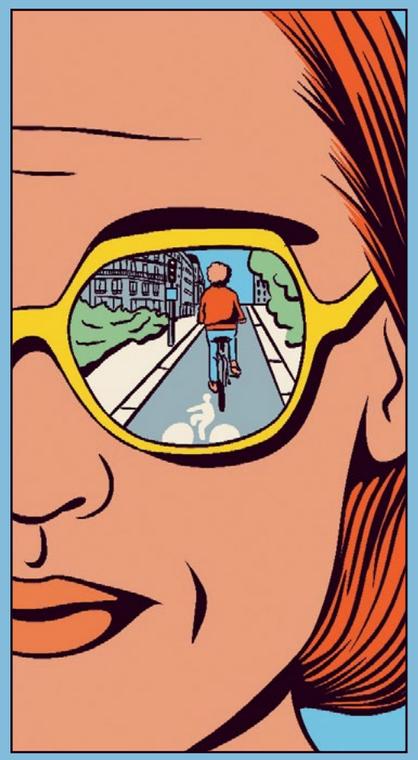
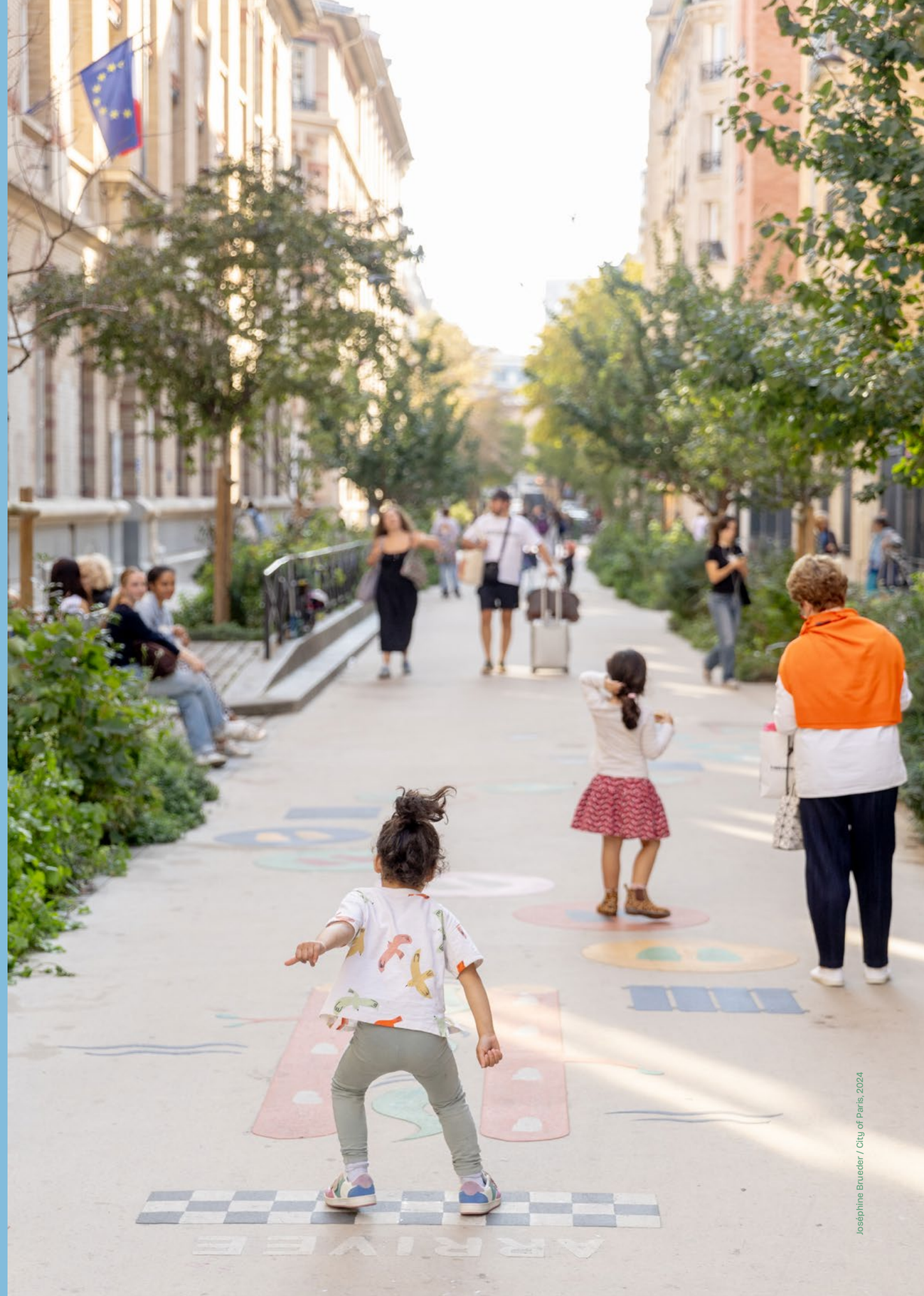
VILLE DE
PARIS

PARIS CLIMATE ACTION PLAN 2024-2030

Faster, more local, fairer

CONTENTS





Joséphine Brueder / City of Paris, 2024

Anne Hidalgo

Paris Mayor

« THE PARIS OF TOMORROW »

For the past 10 years, my municipal majority and I have been working on offering Parisians access to a better life every day. In a cooler, breathable and resilient city, we want them to be able to have access to decent housing, healthcare, services, green spaces and facilities wherever they live. Through our coherent and determined action, we have achieved major milestones. The Olympic and Paralympic Games, while showing the world the beauty of Paris, have been a formidable lever for this transformation, reinforcing our ecological ambitions. Given the challenges we face, we must accelerate. Together, we will adapt our city and reduce our ecological footprint, without ever wavering from our social responsibility.

The political landscape has changed considerably in recent years: there have been countless setbacks on environmental issues, our country is facing an unprecedented housing crisis, and market forces are threatening to relegate certain essential services to the sidelines. Against this backdrop, we're staying on course: that of collective decision-making, freedom of expression, confidence in science and defending the most vulnerable.

Crises have not spared us. We feel the effects of our society's disruptions in our very flesh: the health crisis with Covid-19 and the ensuing economic and social crisis, the climate crisis with the heatwaves of 2019 and 2022, the flooding of the Seine... And all these crises affect above all the most impoverished and vulnerable populations.

These events are challenging the way we live in our city. Thanks to a series of concrete plans and actions, we are responding in a systemic way to the urgent need to make our city habitable for everyone, thereby contributing to the habitability of our planet. I'm proud that these new plans are the fruit of extensive consultations, starting in 2020. With my municipal team, elected representatives, employees, Parisians, associations, businesses and institutions, we have sketched out the Paris of tomorrow. All these voices met, consulted and debated. They came up with proposals, which are now at the heart of these new plans.

With Paris likely to peak at 50 degrees in 10 years' time, we must do everything we can to postpone this deadline as late as possible, and prepare for it. The Climate action plan shows the way. The profound transformation of our city will also be accelerated by the new Local Urban Plan, reflecting our bioclimatic ambitions and our action in favor of solidarity. The Parisian Environmental Health Plan and the Resilience Strategy each contribute to this collective edifice, and will be supported by the investments needed to meet these challenges. These plans form our common framework for the next 15 years. They should enable to win the race against time to achieve carbon neutrality by 2050, and thus meet the objectives of the Paris Agreement, while respecting our commitments to the middle classes, families and the most vulnerable.

The Paris of tomorrow is the stuff of dreams. We'll be able to breathe even on the edge of the ring road, live and eat well regardless of our means, attend schools protected from extreme temperatures and free from all chemical pollutants. Everyone will be able to refresh themselves in the Seine and in new green spaces, escape to urban forests, laugh and play in children's streets. This is also our responsibility toward future generations. For we are building a greener, more united, more sustainable and more livable capital to pass on to them.

More than ever, Paris will be a city where we take care for one another and for all living ecosystems.

Let's build tomorrow's Paris together.

Dan Lert

Editorial by Deputy Mayor in charge of the ecological transition, the climate action plan, water and energy

« ADAPT PARIS TO CLIMATE SHOCKS »

Since the adoption of the 2018 Paris Climate action plan, which aligned the City's objectives with the Paris Agreement, our commitment has remained unwavering. Day after day, we're shaping a greener city, with dozens of solar power plants, hundreds of kilometers of bike lanes, thousands of eco-renovated homes, tens of thousands of trees planted. And yet, during these six years, climate change has never been so tangible and violent. Heatwaves have marked every summer, torrential rains have caused flooding, and droughts have multiplied. The scientists are clear: the world is not on the right trajectory to meet the objectives of the Paris Agreement, the planet is overheating.

A recent study confirms that Paris could face temperatures of up to 50 degrees by mid-century. Extreme climatic hazards for which we must prepare today, by accelerating the profound transformations already underway in our city. This study also shows that there is still time to act, that we can still avoid this scenario if we drastically reduce greenhouse gas emissions, in Paris and elsewhere.

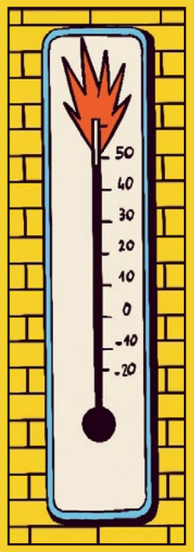
The new 2024-2030 Climate action plan is our response to act on both fronts: to avoid irreparable damage while adapting Paris to the challenges ahead. It is the fruit of more than two years' work by the entire City, the 17 arrondissement town halls, thousands of Parisians, associations and businesses, under the watchful eye of internationally recognized experts. The challenge is to preserve the possibility of living in Paris in the years to come.

This plan places social justice at the heart of our priorities, making the protection of the most vulnerable Parisians and the fight against inequality the compass of our climate action. For it is the most vulnerable, the most precarious, who suffer most from the effects of global warming, even though they contribute least to it.

To adapt Paris to climate shocks, rather than blindly trusting in technological mirages, we favor solutions based on nature, sobriety, energy efficiency and the development of renewable energies in order to move away from fossil fuels.

Finally, this Climate action plan calls for an ecological bifurcation of the Parisian economy. Over-consumption and over-exploitation of resources are incompatible with the preservation of life itself. In this Climate action plan, the City of Paris is deploying all municipal levers to develop another economy, one that is more local, more sustainable and more supportive, one that encourages other ways of producing and consuming. With less advertising in the city, less air traffic, more re-use and local shops, it's a more resilient, low-carbon economy.

With this Climate action plan, Paris reaffirms its ambition to remain at the forefront of the fight against climate change, in line with the expectations of Parisians, and is committed to accelerating all solutions to protect our inhabitants and our infrastructures.



STRATEGY

I. OVERVIEW OF PARIS CLIMATE ACTION PLAN

The climate is changing, Paris is taking action

Climate change is accelerating worldwide. In Europe, the phenomenon is twice as fast as at global level. Too many countries have failed to make the necessary efforts to comply with the Paris Agreement, which aims to keep global warming below 1.5°C worldwide. Still, IPCC scientists keep repeating: time to act is running out, and every degree counts, every tenth of a degree counts, every ton of CO2 avoided counts.

In Paris, where average temperatures are already 2.3°C higher than in the pre-industrial era, extreme weather events are multiplying, with droughts and heatwaves intensifying summer after summer, torrential rainfalls occurring regularly, while harsh winters seem increasingly to be a thing of the past. The capital is preparing to live in a modified environment that could exceed +2.5°C by 2030, and average warming of around +3°C by 2050.

At a time of runaway climate change, the drastic and rapid reduction of greenhouse gas emissions in Paris to achieve carbon neutrality is more than ever a priority.

But we also need to do everything we can to adapt our territory to the effects of climate change, and to protect our populations from the threats posed by this acceleration to their living conditions and health. t

With this new Climate action plan, Paris is equipping itself with operational means to achieve carbon neutrality and to adapt to the new climate reality. By choosing to focus on sobriety and the in-depth transformation of public spaces and buildings, using nature-based solutions rather than an all-technology approach, Paris is asserting its role as a model for climate action, and encouraging all local actors to get involved alongside it. Achieving carbon neutrality in Paris and enabling everyone to live adequately in an altered environment also means protecting the most vulnerable and doing everything possible to reduce social and environmental inequalities.

Two decades of climate action

Paris has been taking ambitious action on climate change for over 20 years. As early as 2004, at a time when the reality of climate change was still being questioned by some, the City of Paris made a clear diagnosis of its share of responsibility for climate change, by carrying out an initial assessment of the greenhouse gas emissions and energy consumption of both its administration and the Parisian territory. In this respect, 2004 remains the benchmark year for the City's climate action plans, both in term of its "local emissions", which refer to direct emissions within the Parisian territory, and its "carbon footprint", which refers to both local emissions and indirect emissions, linked to the lifestyles and consumption patterns of the territory's inhabitants and users, but emitted outside Paris (for example, emissions linked to the production of food or manufactured goods consumed in Paris).

Paris has had a clear roadmap for combatting climate change since 2007, when it adopted its first Climate action plan, before it was legally obliged to do so. This framework document is both a strategic and operational planning tool, addressing the whole range of air-energy-climate issues in the area. It defines objectives and measures for reducing greenhouse gas emissions, adapting to climate change, achieving energy sobriety, improving air quality and developing renewable energies. The first Climate action plan set ambitious targets: to reduce greenhouse gas emissions by 25% and energy consumption by the same amount by 2020, and to increase the share of renewable and recovered energy to 25% between 2004 and 2020. They have guided all the City's climate policies for the decade 2010-2020.

In 2012, the City of Paris strengthened the operational dimension of its Climate action plan, adopting objectives for each major sector (housing, transport, waste) and committing all its municipal policies to a global strategy to combat climate change. As the city is only directly responsible for 5% of the city's greenhouse gas emissions, the second Climate action plan seeks to mobilize all those who live, work or pass through the area to take up the climate challenge. It was also at this time that Paris began to anticipate the effects of global warming on its territory. An initial diagnosis of the area's vulnerabilities and robustness revealed that Paris is a fairly robust city in the face of climate hazards and dwindling resources, despite vulnerabilities relating to heatwaves, flooding, biodiversity erosion and water resources.

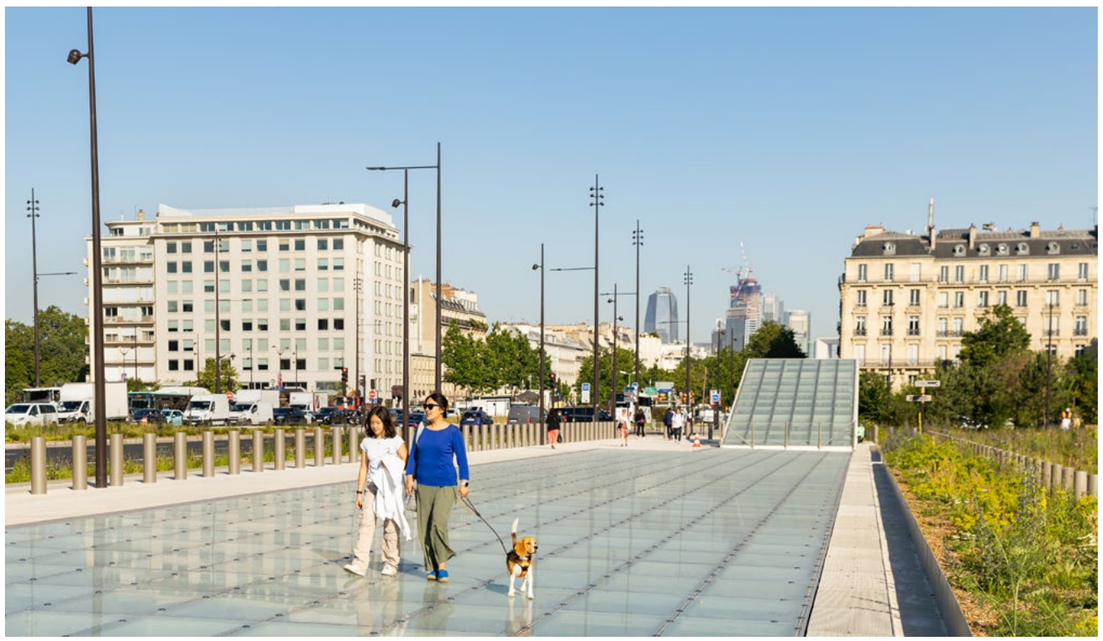
Paris' ambition for the climate took on a new dimension at COP21, hosted by France in 2015, culminating in the adoption of the Paris Agreement by the international community. The third Climate action plan (2018-2024), unanimously adopted by the Paris Council in March 2018 and supported by 95% of Parisians in a citizens' vote, has thus transposed the objectives of the UN Accord to the Parisian scale, putting Paris on the path to carbon neutrality and 100% renewable energy consumption. At the same time, the issue of improving air quality was integrated into the Climate action plan.

> **Depuis 2007, et l'adoption de son premier Plan climat, avant toute obligation légale de le faire, Paris s'est dotée d'une feuille de route claire pour lutter contre le changement climatique.**

Significant results on the road to carbon neutrality and improved air quality

After nearly two decades of action, the City of Paris' climate record is clear: in terms of emissions reduction and renewable energy production and consumption, the City is on track to meet its targets, even if there is still a long way to go to achieve carbon neutrality and 100% renewable energy by 2050.

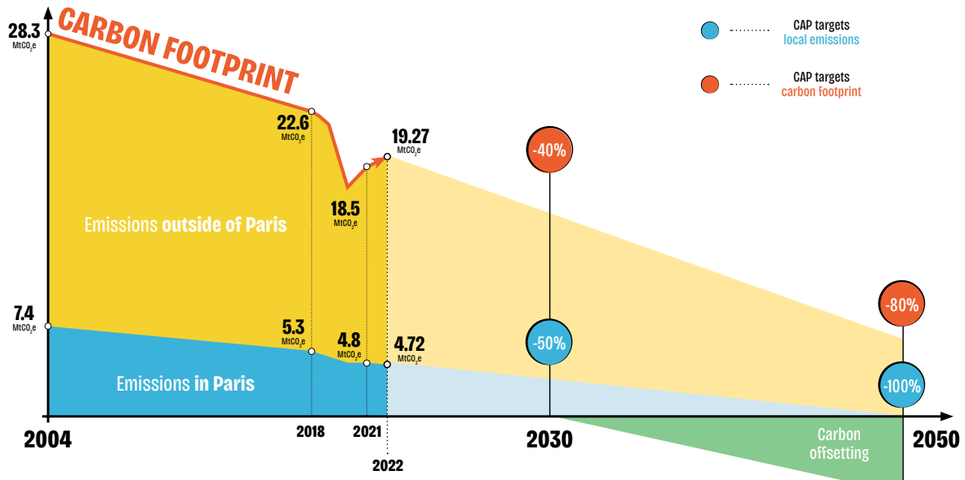
100 %
renewable energy by 2050



Guillaume Bontemps / City of Paris, 2024

Figure 1

Paris' carbon neutrality trajectory



City of Paris, 2024 – Direction de la transition écologique et du climat

Between 2004 and 2022, local emissions (linked to energy consumption in the residential, tertiary, industrial and intramural transport sectors, as well as emissions associated with waste produced in Paris) **fell by 36%.** This significant drop can be explained by sobriety in the use of buildings and transport, as well as changes in behaviour towards less carbon-intensive practices. For road transport, the effects of European and national regulations (Euro standards), coupled with local land-use planning decisions (reducing the use of cars, improving public transport and shared mobility, restricted traffic zones, etc.), have resulted in substantial gains, with a 60% reduction in greenhouse gas emissions over the period.

Paris' carbon footprint, which more broadly reflects all the emissions generated on a planetary scale by the activities of Parisians, **also dropped significantly between 2004 and 2022, with a reduction of 32%.** In 2022, it reached 19.3 million tons of CO2 equivalent, compared with 28.3 million tons of CO2 equivalent 17 years earlier. By 2020, successive confinements and the economic downturn caused by the health crisis had reduced the city's carbon footprint by 40% compared with 2004, in line with the level expected for 2030. However, this result, linked to an exceptional crisis situation, shows the extent of the efforts still required to reach the 2030 targets. The challenge is to achieve this in a normal context.

Energy consumption in Paris buildings fell by 16% between 2004 and 2022. Although this reduction is significant, it has not enabled to fully achieve the objectives of the first Climate action plan in this area, and underlines the need to accelerate our efforts to keep in line with those of 2030. Nonetheless, it remains well above the 5% reduction in consumption observed nationwide over the same period. In Paris, the vast majority of energy consumption comes from buildings, so the challenge of reducing it is linked to the immense collective renovation challenge. While significant gains have been made in the social housing sector, the renovation of private property (both residential and commercial) is clearly lagging behind. This is the challenge for the coming years.

This period was also marked by a sharp decline in the use of the most carbon-intensive energies, starting with fuel oil (-53%) and gas. At the same time, **the share of renewable energies in Paris's energy consumption has risen from 13% in 2004 to 21.4% in 2022,** bringing Paris closer to its initial targets, despite the fact that the share of renewable energies in French electricity is 10 points behind its European commitments for 2020.

Energy consumption in Paris buildings fell by 16% between 2004 and 2022.

Finally, with regard to **air quality,** the efforts undertaken by the City of Paris have resulted in a **clear improvement between 2013 and 2023.** Most atmospheric pollutants, such as fine particles, nitrogen dioxide and benzene, saw their concentrations fall by 35% to 45% over the period, thanks in particular to lower emissions from road traffic. Nevertheless, there is still a great deal of work to be done to achieve the targets. As in the case of carbon footprints, the lowest pollution levels ever recorded in Paris were reached during the exceptional period of the first containment of the health crisis in spring 2020, when much of the city's activity was at a standstill. Levels reached during this period were notably below the threshold for future European regulations for nitrogen dioxide (NO2). This episode illustrates the scale of the efforts required to achieve satisfactory air quality that does not harm the health of Parisians.

Joséphine Brueder / City of Paris, 2024

A plan to guarantee Paris' habitability and move away from the fossil fuel era

The 2021 update of the vulnerability and robustness study of Paris made an unequivocal diagnosis: the major risks that were expected in 2050 are tending to occur as early as 2030, and the possibility of a 50°C heat peak hitting the capital is no longer ruled out by the scientists of the Regional Climate Study Group (GREC – "Groupement régional d'études sur le climat"). The question of adaptation, seen from the angle of protection (protection of Parisians, protection of the territory, protection of vital resources such as water), has become a central issue in this new Climate action plan.

Furthermore, given the ambitious objectives adopted when the Climate action plan was revised in 2018, in line with the Paris Agreement (to achieve carbon neutrality and 100% renewable energy by 2050), the 2024 revision was built on acceleration, the involvement of all levels and support for the most vulnerable. This is the meaning of the motto "faster, more local and fairer", which has governed all internal and external consultations

50°C
heat peak

Make it faster means, above all, stepping up our efforts. To achieve this, the City of Paris is mobilizing its entire administration, departments and staff, as well as all stakeholders (residents, businesses, retailers, associations, etc.) in Paris. With this 2024-2030 Climate action plan, Paris is driving a change of scale on municipal levers, questioning all activities that generate greenhouse gas emissions, and planning the exit from fossil fuels through energy sobriety and the deployment of renewable energies. Adapting Paris to the effects of climate change is also part of this acceleration imperative. The protection of residents, workers and all those moving around the city is at stake. For the first time, the Climate action plan defines an adaptation trajectory for Paris.

Going more local: actions to combat climate change must be implemented rapidly across the entire territory, in every district and arrondissement. For the first time, the Climate action plan is being rolled out locally, as part of a grassroots approach that is as close as possible to the day-to-day lives of Parisians. Each arrondissement has its own operational roadmap, drawn up on the basis of its own priorities, in perfect harmony with actions undertaken in other areas, with the aim of making the arrondissement the benchmark for municipal action.

Make it fairer: Paris places social justice at the heart of its strategy to combat climate change. The climate crisis amplifies inequalities. Not all Parisians are affected by climate change in the same way: those who contribute the least are often those most impacted by its effects. For example, residents of working-class neighborhoods in Paris are the most exposed to heat waves, air pollution and energy poverty, both in summer and winter. With this Climate action plan, Paris is committed to reducing poverty and enabling everyone to live better in a low-carbon city adapted to climate change.

The Climate action plan is divided into 5 main sections, reflecting the City's strategic priorities: protecting Parisians; accelerating the reduction of greenhouse gases; preserving and protecting resources as common goods; promoting and supporting the development of a resilient, low-carbon economy; acting together for the climate.

Action program summary

The Climate action plan is divided into 5 main sections, reflecting **the City's strategic priorities:** protecting Parisians; accelerating the reduction of greenhouse gases; preserving and protecting resources as common goods; promoting and supporting the development of a resilient, low-carbon economy; acting together for the climate. For each of these priorities, actions of various kinds are presented throughout the document, selected either for their importance in terms of expected gains (in terms of CO2 emissions avoided, improved air quality, increased local renewable energy production or territorial adaptation), or for their emblematic dimension and ability to reflect the general philosophy of Parisian climate action.

When it comes to combatting climate change and its effects, and improving air quality, the main types of action to be implemented are well known (massive renovation of buildings, decarbonizing travel, greening the city, reducing energy consumption, developing renewable energies, etc.). So, while some actions are entirely new, the majority were already present in the previous plan. The City of Paris has not retained any fundamentally different orientations from those that have guided its climate action since the 2000s. For this reason, the focus is on scaling up these actions to achieve the targets set.

PROTECTING PARISIANS

Protecting Parisians, visitors, resources and infrastructure is the priority of the 2024-2030 Climate action plan. Firstly, by transforming Paris to protect it from extreme heat, relying first and foremost on revegetation and nature-based solutions. Trees and nature are natural air-conditioners; by opening up some 300 hectares of new green spaces to the public by 2040, creating cool islands in all neighborhoods and increasing the number of wetlands, the city will be more pleasant to live in during periods of extreme heat.

Paris takes its inspiration from cities in southern Europe, deploying low-tech solutions for public spaces and facilities: shutters, shading devices, white roofs and natural ventilation. Parisians will be helped to protect their homes. As far as possible, the use of air conditioning will be limited. To cope with heat waves, the role of water in the city will be reinforced, and Parisians will be able to swim in the Seine from 2025.

Because climate change generates and amplifies inequalities, Paris is making it a priority to protect low-income households and vulnerable populations, so that they do not have to endure the cold and damp in winter and the heat in summer in their living quarters, and so that they can have access to healthy food, including through food distributions. We will also be stepping up our support measures for those most vulnerable to the heat.

Paris also protects its residents by continuing its efforts to improve air quality, by rebalancing public space in favor of pedestrians and bicycles and by greening public space to the detriment of private cars, by transforming the ring road and by lobbying the Metropolis, the Region, the State and Europe for more ambitious public policies.

Support measures for those most vulnerable to the heat will be extended and reinforced. In addition to the elderly, outreach initiatives will be launched for pregnant women and young babies. An "intense heat" plan will be put in place for the homeless. Paris will be prepared for episodes of extreme heat, and will be looking at ways to mobilize places of refuge for the general population in the event of a heat dome.

Finally, Paris will be able to rely on its municipal police force, set up in October 2021, to implement a number of Climate action plan measures. Firstly, it will be responsible for ensuring compliance with environmental regulations, such as monitoring the metropolitan low emission zone (ZFE – "Zone à faible émissions", limiting access to more pollutant motors) and all other traffic restriction measures, or controlling devices that would

be incompatible with the objectives of the Climate action plan, such as heating on terraces, or open doors on air-conditioned shops. It will also be mobilized to support and inform residents in the event of a climatic crisis (e.g. heatwave) - specifically helping vulnerable people (the homeless, the elderly, the chronically ill, etc.).

ACCELERATING THE REDUCTION OF GREENHOUSE GAS EMISSIONS

Paris is firmly committed to carbon neutrality. The city aims to halve its greenhouse gas emissions by 2030, compared with 2004 levels. To achieve this, the city will set emission levels not to be exceeded each year, in order to objectify the efforts expected in each sector and align all its public policies with the decarbonization trajectory.

As the primary lever for reducing emissions, the energy renovation of Parisian buildings is the project of the century. This commitment is reaffirmed by the reinforcement of support schemes for private condominiums and the creation of schemes for small businesses. Paris will continue to set an example by launching a major renovation plan for its municipal property portfolio, deploying a new method for the comprehensive renovation of its schools and nurseries, and continuing to renovate 5,000 social housing units a year to ensure thermal comfort for Parisians in summer and winter.
With its new bioclimatic local urban plan, Paris has acquired a powerful tool for building less, regenerating more and reducing the carbon footprint of construction. The use of concrete will be sharply reduced, with a view to phasing it out gradually, and bio-sourced materials will be encouraged. Paris will develop a new heritage doctrine in conjunction with government departments to speed up building adaptation projects. The mobilization of Parisian roofs and basements for the ecological transition will be facilitated.

To continue reducing emissions from the transport sector, Paris intends to go faster and further in reducing the role of the car, the only guarantee of a genuine decarbonization of Parisian transport in line with health standards on air quality. The rebalancing of public space will be accelerated: 80 pedestrian districts, free of car traffic, will be created, and the inner ring road, the "boulevard périphérique", will be transformed into an urban boulevard. Paris will turn the lane reserved for athletes during the Olympic and Paralympic Games into a dedicated public transport and car-sharing lane as soon as the event is over. For those motorized vehicles that remain essential to city life (cars for disabled people, buses, emergency vehicles, heavy goods vehicles, refuse collection vehicles, etc.), Paris will develop solutions for the massification of clean mobility. By 2030, the city's entire fleet of vehicles will no longer be powered by internal combustion engines. Last but not least, the bathing of the Seine, the transformation of the Paris ring road and the elimination of single-use plastic in the city are major ecological advances, whose deployment will have been accelerated by the hosting of the Olympic and Paralympic Games in Paris.

PRESERVING RESOURCES AS COMMON GOODS

The City of Paris must meet the challenges of the climate and energy crisis by reducing the pressure it exerts on natural resources, which are truly common goods, through a three-pronged strategy of sobriety: in energy, water and materials

Energy sobriety will be decisive if we are to move away from fossil fuels once and for all. Efforts to reduce energy consumption by 35% compared with 2004 will be focused on all areas, the municipal energy conservation plan will be strengthened, public lighting will consume less energy, and the City will mobilize all levers, including regulatory ones, to encourage local actors to follow the same trajectory. At the same time, we will be phasing out the use of fossil fuels in all our municipal facilities, and putting an end to the use of fuel oil on our territory. Local production of renewable energies will be facilitated and encouraged, and municipal buildings will be mobilized to install 6,000 micro-installations producing renewable energies by 2050.

The City of Paris considers energy to be a common good that must be preserved from market logics, which is why it defends and promotes the framework of a public energy service that amplifies the development of renewable energies. It also advocates the reinstatement of regulated gas sales tariffs for private individuals, local authorities and small businesses, abolished in accordance with the 2019 energy-climate law, and the maintenance of regulated electricity sales tariffs.

Climate change will put increasing pressure on water resources. With this Climate action plan, Paris acknowledges the end of the abundance of this vital resource, undertakes to reduce its water withdrawals by 15%, prioritizes uses and develops a new "water mix" to adapt resources to each use. Preventive action will be taken to preserve the quality of water in the natural environment.

For the first time, this Climate action plan commits Paris to an approach of material sobriety, to reduce the consumption of natural resources and the waste produced. The City of Paris will estimate the overall consumption of materials on its territory, and reduce it by implementing a change of scale in terms of the circular economy and waste reduction, particularly in the case of single-use plastics.

80
pedestrian districts for 2030

PROMOTING AND SUPPORTING THE DEVELOPMENT OF A LOCAL, RESILIENT, LOW-CARBON ECONOMY

Paris supports the ecological transformation of the economy by mobilizing municipal levers to promote, support and invest in local and sustainable trade and crafts, and find the path to more responsible consumption that is less destructive of resources.

The transformation of tourism is the symbol of this transition. Paris will work to build a sustainable, welcoming and resilient tourism offer, and will support tourism professionals along the way. Paris will defend the principle of reducing air traffic at airports serving the region, in favor of rail tourism.

It is also calling on the French government to provide massive funding to strengthen and modernize the rail network, so that the rail mode, which emits far less CO_2, can compete with the air sector.

Food accounts for around 20% of Paris's carbon footprint. With this Climate action plan, Paris is promoting sustainable, more plant-based and local food in its municipal restaurants. It also encourages local sourcing, food processing and the development of urban agriculture

To initiate the societal change that goes hand-in-hand with the ecological transition, new professions will emerge, and others will have to evolve to adapt. The City of Paris will mobilize research and higher education, as well as consular chambers, to support this shift in work and employment towards the key areas of the ecological transition: energy efficiency in buildings, renewable energies, urban agriculture and sustainable food.

With the acceleration of climate change, unprecedented volumes of investment will have to be mobilized by public authorities and local stakeholders. An investment trajectory will be drawn up to ensure that investments are made at the right level and at the right pace. Economic actors and private financing will be mobilized, as will public procurement, which represents a considerable lever for the ecological transition.

ACTING TOGETHER FOR THE CLIMATE

Since the adoption of the first Climate action plan in 2007, citizen participation has been at the heart of the City's climate action. This Climate action plan is the work of all the Parisians, associations and businesses who contributed to its development. The City of Paris is entrusting more of the decision-making to Parisians, by mobilizing the Citizens' Assembly, the Council of Future Generations and residents of working-class neighborhoods. Paris will respond to the desire of many Parisians to make a commitment to climate action by expanding the missions of the Paris Volunteers.

To meet the expectations expressed by a section of young people and citizens, in September 2021 the City of Paris opened the Climate Academy, a venue dedicated to accelerating the ecological transition located in the heart of Paris, in the premises of the former town hall of the 4th arrondissement. Thanks to the many partnerships forged since its opening, the Académie has become a place for meeting, sharing and creating, open to the city. In a context of interdependence between territories, efforts to promote the ecological transition require constantly renewed cooperation between local authorities. Paris will be strengthening its ties with metropolitan areas, taking climate action further in all its cooperative ventures.

Paris is developing solidarity and cooperation on climate issues with cities and regions around the world. With this Climate action plan, it continues to speak with a single, ambitious voice on the international stage, defending the place of cities in international negotiations, and the principle of direct financing to keep their carbon trajectories on track. Paris will also contribute to the development of climate justice, and work with its partners to advocate an international phase-out of fossil fuels

Finally, for the first time, this document has been co-designed with all the borough councils. This new approach is in line with the reforms undertaken since 2020 to make the arrondissement the reference level for municipal action. Experience has shown that the most appropriate decisions are those taken by the level in the best position, as close as possible to reality; it is also through proximity that we ensure the most agile, and therefore the most effective, management of public action. This method, particularly relevant to climate policy, which constantly links global challenges and local action, has enabled to draw up 17 arrondissement roadmaps for the implementation of actions on priorities defined by the arrondissement mayors, taking into account their specific characteristics and the expectations of their residents.

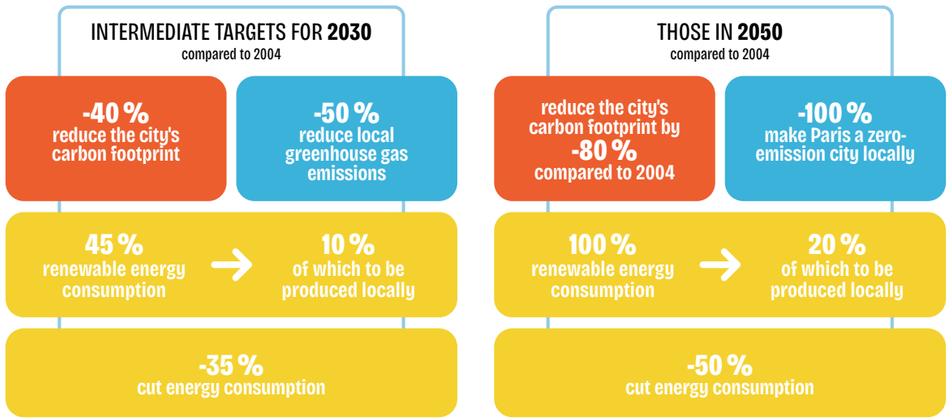
City of Paris

II. STRATEGIC AND SECTORAL OBJECTIVES OF THE PARIS CLIMATE ACTION PLAN

The preparation of the Climate action plan (2024-2030) was undertaken at a time of sharply accelerating manifestations of climate change across the planet. This fourth Climate action plan signals a general mobilization to guarantee Paris's habitability in the near future, and commits the city to a race against time to maintain the Paris Agreement objective of limiting global warming to below 1.5°C.

Two timeframes: 2030 and 2050

The Climate action plan is based on two main sets of objectives:



WITH REGARD TO THE "AIR QUALITY" COMPONENT OF THE CLIMATE ACTION PLAN, THE CITY OF PARIS HAS SET ITSELF THE FOLLOWING OBJECTIVES USING THE LEVERS AT ITS DISPOSAL:

- **2025:** by 2025, no Parisian should be exposed to nitrogen dioxide levels in excess of current regulations
- **2030:** to achieve compliance with the new European regulatory values
- **2035:** To meet WHO recommendations

FINALLY, WITH REGARD TO ADAPTATION, THE CITY OF PARIS WILL DEFINE A TRAJECTORY FOR ADAPTING TO CLIMATE CHANGE BY SETTING ITSELF SEVERAL OBJECTIVES, INCLUDING

- **100 %** of Parisians within a 7-minute walk of a cool island, day or night, by 2030
- **10m²** of green space per inhabitant by 2040
- **40 %** of the territory to be made permeable by 2050
- **-15 %** of water withdrawal

An ambitious decarbonization trajectory

In order to define a trajectory towards carbon neutrality by 2050, starting in 2018, the City has drawn on the most voluntarist scenarios of the French Ecological Transition Agency (ADEME), on the second National Low-Carbon Strategy (SNBC2), on the "Afterres 2050" scenario developed by the Solagro association for agriculture, and on the one developed by GrtGaz-ADEME for biogas production. Respecting this trajectory in Paris depends on the joint mobilization of public authorities at all levels (European, national, regional, metropolitan and municipal). It also involves mobilizing economic actors and operators, as well as residents. This trajectory will be re-evaluated with the publication of the SNBC3 and adjusted in line with the French government's delays in meeting some of its European obligations, such as the share of renewable energies in the energy mix.

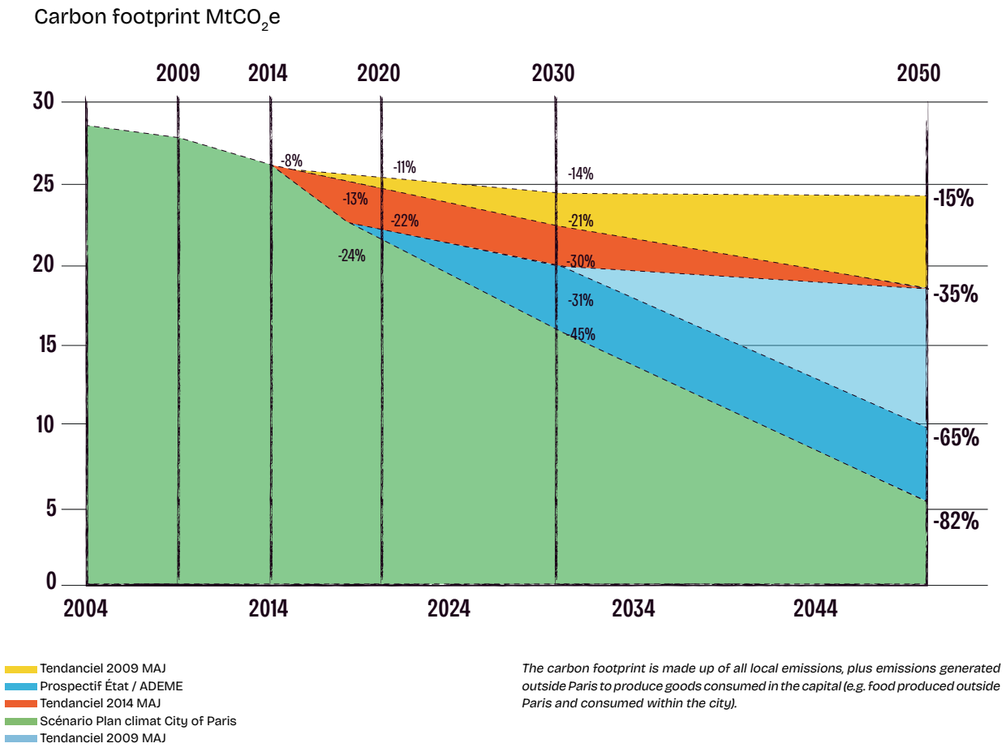
This trajectory towards carbon neutrality by 2050 is represented in the two graphs below. They show:

- That by maintaining the pace of trends observed between 2009-2014 and 2014-2018, the maximum reduction in carbon footprint would be 35% in 2050 (purple and red sections).
- By incorporating the SNBC2 forecasts and the above-mentioned scenarios into these trends, this reduction could be as much as 65% (blue sections).
- That by carrying out, in addition to the actions required in the previous scenario, all the actions included in the 2018 climate action plan, carbon neutrality could well be achieved by 2050 (green section).

These simulations clearly illustrate the need to speed up the actions to be taken by all actors (European Union, State, Region, Metropolis, City of Paris, businesses, citizens...).

Figure 2

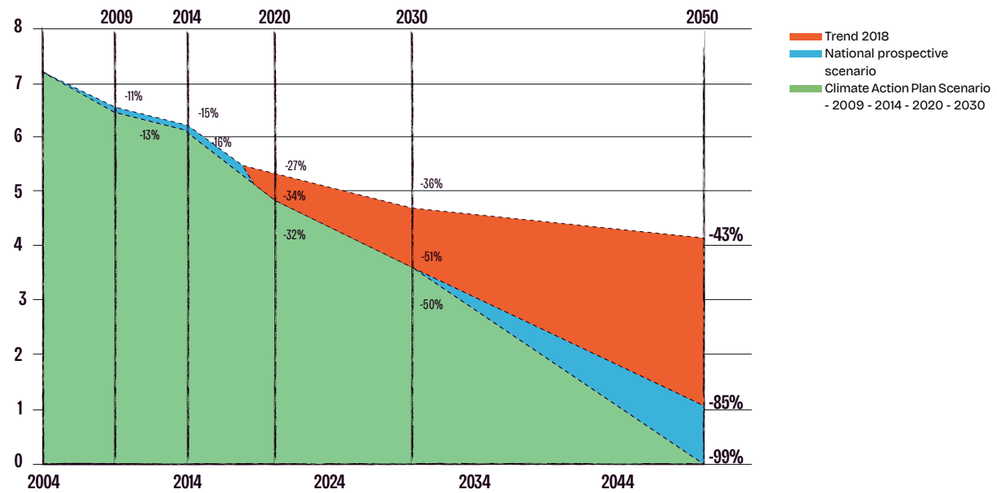
Simulations of Paris' carbon footprint in 2050



The carbon footprint is made up of all local emissions, plus emissions generated outside Paris to produce goods consumed in the capital (e.g. food produced outside Paris and consumed within the city).

Figure 3

Simulations of local emissions in Paris to 2050



Local emissions correspond to all greenhouse gas emissions generated within the city (mainly emissions linked to energy consumption in Paris, plus those linked to the waste sector).

City of Paris, 2018-2023 – Direction de la transition écologique et du climat

Reduce energy consumption and develop renewable energies

Reducing local emissions to zero means cutting Paris' energy consumption by 50% and achieving a 100% renewable energy mix by 2050. The greenhouse gas emissions of renewables being limited to scope 3, local zero emission is attainable (and shall be coupled with the reduction of the Parisian carbon footprint and a compensation strategy). To achieve this objective, the City of Paris plans to:

- Achieve 100% renewable energy in the heating network by 2050,
- Facilitate the use of "green" energy contracts for residents and economic actors for other energies,
- Accelerate local production of renewable and recovered energies
- Study legal changes to limit the distribution of carbon-based energy in networks owned by the City of Paris.

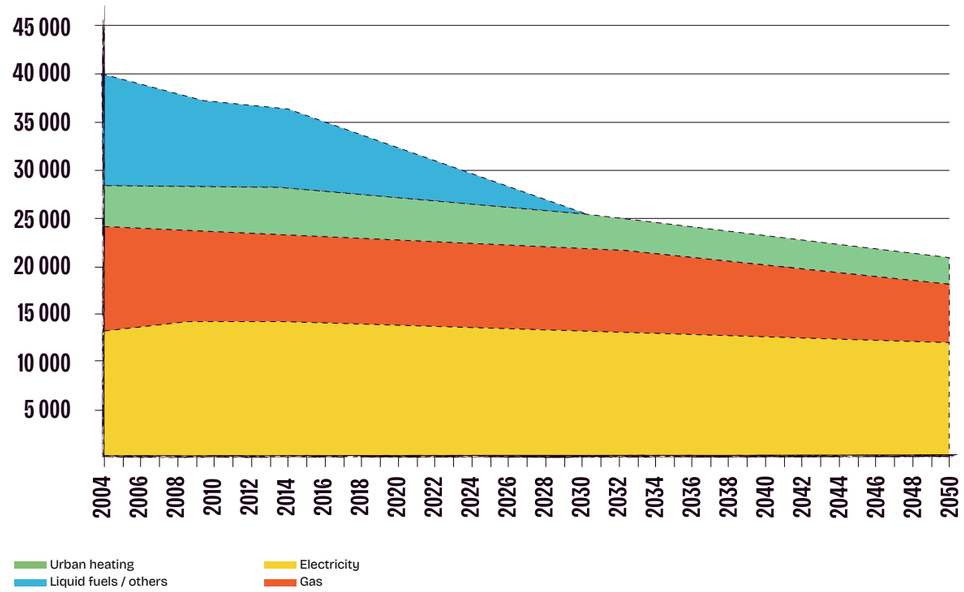
Reducing local emissions to zero means cutting Paris' energy consumption by 50% and achieving a 100% renewable energy mix by 2050.

The City of Paris' decarbonization trajectory includes a simulation of the territory's energy supply, detailing the share of renewable energy consumed in Paris and its expected evolution between 2004 and 2050, as shown below:

City of Paris

Figure 4

Evolution of energy consumption by vector



City of Paris, 2018 – Direction de la transition écologique et du climat

This simulation shows that, despite significant growth in the production of renewable energies in Paris, the supply of renewable energies to Paris from national grids will remain predominant (around 85% in 2050, compared with 96% in 2004). The consumption of green energy is an essential part of the Parisian strategy and is closely linked to national energy policy.

The City of Paris also relies on the development of its heating and cooling networks, central infrastructures for the city's energy transition. The heating network supplies nearly 6,000 Parisian customers, the equivalent of 425,000 homes. Currently 54% supplied by renewable and recovered energy sources, the City of Paris has set a target of 100% renewable and recovered energy in its energy mix by 2050.

Achieving 100% renewable energy in Parisian consumption means dividing the city's energy needs by 2. It thus requires to renovate the 120,000 buildings in Paris. This challenge is both Parisian and national: France will not be able to achieve carbon neutrality unless a major effort is made to renovate the energy efficiency of existing buildings. That's why the City of Paris is calling for a more ambitious regulatory framework to be set at national level for the energy renovation of buildings, while at the same time developing financial incentives for households.

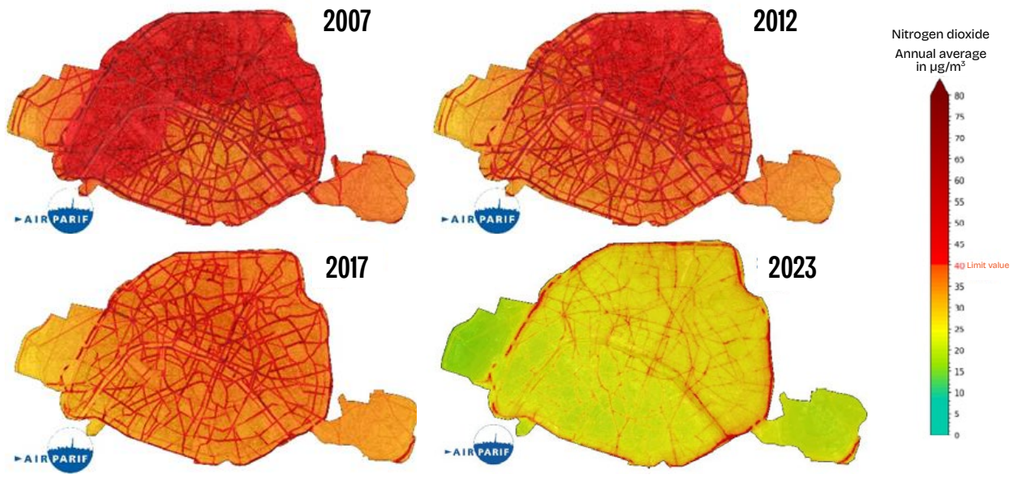
Clément Dorval / City of Paris, 2023

Improving air quality, a major concern

Air quality in Paris has been improving over the past 10 years, with significant reductions of 30-60% in most atmospheric pollutants. Nevertheless, in 2023, 2,000 Parisians were affected by NO2 concentrations exceeding threshold limit values.

Figure 5

Trends in average annual NO2 levels from 2007 to 2023 in Paris



Airparif, 2023

All Parisians are affected by exceedances of World Health Organization recommendations for 4 pollutants: NO2, PM10, PM2.5 and Ozone.

The City of Paris, with the support of the Île-de-France air quality agency, has analyzed current trends and the need for additional measures to meet the new WHO recommendations in 2035. Modelling predicts that emissions from the residential, mobility and construction sectors will have to be reduced by more than 80% to meet the values set by future European regulations in 2030. Efforts must continue in the building and transport sectors. In the mobility sector, this means continuing to reduce traffic volumes, switching to low-emission or locally zero-emission engines, drastically limiting fine braking particles in addition to the roll-out of the Euro 7 standard, and starting the process of banning Crit Air 2&3 vehicles by the end of the decade. In the building sector, significant progress is expected in reducing fine particles from wood-fired heating and pollutants from building sites.

As with the trajectories for greenhouse gas emissions and renewable energies, it is essential that the same dynamic is applied with the Greater Paris Metropolis (the "Low Emission Zone" - ZFE) or with the State (construction, agriculture, standards...) to ensure that these vital objectives for the health of Parisians and Metropolitans are achieved.

Adapting Paris to climate change: a necessity

Paris has warmed by +2.3°C since 1876. The study of Paris' vulnerabilities and robustness to climate hazards, published in September 2021, clearly indicated that Paris would warm by at least +2.5°C +3°C by 2050, and even +4°C by the end of the century.

These disturbances cause physical upheavals in terms of precipitation (intensity, volume, frequency), drought (duration), winter mildness (zoonosis) or soil stability (clay). They have major social consequences (excess mortality during heatwaves) and economic consequences (flooded infrastructure, building stability).

Defining this trajectory of temperature rise (up to +4°C in 2100) and its consequences enables to anticipate in municipal public policy a new frame of reference of risks to be integrated for the protection of Parisians and the preservation or adaptation of infrastructures.

While the City of Paris cannot control the rise in temperature in its territory due to global warming, it has decided to define performance indicators to protect Parisians and the territory's resources in terms of adaptation: access to cool islands, preservation of water resources and greening of the territory.

The City of Paris continues to work with the Regional Climate Study Group (GREC – "Groupement régional d'études sur le climat"), government departments and international networks to define a baseline warming trajectory for adaptation to climate change.

+2,3°C
in Paris since 1876

A strategic plan setting out Paris' environmental ambitions

In accordance with the law, the Paris Climate action plan 2024-2030 has been drawn up in line with the objectives of higher-ranking strategic documents. For example, the Paris PCAET (Territorial Climate Air Energy Plan) incorporates the relevant provisions of the regional planning scheme (SDRIF – "Schéma directeur de la Région Île-de-France") and its metropolitan equivalent (SCOT – "Schéma de cohérence territoriale métropolitain"). It is also compatible with the objectives of the Metropolitan Climate Action Plan (PCAEM – "Plan climat air environnement métropolitain"), the Regional air quality plan Île-de-France (PPA – "Plan de protection de l'atmosphère") and the Climate air and energy regional scheme Île-de-France currently in force (SRCAE – "Schéma directeur de la Région Île-de-France"). A detailed analysis of the links between the PCAET and these strategic documents is presented in the Strategic Environmental Assessment.

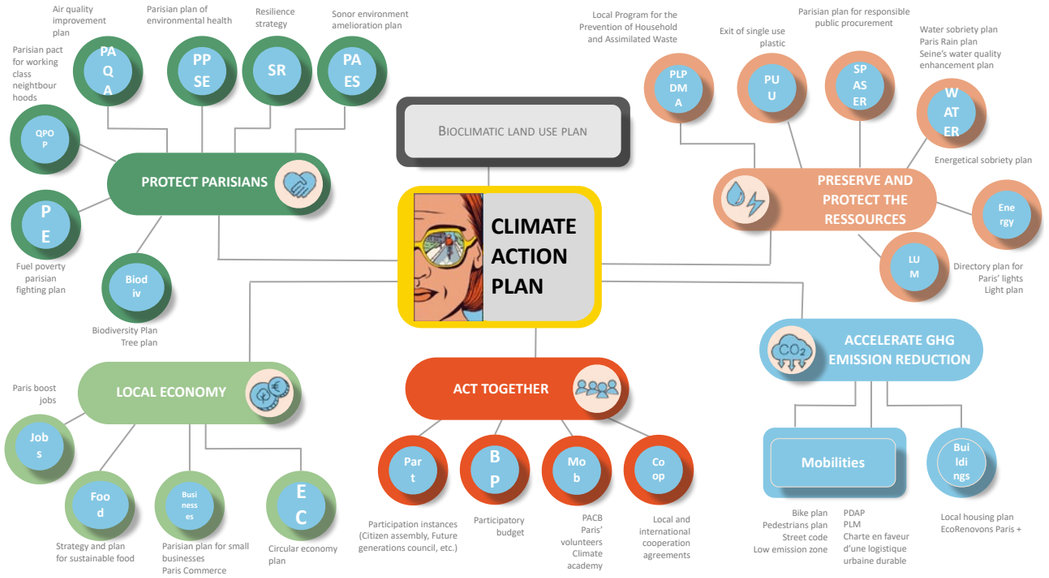
As a global strategic document, the Climate action plan, which sets out Paris's ambitions, is then applied to all sectoral plans, programs and policies, such as the Sustainable Food Plan, the Biodiversity Plan, the Household Waste Prevention Plan and rainwater zoning. It aims to ensure the coherent implementation of the City's public policies to combat climate change. It is also intended to guide the actions of actors, particularly economic actors, in Paris.

The chart below illustrates the interactions between the 5 strategic axes of the draft Paris 2024-2030 Climate action plan and other sectoral plans or programs. The latter take up the major strategic objectives and translate them into operational terms according to the various themes.

Jean-Baptiste Gurliat / City of Paris, 2024

Figure 6

City of Paris environmental plans



City of Paris, 2024 – Direction de la transition écologique et du climat

Sector objectives

GREENHOUSE GASES

Local Emission (millions of tCO2)		2004 reference year	2014	2018	Objective 2020 -25% GHG emissions	2021	Objective 2030 -50% GHG emissions	Objective 2050 -100% GHG emissions
Buiiding	Housing	2,50	2,10	1,94	1,88	1,76	1,40	0
	Tertiary	2,40	2,05	1,88	1,80	1,75	1,20	0
	Industry	0,20	0,10	0,16	0,15	0,18	0,11	0
	Subtotal	**5,10**	**4,24**	**3,98**	3,83	**3,68**	**2,71**	**0**
Transport		1,80	1,27	0,85	1,35	0,71	0,68	0
Waste		0,52	0,45	0,44	0,39	0,42	0,35	0
Total		**7,42**	**5,96**	**5,28**	5,56	**4,82**	**3,74**	**0**

Carbon Footprint (millions tCO2)	2004	2014	2018	Objective 2020 -25% GHG emissions	2021	Objective 2030 -40%	Objective 2050 80%
Energy	6,15	5,15	4,86	4,61	4,50	3,69	1,23
Transports (including aviation)	15,48	12,58	11,99	11,61	8,54	9,29	3,10
Consumption (including Food)	6,72	6,68	5,78	5,04	5,51	4,03	1,34
Total	**28,35**	**24,41**	**22,63**	21,26	**18,54**	17,01	5,67

ENERGY

Energy consumptions (GWh)		2004 reference year	2014	2018	Objective 2020 -25% energy consumptions	2021	Objective 2030 -35% energy consumptions	Objective 2050 -50% energy consumptions
Buliding	Résidentiel	15 268	13 952	13 593	11 451	12 725	10 092	7 423
	Tertiaire	16 897	16 395	16 459	12 673	15 196	11 542	9 849
	Industrie	1 630	1 532	1 578	1 223	1 255	1 675	1 484
	Sous-Total	**33 795**	**31 879**	**31 630**	**25 346**	**29 176**	**23 309**	**18 756**
Transport		7 679	4 727	3 734	5 759	3 370	3 886	3 154
Total		**41 474**	**36 606**	**35 364**	**31 106**	**32 546**	**27 195**	**21 910**

Share of renewable energy	2004 reference year	2014	2019	Objective 2020	2021	Objective 2030	Objective 2050
In consumption	13 %	18 %	21 %	25 %	19 %	45 %	100 %
Including local production	4 %	5 %	6,8 %	NC	7 %	10 %	20 %

AIR

Emissions NOx t/an	2005 reference year	2015	2019	2021	PCAET-PAQA 2030	PREPA 2030 -69% / 2005
Road Transport	7 096,4	4 252	2 253,2	2 040	884	2 200
Housing	1 805,2	1 411	747,0	677	293	560
Tertiary+Industry	1 674,4	497	1 182,2	1 332	578	519
TOTAL	**10 576,0**	**6 160**	**4 182,4**	**4 049**	**1 755**	**3 249**

* including Tertiary

Emissions PM2,5 t/an		2005 reference year	2015	2019	2021	PCAET-PAQA 2030	PREPA 2030 -57 % / 2005
Road Transport		497,4	261,0	111,9	106	57,0	213,9
Housing	Wood heating	nc	290,9	254,7	nc	129,0	nc
	Other sources	nc	82,1	63,7	nc	32,0	nc
	Total	511,0	373,0	318,4	313	162,0	219,7
Tertiary+Industry		144,6	66,0	113,3	115	58,0	62,2
TOTAL		**1 153,0**	**700,0**	**543,6**	**534**	**276,0**	**495,8**

ADAPTATION

Objectives adaptation trajectory	Reference		2023 Trend	Objectives	
	Year	Target		Year	Target
100% of Parisians within 7 minutes' walk of a cool island, both day and night	2016	82% by day 50% by night	99% by day 68% by night	2030	100% by day 100% by night
10m² of green space open to the public per inhabitant	2022	7 m²	7 m²	2040	10 m²
40% of the Parisian territory to be made permeable	2018	26 %	33 %	2050	40 %
Reduce water consumption by 15%	2019	275 millions m²	263 millions m²	2030	234 millions m²

III. SOCIO-ECONOMIC CONSEQUENCES OF THE CLIMATE-FRIENDLY INVESTMENT TRAJECTORY

In 2023, the Jean Pisani Ferry and Selma Mahfouz report warned of the investment hurdle needed to meet France's climate trajectory, estimated at an additional 66 billion euros per year for all sectors combined, whether public or private capital.

The City of Paris, which has long championed the indispensable role of local authorities in the success of the ecological transition, commissioned the French observatory of economic conjunctures (OFCE – "Observatoire Français des Conjonctures Économiques"), a French economic observatory, in early 2024 to estimate the investment trajectory set out in the present Climate action plan and assess the socio-economic consequences of its climate policy on the Parisian economic area.

This study highlights the fundamental role played by local authorities in achieving France's 2050 carbon neutrality targets. However, for this transition to succeed, the mobilization of all actors is a prerequisite. The French government's first Multi-Year Financing Strategy for the Ecological Transition states that "the success of the ecological transition depends on a massive reorientation of funding flows and a distribution of the financial effort among all economic actors". **In particular, the government is expected to make a stronger and more rapid commitment to the ecological transition through legal measures and greater investment.** Lastly, individuals and businesses are called upon to contribute to this effort, in particular by implementing measures to reduce carbon emissions. Firstly, the OFCE report emphasizes that **the Climate action plan's action program is in line with the greenhouse gas emission reduction targets set by the City of Paris.**

The initial results of this study point to an **additional investment of over 2 billion euros per year until 2050 for the Paris territory by all actors** (State, Region, the Greater Paris Metropolis, the City, businesses, households), **including 500 million for the City of Paris.** The transport sector, which has already embarked on a vast transformation supported by the city's proactive policy, would require an additional average effort, mainly from the private sector, **of 800 million euros per year concentrated until 2030.** This is essentially an estimate of the cost of converting vehicles to less emissive modes, in line with the 2030 ban on internal combustion vehicles. At the same time, the transformation of the building sector, the largest emitter of greenhouse gases, is gaining momentum and accounts for most of the €1.5 billion in additional investment between 2030 and 2050. These measures include insulating buildings, replacing heating systems and developing renewable energy production. **For its buildings alone, additional investment expenditure for the City of Paris is rising steadily, and is estimated at almost €200 million between 2030 and 2050.** For the renovation of private and social housing, the additional share borne by the Paris local authority is estimated at €200 million and €50 million per year respectively from 2030 to 2050.

The City's contribution to greening objectives through the opening of new **green spaces by 2040 is estimated at 40 million euros per year.**

In addition, by ensuring the transfer of part of the fuel oil and gas consumption, district heating plays an important role in achieving climate objectives. Cumulative expenditure up to 2050 associated with the greening of its production and the development of its network are estimated at around 720 million and 1 billion additional euros respectively. The extension of the district heating and cooling network should not generate any costs for the City of Paris.

In macroeconomic terms, the initial results of the OFCE study point to the creation of at least **25,000 additional jobs per year up to 2050, at a maximum cost of 80,000 euros per job created.** Around 25% of these jobs will be in construction, and 64% in services (energy distribution, architecture, insurance, etc.). The added value generated by the implementation of the climate action plan is estimated at nearly **2 billion euros per year.**

Finally, the Climate action plan will bring **significant health, social, environmental and architectural co-benefits,** in addition to financial gains.

The multi-year investment trajectory of the Climate action plan, known as the "climate budget", will be constructed on the basis of estimates made by the OFCE and those made by the City of Paris. The aim of this approach is to identify and track municipal investments needed to implement the actions set out in the Climate action plan, in order to achieve the decarbonization trajectory it supports.

> This study highlights the fundamental role played by local authorities in achieving France's 2050 carbon neutrality targets.

Accelerating investment in the ecological transition

While most of the investment trajectory of the Climate action plan can only be based on the financial commitment of the municipality, it is important to remember that for many years the City of Paris has chosen to invest massively to respond to the climate and energy crisis, despite the financial disengagement of the State.

Paris has chosen to accelerate its investments by prioritizing spending dedicated to the ecological transition in order to adapt the City to climate change. This translates into an unprecedented level of investment, including a total of 1.75 billion euros from 2023. In addition to its impact on the daily lives of Parisians and on Paris' transformation in the face of the climate emergency, this investment also contributes to the dynamism of the French economy.

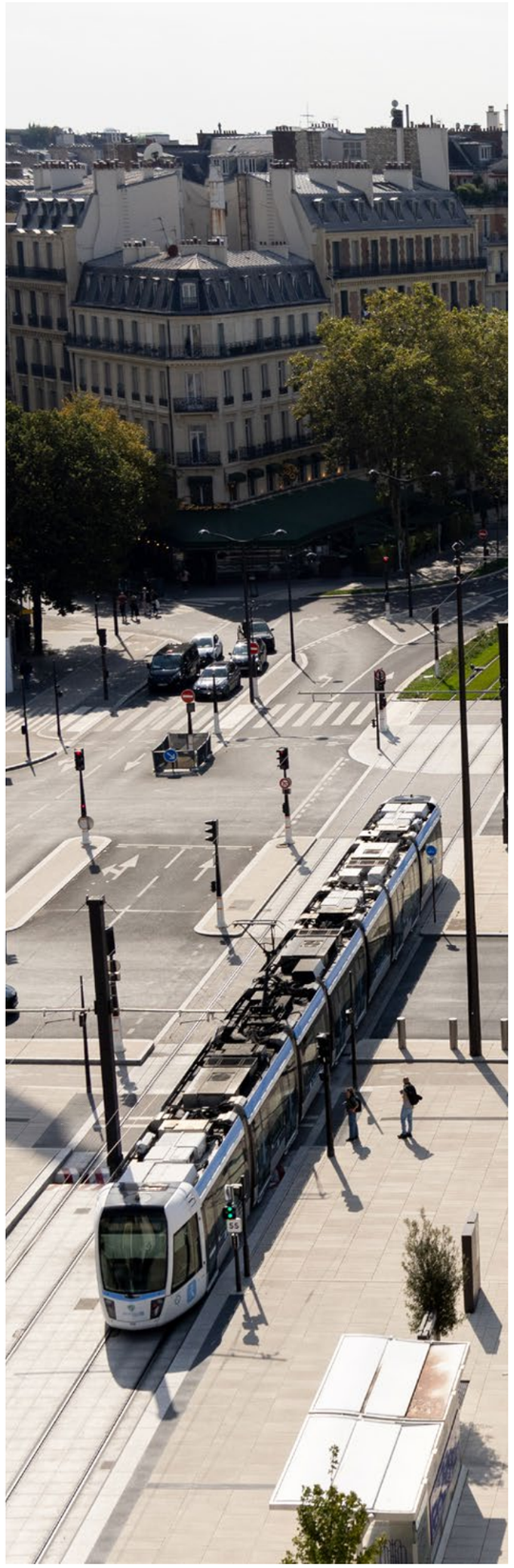
In concrete terms, this acceleration in investment is reflected in:

- **Increased targets for thermal renovation of buildings:** 5,000 social housing units renovated each year; 40,000 private housing units benefiting from the Eco-Rénovons Paris scheme, to which 13 million euros are earmarked in 2023. As building renovation is a key lever for reducing the energy consumption of the City's assets and adapting to the effects of global warming, the Paris Council voted €100 million in the 2024 budget to carry out extensive renovation projects in schools, middle schools and crèches. At least twenty schools, eight middle schools and two swimming pools will benefit from work to optimize their energy performance. In 2025, the City will step up its efforts to improve the energy performance of swimming pools by investing a further €6 million, in addition to the €10 million already invested. The City will also subsidize private condominiums at levels of €10 million yearly to help them achieve their energy-saving objectives under the Eco-rénovons Paris scheme, and will continue to support households under the Slime scheme.
- **The opening of new green spaces and the planting of trees,** which are at the heart of the City's policy of renaturation and promotion of biodiversity. After the Place de Catalogne (14e), two new urban forests will be created in Place du Colonel Fabien (10e) and Place de l'Hôtel de Ville (4e) by 2026. The year 2025 will also see the launch of work to extend Parc Suzanne Lenglen on the land currently occupied by the heliport (€16 million). In 2025, the City will also pursue its policy of deploying 30 oasis courtyards in schools and middle schools, investing a further €7 million, on top of the €7 million spent between 2021 and 2023. There will also be new streets in front of public establishments, the development and greening of the Notre Dame forecourt, the greening of 100 hectares of walls and roofs, and the creation of parks at the gates of Vincennes and Python-Duvernois. In addition, the City will devote €3 million to the deployment of shading and misting systems in public spaces to protect Parisians from heat peaks.
- **The development of low-carbon mobility:** in order to accelerate the development of clean mobility ahead of the Olympic and Paralympic Games, the City invested €105 million in 2024 to extend several transport lines: tramway line 3 to Porte Dauphine, the RER E to Nanterre - La Folie and metro line 11 made accessible by adapting stations to Rosny Bois Perrier. At the same time, the city has passed the milestone of 100 kms of bicycle paths. By 2025, €25 million will be devoted to achieving the objectives of the bicycle plan, with the creation of new lanes in working-class

neighborhoods and on the network's main routes (creation of over 60 km of bicycle lanes, deployment of 3,000 new Vélib' public bikes). The fight against polluting vehicles will continue with the creation of additional limited-traffic zones, the continued pedestrianization of squares (Trocadéro, d'Iéna and de la Concorde), as well as the "Embellir votre quartier" initiative ("beautify your neighborhood"), and the deployment of reserved lanes for buses, cabs and car-sharing. 2.7 million in eco-mobility grants will help individuals and businesses to invest in the purchase of clean bicycles or vehicles, in particular to pass the new Crit'Air 3 stage of the Ile-de-France Low Emission Zone.

- **Reducing the energy consumption of buildings and developing renewable energies:** In order to decarbonize its energy mix, the city is stepping up the installation of renewable energy production units on its facilities: since 2023, the city has launched the installation of equipment on some 50 municipal rooftops, producing around 3 GWh per year, part of which is self-consumed under the énergiculteurs program. This program will continue and should enable an additional 5 GWh to be produced on municipal roofs by 2030. The city will invest €7 million, notably for projects on the Canopée des Halles and the Parc Floral. At the same time, four surface geothermal projects are being tested in Paris day-care centers, with a view to more extensive deployment.

The City of Paris has chosen to invest massively to respond to the climate and energy crisis, despite the financial disengagement of the State.



Jean-Baptiste Gurliat / City of Paris, 2024

IV. STEERING AND MONITORING

Governance

The Paris Climate action plan is the cornerstone of the city's environmental policy, providing a guideline for the various sectoral policies implemented by the local authority. The operational implementation of the plan's measures is embodied in the various related environmental plans and programs. The 400 or so measures that make up the Climate action plan are monitored by the City's various steering committees and decision-making bodies, depending on the themes concerned.

A dedicated steering committee ensures the overall coherence of the process. Initiated with the first Climate action plan, it marks milestones in the plan's implementation. Bringing together elected officials and departments from Paris, representatives of the Greater Paris Metropolis, NGOs and scientific and technical partners, it ensures that the plan is being properly implemented and makes recommendations for continuous improvement.

To ensure that the aspirations of Parisians are taken into account and that they have access to democratic debate, the City of Paris will mobilize the Citizens' Assembly and the Council of Future Generations to promote citizen governance of its climate action.

Monitoring and evaluation system

To assess progress and guide decision-making, the Climate action plan is steered by continuous assessment based on quantitative and qualitative indicators. In order to objectify the progress of the Climate action plan, it is accompanied by essential steering documents to guarantee the arbitration and improvement of the targeted policies

- A table listing the actions of the Climate action plan, specifying objectives, indicators and implementation methods;
- Fact sheets corresponding to each of the actions included in the Climate action plan, and listed in the table above
- The mid-term review, a regulatory triennial report on the progress of the plan and the achievement of its objectives.
- The "ecological transition dashboard" and the "Paris Demain" report, communicating the evolution of Parisian ecological and social transition indicators.
- The Climate Budget, appended to the primary budget, reporting on the impact of the City's expenditure on the climate and the investment program associated with the Climate action plan.

Jean-Baptiste Gurliat / City of Paris, 2024

ACTION PLAN 2024-2030

PROTECTING PARISIANS

Because of its density and urban characteristics, Paris is warming more than the global average. Temperatures in Paris have risen by 2.3°C since the Industrial Revolution, and are forecast to rise by 3.4°C by 2050. *Paris is therefore preparing for a modified environment that could exceed* +2.5°C by 2030, +3°C by 2050, *and even +4°C by the end of the century.*

These heat waves have a real impact on the health of local residents. The record heat of summer 2022 claimed more than 61,000 lives in Europe, including almost 5,000 in France. According to a study published in 2023, Paris is the European capital where heat waves could be the deadliest. The effects of global warming are also multiplied tenfold, for example under uninsulated roofs, where the risk of mortality is greatly increased.

Fragile populations are the hardest hit: the over-65s, pregnant women, very young children, people with pre-existing medical problems and the socially disadvantaged. Urgent action is needed to protect Parisians.

1. Etude Masselot & all : Excess mortality attributed to heat and cold: a health impact assessment study in 854 cities in Europe - 2023

I. REFRESHING PARIS

In Paris, the urban heat island effect is particularly important: it amplifies the effects of global warming in mineral and sparsely vegetated neighborhoods.

One of the major consequences of climate change expected in Paris is a significant increase in the frequency and intensity of heatwaves. By 2050, tropical nights (when temperatures do not fall below 20°C) are expected to triple, and the number of heatwave days to increase by 40%. A heat peak of 50°C cannot be ruled out in the next few years. In these conditions, cooling Paris and adapting Parisian lifestyles are priorities to protect residents and infrastructures from the heat.

Paris does, however, have a number of essential assets for coping with heat waves: varied water resources and a resilient water network, as well as electricity and gas networks that are mostly buried underground - enabling them to withstand very high temperatures.

In order to protect Parisians, the City of Paris is mobilizing all the levers at its disposal to cool the city down: revegetation, soil unsealing, reinforcing the role of water, adapting buildings, infrastructures and public spaces, and encouraging changes in behavior by raising awareness among Parisians of the effects of climate change. These measures will help to improve the quality of life in Paris in the summer and throughout the year.

1. Greening the city

The development of vegetation is vital for the Paris city, and is the primary lever for cooling the area. Trees and nature act as natural air conditioners, providing numerous benefits: cooling, shading, rainwater absorption, dust fixation... In hot weather, it can be up to 7°C cooler in the shade of a tree than in full sun.

Beyond their obvious contribution to adapting to climate change, nature-based solutions also help to beautify the city and protect biodiversity. They are at the heart of Paris's climate action.

Policies to combat climate change through greening have a strong social objective: not all social categories have the same access to nature. Disadvantaged households go on fewer vacations or weekends away from Paris. Inequalities are concentrated in certain areas that are more exposed to heat or air pollution. For example, the 500-meter strip around the ring road is home to 17% of poor households, above the metropolitan average. More green spaces and vegetation in public spaces can reduce inequalities and ensure a better quality of life for all.

The City of Paris aims to mobilize all available levers **to gradually transform the capital into a "garden city",** by opening up new green spaces, greening public spaces and remedying areas lacking in nature. **The preservation and reinforcement of green and blue corridors, made up of urban reservoirs and corridors of biodiversity,** will enable animal and plant species to circulate, feed and reproduce, while contributing to the development of the city's cool zones.

Strengthening nature's place in the city also means **making it more open and porous to the rest of public space.** Nature cannot be confined to its classic green spaces. It has a vocation to develop everywhere in the territory, in the interstices but also outside the usual spaces of parks and gardens. The latter will be extended wherever possible.

7°C

cooler in the shade of a tree than in full sun

2. *Paris face aux changements climatiques,* City of Paris – Ramboll, 2021

A • Making Paris a garden city

For more than ten years, Paris has been committed to restoring nature to its rightful place, and is building on the momentum of the "15-minute city" to accelerate its policy of nature in the city. Debituminization operations such as the numerous "*school streets*" (pedestrianized and vegetated roads surrounding schools) and the creation of 70 hectares of green spaces have changed the face of Paris. This approach now needs to be systematized, in order to green the city and to plant in Parisian soil anywhere it is possible.

The aim is to achieve 10m² of green space per inhabitant by 2040, made possible by the opening up of around 300 hectares, including 30 hectares open to the public by 2026. This objective is enshrined in the bioclimatic Local Urban Plan.

The City of Paris will prioritize the revegetation of areas where there is a shortfall, so that **half of Paris will have at least 20% vegetation.**

CREATE NEW GREEN SPACES, OPEN UP AND EXPAND EXISTING PARKS AND GARDENS

The City of Paris will be creating around ten urban parks as part of its development projects in connection with metropolitan areas, notably in Bercy-Charenton, Messageries, Porte de Montreuil, Porte de la Villette and Chapelle-Charbon. Among them, a large 15-hectare park in northern Paris will contribute to the extension of a biodiversity reservoir of more than 25 hectares crossing the 18e and 19e arrondissements and several working-class districts

GREENING THE STREETS

For several years now, the City of Paris has been committed to "debituminizing" public space, wherever possible, by removing and reducing the use of concrete or asphalt and replacing it with planted open spaces or permeable floor coverings. The City of Paris aims to create 500 new garden streets, through the greening of former parking spaces, the heart of city blocks or the edges of gardens. Massive debituminization of public spaces also helps to cool the city, thanks to the infiltration of rainwater into the debituminized soil. Debituminized spaces also help to reduce pressure on sewage systems through their natural water retention action. Although the density of underground networks and quarries beneath Parisian public space makes it impossible to envisage this action uniformly across the territory, the City of Paris must be innovative.

De-waterproofing operations will be stepped up. The aim is to achieve 40% of the territory free of impermeability by 2050, compared with 33% in 2023.

The reclamation of spaces dedicated to cars will be essential, particularly parking spaces. The spaces freed up in this way will be used to create or reconstitute lines of trees, and to increase the amount of planting in streets, avenues and boulevards. Likewise, we'll be stepping up the number of perennial planting operations in the open air

Figure 7

Green spaces in Paris

City of Paris, 2024 – Direction des espaces verts et de l'environnement

The "*rues aux écoles*" program, pedestrianized and vegetated school streets, will be extended beyond the 218 traffic-calmed streets already completed by 2024. The goal by 2026 is to have 300 school streets closed to traffic, half of which will be lightened and planted with vegetation. These improvements are the result of a co-construction process involving local residents. They also significantly reduce nearby road noise.

In addition to transforming hundreds of asphalt streets into "garden streets", **the City of Paris will be creating several urban forests, including three by 2026.** The aim is to identify sites, sometimes major heat islands, with high planting potential. This is the case for former industrial sites such as stations on the former railway belt, "petite ceinture", or even large Parisian squares that act as motorway traffic circles, such as Place du Colonel Fabien (19th), which could be the focus of a major landscaping project. The Place de Catalogne (14th) urban forest was inaugurated in spring 2024. The City hall urban forest will begin as soon as this Plan is approved. The City of Paris will carry out dense planting projects there, enabling the development of several plant strata for maximum freshness for residents.

In addition, the City of Paris will continue to encourage local, citizen-based greening initiatives, by organizing greening maintenance sessions in public spaces with volunteer Parisians.

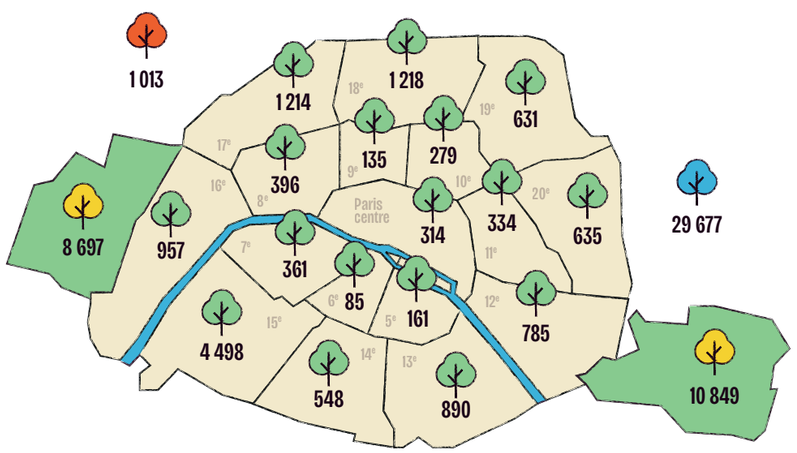
GREENING THE HEART OF BLOCKS AND BUILDING COURTYARDS

Paris has an abundance of green spaces outside public areas. The City of Paris supports the greening of inner-city blocks by classifying them as "*protected open spaces to be greened*" under the bioclimatic Local Urban Plan. **The Copr'Oasis program offers all condominiums technical and financial support for greening and reclaiming rainwater from their courtyards. This program will be expanded over the coming years.** The City of Paris will also be mobilizing major institutional landowners to encourage them to open up their existing green spaces to the public, and to plant in the open ground the cores of the blocks they own.

The City of Paris encourages the development of cool air islands by mobilizing its partners, including social landlords. The landlords' 2020-2026 greening program will strengthen the network of cool air islands with almost 15,000 m² of additional space.

Figure 8

Planting balance November 2020



City of Paris, April 2023 – Green spaces & environment directorate

B • Plant 170,000 trees in Paris

Paris has set itself an ambitious target: to **plant 170,000 trees in 6 years, with the emphasis on the open ground.** Where tree planting is not possible for technical reasons (presence of underground networks), other vegetation strata are favoured such as shrubs, hedges or meadows - which do not pose the same root problems - and the greening of buildings. Paris is also stepping up protection of its trees with its Bioclimatic PLU (Land Use Plan), which safeguards 100,000 avenue trees and 250 remarkable trees. It also imposes compensation, or even over-compensation, by a species of comparable development in the event of felling, including for health and safety reasons.

A DENSER PLANT COVER

Through the shade they provide, trees contribute to urban cooling, reducing temperatures by as much as 2 to 7 degrees locally. **Between 2021 and 2030, the city will increase its canopy index by 2 points.** This index measures the density of trees in the city. In 2018, Paris' canopy index (including woods) was 21%

In line with its Tree Plan, the City of Paris will be mobilizing various tools to increase the presence of trees wherever possible: in public spaces, in parks and gardens, in woods, cemeteries, on the embankments of the ring road, in sports centers and throughout the municipal heritage or inner city. All techniques will be mobilized, such as the dense planting of forest seedlings or spindles grown at the Paris' horticultural production center or in nurseries.

RESILIENT SPECIES, ADAPTED TO CLIMATE CHANGE AND WATER-EFFICIENT

To anticipate and respond to climate change, the City of Paris is **planting** public spaces with **a wide variety of tree species and choosing plants that are resistant to heat and drought.** To achieve this, it relies on its "*Guide des Essences de Paris*", which defines the species to be favored according to their resilience, their cooling potential and their interest for biodiversity.

In cooperation with the Paris Arboretum and the National Natural History Museum (MNHN – "Muséum National d'Histoire Naturelle"), the City of Paris will set up a "trees and climate laboratory", for example in the Paris Botanical Garden, to experiment with the trees best suited to Paris's future climate.

Paris has set itself an ambitious target: to plant 170,000 trees in 6 years, with the emphasis on the open ground.

C • Protecting biodiversity and refreshing the city

Climate change is a further threat biodiversity, which is suffering the cumulative effects of the pressures exerted by human activities worldwide (intensive agriculture, land artificialisation, deforestation, air, soil and water pollution, etc.), to the point where scientists are talking about the sixth mass extinction. The deterioration of biodiversity and ecosystems is exacerbating climate change. **Preserving biodiversity therefore also means acting in favor of the climate. Actions to defend and strengthen the place of biodiversity in Paris are at the heart of Parisian climate action.**

The policy of strengthening nature in the city, with a view to adapting to climate change, also means **offering more spaces conducive to animal life.** There are already more of them in the city than in the last century. Ambitious environmental protection policies have led to the return of many species, such as the grey heron and the fox. Ensuring that the city is habitable for humans goes hand in hand with preserving and developing habitats for biodiversity. An island of coolness for residents is an additional habitat for flora and fauna. By becoming greener, the bioclimatic city of tomorrow will be more welcoming to the entire living world.

DEVELOPING AREAS CONDUCIVE TO BIODIVERSITY

In conjunction with greening initiatives, the City of Paris will focus on establishing continuous urban biodiversity corridors and improving existing and future corridors, some of which have already been included in the bioclimatic PLU. By identifying and qualifying these spaces, the aim will be to **remove fragmentation,** such as that caused by the ring road, while improving the ecological functionality of existing corridors. In the same spirit, grates and other locks can be removed to open up nature and bring it closer to residents. The experience of nature and freshness will be enhanced tenfold by improving natural continuity and reinforcing the radiating effect of biodiversity reservoirs

Habitat for biodiversity must be preserved: for each project, the impact on biodiversity will be studied. Routine maintenance will be adapted as required. The experience of nature and freshness will be enhanced tenfold by improving natural continuity and reinforcing the radiating effect of biodiversity reservoirs.

In order to reinforce the green corridor, **the City of Paris will be increasing the number of diversified shrub areas in Paris, from 500 meters to several linear kilometers of hedges per arrondissement.** The creation of these shrub areas in the form of hedges or clumps will help to cool the city, while facilitating the movement of certain species such as the European hedgehog and the maintenance of the house sparrow. This shrub layer will be combined with existing tree lines.

In addition, the City of Paris will create **40 new biodiversity refuges** by 2030, notably in the woods and on the inner ring road. These areas, out of reach of the public and therefore free from any human activity, are particularly conducive to the development of biodiversity.

APPLYING THE BIODIVSCORE TO ALL CONSTRUCTION AND RENOVATION PROJECTS

While the challenges of preserving and developing biodiversity are increasingly considered in the design of urban projects, progress still needs to be made in the construction and/or renovation phases. Faced with this situation, the City of Paris intends to impose the consideration of biodiversity, starting with the question of natural bird habitat, in all Parisian construction and renovation projects.

The PLU thus includes provisions for the installation of nesting boxes and planted areas on buildings, conducive to biodiversity. In addition, the City of Paris has developed a tool for assessing practices: the BiodivScore. Inspired by the avoid-reduce-compensate approach, it aims to assess the biodiversity performance of projects and support them in reducing their impact. Eventually, **100% the projects of the City of Paris and its operators will implement the BiodivScore.** The City of Paris will also encourage public and private operators to apply it to their projects

Figure 9

Paris green grid

City of Paris, 2022 – Green spaces & environment directorate

2. Adapting Parisian buildings to heat waves

Paris saw a peak in construction during the Haussmann period (1,231 hectares built between 1851 and 1914), and today one out of every two buildings is over a century old. Most of Paris's urban planning was therefore designed during an era with climatic characteristics that are now a thing of the past. Climate change and its consequences in Paris (much hotter, drier summers and milder winters) raise the question of how to adapt Parisian buildings to the new climate. As living spaces prone to overheating during heatwaves, Parisian buildings are a priority in the city's climate change adaptation strategy. Summertime habitability of housing and public facilities such as schools and nurseries is becoming a fundamental issue.

To achieve this, Paris draws on techniques developed centuries ago by cities in Southern Europe (shutters, white roof paint, thermal phase-shifting materials), adapting them to the Parisian context and taking care to limit their ecological impact. Paris favors natural cooling practices and seeks to avoid as far as possible the use of air conditioning, which has deleterious effects in terms of energy consumption, greenhouse gas emissions and the reinforcement of the urban heat island effect.

By including bioclimatism in the Local Urban Plan, Paris ensures that new buildings in the city use materials and technical solutions adapted to present and future climatic hazards.

A • Ambitious bioclimatic regulations for adaptation

Considering the summer habitability of buildings is at the heart of the ambitious new regulations of the bioclimatic PLU. It introduces a series of provisions designed to reinforce the thermal protection of new buildings and renovation projects (strict standards for insulation, energy-efficient materials and optimization of natural ventilation, etc.), and encourages the greening of urban spaces and the creation of cool islands.

BUILDINGS ADAPTED TO CLIMATE CHANGE

Newly-constructed buildings in Paris will have to take account of climate change, and in particular the increasing number of heatwaves.

All new buildings will have to comply with a "summer discomfort index" of 625 degrees hours, representing the maximum time during which the building's indoor temperature exceeds 26 to 28 degrees during the day and 26 degrees at night, for collective housing buildings with the exception of those falling under the sub-destination Accommodation, for which the summer discomfort indicator (DH) must be less than or equal to 750 degrees hours, and 500 degrees hours for office buildings. This performance target goes beyond the requirements of current environmental regulations (RE2020).

It is supplemented by qualitative provisions inspired by bioclimatic architecture such as siting, orientation and exposure to the sun, massing, facades and openings, materials, thermal insulation, natural ventilation of premises, and devices to protect against solar radiation. For example, the glazed parts of facades must have opening bays and external protection when they are strongly exposed to the sun.

To facilitate the implementation of this type of project, the rules governing the external appearance of buildings have been relaxed. The choice of facade and roofing materials, and the installation of solar protection systems, do not conflict with the rules governing the urban and architectural integration of buildings.

The City of Paris **will preserve existing air corridors and plan the creation of new air circulation corridors,** in cooperation with surrounding local authorities and the Metropole du Grand Paris, during development projects.

HEAT-EFFICIENT RENOVATION

New construction will represent only a small minority of future buildings in Paris. Adapting the Parisian building stock to climate change therefore requires the renovation of existing buildings and structures.

> **Newly-constructed buildings in Paris will have to take account of climate change, and in particular the increasing number of heatwaves.**

The bioclimatic Local Urban Plan stipulates that "***work on existing buildings should contribute to improving their energy performance and bioclimatic qualities, without compromising acoustic comfort***". In this way, summer habitability will be improved by adding solar protection, using insulation materials that limit the urban heat island effect, and making specific provisions for the top floors. The new regulations maintain the obligation to maintain existing natural ventilation systems.

As in the case of new buildings, the rules on external appearance have been relaxed with regard to exceeding maximum building heights and volumes, to allow higher roofs for thermal insulation and the installation of external solar protection devices.

40
new biodiversity refuges

To find out more about thermal renovation: part 2. II. - Massive renovation of buildings

B • Equip buildings with cooling systems to protect occupants

Upstream of ambitious thermal renovation projects, solutions can be implemented quickly to meet, at least in part, the public health challenge posed by heat inside built spaces

A "SHUTTER PLAN" TO PROTECT AGAINST SUMMER OVERHEATING

External shutters and solar protection are the most effective and economical way of protecting buildings and their occupants from the heat. That's why the City of Paris is implementing a "***shutters and shading plan***"

A diagnosis will identify priority buildings for the installation of solar protection, based on criteria linked to the type of building, its exposure and the socio-economic level of its inhabitants, with a view to focusing on vulnerable populations who are captive to their homes during the summer months.

In 2024, the City of Paris launched a plan to install solar protection on the exposed facades of its most sensitive facilities. **The aim is to have 100% of these buildings equipped by 2030.** As part of thermal renovation projects, the improvement of summer comfort will be studied and systematically integrated, with appropriate solar protection devices on exposed facades (anti-UV glazing, external blinds, mobile or fixed solar shade, vegetation, etc.).

In the case of social housing, landlords will take advantage of every thermal renovation project to guarantee the presence of solar protection in their homes

In the case of private housing, the City of Paris will create a specific aid scheme to finance solar protection and reinforce Eco-Rénovons Paris+ aid for low-income households

In view of the public health issue of overheating in housing, the City will be calling on the French government to make a financial commitment and develop dedicated aid for the installation of solar protection systems.

QUICKLY REFRESH PARISIAN ROOFTOPS

For centuries, Mediterranean countries have been constructing white buildings to withstand the heat. White reflects the sun's rays rather than absorbing them. Painting roofs white blocks 95% of the sun's heat, protects waterproofing and reduces need for air conditioning by up to 30%.

The City of Paris has been committed to this approach since 2017. Where it has been tried out, this solution delivered thermal comfort gains of up to 6°C.

The City of Paris aims to achieve 100% cool roofs for municipal facilities. Solutions adapted to each building will be selected (reflective paint, vegetation, attic insulation, etc.).

An initial program of **40,000 m² of reflective paint roofs** on public buildings will be deployed by 2026. Priority will be given to sensitive establishments in working-class neighborhoods.

Painting roofs white blocks 95% of the sun's heat, protects waterproofing and reduces need for air conditioning by up to 30%.

This practice will also be encouraged for private property. A new provision has been included in the bioclimatic PLU to "*specifically improve the thermal comfort of the top floors, particularly in the case of zinc roofs or other heat-sensitive materials*"

Faced with the health issue of overheating on the top floors of Parisian buildings, the City of Paris will launch a study into the habitability of housing under roofs. Its findings will be used to launch a "*1,000 anti-overheating roofs*" **program**, similar to the programs to combat insalubrity that the City carried out in the early 2000s, which eradicated this phenomenon. **Special assistance** will be provided, **particularly for homes on the top floors** ("*Sous les toits*" scheme), which are particularly exposed to heat. In addition, the city will be stepping up its communication efforts and those of its partners with regard to the most vulnerable households, on existing assistance and support schemes.

Particular attention will be paid to zinc roofs, which account for over two-thirds of Parisian roofs. Dark in color and metallic, they absorb the sun's heat and can reach a surface temperature of up to 80°C in hot weather. This heat is transmitted inside buildings, making certain rooms unliveable, and to the surrounding area, reinforcing the urban heat island phenomenon. The City of Paris will be working in depth with the Architectes des Bâtiments de France (French architectural review board) to **identify solutions for adapting zinc roofs and limiting their heating effects during periods of high heat**, while taking into account their high heritage value, which contributes to the identity of Paris.

NURSERIES AND SCHOOLS PROTECTED FROM THE HEAT

With heatwaves on increase as early as June, and sometimes well after the start of the new school year in September, the question of how to protect nurseries and school buildings, for the well-being of the children who attend them, is becoming increasingly important. Once a certain temperature has been reached in classrooms, teaching and activities can no longer be carried out under satisfactory conditions.

In response to this new climate, the City of Paris is launching a program dedicated to cooling in schools, with the aim of equipping 100% of schools and nurseries with cooling systems to protect children from the heat by 2030.

Without waiting for comprehensive renovations to be carried out, **all Parisian schools will have to provide refuge or fresh areas** for children who can no longer occupy their usual spaces during the hottest hours of the day. In all schools and nurseries for which a comprehensive renovation is not scheduled before 2030, specific measures will be taken to ensure the presence of heat-protected areas, such as the **installation of solar protection and blackout screens, or the painting of roofs white.** Priority will be given to facilities that receive children during the summer (leisure centers, group nurseries).

Passive cooling solutions adapted to the future climate, as well as connection to the district cooling network or to local geothermal energy, will be systematically sought as part of comprehensive renovations.

GENERALIZED OASIS COURTYARDS

In Paris, the courtyards of schools, nurseries and middle schools account for 70 hectares, evenly distributed throughout the city. Still mainly asphalted and impermeable, these spaces play a major role in the urban heat island effect throughout the capital. In summer, they impact on the well-being of the youngest children, by exposing them directly to temperatures that can be extremely high due to the thermal inertia of these surfaces.

In 2017, the City of Paris created the oasis courtyards concept. This new method of renovating school courtyards aims to transform these spaces into refreshing places, by resorting to open-ground vegetation, giving more room for shade and coolness notably via trees and artificial installations (pergolas, stretched canvases, shadehouses...), improving rainwater management and providing water points. Between 2018 and 2024, 165 oasis courtyards will be created. Designed as true cool air islands in the heart of neighborhoods, some courtyards also welcome a wider public outside educational time, and can become "refuges" for vulnerable people during heat waves.

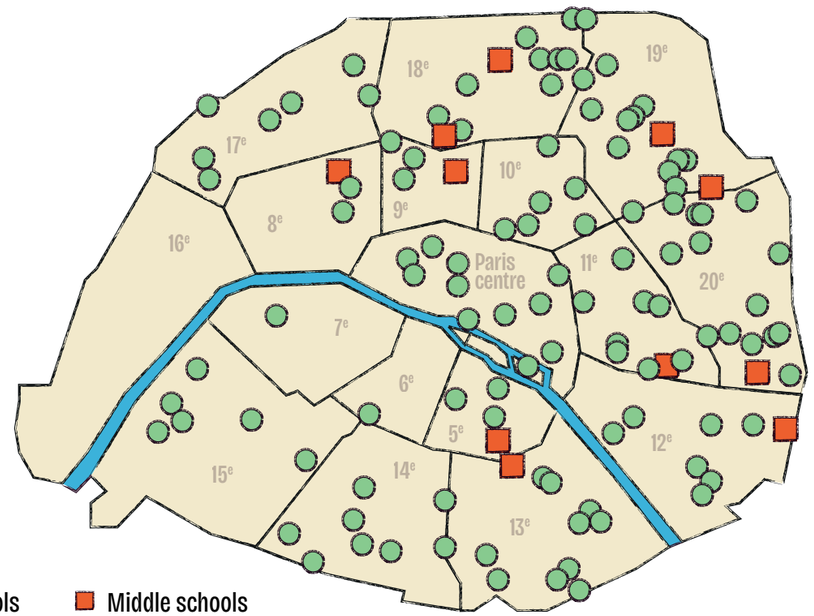
Every year, the City of Paris will create almost 60 additional Oasis courtyards, with the aim of extending them to all schools, nurseries and middle schools by 2030. Many of them will be outside school hours, to make them hyper-proximity facilities, perfectly in line with the city's "15-minute" approach, enabling local residents to enjoy refreshed spaces.

CONTINUING TO ADAPT MUNICIPAL FACILITIES FOR THE ELDERLY

Protecting the elderly from heat waves is a priority for the City of Paris. The City Social Action Center's senior residences, most of which date from the 70s and 80s, are undergoing thermal renovations to improve summer living conditions for residents. **This work will continue until 2027, when 100% of the residences will have been renovated and adapted.**

Figure 10

165 oasis courtyards in Paris



City of Paris, 2024

Other measures will complement these renovations, such as the planting of trees and the shading of outdoor areas.

SPECIFIC SUPPORT FOR PRIVATE HOUSING

The City of Paris implements the environmental transition of private housing under the *Eco-Rénovons Paris* scheme (local complementary subsidization of thermal renovations), and supports homeowners who undertake energy renovation work by exempting them from property tax for three years. Comprehensive renovations improve the energy performance of condominiums, and enhance the quality of life and comfort of use, in particular by improving summer comfort for residents (individual renovations do not achieve the same results). As part of its efforts to adapt to climate change, the City of Paris will continue to reinforce its actions in favor of summer comfort and the fight against energy boilers in housing. To this end, **it will introduce a better financial incentive for bio-sourced materials** (better suited to summer energy insulation).

The City of Paris implements the environmental transition of private housing under the Eco-Rénovons Paris scheme (local complementary subsidization of thermal renovations), and supports homeowners who undertake energy renovation work by exempting them from property tax for three years.

C • Regulate and limit the use of air conditioning

With heatwaves on the increase, an often haphazard development of individual air-conditioning systems is noticeable, installations which consume a lot of energy and reinforce the urban heat island effect by releasing hot air outdoors.

Research has shown that dry discharge from air-conditioning units in cities can increase street temperatures by up to 2°C. If heat waves were to become more frequent, a doubling of the overall installed air-conditioning capacity would increase local temperatures by up to 3°C, while contributing to an amplification of the urban heat island on a city-wide scale. **To avoid this scenario, the City of Paris is encouraging the use of alternative solutions to individual air conditioning.**

The installation of air-conditioning units on the exterior of buildings that alter their appearance is subject to prior declaration to the City of Paris. **To curb the massive deployment of air conditioning, the City of Paris will introduce stricter controls on these installations,** and will refer offenders to the public prosecutor for prosecution.

DEVELOPING THE DISTRICT COOLING NETWORK

The City of Paris cooling network is an important asset in adapting the city to climate change. In particular, it uses the coolness of the Seine to cool connected buildings, thus limiting the urban heat island effect.

The City of Paris plans to increase the number of buildings connected to this network. By 2030, **the network will be 116 km long, compared with 89 km in 2023,** 4 new production plants will be installed and the number of connected customers will increase by 52% to 1,055. **By 2042, the network will have tripled in length.**

Priority will be given to connecting facilities serving sensitive populations, such as schools and nurseries, nursing homes, libraries and Parisian hospitals.

By 2030, the network will be **116 km** long, compared with 89 km in 2023

REGULATORY PROVISIONS IN FAVOR OF ALTERNATIVES TO AIR CONDITIONING

The bioclimatic Local Urban Plan promotes alternative solutions by stipulating *that "summer comfort must be sought as a priority by means of passive devices".*

Where a cooling system is used, it should give priority to passive cooling solutions, and where necessary, cooling should be provided by connection to the district cooling network, or, where this is not technically possible, by other collective air-conditioning systems.

PROMOTING PASSIVE COOLING

To support these regulatory provisions, the City of Paris will launch an annual information campaign before each summer on the risks associated with individual air-conditioning, the need for prior declaration of works in the event of installation, and alternative solutions. As part of the *Eco-Rénovons+ Paris* scheme, dedicated support will be deployed to help co-owners identify cooling solutions that can be implemented to ensure that buildings remain habitable in summer. The implementation of comprehensive renovations, including a cooling component in addition to energy renovation work, will also entitle co-owners to a three-year property tax exemption.

Based on this model, and in order to mobilize the existing building stock for the sustainable cooling of their buildings, the City of Paris will also be proposing to companies that are members of the Paris Biodiversity & Climate Action Pact (PACB – "Pacte Paris Action Climat Biodiversité") to experiment with free cooling on their sites, using outside air to cool the buildings via night ventilation.

The City of Paris cooling network is an important asset in adapting the city to climate change. In particular, it uses the coolness of the Seine to cool connected buildings, thus limiting the urban heat island effect.

3. Transforming public space to refresh it

Parisian public spaces are mainly composed of bitumen, asphalt and granite. These materials store heat during the day and release it at night, contributing to the urban heat island effect. The challenge for the City of Paris is to protect the uses of public space in terms of travel and activities.

The city's policy is to refresh public spaces with greenery, shade and water, and to deploy new, adapted street furniture. The use of low-heat-storage materials will be systematized.

In order to quantify the effects of the solutions deployed, **the City of Paris will measure and model in detail the urban heat island effect** on the scale of the city and development projects. These measurements will be based on regular aerial thermography and the deployment of a network of sensors and weather stations by 2030.

A • Developing cool air islands

Since 2016, the City of Paris has launched a program to develop cool air islands and paths. This notion turns the concept of heat islands on its head, leading to the identification and creation of cool zones and cool pedestrian routes throughout Paris, following the hyper-proximity logic of the quarter-hour city.

By 2030, **all Parisians will be within a 7-minute walk of a cool air island, day and night.**

In 2024, Paris will have more than 1,400 cool air islands (mainly parks and gardens). The entire Parisian population has a cool island nearby during the day. At night, many of the cool islands are closed to the public, and 32% of the population (650,000 inhabitants) is more than 7 minutes from a cool island.

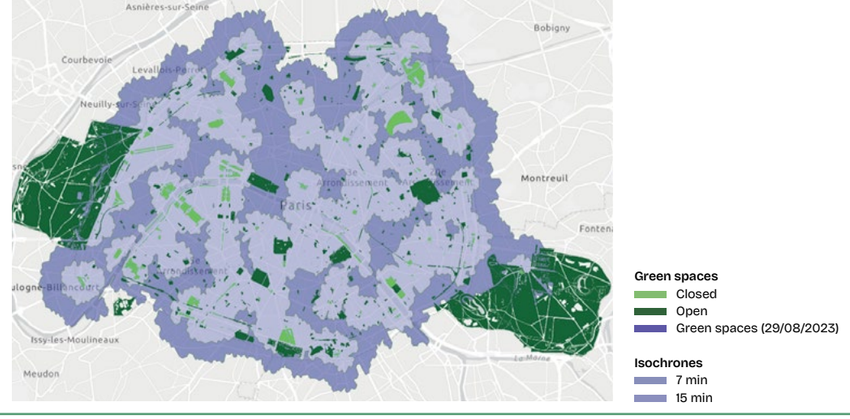
The City of Paris will step up communication on the interactive cool air island, and translate the map into English, Spanish or any other language used by the main communities in Paris. Paris Volunteers will continue to be involved in disseminating information about the cool air island to Parisians.

Drawing inspiration from the "oasis courtyard" approach, the City will remove concrete, plant and create shaded areas in the playgrounds of Parisian parks and squares.

More broadly, the City of Paris will be rolling out the Oasis system in public spaces, with the aim of **installing refreshing Oasis squares in all arrondissements,** prioritizing areas lacking in vegetation. Equipped with refreshing street furniture - stretched canvases, pergolas, fountains and misters, refreshing benches, planted shades - and in keeping with the aesthetics of the site and its surroundings, these squares will be littered and planted in the ground wherever possible.

Figure 11

Distance to a cooling island in Paris



City of Paris, 2023

B • Shading public spaces to beat the heat

Shade, by providing protection from the sun's rays, helps combat the heat and offers a "cool" refuge in which to recharge one's batteries. The City of Paris favours the natural shading of trees, supplemented by artificial shade when tree planting is not possible. Inspired by Tel Aviv's initiative, Paris will study the definition of a "Shade index" to better assess the presence of shade in relation to urban morphology (shadow cast by buildings). By proposing a value ranging from 0 to 1, the shading index makes it possible to better identify areas lacking shade, and thus to strategically deploy shading equipment and tree planting while minimizing costs.

To maximize the shading index, since 2021 the City of Paris has been experimenting with the installation of shaded areas in public spaces, mainly on very mineral squares where planting trees in the open ground is not an option, given the occupation of the subsoil. **By 2025, the City of Paris will be deploying 40 shading systems in public spaces every summer.**

Drawing inspiration from southern cities such as Seville and Granada, the City of Paris will experiment with the installation of shaded arcades or reversible tensioned canvases on busy streets and avenues, and the installation of large-scale structures on major squares.

By 2030, more than a hundred shading systems will have been added to the City of Paris' natural systems.

C • Strengthening the place of water in the city

In hot weather, it's essential to stay well hydrated. The City of Paris is taking action to provide free access to water for everyone. By 2023, there will be 1,200 drinking fountains on the streets and in parks and gardens.

By 2026, **120 new misting fountains** will have been installed by the Parisian water operator Eau de Paris throughout Paris, in working-class neighborhoods and in busy squares.

To facilitate access to drinking water for all, Eau de Paris is implementing the *"Ici, je choisis l'eau de Paris" (Here, I choose Paris water)* campaign, through which a network of shopkeepers is offering Parisians and visitors to the capital the chance to fill their water bottles with tap water, free of charge. **The city's goal is to exceed 1,200 participating businesses by 2024.**

At the same time, the City of Paris is deploying misters in its parks and gardens to keep Parisians cool. In 2024, 86 misters are available in green spaces, and **by 2030, a dozen new installations will be deployed annually** to systematize their presence in almost all Parisian green spaces. In addition, 3 misting areas with 3 misters were tested in 2024 in public spaces outside gardens, along with the 68 misters deployed at Olympic and Paralympic Games venues. Following the very positive results of the experiment, the City of Paris will be developing these misting areas more widely.

RENATURALIZING THE SEINE, CANALS AND RIVERBANKS

The presence of water in the city is an obvious asset when it comes to adapting the city to heat waves, and an essential component in cooling public spaces. However, the heavily mineralized and waterproofed banks of the Seine and canals limit their cooling power. Worse still, they contribute to the urban heat island effect. With this in mind, the City of Paris will be developing a **program to renaturalize the riverbanks and quays, to promote cooling and the development of biodiversity through the creation of wetlands.**

The vegetation potential of the riverbanks will be exploited by planting 200 trees, removing 26,000 m² of pavement and desilting sections of the Seine banks, where technically feasible.

In addition, the City of Paris will be working closely with all stakeholders, in particular with the French waterway navigation authority (VNF – "Voies navigables de France") and HAROPA Port, the river and sea port on the Seine axis, to develop a genuine blue corridor in the area, thereby reinforcing the role of water in the city.

The Seine, canals and more than 200 rivers, ponds, marshes, basins and swales make up Paris' blue corridor. This ecological network is conducive to the survival and movement of wild biodiversity, in terms of both flora and fauna. In order to strengthen its blue corridor, the City of Paris plans to create **20 new wetlands,** particularly in parks and gardens of less than one hectare that do not have any, thus contributing to the urban cooling of the area. The City intends to develop **a 250 m meshing between two water areas** (vegetated basins, wetlands and ponds), based on a plant palette composed of 100% regional species.

REOPENING RIVERS

To amplify the benefits of the bodies of water flowing through the city, the City of Paris has embarked on a program to reopen rivers.

The first project will involve reviving the Bièvre, which disappeared from Parisian territory in the 19th century, in the Parc Kellerman, and studying the possibility of opening up additional sites in Paris, such as Square René Le Gall. This reopening and renaturation project will contribute to urban refreshment and the preservation of surrounding biodiversity.

The City of Paris will also create a new river on the Mortemart plain in the Bois de Vincennes. It will be fed by the non-potable water network that already irrigates the lakes and rivers of the Parisian woods. The creation of this river will be accompanied by the planting of 250 trees and the creation of 4,000 m² of water, and will improve ecological continuity by connecting the Joinville river and the Lac des Minimes.

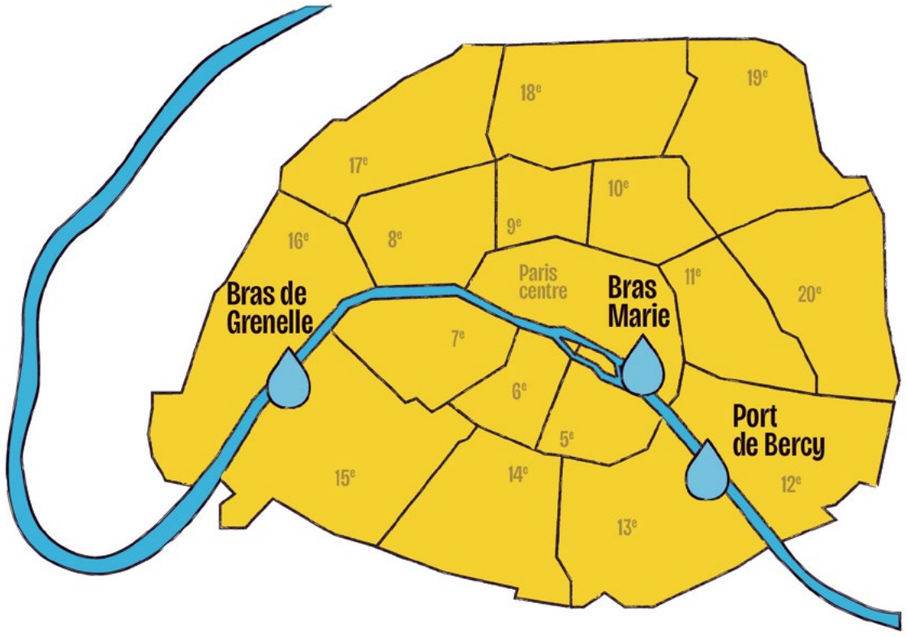
OFFERING NATURAL BATHING SITES

In order to offer Parisians fun places to cool off, the City of Paris sets up temporary bathing sites to complement the municipal swimming pool offer during the summer period, during Paris Plage ("Beach Paris"), between mid-July and the end of August. In 2024, 6 ephemeral pools were made available free of charge, including 2 natural swimming sites on the Canal Saint-Martin and the Bassin de la Villette.

The City of Paris will study the possibility of opening lighter natural bathing sites that do not require heavy infrastructure, such as the Canal Saint Martin, in the event of an early or late **heat wave** outside the Paris Plage periods. This measure will complement the heatwave plan and crisis measures. The City of Paris is also committed to strengthening the natural bathing offer by mobilizing the Seine, with the opening of **three bathing sites in 2025: Bras Marie, Bras Grenelle and Bercy, in addition to bathing on the Canal Saint Martin.**

Figure 12

Bathing sites on the Seine



APUR

II. COMBATTING ENVIRONMENTAL INEQUALITIES

In recent years, several surveys and studies have shown that the environmental condition of low-income households characterized by greater exposure to nuisances than middle- and upper-class households, a lower contribution to pollution, and greater distrust of ecological narratives. In other words, the people most affected by the effects of global warming are also those who contribute the least.

In France, for example, the average carbon footprint is 11 tons of CO_2e per inhabitant per year. This average hides major inequalities, with emissions from the wealthiest 10% of the population reaching around 31 tons, compared with 4 tons for the most modest. This finding can generate a profound sense of injustice. At the same time, these households are often those living in the worst insulated homes, close to the most polluted roads, and who have the greatest difficulty in avoiding extreme climatic phenomena such as heatwaves, suffering a kind of "*double ecological penalty*". On a daily basis, material precariousness tends to relegate ecological and environmental concerns to the background. Climate change generates and amplifies inequalities. The question of social justice must therefore be central to the definition of climate policies. Ambitious climate action can only be restorative, based on equity, providing solutions for the most disadvantaged and leaving no one behind.

Thus, Paris' climate policy is conceived as a policy to combat socio-environmental inequalities and protect the most vulnerable, taking into account the various socio-economic factors of Parisians (gender, age, social class, income, profession, nationality, etc.).

1. Protecting the most vulnerable Parisians by combatting all forms of precariousness

The succession of health and energy crises over the past few years has had a heavy impact on the daily lives of the most vulnerable, and has driven new groups into precariousness and even poverty. In 2023, 9.2 million people in France will be living below the monetary poverty threshold, one million more than in 2013. With soaring transport, energy and food prices, the situation is worsening, particularly for precarious workers, people at the end of their entitlement, young people and the elderly. This is particularly true in Paris, where the cost of living is higher than elsewhere.

Protecting and supporting these groups is at the heart of the City of Paris' ecological transformation project. This includes all those who are vulnerable to social insecurity - low-income earners, people on minimum social benefits, over-indebted people, people with little or no training, the poorly housed or the homeless, as well as those who are particularly exposed to socio-economic hazards because of their family situation (single-parent families and/or large families, isolated people, unaccompanied minors). They also include the very young and the elderly, who are more exposed to risks because of their age, as well as people who are vulnerable because of their state of health or disability.

In this way, the city will develop actions aimed at the most vulnerable populations, so that they do not have to endure the cold and damp in winter, and the heat in summer in their homes, even in temporary accommodation and social hotels, or so that they can have access to healthy food, including through food distributions, school canteens or the collective catering of health and social establishments.

More broadly, the city will be paying particular attention to the implementation of its climate policy in working-class neighborhoods, which are at the front line of the effects of climate change. Social and territorial inequalities combine to the detriment of the health of those who live or work there.

Finally, the question of inequalities in the face of the consequences of climate change will be broadened and examined from a gender perspective, in order to build truly inclusive responses and adaptation solutions.

In 2023, 9.2 million people in France will be living below the monetary poverty threshold, one million more than in 2013.

A • Combatting energy poverty

With the energy crisis and the resulting rise in prices, the number of people living in poorly insulated buildings and/or unable to afford adequate heating in winter has risen sharply. This is true on a national scale, where some 12 million people are thought to be affected by this problem, and it's also the case in Paris, where estimates put the number of households affected at around 100,000, or 10% of Parisian households. Poorly insulated buildings, which are impossible to heat in winter, often turn into kettles that are impossible to cool in summer. Given the scale of the phenomenon, and the serious consequences for the health and daily lives of those affected, the City of Paris will continue and step up its efforts to combat energy poverty and support affected households.

Although energy poverty is increasingly well documented, it remains difficult to understand. Figures on the reality of the phenomenon can vary from one survey to another, depending on the methodologies used. **So, in order to improve its knowledge of the specific features of energy poverty in winter and summer on its territory, and with a view to stepping up its efforts to combat this phenomenon, the City of Paris will be setting up an energy poverty observatory.**

IDENTIFYING AND SUPPORTING HOUSEHOLDS IN ENERGY POVERTY

In 2021, the City of Paris adopted its first **plan to combat energy poverty 2021-2026.** This program introduced a preventive component, enhanced support for households concerned and the inclusion of this issue in the overhaul of municipal aid.

With the deployment of the Local Service of Intervention for Energy Control (SLIME75 – "Service local d'intervention pour la maîtrise de l'énergie"), a local service to manage energy poverty, the City of Paris is committed to supporting 1,200 households between 2022 and 2025. Through a network of over 300 social actors, this service identifies households in precarious situations and offers individual follow-up to provide them with concrete, sustainable solutions. It helps to make existing assistance easier to understand and access, and to reduce the number of people *who do not use it*. In 2023, The City of Paris signed an agreement with the builders' association "Les Compagnons Bâtisseurs Île-de-France" to supplement its levers of action and intervention with the most modest households, and provide them with concrete solutions with immediate effect. The aim of this agreement is to test their Bricobus® scheme, dedicated to combatting energy poverty. The Bricobus® consists in setting up an itinerant "*Repair, Maintenance, Do-It-Yourself*" service across Paris. The service is designed to help low-income and vulnerable households facing energy poverty to carry out maintenance and improvement work on their homes. The association has developed a solution specifically adapted to the Paris context: a biogas-powered van, operated by a team made up of a technical coordinator, a housing coordinator and an Energy Poverty project manager, offering support to households throughout the territory.

IMPROVING THE AFFORDABILITY OF RENOVATION WORK FOR THE MOST VULNERABLE GROUPS

Through the Eco-Rénovons Paris+ co-owner support scheme, the City of Paris is stepping up financial assistance for the most precarious homeowners by financing up to 75% of the cost of the work. Since 2016, this program has supported the renovation of over 13,000 homes. Nearly 20% of the aid paid out by the City of Paris in 2022 under the scheme was for the most vulnerable households.

By 2025, the City of Paris will have introduced a "**zero out-of-pocket expenses**" policy for the renovation of buildings whose owners are in a situation of great precariousness. In particular, the City of Paris intends to experiment with the development of **zero-energy-exclusion territories** within the framework of the *Stop Exclusion Energétique* association.

SUSTAINABLE SOCIAL ASSISTANCE

The City of Paris will be stepping up its support measures for households in precarious situations, through targeted assistance such as the Housing Solidarity Fund (FSL – "Fonds Solidarité Logement") or extra-legal municipal aid. In 2022, almost 40,000 Parisians benefited from one or more energy subsidies from the City of Paris, for a total of almost 8 million euros. In 2023, the resource ceiling for receiving the Housing Solidarity Fund and the amount of assistance have been increased. This adjustment will enable the City to **support almost 50,000 Parisians.**

LAUNCH AN EMERGENCY RENOVATION PLAN FOR FURNISHED HOTELS

In Ile-de-France, over 55,000 people in difficulty are housed every day in 880 hotels. The majority of these establishments, located in working-class neighborhoods, consume a lot of energy, and are veritable heat sinks, deteriorating the quality of their accommodation and care.

In conjunction with the local emergency social services ("SAMU social de Paris"), **the City of Paris will support hotel owners in the thermal renovation of their properties.** The SAMU social will then be able to prioritize hotel bookings so that hotels that have carried out the necessary work can be promoted.

Lastly, the City of Paris will work with approved social operators to study the conditions for converting furnished hotels into social hotel residences (RHVS), offering a real alternative to expensive, low-quality furnished hotels for low-income groups who do not have any particular integration difficulties.

13 000
revonated homes since 2016

B • Combatting food insecurity

The health crisis and inflationary context of the early 2020s have led to an increase in food insecurity, which has spread to new target groups, particularly students, who are increasingly turning to food aid. The City of Paris aims to make sustainable food accessible to as many people as possible, by mobilizing the levers on which it can act: collective catering and the 30 million meals it serves every year, and support for actors and sectors committed to helping the most precarious.

GIVING AS MANY PEOPLE AS POSSIBLE ACCESS TO QUALITY FOOD THROUGH MASS CATERING

Mass catering is the main way in which local authorities can give the greatest number of people access to healthy, low-carbon, quality food at low prices. Thanks to its highly progressive pricing system, with the first meal priced at 13 euro cents, the City of Paris gives a whole section of the population access to this quality food, while supporting local, responsible supply chains. This mainly concerns the 1,300 school, administrative and crèche canteens, emerald restaurants, the 13 solidarity restaurants, senior assisted-living housings and child welfare establishments.

Since 2008, thanks to a proactive public procurement policy, the City of Paris has increased the proportion of sustainable food in its 30 million annual meals served in collective canteens from 7% to almost 60%. To build on this momentum and reduce the carbon footprint of Parisian food, **by 2030** the City of Paris will offer **100% vegetarian and organic catering, as well as vegetarian and organic dishes at the receptions it organizes,** confirming its position as France's leading public purchaser of sustainable food.

The City of Paris is committed to increasing the proportion of plant-based proteins in its catering services by offering a wide range of homemade vegetarian dishes. To complement this objective, the city shall be stepping up training in vegetarian nutrition for restaurant staff, menu designers and recipe developers. This work will help avoid ultra-processed products, develop the use of local plant proteins, and work on the visual, taste and nutritional quality of preparations. A "*home-cooked*" label will be developed to enable Parisians to identify dishes prepared on site. These measures will be taken up with the CROUS, with a view to extending them to restaurants outside the City of Paris. At a national level, the City of Paris will advocate the use of vegetables on menus.

As locality is a component of sustainability, **the City of Paris will increase the proportion of local food (within a 250 km radius of Paris) in collective catering to 60% by 2030.** At the same time, **the City of Paris will also advocate the introduction of a food exception clause in the public procurement code,** bringing the legal framework for food purchasing into line with the need for relocation and the transition to organic farming and food production.

The fight against food waste will involve **reducing the proportion of uneaten food by 50% by 2030.** The aim is to improve the management of preparations and services, while developing food recovery and donations. In line with its "zero waste" objectives, the City of Paris will be stepping up the re-use of both kitchen equipment and delivery equipment for its catering services.

Lastly, by 2030, the City of Paris will be testing the "*climate cafeterias*" method for measuring and reducing the carbon footprint of Parisian catering at all 1,300 sites concerned.

REALIZING THE RIGHT TO SUSTAINABLE FOOD FOR ALL

In the face of social, economic and geographical inequalities in access to healthy, high-quality food, particularly in the city's priority districts, and at a time when food in Paris is 6.5% more expensive than the French average, the measures set out in the Climate action plan will enable the most precarious populations to have access to high-quality, sustainable food. These social justice measures are designed to counter the idea that healthy, high-quality food, based on products from sustainable sources, is reserved for the most privileged social categories.

The City of Paris will be working with the actors involved in the necessary evolution of food aid by adapting to the needs of different forms of food insecurity and by restructuring and pooling supply circuits as much as possible. Initial work is underway to supply some 30 Parisian food aid associations with organic, sustainable, local produce via short distribution channels, enabling them to better feed around 9,000 people a week and offering outlets to producers in the Paris Basin.

The City of Paris will also support the structuring of purchasing groups and other food business models such as sustainable agriculture distribution networks ("AMAP - associations pour le maintien d'une agriculture paysanne") or **nomadic markets**, in order to provide access to sustainable food for all, and in particular for residents of working-class neighborhoods.

On a national level, the City of Paris will be **lobbying for legislation to establish an enforceable right to sustainable food for all**, and will continue to support sustainable food as a way of opening up common law and citizenship to people in precarious situations.

To make social food security a reality, **the City of Paris will support the proliferation of solidarity, mixed-use and democratic food facilities.** There are a wide range of complementary projects: food halls, communal food bins, shared kitchens, social grocery stores and third-party solidarity centers... with priority given to priority urban neighborhoods and in conjunction with Parisian social economy actors.

By 2030, the City of Paris will be testing the "climate cafeterias" method for measuring and reducing the carbon footprint of Parisian catering at all 1,300 sites concerned.

City of Paris

2. Reducing climate inequalities

To reduce climate inequalities, Paris relies on its urban policy competencies. These involve reducing social and territorial inequalities by developing specific resources in the most disadvantaged Parisian neighborhoods, and by combatting all forms of discrimination. The city also deploys actions aimed at reducing gender inequalities in its policies to combat climate change.

A • Targeted action in working-class neighborhoods

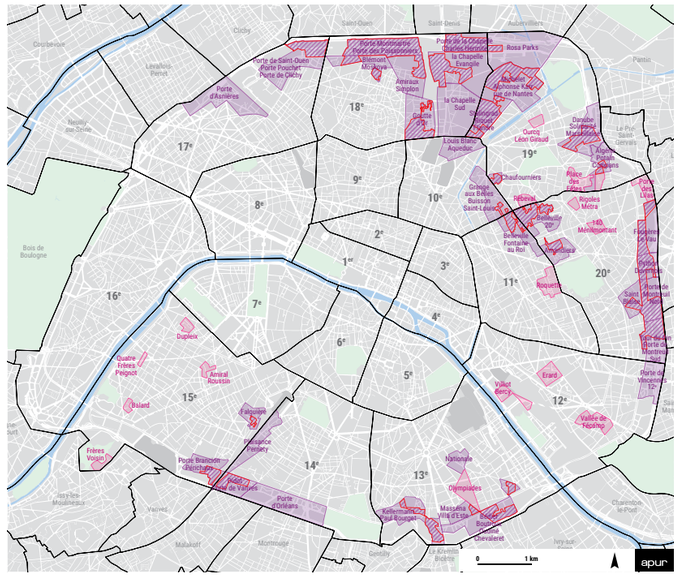
Paris has made its working-class neighborhoods a priority. The City of Paris is strongly committed to developing public services, supporting associations, building and renovating housing, implementing educational success programs, and providing access to education, healthcare, culture and employment. But social vulnerabilities remain, and the city will continue its efforts to ensure territorial equality and improve living conditions for residents of working-class neighborhoods.

PRIORITIZING ECOLOGICAL TRANSITION INITIATIVES IN WORKING-CLASS NEIGHBORHOODS

In 2024, the City of Paris adopted a new geography of working-class neighborhoods (QPOP), which differs from the state-defined geography of priority neighborhoods (QPV). Indeed, the City of Paris considers that the State's priority geography does not adequately reflect the reality and complexity of the difficulties observed in Parisian neighborhoods. Whereas the French State took into account only the median income criterion, the City of Paris set 12 indicators of vulnerability, making it possible to qualify a diversity of issues (precariousness, professional integration, dropping out of school, housing difficulties, precarious elderly people, single-parent families, etc.). The Parisian geography recognizes 35 working-class neighborhoods and 16 "watch" sectors, spread across 10 arrondissements (10e, 11e, 12e, 13e, 14e, 15e, 17e, 18e, 19e and 20e), representing 427,425 inhabitants, or 20% of the Parisian population. In comparison, the State's priority geography represents an estimated population of 121,800, or 7% of the Parisian population.

Figure 13

Map of working-class neighborhoods in Paris



APUR, 2024

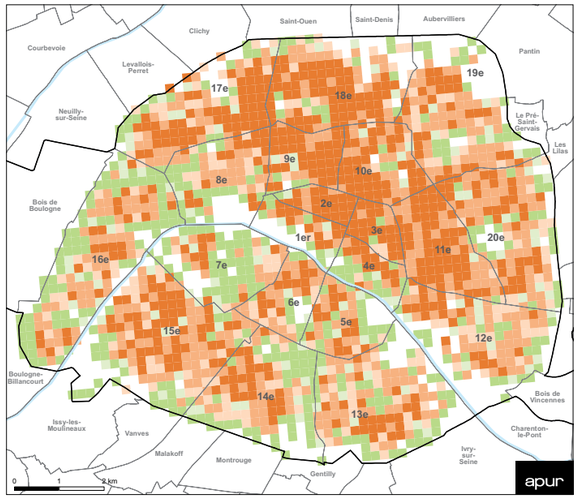
Residents of working-class neighborhoods are more exposed to air pollution, urban heat islands and fuel and food insecurity. With the Climate action plan, the City is placing the fight against social inequality at the heart of its strategy to combat climate change, and the Pact prioritizes Climate action plan actions in working-class neighborhoods. In concrete terms, this means pursuing major urban renewal projects and accelerating the delivery of streets to schools, oasis courtyards, pedestrianization and greening projects, and thermal renovation of public buildings and housing. Working-class neighborhoods are also teeming with community initiatives that offer solutions for protecting ourselves, adapting to and mitigating the effects of climate change, initiatives that Paris will continue to support: recycling centers, social and solidarity grocery stores, shared gardens, "accorderies associations" (solidarity and service exchange centers on the basis of time sharing), and so on. **To this end, the City of Paris has pledged to devote 25% of its investment to working-class neighborhoods.** Similarly, the creation in 2021 of a budget line dedicated to supporting associative projects contributing to the transition will enable direct funding of actors present in these neighborhoods.

Priority will be given to creating cool air islands in neighborhoods through massive greening, installing shade structures and increasing the number of Oasis courtyards in working-class neighborhoods, in order to improve environmental health, which is particularly at risk in these neighborhoods, which suffer from a combination of pollution and lack of access to green spaces. The circular economy and mobility are also the subject of proposals aimed at strengthening support for the most precarious households.

> **To this end, the City of Paris has pledged to devote 25% of its investment to working-class neighborhoods.**

Figure 14

Inequalities in vegetation per inhabitant per neighborhood



Rate of vegetation in square meters per capita, expressed in relation to the Parisian average

DEFICIENCY OF VEGETATION PER CAPITA
score compared to the Parisian average

- Over 200
- From 150 to 200
- From 100 to 150
- From 50 to 100
- Under 50
- Tiles with fewer than 40 inhabitants appear in white

APUR, 2022

PROMOTING THE ECOLOGICAL TRANSITION BY AND FOR LOCAL RESIDENTS

To enable residents to grasp the challenges of climate change and identify levers for reducing the carbon footprint of their neighborhood or home, the City of Paris will be experimenting with a local and territorialized method to determine the most promising levers for reducing the local collective carbon footprint and steering working-class neighborhoods towards sustainability.

On the basis of a diagnosis involving residents and encouraging their commitment, a program of actions for the ecological transition (local greening, location of shaded areas, fountains, development of soft mobility, encouraging proximity to leisure facilities, promoting the local economy, etc.) will be built up with the support of meetings of groups of citizens, elected representatives and experts, leading to transformations that are feasible in the neighborhood and desired by residents.

ADAPTING COMMUNICATIONS AND RAISING AWARENESS AMONG RESIDENTS OF WORKING-CLASS NEIGHBORHOODS

Residents of urban areas often face a digital divide. This has a number of consequences, ranging from a breakdown in rights to a lack of information on the public services available to them. An alternative to paper-based communication is therefore needed, with multi-language facilities.

Each new action taken by the Climate action plan in working-class neighborhoods will be the subject of a specific communication campaign based on **an "*outreach*" approach** (at the foot of the building, door-to-door, etc.). These will be carried out with local actors, close to the residents, but also in conjunction with social landlords, for example. By way of example, the appropriation of cooling areas and cool islands will be facilitated by the organization of activities in conjunction with associations.

B • Integrating the gender issue into Parisian climate policy

All over the world, the effects of climate change are having a greater impact on women than on men. This fact was already identified in 2007 by the IPCC, which noted that the consequences of climate change varied according to gender. Gender influences both people's vulnerability and their ability to cope with extreme climatic situations. For example, according to a recent study, women over 65 are 15% more likely to die from a heat wave than men of the same age. One of the main reasons put forward for this is that women sweat much less than men, the body's only natural cooling mechanism.

It is therefore essential that public policies for mitigating and adapting to climate change take these inequalities into account more systematically, by integrating the gender factor into both their design and evaluation. To this end, **starting in 2024, the City of Paris is committed to assessing the impact of its ecological transition policies through a gender lens, in order to examine their sensitivity, better understand their differentiated effects on women and men, and work towards gender mainstreaming objectives for its future programs.** Numerous measures can be put in place to reinforce this gendered approach to transition, whether in terms of awareness-raising and communication campaigns (e.g. specific messages aimed at pregnant or breast-feeding women during heatwaves), urban planning (increased safety on cycle paths and intersections, public lighting at night) or practices (increased human presence at certain sites, notably on public transport).

To improve knowledge and systematize a gendered approach to climate policies, a "gender and ecological transition" office will be set up at the City. In particular, it will help to advance knowledge of the causes of gender-based inequalities, as well as working on the development of dedicated methodologies. Working with scientific and university research institutes, it shall allow to manage a database on ecological transition and gender. This methodology could be extended to other inequality factors (sexual orientation, ethnic origin, disability, etc.). It shall enable a cross-functional approach to climate justice issues, and create synergies between the City's departments responsible for ecological transition and those in charge of promoting gender equality

The City of Paris will support a new Parisian "Women4Climate" promotion. A program created in 2017 by the C40, bringing together women committed to the climate. This mentoring scheme will connect female leaders from the private and public sectors, union and association leaders, figures from international and community organizations, and female entrepreneurs with young up-and-coming figures in the fight against climate change.

> **All over the world, the effects of climate change are having a greater impact on women than on men.**

III. IMPROVING THE HEALTH OF PARISIANS

According to the World Health Organization (WHO), climate change poses the greatest health threat to humanity. It is difficult to estimate precisely the scale and impact of the health risks associated with climate change, but the WHO estimates that on a global scale, between 2030 and 2050, climate change is likely to result in almost 250,000 additional deaths per year, mainly due to malnutrition, malaria, diarrhea and heat stress.

The health of Parisians is already being affected by climate change. Periods of extreme heat lead to peaks in hospitalization and mortality, particularly among the vulnerable: the elderly, young children, the homeless... Climate change also increases the risk of epidemics caused by zoonoses, i.e. infectious diseases that pass from animals to humans. The healthcare system is also sensitive to climatic hazards (floods, heatwaves, scarcity of water resources). Recent studies have increasingly documented the consequences of climate change on mental health: negative emotions, stress, anxiety, depression... Rising average temperatures can have a severe psychological impact, particularly for people already suffering from mental problems.

Air pollution remains the leading environmental health stress for Parisians, on a par with alcohol and tobacco. Air pollutants can increase respiratory ailments such as bronchiolitis, impair respiratory function and cause cardiovascular disease. Efforts undertaken by the City of Paris have led to a considerable improvement in air quality in recent years. In 10 years, the concentration of fine particles in the air has fallen by a third, and nitrogen dioxides by half. However, heat waves encourage the production of ozone, the only pollutant not to decrease in Paris. Rain, on the other hand, reduces the quantity of fine particles in the atmosphere. Changes in precipitation and the increase in drought episodes could amplify their quantity. Finally, global warming is amplifying and lengthening the pollen season, making allergies worse.

The City of Paris places public health at the heart of its policy to combat climate change, and has made improving air quality a priority.

1. Combining health and climate change at Paris

The COVID19 health crisis and its economic consequences have shed unprecedented light on social and territorial inequalities in health. Like pandemics, climate change affects everyone, but at different levels and to different extents. The City of Paris is convinced of the need to understand in as much detail as possible how the risks associated with climate change affect the health of the population, to promote a health-friendly environment and to reduce health inequalities. Working-class neighborhoods in particular, which are more vulnerable to health risks, are a priority for the City, which will mobilize all actors to mitigate the effects of these inequalities.

The City of Paris will carry out shared territorial diagnoses of environmental health issues in neighborhoods identified as zones of environmental health fragility.

A • A better understanding of the vulnerabilities of populations, particularly those in precarious situations

The City of Paris has mapped out areas of environmental health vulnerability, with the aim of identifying areas that suffer from a combination of environmental nuisances (air pollution, noise, housing, lack of vegetation), population vulnerability factors (socio-demographic and health factors) and a lack of certain urban amenities.

In order to pay greater attention to working-class neighborhoods, **the City of Paris will carry out shared territorial diagnoses of environmental health issues in neighborhoods identified as zones of environmental health fragility. The issues of heat and adaptation to climate change, particularly in relation to housing conditions, will be central.** The aim is to take stock of the situation and to co-define, with local residents and other stakeholders, actions designed to improve the health and well-being of the population, reduce health inequalities and strengthen the area's resilience.

The City's ultimate ambition is to better understand and publicize the links between environmental factors and the prevalence or incidence, depending on place of residence or social background, of certain respiratory pathologies, cancers, cardiovascular diseases, metabolic disorders or neurodevelopmental disorders.

Particular attention will be paid to areas of environmental health vulnerability, including homes along the ring road. Health-friendly urban planning (UFS) and health impact assessments (EIS/EQIS) of urban policies, already widely deployed in Paris thanks to an integrated municipal service, will also be strengthened and extended.

The City will create and monitor a Paris Environmental Health Barometer. Based on the KAPB (Knowledge, Attitudes, Beliefs and Practices) model used in the fight against AIDS, these surveys, carried out every two years on the basis of broad questionnaires and qualitative focus groups on target audiences (young people/pregnant women), shall enable to objectify Parisians' knowledge and practices in terms of environmental health.

B • Assessing and preventing epidemic risks linked to climate change

The City of Paris monitors acute climate-related health risks, such as epidemics caused by tropical zoonoses (infectious diseases transmitted from animals to humans). The population of mosquitoes and ticks is increasing, and their geographical distribution is being extended by the creation of ideal conditions for their reproduction (higher temperatures, vegetated surfaces and stagnant water). The viability of high-risk pathogens (dengue, Zika, Chikungunya) is also enhanced by climate change. The risk of epidemics is heightened by the growing mobility of Parisians staying in the tropics and tourists visiting Paris, each of whom brings viruses into the area.

The City of Paris will therefore be taking measures to limit the proliferation of these vectors, particularly in high-risk areas where water may stagnate. This will help reduce the prevalence of diseases that have recently appeared in Paris, such as dengue fever and chikungunya (a few dozen cases a year). It should help stem the growth of the tiger mosquito population, which will appear on the territory in 2021.

To this end, the City of Paris intends to integrate the prevention of vector-borne diseases into the management of green spaces, water bodies and rainwater and sanitation networks, by promoting integrated management using the "One Health" approach, which enables better regulation of species while preserving biodiversity.

The City of Paris will pursue and strengthen its partnerships and agreements with the world of research, laboratories, networks and specialized associations to improve knowledge and monitoring of the risk of zoonoses and to better prevent epizootics and epidemics.

Cooperation between the City of Paris and the Regional Health Agency (ARS – "Agence Régionale de Santé Île-de-France") will be strengthened in terms of information and data sharing, and risk management, particularly when implementing vector control measures that respect biodiversity.

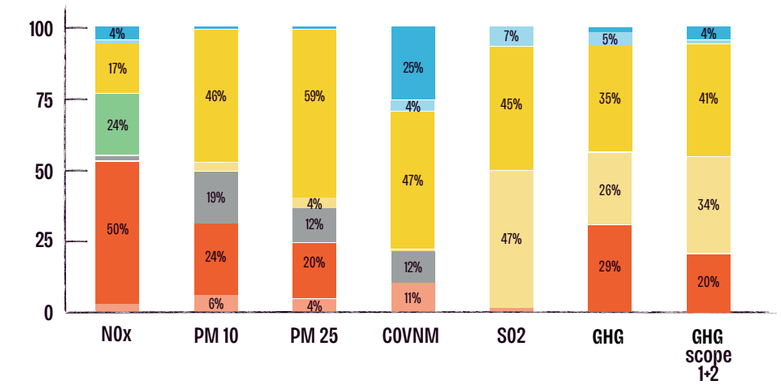
Finally, the City of Paris will advocate the creation of a regional animal health and zoonotic risk observatory to better monitor the impact on animal and human health, anticipate epidemics and/or epizootics and formulate recommendations for the inhabitants of Île-de-France.

2. Reduce air pollution

Air pollution is the main environmental risk to the health of Parisians. The quality of the air we breathe depends on a multitude of parameters that can alter its quality: climatic and weather conditions, emissions of atmospheric pollutants of natural origin or linked to human activity, dispersion and transformation of pollutants in the environment.

Figure 15

Different sources of air pollutants in Paris



Airparif, 2024

Air pollution is the main environmental risk to the health of Parisians. The quality of the air we breathe depends on a multitude of parameters that can alter its quality: climatic and weather conditions, emissions of atmospheric pollutants of natural origin or linked to human activity, dispersion and transformation of pollutants in the environment.

Air pollutants in Paris are mainly emitted by road traffic (mainly diesel vehicles) and the residential sector (wood heating), which together account for three-quarters of regional emissions of nitrogen oxides (NOx) and fine particulates PM2.5. The remainder of background pollution comes from building sites, the tertiary and industrial sectors, agriculture, and air and river transport. The City of Paris' proactive policy has led to a downward trend in emissions from the residential sector and road traffic. Air quality in Paris has improved significantly in recent years: between 2013 and 2022, concentrations fell by 45% for NO2 and PM2.5 particles (and 35% for PM_{10}). As a result, air pollution-related deaths and the risk of contracting asthma, cancer, lung, cardiovascular, neurological and chronic endocrine diseases have fallen sharply. The intensity and frequency of pollution peaks are also declining

However, air pollution continues to generate high health costs. In 2023, more than 2,000 Parisians were still exposed to exceedances of the regulatory value for nitrogen dioxide linked to road traffic. The working-class neighborhoods along the ring road are most directly affected by the pollution generated by this major traffic artery. According to a study by the Regional Health Observatory (ORS – "Observatoire Régional de la Santé"), based on Airparif data for 2019, it is estimated that 1,500 deaths could be avoided each year if WHO recommendations for fine particulate matter PM2.5 were respected, 700 for NO2, and that each Parisian would gain 10 months' life expectancy.

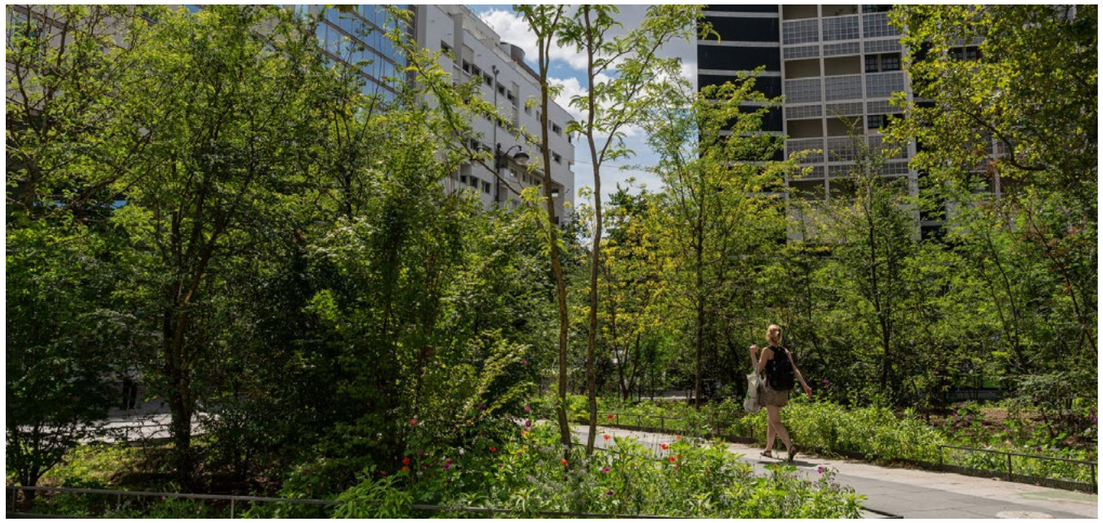
Average ozone levels in Paris, directly linked to heat peaks and road traffic, still exceed the quality objective for health protection every year. The acceleration of climate change has led to a 25% increase in this indicator over the last ten years. Ozone is the only pollutant whose concentration has increased over this period

The World Health Organization (WHO) has strengthened its air quality guidelines for 2021, lowering almost all its reference thresholds to protect people's health. These new, more ambitious WHO recommendations illustrate the heightened health stakes associated with air pollution and the need to accelerate action to improve air quality.

Although these guidelines are not legally binding, they do provide a factual basis for decision-makers in defining standards that will themselves be legally binding

for air quality management, such as French regulations and European directives. The European air quality directive revised in autumn 2024 has raised the target for good air quality status to 2030. The City of Paris is calling for an ambitious revision of European air quality regulations in line with new scientific findings, with the aim of meeting the recommendations of the World Health Organization (WHO). The City of Paris regrets the weakness of the Euro 7 standard, which sets emission limits for nitrogen oxides (NOx), carbon monoxide (CO), hydrocarbons (HC) and particulates.

At the Ile-de-France level, the Atmosphere Protection Plan (PPA – "Plan de protection de l'atmosphère"), managed by the French government, defines the objectives and measures needed to restore and preserve air quality in the region. **The City of Paris will continue to press for the Île-de-France region's PPA to prescribe all the measures needed to meet European regulatory values and follow WHO recommendations.**



City of Paris

A • Reducing the impact of transport on air quality and making Paris a zero-diesel city

REDUCE TRAFFIC OF THE MOST POLLUTING VEHICLES THROUGH AN LOW EMISSION ZONE

Low Emission Zones (ZFE – "Zone à Faibles Emissions") are a central tool enabling cities to reduce air pollution from road traffic. The City of Paris was a pioneer, creating France's first ZFE in 2015. Since then, the scheme has been introduced in more than 10 French conurbations and 250 European cities and metropolises. It consists of gradually eliminating the most polluting vehicles according to their Crit'air sticker. The Climate and Resilience Act of August 22, 2021 transferred the powers and prerogatives associated with the Low Emission Zone to the President of the Greater Paris Metropolis.

Since 2021, access to the Paris ZFE for vehicles classified as "non-classified", Crit'air 5 and Crit'air 4, has been restricted. Vehicles classified as Crit'air 3 will in turn be withdrawn from circulation within the zone from January 1st 2025.

According to Airparif, the ban on Crit'air 2 vehicles (including the latest diesel vehicles) is essential to meet air quality regulations.

That's why **the City of Paris will be very demanding when it comes to the timetable for rolling out the metropolitan ZFE scheme and completing the various stages - the only solution capable of banishing diesel from the city, which is responsible for a huge proportion of this pollution.**

The City of Paris will continue to advocate that the State release measures and aid commensurate with the stakes involved, to support the most modest households in changing their vehicles. Paris is therefore calling for the conversion bonus and the ecological bonus to be increased, in favor of electric vehicles (Crit'air 0).

At its own level, it will continue to provide support for more environmentally-friendly mobility, targeting low-income households.

To find out more about clean mobility, see Part II. IV. - "Pursuing the decarbonization of transport".

PREVENTING POLLUTION PEAKS DURING HEATWAVES

During peaks in ozone pollution associated with hot weather, the Paris Police Headquarter can implement differentiated traffic measures based on the Crit'Air sticker (only vehicles categorized 0, 1 and 2 are authorized to circulate). **The City of Paris is calling for these measures to be systematically applied.**

In the face of increasing heat waves, the City of Paris will be lobbying the French government to extend the system during heatwaves, even before they cause a peak in ozone pollution.

The City of Paris will also ask the Île-de-France Region and Île-de-France Mobilités, the Regional Transport Agency, to introduce free public transport during peak pollution periods.

"PARIS PREND L'AIR!" RAISING AWARENESS AMONG PARISIANS

In 2022, the City of Paris launched the "*Paris prend l'air!*" operation in partnership with the Bloomberg Philanthropies Foundation and Airparif. The aim of the program is to raise public awareness of air quality through events held throughout Paris. **Initially scheduled to run for 18 months, the program will be extended.** Participants, who will be lent sensors, will gain a better understanding of air pollution and its impact on health. They will discover ways of reducing their exposure and emissions.

To find out more about clean mobility, see Part II.IV.

B • Curbing installations that emit fine particles from buildings

ERADICATE THE USE OF FUEL OIL

Fuel oil is the most polluting fossil fuel used for domestic heating in Paris, both in terms of greenhouse gas emissions and air quality (nitrogen oxide and fine particle emissions). Indeed, despite a drop in consumption in recent years, domestic heating oil still generates one-fifth of NOx emissions in the residential sector (i.e. over 3% of total NOx emissions in Paris), even though it accounts for only 5% of the sector's energy consumption. **The City of Paris is aiming to eradicate the use of heating oil, by replacing boilers in the municipal fleet and supporting the co-ownerships concerned.**

To find out more about phasing out fuel oil in Paris: Part 3 - Moving away from fossil fuels

Clément Dorval, 2021

IV. ANTICIPATING AND MANAGING CRISES

Faced with the growing number of crises linked to climate change, since 2017 the City of Paris has had a Resilience Strategy, which involves implementing solutions to better anticipate and overcome any crises that may arise. Its articulation with the Climate action plan enables the City to provide an operational response through the development of anticipation capabilities and the deployment of solutions to circumscribe the effects of future shocks. Through its actions, Paris relies on its residents, adapts its infrastructures, mobilizes collective intelligence and the surrounding territories to overcome future shocks of a climatic, health, economic or energy nature. Poverty increases people's vulnerability to shocks and crises. This is why Paris places solidarity and the reduction of inequalities at the heart of its territorial resilience policy.

1. Territorializing responses to the climate crisis

The impact of the climate crisis varies from one region to another: urban morphology, socio-demographic profiles of the population, the intensity of vehicle flows and the types of human activities hosted are all parameters that influence the local impact of climate change. The responses required are therefore necessarily specific to these local, or even micro-local, impacts.

An atlas of Paris' vulnerabilities and robustness in the face of climate change will be produced by 2025, in order to take better account of the territory's particularities on a micro-local scale, and to examine the resilience of neighborhoods and arrondissements in the face of different climatic hazards. It will provide a detailed overview of the vulnerabilities, but also of the resources and adaptive capacities of Paris, in particular by identifying all the places of refuge that could be mobilized in the event of an extreme heat wave, in order to strengthen its resilience over the long term. This work will help prioritize and accelerate adaptation and urban resilience actions, provide an open set to support the research and development of innovative solutions, and serve as a tool for raising public awareness via maps and educational tools.

2. Better prepared for crises

Faced with a runaway climate, local authorities are on the front line in ensuring the protection of their residents and maintaining the functioning of the urban ecosystem. In order to respond appropriately to each situation, the City of Paris combines major risk prevention (natural, technological, health, building and social risks) with crisis management planning

It is continuing and stepping up measures to protect its infrastructures, particularly its networks, in order to strengthen its resilience in times of crisis (floods, heatwaves).

A • Anticipating crises through simulation

To anticipate extreme climatic events that could affect the territory, the City of Paris regularly organizes or participates in crisis management exercises.

The risk of major flooding occurring in Paris when two flood waves from two tributaries of the Seine (such as the Yonne, Loing or Yerres rivers) coincide is well known. A flood of the 1910 type - the reference flood - could affect several million inhabitants and tens of thousands of businesses, causing up to 30 billion euros in direct damage. With the phenomenon of torrential rains linked to climate change, this risk could increase. Exercises simulating a major flooding of the Seine are regularly organized to check the efficiency of the crisis measures planned by public and private partners. In recent years, the City of Paris and its partners have been able to test the governance of their systems, the deployment of manpower and equipment in the field, their ability to limit damage and rescue disaster victims, and the means of ensuring the continuity of services essential to the daily lives of residents: drinking water, food and electricity supplies, maintenance of major transport routes, etc.

With heat waves on the increase, the City of Paris wanted to extend the principle of these anticipatory exercises to the occurrence of a heat dome episode. The "Paris at 50°C" exercise, organized on the initiative of the City of Paris in late 2023, is the first test of this scale dedicated to super-heat waves ever organized in France. The exercise was based on a heatwave scenario of unprecedented length and intensity, with a 50°C heat dome. Combining indoor crisis management and in situ simulation in two Paris neighborhoods, the exercise analyzed the consequences of such an event on the lives of residents and economic actors, and tested the effectiveness of actions planned by all local actors. The lessons learned from the exercise will be used to reinforce the measures already in place.

> With heat waves on the increase, the City of Paris wanted to extend the principle of these anticipatory exercises to the occurrence of a heat dome episode. The "Paris at 50ÅãC" exercise, organized on the initiative of the City of Paris in late 2023, is the first test of this scale dedicated to super-heat waves ever organized in France.

B • Making Parisians actors in the city's resilience

To be effective, the response to a crisis presupposes ownership of the issue and the involvement of all actors. Every inhabitant must be able to contribute, at his or her own level, to maintaining the resilience of Paris in the face of shocks.

A prerequisite for action is risk awareness and the widespread dissemination of a risk culture. As part of its Resilience Strategy, the City of Paris is working to **renew communication on risks and crises**, by developing information media and initiatives - sometimes playful - based on the experience of Parisians, while taking care not to make them anxiety-provoking. The City of Paris will endeavor to awaken the awareness of the youngest members of society to the culture of risk by developing educational materials for schools, in conjunction with the Climate Academy.

At the same time, **the City of Paris will continue to support the mobilization of citizens in favor of solidarity actions.** Consideration has been given to enriching the Paris Volunteers program, which boasts a community of 75,000 committed Parisians, in order to strengthen their contribution to crisis prevention and management. With this in mind, the City of Paris will develop **solidarity missions aimed at raising awareness of the right gestures and means of volunteer involvement in times of crisis.**

> To be effective, the response to a crisis presupposes ownership of the issue and the involvement of all actors.

C • Strengthening the city's resilience to flood risk

Although preventive measures against the risk of flooding from overflowing of the Seine fall within the scope of the Flood Risk Prevention Plan (PPRI – "Plan de Prévention des Risques Inondations"), drawn up by the State, the City of Paris is implementing several public policies that complement the PPRI, aimed at improving the management of flood risks from runoff and overflowing of the combined sewer system, and at limiting the impacts of the hazard through the Resilient Neighborhoods Charter and the Parispluie plan (the Parisian rain zoning plan); many actions are currently underway to reduce flood-related risks. These actions can be of the awareness-raising or planning kind as summarized in the new resilience strategy adopted by the Paris Council at the end of 2024.

The City of Paris will raise awareness Parisians of the risk of flooding, runoff and rising groundwater, as well as of the areas at risk in Paris, by distributing educational documents (e.g. Agence Parisienne du Climat guide to flooding in Paris, guides produced by the European Center for Flood Risk Prevention and Management (CEPRI) for professionals, etc.), and by organizing workshops on the flood fresco, as well as dedicated activities within the Resilience Campus.

In order to better inform Parisians about the measures they can take to make their homes more resilient, the City of Paris will be developing communication campaigns on building adaptation measures, in addition to the Flood Risk Prevention Plan. Some of these awareness-raising initiatives could be carried out in conjunction with the insurance industry, which is seeking to strengthen public information and promote individual prevention measures, such as securing electrical circuits, installing non-return valves in sewage systems, or upgrading boilers.

The City of Paris is participating in the organization by the Paris Police Headquarter of a **Sequana crisis exercise on the flooding of the Seine in 2025.** The tabletop exercise planned by the Prefecture will be coupled with an in situ exercise on the scale of a Parisian micro-neighborhood located in a flood zone, in which Parisians will be involved. This in situ exercise will be organized by the City of Paris, in conjunction with the Paris Police Headquarter.

With regard to its property assets, the City of Paris will pursue a strategy of improving the **resilience of its facilities,** by systematically integrating flood risk into complete renovation operations. In addition, certain strategic municipal buildings will benefit from adaptation work to enable them to be rapidly restored to operation following a very large-scale flood, such as the dewatering of generators or the waterproofing of electrical installations.

In line with the Paris Pluie plan, the City of Paris **will experiment with techniques to reduce** urban **runoff** in development projects involving areas with steep slopes. A number of devices will be tested to reduce the speed of water while allowing it to infiltrate, such as the creation of vegetated steps, valleys or infiltration channels. Initial consideration will be given to the Butte Montmartre, subject to analysis by the Quarrying General Inspection office (given the presence of gypsum quarries which may limit development possibilities).

Finally, with the support of experts such as CEPRI and the public territorial grouping EPTB Seine-Grands-Lacs, the City of Paris will set up an internal working group on the return to normalcy. The ***Build Back Better*** approach will be used to anticipate the return to normalcy of public services essential to Parisians. Promoted by the United Nations, among others, the "Build Back Better" approach consists in rebuilding areas affected by a disaster, taking care to reduce their vulnerability to disasters and strengthen the resilience of buildings, communities and public authorities to future events. In other words, the aim is to implement a reconstruction process that learns all the lessons from the crisis and prevents it from happening again in the future.

> The City of Paris is participating in the organization by the Paris Police Headquarter of a Sequana crisis exercise on the flooding of the Seine in 2025.

3. Protecting Parisians from heatwaves

With heat waves on the increase, the City of Paris is stepping up its efforts to inform, prevent and support Parisians. In view of the social and health impacts of these phenomena, the City of Paris has made the protection of vulnerable groups (over 65s, young children, the chronically ill, pregnant or breast-feeding women, the homeless or poorly housed, students, migrants, isolated parents, etc.) its priority. After several days of very high temperatures, the population as a whole can be considered vulnerable.

A • Strengthening the heatwave plan to adapt it to the new climatic situation

The City of Paris' heatwave plan is based on health management of heatwaves, with the aim of coordinating all actors in the area (Police Headquarter, Region Prefecture, Regional Health Agency, etc.), disseminating health recommendations to the population, and implementing preventive actions and measures, from June 1 to September 15, to prevent and limit the health effects of a heatwave.

1 300
"cool air islands"

Even before the heatwave plan is activated, the cooling systems installed throughout Paris, and reinforced in summer, are accessible. These include the 1,200 drinking fountains throughout the capital, the 2-in-1 fountains deployed in summer (drinks and sprinklers), the misting systems in parks and gardens, the shaded areas in public spaces, and the 140 parks and gardens open 24 hours a day. **New measures were taken as soon as the plan was activated: some twenty major Paris parks were opened all night, and swimming pool opening times were adjusted.**

Sophie Robichon / City of Paris, 2023

In all, over 1,300 "cool air islands" (green and wooded areas, oasis courtyards, intramural cemeteries, swimming pools and bathing sites, establishments open to the public and naturally cool, including museums and municipal libraries, etc.) are made accessible. The city's communications are systematically stepped up when vigilance thresholds are reached, to give everyone access to constantly-updated map of cool islands, and to disseminate prevention messages aimed at the general population and vulnerable groups.

To facilitate access to refreshed venues such as museums and cinemas, work is underway with City of Paris partners to offer reduced rates to the most disadvantaged (students, senior citizens, low-income families).

The City of Paris is planning to organize a night-time cultural program, inspired by the Nuit Blanche, to open up more islands of coolness at night to Parisians.

Lastly, in line with the recommendations of the Municipal Observation Mission MIE "Paris à 50°C" and the conclusions of the "Paris à 50°C" crisis exercise, **the city shall be looking at ways of mobilizing exceptional resources to deal with extreme heat peaks, unprecedented in Paris, in particular to provide solutions for Parisians whose homes could become uninhabitable during the acute phase of the crisis, especially those on the top floors.** The identification and adaptation of places that could serve as shelters (cool public buildings, renovated schools, underground gymnasiums, tunnels and parking lots, etc.) will be launched. The resources needed to temporarily transform them into reception areas will be identified and anticipated. Particular attention will be paid to working-class neighborhoods.

B • Better support for vulnerable seniors

The elderly, who are often isolated, are particularly vulnerable to heat waves. The city intends to step up its efforts to support them during these critical periods, by multiplying its "outreach" initiatives. To this end, the City will be drawing on a REFLEX database, which lists people over 65 and/or people with disabilities who have voluntarily registered, and will ensure that registration campaigns will be regularly re-launching.

As soon as the Heatwave Plan is activated, the City of Paris will be making regular visits to isolated, vulnerable people. **Teams of Paris Volunteers will be mobilized** to distribute brochures on resource points, equipment (water bottles, fans, etc.), a map of free water sources and a flyer on self-preservation. **Regular telephone calls** to check on their health, assess their needs and remind them of preventive measures to take in the heat **will also be systematically organized.**

When the heatwave plan is activated, the City of Paris will open cooling rooms located in certain EHPADs (regulated homes for dependent seniors), district townhalls and seniors' clubs. To make them more "attractive", **social support and entertainment will be provided in these rooms.** The opening of these refreshed rooms to other publics (children, teleworkers, etc.), to encourage intergenerational links, could be envisaged.

When the heatwave plan is activated, the City of Paris will open cooling rooms located in certain EHPADs (regulated homes for dependent seniors), district townhalls and seniors' clubs.

C • Meeting the specific needs of pregnant women, infants and their parents

Pregnant women are particularly vulnerable to heatwaves. Exposure to heat during pregnancy is a crucial public health issue, as it has an impact on maternal health. Studies have also shown that heat has an impact on premature deliveries, with the rate rising from 5% to 16% during and in the days following a heatwave. This risk increases with the number of consecutive days of extreme heat.

Based on the REFLEX file, **the City of Paris will offer pregnant women being monitored in Paris the opportunity to register on an information file in response to heatwaves.** Through the maternity hospitals and midwifery networks, the City of Paris will provide them with information on best practices and cool places in the capital to protect themselves from the heat.

This approach will also be offered to young parents, who may find it difficult to protect their babies from the heat. The City of Paris intends to support them, as it does the elderly, to help them find effective solutions.

To support parents in the first few months after the birth of their child, **the City of Paris is adapting the PMI (Mother and Child Protection Centers) to make them true places of refuge from extreme heat.** Premises will be fitted out accordingly, and opening hours adapted during the summer months to enable young parents to find a cool space for their infants. PMI professionals will be specifically trained to support parents and advise them on how to protect their infants from the heat.

D • An "Extreme heat plan" dedicated to rough sleepers

The problem of homelessness is a subject that receives more media coverage in winter, when the extreme cold highlights the difficult conditions of those who sleep rough at. However, their living conditions remain difficult all year round, and these people are particularly vulnerable to heat waves. In order to gain a better understanding of the profiles of people sleeping rough outside winter, and to gain a better grasp of the difficulties they encounter during the summer months, **"Nuit de la Solidarité" operations (solidarity monitoring nights) will take place every summer, following on from the first experiment conducted in 2023 in three arrondissements (8th, 12th and 20th)**. Initial results seem to show that there are more rough sleepers in summer than in winter (817 people met in June 2023, compared with 707 during the winter Night in January 2023, i.e. +15.5% compared with January 2023 and +18% compared with the average of the last five winter counts.

Following the example of the national "Grand froid" (extreme cold) plan, the City of Paris would like to see a plan put in place to detect, prevent and reduce the health effects of heatwaves, in order to protect the homeless, who are particularly vulnerable to the effects of heat. **The City of Paris will work with the French government to set up a national "extreme heat" plan** that could be triggered in the event of extreme weather conditions, to be defined in conjunction with Météo-France, National Health Agency, the Prefecture and the City's departments. The threshold will be defined according to the unfavorable combination of several factors, such as extreme temperatures, high humidity or a sharp deterioration in air quality.

Without delay, the City of Paris will be working to ensure the **availability of shelters that can be mobilized within 24 hours to enable homeless people to take refuge,** even during the day, when the heat is at its most intense. **Local public facilities will be opened, and municipal vehicles will be made available to the Samu Social (Emergency medical assistance service), whose staffing levels will be increased.**

Outside the most critical periods, new measures will be put in place to enable people living on the streets to cope better with heat waves. For example, **the opening hours of the 17 bath-showers will be extended, and the "solidarity and inclusion spaces"** will be added to the list of priority establishments to benefit from interventions to make them cooler places, open to those particularly vulnerable to the heat.

4. Adapting the pace and production of work to the effects of climate change

The International Labour Organization (ILO) estimates that by 2030, more than 2% of the world's total working hours could be lost each year due to the consequences of climate change, either because it's too hot to work, or because the pace of work is slower. 1.2 billion jobs, or 40% of global employment, would be directly impacted by the climate crisis.

One of the major consequences is an increase in the phenomenon of "*heat stress*", understood as an excessive rise in body temperature leading to physiological alterations and sometimes fatal heatstroke. It is therefore essential that this issue be integrated into the world of work as an occupational risk for workers. Public and private actors must jointly take measures to protect workers from these risks, as well as users of public services.

Faced with more frequent, more intense and longer-lasting heatwaves, **the City of Paris has progressively reinforced its heatwave measures in terms of prevention, service organization and adaptation of its employees' work cycles.** Following the 2003 heatwave, the city adopted a master plan based on the four alert levels of the national heatwave plan.

This approach takes into account working conditions by profession and by site, and aims to adapt missions while ensuring respect for the **principle of service continuity**, particularly for staff whose duties expose them to extreme heat (such as those working in public spaces). In addition, work to adapt the city's buildings is also aimed at meeting the need for greater thermal comfort for those who work in them.

In line with its public policies aimed at transforming Paris in the face of the consequences of climate change, the City of Paris will be **working to move from managing acute heatwaves to adapting structurally to the multiplication of longer, more intense periods of heat, in the context of regular exchanges with representative trade unions, while ensuring that the Heatwave Plan is regularly updated for the benefit of employees**. In this context, the City will initiate a review with a view to adapting working hours and organization.

The process will also be extended to actors involved in public service delegations and to the city's service providers. More specific action will be taken with regard to construction workers: after the agricultural trades, they are the most exposed to the loss of working hours (19% in 2030, compared with 60% for farmers) due to hot weather. **Specific provisions could therefore be included in the rules governing public procurement, so that the City, as the client, ensures that the risk of heatwaves is taken into account by service providers.**

The City will use the Paris Observatory of Accidents and Deaths at Work in Paris, adopted by the Paris Council in November 2022, to record heat-related deaths, a phenomenon that is still poorly documented today.

Within its own perimeter, the City of Paris will carry out an internal review of the opening hours of public facilities during heatwaves, to ensure accessibility and continuity of service, and to adapt the opening hours of municipal public services to changes in the pace of life during periods of extreme heat.

On a broader level, the City will also advocate at national level for measures to adapt to heat waves and heatwaves to be strengthened in the Labor Code. The city is also defending the inclusion of the risk of heatwaves in the Labor Code, and the obligation for companies to draw up a work adaptation plan as part of a social dialogue between employee and employer unions.

One of the major consequences is an increase in the phenomenon of "heat stress", understood as an excessive rise in body temperature leading to physiological alterations and sometimes fatal heatstroke. It is therefore essential that this issue be integrated into the world of work as an occupational risk for workers.

ACCELERATE THE REDUCTION OF GREENHOUSE GAS EMISSIONS

The city's goal is to achieve carbon neutrality by 2050, in line with the Paris Agreement, by reducing its carbon footprint by 80% and offsetting the remaining 20% of emissions.

I. STEERING PARIS' DECARBONIZATION TRAJECTORY

Since 2004, the City of Paris has been assessing the greenhouse gas emissions of its territory and administration. This inventory has been published for the reference years 2004, 2009, 2014, 2018, 2021 and 2022. These exercises make it possible to identify the contribution of each sector of activity, the emissions generated by Parisian lifestyles, and to assess the results of the climate change mitigation policies implemented. These data are essential to the construction and management of greenhouse gas emission reduction trajectories for the City and, more broadly, for Paris as a whole.

1. Halve greenhouse gas emissions in Paris by 2030, aim for carbon neutrality by 2050

The greenhouse effect is a global issue. On the one hand, local emissions in Paris accentuate global warming on a global scale; on the other, decisions taken in Paris imply emissions outside Paris, or even outside France.

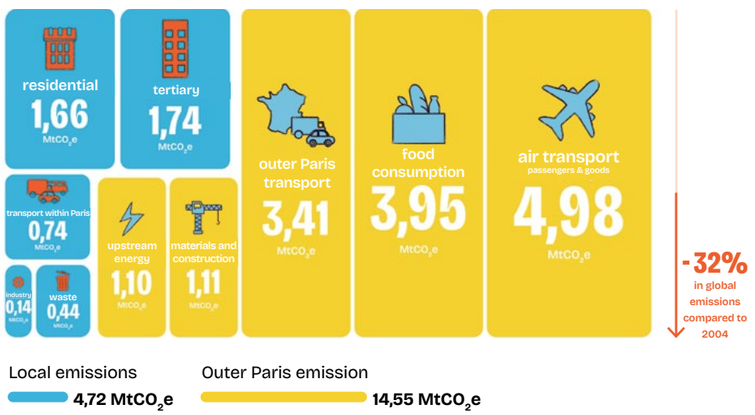
To manage its carbon trajectory, the City of Paris has chosen to take into account all the greenhouse gases generated by the territory, its inhabitants and users, whatever their source of emissions. Paris' greenhouse gas emissions are therefore made up of:

- **Local emissions,** which include all direct emissions from Paris, within the city's territory. In 2022, they represented 4.7 million tons of CO_2e, 36% less than in 2004.
- **The carbon footprint,** which includes local emissions plus emissions generated outside the area, such as those caused by the aircraft used by Parisians for travel, food and the energy used to produce the products consumed in Paris. In 2022, the city's carbon footprint will amount to 19.3 million tons of CO_2e, down 32% on 2004.

Paris is one of the few cities in the world to consider the carbon footprint of its territory, accounting for emissions from air traffic and the food consumed by its residents.

Figure 17

Paris 2022 carbon footprint



City of Paris, 2024 – Climate & Ecological Transition directorate

To achieve carbon neutrality, **the City of Paris has set itself the target of reducing its local emissions to zero** by 2050, **and by 50% by 2030** (compared with 2004) to 3.7 million tons of CO_2e.

Local emissions are made up of the following sectors:

Buildings: these are emissions generated by residential and commercial buildings in Paris. Paris is unique in having a tertiary sector equivalent to its residential sector, each emitting 1.74 million tons of CO_2e and 1.66 million tons of CO_2e respectively in 2022, i.e. around 30% less than in 2004. Most of these emissions are due to the combustion of energy to heat these buildings.

- **For residential buildings,** the target is to reach 1.4 $MtCO_2e$ by 2030, equivalent to a 43% reduction compared to 2004.
- **For tertiary buildings,** the target is to reach 1.2 $MtCO_2e$ by 2030, equivalent to a 48% reduction compared to 2004.

Intramural transport: this sector includes all road travel in Paris, on the ring road and on RATP and SNCF public transport (metro, bus, RER fast suburban lines and tramway). In 2022, this sector emitted 0.74 $MtCO_2e$, 59% less than in 2004. These emissions are mainly due to the combustion of fuel by thermal vehicles. The target for 2030 is 0.68 $MtCO_2e$, 63% less than in 2004.

Waste: this sector covers emissions generated by the processing of the various types of waste collected in Paris. Every day, almost 3,000 tons are collected from the streets of Paris. In 2022, this sector represented 0.44 $MtCO_2e$, down 13.5% on 2004. Most of these emissions are due to plastic waste. By 2030, the target is to reach 0.35 million tons of CO_2e, i.e. 32% less waste-related emissions than in 2004.

Industry: this sector is the smallest contributor to Paris' greenhouse gas emissions. In 2022, it represented 0.14 million tons of CO_2e, 30% less than in 2004. Paris's industrial emissions correspond mainly to the city's energy production facilities, in particular the district heating and cooling networks. By 2030, the objective is to reach 0.11 $MtCO_2e$, i.e. 43% less than in 2004.

Achieving local emission reduction targets is a major challenge. **The aim is to reduce local emissions by more than 20% by 2030 compared with 2022.** The City of Paris is stepping up and scaling up its efforts on the main municipal levers for reducing greenhouse gas emissions: urban planning, the building sector and transport

2. Managing the carbon envelope of Paris

In addition to mapping emissions in the city's annual greenhouse gas balance sheet, the City of Paris has decided to equip itself with a tool for steering its climate policy in order to objectify the efforts expected in each sector and align municipal action with the decarbonization trajectory.

This is why **the City of Paris is introducing a Parisian carbon budget from 2024,** defining the maximum quantity of greenhouse gases that can be emitted each year by the territory in order to remain on the decarbonization trajectory. Established for municipal periods, the carbon budget will enable each term of office to set concrete targets for the sectors that contribute to local greenhouse gas emissions: residential, tertiary, industry, transport and waste.

While the city has always considered the territory's entire carbon footprint in its thinking and public policies, it is on this local perimeter that it has the most direct and effective levers for action.

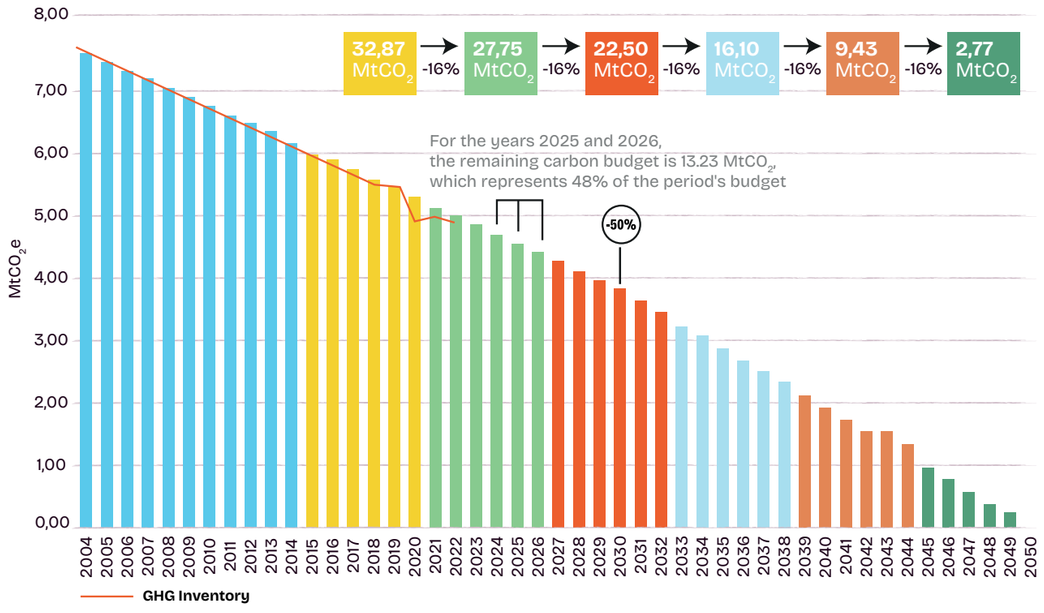
The annual assessment of the carbon footprint will make it possible to measure the proportion of the budget consumed, the efforts to be made to stay within the pre-established envelope, and to warn if the budget is exceeded.

This carbon budget will be drawn up on a territorial scale, to mobilize all actors, but also on a Parisian administration scale, to optimize the management of Parisian public policies.

The current budget for the 2021-2026 period is 27.75 Mt CO_2e, down on the previous 2015-2020 reference budget. Between 2024 and 2026, the estimated amount not to be exceeded is 13.23 Mt CO_2e, or of the budget for the current period.

Figure 18

Paris' carbon budgets for carbon neutrality



City of Paris, 2024 – Climate & Ecological Transition directorate

3. Strengthen the Paris's carbon sequestration capacity

Paris covers an area of 105 km², including 87 km² of built-up area and 2 woodlands covering 18 km². Mainly urban, its carbon sequestration capacity - i.e., a positive net flow from the atmosphere to soils and forests (including wood products) resulting in an increase in stocks - **is therefore very limited.**

The territorial estimate of this flow is based on available information on land-use changes, forest dynamics and environmental management methods that modify existing carbon stocks. It is estimated at 5,292 tCO_2e/year, 93% of which comes from woodlands, i.e. 4,930 tCO2/year. This figure should be seen in the context of the city's greenhouse gas emissions. It represents 0.1% of local greenhouse gas emissions and 0.023% of the carbon footprint according to the GHG emission balance 2018.

In parallel with these flows, the carbon concentration in Paris soil represents a stock of 2.52 million tCO2 according to the 2018 land use distribution. Although woodlands cover almost 9 times less surface area than artificial soils, they offer a stock almost half that found in impermeabilized soils.

In order to meet its decarbonization trajectory, **the City of Paris is implementing a carbon sequestration strategy** based on strengthening the storage capacity of Parisian soils, developing carbon storage in buildings and a strategy to promote carbon sequestration outside the city.

With regard to soil carbon sequestration, the Paris Climate action plan aims to strengthen carbon capture through the city's greening initiatives and to take better account of this aspect in the management practices of its green spaces with:

- Continuation of the green space management plan to maintain an ideal level of organic matter.

- The choice of species planted, which takes into account the carbon storage capacity of trees for future plantations.

The City of Paris also intends to increase its knowledge of its soil sequestration potential through:

- Critical analysis of surface areas by land use ;

- The development of specific carbon sequestration values for Parisian soils using analyses carried out over several years by the agronomy laboratory ;

- Taking into account the experimentation on the "Impact of plant cover and its management on carbon sequestration and soil biodiversity", which it is currently carrying out.

The City has also developed a specific tool for estimating the stock and flows of street trees present on its territory, based on the richness of its tree database, which provides information on each species, diameter and age of the trees managed by the City of Paris (street trees, parks and gardens, cemeteries). Taking into account these data, and those of the Luxembourg Gardens and Jardin des Plantes not managed by the City of Paris, the stock of the City's tree heritage to date is estimated at 220,858 tCO2, with an estimated average annual sequestration of 2,681 tCO2/year.

A foresight tool has been designed **to measure the sequestration potential of upstream development projects,** so that the carbon criterion can be taken into account in decision-making processes when implementing urban projects or managing city land.

With regard to carbon sequestration in the building sector, the implementation of the Climate action plan and the application of the bioclimatic Local Urban Plan will reinforce the use of bio-sourced materials. These help to reduce the carbon impact of buildings, while at the same time boosting the city's carbon sequestration capacity through wood construction.

Finally, aware of the limits imposed by the density of its territory, the City of Paris is developing a strategy to promote extramural carbon sequestration. It relies on the Paris and Greater Paris carbon cooperative to promote carbon sequestration projects linked to the Paris territory.

To find out more about the carbon cooperative: Part 4. V.2.B - Directing private financing towards ecological transition projects

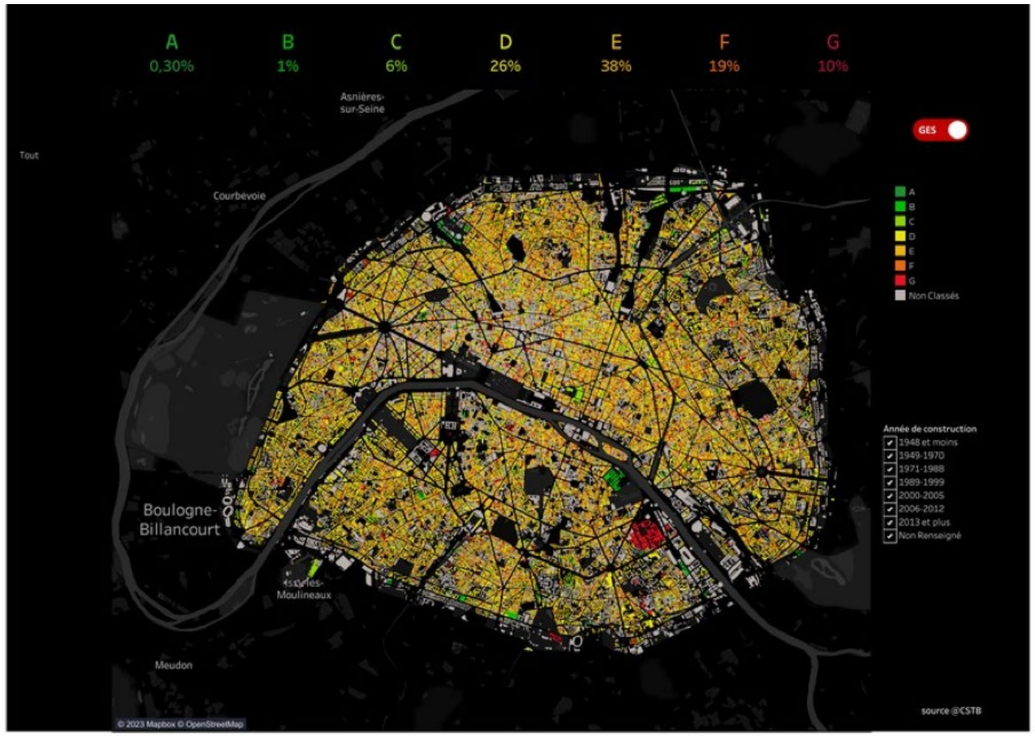
Joséphine Brueder / City of Paris, 2023

II. MASSIVE RENOVATION OF BUILDINGS

As the leading sector in terms of local greenhouse gas emissions and the first urban system to be impacted by rising urban temperatures, the building sector is at the crossroads of habitability and decarbonization. In Paris, the building sector will account for 3.53 Mt CO_2e in 2022, or 75% of local emissions. Renovating the city's building stock will be the main task for the next decade. The challenge is considerable, and requires overcoming major obstacles such as financing, stakeholder coordination, technical constraints and the need to raise awareness and involve owners and occupants. **The City of Paris has set all local actors the target of renovating 100% of the existing building stock to very low-energy standards by 2050.**

Figure 19

Mapping the energy label of Parisian buildings



CSTB, 2022

Since 2007 and its first Climate action plan, the City of Paris has made energy renovation a priority. This has yielded significant results: emissions from the sector have been reduced by 30% between 2004 and 2021. To reach the 2030 and 2050 targets, a change of scale is necessary.

Building renovation is mainly viewed quantitatively in terms of improving energy performance through insulation or better equipment.

While massive energy renovation remains a fundamental challenge for the ecological transition, it is essential to adopt a global approach to integrate other environmental issues such as renewable energy production, mobility, greening and waste management. **The city will work with renovation stakeholders to make the challenges of environmental transformation of buildings more transparent.**

The question of best practices, to avoid the rebound effect that can limit the gains achieved through high-performance renovation, will also be the focus of work with industry actors

1. Towards 100% of renovated homes

Parisian buildings are mainly residential and tertiary. The residential sector is made up mainly of 47,000 condominiums, which account for 75% of Parisian housing, and 23.3% of social housing. Including social housing financed under construction or works in progress, the social housing rate rises to 25.2%.

47, 000
condominiums in residential sector

A • Priority to public housing

The City of Paris has set a target of 40% public housing by 2035. To reach this target, the City of Paris will give preference to the least emissive methods of housing production, opting as far as possible for the rehabilitation of existing buildings (conversion of offices into housing), over-elevations, and the use of low-carbon, reused or recycled materials.

The City of Paris and social landlords have already renovated more than 60,000 social housing units since 2009, and the effort is continuing. Achieving the objectives of the Climate action plan requires to **renovate 5,000 social housing units a year, with an average gain in energy consumption of 60%.** The city will support social landlords in carrying out this program, in particular through the amounts earmarked in the new agreement on the delegation of stone subsidies and the annual financing circulars.

In addition, energy-efficient renovation of the social housing stock will incorporate new objectives such as sobriety in materials, products and equipment, preservation of existing buildings, low tech, the use of adaptable and/or modular equipment, mutability, and waste reduction and material recovery.

The City of Paris has set a target of 40% public housing by 2035.

B • Accelerate renovation of condominiums

A central challenge since the first Climate action plan, the renovation of private housing represents an immense challenge. The City of Paris has set a target of accelerating the energy renovation of private housing to **40,000 units per year by 2030**, with priority given to buildings in the city's priority districts.

The 2018 Climate action plan called for compulsory renovation of poor insulated buildings. Legal provisions now call for a freeze on rents for rental properties with energy performance ratings of F and G according to the energy performance diagnosis. Eventually, the French government will prohibit the letting of G-rated properties in 2025, F in 2028 and E in 2034. **The City of Paris will be watching closely to ensure that the government complies with this timetable.**

THE ECO-RÉNOVONS PARIS + SCHEME

To support condominiums, the City of Paris has launched the Eco-Rénovons Paris + scheme for 2022. This program aims to encourage the energy renovation of private housing buildings to make them even more environmentally friendly. It offers financial assistance as well as free, personalized support at every stage of the project.

The City of Paris **will continue to implement the Eco-rénovons Paris + scheme, which will be renewed and strengthened in order to achieve 100% renovation of private housing by 2050.** This type of technical and financial assistance, provided with the support of the Parisian Climate Agency (APC – "Agence Parisienne du Climat"), is designed to support two-thirds of the environmental renovation projects carried out in Paris.

In addition, the City supports homeowners who undertake energy-efficiency renovations by exempting them from their property tax for a period of three years from the date of payment for the work. This support will continue.

> A central challenge since the first Climate action plan, the renovation of private housing represents an immense challenge. The City of Paris has set a target of accelerating the energy renovation of private housing to 40,000 units per year by 2030, with priority given to buildings in the city's priority districts.

MORE INFORMATION FOR CONDOMINIUMS

To encourage more condominium owners to take part in renovation projects, **the City of Paris will sign a charter of reciprocal commitments with property managers.** The aim is to present information on energy renovation and the tools available for taking action, at their annual general meetings. In order to make this approach more widespread, the City of Paris will also advocate the need to amend regulations to introduce a mandatory resolution on energy renovation at condominium General Meetings, as well as the creation of a label to recognize condominium managers who demonstrate their competence in this area.

The city is also committed to providing residents with more information and better support throughout the process of accessing energy renovation grants. The Agence Parisienne du Climat (Parisian Climate Agency) will increase the number of information sessions for property managers and union councils, based on concrete examples of work already carried out and adapted according to the situation of the building or the size of the condominium, with costs and out-of-pocket expenses for those on low incomes. The "*Renovation Ambassadors*" program will be strengthened. This network of condominium owners involved in renovation projects helps to raise awareness by setting an example, and to encourage the sharing of experience between neighboring condominiums.

CALL FOR MORE FINANCIAL AID

Renovating 100% of Paris's buildings by 2050, the real project of the century, will only be possible with greater support and a financial commitment commensurate with the challenge from all the actors involved (Greater Paris Metropolis, Île-de-France Region and the French State), for both private and social housing.

It is vital that national schemes such as "Ma Prime Rénov'" and assistance from the National Agency for Housing (ANAH) are maintained and rapidly reinforced.

2. Undertake a major renovation plan for municipal property

A • High-performance public facilities

With a portfolio of over 6,000 facilities, the City of Paris works hard every day to guarantee quality public services. Nurseries, schools, swimming pools, libraries, gymnasiums... public facilities play an essential role in the lives of Parisians. They give structure to the city, transforming the neighborhood in which they are located, and changing its image.

Through its Climate action plan, the City of Paris is committed to **reducing the energy consumption of its buildings by 40% by 2030 and 60% by 2050.**

The City of Paris aims to increase the environmental, technical and architectural quality of its new operations, but also to build buildings that are "*friendly*" to users, meet their needs for nature in the city, integrate the principles of the circular economy and are designed to meet ambitious energy targets. In order to achieve the objectives of the Climate action plan for the buildings managed by the City, energy consumption must be reduced from 640 GWh in 2004 to 384 GWh in 2030 and 256 GWh in 2050. In 2021, the City's energy consumption stood at 575 GWh (-10% on 2004, +50% equipment) and should reach 467 GWh (-25% on 2004) in 2026.

To achieve **the Climate action plan's ambition of 2050, all municipal facilities will have to be renovated.**

The impact of this plan in terms of greenhouse gas emissions and energy consumption will be assessed periodically. Communication with Parisians will also be stepped up, with more information on energy consumption and renovation work posted on facilities and on the City of Paris website. The plan could also be used to encourage the French government to play a greater role in financing the energy renovation of local authorities.

City of Paris operators are also working towards a massive renovation of their buildings. For example, Paris Musées, which groups the 14 museums and archaeological sites in Paris, has set itself the target of reducing its energy consumption by 60% by 2050.
The City of Paris also invites the French government and major public property owners to report regularly on the progress of renovations to their buildings in Paris.

B • Comprehensive renovation of 100% of schools and nurseries by 2050

As part of its renovation strategy, the City of Paris will be paying particular attention to nurseries and schools. A first step has already been taken with the 240 schools to be renovated under the Climate action plan between 2011 and 2020.

240
renovated schools under the Climate action plan between 2011 and 2020

Through this massive project, the City of Paris intends to rely on a new method based on very precise programming and budgetary visibility, and a concerted effort with arrondissement town halls and educational communities to accelerate and maximize the expected gains. Traditionally, renovation work is carried out outside school opening hours, and involves partial renovations targeting the most sensitive areas, which do not allow for any significant improvement in the buildings' energy performance or users' well-being. This new method will enable work to be carried out on sites that are free of their usual users, who will occupy other buildings for the duration of the work.

In order to accelerate the process and aim for gains of 60%, the City of Paris will undertake in-depth renovations, lasting up to one or two years.

These comprehensive renovations will focus on insulation, replacement of thermal centers, replacement of woodwork, summer comfort, greening, eradication of lead, ambient and endocrine disruptors, interior ventilation, and also, if necessary, changes to the interior structure of the buildings to better meet educational needs and ensure full accessibility.

This method will be accompanied by a precise timetable and budget to achieve the goal of 100% of schools and nurseries by 2050, based in particular on precise diagnoses of all establishments.

Representing the renovation of around **30 schools and 10 nurseries per year**, the City of Paris will rely in particular on local facilities to ensure that children can be cared for and school activities organized in good conditions during the renovation period.

3. Speeding up renovation of commercial buildings

One of the distinctive features of Paris is the large amount of commercial real estate, which in 2022 will account for 45% of the capital's real estate. These surfaces are divided between offices, retail outlets, educational and healthcare establishments, and cultural establishments.

In terms of energy consumption, the Paris tertiary sector represents an important lever for the success of the Climate action plan's commitments, which is why the City of Paris is encouraging the thermal renovation of the tertiary sector as part of its bioclimatic Local Urban Plan, and is mobilizing the entire economic ecosystem to accelerate the renovation of the stock and reduce the associated greenhouse gas emissions. In particular, the City of Paris will be relying on companies that have signed the Paris Biodiversity & Climate Action Pact (PACB – "Pacte Paris Action Climat Biodiversité") to encourage them to renovate their Parisian assets, by supporting them in the implementation of their projects.

One of the distinctive features of Paris is the large amount of commercial real estate, which in 2022 will account for 45% of the capital's real estate.

A • Reinforce obligations to renovate the Paris tertiary sector and diversify sources of financing

The legal provisions of the "tertiary sector decree" set energy consumption reduction targets for buildings over 1,000 m² by 2030 and 2050. On the basis of these regulations, the City of Paris will work with local actors to implement and monitor the legal provisions in the area. **The City of Paris will call on the legislator to re-evaluate the 1,000m² threshold to take into account the specific features of large cities such as Paris,** where the average size of premises is smaller.

In order to accelerate the renovation of the tertiary sector, the City has organized **a financing conference for the renovation of Paris' tertiary sector as part of the regional COP on ecological planning.** The aim is to identify the obstacles to action, mobilize financial actors and draw up a 10-year operational program, including facilitating access to sources of financing for private actors.

B • Informing and supporting small and medium-sized businesses in Paris

VSEs/SMEs are key economic actors in Paris, employing nearly 52% of the workforce. They are also highly sensitive to variations in energy prices: significant increases can quickly make them vulnerable. However, very small businesses rarely have the means to analyze their energy consumption and find energy-saving solutions tailored to their specific situation. The City of Paris has therefore set up the "Paris Commerce Energie" website to inform small businesses and help them find solutions to reduce their energy consumption and their bills.

To support this work, **the City of Paris,** in collaboration with the consular chambers (Chambre de métiers et de l'artisanat, Chambre de commerce et de l'industrie de Paris), and the Agence Parisienne du Climat, **will experiment with a first "one-stop information desk"** designed to provide personalized support to small businesses to help them set up energy-saving projects. An assessment will be made in 2025 to confirm the relevance, development and sustainability of the scheme.

4. Tougher renovation regulations to reduce carbon emissions

When renovating facades or re-roofing buildings, the City of Paris encourages the incorporation of energy efficiency improvements. To this end, the Bioclimatic Land Use Plan specifies the thermal resistance and thermal transmittance values towards which the insulation and joinery used should aim.

For projects subject to the overall existing building thermal regulations (RTex globale), the City of Paris is **reinforcing the regulatory performance requirements for renovations** by imposing an energy consumption less than or equal to 60% of the reference consumption (Cepref) for office buildings, and less than or equal to 104 kWhep/m².an for other building categories (160 kWhep/m².an in the case of electric heating). Higher values may be allowed, up to a limit of 10%, for collective housing buildings with more than 80% T1 one-room apartments.

Renovation necessarily involves the use of a lot of materials, so it's vital that, like new construction, it takes into account the need to use fewer materials in order to reduce the sector's carbon footprint.

The City of Paris will also introduce special clauses in its works contracts to **require the use of materials derived from recycling or reuse.** At present, 40% of the floor surfaces built on municipal projects are made of bio-sourced wood, while the use of alternative materials such as raw earth, recycled cotton or straw is growing. The City of Paris will also encourage its partners (social landlords, developers) to adopt the same purchasing policy.

The City of Paris will also introduce special clauses in its works contracts to require the use of materials derived from recycling or reuse.

III. BIOCLIMATIC URBAN PLANNING

Parisian urban planning has evolved significantly over the centuries, reflecting the city's political, social and economic changes. In 2021, the construction sector accounted for up to 1.1 MtCO_2e of carbon emissions, or 6% of total emissions.

It is also a place where experimentation and innovation can accelerate public policy. In this way, Parisian urban planning represents an important lever on the road to carbon neutrality.

THE BIOCLIMATIC LAND USE PLAN

The ***Land Use Plan*** (PLU) is a strategic document that establishes major planning guidelines and regulates all construction, renovation and rehabilitation initiatives within the city of Paris. The PLU was last significantly updated in 2006, although amendments have been made over the years. Today, a revision is required to bring the PLU into line with contemporary challenges, particularly those related to climate.

The City of Paris has drawn up its bioclimatic Land Use Plan (PLU) as part of a balanced approach to the triple challenge of economic, social and environmental development. It aims to establish a shared vision for continuing to adapt Paris to the climatic challenges and solidarity imperatives of our time. It is a proactive approach to setting standards for construction and territorial organization that marry ecological transition and solidarity. This document aims to improve the living environment in Paris, with particular emphasis on protecting the environment and heritage, in line with residents' aspirations.

With the majority of the city's infrastructure already in place, the emphasis is on rehabilitating and renovating existing structures rather than building new ones. This approach encourages the reuse of materials and the search for more local and sustainable solutions, in order to reduce the carbon footprint of construction. The aim is to promote more efficient resource management, by "doing better with less".

Moreover, housing accounts for a significant proportion of Parisians' expenditure. With this in mind, an increase in the number of affordable housing units is planned, aiming to reach a threshold of 40% public housing. This political initiative aims to preserve and support the purchasing power of families, young working people, students and retirees, by setting up a reinforced network of public services and local facilities, whether cultural, sports or health-related.

What's more, nature plays a key role in this project, with increased biodiversity and greening of the city, helping to create cooler spaces and adapt to climate change. The Paris of 2050 aspires to be a low-carbon city, harmoniously integrated into its architectural and landscape environment.

In short, the bioclimatic Land Use Plan embodies a clear and open ambition to meet current and future climate challenges, working closely with citizens and encouraging innovation. This shared vision follows on from the Climate action plan, establishing innovative bioclimatic rules, ensuring that Paris can meet the challenges ahead with efficiency and resilience.

1. Build less and more energy- and carbon-efficiently

The new climate situation facing Paris calls to rethink our relationship with the city by designing low-carbon, energy-efficient buildings and neighborhoods.

In a city where 90% of the buildings are already there, and faced with the carbon footprint of new construction, **rehabilitation is becoming the new norm for reducing the environmental impact of buildings. Demolition is becoming the exception.**

To better meet the housing needs of Parisians, but also to limit new construction, **the Bioclimatic PLU also imposes new measures to encourage the production of housing rather than offices, by giving priority to existing buildings.** This also involves the fight against housing vacancy.

A • New buildings with a lower carbon footprint

The Bioclimatic PLU requires environmentally-friendly construction: materials with a low carbon footprint (wood, cut stone, hemp, raw earth) will be favored, and ambitious energy performance requirements for improved comfort in winter and summer are imposed. It goes beyond the mandatory regulatory thresholds.

The environmental impact of concrete is very high: carbon footprint, water consumption, extraction of raw materials. Despite strong regulatory constraints, the City has set itself **the goal of reducing the use of concrete in construction, development and rehabilitation as much as possible, with a view to gradually phasing it out.** As an alternative, it recommends the use of reused, recycled, renewable, recyclable, biosourced or geosourced materials.

To this end, the City of Paris is reinforcing its performance requirements for new buildings in anticipation of the forthcoming environmental regulations (RE2020). The bioclimatic PLU imposes a maximum indicator of impact on climate change of building components (Icc) less than or equal to 580 kg CO_2e/m² for collective housing buildings, and 710 kg CO_2e/m² for office buildings. However, for collective housing buildings within the meaning of RE 2020, a higher value than that indicated above may be allowed when this is strictly incompatible with compliance with the provisions of the first paragraph of sub-section UG.5.1.3 (summer comfort). The Bioclimatic PLU also offers innovative incentive mechanisms to encourage high environmental performance projects.

The City of Paris will also be stepping up subsidies for social landlords and condominium owners who use eco-friendly materials for their renovation projects.

B • For low-carbon worksite management

Building sites need to be better supervised, and it is imperative that they use less concrete, fewer trucks, less water and generate less nuisance, as was done by SOLIDEO to build the Athletes' Village in Seine-Saint-Denis. **The City of Paris will implement a clean worksite charter applicable to all building sites from 2024.**

The City of Paris will require the traceability and recovery of construction site "waste" so that it can be recycled or reused. In partnership with the National Institute of Circular Economy ("Institut National de l'Economie Circulaire") and the Greater Paris Metropolis, it will study the means to be implemented to develop this sector (creation of storage facilities, visibility of available resources, promotion of economic actors). This work should enable **the development of reuse platforms** based on Extended Producer Responsibility for construction materials.

C • Resource-efficient development projects that generate renewable energy

Development projects are the testing grounds for the Climate action plan. As exemplary projects, they enable to test innovations in order to meet more stringent energy and carbon targets. By 2023, 9% of Paris's non-woodland area was covered by a development project.

DEVELOPMENT PROJECTS ARE THE TESTING GROUNDS FOR THE CLIMATE ACTION PLAN

Among these projects, the concerted development zone (ZAC – "Zone d'Aménagement Concerté") Saint-Vincent-de-Paul (14th) was awarded the BBCA Excellent level label for its approach to controlling the project's carbon costs. To save materials and energy, demolition and reconstruction have been avoided. The reuse and re-use of materials, preferably on site, has enabled over **30%** (by mass) of materials to be re-used in rehabilitated buildings, and over **15%** in new buildings. In addition, the operation's energy supply is based on heat recovery from the non-potable water network.

In terms of the use of bio- and geosourced materials, the ZAC Chapelle Charbon (18th) is a pilot project, combining high-performance materials such as wood, coated straw, hemp concrete, stone and low-carbon concrete. The project's focus on resource management has also resulted in the reuse of **99%** of the soil excavated for the park's construction, and 95% of deconstruction materials. On the energy front, the project is served by a heat loop supplying the buildings with hot water and heating.

On the ZAC Python-Duvernois (20th), the use of wood and/or stone structures is favored, in addition to bio-sourced materials for the finishing work (insulation, joinery, cladding, etc.). The ZAC is also characterized by its ambitious approach to rainwater management, with extensive green roofs, open spaces and a central park including a 630 m² retention basin and a 400 wetland.

In terms of energy recovery, the Gare des Mines-Fillettes (18th) ZAC plans to use the geothermal power plant installed on the Olympic Arena site to produce cold, and to recover heat from the plant to supply a hot water loop serving the ZAC.

The city will continue to carry out virtuous and replicable experiments (sober building, low-tech, vertical solar panels on railings, etc.). Analysis of these experiments will enable to formulate recommendations for their generalization.

Generally speaking, the environmental performance of current and future development projects will be assessed with a view to deriving objective data in terms of consumption and production of renewable and reclaimed energy or water, use of geo- and bio-sourced materials, carbon footprints and other relevant data.

Last but not least, the city is also using real estate development as a lever to ensure that projects under private ownership take greater account of the Climate action plan.

Jean-Baptiste Gurliat / City of Paris, 2023

2. Reconciling urban, climate and heritage issues

In a city as rich in heritage as Paris, the methods and materials used in renovation work can clash with protection imperatives, leading to rejections, delays and additional costs. Furthermore, historic monuments and heritage buildings are likely to be affected by the effects of climate change, such as heat waves, droughts and floods.

Paris wishes to support building projects towards an aesthetic capable of combining heritage, adaptation and innovation. In line with the objectives of the Climate action plan, the City of Paris has initiated work on its built identity through the Manifesto for a New Parisian Urban Design.

This manifesto for a new Parisian urban aesthetic will promote buildings and public spaces that reflect a heightened sensitivity to the city's adaptation to climate change and the reduction of greenhouse gas emissions. It will showcase innovative architectural solutions that promote energy sobriety and efficiency, greening and respect for the scale and historic character of Paris. It will highlight the city's timeless beauty while introducing modern elements that contribute to the city's ecological transition.

A • Reconciling urban design and climate issues

The City of Paris will develop a new **heritage doctrine in conjunction with government departments to help buildings adapt to global warming.** In collaboration with the national authority of the French Buildings Architects (ABF – "Architectes des Bâtiments de France"), the City of Paris will create a roadmap setting out major renovation principles according to the architectural characteristics of buildings (Jules Ferry school, Haussmannian, etc.) in order to adapt construction principles to the preservation of Parisian urban heritage, improve information for owners from the outset and, above all, speed up renovations.

The City of Paris will develop a new heritage doctrine in conjunction with government departments to help buildings adapt to global warming.

B • Speed up administrative procedures

In addition to the major hurdle posed by the financial investment involved in energy renovation, public and private actors can face administrative difficulties, particularly when it comes to obtaining the necessary planning permission.

With a view to massively increasing the number of energy-efficiency renovation projects to meet Paris's climate objectives, it is essential to streamline the administrative side of renovation.

To this end, the City of Paris will be forging a stronger partnership between its departments, renovation stakeholders (social landlords, developers, architects, design offices and building contractors) and the Architectes des Bâtiments de France, in order to study the implementation of an improved, more fluid procedure for preparing and monitoring dossiers (more frequent upstream exchanges, pre-instruction, etc.), involving project owners and their various service providers as early as possible.

The City of Paris will insist on urban planning procedures for low-tech and rapid solutions for adapting Parisian buildings (insulation, installation of solar protection, roof conversions, etc.), which generally require transforming the external appearance of buildings, and for which these procedures must be simplified and accelerated in particular. This is the case, for example, for the installation of shutters and blackouts, or the painting of roofs white.

With a view to massively increasing the number of energy-efficiency renovation projects to meet Paris's climate objectives, it is essential to streamline the administrative side of renovation.

3. Putting Parisian roofs and basements to work for the ecological transition

City of Paris

A • Facilitating the evolution of Parisian rooftops

Meeting the objectives of the Climate action plan in terms of energy savings, carbon neutrality, adaptation and sobriety, requires to optimize existing built surfaces, in particular to develop the tools and methods essential to the ecological transition. In fact, some partially-used areas of housing, public facilities and commercial buildings offer enormous potential for the development of new uses.

In this respect, the perception of roofs as unusable space, or as space reserved solely for technical equipment, has changed radically in recent years. New uses for roofs are multiplying: elevation for residential use, solar production, rainwater harvesting, vegetation, urban agriculture, sports fields, convivial spaces, rooftops...

As essential levers for adaptation and ecological transition, the City of Paris wants to amplify their transformation.

To encourage the transformation of existing roofs, municipal transformation schemes will be strengthened, such as solarization, greening and cooling programs.

The bioclimatic PLU also gives priority to greening and agriculture in new buildings. The new scheme requires certain surfaces of the building to be planted, in particular roofs, terraces and spaces on slabs, in order to help limit the heat island effect in areas that are sometimes insufficiently or not at all planted. Vegetation and solar panels can be combined.

To promote and discuss alternative uses of rooftops, the city will support an annual festival along the lines of Rotterdam's Rooftop Festival.

B • The hidden potential of Parisian basements

Paris's subsoil also harbors resources that could be put to even greater use in the service of the area's resilience. Parking lots, in particular, can become levers for both mitigating and adapting to climate change, as the use of private cars declines. There are three main ways in which these spaces can be used, depending on whether they are developed on a permanent or ad hoc basis:

- The sustainable development of activities that meet a number of challenges and require a careful coordination of potential developments, such as secure bicycle parking, electric charging stations, the development of renewable energies and logistics storage sites;

- Mobilizing lost/unused basements is a priority for renewable cooling and heating production in Paris

- The temporary use of basements as shelters in the event of crises and extreme events such as heatwaves, which requires mapping of availability and access conditions to ensure efficient coverage of the city;

The City of Paris will conduct a study on the potential for transforming underground spaces. This study will measure the surface areas that can be freed up, the need to transform these spaces, and will propose planning scenarios for the city, arrondissements and even neighborhoods, taking into account respect for the peace and quiet of local residents in relation to these new uses.

IV. BY CONTINUING TO DECARBONIZE TRAVEL

In Paris in 2022, **the transport sector will account for 740,000 t CO_2e, or 15% of local emissions.** In the space of 10 years, municipal action has made it possible to drastically reduce the use of private cars, opening up more space for the development of active mobility and new uses of public space. This urban revolution **has contributed to a 60% reduction in carbon emissions in this sector.** The City of Paris is committed to continuing its investment in active, low-carbon, inclusive mobility, developing cycling infrastructure and reclaiming public space. With the advent of the "all-car", the 20th century preempted and paved over most public space. Decarbonizing transport goes hand in hand with reclaiming this space for soft mobility, pedestrians and nature in the city

In just a few years, changing modes of transport and the rise of soft mobility, such as bicycles, have transformed Paris. The City of Paris intends to go further and faster in reducing the number of cars, which is the only guarantee of a genuine decarbonization of Parisian transport in line with health standards on air quality.

1. Rebalancing public space to make room for low-carbon mobility

A • For a peaceful city

Reducing traffic in Paris has necessitated major changes to the city: from the pedestrianization of the river banks and major squares to the introduction of bicycle lanes, the City of Paris has demonstrated its determination to give space back to Parisians and to encourage mixed use of public space, which must also be kind to the women who walk in it. To keep pace with these changes, the City of Paris has rethought and clarified the rules for sharing Parisian public space, reaffirming the absolute priority given to pedestrians. Particularly vulnerable, pedestrians are at the heart of the city's road development policy.

MORE SPACE FOR PEDESTRIANS

Walking is the primary mode of mobility in Paris, accounting for 66% of all journeys in the city. The City of Paris will therefore be diversifying its pedestrian-friendly initiatives, with the roll-out of “school streets” and their extension to other types of establishment, Paris Respire (closed streets on weekends or specific dates), the "Embellir votre quartier" program, and the implementation of the Oasis approach and its placettes in all arrondissements. Streets will be planted, sidewalks widened and driveways transformed into promenades. These developments will help reduce road noise pollution.

With this in mind, surface parking will be rethought. It accounts for 8% of public space, yet only 33% of Paris households have a car. That's why, by 2030, the City of Paris **will be transforming 50% of parking spaces, i.e. 60,000 spaces,** to give priority to pedestrians, active and shared modes of transport, and to green public space.

Thanks to these actions, which enable the recovery of public space currently devoted to automobile traffic, more than **100 hectares will be given back to pedestrians by 2030** in order to pacify the city. They will also contribute to the greening of public spaces.

REGULATING AUTOMOBILE TRAFFIC

To reduce automobile pressure, the City of Paris will continue to take measures to regulate road traffic. The systematic introduction of a **30 km/h speed limit** off major roads is an initial response. The City will complement this provision by developing pedestrian areas, bicycle lanes and "zones de rencontre", spaces shared by all users, where speed is limited to 20 km/h and pedestrians have priority.

At the end of 2024, the city will inaugurate the first large-scale traffic-calmed zone, also known as a **Limited Traffic Zone (ZTL – “Zone à Trafic Limité”)** in central Paris. Roads will be reserved for pedestrians, bicycles, public transport and certain categories of users (local residents, shopkeepers, craftsmen, people with reduced mobility, etc.). As of 2024, tourist coaches will no longer be able to circulate in the center of Paris.

To take this a step further, the City of Paris is modifying traffic plans by district, in all arrondissements, with the aim of eliminating through-traffic - traffic that simply passes through districts without stopping. Only strictly necessary journeys, whether for health or work, local services or shared vehicles such as buses or cabs, will be allowed to circulate in Parisian neighborhoods. **By 2026 the City of Paris will have created one major pedestrian hub per arrondissement** (Montmartre, Réunion, Jardin de Reuilly, Marais, etc.).

15 major traffic arteries will also be transformed, to reduce car traffic and promote pedestrian traffic and soft mobility; these arteries will be planted and light-colored surfaces will be favored: rue de Clichy (9th), rue du Faubourg Saint-Denis (10th), avenue Claude Vellefaux/ Parmentier (10th), boulevard Beaumarchais (11th), boulevard Richard-Lenoir (11th), avenue Ledru-Rollin (12th), avenue d'Italie (13th), rue Tolbiac (13th), avenue du Général Leclerc (14th), rue de la Convention (15th), avenue Foch (16th), boulevard Pereire (17th), avenue Simon Bolivar (19th), rue de Bagnolet (20th) and rue Belgrand (20th).

The City of Paris will also continue to convert traffic lanes into bus lanes, to promote the only 100% accessible mode of transport with an unrivalled network of local services.

In order to measure the impact of these developments on the quality of life of local residents, **before-and-after air quality and noise measurement** campaigns **will be carried out.** In Saint Merri (Paris Centre), the pedestrian and cycle-friendly layout around the school has led to a 25% reduction in outdoor and indoor pollution

TRANSFORMING THE RING ROAD

A 35 km-long ring road surrounding Paris, the ring road is used every day by over a million vehicles, making it the busiest road in Europe. It is responsible for increased exposure for the residential buildings along its length (40% of which are social housing), and contributes to Parisian background pollution, making its transformation a social and health emergency.

With this in mind, the City of Paris has embarked on a metamorphosis of its ring road into **a traffic-calmed green continuum**, including a 500-metre strip on either side of the infrastructure. Enabling the residents of the ring road to live and breathe better means reducing traffic and leaving more room for nature.

The transformation of the gates into squares will continue, and the transformation of the axis will be accompanied by the intensification of planting on the embankments, the central median strip and certain side roads. The transformation of the gates will also strengthen links between Paris and the metropolitan area, improving pedestrian and cycle connections that are currently very difficult.

By 2030, the City of Paris will transform the ring road into an urban boulevard, starting with the lane reserved for athletes during the Olympic and Paralympic Games, which will then be reserved for public transport and car-sharing, whereas today 80% of cars on the ring road carry just one person.

On October 1st 2024, the City of Paris lowered **the speed limit on the ring road to 50 km/h** for the 1.2 million users who use it every day, representing 3% of the daily journeys in the Ile-de-France region. The improved traffic flow on the ring road should improve air quality in the vicinity of this infrastructure, and thus reduce exposure of the surrounding population, which is the most exposed to air pollution. The impact of the project will be monitored at several levels and over several timeframes. A multi-year monitoring study has been entrusted to Airparif and Bruitparif for the period 2024-2029.

1,2 million
parisian use the ring road every day

B • For a city on the move: 100% cycling in Paris

By stepping up its proactive bicycle development policy, the city aims to become a world capital for cycling. Representing almost 11% of journeys in Paris, the aim is to reach around a quarter of all journeys by 2030.

DEVELOPING CYCLING INFRASTRUCTURE

There are over 1,000 km of cycle paths in Paris, including 300 km of safe lanes. By 2030, the aim is to provide a complete network of cycle paths throughout the capital. To achieve this, **by 2026, the city plans to create and secure an additional 180 km of lanes.** It will also systematize the introduction of two-way cycle lanes, **bringing the total number of new cycle facilities to 390 kilometers.** The main network, in continuity with the Greater Paris Vélopolitain (the greater metropolitain bike axes), will connect with cycle paths in neighbouring areas. The secondary network, meanwhile, will offer a range of options for journeys of more than one kilometer, particularly useful for journeys between arrondissements. The local service network will ensure that Parisians can cycle anywhere in the capital, in complete safety and without emitting greenhouse gases.

The City of Paris will work closely with neighboring municipalities and the Metropole du Grand Paris to ensure the continuity of pedestrian and cycling infrastructures.

INCREASE BICYCLE PARKING FACILITIES

Fear of theft is the number-one reason for people to give up cycling in Paris. To remedy this situation and guarantee secure parking facilities for all, the City of Paris will be stepping up its public spaces, developing secure parking facilities in all its parking lots, and facilitating the installation of bicycle rooms in buildings through the Bioclimatic PLU. The City of Paris has thus set itself the target of providing **130,000 new bicycle parking spaces** by 2026.

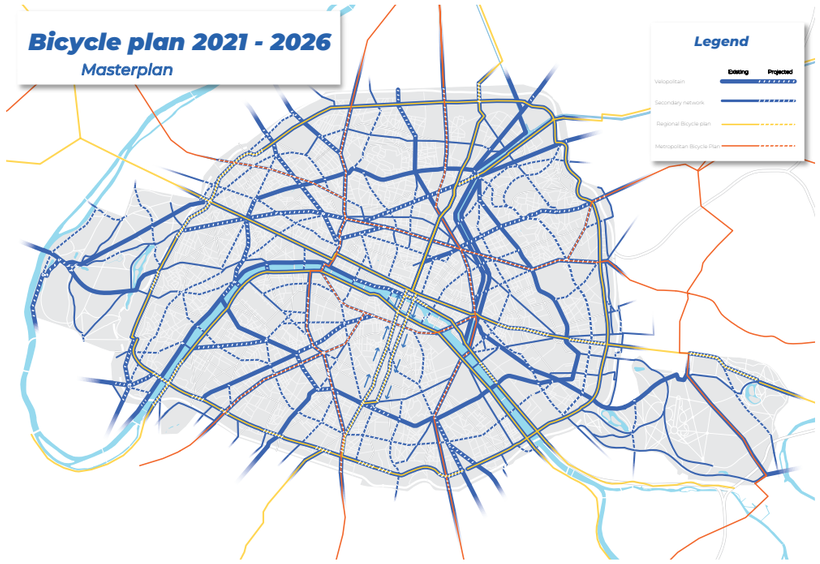
PROMOTING THE LEARNING AND USE OF BICYCLES

To support this "velorution", the City of Paris is mobilizing all the means at its disposal to encourage cycling. From the earliest age, the City of Paris wants to generalize "***knowing how to ride a bike***" in all Parisian elementary schools, by setting up a "*Bike Permit*". The aim is to ensure that **all young Parisians know how to ride a bike by the time they reach secondary school.**

By mobilizing the arrondissements, the City of Paris will support local initiatives by associations, in particular bike schools to facilitate adult learning, as well as the **creation of a self-repair workshop in each arrondissement.**

Figure 20

Map of the 2021-2026 Bicycle Plan



City of Paris – roads infrastructures & Mobility directorate

2. Accelerating the energy and low-carbon transition in mobility

By adopting its decarbonization trajectory in 2018, the City of Paris has committed to turning the page on thermal vehicles. To achieve this goal, the City of Paris is pursuing the transformations made in favor of energy-efficient and non-polluting modes of transport. To reduce the need for travel, and in particular commuting, the City of Paris is working, via its Local Urban Plan, to rebalance the distribution of surface areas dedicated to the tertiary sector across the metropolis and ultimately reduce the overall surface area of offices in Paris, while supporting the economic rebalancing between east and west.

A • Priority to public transport

Paris offers a unique public transport network, with the highest density of metro stations in the world. With 5.4 million journeys made in Paris every day, public transport is a key factor in the decarbonization of Parisian transport.

Although the City of Paris is not directly responsible for organizing public transport, it is the largest contributor to the Ile-de-France Mobilité (Region Transport Agency) budget. It is strongly committed to reinforcing the public transport offer on its territory, and advocates the maintenance and reinforcement of the public transport service to ensure that it remains protected from market forces. Every year, it supports the mobility of young people by reimbursing the Navigo Pass for some 90,000 young Parisians.

The City of Paris is keen to develop high-capacity public transport networks such as the metro and tramway. It is participating in the extension of lines 11 and 14, supporting the extension of lines 1 and 10, and the merger of lines 3-bis and 7-bis to improve service to northeast Paris. It also hopes to complete the final section of the Paris tramway between Porte Dauphine and Pont du Garigliano before 2030, and to improve connections with other areas such as Seine Saint Denis, with the extension of the T8 to Rosa Parks station.

To make a success of the ecological transition in transport, it must be accessible to all. **The City of Paris is opposed to any increase in fares for users, and is working to reduce them.** It guarantees free transport for all young people, and for the elderly on a means-tested basis, by reimbursing season tickets.

The City of Paris is also lobbying its partners to **speed up investment in accessibility for people with disabilities,** starting with work to make metro lines accessible. By the end of 2024, the City will have made all the bus lines making up the Paris surface network accessible (with the exception of two lines that take a route through areas where the natural gradient of the street is too great, such as line 40, which runs through the Montmartre district). Since buses account for 27% of commuter traffic in Paris, **the city will step up its investment in road improvements to improve traffic flow.** It will support Ile-de-France Mobilités in the ecological transition set out in the "*Bus Plan 2025*", which calls for the conversion of 100% of bus centers to electric and bioNGV by 2025, and the deployment of more than 600 clean buses a year.

In order to adapt the public transport offer to climate change, and in particular to the shift in evening activities during heat peaks, **the City of Paris will advocate the reinforcement of the night-time public transport offer** for employees working staggered hours and for night owls. It will also ask RATP and SNCF to carry out a study on the resilience of the public transport network in the face of climate change and the expected rise in temperatures in the capital, both in terms of infrastructure and passenger reception conditions.

The City of Paris is also opposed to the development of additional air transport, such as flying cabs, which would add further pollution and nuisance. In line with the plan to reduce the surface area of the heliport located in the 15th arrondissement, the City of Paris also calls for a sharp reduction in helicopter air traffic, particularly commercial flights, with a view to eventually closing the Paris heliport altogether.

B • Formalize the territory's bunkering strategy

Paris supports the European Union's ambition to ban the sale of combustion-powered vehicles by 2035. It intends to be a pioneering city in the transition to less polluting vehicles, **by developing new solutions for the massification of cleaner mobility.**

To facilitate the transition to low-carbon mobility, the City of Paris has launched the Belib' scheme in 2021, proposing a **Parisian public network of charging stations for electric vehicles.** Through this network, the City offers a range of charging facilities tailored to different users. The charging stations are scattered throughout the city, integrated into the parking strip. Paris parking lots are also being modernized, with more and more recharging stations being installed. The Madeleine parking lot, for example, will become the parking lot with the largest electric recharging offer in Europe.

It also obliges development projects, via the bioclimatic PLU, to integrate fast electric charging hubs and hydrogen stations, or to develop shared private charging infrastructures for professionals (RATP depots, municipal buildings with parking), notably on the Quai d'Austerlitz or in the ZAC Bercy Charenton.

To keep pace with these changes, the city **will gradually transform its concession service stations into low-carbon energy stations.** A hydrogen production and distribution station has already been installed at Porte de Saint-Cloud. A multi-energy station will be installed on the Pont de Grenelle by 2030, in front of the Maison de la Radio. On October 1, 2024, the Paris City Council amended the concession contracts for 4 of the 15 service stations in Paris, located at Porte d'Aubervilliers, Quai d'Issy-les-Moulineaux and Porte d'Orléans. These stations can no longer sell diesel fuel.

The gradual phasing out of diesel and gasoline engines in Paris, which will have a highly beneficial effect on improving air quality, goes hand in hand with the increase in new needs for mobility (hydrogen production and/or distribution stations, continued deployment of electric charging stations, etc.). To anticipate and meet these needs as effectively as possible, **the city will draw up a "master plan for the energy transition of mobility"**, which will look at energy requirements for future mobility and the energy supply for transport.

C • Stepping up measures to promote the use of the most carbon-intensive engines

In order to anticipate the end of carbon-based mobility, the City of Paris is implementing a number of measures to regulate its use in the capital.

In 2022, the City of Paris has set up a new **scheme to help people move towards more environmentally-friendly mobility,** stepping up financial aid by targeting more modest groups, including:

- Individuals: purchase of bicycles, electric bikes, cargo bikes, subsidies for the Mobilib' car and van-sharing service, free public transport for schoolchildren and senior citizens, etc.
- Collective housing: create secure bicycle shelters
- Professionals: acquisition of electric or cargo bikes, cars or light commercial vehicles, electric or hydrogen-powered trucks, acquisition of a pollution control system or alternative energy engine for boats.

The City of Paris is studying the feasibility of a "*one-stop shop*" bringing together the other ecomobility subsidies granted by the State, the Region, the Metropolis and the City of Paris.

The City is also calling for **conversion bonuses to be stepped up, subject to income or sales conditions,** and targeted solely at Crit'air 0 vehicles, in line with the gradual phase-out of internal combustion vehicles.

The City of Paris supports shared mobility with several thousand self-service scooters and electric bikes, as well as the largest public bike-sharing service, Vélib', with 400,000 subscribers.

The city is also pursuing its parking policy in line with the objectives of decarbonizing transport. This concerns both existing public spaces and those created as part of development projects. Parking is free for low-emission vehicles, while two-wheeled thermal vehicles have had to pay for parking since September 2022.

To encourage a reduction in the number of SUVs and 4x4s circulating in the capital (15% of the vehicle fleet in 2023), which increased by 60% between 2019 and 2023, **the City has introduced since October 1er 2024 a differentiated non-residential parking tariff for heavy, polluting and bulky vehicles with a tripling of the parking rates in force for the vehicles concerned.** This measure follows a vote held on February 4, 2024, following which 78,121 Parisians expressed their views and 54.55% of them voted in favor of the creation of a

specific tariff. Heavier and less aerodynamic, SUVs consume on average 15% more fuel and generate 20% more greenhouse gas emissions than a standard vehicle. Even electrically powered, SUVs generate more pollution: being heavier, particle emissions due to braking are higher. Their size also makes them more dangerous for pedestrians: in the event of a collision, accidents involving an SUV are twice as fatal for pedestrians as those involving a standard car

Finally, the city **will step up checks and fine drivers whose engines are running when stationary** - a stationary engine emits only 15% less than when driving, which has a significant effect on the quality of the air breathed by nearby pedestrians.

The City of Paris is also supporting specific actors, such as the film and audiovisual industry, with the implementation of an **ecological transition plan for film shoots** to reduce the fleet of combustion-powered vehicles and regulate the use of combustion-powered generators before they are banned from Paris territory.

D • Decarbonizing travel for the Paris administration

The Administration Mobility Plan (PDAP – "Plan de déplacements de l'administration parisienne") aims to improve the mobility of its employees and travel linked to municipal activities (logistics, waste collection...) by encouraging the least polluting and most energy-efficient modes of transport (travel being the source of almost 20% of total greenhouse gas emissions and 9% of the administration's energy consumption). A pioneer in this field, the City of Paris has already switched its entire fleet of refuse collection vehicles from diesel to gas

In 2023, the City adopted its third PDAP for the period 2024-2030. While the previous plans focused on the de-dieselization and electrification of the municipal fleet, and on encouraging more virtuous travel practices, PDAP3 will pursue these objectives and go further by placing the goal of decarbonization at the center.

By 2030, the city is committed to phasing out the use of internal combustion engines for its vehicle fleet, with an initial target of 50% of the fleet using low-emission or carbon-free vehicles by 2026. In addition, it will gradually reduce the number of vehicles in its fleet, notably by developing shared-use solutions and promoting active mobility.

For technical vehicles for which there are no electric alternatives, the City **will turn to the use of bioNGV, derived the methanization of food waste, or biofuels.** The systematic replacement of gasoline-powered sidewalk cleaning machines (light vehicles) by electric machines, with a 100% electric fleet, will be achieved by 2026. As the market matures, **the gradual switchover to collection with electric tippers will be undertaken, and will go hand in hand with the necessary electrification of garages and adaptation of their power supplies.**

City of Paris

> By 2030, the city is committed to phasing out the use of internal combustion engines for its vehicle fleet, with an initial target of 50% of the fleet using low-emission or carbon-free vehicles by 2026.

E • Eco-logistics: doing more with less

In response to the need to move logistics towards a more sustainable approach, and thus contribute to achieving carbon neutrality, the City of Paris is implementing a strategy to facilitate the work of professionals and limit the environmental impact of these activities.

The first step is to make last-mile logistics more virtuous by mobilizing land and real estate, particularly in areas with shortages. The City of Paris is stepping up its strategy of direct and indirect control of real estate infrastructure, in order to gain a foothold in the very tight rental market for business premises. **A plan to transform and enhance the value of currently under-utilized real estate assets will enable sites to be converted to accommodate logistics and production activities.**

As an example, the City of Paris is working with the Gares & Connexions grouping to develop an **urban logistics space for each of the Paris stations, with a minimum surface area of 1,000 m².** These will enable local service to be provided on foot for deliveries of less than a kilometer, by bicycle for deliveries of between 3 and 4 kilometers, and by light electric utility vehicle for journeys of around ten kilometers.

New urban development projects will include a minimum percentage of logistics space to organize distribution flows for shops, businesses and residents. By 2030, **the city will have set up 50 emission-free urban logistics sites**, some of which will be low-rent and reserved for actors in the social economy.

The first objective is to make loading and unloading operations easier and safer by safeguarding existing delivery areas and deploying them on streets where they are lacking. Between now and 2026, **1,000 additional delivery areas** will be created, particularly on streets identified as under-supplied, in addition to the 9,000 already in Paris.

New facilities will facilitate the development of **cyclo-logistics**. In particular, the city is looking into the possibility of setting up tour preparation sites close to final distribution points (a bicycle's radius of action is around 2 km), in the form of real-estate sites (urban cyclo-logistics areas) or in public spaces (micro-hubs). These spaces must be accessible to heavy goods vehicles.

The City of Paris is designing new cycle paths to take into account the dimensions of three-wheeled scooters. In line with the 2022-2026 sustainable urban logistics strategy, Paris will facilitate the day-to-day loading and unloading of these private bicycles, **by creating 1,000 special delivery areas for cargo bikes near major generators of two-wheeled traffic. The target will be doubled to 2,000 by 2030.**

The City of Paris will support the development of cyclo-logistics in order to improve the working conditions and status of self-employed cyclist delivery drivers. The first **Maison des Coursiers** has been set up on boulevard Barbès to provide delivery drivers with better information on their rights. The City will study the conditions for making this project sustainable and expanding it, and will give delivery drivers, and more particularly self-employed drivers, access to existing services such as the Maisons de la Vie Associative et Citoyenne. The City will also work with the platforms and merchants to draw up a social charter and encourage actors to develop responsible approaches in Paris.

> By 2030, the city will have set up 50 emission-free urban logistics sites, some of which will be low-rent and reserved for actors in the social economy.

3. Rail and river at the heart of low-carbon freight transport

The City of Paris intends to make better use of the Seine, the canals and the Paris rail network, with the aim of significantly reducing truck transport to the capital.

SUPPORTING THE DECARBONIZATION OF RIVER FREIGHT

Waterways are a much lower-emission solution than road transport (a 5-t convoy is equivalent to 250 trucks). However, unlike the rest of France, the vast majority of Parisian boats are passenger vessels (83%), whereas the national river fleet is predominantly made up of freight boats (43%). It is therefore necessary to **step up the promotion of river freight in conjunction with river and Seine Axis stakeholders, as it links all the territories from Paris and the Greater Paris Metropolis to Le Havre, via Rouen, and to help make it greener.**

The City of Paris has joined forces with the French waterway navigation authority (VNF – "Voies navigables de France") to promote sustainable river logistics on the Seine, Marne and Oise rivers, as well as on the canals of Paris. This involves prospecting for future customers, boosting the competitiveness of the river mode and supporting the energy transition of boats, in conjunction with transport operators, shippers and institutional actors.

The City intends to rethink **the financial assistance granted for engine changes,** transforming it into a subsidy for the Modernization and Innovation Assistance Program managed by VNF for greater efficiency and clarity.

> The City of Paris intends to make better use of the Seine, the canals and the Paris rail network, with the aim of significantly reducing truck transport to the capital.

As with land transport, the greening of the river fleet can only be **achieved through the creation of infrastructures that enable boats to be supplied with low-carbon energy.** To encourage the electrification of quaysides, the French waterway navigation authority establishment is working with HAROPA to deploy a network of electricity distribution terminals on the Seine for river freight boats, in order to reduce pollutant and greenhouse gas emissions from parked boats. Electric charging stations are also scheduled to be deployed from 2025-2026 at certain ports of call on the Paris canals.

ENHANCING THE ECONOMIC ATTRACTIVENESS OF RAIL FREIGHT

Sites with rail and waterway connections are rare. They can only be developed if their business model takes into account the fact that they will initially have to operate solely with road freight. Indeed, many factors are still holding back the development of urban logistics by river and rail: regulations, the necessary adaptation of the professional sector, the upgrading of rail infrastructures, the priority given to passenger transport in the allocation of train paths. The taxation of urban rail terminals also needs to be adapted.

To overcome these obstacles, **the City is mobilizing the entire logistics ecosystem.** It supports the development of rail freight by developing dedicated infrastructures such as the Chapelle International logistics hotel, which opened in 2018.

PRESERVING AND PROTECTING RESOURCES AS COMMON GOODS

The pressure exerted on natural resources by human activities is exacerbated by climate change. Each year, the ever-earlier announcement of the "*day of overshoot*" alerts to the vulnerability of our environment by communicating the day on which humanity has consumed all the natural resources that the planet is capable of regenerating annually. On current trends, 1.75 planets would be needed to meet current resource consumption.

Paris may appear robust in the face of climate change, but its territory is vulnerable to increased heatwaves, droughts and uncertain flooding. These changes affect the availability and distribution of resources, particularly those essential to city life: energy, water and materials.

In this context, the City of Paris must meet the challenges of the energy and climate crisis by implementing a *policy of sobriety in the use of natural resources.* The finiteness of these resources calls for a rethinking of the notion of need, and a consideration of natural resources as a "*common good*". As "*commons*", resources need to be managed rather than extracted, in a spirit of solidarity.

By declaring energy, water and materials to be "*common goods*", the City of Paris is committed to implementing a policy of triple sobriety through the controlled management and efficient use of its resources.

I. MOVING AWAY FROM FOSSIL FUELS TO A 100% RENEWABLE ENERGY TERRITORY

Since the 1st Industrial Revolution, almost perpetual growth on a global scale has generated a frantic race for energy resources, which have become major strategic resources for everyone. Over the decades, consuming more and more energy to produce more has become a widely shared or sought-after way of life. Between 1971 and 2018, primary energy consumption in France rose by 60%. The oil shocks of the 1970s, and more recently the energy crisis of 2022, have shown just how vulnerable our societies have become, heavily impacted by variations in increasingly unpredictable energy markets. This is due to our dependence on fossil fuels, often transported over thousands of kilometers in networks or by ship, and subject to natural, industrial or geopolitical hazards. At the end of the 2000s, Paris was 90% dependent on fossil fuels for its energy consumption.

Aware of the need to break with this model, since its first Climate action plan in 2007, Paris has been committed to a strong energy transition, which involves considering the scarcity of energy at its true value, and therefore making a firm commitment to saving it while ensuring that it is accessible to all for essential needs.

Between 2004 and 2021, Paris' energy consumption fell by 15%, and the share of local renewable energy production tripled over the same period, from 2.3% to 7%.

To make Paris a 100% renewable city and contribute to carbon neutrality, **the City of Paris has set the following targets for 2050 (compared with 2004):**

TARGETS FOR 2050

- Reduce the city's energy consumption by **-50 %**
- **100 %** renewable energies within local consumption
- **20 %** of which produced locally

To achieve this goal, it has set the following intermediate targets for the period up to 2030:

TARGETS FOR 2030

- **-35 %** reduction in local energy consumption
- **45 %** renewable energies in consumption
- **10 %** of which produced locally

The City of Paris will also be confronted with far-reaching changes in energy use, notably an increase in electricity requirements (mobility, heat pumps, etc.). However, this increase will be offset by efforts to reduce energy consumption, improve energy efficiency and renovate buildings.

1. Reduce energy consumption

Paris has set itself the ambitious target of reducing energy consumption by by 2030 and by 2050.

For buildings, consumption should not exceed 23.3 TWh in 2030 and 18.7 TWh in 2050. In 2022, energy consumption was estimated at 28.5 TWh, excluding transport. Although this represents a 15% reduction on 2004 levels, there is still a great deal to be done to achieve these targets.

To achieve these ambitious targets, the City of Paris has been using a number of levers since 2007: **energy-efficient building renovation, improving the energy performance of equipment and energy sobriety.**

➔ **Actions concerning the energy renovation of buildings are presented in II. Massive renovation of buildings**

A • Municipal energy efficiency plan

Municipal facilities account for only of the city's energy consumption, but they must be exemplary in their consumption.

In addition to the renovation of its buildings since 2007, the City of Paris has undertaken major programs to reduce energy consumption in its buildings, reinforced in September 2022 by a sobriety plan to respond to the energy crisis.

Through this Energy Saving Plan, the City aims to achieve a reduction in energy consumption by the end of 2024, based on three key measures applied to municipal services:

- lowering temperatures in city buildings from 19°C to 18°C (with the exception of facilities for vulnerable groups) and lowering temperatures by 1°C in swimming pools;
- the winter heating season has been postponed by one month to the All Saints' vacation;
- turning off ornamental lighting earlier.

The scheduling of the heating season for municipal buildings and social housing will also be adapted to objective temperature criteria.

In addition, a trial will be carried out in certain municipal buildings with the installation of presence detectors to reduce consumption.

To maintain this effort, the city is gradually deploying a network of "energy efficiency referents", designed to accelerate savings, sustain them over time, and spread a deep-rooted, sustainable and shared culture of energy efficiency.

In the first 6 months of the plan's implementation, the City of Paris reduced the energy consumption of its municipal fleet by 6.7%. **The energy efficiency plan will be continued and strengthened, with a target of by 2030.** These measures will add to the energy savings achieved through the renovation of the municipal building stock.

To enable Parisians to better measure the impact of these actions, the City **will set up a display of consumption and any production by public facilities for** the public and municipal employees.

> **In the first 6 months of the plan's implementation, the City of Paris reduced the energy consumption of its municipal fleet by 6.7%. The energy efficiency plan will be continued and strengthened, with a target of by 2030.**

B • The energy-efficient City of Light

An important lever for the city to reduce its electricity consumption, public lighting comprises 170,000 light points (emergency lighting, traffic lights and monument illuminations). Renovation work on public lighting has reduced energy consumption by (58 GWh) in 2020, compared with 2004. The City of Paris has renewed its street lighting maintenance contract for 2021, **with the aim of reducing energy consumption by a further per year over the next 10 years.** 70,000 LEDs will replace energy-guzzling lights.

The impact of artificial light on flora and fauna has been known for some fifteen years, and is now clearly taken into account in choices concerning public lighting. **The City of Paris will combat light pollution by implementing a master plan for lighting development, with the aim of reducing light pollution emitted by lighting and buildings by 50%.** It will, for example, set the lighting level of certain streets at warmer color temperatures, which will have less impact on biodiversity.

C • Mobilizing local actors towards greater sobriety

To reduce the of consumption outside the municipal network, Paris is mobilizing all local actors, including citizens, businesses and small commercial outlets.

The city is firmly committed to an active policy of energy conservation, and as of July 2022 will be **issuing bylaws banning the heating of terraces in winter, and prohibiting the opening of doors to businesses that are heated in winter or air-conditioned in summer.** Compliance with these rules is monitored by the municipal police, who have been sensitized to the issue.

To keep everyone involved, **the city will be running annual communication campaigns to promote energy-saving actions before winter and summer.**

More specifically for Parisian condominiums, which account for 45% of consumption, the Parisian Climate Agency (APC – "Agence Parisienne du Climat") has already developed a number of tools (DECLICS challenge, ecogestures workshops, simplified energy balance, sustainable building management guide). The year 2024 saw the launch of a trial for a **complete sobriety program for condominiums** (energy, waste, consumption and water), to complement the support provided for renovation projects. The next few years will be devoted to rolling out this pilot project. In Paris, collective heating systems are in the majority. A 2019 ADEME study highlights that **the installation of heating cost allocators,** ensuring individualization of charges within a condominium, **results in average savings of 17%. The City of Paris and the Parisian Climate Agency will be testing the system with volunteer building managers from 2025.**

In schools, **a Class'énergie challenge** will be offered, to teach good habits from an early age.

D • Digital Responsibility

The digital sector accounts for between 2% and 4% of the world's greenhouse gas emissions, equivalent to those of air traffic. It also accounts for almost of the world's electricity consumption; its exponential growth will multiply its electricity consumption and triple its carbon footprint by 2050. The sector is also placing heavy pressure on water resources and rare earths.

According to the French Ecological Transition Agency ADEME and the French telecommunication authority (ARCEP - "Autorité de régulation des communications électroniques, des postes et de la distribution de la presse"), nearly 80% of this carbon footprint comes from the manufacture of terminals (televisions, smartphones, computers, connected objects, etc.), while their distribution and use account for only around 20% (mainly the consumption of data centers, and more marginally fixed or mobile network infrastructures). In environmental terms, controlling the life cycle of equipment is therefore at the heart of the levers for reducing the digital footprint.

To meet this societal challenge and help reduce the environmental footprint of digital technology, **the City of Paris will adopt a cross-functional digital strategy and associated action plan by early 2025.**

> **The digital sector accounts for between 2% and 4% of the world's greenhouse gas emissions, equivalent to those of air traffic.**

E • The public energy data service in Paris, better understanding for better action

Achieving the City of Paris' objectives requires a more detailed understanding of the area's energy situation, quantifying consumption, potential savings and renewable energy production, and identifying opportunities for sharing these resources.

Giving as many people as possible access to this information will facilitate decision-making, projects, private or citizen initiatives and changes in behavior.

A great deal of work has been carried out since 2004 to gain a better understanding of energy consumption, facilitated by the widespread deployment of smart meters. Tools have been put in place to make decision-making easier and more efficient. In conjunction with the Parisian Climate Agency and the Parisian Urban Planning Agency (Apur), the city has developed a professional tool for recording energy consumption and building characteristics. This tool makes it possible to better target needs and potential collective actions in favor of energy decarbonization.

In 2025, the City of Paris will open a portal centralizing energy consumption and production data for its territory. It will facilitate access for every citizen, or energy consumer, to relevant and accurate energy data, enabling them to make the right choices to reduce their energy consumption, or to have greater visibility over local production. It will also provide information on the city's potential renewable energy sources.

> **In 2025, the City of Paris will open a portal centralizing energy consumption and production data for its territory.**

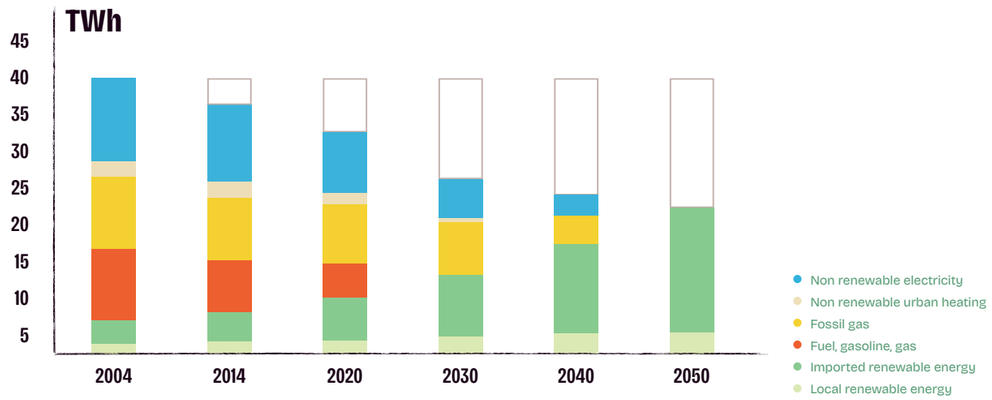
2. Accelerate the phase-out of fossil fuels and aim for 100% renewable energies

In Paris, over 50% of the energy consumed in the area is still of fossil origin, mainly due to the use of gas (35% of consumption excluding mobility) and fuel oil (8% of consumption).

Achieving carbon neutrality will require, in addition to measures to reduce energy consumption, a switch to 100% renewable energy, enabling to move away from particularly polluting fossil fuels.

Figure 21

Observed and expected trends in Paris' energy mix



City of Paris, 2018

This will require the commitment of all actors in the chain, from energy producers to consumers, including adaptations to the transmission, distribution and storage systems.

To overcome this dependence on fossil fuels as quickly as possible, the City of Paris has the largest district heating and cooling networks in France, which, alongside local solar energy, geothermal energy and the green part of the national mix, will enable Parisians to consume 19.3% of renewable and recovered energy (EnR²) by 2021.

By 2030, 2.6 TWh of the 23 TWh consumed in the city will come from renewable and recovered sources, thanks to a multiplication of local solar (photovoltaic and thermal), geothermal and heat recovery production. In addition, the greening of the heating network, the tripling of the cooling network and the decarbonization of the national energy mix will enable Paris to reduce its consumption of fossil and fissile energy.

By 2050, Paris's total energy consumption of 21.9 TWh will be met by district heating (fully greened) and cooling networks, local production of renewable energies from solar, geothermal and organic sources (biogas and biofuels), and the fully decarbonized national electricity grid.

To achieve this paradigm shift, the priorities of the City of Paris are clear: rapidly eradicate the most emissive fossil fuels (coal and fuel oil), drastically reduce the use of fossil gases, develop renewable heating and cooling networks, and promote the consumption and production of renewable energies.

A • Paris, an accelerator for renewable energies

The development of renewable energies in Paris clearly emerged as one of the priorities of Parisians and local stakeholders during the consultation process prior to drawing up the Climate action plan. While a number of obstacles to the development of renewable energies in Paris were identified (notably the density of the urban fabric and the lack of large plots), the potential for solar energy, geothermal energy and heat recovery is no less promising. Based on the law to accelerate the production of renewable energies, **Paris will make its entire administrative territory a zone for accelerating renewable energies, in particular solar, geothermal and heat recovery, with the exception of large-scale wind power.** Definition maps are appended. This zoning will enable Parisian projects to benefit from simplified siting procedures and financial support through calls for projects promised by the French government.

B • Plan to accelerate Paris' energy transition

At the level of the City of Paris, the switchover also requires a precise assessment of the possible scenarios for moving from one scheme to another, taking into account the urban, land, economic and social realities of Paris. These simulations are necessary to better anticipate current trajectories and improve the effectiveness of both public and private decisions. **The City of Paris will complete the current trajectories for the use of all energies according to use (including mobility) through a multi-energy master plan.** This will make it possible to assess the effectiveness of actions taken by actors at all levels. This dynamic tool will be regularly updated in line with technological developments (hydrogen, heat pumps) and opportunities (geothermal energy, waste heat, etc.).

C • Accelerating the shift away from fossil fuel and gas to less carbon-intensive and renewable energies

Fossil fuels are still the biggest emitters of greenhouse gases. Fuel oil and coal also contribute to local air pollution. **The City of Paris is aiming for a total phase-out of fuel oil by 2030, and of fossil fuels by 2050.**

ACCELERATE THE PHASE-OUT OF FOSSIL FUELS FROM MUNICIPAL FACILITIES

The City of Paris has undertaken to **replace the last coal-fired plant in its heating network in May 2024.** This unit will be replaced by biomass combustion from regional or even national sources, generating savings of over 100,000 t CO2 per year.

With regard to municipal buildings, the City of Paris will continue its efforts to eliminate all oil-fired installations by early 2025. The City of Paris **will also implement a plan to phase out the use of fossil fuels for its municipal facilities by 2040,** in particular by connecting them to the heating network.

SUPPORTING CO-OWNERS AND PRIVATE ACTORS

By 2021, the City of Paris and the Agence Parisienne du Climat will have counted some 1,100 oil-fired condominiums (around 30,000 homes) in Paris. A special program has been set up to raise awareness and encourage condominiums to replace their oil-fired heating systems. **The City of Paris is maintaining its objective of eradicating the use of fuel oil by 2030.**

To ensure that the transition is truly effective, the City of Paris will work with the Parisian Climate Agency (APC) to support the energy conversion of condominiums, giving priority to renewable energies (geothermal, solar thermal) or less carbon-intensive energies (heating networks) rather than fossil natural gas.

To enable condominiums to move away from fuel oil more quickly, **the City of Paris will be advocating for increased state aid** for households.

This transformation must involve not only buildings, but also the use of public space in Paris. For example, by 2030, **the use of fossil generators will be banned in public spaces**, whatever the use (events, construction sites, etc.).

D • Supporting renewable district heating in Paris is a cornerstone of the city's strategy to move away from fossil fuels

Domestic hot water and heating are the top two energy consumption items in the residential sector and, to a lesser extent, in the tertiary sector in Paris.

Since its creation in 1927, the City of Paris heating network has successfully modernized. It supplies nearly 6,000 Parisian customers, the equivalent of 425,000 homes. 20% of Paris condominiums, which are heated collectively, are connected to this network, as are all Paris hospitals. With almost 500 km, the network covers a large part of the territory and continues to expand.

The Paris heating network, which today distributes 4.3 TWh of energy, **of which is supplied by renewable energies (2022 figures)**, is one of the main assets for the energy transition of its territory.

The concession contract will soon be renewed. On this occasion, a SEMOP (Mixed economy single operation grouping – "Société d'économie mixte à opération unique") between the City of Paris, an operator and the Banque des Territoires will be set up for a 25-year period. This will make it possible strengthen public control of this tool in order to accelerate its greening and development, while paying particular attention to pricing, in line with the two main thrusts of the heat master plan, which sets out its roadmap to 2050:

- **The Paris heating network will continue its greening trajectory to be renewable by 2050:** renewable energies will gradually replace the fossil fuels still present. Since 2024, coal has no longer been used in the heating network, while the proportion of renewable energy will gradually increase to reach by 2030. To ensure that fossil fuels are phased out, and with a view to sharing the renewable heat produced, the City of Paris will continue to work with the Greater Paris Metropolis and neighbouring local authorities to build 4 to 8 biomass or solid recovered fuel production sites by 2050.

- **The heating network will continue to develop, in particular by increasing the density of its network:** to accelerate this switch to non-fossil fuels, in 2022 the Paris Council adopted the principles for the classification of its heating network. As a result, a large part of Paris has been designated as a priority heating network deployment zone, in which connection is mandatory under certain technical conditions. To accelerate the development of the network, the City of Paris has significantly reduced the cost of connection in July 2022. The City of Paris will set an example by converting the vast majority of its sites and facilities to district heating within the first few years of the next heating network concession.

E • Favoring the municipal cooling network for needs

In Paris, between 5 and 10% of homes are equipped with collective air conditioning, resulting in annual electricity consumption of 20 to 50 GWh. In summer, 5% of electricity consumption in the tertiary sector comes from air-conditioning needs.

With climate change and rising temperatures, particularly in urban centers, energy requirements for air conditioning are likely to increase. Initial simulations carried out by ENEDIS and RTE suggest that the rate of air-conditioning equipment could be close to 20% in 2030 and in 2050. Based on these assumptions, electricity consumption for air-conditioning could reach between 200 and 400 GWh per year in 2050, i.e. a 4 to 8-fold increase in consumption, making air-conditioning the 2nd potential source of increase in electricity consumption after the development of electric mobility.

As early as 1991, the city developed a district cooling network. Today, this network is 100% powered by renewable energy, and produces refrigeration with a high environmental value. It cuts energy consumption by 35% and CO2 emissions by 50%, compared with an equivalent fleet of stand-alone installations. By 2023, the network will be supplying nearly 370 GWh of cooling to more than 700 customers.

When renewing the concession in 2022, the City has set objectives for developing and strengthening the network's environmental performance ambitions.

Synergies between heating and cooling networks will also be studied.

F • Pooling the purchase of renewable energies

The transition to decarbonized energy requires both the production of more renewable energies and access to them for as many people as possible.

Since 2015, **the City of Paris has had 100% renewable electricity supply contracts to power its own consumption.** All municipal facilities, all Parisian public lighting, but also certain symbolic monuments such as the Eiffel Tower are powered by 100% renewable electricity, part of which is produced locally. A proportion of biogas has also been included in contracts to supply public buildings.

The City of Paris will enter into *Power Purchase Agreements* (PPAs), long-term renewable energy contracts signed directly with renewable energy producers, with the aim of **covering 10% of the City's needs through these direct purchases by 2030.** These long-term contracts support the production of renewable energies by offering producers guaranteed outlets for their output.

For individuals, the use of renewable energy can be an additional financial burden. In order to improve access to "*clean, affordable energy for all*", **the City of Paris will study the possibility of launching group purchases of renewable energy for Parisians and small commercial customers.** The volume of a group purchase, following the example of other purchasing groups, should help to obtain more favorable market conditions.

Since 2015, the City of Paris has had 100% renewable electricity supply contracts to power its own consumption.

3. Produce 500 GWh of additional renewable energy by 2030

In 2019, Paris' renewable energy production was estimated at 2.083 TWh (around 7% of overall consumption). To achieve carbon neutrality, Paris has set itself the goal of mobilizing the full potential of local renewable energy production. **An additional 500 GWh of local renewable energies must be mobilized to achieve this ambition by 2030.**

To achieve this objective, all stakeholders in Paris need to be mobilized in order to accelerate local production: solar panels, use of geothermal energy, recovery of lost energy...

These 500 GWh of new production can be broken down into:

- + 100 GWh of photovoltaic solar energy;
- + 100 GWh of solar thermal;
- + 100 GWh of geothermal energy;
- + 100 GWh of waste heat recovery;
- + 100 GWh of hydrothermal heat recovery.

This breakdown aims to mobilize all the resources available in the city, based on the deposits presented in the plan's diagnosis. The difference between the available potential and the volume that can actually be mobilized is explained by an adjustment that takes into account the number of years remaining between now and 2030, and the implementation complexities inherent in each energy source. For example, the gross potential for solar PV is reduced from 134 GWh to a net mobilization of 100 GWh by 2030. This loss of potential can be explained in part by the difficulties involved in integrating these systems into existing assets, and the time required to process these applications.

2,083 TWh
Paris' renewable energy production

A • Developing solar energy in Paris

APUR estimates the theoretical solar potential in Paris at 1,500 GWh/year. Photovoltaic electricity production in Paris is estimated at 3.6 GWh in 2022. To meet the 2030 target, installed capacity will have to be multiplied by 28. Similarly, the development of solar thermal energy will require the deployment of an additional 2,500 projects in Paris by 2030, i.e. a 5-fold increase in current installations.

AN UPDATED PARIS SOLAR CADASTER

In 2012, Paris published one of the first solar cadaster in France, enabling every homeowner to find out how much sun his or her roof receives, the capacity of solar installations and to make an appointment directly with an advisor from the Parisian Climate Agency. In 2022, APUR, with the support of the City of Paris, published a comprehensive new roof database, enabling to better target the potential of "solarizable" roofs in Paris. Of the 128,000 roofs referenced, representing 32.2 million m², 2,100 have a flat surface area of at least 200 m², contiguous and uncluttered, suitable for the implementation of solar solutions, vegetation and/or urban agriculture. **The solar cadaster will be regularly updated by the City of Paris and APUR, and made available on the public energy data service portal.**

"ENERGIECULTEURS, THE PARIS SOLAR BOOSTER

To accelerate the deployment of solar energy in Paris, in 2023 the City of Paris launched the "*Energieculteurs*" project, which aims to set up solar power plants for self-consumption. The aim of this project is to mobilize rooftops, study potential and set up projects, with the ambition of gradually bringing on board as many local actors as possible.

In 2023 and 2024, the first two seasons of Energieculteurs will see some 50 municipal rooftops equipped, producing around 3 GWh per year, some of which will be self-consumed. The program will continue and should **enable by 2030 to produce a further 5 GWh on municipal roofs, including projects on the Canopée des Halles and the Parc Floral.**

At the same time, the City of Paris is working with major Parisian property owners (social landlords, SNCF, State, Eau de Paris, etc.) to accelerate the deployment of solar panels on their properties, by providing expertise tailored to the Parisian context. Projects are currently being studied for Eau de Paris reservoirs (including the Lilas reservoir and the Orly II drinking water production plant) and major Paris train stations. **The aim is to multiply local production by at least 4 to reach 20 to 25 GWh produced on Parisian roofs, excluding municipal facilities.**

ACCELERATING THE SOLARIZATION OF SOCIAL HOUSING

Paris's social landlords are already among the leading producers of solar energy. They have hundreds of thousands of m² of flat roofs. **Over the course of 2025, the City of Paris will be providing special funding for the design and construction of solar energy production facilities, with the emphasis on self-consumption** to generate financial savings for tenants.

SUPPORTING PARISIAN CONDOMINIUMS

Representing over 47,000 buildings in Paris, condominiums represent a huge potential for the development of solar energy. The development of solar energy will not only boost local energy production, but also enable condominiums to better control their budgets through self-consumption.

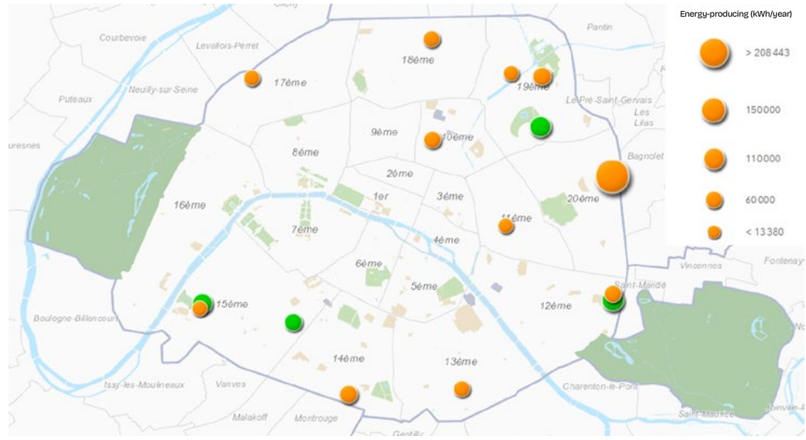
In 2025, **the city will introduce a new scheme to support and subsidize the installation of self-consumption solar power plants for Parisian condominiums.**

It will also study the possibility of setting up a "legal organizing entity" (PMO) to facilitate collective self-consumption operations, as well as the possibility of grouping together the purchase of panels on a Paris-wide scale.

> In 2023 and 2024, the first two seasons of Energieculteurs will see some 50 municipal rooftops equipped, producing around 3 GWh per year, some of which will be self-consumed.

Figure 22

Energieculteurs season 1 sites



City of Paris, 2023

B • Mobilizing geothermal potential and all forms of energy recovery

Paris's largest source of renewable energy lies in its subsoil. According to the Geological and mining research bureau (BRGM – "Bureau de recherches géologiques et minières") and APUR, the theoretical potential for geothermal energy in the Parisian subsoil is 249 GWh (closed loop); the figure for groundwater is higher, at 6.2 TWh (open loop). These sources of renewable and recovered energy can be valorized at different scales (buildings, districts, blocks, etc.) via hot water loops or, more broadly, via structuring heating and cooling networks.

MAKING THE MOST OF PARIS'S GEOTHERMAL POTENTIAL

By 2022, the 70 geothermal installations in Paris were producing 91 GWh annually. In order to meet local production targets for 2030, **an additional 100 GWh of geothermal energy are needed**, i.e. a doubling of current production capacity.

Major deep geothermal projects are underway or under study, such as the new Arena 2 geothermal power plant at Porte de la Chapelle, which will produce 4.7 GWh of energy per year (2.5 GWh of heat and 2.2 GWh of cold), and the Bercy Charenton ZAC project currently under study.

2 geothermal projects (14th and 11th) will be commissioned in 2025, and two other projects are planned for 2026, before considering more extensive deployment. Surface geothermal energy uses the heat and natural inertia of the ground to produce "hot water" in winter, which is used to supply the building's heating system. This system also enables equipment to be cooled naturally in summer, by recovering "cool water at 13°C".

Between now and 2030, the City of Paris plans to generate a further 8.4 GWh from geothermal energy on its property. It will work to mobilize other landowners to boost this production.

Eau de Paris is also rolling out a major renewable energy production program. Before 2030, it plans to build a geothermal project on the Ménilmontant reservoir, which could generate up to 15 GWh.

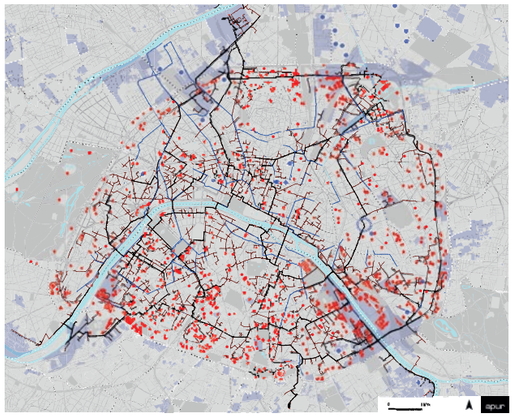
RECOVERING WASTE HEAT THROUGHOUT THE TERRITORY

In addition to geothermal energy, Paris has a wealth of waste heat, the potential of which can be exploited using current technologies. At present, 11 GWh of waste energy are exploited in Paris. By 2030, this figure should be multiplied by 10. To encourage the recovery of this wasted energy and make the most of this potential, in 2023 the City of Paris launched a project to promote the development of hot water micro-loops.

The City of Paris will promote **the gradual conversion of its high-pressure steam heating network to hot water loops (65 km converted by 2030, compared with 34 km at present), in order to encourage the recovery and valorization of all these energies.** The feasibility of running hot water networks in certain underground galleries is already being studied.

Figure 23

Potential sites for heat recovery in Paris



Ressources of renewable and recovery energy

RE&U 'average' temperature
- Thermal solar: buildings built after 1914 with more than 500 m² of rooftop terrace and with solar irradiation > 800 kWh/m²/year.

RE&U 'low' temperature
- Sewer network – sections > 0,8m
- Data centers
- Urban project // opportunity for RE&U development and low-temperature hot water loop
- Hot water loop with heating recovery on sewer network

Urban district heating
- Steam distribution network
- Hot water distribution network
- Towards the creation of a low-temperature hot water network complementing the existing network

Capacity to capture RE&U depending on the temperature level of the Steam network (235°C)

Steam (235°C)
Biomass
Refuse-derived fuel (RDF)
Waste incineration
Methanization

Conventional hot water (100°C)
Solar thermal
Deep geothermal
Industrial waste heat

Data centers
Shallow geothermal
Heat recovery from wastewater
Heat recovery from non-potable water
Energy sharing between programs
Very low temperature hot water (25°C)

APUR, 2023

Paris is fortunate to have a sewerage network made up of tunnels that can be visited. Heat recovery from these sewers has already been implemented in a number of facilities. Recent hydraulic studies have identified sites with strong potential for both public and private buildings. For example, since 2021, sewer heat has been supplying heat to the Mairie du 11th arrondissement and the Parmentier school complex, producing over 200 MWh of renewable energy per year. These projects, which have demonstrated the feasibility and relevance of these systems, will be multiplied over the coming years. **The City of Paris has set itself the target of recovering 10 GWh of energy from sewer heat.**

In the same way, it is possible to recover other waste heat, such as grey water from buildings, the metro, datacenters, or even calories from the non-drinking water network. The Alain Fournier secondary school in the 11th arrondissement is a good example, with a connection to a nearby datacenter that supplies up to 345 MWh of waste energy per year.

A total of 120 additional installations will enable 30 GWh of waste energy to be recovered in Paris by 2030.

To accelerate the transition to scale, in partnership with ADME, the City will launch in early 2025, following a feasibility study and if the opportunity is confirmed, **a first Renewable Heat Contract in the area,** aimed primarily at supporting and facilitating the switch from fossil fuel-based heating systems to the use of local renewable heat. At the same time, a survey of existing systems, projects and potential will be carried out.

Finally, the city will support and assist the structuring of local biomass channels to supply its heating network.

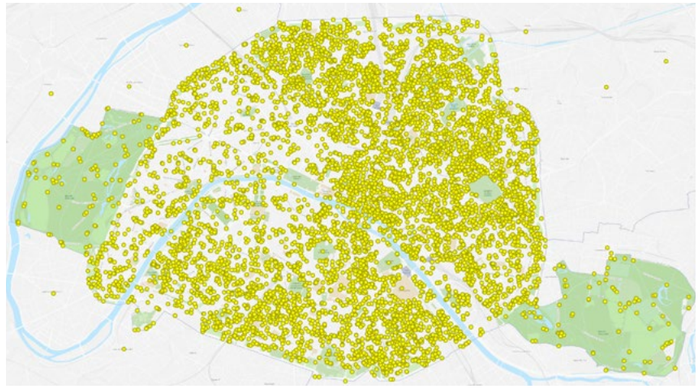
C • Achieve energy production in public buildings by 2050

The City of Paris has set a target of 6,000 micro-installations producing renewable energy in Paris by 2050. It will launch a study program to make all its buildings energy producers within 25 years. All solutions will be studied, depending on geographical location, architectural constraints and physical opportunities: solar, geothermal, heat recovery. Projects may involve self-consumption, re-injection or shared production.

This detailed diagnosis at plot level will be incorporated into the multi-energy master plan, and will be regularly updated in line with technological developments and equipment requirements.

Figure 24

6,000 municipal buildings open to the public



City of Paris,2024

D • Create "Energies de Paris", to develop local renewable energy production

To accelerate the local production and consumption of renewable energies in Paris, Paris will create "Énergies de Paris" (Energy of Paris) to strengthen existing mechanisms and help achieve the local production target of 10% by 2030. Beyond these targets, "Énergies de Paris" will be tasked with better planning the energy transition of the Parisian territory, in liaison with the City's departments and the Parisian Climate Agency.

E • Mobilizing citizens and public and private actors to accelerate local energy production

Over and above the efforts that the City of Paris will be making on its own property, the development of renewable energy sources in Paris will depend largely on **the commitment of all the actors likely to be able to undertake local renewable energy production projects.**

Citizen energy communities, which bring together citizens, local authorities and local businesses in the same geographical area to develop renewable energy production projects, on the scale of an urban block or neighborhood for example, financed collectively and controlled by citizens, **will be encouraged.** The city will draw inspiration from other international metropolises, such as Barcelona, to accompany or support citizen collectives committed to the concrete transition of their territory. An "*energy citizen community*" incubator could be set up to help coordinate initiatives and provide motivated citizen collectives with training, tools and advice on setting up projects.

In addition to financial aid for solarization, we'll be working specifically **with Parisian condominiums**, which are key actors and are already, in a way, communities of citizens, to encourage the emergence of concrete local citizen projects.

Like the sustainable housing Forum Habiter Durable, **a Parisian renewable energy day** will be organized each year, to showcase the possibilities, pool actors, highlight exemplary projects in the area, define collective solutions to speed up project implementation, and mobilize citizens' energies around this type of project.

The **tertiary sector will also be mobilized,** and in particular the signatories of Paris Action Climat Biodiversité. These companies, committed with the City of Paris to the city's ecological transition, will enable the emergence of local projects in Paris.

On a broader scale, the city will rely on **SEM Axe Seine Energies Renouvelables** (mixed economy grouping Seine Axis Renewable Energy) to develop renewable energy projects. In particular, SEM ASER will participate in the development of the biomethane production sector, by supporting and accompanying metropolitan actors (SYCTOM, SIAAP...) as well as national actors to accelerate the production of gas from renewable sources. Similarly, the City of Paris shall support the development of biomass and recovered wood, as well as solid recovered fuels (SRF), in order to supply the Paris heating network and other metropolitan networks with local renewable energy.

II. BY MANAGING WATER MORE SUSTAINABLY

Water and climate change are intimately linked. The increasing number of crisis situations and phenomena observed in recent years in France (droughts, pollution, floods) raises the question, in the more or less long term, of the availability and quality of the resource, and more fundamentally that of the uses of a scarcer and more fragile resource. At national level, between 2008 and 2018, the average annual volume of water consumed is estimated at 5.3 billion m^3. Agriculture is the leading water-consuming activity, ahead of nuclear power plant cooling. Drinking water production only comes third.

The Paris territory is not spared from these projections, especially as it lies at the heart of the Seine-Normandie basin, which is experiencing significant pressure on its resources, due in particular to the extreme concentration of its population (65% of the population is concentrated in 1% of the territory). Local climate forecasts are unequivocal: droughts are set to multiply over the coming decades. These droughts are expected to reduce annual river flows by between 10% and 30%. This reduction in flows and water levels will result in a lower dilution of pollutants. Furthermore, extreme rainfall events are likely to multiply, increasing the risk of flooding. Finally, climate change will reduce groundwater recharge by around 10% by the end of the century.

While the security of Paris's water supply is not in question for 2050, thanks to a diversified supply pattern, the City of Paris is increasingly anticipating tensions on the resource, particularly in summer, a season conducive to drought and multiple water uses. To anticipate these tensions, **the City of Paris is initiating a policy of water sobriety.**

Finally, the production of drinking water consumes energy and generates greenhouse gas emissions. Implementing a policy of industrial sobriety in water production and using untreated water for needs that do not require drinking water, by improving the water mix, will help reduce greenhouse gas emissions and energy consumption.

1. Saving and diversifying water resources in Paris

Paris consumes 159 million cubic meters of drinking water per year, or 120 liters per inhabitant per day. This is less than the national average of 150 liters per person per day. Drinking water consumption by the Paris administration amounts to 3.8 million cubic meters per year, or 2.4% of the territory's consumption.

In addition, Paris has a non-drinking water network that provides various services, such as supplying cisterns for sewer flushing, watering parks and gardens, street cleaning, and supplying ponds, lakes and rivers in Parisian gardens and woods. To supply this network, the City of Paris withdraws 78 million cubic meters of water per year from the Villette basin (83% of total withdrawals) and the Seine (17% of total withdrawals).

The City of Paris is committed to reducing its water consumption (drinking and non-drinking) by 15% by 2030.

A • Reduce drinking water consumption

Parisians' drinking water supply system is particularly resilient to climate change, thanks to the multiplicity of its resources, in particular surface water (Seine and Marne) and groundwater (sources of the Avre, Vanne and Loing rivers).

When it comes to reducing water consumption, a "simple" action to reduce the amount of drawn from the environment and the volume consumed is to reduce leakage from drinking water distribution networks. However, this lever can only be activated at the margin in Paris, where the high level of performance of the drinking water distribution network exceeds 90%. Nevertheless, **Eau de Paris, the municipal Parisian water operator, will be deploying 3,000 connected acoustic sensors each year to help identify leaks.** These sensors listen in on the network every night, when consumption levels are at their lowest, and detect any anomalies. **This approach will save 4.3 million cubic meters of water per year.**

The implementation **of energy performance contracts for swimming pool renovations** will also help **reduce drinking water consumption by up to 30%.** The City of Paris will be looking into the possibility of recovering locally the water discharged from swimming pools. The creation of recovery networks during renovation work would enable wastewater to be treated and efficiently returned to the circuit.

Urine recovery is being tested in the Saint-Vincent-de-Paul district, as part of a circular approach and to reduce water consumption. Further experiments will be carried out to develop these solutions. With regard to the installation of dry toilets, which are extremely water-efficient, the City of Paris will be lobbying for changes in regulations so that they can be tested in urban projects. It will also make the use of dry toilets more widespread at events.

Lastly, a campaign to raise awareness of the need to use water sparingly will be launched, particularly among large-scale consumers (hotels, swimming pools, construction).

B • Maintain and optimize the non-potable water network

A legacy of the 19th century, the 1,700 km-long non-drinking water network is fed by surface water withdrawals from the Seine, the Ourcq canal, itself fed by the Ourcq river and the Marne. Every day, some 214,000 m^3 of water are produced by simple screening and sieving before being distributed by gravity, drastically limiting the carbon footprint of this resource, which does not pass through drinking water treatment plants.

Today, this raw water is used to maintain sewers, clean streets, water green spaces and feed ponds, lakes and rivers, particularly in the Parisian woods.

At a time when the emphasis is on developing non-conventional waters, particularly for uses that do not require drinking water quality, this non-drinking water network is a real asset for the City. Following the guidelines of the 2022 non-drinking water master plan, **the city will continue to invest in optimizing its network, in order to improve efficiency by reducing leakage and guaranteeing its long-term viability.** Having already focused on optimizing the industrial production and storage of non-potable water, the City of Paris now wishes to concentrate its efforts on optimizing the distribution network and its hydraulic equipment.

To reduce non-potable water withdrawals by more than 20% by 2030, the most significant gains will be achieved by optimizing the operation of sewer flush tanks. These tanks, located at the head of each sewer, fill automatically before suddenly releasing the retained water to clean it.

Lastly, the City of Paris will renew the network in the Parisian woods and improve the watertightness of the infrastructure of the Parisian canals, again helping to reduce leakage losses.

A legacy of the 19th century, the 1,700 km-long nondrinking water network is fed by surface water withdrawals from the Seine, the Ourcq canal, itself fed by the Ourcq river and the Marne.

2. Diversifying the water mix

Faced with the need to diversify urban water uses in response to climate crises, the city is committed to diversifying its water mix while controlling the impact on the resource.

A • Adapting resources to each use

In the interests of water conservation, **each new use will give priority to rainwater, drainage water, non-potable water and, as a last resort, potable water.**

For the watering of vegetated public spaces and green areas, the City will promote the "*water mix*" available in Paris, combining rainwater recovery and non potable water. **The use of drinking water for these purposes should gradually become marginal, with an initial target of a 50% reduction by 2030.**

The city **will encourage runoff water to feed vegetated areas in order to preserve and increase the cool island effects thus generated.**

Finally, while the reuse of treated wastewater is often presented as an interesting solution for certain uses, such as agricultural irrigation, it does not appear to be relevant in the case of Paris. Discharges from wastewater treatment plants can represent up to 20% of the Seine's flow during low-water periods. These discharges are therefore essential to support the low-water levels of the rivers in the Seine Normandy basin.

B • Transform 100% of rainwater into a resource

As part of its efforts to diversify the water mix, the City of Paris will develop a "100% useful rain" doctrine, i.e. transforming **the use of rain and runoff into an essential resource.**

The implementation of this policy will notably involve improved management of regular rainfall, in line with the principles of rainwater zoning, with priority given to techniques based on nature, open air, gravity flow and infiltration. Wherever possible, the city will accelerate the deployment of water recovery systems in its municipal facilities.

In the case of more exceptional phenomena that could lead to flooding, the desilting of the land and the creation of retention areas will help limit the risks, which will accelerate with climate change.

As part of its efforts to diversify the water mix, the City of Paris will develop a "100% useful rain" doctrine.

Clément Dorval / City of Paris, 2023

3. Taking action for water quality

The consequences of climate change are tending to degrade the quality of raw water, i.e. surface or ground water present in the natural environment before treatment. Indeed, the reduction in the quantity of water available in water tables and rivers, the rise in their temperature, as well as extreme rainfall events leading to soil leaching, have an impact on pollutant concentrations and the development of algae, degrading raw water quality.

The City of Paris and its water authority, Eau de Paris, are implementing **ambitious, large-scale measures to preserve the resource and prevent this deterioration in water quality.**

The City of Paris and its water authority, Eau de Paris, are implementing ambitious, large-scale measures to preserve the resource and prevent this deterioration in water quality.

A • Protecting resources

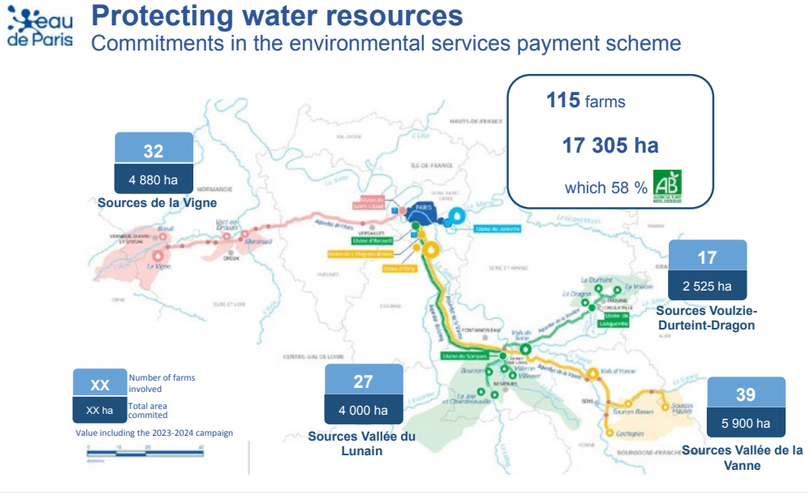
Half of the drinking water supplied to Paris comes from underground resources, springs and groundwater some one hundred kilometers from Paris. The quality of these resources depends on the human activities carried out in the areas from which they are extracted: conventional agriculture, which consumes pesticides, contributes to the deterioration of groundwater quality. Because Paris chooses prevention over cure, the city has been investing since the 1990s in protection plans aimed at reducing the use of pesticides in water catchment areas. Less polluted water requires less treatment to make it drinkable, so its carbon intensity is lower, in addition to the gains linked to the pesticides avoided.

To support farmers located in catchment areas and improve groundwater quality, in 2020 Eau de Paris introduced its own direct aid scheme for voluntary farmers, enabling them to reduce pesticide use. More than 15,000 hectares were beneficiaries of this aid scheme in 2022, and have embarked on an agricultural transition towards organic or sustainable farming models. **Eau de Paris will double the agricultural area concerned to 28,500 hectares supported by 2026.**

In addition, Eau de Paris will acquire 450 hectares of farmland in water supply areas to install farmers with sustainable practices, and will plant 10km of hedgerows by 2026 to enable natural water filtration by the

Figure 25

Agricultural areas supported by Eau de Paris



Eau de Paris, 2024

soil and reduce the transfer of pollutants into groundwater.

Actions to protect water catchments are of great benefit to the areas concerned, ensuring the protection of their water resources, the preservation of natural areas and support for agricultural transition and local food policies.

To go further, **the City of Paris will lobby the French government to ban the use of polluting products, particularly pesticides, in water catchment areas.** It will also advocate the application of the "polluter pays" principle, so that the cost of cleaning up water pollution is borne by the producers of polluting substances rather than the users.

B • Reasonable water treatment

Water purification is an energy-intensive industrial process that can generate greenhouse gas emissions. The City of Paris and its operator Eau de Paris have opted for a reasoned "just treatment" strategy.

Eau de Paris is constantly upgrading its treatment processes, choosing the most efficient solutions with the lowest environmental impact. The efforts made over the last 20 years have already enabled the company to reduce its greenhouse gas emissions by almost 25% between 2004 and 2020. Eau de Paris has also avoided the emission of almost 3,500 tonnes of CO2 per year between 2018 and 2020, thanks in particular to the recovery of sludge from water treatment. Eau de Paris will continue its efforts in terms of energy sobriety and efficiency, and by 2026 will be producing 20% of its consumption from renewable energies.

This industrial strategy will be pursued and regularly adjusted to take account of changes in quality standards, the impact of measures to protect water resources and the impact of climate change.

greenhouse gas emissions are reduced
by almost 25 % between 2004 and 2020

C • Improving river quality and allowing bathing in the Seine

At the end of the 1980s, over 20 million cubic metres of polluted water were being discharged into the Seine every year. In the face of this ecological disaster, and under the positive impact of the European Commission's Water Framework Directive, which requires states to achieve good ecological status for their water bodies, major efforts have been made to reduce discharges to around 2 million cubic meters by the mid-2010s. These efforts have led to a significant improvement in water quality, with more than 32 species of fish now present in the Seine, compared with 14 previously. Paris's bid for the 2024 Olympic Games and its status as host city, with three swimming events in the river, have accelerated public policies to improve water quality, particularly bacteriological quality, in the Seine.

Indeed, the Paris 2024 Summer Olympics imperative provided an exceptional opportunity to coordinate all actors in the water cycle, including the City of Paris, the State, the Ile-de-France sanitation authority, the Greater Paris Metropolis and the local authorities concerned, around a water quality and bathing plan from 2016, to which over 1.4 billion euros were devoted. Major investments have been made to improve the Parisian wastewater network and adapt it to the climate challenge, through network renovation work (correction of bad private connections), development of rainwater zoning, and connection of quays, boats and floating establishments to the wastewater network. The Austerlitz basin will also make it possible to drastically reduce wastewater and rainwater discharges into the Seine, by storing the equivalent of twenty Olympic-size swimming pools of rainwater in the event of heavy rainfall.

The significant and lasting improvement in the quality of the water in the Seine is one of the great legacies of the organization of this event, and the possibility of bathing in it the best illustration.

These efforts will enable the opening of three bathing sites on the Seine as early as 2025: at Bras Marie (Paris Centre), Bras de Grenelle (15th) and Bercy (12th).

TOWARDS A LEGAL PERSONALITY FOR THE SEINE

In recent years, as threats to the earth's ecological equilibrium and livability have become more acute, the issue of the rights of nature has emerged in debates on the protection of nature. The idea of recognizing nature's rights in order to better protect the living world opens the way to a new legal paradigm, and goes hand in hand with a genuine desire to position the environment as a new fundamental value to be protected by criminal law

Some twenty countries around the world have recognized the rights of nature. Several rivers have obtained the status of legal personality: the Rio Atrato in Colombia, the Whanganui in New Zealand and the Magpie River in Quebec. In line with this trend, the City of Paris shall study the **possibility of conferring legal personality on the Seine,** which could be made effective either through legal action or by including the river in governance mechanisms for the protection of the environment and aquatic environments.

> At the end of the 1980s, over 20 million cubic metres of polluted water were being discharged into the Seine every year.

Joséphine Brueder / City of Paris, 2024

III. MAKING PARIS A MORE RESOURCE-EFFICIENT CITY

Today's logic of overproduction and overconsumption depletes the natural resources used to produce new products and pollutes the related natural environments, in a wide variety of areas: sand for concrete production, rare earths for the manufacture of electronic equipment, water for clothing production, oil for plastic production... As with energy resources, the consequences go far beyond environmental issues, and are also social, societal and geopolitical.

The fight against the scarcity of natural resources and the deterioration of ecosystems is at the heart of the circular economy and its model of production and consumption, which consists of sharing, reusing, repairing, renovating and recycling products and materials for as long as possible, so that they retain their value. The sobriety of materials therefore concerns:

- Reducing purchases and adopting responsible consumption (in the face of over-consumption and wasteful behavior): working on demand.
- Local production and transformation of goods and products according to the principles of the circular economy - working on the supply side.

1. Assessing Paris' material footprint

The City of Paris intends to support the reduction of the territory's material footprint. This is in line with the Parisian public policy of scaling up circular economic sectors: resource saving and economic model.

This is why Paris will develop a tool to measure the territory's material footprint. Initial work to quantify the flows of materials, water and energy into and out of Paris, initiated in 2018, has shown that the material footprint of a Parisian (15 tons/inhabitant, i.e. the total weight of material required to produce the goods they consume) is almost 5 times greater than their direct material consumption (3.4 tons/inhabitant). By highlighting the city's heavy dependence on imports, this observation argues in favor of a necessary relocation of production systems, combined with a more sober and responsible consumption of resources.

The City of Paris will continue the work already underway and will develop a territorial material footprint indicator and define an associated reduction target for 2030 and 2050.

In addition, the City of Paris is committed to being exemplary in its own consumption, and will adopt a strategy enabling it to reduce the material footprint of the Paris administration, notably in the awarding of subsidies, the awarding of public contracts and the management of public service concessions and delegations.

15 tons / in habitant
the material footprint of a Parisian

2. Scaling up the circular economy

The City of Paris supports the establishment and development of actors in the circular economy in Paris. The aim is to prevent waste and reduce the need to extract resources, by promoting sobriety and responsible consumption. In particular, this involves promoting the reuse, repair, reutilization or upcycling of goods that Parisians, both individuals and professionals, wish to dispose of. It also involves the development of new economic models, integrating the logic of eco-design and the extension of product useful life.

The City of Paris supports the establishment and development of actors in the circular economy in Paris.

A • Develop recycling, repair, reuse and re-employment channels

The City of Paris supports the sectors of activity that meet the city's essential needs and whose transition will have the greatest impact. To ensure that sobriety and the ecological transition are not achieved at the expense of the most vulnerable, the City also takes social issues into account by devoting its action to **structuring sectors, or improving existing sectors, with strong job creation potential.** This support takes the form of funding, facilitating access to premises and even implementing ad hoc real estate projects tailored to the needs and constraints of circular economy structures. The city intends to **double the amount of waste recovered through reuse** (10,000 tonnes per year by 2030).

TEXTILES, HOUSEHOLD LINEN, FOOTWEAR

In the age of *ultra-fast fashion*[4] globalized, depleting resources and exploiting men and women on the other side of the world, the City of Paris is committed to the local reuse of Clothing Textiles, Linen and Footwear (TLC). Using materials from recycling or new bio-sourced materials (wool, hemp, linen, organic cotton), short-run, on-demand production, reduction and valorization of dormant stocks, integration of materials from previously-worn garments: the City of Paris is supporting actors in these areas, notably by **training professionals** to meet growing recruitment needs in this context of relocalization.

In addition, the city supports the Plateau Fertile third-party space run by the Fashion Green Hub association, which brings together a community of industry professionals to imagine, test and put into practice the fashion of tomorrow.

To further extend the useful life of TLC, the City of Paris is committed to supporting the network of repair and alteration businesses (alterers, cobblers, etc.), by **improving their visibility** among Parisians and facilitating their referencing to benefit from financing from the repair fund.

ELECTRICAL AND ELECTRONIC EQUIPMENT

A smartphone weighing 120 grams requires 70 kg of material to produce. The emergence of social economy actors specializing in the collection and reconditioning of household appliances and IT equipment is helping to extend the lifespan of these goods, which have a significant carbon and material footprint, while enabling the most disadvantaged to acquire low-cost equipment, and helping people who have been excluded from the labour market to find lasting employment. For the past 9 years, the City of Paris has been supporting this ecosystem, in particular the following actors: Ecodair, Envie, RépareSeb, Emmaüs Connect, etc.

In addition to financial aid for scale-up, the City of Paris will work to improve the visibility of these actors, so as to capture a larger pool of quality products and sell their reconditioned production. The City will also support the professionalization and skills development of general solidarity-based reuse actors.

Between now and 2030, the City of Paris **will support the opening of one or more workshops** enabling the massification, sorting and even local reconditioning of different equipment flows, coupled with sales and repair/maintenance areas, and will step up information and awareness-raising campaigns among Parisians to encourage the reuse of electrical, electronic, IT and digital equipment.

ALTERNATIVES TO SINGLE-USE PLASTICS (SUP) / DEPOSITS FOR REUSE

While the catering sector now uses reusable tableware for on-site catering, the exponential growth in home deliveries and takeaways has led to an explosion in the quantities of plastic waste produced and consumed, with direct and indirect consequences for the climate.

Against this backdrop and in response to this challenge, the City of Paris is supporting the emergence of local solutions for reusing packaging to replace disposable packaging in takeaway and delivery catering, through the **implementation of deposit systems for reuse and local washing loops** for these containers. This system, which is both effective and attractive for restaurateurs and consumers, will enable at least half of all disposable packaging to be replaced by reusable packaging by 2030, i.e. 180 million items of packaging annually, representing 5,500 tonnes/year of single-use packaging waste avoided.

BUILDING MATERIALS AND FURNISHINGS SECTOR

The building sector is the leading producer of waste and consumer of materials in Paris, and is therefore a priority target for the City, which wishes to enable the **creation of physical platforms for the buffer storage and preparation for reuse of materials** collected and/or reused on its territory.

With regard to furnishings, the City of Paris will support the creation of a storage and production space, bringing together in a single location furniture design professionals using second-hand materials, a fleet of professional machines and production workshops operated by artisan entrepreneurs and actors in the social economy, as well as a space for showcasing and selling these productions.

4. *Ultra fast fashion is characterized by the almost daily renewal of collections, the predominance of online sales and unbeatable prices.*

B • New spaces conducive to re employment

For several years now, the City of Paris has been supporting the development of general and specialized recycling centers. These places of solidarity-based re-use enable as many people as possible to buy equipment at moderate prices, while respecting the planet's ecological limits. What's more, they are often structures for integration through economic activity, offering pathways to sustainable employment for people who are far from it

"Recycleries" currently collect over 4,800 tons of waste a year. The City wishes to continue **the drive to open generalist and specialized recycling centers in neighborhoods where there are none, in order to reach the target of 30 ressourceries in Paris by 2030. The City will also support projects for mobile recycling centers and building-side recycling centers with repair workshops to raise residents' awareness of waste reduction.**

To change scale, **by 2030 the City will have created the first "Reuse Hub" of between 5,000 and 8,000 m² in Paris.**

First and foremost, it will strengthen existing actors in the solidarity-based reuse sector, providing them with logistical and economic support. It will act as a "ressourcerie des ressourceries", a resource store of resource stores, multiplying storage and recovery spaces. The Hub will also help to develop reuse in Paris by exploring new sources (building and civil engineering, professionals). Lastly, the Hub will help to professionalize the sector, by offering training courses in eco-manufacturing techniques and eco-design, for example, and providing support for project leaders. It will also feature a café-boutique area open to all, to make consumption rhyme with responsibility. **The "Reuse Hub" will double the volume of goods collected annually.**

PARIS MUSEUMS COMMITTED TO MORE RESPONSIBLE SCENOGRAPHY

Since 2018, the City of Paris has embarked on a strategy to develop the circular economy in cultural venues and establishments. Paris Musées is also working to reduce the environmental impact of transport, conservation of its works and exhibitions through several actions such as reuse and the mutualization of scenography, which represents up to 95% in some exhibitions.

For several years now, the City of Paris has been supporting the development of general and specialized recycling centers.

2. Reduce, reuse and recycle waste and move away from single-use plastics

The Climate action plan's objective is to reduce greenhouse gas emissions linked to waste processing by 32% by 2030. For several years now, per capita waste production has been on a downward trend: from 483 kg of waste produced per inhabitant in 2010, to 450 per inhabitant in 2022, with a 9% reduction in so-called residual household waste between 2019 and 2022. Paris is committed to continuing these efforts. Nearly 3,000 tons of waste are collected every day, and over 70% of the contents of garbage cans could be diverted from incineration and landfill through actions to reduce, reuse and recover waste. The ambition is to make sorting a reflex and throwing away the exception.

In order to further reduce its volume of waste, the City of Paris is working on:

- Raising awareness among residents, to quantitatively reduce the flow of materials consumed and limit their environmental impact (eco-design, end of disposable products, particularly plastics, changes in behavior, etc.).
- Reuse and repair waste to give it a second life at fair prices
- Reuse, particularly through deposit systems
- Recycling waste once it has been produced
- A plea to the French government to reduce packaging at source, increase product shelf life and make it compulsory to find permanent solutions to the problem of disposable packaging, particularly in supermarkets, takeaways and deliveries.

A • Reduce the volume of material sent for processing

The City of Paris has set itself a **target of reducing household and similar waste by 20% (compared with 2010) by 2030,** which corresponds to **a reduction of 100,000 tons (all categories combined) compared with current waste production.** With this in mind, the City will adopt a new action plan to pursue waste reduction for the period 2024 - 2030 through the Local Waste Prevention Plan (PLPDMA – "Plan local de prévention des déchets ménagers et assimilés") and will lobby the State for strong measures to be taken at national level in terms of waste reduction.

To achieve this objective, the city will continue to work with volunteer arrondissement town halls, social landlords, schools, youth clubs and businesses to **set up zero-waste territories** to encourage Parisians and shopkeepers to get involved in the issue, and to step up awareness-raising campaigns to achieve a concrete reduction in waste.

It will also promote "out-reach" initiatives by organizing regular meetings in public spaces with cleanliness officers, such as regular cleanliness cafés in schools, zero-waste workshops and awareness-raising events in condominiums.

B • Diverting food waste from waste

Every Parisian produces between 50 and 80 kilos of food waste a year, or a quarter of their residual household waste. All too often, this waste is incinerated without any added energy value. Reducing waste therefore requires specific sorting of food waste. Paris has been a forerunner in food waste collection, without waiting for the regulatory obligation to generalize sorting at source and selective collection by January 1, 2024.

The development of local composting enables food waste to be sorted and recycled locally. The city is already equipped with 68 neighborhood composters, 450 composters at the foot of buildings, 642 composting sites installed in condominiums and almost 8,800 individual worm composters have been distributed. The city will continue to support this development by assisting local composting projects, particularly innovative ones, to sort food waste and give it a second life.

In addition to local composting, the City of Paris is continuing to **roll out food waste collection points in public spaces** in a reinforced network that takes into account the habits of Parisians, to enable them to easily deposit their food waste on their daily routes. **All food markets will be equipped with food waste collection points, and 500 Trilib' stations deployed throughout Paris will be equipped with a module dedicated to food waste,** offering every Parisian a sorting solution less than 3 minutes' walk from home.

By January 2024, over 4,500 tons of food waste produced each year in the 1,050 municipal canteens and administrative restaurants will have been collected, thanks in particular to the installation of sorting tables and food waste awareness campaigns.

In 2025, SYCTOM, the Metropolitan waste treatment operator, will open a methanization unit in Gennevilliers to recover 50,000 tons of food waste per year, transforming it into biogas and digestate distributed to farmers in the Paris basin. The food waste collected can then be converted into biogas, which can be used to power skips and buses, for example.

C • Improving waste sorting performance

The City of Paris intends to increase the source-sorting performance of Parisian waste to reach 60% of recyclable or reusable waste recovered by 2030. Achieving this objective presupposes that the necessary legislative changes accompany the City's action. It supports **a policy of zero landfill waste,** and to this end intends to pursue its close and demanding collaboration with the actors in charge of managing outlets and processing Parisian waste (SYCTOM) to achieve the total eradication of recourse to landfill solutions.

Optimizing selective collection is the key to improving sorting. In September 2022, the frequency of yellow bin collections was increased from 2 to 3 times a week, in response to the structural trend towards higher yellow bin tonnages and an improvement in the sorting habits of Parisians. This policy, whose momentum must be maintained over the long term, has borne fruit, with an 8% increase in packaging collected in just one year.

To encourage Parisians to sort their waste, the City of Paris has strengthened the sorting facilities available throughout the city to ensure an effective network. By 2024, 500 Trilib' stations and 200 garbage cans and sorting garbage cans will make sorting at source more widespread **for packaging, glass and food waste.**

Performance in waste sorting also involves actions to encourage the recycling of all waste, including occasional waste. The recovery of occasional waste, for which recycling or repair methods are specific, will be strengthened by working with eco-organizations within the framework of "extended producer responsibility" (textiles, batteries and electronic waste, furniture, etc.) or by developing innovative local sorting solutions (new trimobiles, for example, to facilitate the collection and recycling of small, bulky items). The City of Paris will also advocate opening up the governance of eco-organizations to local authorities.

Last but not least, Paris will make its voice heard when it comes to the management of recycling channels, and will lobby the French government to ensure that Paris's specific characteristics (spatial, demographic and operational constraints) are taken into account in the construction of new waste recycling and reuse channels, and will call for priority to be given to waste reduction over recycling.

To encourage Parisians to sort their waste, the City of Paris has strengthened the sorting facilities available throughout the city to ensure an effective network.

D • Eliminate single-use plastics

The third most manufactured material in the world, after cement and steel, plastic is a purely human creation derived from petroleum. The properties of plastic have made it an indispensable material for a wide range of sectors and uses (packaging, construction, transport, electrical and electronic equipment, clothing, healthcare, etc.). Over 9 billion tons have been produced since the 1950s, half of which in the last two decades. Production is set to increase by a further 40% between now and 2030. The OECD has estimated that for 460 million tons produced in 2019, 353 million tons became waste in the same year, of which 9% was recycled, 19% incinerated, and half landfilled. The rest, around 22 million tons, ends up in the environment, causing global pollution. The seriousness of the problem lies in the extremely long lifespan of plastics. They take centuries to degrade, breaking down into smaller and smaller pieces that quickly get out of control.

Awareness of the scale of the ecological disaster initially concerned the seas and oceans. But scientists are now warning of the foreseeable consequences for the soil, which is also heavily contaminated. What's more, the consequences for human health are particularly worrying, although still poorly understood.

A recent study by the Stockholm resilience center (February 2021) points out that "the quantities of plastics and chemicals produced by humanity are beyond 'planetary limits'".

Faced with this major challenge, **in 2019 the City of Paris set a strong ambition: zero single-use plastic by 2024 at Olympic and Paralympic venues. The City will continue its efforts to ensure that the intangible legacy of the phase-out of single-use plastics is a lasting one throughout the territory. In particular, it is committed to eliminating single-use plastics from its administrative perimeter by 2024.**

By 2026, three major municipal policies will also target plastics:

- Sustainable food plan: elimination of plastic in school and collective catering for food reheating, preparation and serving
- For early childhood, elimination of all plastics in contact with children to protect them from endocrine disruptors.
- For the horticultural production center, reusable containers are preferred wherever possible, given the amount of waste generated (around 600,000 pots per year).

Long-term work is underway to eliminate plastic leaks from urban equipment (synthetic floors, geotextiles) and to increase litter collection.

Particular attention will also be paid to cultural establishments financed or supported by the City of Paris, or under concession contracts, so that they stop using single-use plastic in their catering and beverage offer.

While the City of Paris has a duty to set an example, it cannot act alone. That's why it has developed a network of committed actors in 5 sectors: tourism, events, food, health/hygiene/beauty and logistics. Since 2023, the City of Paris has been offering the **first zero-plastic certification for economic actors,** and nearly 100 signatories have already joined the approach. For example, Eau de Paris is continuing to promote tap water as an alternative to bottled water, by increasing the number of water bottle refill points (doubling the 1,200 drinking fountains in public spaces through a network of retailers involved in the "Ici, je choisis l'eau de Paris" campaign).

PROMOTING AND SUPPORTING THE DEVELOPMENT OF A LOCAL, RESILIENT, LOW-CARBON ECONOMY

Paris, capital city and world city, is at the crossroads of major cultural, tourist, economic, environmental and social issues. The model of society advocated by the Paris Climate action plan, that of a carbon-neutral city, adapted to climate change and fair, in line with the Paris Agreements, implies a profound transformation of the local economy. The City of Paris defends the idea of "*another economic model*", more local, more sustainable and more supportive, encouraging other ways of producing and consuming. The aim is to bring about a genuine ecological bifurcation of the economy through systemic changes in production, consumption and economic organization. This paradigm shift poses more of a societal challenge than a technical one. The solutions are known and proven, but require radical changes to our lifestyles. The central question of structural sobriety, which leads to a desirable economy, must enable to escape from the speculative bubble of over-consumption. Without calling into question the habits of Parisians and their desire for comfort. The path proposed by the Climate action plan is not one of renunciation, but of a fork in the road towards a model of society better adapted to the constraints of the climate. It is in line with the decarbonization of the economy, the development of a circular and solidarity-based economy, and the promotion of sustainable economic sectors, particularly in the tourism industry.

I. PROMOTING LOCAL, SUSTAINABLE TRADE AND CRAFTS

Parisians' over-consumption of manufactured goods sustains a linear, globalized production and distribution system with deleterious effects on the environment (scarcity of natural resources, sometimes essential for the energy transition, competition for farmland, water pollution, climate disruption, etc.) and global inequalities (working conditions of workers on globalized production lines, child labor, disappearance of French craft and industrial know-how, etc.).

The City of Paris must mobilize its levers of access to commercial and industrial real estate to promote an economy that meets the essential needs of Parisians, without compromising the ability of other areas to meet theirs, now and in the future. The aim is to promote a local, circular, solidarity-based economy that serves the needs of Parisians: relocating productive activities that make the most of local resources through the circular economy, developing responsible local businesses, and enabling short-distance logistics. This more solidarity-based and circular economy should stimulate and diversify the local job market, making it accessible to those who are furthest from employment.

Paris has over 61,000 shops and commercial services, which translates into a commercial density of over 700 shops per km². This density is 30% higher than in Bordeaux and Nice, and 60% higher than in Lyon, Marseille or Lille. This commercial and craft density is coupled with a singular commercial diversity, covering all retail ranges and sectors. This Parisian specificity is an asset to be preserved, while ensuring the sector's ecological transition.

1. Supporting the commercial vitality of neighborhoods

The changing consumer habits of Parisians, the development of e-commerce and the consequences of recent health and economic crises are having a major impact on the city's trade and craft industries. Against this backdrop, the City of Paris intends to pursue its policy of maintaining local businesses, which are at heart of its "quarter-hour city" project, a guarantee of the city's cultural richness and unique social mix, and a generator of sustainable employment.

In order to promote a more local and sustainable economic model, **the City of Paris is committed to encouraging the establishment of fair trade and ecologically responsible activities** in commercial and business premises owned by the City of Paris and its real estate operators (social landlords, SEMAEST, SOGARIS, Foncière Paris Commerces, etc.).

> **Paris has over 61,000 shops and commercial services, which translates into a commercial density of over 700 shops per km.**

A • A sales policy to support the ecological transition

The Paris Plan for Commerce is supported by a new dedicated operator, Paris Commerces, born of the merger of GIE Paris Commerces and SEMAEST, whose missions focus in particular on the purchase of commercial premises and the installation of local businesses. This one-stop shop will meet the needs of small businesses, helping them to find and set up premises. It will be able to operate throughout Paris, as the City wishes to be able to use its urban right of pre-emption throughout the city.

Supporting a more local, sustainable and socially responsible economy, **Paris Commerce will promote the installation of shops and craftsmen** committed to the ecological transition, local production (notably "*Made in Paris*") and the social and socially responsible economy (sustainable food, the fight against single-use plastic, local manufacturing, repair shops, etc.). In addition, the future premises pre-empted by this operator will be renovated in line with the objectives of the Climate action plan. The commercial coordinator will also be responsible for promoting the ecological transition among all Parisian businesses.

B • The end of dark stores and dark kitchens

Since the confinements resulting from Covid-19, virtual restaurants or *dark kitchens* have proliferated at the foot of Parisian buildings, in place of former shops or restaurants. They provide restaurateurs with spaces dedicated solely to the preparation of meals ordered over the Internet and intended for home delivery. Similarly, *dark stores* or "blind stores" are the latest translation of *quick commerce,* offering a rapid home delivery service for food products and consumer goods. The development of these unstructured, unregistered activities undermines the model of sustainable, socially responsible local commerce. They create negative health and environmental externalities for local residents, while raising questions about the conditions under which these professional activities are carried out.

Faced with this situation, **the city took steps to preserve local commerce and reduce the pressure of these new practices.** After a period of legal uncertainty, the French Conseil d'Etat finally recognized that *dark stores* should be considered as warehouses. Through its new Bioclimatic PLU, the City of Paris has banned the installation of warehouses in residential buildings, and stipulates that a business may not reserve more than a third of its surface area for storage. Financial penalties will continue to be applied to prevent the return of this phenomenon, which has now disappeared in Paris. In addition, the City requires that any operator wishing to install a *dark kitchen* must submit a prior request to its services.

In addition, the city will continue to alert the government to the need for better national supervision of the emergence of new forms of "quick commerce".

C • Calling for the introduction of an e-commerce tax

Fast delivery services generate significant negative externalities in terms of intensity of use of public space (half-full trucks, urban congestion and environmental pollution) and encourage users to over-consume and over-produce waste (design of new packaging and increased food waste).

Following Barcelona's example, in view of the explosion in e-commerce and home delivery, generating over 500,000 parcels delivered every day in Paris, **the City of Paris is calling for the introduction of a local tax on e-commerce parcels.**

Mobilizing the major logistics operators to contribute financially to the development of public transport would help to offset this practice. For example, a tax of 1 euro per parcel delivered by express (24/48h) would generate a fee of 180 million euros per year in Paris, which would benefit the reinforcement of the capital's public transport offer.

2. Promoting local production and responsible consumption

The growing ecological awareness of Parisians is reflected in their consumption habits, and the City wishes to support this movement by promoting shops and craftsmen offering local, sustainable goods and services.

A • Products with the "*Made in Paris*" label

With the creation of the "*Fabriqué à Paris*" label in 2017, the City of Paris wanted to publicize and recognize the dynamism of Parisian craftsmanship, which has been able to adapt its know-how to changes in society and to the evolution of manufacturing processes towards greater sustainability.

With more than 1,700 types of products manufactured in Paris, including 415 to be certified by 2022 in 4 categories (food crafts, manufactured products, home furnishings, fashion and accessories), the "*Made in Paris*" label is a guarantee of quality, highlighting virtuous, job-creating industries and responsible consumption that integrates environmental, social and societal issues.

To encourage this dynamic and encourage Parisians to opt for more responsible products, **the City will strengthen the label to reach 500 applications each year, accompanied by a reinforcement of their systematic promotion in the City's commercial policy.**

The "Made in Paris" label is a guarantee of quality, highlighting virtuous, job-creating industries and responsible consumption that integrates environmental, social and societal issues.

B • Promoting local consumption

Using this "Made in Paris" brand, in conjunction with the Paris Chamber of Commerce and Industry and the Chamber of Trades and Crafts, and with the support of its operators, the City of Paris will reinforce its policy of promoting local, responsible production for Parisians and tourists alike. To this end, the City aims to **create a platform that:**

- **Reference and map all these actors via a website;**
- **It will facilitate the sale of these products,** benefiting both shops, artisans and consumers wishing to buy locally. It will also benefit Parisian shops and artisans who may not have the means to acquire their own e-commerce site. This solution will also enable to pay particular attention to delivery methods that respect labor rights and the environment.

Beyond this, the promotion of these local and responsible actors will be reinforced within the framework of animations / events carried out by the City and its operators. For example, the *"Paris Je t'aime*" Tourist Office, in partnership with the City, has been organizing the "*ParisLocal*" event since 2021. This annual event puts local production in the spotlight by offering workshops, activities and tasting stands to Parisians and tourists in the capital. The event continues to grow, and the City aims to exceed 600 participants each year.

Crédits

C • Product carbon labels

Consumer information is essential to ensure a change in practices. The creation of the Energy label, the Nutri-score and, more recently, the reparability index have paved the way for greater transparency on the environmental impact of everyday products.

To keep up this momentum and raise public awareness of the carbon impact of the goods they consume, the City of Paris is promoting the idea of a "*carbon label*" at national and European level, providing consumers with information on the carbon footprint of these products and helping to steer them towards lower-emission products.

D • Reducing the amount of advertising in the city

The production and marketing of consumer goods involves significant consumption of materials and energy, often from fossil sources, and thus increases the carbon footprint of Paris. Over-consumption also generates large quantities of waste, which contributes to greenhouse gas emissions.

To reduce over-consumption, the City of Paris will reduce the amount of advertising in public spaces **by gradually phasing out commercial advertising on street furniture in Paris over a three-year period. The City of Paris will lobby third parties (SNCF, RATP, shops, etc.)** to eliminate digital advertising screens throughout Paris. The electricity consumption of a single advertising screen is equivalent to that of a single Parisian household.

3. Continue to support social economy and integration structures, with a particular focus on jobs related to the ecological transition

Through its actions, the City contributes to Paris's economic dynamism in terms of business creation and aims to make Paris a capital of the social, solidarity and circular economy. Its efforts are particularly focused on actors in the circular economy, who are developing business models that are often innovative, less resource-intensive and create jobs that cannot be relocated. These actors, who are just starting up their businesses or have structurally low margins, are suffering from the pressure on land in Paris, and are finding it hard to find premises that match their needs in terms of typology and rent levels.

To meet this challenge, the city is working to maintain or develop spaces that meet the specific needs of these solidarity and circular economy projects, with the aim of **tripling the number of spaces dedicated to ESS (the national framework of social & solidarity economy actors – "Economie sociale & solidaire")** with a positive impact on the climate in the social landlord stock (193,000m² by 2023).

Among these, Paris's development projects will promote the development of the ESS sector, with the aim of ensuring that around 20% of the ground-floor business/commercial space in new projects is dedicated to social, associative or ESS activities. The development projects represent a potential of 20,000 m² of retail space dedicated to ESS activities.

Through its actions, the City contributes to Paris's conomic dynamism in terms of business creation and aims to make Paris a capital of the social, solidarity and circular economy.

4. For more sustainable cultural events

Through its policy of support for creators and cultural venues, the City of Paris, as a public authority, is driving the initiative of a virtuous circle of sustainable culture, of which it is both an integral part and accountable for its implementation and follow-up.

This virtuous circle of sustainable culture begins with artists and works of art, who rely on cultural venues to reach out to audiences, who are also local residents.

It is therefore the entire model and chain of creation, production and distribution of works of the mind that must be rethought thanks to the new Climate action plan, which must commit all cultural actors and managers, including the City of Paris, for the years 2024-2030.

With over 300 shows programmed every week, almost 100 temporary exhibitions a year, 1,317 art galleries and numerous venues dedicated to culture on its territory, it is necessary to act to limit the environmental impact of cultural activity in Paris.

Whether it's the choice of materials (bio-sourced, geosourced, low-carbon...) for the construction or renovation of cultural buildings, energy consumption and activities in the cultural sector, waste sorting and the elimination of single-use plastic at festive events, the mobility and transport of audiences, works of art, artistic and technical teams and all professionals, or the environmental sustainability of film shoots in the capital, a systematic and comprehensive strategy needs to be implemented over the long term, for and with cultural actors, in order to sustainably reduce the carbon footprint of cultural activity in Paris.
To this end, the City of Paris undertakes to:

- Reinforce the mobilization and support of cultural actors around the challenges of transition;
- Develop a strategy for phasing out single-use plastic in cultural venues and ending the sale of plastic water bottles in cultural facilities;
- Generalize the reuse of scenographic elements from the exhibitions of museums belonging to the public establishment Paris Musées;
- Reduce the carbon footprint of events and major cultural events held in public spaces, such as Nuit Blanche and summer cultural festivals (Formes Olympiques, Paris l'été, etc.), which must comply with the City of Paris' new eco-responsible events charter;
- Focus on serial productions or performances for the performing arts;
- Install cool islands in conservatories and fine arts studios;
- Develop and enforce rules for film shoots in the capital;
- Work at the Paris administration level to set up an awareness and responsibility plan for teams in central departments and public facilities, including the designation of "referents" to effectively monitor the application of the measures set out in the 2024-2030 Climate action plan

This virtuous circle of sustainable culture begins with artists and works of art, who rely on cultural venues to reach out to audiences, who are also local residents.

Clément Dorval / City of Paris, 2024

II. BY PROMOTING TOURISM THAT IS COMPATIBLE WITH CLIMATE CHANGE

Since the middle of the 20th century, the tourism sector has experienced almost exponential growth, with travel volumes doubling every 15 to 20 years since 1950. With 29 million tourists expected in 2019, Paris is one of the most visited cities in the world. Paris must face up to the environmental consequences this implies and contribute to defining a more sustainable and controlled tourism model.

Since the 2021 Sustainable Tourism Conferences, the city has been mobilizing the entire ecosystem of tourism professionals to make Paris a capital of sustainable, eco-responsible, welcoming, local and resilient tourism. This transformation is desired in the public arena, but also encouraged among tourism professionals themselves (by supporting them in their transition) and visitors (by informing them), in order to limit the environmental impact of tourism and make it a more virtuous and positive activity for the territory and its residents.

Greener and less polluting, the face of tomorrow's tourism is taking shape.

1. Making Paris a sustainable destination

The influx of visitors from all over the world helps to create an attractive and job-creating environment, but also has major consequences in terms of greenhouse gas emissions, particularly when it comes to transport.

Raising awareness among travelers and those involved in tourism is essential in order to provide clear information on the impacts of tourism and encourage travelers to come to Paris by the least carbon-intensive modes of transport. Trains emit six times less CO2 than planes on average, and in one out of three cases, a train alternative of less than 6 hours exists for the 150 busiest European air routes of less than 1,500 km. The City of Paris shall work with tourism operators and transport companies to adapt the transport offer and encourage travelers to opt for trips that emit less greenhouse gas.

A • Promoting low-carbon arrivals and travel

To ensure its transition to a sustainable model, alternative solutions to air travel to Paris must be developed and strengthened, in particular around the rail sector, which emits much less CO2. The city will work with its partners, including the SNCF and European rail companies, to promote rail tourism. It will **promote the development of night trains to and from Paris,** following the example of the Paris-Berlin line opening at the end of 2023, in order to meet social and ecological expectations, particularly among European tourists. The City of Paris will also advocate the fitting out of rolling stock to encourage active mobility, with the creation of bicycle spaces on trains.

The Parisian tourist office “Paris Je T'aime - Office de Tourisme” **will be highlighting all the international train and night train** lines linking Paris to Vienna, Madrid, Venice, Berlin, Milan, Barcelona, London, Amsterdam, Brussels, Frankfurt, Geneva, and more.

Decarbonizing the motorization of tourist transport (boats, coaches, etc.) is an essential challenge for the capital and, more broadly, along the Seine Axis, as part of the promotion of river tourism and the enhancement of this axis. Paris must be able to support the

investments made by the actors most concerned in the transformation of motorization, in coordination with the other territories involved.

Particular attention will be paid to cruise lines operating on the Seine within the city limits, some of which have already begun their transition.

Touring coaches are particularly emissive, accounting for almost 5% of nitrogen oxide emissions generated by traffic, and are a major source of nuisance for local residents in terms of noise and public space congestion. **The City of Paris is taking action to significantly reduce the number of touring coaches in Paris,** by moving towards a compulsory motorization transition and a traffic ban in the ZTL of Paris Centre, but also by supporting the development of soft mobility more suited to traffic in the city center.

In addition, regular tourist bus routes included in the city transport plan will have to implement a transition in their engines (Crit'Air 0).

SUPPORTING A REDUCTION IN AIR TRAFFIC

After a sharp drop in air travel due to the global health crisis in 2020 and 2021, air transport figures picked up again in 2022, reaching a level approaching that of 2019, with almost 87 million passengers welcomed at Paris airports (Roissy-Charles-de-Gaulle and Orly). By 2022, 20% of tourists will have flown to Paris.

Air transport of Parisian travelers and goods consumed in the area accounts for almost a quarter of Paris' carbon footprint (4.98 million tonnes out of the 19.3 million tonnes of the 2022 carbon footprint). If emissions from tourists were added, Paris' total carbon footprint would increase by 3.19 million tonnes. In order to have the most exhaustive possible view of the carbon impact of its territory, and thus activate the most effective levers for reducing greenhouse gas emissions, **future editions of Paris' greenhouse gas emissions report will present this data on tourist air traffic.** Paris remains a pioneer in carbon accounting, and invites other cities to adopt this approach responsibly.

In this context, achieving the objectives of the Paris Climate action plan requires to regulate this activity. Technological progress measures are necessary, but they alone will not be sufficient to reduce the sector's greenhouse gas emissions if the number of flights continues to rise.

Following in the footsteps of Amsterdam, which has reduced airport traffic by 40,000 movements (8%) by 2023 by introducing a curfew, banning private jets and abandoning plans to extend its airport, other major cities around the world are considering how to reduce air traffic. **Paris is part of this process, and will be lobbying the relevant actors,** in particular the French government and the managers of Roissy-Charles de Gaulle, Orly, Le Bourget and Beauvais-Tillé airports, **to reduce take-off and landing slots from 2025 onwards, compared with 2022 levels, in order to rapidly reach levels compatible with the Paris Agreement trajectory.**

B • Supporting the development of cycle tourism

The growth in cycle tourism and the use of soft mobility by Parisians and visitors alike reinforces the importance for Paris of continuing to roll out its second Bicycle Plan between now and 2026, and of initiating actions to make the city ever more cycleable.
From a tourism point of view, the completion of the cycling network by 2026 creates a major opportunity to develop the soft mobility offer for visitors.

To this end, the City and Paris Je T'aime-Office de Tourisme **are stepping up the roll-out of the "*Accueil Vélo*" label,** which will enhance the appeal of places accessible to cycle tourists in 2023 and stimulate the associated industry. This label identifies places that best meet the specific needs of cycling and touring visitors (accommodation, catering, bike repair and rental, etc.), contributes to the visibility of the cycle tourism infrastructure network and helps to put professionals in touch with each other. As part of its Bicycle Plan, the city is also working with hoteliers, who play an essential role in welcoming cycle tourists by fitting out their premises.

Paris Je T'aime - Office de Tourisme will also **promote the major cycle routes** crossing the capital (Scandiberique, London-Paris green avenue, Seine à vélo and Véloscénie) to French and international visitors. This will facilitate the reception and circulation of cycle tourists (stages, accommodation, maintenance and signposting), and the visibility of Paris on these routes will reinforce the efforts made to structure the network and the ecosystem.

2. Supporting the sustainable transition of tourism operators

With almost 89,000 rooms in Paris and more than 6,000 traditional catering establishments, the hotel and restaurant industry is one of the major actors in the ecological transition.

A • For sustainable tourist accommodation

The city will continue to support tourist accommodation operators in their efforts to make the transition to a greener environment, by helping them to renovate their facilities to make them more energy-efficient and more accessible, by helping them to install alternative accommodation solutions, and by promoting awareness-raising initiatives aimed at both operators and tourists.

In 2021, deployment of the "sustainable and accessible tourist accommodation" program enabled to finance work to improve energy performance, reduce water consumption (installation of fountains in hotels) and make rooms and common areas accessible to people with reduced mobility. Between now and 2026, this type of support will be extended and strengthened to provide leverage for new tourist accommodations (hotels, youth hostels, etc.).

In addition, the City of Paris and Paris Je T'aime - Office de Tourisme will encourage industry actors to **implement measures to reduce energy and water consumption,** in particular by using collective cooling systems that are less polluting than air conditioning, such as district cooling networks. The city will also promote the **development of alternative, less "carbon-intensive" accommodation,** in particular youth hostels and campsites, which help to limit the artificialization of land, and collective accommodation solutions such as youth hostels, which have a much smaller ecological footprint than conventional hotels.

The tourism sector has an essential role to play in **making Paris a single-use plastic-free destination.** Support for industry actors as part of the "*exemplary tourist stay*" approach will be stepped up, with training and experience-sharing opportunities, promotion of virtuous sectors and actors, and financial backing for initiatives to eradicate single-use plastic.

To ensure that all actors contribute their fair share, and to find additional sources of funding, the **City of Paris will be lobbying the French government and Parliament for a significant increase in the tourist tax levied on five-star hotels** and luxury hotels, which is currently very low (€3.30 for five-star hotels and €4.60 for luxury hotels per night). The City of Paris proposes to follow the example of major cities such as Berlin and Amsterdam, which have opted for a tourist tax based on a percentage of overnight stays. A tax representing 5% of overnight stays in these establishments would bring in around €120 million.

> **The tourism sector has an essential role to play in making Paris a single-use plastic-free destination.**

B • Supporting the mobilization of nightlife actors

The City of Paris is mobilizing nightlife actors the sector's ecological transition, in particular club and nightclub managers, as well as evening and festival organizers. The Conseil de la Nuit (Night Council), a city-led consultation and structuring body for all Parisian nightlife actors, has launched a specific working group on the ecological transition. The aim is to raise awareness and train professionals in the sector on methods to reduce their environmental impact (thermal renovation, sustainable food, end of single-use plastic, waste reduction, transport of artists and technicians, etc.) and adapt their infrastructures and activities to various hazards linked to climate change (heatwaves, flooding). **Paris will step up its support and expand the number of actors involved.**

To achieve the goal of making Paris a single-use plastic-free city, **the City will continue to support concert halls, clubs and festive establishments committed to ending the sale of plastic water bottles.**

C • For responsible events

Every year, the City of Paris issues 50,000 temporary permits to occupy public spaces or sports facilities for cultural, sporting, festive or popular education events.

In order to reduce the environmental impact of events, the City of Paris will introduce **a new eco-responsible events charter,** which will include a specific section devoted to the collection and recovery of food waste. It will also include a commitment to reuse as much as possible, and to use recyclable and co-responsible materials for sets and installations, to limit as much as possible the use of plastic in their manufacture, and to use low-consumption technical and stage equipment in reasonable numbers.

This will enable to better manage the impact of these events on the sites concerned (protection of green spaces, duration of occupation), energy supply methods and nuisances, as well as guaranteeing events with zero single-use plastic and aiming for zero waste, offering 100% organic and/or local catering, and promoting access by public transport and soft mobility. For major events, the preparatory file for the event must include a provisional carbon footprint, which will be supplemented, after the event, by a study showing the actual carbon footprint, in order to assess the organization's successes and shortcomings, and to jointly define the environmental objectives to be achieved for a new edition of the event. Its application will be monitored by the City's departments. **Within this framework, the City of Paris will exclude partnerships with companies involved in the production of fossil fuels.**

> **To sustainably transform events in Parisian public spaces, ten key sites will be equipped with water and electricity connection points.**

To sustainably transform events in Parisian public spaces, **ten key sites will be equipped with water and electricity connection points. This will eliminate the need for generators and** reduce the environmental impact of events.

Jean-Baptiste Gurliat / City of Paris, 2024

III. SUPPORTING LOW-CARBON, SUSTAINABLE AND RESILIENT FOOD

The food sector emitted 3.9 $MtCO_2e$ in 2021, or 17% of Paris' carbon footprint in 2018. Food is the second largest emitting sector after the aviation sector. Almost all of these emissions are linked to extramural activities, notably the production, transport and processing of food products.

Paris's food resources depend mainly on France, but also on markets further afield, particularly for animal feed and certain fruits and vegetables. Traditionally oriented towards its territory, the internationalization of trade has gradually distanced Paris from its home basin. Today, agricultural resources are under pressure from a number of factors: competitiveness on the international market, the collapse of biodiversity, energy tensions and the growing scarcity of water resources. The City of Paris is attempting to challenge this model through the development of a strategic vision for 2030. This sustainable food strategy aims to decouple its impact from the expected effects on the resource by promoting food autonomy through land preservation, resource resilience and diversification of supply modes.

In addition to reducing the Parisian carbon footprint, the objectives of the Climate action plan will enable to offer more sustainable, more local and healthier food for all Parisians and visitors to the capital.

1. Supporting a local, sustainable agricultural industry

70% of the food consumed in Paris comes from France, in particular from local markets for cereals, and from national basins for livestock production (Normandy, Brittany, Aquitaine) and market gardening (Pays de-la-Loire and Centre-Val-de-Loire). The proportion of food consumed in Paris produced in the Paris Basin is 25%. Against a backdrop of climate change, agriculture in the Paris region could be affected by increasing drought, which could lead to a growing demand for irrigation, as well as by changes in seasonal weather conditions.

Investments are therefore needed to support farms in adapting to climate change, in particular to diversify crops, set up ecological infrastructures and smooth out excess or insufficient rainfall.

With a view to making local agricultural production more sustainable, the Climate action plan supports the regional objective of **20% of Ile-de-France's agricultural land to be organic by 2030** and to increase the share of Ile-de-France's agricultural land to 50% from 48% in 2018, in order to preserve soil and biodiversity.

The structuring of a local food cooperation association aims to strengthen the region's food resilience, support the nearly 10,000 direct agricultural jobs in the region and make Paris an exemplary city in terms of responsible food consumption by reducing emissions from this targeted sector by 40% by 2030.

A • AgriParis Seine, an operator for more sustainable food production

Created in 2023, **AgriParisSeine** is an association for territorial cooperation on sustainable food and agriculture. Its aim is **to restructure the supply chain for Parisian collective catering within a 250 km radius of Paris.** To achieve this, the association will provide a framework for cooperation with urban and rural areas within this perimeter, so as to limit their competition for access to sustainable food and create territorial synergies to develop agricultural supply chains based on models that are more respectful of ecosystems and living organisms. The structure will also contribute to the goal of **60% local food in Parisian collective catering by 2030,** as well as to the preservation of biodiversity and better water management through the promotion of organic farming.

B • Preserving agricultural land

In order to support the AgriParis Seine initiative, the City of Paris is committed to preserving and developing agricultural land for sustainable farming in the Ile-de-France region, by mobilizing its services, land holdings and partnerships.

With regard to **the mobilization of municipal land, a study has been launched to identify and qualify properties owned by the City of Paris outside its territory, with a view to developing them for the benefit of sustainable agricultural sectors.** The aim is to preserve as far as possible the agricultural use of land already in use, if necessary by improving the environmental impact of their use, and to recultivate former farms. As for other types of land, the aim is to give them an agricultural vocation where they have proven potential, and to study the possibility of installing equipment and processing units on land that has already been partially developed. All new rural farming projects on City of Paris land will follow agroecological principles, i.e. a set of concepts and practices in which the knowledge of scientific ecology is used for agricultural production.

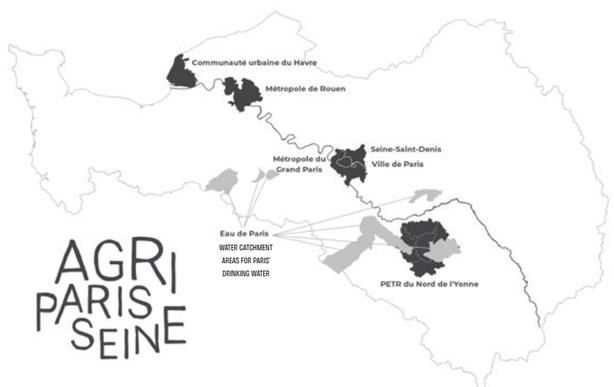
Initial avenues of development have already been identified and initiated, including the signing of the **first "*environmental rural lease*"** on a municipal property. This will provide a framework for agricultural practices on the site, while limiting the impact on resources (water, biodiversity, soil, air). Other sites with prima facie agricultural potential are currently being considered.

At the same time, the City of Paris is committed to supporting project developers in their search for land, developing land watch units with partner territories, and mobilizing the "dormant" land of Parisians.

The aim is to preserve as far as possible the agricultural use of land already in use, if necessary by improving the environmental impact of their use, and to recultivate former farms

Figure 26

Founding members and territories of AgriPariSeine



AgriParisSeine

C • Improving the viability of sustainable farms in the Paris Basin

Achieving the objectives of the Climate action plan for a sustainable food supply will require a transformation of the Paris Basin's agricultural model, with new farm installations and changes to existing farms and practices. In a 2020 study, the Abiosol association estimated that 16,000 jobs would need to be created to achieve greater food autonomy and an agro-ecological transition in the Paris Region by 2030.

The City of Paris is already taking action to promote the development of agriculture with the **Paris Fertile** program, which raises awareness, trains and supports between 400 and 600 Parisians each year in sustainable agriculture careers. However, agricultural production jobs remain unattractive today, with difficult conditions and low incomes.

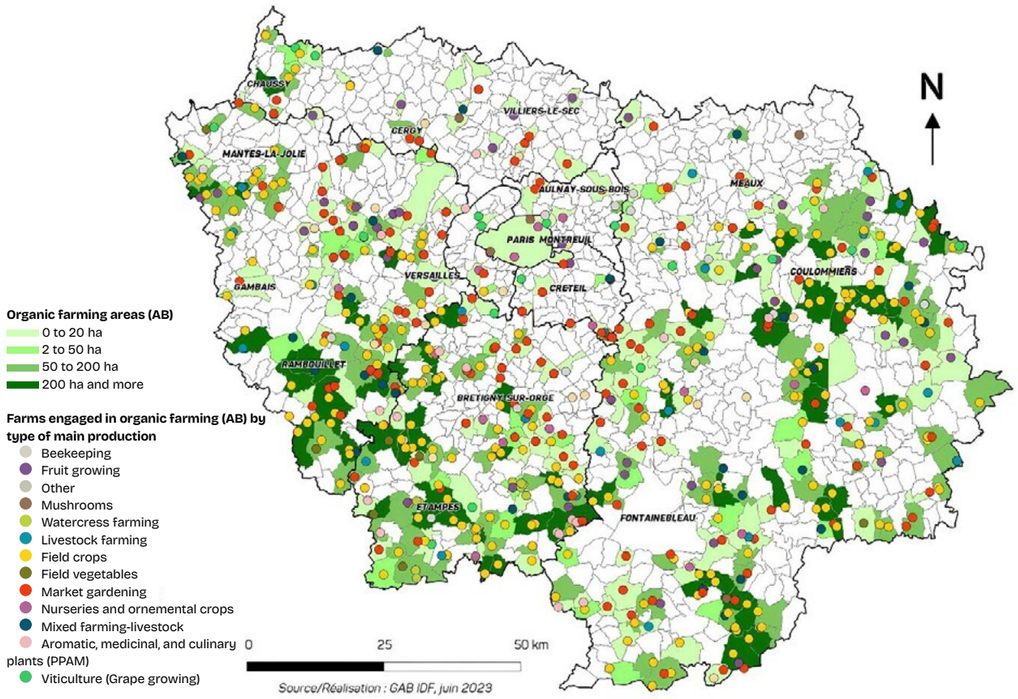
Encouraging the production of renewable energy on farms, by supporting the development of photovoltaic installations on the roofs of farm buildings, will improve and diversify the income of farmers in the Paris Basin. In addition to facilitating the installation and maintenance of diversified agro-ecological farms in the region, by improving farmers' incomes, this measure will contribute to the decarbonization of the region's electricity production.

Eau de Paris will continue its policy of supporting the agricultural and ecological transition of farms located in its catchment areas, particularly in Seine et Marne.

To find out more about Eau de Paris' sustainable agriculture projects: Part 3.II Acting for water quality

Figure 27

Farms engaged in organic farming



GAB IDF, 2023

D • Structuring local plant protein chains

The Régie Eau de Paris will contribute to 5 projects to structure agricultural sectors that are beneficial to water (oats, buckwheat, lentils, chickpeas, sunflower), which are essential for sustaining and amplifying changes in practices and, ultimately, restoring the quality of water resources.

In order to boost the supply of organic and sustainable food in the city, while ensuring maximum respect for animal welfare, the City of Paris supports the development of local plant-based protein chains through its public procurement policy (2 vegetarian meals a week served in school restaurants) and the creation of AgriParis Seine.

The greening of Paris' agricultural supply chains has many advantages, notably in terms of consolidating the agricultural sectors concerned within the 250 km radius of Paris, reducing greenhouse gas emissions, preserving water resources, protecting biodiversity and improving public health.

The Régie Eau de Paris will contribute to 5 projects to structure agricultural sectors.

2. Develop new spaces and locations to facilitate sustainable food sourcing

Paris has a dense and diversified food retail network. The relocation of agricultural production to urban and peri-urban areas and the promotion of short local circuits linked to farming areas are becoming major challenges. This is why the City of Paris supports innovation, the emergence of new modes of consumption and the development of sustainable logistics through the creation of multifunctional logistics platforms and urban food processing centers.

A • Developing local food

DEVELOPING A LOGISTICS NETWORK TO PROMOTE SHORT-DISTANCE SUPPLY CHAINS

In order to transport locally-produced foodstuffs, the city intends to **develop a strategic network of multi-functional logistics areas, adapted to re-use and short, local food chains.** These spaces will help reduce greenhouse gas emissions and last-mile logistics costs, and particular attention will be paid to integrating them into the road, river and rail networks. The deployment of this network will be primarily dedicated to short local food circuits, particularly at the gateway to Paris, in urban policy districts and in areas lacking in sustainable food supply.

Through this logistics network, the City also intends to structure container re-use channels (storage, washing, reverse logistics) thanks to infrastructures adapted to re-use solutions, in line with Paris' commitment to phasing out single-use plastics.

SUPPORTING RESTAURATEURS AND RETAILERS TO ENSURE A SUSTAINABLE FOOD SUPPLY FOR AS MANY PEOPLE AS POSSIBLE

The City will ensure a **network of sustainable restaurants and food shops, particularly in areas more than 400 meters from a sustainable food access point.** To facilitate this, the City of Paris will mobilize the Paris Commerce operator and encourage the installation of these activities in public spaces.

CREATING FOOD PROCESSING FACILITIES IN PARIS

To strengthen its sustainable food network, **the City of Paris will develop new food processing facilities based on** the model of the Hôtel Serpollet (20e), in particular for processing unsold produce.

The installation of canneries or shared kitchens to process products with short use-by dates will be encouraged near food markets or fresh produce shops, as well as alongside areas practicing urban agriculture.

The development of shared kitchens will be particularly encouraged in working-class and student neighborhoods, to ensure a supply of healthy, local produce for all. Each development project will need to consider the location of local food processing units, based on the need to make the most of unsold produce and local urban agriculture plots.

B • Developing urban agriculture

Local agriculture is a lever for adapting to climate change, providing organic, sustainable, environmentally-friendly food and serving economic, social, educational, landscape and environmental functions.

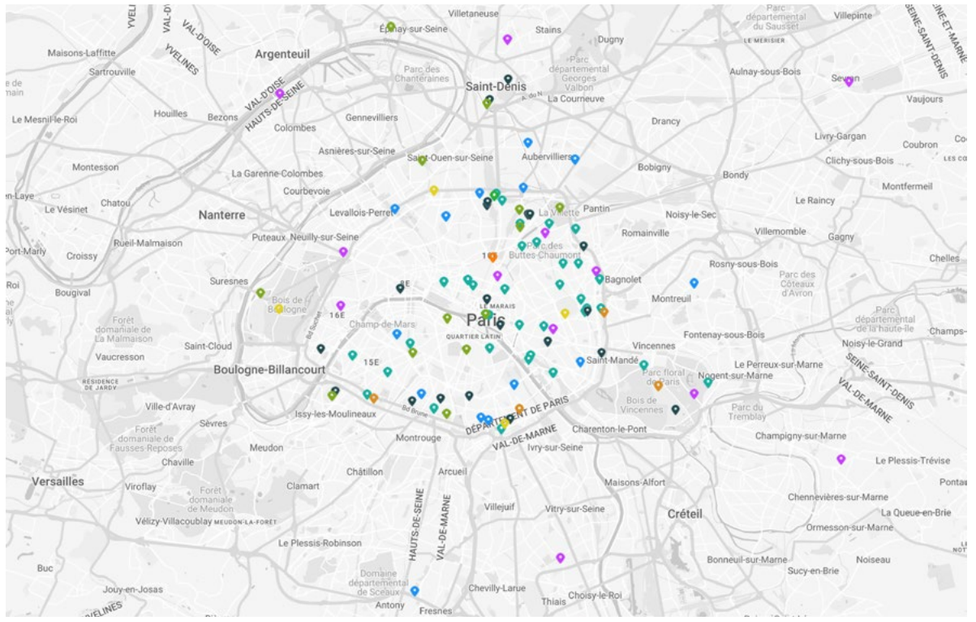
The City of Paris will preserve and develop urban agriculture sites throughout the city by mobilizing land (in the open as well as on rooftops and within built-up areas, on City and partner property) and providing technical and economic support for urban agriculture project leaders.

The city will be relying in particular on the Parisculteurs program, which in 5 seasons has mobilized 120 sites, 75 of which have already been installed, representing 34 hectares of managed land. By 2030, 100% of Parisculteurs open-ground sites will be agro-ecological. At the same time, the development of "edible streets" in working-class neighborhoods will allow everyone to benefit from the fruits of these projects.

The City of Paris will make **the Farm of Paris ("Ferme de Paris"), a 5-hectare educational farm, a demonstrator of an agroecological model that is sober and resilient in the face of climate change,** by promoting this facility beyond the 35,000 annual visits, more than 160 activities organized each year and training courses for project leaders.

Figure 28

Parisculteurs project call sites



City of Paris, 2024

IV. ACCELERATING THE TRANSFORMATION OF WORK AND EMPLOYMENT

To initiate real societal change, existing professions will have to adapt, and certain economic activities may become unviable in the future. It is important to anticipate these changes and encourage economic diversification. This implies increasing the skills of companies and employees in this area, and even supporting the retraining of workers in emerging sectors linked to the fight against climate change. The City of Paris will support this transformation of the working ecosystem and promote the emergence of new professions in favor of a sustainable future.

1. Mobilizing research and higher education for the ecological transition

With almost 400,000 students and nearly 200 higher education establishments, some of them among the most prestigious in the world, Paris is a leading student capital and a fertile breeding ground for research. To contribute to high-level vocational training, the City of Paris created specialized schools of applied arts as early as the end of the 19th century, complemented by establishments specializing in urban engineering (EIVP), nature trades (Ecole du Breuil), architecture and graphic arts (EPSAPVP) and physics, chemistry and biology (ESPCI).

The richness of this environment is a real asset for training students in climate issues and mobilizing research to support the ecological transition

400, 000
students living in Paris

A • Climate training in higher education

Since the 19th century, the City of Paris has been committed to high-level vocational training, with the creation of 3 schools of applied arts. Now joined by schools specializing in urban engineering, nature-related professions, architecture and the fields of physics, chemistry and biology, the City of Paris' schools of higher education are a priority lever for training young people in the professions of the ecological transition. The City will endeavor **to systematically include a module on the ecological transition in their training offers, applied to the field of study of its establishments.**

More broadly, the City will continue the work begun within the Climate Academy with actors in Parisian higher education (universities, schools, student associations, students) to **increase the teaching of the ecological transition in initial and continuing training courses.**

The City of Paris will mobilize the Parisian education ecosystem and dialogue with government departments to ensure that the ecological transition is a benchmark for the activities of higher education establishments, by integrating dedicated training modules and mobilizing staff and students around concrete projects and the sharing of experience.

B • Supporting research and innovation for climate protection

The ecological transition is a catalyst for the research sector, and Paris is an ideal testing ground. The city has long been committed to innovation, research and universities, well beyond its institutional competencies and territorial boundaries. The scientific attractiveness of the city and the promotion of Parisian research are essential to the community.

The City will pursue its ambition to be a place of research and experimentation at the service of ecological transition, through its "Paris Recherche" label, which brings together several funding and research support schemes (doctoral students on CIFRE contracts, Conseil Scientifique de la Ville de Paris, Institut d'Études Avancées de Paris, research grants, events, etc.). A new scheme, "Research Fields", will be added, offering Master's level students the opportunity to work in conjunction with the City on defined territories. These actions aim to enrich the public policies developed by the community around the ecological and social transition.

The Paris Recherche initiative is designed to facilitate links between the city's departments and researchers, so that scientific recommendations can be applied as closely as possible to municipal action in response to the urgent need for action on climate change. Each year, it enables the city's departments to formulate needs in terms of research and expertise, and to benefit from the results produced by these mechanisms on priority themes and areas of study with regard to climate issues. For example, Paris will support research programs to better understand the consequences of climate change on Parisian heritage, as well as best practices and innovative measures to prevent or mitigate these threats.

The City's partnership with the Regional Climate Study Group (GREC – "Groupement régional d'études sur le climat") in Paris will enable the results of academic research to be translated more systematically into actionable knowledge for City departments: the thematic knowledge synthesis notebooks co-developed by City departments and GREC researchers will be the main tool. They will focus on four themes in particular: the City of Paris' room for maneuver in terms of energy and material sobriety, the management of organic materials in the City, the participation of the working classes in the transition, and the effects of public ecological transition policies on health.

- **The city will continue and expand the use of participatory science to create links between researchers, citizens, city employees, children and young people, in particular through the Climate Academy, which aims to enable all these actors to exchange ideas and build together.**

TRAINING BUILDING PROFESSIONALS

The challenge of ecological transition in buildings is crucial to achieving carbon neutrality. In order to meet the ambitious targets set by the City of Paris for the ecological renovation of buildings by 2030 and 2050, a sufficient number of skilled professionals to carry out renovation projects is needed. However, these trades are already under pressure, and some condominiums are having difficulty finding companies capable of carrying out their projects.

C • Places for learning and information

To remedy this situation, **the city will mobilize training and educational actors to promote eco-renovation trades** from the design phase through to completion. Thanks to the eco-construction lab housed at the Climate Academy, craftsmen, construction companies, builders, students, architects, project managers and contractors have a privileged place for demonstrations, information and training. It also features a material library of biosourced and geosourced materials, as well as data sheets produced by "*Construire Solidaire*" for detailed information on the characteristics of low-carbon materials.

At the same time, **the City will be showcasing jobs in the ecological transition at its major annual "*Paris pour l'Emploi*" job fair, which each year offers several thousand job vacancies** to candidates with or without experience, graduates or otherwise, looking for a job, apprenticeship, orientation or professional mobility. In parallel with this major event, special days will be organized with the help of Quartier jeune (QJ) and the Climate Academy, in the form of recruitment forums providing precise guidance to companies and structures recruiting in the field of ecological transition.

More generally, the Parisian strategy for integration through employment will work to raise the profile of these forward-looking professions in events organized as part of the Parisian Plan for Integration through Employment (PPIE): forums, job datings, Employment Rallies, etc.

D • Practical application and design of eco-renovation projects

The city will study the possibility of a passive renovation competition with a view to creating a renovation training site. It will pursue its commitment to innovation in renovation, with a view to proposing an innovative and singular architectural style that would offer a new cachet to the urban environment, particularly that built after the Second World War.

With the same aim of providing professional training and enhancing the attractiveness of eco-renovation trades, **the City of Paris will be setting up a renovation training site on a municipal building.** The worksite will be open to City of Paris employees, craftsmen, companies, jobseekers, young people undergoing training and adults undergoing retraining. It will be both a school for learning techniques and using eco-renovation materials, and a demonstrator of talent and know-how capable of both stimulating the desire to renovate and the desire to take part in this formidable challenge.

2. Supporting employment through the ecological transition

The social consequences of the current crises are severe, and it is with this in mind that the City intends to lend its full support to the actors mobilized to guarantee access to employment for Parisians. In this respect, the emergence of jobs in the ecological transition to meet the challenges of climate change is a catalyst that the City will seize upon to help young people and people who are far from employment to find or regain a job. The City of Paris will ensure that women have equal access to these new professional opportunities.

The social consequences of the current crises are severe, and it is with this in mind that the City intends to lend its full support to the actors mobilized to guarantee access to employment for Parisians.

Crédits

A • Integration through economic activity

The town is keen to encourage initiatives that promote access to employment for people experiencing social and professional difficulties, in particular through the "insertion par l'activité économique" (IAE) scheme. This is aimed at people with both social and professional difficulties, and enables them to achieve positive results through work experience, reinforced social and professional support, and appropriate training. The City of Paris is committed to **doubling the number of people benefiting from the IAE scheme in Paris, with priority given to jobs linked to the environmental transition, to reach 10,000 by 2030.**

Applying the principles of material and resource sobriety to production methods - via the solution represented by the circular economy - has significant potential for creating local, inclusive and non-displaceable jobs: **3,000 jobs could be created in the circular fashion sector by 2030, and 1,500 in the repair and reconditioning of electrical and electronic appliances,** 2 priority circular economy sectors.

The city supports ESS structures, notably through subsidies and assistance with access to training, as well as through its responsible public procurement scheme.

The City will continue to support these structures, which are socially and environmentally committed, by offering jobs in emerging transition professions.

B • Paris Boost Emploi

Through its "*Paris boost emploi*" program, the City of Paris supports job-seeking for Parisians. It **enables every Parisian looking for work to benefit from free vocational training.** It offers many young people a professional experience within the City and its satellites. The program's ambition is to double the number of people benefiting from economic activity-based integration schemes. The program has enabled three new "zero long-term unemployed territories" to be tested, bringing the total to four in the capital.

Thanks to funding from the City of Paris, nearly 3,500 Parisians are trained each year in the digital, remanufacturing, circular economy and ecological transition professions..

The City will continue to provide financial support to the major organizations with which it has signed multi-year agreements: the Mission Locale de Paris, the Ensemble Paris Emploi Compétences (EPEC) and the École de la 2ème Chance.

The City will also use the "ParisEmploi" scheme to promote jobs in the ecological transition. These points offer a first-level reception, information and guidance service for all Parisians seeking employment, professional reorientation or training. Acting as gateways to the full range of local support services, the "ParisEmploi" points are therefore a priority relay for engaging new professions.

V. FINANCING AND INVESTING FOR THE CLIMATE

The acceleration of climate change means that investments have to be upscaled in order to curb greenhouse gas emissions, but above all to protect Parisians who are already suffering the effects of this crisis.

Global warming of+ 3°C above pre-industrial levels would result in an estimated annual loss of at least 170 billion euros for the European economy.

Unprecedented volumes of investment must therefore be mobilized. More than ever, the sources of financing for the ecological transition need to be diversified and increased. It is also important to involve all local stakeholders in this effort, so that the burden of ecological investment does not fall on public funds alone.

1. Tools for programming and monitoring climate protection investments

Since its first Climate action plan, the City has invested more than €1 billion directly in the energy transition, divided between the modernization of public buildings (€536 million), the renovation of social housing (€605 million), support for private condominiums (€22 million) and the profound transformation of public lighting (€56 million). More globally, the City has invested €10 billion in the ecological transition since 2014.

In 2022, the Mandate Program of Investments Acceleration (PAIM - "Programme d'accélération des investissements de la mandature"), has made the ecological transition imposed by the climate emergency its priority, resulting in an unprecedented level of investment (1.75 billion euros from 2023). In addition to its impact on the daily lives of Parisians and on the transformation of Paris in the face of the climate emergency, this investment also contributes to the dynamism of the French economy.

A • Accelerating the city's climate-friendly investment trajectory

In order to objectify the investment trajectory required for the success of the Climate action plan, the City will draw inspiration from the work underway by the C40 on the introduction of a *climate budget* based on the model of the City of Oslo. The aim of this approach is to identify and track municipal investments earmarked for implementing the actions set out in the Climate action plan, in order to achieve the decarbonization trajectory it supports. It will also enable the city to meet its commitment to the European Net Zero Cities program, for which it must set up a *Climate City Contract* backed by a climate investment plan.

The city will draw up a climate budget for the period 2024-2030. Combining carbon data and financial data, this will be a programming and steering tool that will enable a set of measures to be monitored and readjusted if necessary. Integrated into the budgetary cycle, it will enable to question annually the investment in the implementation and effectiveness of measures in relation to the climate trajectories adopted by Paris. Alerts identified in the climate budget will be the subject of a specific analysis with a view to more regular readjustment of measures. The climate budget will include a focus on working-class neighborhoods.

B • Assessing the impact of municipal spending on the climate

The construction of the Paris budget is a decisive and decisive step that must contribute to the City's achievement of its climate objectives. It is in this perspective of coherence and transparency that **the climate assessment of its budget** is part of, **making it possible to identify operating and investment expenditure with a significant impact, positive or negative, on the climate.**

This approach is based on the methodology developed by the Institute for Climate Economics (I4CE – "Institut de l'Économie pour le Climat"), which makes it possible to determine the expenditure associated with a favorable, unfavorable, neutral or indefinite impact on greenhouse gas emissions.

Undertaken for the first time in 2020 on the basis of the 2019 administrative account, the climate assessment has since been repeated year after year. Each new exercise allows to broaden the scope of the expenses evaluated and to deepen the assessment made of them. In accordance with the provisions of the 2024 Finance Law relating to the "Green Budget" of local authorities, the City of Paris will continue and strengthen its budget climate assessment exercise. From 2026, the scope of the assessment will be extended to include biodiversity issues. By 2028, the assessment will cover the 6 axes of the European taxonomy: climate change mitigation and adaptation, water resources, circular economy, air and soil pollution, and biodiversity.

With a view to strengthening political decision-making, the work on climate assessment of city spending, currently carried out ex-post, will gradually be integrated into the budget construction process from the outset, to enable the city to prioritize the allocation of resources to projects with a positive impact on the climate, and reduce any spending that would, conversely, have a negative impact on the climate.

2. Mobilizing private actors and funding

While the City of Paris is committed to reducing its territory's greenhouse gas emissions and protecting Parisians from the effects of climate change, its actions alone are not enough. It's everyone's responsibility, and that's why the City of Paris will pursue its commitment while encouraging public and private actors to do the same.

The City of Paris intends to continue empowering economic, institutional and financial actors, so that they can play a direct part in accelerating the ecological transition supported by the Climate action plan.

A • Encouraging economic actors to align themselves with the objectives of the Climate action plan

The City of Paris created the Paris Climate Action scheme (Paris Action Climat) in 2012 to mobilize economic actors around climate issues. In ten years, it has been joined by 73 companies that have signed the partnership charter, and more than 500 participants have worked in themed communities. The commitments and mobilization of the members of this network have contributed to the reduction of one million tonnes of CO_2e in Paris.

In 2022, Paris Climate Action moved from a reporting approach, with signatories reporting their commitments, to an action-based approach, with signatories committing to develop actions in Paris. The scope of the scheme has been broadened to take greater account of biodiversity issues in Paris. The change of name to "Paris Action Climat Biodiversité" bears witness to this.

With the Paris Biodiversity & Climate Action Pact, **signatory Parisian companies commit to developing actions in line with the objectives of the Climate action plan** (such as developing rooftop renewable energy production capacity, implementing programs to phase out single-use plastics, carrying out energy renovation work on their premises or greening their facades, etc.). The City of Paris has developed a catalog of inspiring initiatives that can be deployed throughout Paris, available to signatories.

The new scheme will provide an impetus for new projects, aligned with the city's objectives, to be implemented by economic actors. All new actions will be listed on an interactive map accessible to the general public. Economic actors who have not yet signed up will also be able to apply to join the network via the two annual calls for expressions of interest.

B • Directing private financing towards ecological transition projects

The mobilization of private capital is essential to the success of the ecological transition supported by the Climate action plan. That's why the City of Paris and the Metropolis of Greater Paris have created the Carbon Cooperative, alongside some forty members. The operator is structured as a cooperative (SCIC), with a broad capital base including project sponsors, local authorities, financial companies, experts in forestry, agriculture, biodiversity and the circular economy, and City operators.

A genuine financing operator for ecological transition projects, the carbon cooperative relies on a variety of mechanisms, including energy saving certificates and local, responsible carbon offsetting based on the Bas Carbone label.

The creation of a local label offering a methodology for urban renaturation projects will provide the cooperative with the tools it needs to select projects, and will help Parisian project leaders gain access to the funding they need to implement their solutions and develop innovations to meet the challenges of the Climate action plan.

Lastly, the City of Paris has launched a study into the creation of a "Paris 2050" endowment fund. The scope of this fund will cover all the public policies pursued by the municipality in support of a city in transition. Indeed, on the occasion of the 2024 Olympic and Paralympic Games, the City of Paris has entered into solid partnerships that it seems useful to perpetuate, while amplifying the actions carried out as part of the legacy of the Games. This fund will support a diversity of projects, a mix of funding sources and flexible operations. The fund will be dedicated first and foremost to financing innovative projects in the general interest, particularly in the fields of ecological transition, sports, culture, social affairs, education, heritage and philanthropy. These projects may be implemented by City of Paris departments or by any non-profit organization in the Paris area, for actions supported by the City of Paris.

C • Green and sustainable bonds

Since 2015, the City of Paris has been using green, social and sustainable bonds to help finance the local development projects it supports. To measure the impact of the operations financed and provide a high level of transparency to national and international investors on the use of this financing, it implements an "ESG" (environmental, social and governance) assessment tool based on recognized standards in the field, in particular the European taxonomy.

The City will pursue its commitment to use "green bonds" every year, and will update its benchmark to incorporate the new guidelines and measures included in the 2024-2030 Climate action plan.

> **Since 2015, the City of Paris has been using green, social and sustainable bonds to help finance the local development projects it supports.**

3. Mobilizing the City of Paris' ecosystem of operators

Over the course of its history, the City of Paris has created operators in various legal forms to carry out public service missions on its behalf, thus extending the action of the local authority. These operators are responsible for implementing Paris's policy to combat climate change. The creation of new operators will help accelerate the capital's ecological transition. In addition to its operators, public procurement represents a major lever in the transition of the economy towards a low-carbon model adapted to climate change.

> **Over the course of its history, the City of Paris has created operators in various legal forms to carry out public service missions on its behalf, thus extending the action of the local authority**

A • Involving city operators in the ecological transition

The City of Paris can call on a number of different operators to manage or enhance part of its assets and/or carry out a variety of tasks. The Mixed Economy Societies (SEM – "Sociétés d'Économie Mixte") and Local Public Societies (SPL – "Sociétés Publiques Locales"), created on the initiative of the City of Paris, act as intermediaries for the local authority in the fields of housing and real estate (social landlords, combatting substandard housing, etc.), development, mobility and logistics, and services (funeral services, energy networks, culture, leisure and tourism, etc.).

Like municipal departments, **these City operators must make a greater contribution to achieving Paris's climate objectives.** They will have to adopt their own strategies, adapting the Paris Climate action plan to their own scale and committing themselves to participating in the City of Paris' measures in this area.

To ensure that its ecological transition policy is deployed as closely as possible to local actors, **the City of Paris is developing dedicated entities in various forms (SEM, cooperative, association...) by forging close links with partner territories.**

SEM Axe-Seine Énergies Renouvelables, created with the support of Le Havre, Rouen and the Greater Paris Metropolis, is involved in the development, management, distribution, storage and delivery of renewable energies in the Seine Axis area

The creation of the **AgriParis Seine** association, which brings together 7 local authorities and actors (Paris, Rouen, Le Havre, Métropole du Grand Paris, Seine-Saint-Denis, Pôle d'Équilibre Territorial et Rural du Nord de l'Yonne and Eau de Paris), aims to reduce the environmental impact of food production by structuring supply chains and strengthening links between local actors.

Énergie de Paris' mission will be to support the development of local renewable energy production in Paris.

B • Using public procurement as a lever for climate action

With public procurement worth 1.6 billion euros a year, and cumulative sales of over 1.4 billion euros a year for concession contracts, Parisian public procurement represents a considerable lever for the city's ecological and inclusive transition.

For example, more than 70% of the contracts signed by the Paris local authority contain an environmental provision. Sustainable food is being developed in the 30 million meals served by the Paris administration every year, with a rate of 100% in nurseries. Diesel fuel will be banned from markets from January 1, 2020, as will the use of single-use plastic. The electricity used by the City of Paris is 100% renewable. The administration is reducing its consumption of supplies and adopting measures against waste, particularly food waste.

As part of its second **Parisian scheme for responsible public procurement**, covering the period 2022-2026, the City has sought to strengthen the role of its public procurement in achieving the objectives of the Climate action plan. This approach will be pursued and strengthened in the next public procurement plan.

The City is studying the possibility of introducing "carbon criteria" into its contracts, and is working in this direction as part of the European Decarb-Pro program on the introduction of carbon pricing in public procurement, particularly concerning infrastructure, construction and energy. In addition, the City of Paris, in pursuit of the objectives of the responsible public procurement scheme adopted in December 2021, which calls for "75% of contracts to include a provision relating to the circular economy by 2026", is paying particular attention to the repairability of its IT and digital equipment.

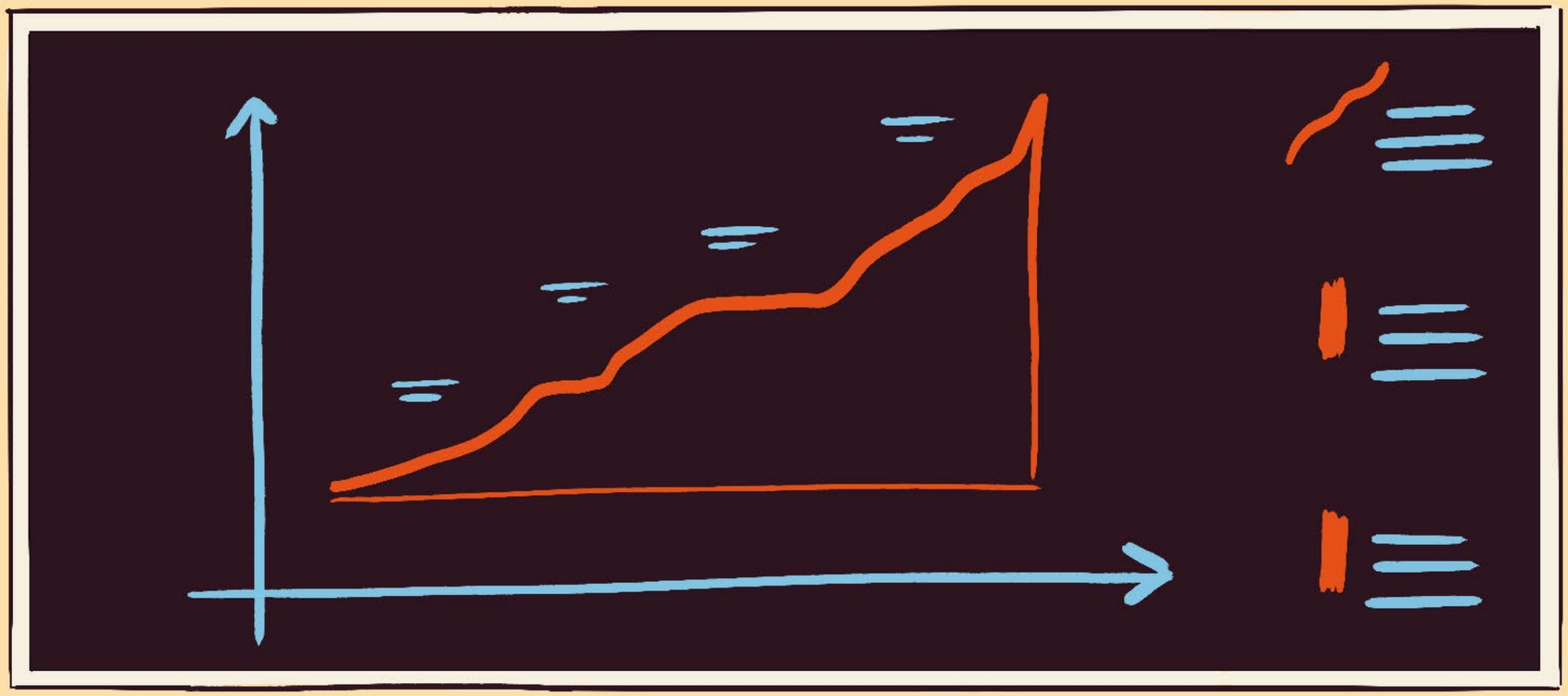
In addition, the City of Paris will, wherever possible, include provisions to ensure that the requirements of the Climate action plan are taken into account when renewing its public service delegation contracts, particularly with regard to:

- annual monitoring of energy consumption
- a carbon/energy performance target backed by a program of works enabling the property concerned to comply with the Tertiary Sector Decree, or at least to achieve an energy gain of 30%.

With a view to supporting local dynamism, innovation and social support, the City of Paris awards grants and subsidies to local actors each year, in line with the priorities of municipal policy. In line with the commitments of the Climate action plan, **from 2025 onwards, the City of Paris will gradually introduce a form of eco-conditionality for its system of calls for projects and subsidies.** A set of guidelines will be drawn up to make the City's climate objectives a reality in the life of associations and in grant applications, informing associations about best practices and providing practical toolkits. An assessment of the implementation of this measure will be communicated annually when the budget is voted. Lastly, the City of Paris will ensure the equal-conditionality of aid granted for ecological transition, so that the structures financed implement actions to achieve gender equality.

Sustainable food is being developed in the 30 million meals served by the Paris administration every year, with a rate of 100% in nurseries

Joséphine Brueder / City of Paris, 2024



ACTING TOGETHER FOR THE CLIMATE

More than ever, Paris can count on a population committed to the climate. Parisians have demonstrated this on numerous occasions, from the citizens' vote organized by the City of Paris in 2017, during which residents voted 95% in favor of the Climate action plan, to the Climate Walks, which mobilized a large number of people

This is good news, because the success of the fight against climate change in Paris depends not only on the municipality, which is directly responsible for 1% of the area's greenhouse gas emissions, but also on all the people who live, work or visit the area. If citizen participation is in the DNA of the City's climate action, this fourth Climate action plan gives Parisians even more of the keys to decision-making and action, through shared governance, access to progress monitoring, and ever-increasing opportunities to get involved

In 2021, the City opened the Climate Academy (“Académie du Climat”), a place dedicated to information, training and sharing solutions for the ecological transition. This venue, which brings together scientists, experts, actors in the transition, committed young people and Parisians keen to understand and act, will strengthen its role in presenting and discussing the public policies undertaken by the City of Paris to respond to the climate emergency.

I. BY ADOPTING SHARED GOVERNANCE

Aware that the ecological transition requires the mobilization of all local stakeholders, the City of Paris has involved its administration, economic actors, associations and citizens in the Climate action plan process since 2007.

The drafting of this fourth Paris Climate action plan benefited from strong citizen input: over 140 local events were organized throughout the three months of preliminary consultation, and 1,223 contributions on all aspects of the ecological transition were collected on the "decider.paris.fr" citizen participation. The involvement of numerous economic actors, associations and institutions helped enrich these contributions, resulting in an expression of Parisian civil society.

During the implementation phase, the Climate action plan will continue this dialogue and make available the data needed to transparently report on progress, in order to ensure a right of follow-up for the actors in Paris.

1. Monitoring and steering the transition with local stakeholders

The City of Paris is convinced that the involvement of local actors is essential to building a collective and effective response to climate change. It ensures that citizens' interests are better represented, and mobilizes a diversity of resources and expertise. The City of Paris will rely on citizen governance mechanisms and will share its progress in complete transparency. To monitor the actions it is implementing as part of the Climate action plan and assess their effects, the City of Paris will draw on the expertise of the Regional Climate Study Group (GREC – "Groupement régional d'études sur le climat").

A • Democratic governance and citizens

THE CITIZENS' ASSEMBLY, A WATCHDOG FOR THE CLIMATE ACTION PLAN

The City of Paris has a number of tools to enable Parisians to get involved in municipal choices and participate in the decisions that concern them

One of these tools is the **Citizens' Assembly**, created in 2021. A participative and deliberative body, it brings together every year 100 Parisians chosen by lot. The Assembly evaluates public policies, has access to training resources, and interviews elected officials, civil servants and outside experts. It can issue resolutions and proposals on subjects it considers to be priorities, and submit them to the Paris Council

The Citizens' Assembly was involved in drawing up the Climate action plan, through a written contribution. Future promotions of the Citizens' Assembly will be able to pursue this commitment, **by taking up any subject relating to the Climate action plan, and by questioning all aspects of its implementation.** The Citizens' Assembly will also be able to contribute to the Paris Council's democratic debate on climate issues, as it did on the renovation of private housing, by proposing a resolution on the involvement of condominium managers in accelerating the thermal renovation of Parisian buildings. **The right of follow-up given to the Assembly will enable its members to observe and evaluate the implementation of everything that has been voted.**

THE FUTURE GENERATIONS COUNCIL, GUARANTOR OF THE CLIMATE ACTION PLAN'S FORWARD-LOOKING VISION

During the implementation phase of the Climate action plan, the City will continue the dialogue initiated with other Parisian citizen bodies, such as the **Council for Future Generations (CGF), whose action-oriented foresight missions are set to be strengthened. This consultative, independent and equal-opportunity body, whose aim is to represent Parisian civil society and to reflect in a forward-looking way on themes that concern Paris, will be involved in monitoring the Climate action plan.** It will meet regularly to monitor the implementation of the Climate action plan, and of certain projects arising from it. Additional missions may be entrusted to members, through referrals on specific subjects.

ANNUAL MEETINGS TO MONITOR THE IMPLEMENTATION OF THE CLIMATE ACTION PLAN THROUGH THE PRISM OF SOCIAL JUSTICE

Finally, the associative world was heavily involved in the consultation process prior to the revision of the Climate action plan, highlighting the benefits of dialogue between environmental associations and those working for solidarity and social justice. These exchanges highlighted the importance of approaching the challenges of ecological transition from a social angle, to ensure that the ecological transition truly benefits people in precarious situations. Concerns such as summer energy poverty and food democracy emerged in this context and have found their place, in the form of measures, in the Climate action plan. To pursue these exchanges, which are essential to the full integration of the social perspective in the implementation of the Climate action plan's measures, **the City of Paris will organize, in conjunction with the Climate Academy, thematic meetings with associations committed to the ecological transition, solidarity and/or involved in working-class neighborhoods. These annual meetings will provide an opportunity to address various topics and measures of the Climate action plan from a social justice perspective.** They will be particularly useful for questioning these measures, identifying any bottlenecks and levers for action to speed up their implementation. The City will also be drawing on the Parisian Council of Associations ("Conseil Parisien des Associations"), a participatory body bringing together 100 structures representing the vitality of associations, with the aim of co-constructing public policies for associations throughout Paris

B • Sharing the progress of the Climate action plan transparently

TRANSPARENT AND REGULAR COMMUNICATION OF DATA ON PARIS' ECOLOGICAL TRANSITION

In order to communicate clearly and transparently on the ecological transition of the territory and its policies in this area, the City of Paris will publish an "ecological transition dashboard" on its website. This will enable residents to track the progress made by the City in "real time", based on indicators from various areas of municipal action. **In addition, the City of Paris will produce an annual sustainable development report entitled "Paris Demain", which will present analyses on the evolution of these indicators.**

In addition, the City will continue to make its data accessible by regularly publishing datasets on its open-access data platform. These data cover the main aspects of the Climate action plan (emissions reduction, adaptation, energy and air quality). They will contribute to enriching reflections, studies and analyses on the impacts of the ecological transition.

OPERATIONAL MONITORING TOOLS

The actions of the Climate action plan are detailed in the attached sheets. These sheets present the context, objectives, resources and partnerships required to implement them. Where appropriate, they specify the indicators for monitoring the actions.

The City of Paris will present a progress report after three years of implementing the Climate action plan. This "mid-term review" will present the program's progress and compliance with the carbon trajectory and various strategic objectives set out in the Climate action plan.

The City of Paris will ensure that its operating and investment expenditure is consistent with the objectives of the Climate action plan. To this end, it will carry out a budget climate assessment, which measures the impact of City of Paris spending on greenhouse gas emissions. It will also set up a "climate budget", corresponding to the Climate action plan's investment program. **To better inform elected officials and the general public, the City will present a specific document alongside the budget adoption process, known as the "Climate Budget". This document will be appended to the primitive budget.**

The "Climate Budget" will also enable the City to report annually on its efforts to private investors, notably in the context of green bond issues, as well as to the international organizations with which it collaborates (C40, Covenant of Mayors, Carbon Disclosure Project).

II. BY MOBILIZING PARISIANS

Achieving carbon neutrality and adapting Paris to climate change will only be possible if everyone who lives, works and travels in the area is involved. In order to provide them with the best possible support, the City of Paris will continue to strengthen and improve its training and mobilization programs in favor of the climate.

1. Understanding for better action

The more Parisians are aware of environmental issues, the more they will be able to identify the room for maneuver available to them, and will be motivated to take concrete action to reduce their environmental footprint. Taking ownership of climate issues also strengthens the ability of Parisian citizens to mobilize and participate in collective initiatives. The City of Paris wants to give them all the tools they need to grasp the challenges of this changing world and transform it.

The participatory agenda supported by the City of Paris will also be an opportunity to **place at the heart of the democratic debate the major issues, some of which concern the daily lives of Parisians, that need to be decided in order to accelerate Paris' carbon neutrality trajectory,** by mobilizing various tools, depending on the themes addressed and the issues at stake: **organization of consultations, setting up of citizen conferences, continuation of voting exercises** (like the one on self-service scooters organized in April 2023 and the one on SUVs in February 2024), etc. These democratic events will be accompanied by the production of accessible information on the major issues at stake in the debate, and the creation of forums for discussion, dialogue and the exchange of ideas.

A • The Climate Academy, an emblematic place for learning, commitment and action

In response to the expectations expressed by young people during the climate marches, in September 2021 the City of Paris opened the Climate Academy ("Académie du Climat"), a venue dedicated to accelerating the ecological transition located in the heart of Paris, on the premises of the former 4th arrondissement town hall. Through the many partnerships forged since its opening, the Académie has become a place for meetings, sharing and creation, open to the City.

The Climate Academy is also a space for experimentation and demonstration of solutions and means of action, echoing the policy pursued by the City of Paris over the last ten years to build a supportive, carbon-neutral city by 2050. **This role as a demonstrator of mitigation and adaptation solutions for a heritage building will be strengthened in the years to come, in order to achieve the objectives set by the Climate action plan** (creation of an oasis square, greening of the roofs on the 3(rd) floor and the façades, green shade, ecological insulation, installation of renewable energy systems for the building's energy autonomy, rainwater recovery, etc..

With the aim of strengthening training and support for citizens, **the Climate Academy is committed to stepping up its awareness-raising activities,** particularly in schools, middle schools and universities, while increasing its offer of awareness-raising activities for associations, economic actors, elected representatives and the general public. Priority will be given to "priority education network" establishments and those in urban policy districts, to ensure that everyone has access to these initiatives.

It will continue to amplify mobilization on environmental issues through the organization of events and meetings open to all, and the incubation of associative and professional projects in favor of climate and biodiversity (participative research, etc.). In the coming months, the City of Paris shall be further deploying tools to support the phase-out of single-use plastic (SUP) by the time of the Olympic and Paralympic Games, zero waste territories, the revision of the bioclimatic Local Urban Plan (PLU), and to involve young people in the implementation of the Climate action plan's objectives.

B • For education in tune with the ecological transition

OUTDOOR CLASSES

Taking advantage of the outdoors to learn allows you to reconnect with your environment and approach learning in a different way. Although outdoor learning is still a relatively undeveloped practice in France, it has been practiced for several years in other countries (Switzerland, Scotland, Germany, Denmark, Sweden...), and more and more experiments are being developed in Paris in various locations that are conducive to this learning format: schoolyards, parks, woods and even urban spaces on the outskirts of schools... They concern both school and extracurricular time. The long-lasting, regular link with nature that is created in these learning spaces helps to raise children's awareness of ecological issues and develop attitudes conducive to preserving the environment.

The outdoor classroom offers children an important opportunity to take advantage of the benefits of the outdoors and nature for their learning.

To support development of this practice in Paris, the City, in conjunction with the Climate Academy, will open an "outdoor school" training center. This facility will enable children to discover outdoor learning in the Square des Deux-Nèthes (18e), during and outside school hours. A team will be dedicated to hosting immersion classes on the site, and to supporting educational staff in developing the practice of the outdoor classroom in all Parisian schools.

A CATALOG OF "CLIMATE ACTIONS" IN SCHOOLS

Children are on the front line of climate action on a daily basis. **To support their school and extracurricular activities, a catalog of "*climate actions*" will be deployed in all the City's schools.** The catalog, which will be available at each arrondissement town hall, will offer teachers, eco-delegates and leisure centers several climate actions to carry out with children, such as:

- The Climate Academy's educational pathways are complemented by a range of ecological transition training courses;
- Pedagogical materials for turnkey workshops to put fun activities into practice in the classroom;
- Listing of fun awareness-raising workshops;
- A list of actors, partners and associations that can intervene during school hours.

The catalog will include a "hors les murs" (literally 'outside the walls', outdoors) section, to develop a wide-ranging educational action outside schools, with educational visits to different sites around Paris. It will present a common base that can be expanded with activities and events proposed by each mayor's office, initially for schools in their arrondissement, and subsequently for their constituents.

TRAINING TO PREPARE FOR HOT WEATHER

The City of Paris will organize workshops or training courses for parents and children, and for the City Directorate of School Affairs (DASCO) staff, open to the educational community, on how to effectively reduce heat-related risks.

2. Training and raising awareness among local actors

Training and support for associations helps strengthen their ability to take action to combat climate change. The City of Paris has considerable training capacity in these areas. It will make them available to its staff and elected representatives, as well as to Parisians. These efforts will be complemented by the work of the Parisian Climate Agency, which, after more than 10 years in existence, has unrivalled expertise in Paris.

A • Supporting associations as relays for climate action

More than 80,000 associations are active in Paris. They play an essential role in implementing the Climate action plan, by reporting local needs, acting at their own level with their own resources, and helping to reinforce municipal action. **The City intends to support them as best it can in their ecological and energy transition, notably by mobilizing the Paris Council of Associations to develop training programs, tests and communication tools.**

To mobilize the rich fabric of Parisian associations on environmental issues, the Climate Academy, which has expertise in pedagogical engineering and a network of actors involved in training, will continue to support associations by proposing its content or directing them to suitable training courses. It will also be proposing to extend the range of training courses on the ecological transition aimed at city employees, neighborhood councils and associations, taking into account their specific needs.

B • Integrate ecological issues more fully into training courses staff and elected representatives

The city has always accompanied its climate action with extensive awareness-raising and training programs for its administrative staff. Since 2011, it has relied on a network of trained employees in all departments, which contributes to the development of synergies between departments, and to the involvement of employees in the challenges of the ecological transition. Since 2018, all 52,000 employees have had access training on the ecological transition, which has been integrated into the common core of the City's training catalog.

The aim of this foundation, whose content is still being enriched, is to raise awareness of the challenges of climate change among city employees, while building up a pool of in-house trainers to help them take ownership of the Climate action plan and its operational implementation by job, in all areas of Parisian public policy. With the support of the Climate Academy and City experts, **ecological issues will be extended to all initial training courses for new recruits** in their induction and training cycle. **Specific modules or days will also be offered to adapt to departmental business issues, by creating dedicated days and areas for sharing best practices,** and by drawing on the pool of in-house trainers. **The City of Paris will offer all elected municipal officials training on climate issues and the Climate action plan**

Crédits

C • Supporting Parisians with the Paris Climate Agency

Since its creation in 2011, the Parisian Climate Agency (APC) has been an important partner of the City of Paris in accelerating the city's ecological transition. APC's role is to inform, advise and support Parisians in their ecological transition.

The Parisian Climate Agency is the one-stop shop for condominium renovation in Paris. To halve the energy consumption of buildings, renovation efforts will need to be complemented by a change in user behavior to reduce energy consumption. **APC will be continuing its work to help Parisian households adopt a more sober approach to their energy consumption**, in particular through the organization of fun challenges. For example, over a hundred Parisian households take part every year in the "Déclics Challenge", a team challenge to reduce energy, water and waste consumption.

The Parisian Climate Agency will continue to organize events, conferences and meetings around the measures of the Climate action plan and, more generally, the ecological transition in Paris.

> Since its creation in 2011, the Parisian Climate Agency (APC) has been an important partner of the City of Paris in accelerating the city's ecological transition.

3. Enabling everyone to make a commitment to the climate

Parisians have demonstrated their willingness and ability to make a concrete commitment to the climate. Paris supports this energy by organizing federative events to encourage people to get involved and take action, and offers a wide range of missions to take action for the climate as part of the "Volontaires de Paris" (Paris volunteers) program.

A • Large-scale events to encourage action

The organization of events around these themes in Paris and its arrondissements by groups of residents, institutions, economic actors and associations is essential in order to take ownership of the objectives, ask questions, engage in dialogue, reflect, test, learn how to act, and trigger the move to action, commitment, or initiate a change towards more virtuous practices.

The City of Paris will continue to support this proliferation of initiatives with major collective climate days to mobilize the whole of Paris. Like the Car-Free Day, the Better Eating Festival and the Summer Solidarity Night, these events will embody the various challenges of Paris's ecological transition and enable everyone to take part in the action.

Workshops to discover ecological initiatives, activities and games, conferences, markets for local producers and craftsmen, visits to projects and sites emblematic of the ecological transition... The formats will be adapted to the different highlights, and will involve the Volontaires de Paris and the Citizen Card in their organization.

B • Expand the opportunities for Paris Volunteers to get involved

The Paris Volunteers program supported by the City of Paris responds to the need for an entry point to guide and build the personal commitment Parisians wishing to take action. Volontaires de Paris is a community of 70,000 people mobilized to take action at local level alongside city councils and departments in areas such as climate and the environment, solidarity, accessibility and greening. The Paris Volunteers for Climate Action community, resolutely committed to the city's ecological transition and fully involved in the life of the city, is a formidable relay and amplifier of citizen action in the fight against climate change at local level.

Animations, practical workshops, conferences, exhibitions, challenges, missions, visits to eco-responsible sites... these are just some of the activities and experiences on offer to volunteers, so that they can benefit from information and levers for action on climate issues in Paris. **The aim now is to provide these volunteers with more detailed support, by offering them courses tailored to their commitment.** From a simple search for information to the role of ambassador, everyone should be able to find their own way and progress in their desire to get involved.

A climate pathway consisting of various training courses around the Climate action plan and related plans (biodiversity, zero waste, etc.) will complete this offer: these events will be an opportunity to forge links between researchers, citizens, city agents, students... The action program will be composed according to the themes of the 2024-2030 Climate action plan, with levels of commitment and valorization according to the missions accomplished. The advanced curriculum will consist of training and 2 to 3 concrete missions. For example, Paris Volunteers will be given a day's training by an advisor from the Parisian Climate Agency in energy management (eco-behaviors, understanding energy bills, etc.), and will be given a kit to enable them to run eco-behaviors workshops themselves and play an active part in spreading low-energy behavior.

In order to adapt this type of commitment to children, the City wishes to develop a community of Petits Volontaires de Paris (Little Volunteers of Paris) to raise awareness and mobilize children around these same issues.

70, 000
people mobilized to take action at local level

C • Student commitment to the climate

With almost 400,000 students in 2021-2022, Paris is an ideal location for raising awareness and supporting student initiatives in favor of the ecological transition.

The City of Paris will take advantage of the strong mobilization of students around climate issues to offer them the chance to get involved in missions linked to the protection of ecological issues. This will be achieved through the Paris Volunteers community, **civic service proposals and climate-focused internships within the community**, with recognized recognition of the commitment made by volunteers.

Finally, students will be offered ways of participating in discussions on the Climate action plan and its applications, and on urban issues through the prism of climate, following the example of the work undertaken with students on Urban Controversies.

Support for student initiatives will be provided through a "*Student Climate Grant*". In the form of calls for projects, the City provides financial assistance for student projects in the fields of the social and solidarity economy and the environment, via the KIT ASSO and Start'In ESS schemes.

III. BY DEVELOPING SOLIDARITY AND COOPERATION IN FAVOR OF THE CLIMATE

Paris maintains a close, interdependent relationship with its surrounding areas. Most of the resources consumed in Paris (food, drinking water, energy) are produced outside the area and imported. As a major economic, financial and cultural center, Paris attracts workers from all over the Ile-de-France region and beyond, as well as tourists from all over the world. Combatting climate change therefore requires coordination and mutual assistance between cities.

With its long-standing commitment to the climate, the City of Paris has, over the years, forged close links with local authorities and governments to develop climate diplomacy on a national and international scale. As a pioneer in climate action, Paris is leading the way for non-state actors in international negotiations. The challenge is to gain recognition for the driving role played by cities in reducing greenhouse gas emissions and adapting territories to the effects of climate change, and to give them more means to act.

1. Developing local cooperation for the climate

In a context of interdependence between territories, efforts to promote the ecological transition require constantly renewed cooperation between local authorities. The territories of the Greater Paris Metropolis face common climate challenges, for which solutions need to be devised on an agglomeration-wide scale, in close cooperation with the actors involved. The City of Paris cooperates on a daily basis with several of the Metropole's local authorities.

CHALLENGES TO BE MET WITH PARTNERS IN NEIGHBORING CITIES

In recent years, a number of major projects have demonstrated the commitment of the City of Paris and local actors to climate protection, including the creation of SEM Axe Seine Energies Renouvelables, AgriParis Seine, and Coopérative Carbone Paris & Greater Paris Metropolis.

Historically, cooperation between territories has also focused on large-scale urban services, such as drinking water supply, waste treatment and sanitation. These services rely on infrastructures and networks that go far beyond municipal boundaries. They also represent nodal points in the city's ecological transition, as in the case of the **urban heating network**, which relies on facilities located outside Paris and supplies heat to numerous neighboring municipalities. **The latter will be involved in the governance of the future operator through a territorial committee. The transformation of the Paris ring road into an urban boulevard, and the management of the Bois de Boulogne and Bois de Vincennes,** are also among the transitional challenges for which cooperation between local authorities is essential.

To formalize and steer these cooperative ventures, **the City of Paris implements partnerships using flexible tools, formalized in agreements, to ensure ongoing dialogue between territories concerned by the same project or an issue of common interest.** All in all, these agreements with the communes, intercommunalités and départements of the Paris region cover more than 420 operational actions, more than half of which contribute to the challenges of the Climate action plan: development of public spaces, transport (development of bicycle routes, urban logistics), waste reduction, circular economy, etc.

Within this framework, the City of Paris **will deepen the climate action in all the cooperations it maintains with the territories, and multiply the synergies with the actors involved in the great transformations to come.**

Paris is particularly committed to ambitious cooperative ventures:

- **Continuing the partnership with local authorities in Seine-Saint-Denis to transform the Saint-Denis and Ourcq canals** will accelerate the development policies, with the aim of making the riverbanks greener and decarbonizing their logistics functions.

- **In terms of adaptation, improving water quality is one** of the challenges for which cooperation will be stepped up with the gradual implementation of white-water bathing areas in the Seine and Marne rivers, with the aim of benefiting the entire metropolitan area.

- **Paris will be stepping up its efforts to interconnect green and blue corridors,** for example with a project it will be piloting with the public territorial authority Est Ensemble, "le Grand Chemin" (the great path), to create a planted promenade linking the 19th and 20th arrondissements of Paris with the communes of the EPT.

- **Structuring organic and local production chains along the Seine Axis, from the Yonne to Le Havre,** with the AgriParis Seine and Seine Nourricière projects.

- **The transformation of the areas bordering the ring road,** particularly the crossings, such as Porte de Bagnolet and Porte de la Chapelle, with the challenge of reconciling and interfacing the developments of the communes with the objective of transforming the ring road. **Paris' commitment to involving all major Parisians,** especially young people, in the transformation of the city to combat global warming and adapt to change: opening of the Climate Academy through partnerships with communes, a QJ already focused on Paris.

- **Technical cooperation with the Metropole and the Region** on cold networks, the creation of inter-communal biodiversity corridors and the monitoring of land artificialisation projects.

420
operational actions

2. Continuing Paris's commitment to the international climate

Cities, which account for 70% of global greenhouse gas emissions and two-thirds of global energy consumption, are at the forefront of global efforts to combat climate change. Today, they are home to 50% of the world's population, and are expected to be home to two-thirds by 2050. The C40, a global network of mayors of major cities committed to the climate, shows that 75% of its member cities are reducing their emissions faster than their respective states, and are only 10% away from the target of halving emissions by 2030, in line with a 1.5°C trajectory.

Paris is deploying a long-term action plan based on a strong conviction: cities have demonstrated their legitimacy in the climate transition. They must be recognized by governments by being more closely involved in international negotiations, and benefit from the funding that will enable them to stay on course for carbon neutrality.

A • Paris at the forefront of city climate diplomacy

As host city of COP 21, Paris worked towards the conclusion of the Paris Agreement by mobilizing 1,000 mayors for the climate on the sidelines of the negotiations in December 2015. Since the Agreement came into force, Paris has remained at the forefront of city climate diplomacy. It initiated the "Paris Declaration", reiterating the determination of cities to take concrete action to limit global warming to 1.5°C and to achieve carbon neutrality by 2050 at the latest, and then the COP of Cities, which aims to make the voice of cities heard to encourage governments to raise their ambitions, and which will meet again in 2025 for the 10th anniversary of the Paris Agreement, ahead of COP30.

In partnership with the associations of local authorities of which it is a member, Paris is working to ensure that local authorities are more directly involved in climate negotiations. **The City of Paris is thus lobbying for a reserved seat for cities on the decision-making bodies of international financing funds, as well as** for the introduction of guarantee mechanisms supporting direct access to financing by multilateral banks and the development of "Climate-Biodiversity" projects by cities. On the sidelines of the Summit for a New Global Financial Pact to be held in Paris in June 2023, the City of Paris and the United Nations Sustainable Development Solutions Network (UNSDN) announced plans for a Green Urban Bank. At the European level, **the City of Paris will support the project to create a European fund that will lend directly to local authorities to finance projects promoting the ecological transition of their territories.**

It will also advocate financial transfers from historical fossil fuel producers to finance adaptation and irreversible damage caused by climate change in cities, particularly in the South. **Following the example of Wallonia and Scotland, the City of Paris will contribute to the "loss and damage" fund** obtained following the COP28 negotiations **to help countries affected by climate disruption. The City of Paris will also advocate that cities should be direct beneficiaries of loss and damage mechanisms in** the event of a climate disaster, and for the financing of necessary adaptations in terms of infrastructure.

As a pioneering city in the implementation of a low-carbon trajectory, and given the scale of the financing required by cities to achieve their transition, Paris calls on governments and international financial institutions to show imagination in releasing new funding for development policies. Wealth tax, a tax on fossil fuel extraction and a tax on shipping are just some of the measures that could be used to set up dedicated funds, the management of which cities must be involved in.

Paris is also France's leading contributor to official development assistance. Decentralized cooperation initiatives undertaken by the City of Paris will be continued and strengthened in their "climate/adaptation" aspects.

Lastly, the city will continue its international cooperation to preserve forests and recognize them as common assets, an action that echoes Parisian policies in favor of new plantings and the greening of public spaces.

B • Continuing to anticipate climatic migration phenomena

Since 2018, the City of Paris has been working with the International Organization for Migration (IOM) to better understand how climate and environmental changes influence migration trends and urbanization, with the aim of integrating these issues into the City of Paris' public policies.

An initial research project has enabled the City of Paris to strengthen its knowledge and integrate projections of migration flows linked to climate change into its foresight work.

The City of Paris and the International Organization for Migration will continue their partnership on this subject, with a new research project on climate migration in Paris, cultural projects to raise public awareness, and exchanges on these subjects with other cities around the world.

Since 2018, the City of Paris has been working with the International Organization for Migration (IOM).

C • Climate diplomacy at the service of human rights

As the capital of human rights, Paris is also a pioneer in recognizing the link between climate and human rights. Today, this link is a reality: the 6th IPCC report paints an alarming picture of the decline in human rights in the face of the consequences of climate change. At a time when environmental defenders are the most threatened human rights defenders in the world, as the reports of the NGO Global Witness demonstrate year after year, the City of Paris recognized the centrality of their commitment in 2011 by awarding Honorary Citizenship to Raoni Metuktire for his fight in favor of the rights of indigenous populations in Amazonia. **It will continue to actively welcome and protect environmental activists threatened in their own countries.**

It will continue to actively welcome and protect environmental activists threatened in their own countries.

D • Towards true climate justice

The City of Paris is convinced of the inextricable link between human rights and environmental law. As a signatory to the Universal Declaration of Human Rights, the first attempt to formalize the concept of ecocide in French law, it will closely monitor initiatives to enshrine the crime of ecocide in international law, and to remedy the recurrent lack of sanctions for serious violations of environmental protection rules. It will also continue to be involved in climate litigation, to ensure that governments and multinationals face up to their responsibilities in implementing the Paris Agreement.

The ways in which these initiatives are financed and implemented, and the principles of climate justice that underpin their design, provide a clear example of how cities in the North contribute to global solidarity.

Resolutely committed to achieving the Sustainable Development Goals (SDGs), and in particular the fight against climate disruption, this ongoing commitment makes Paris the leading contributor of public development aid. In 2022, this means a budget of 6.7M€ for development actions covering all the targets of the SDGs, excluding expenses linked to the reception of refugees, and almost 77M€ including them.

As part of its decentralized cooperation initiatives, Paris promotes a vision of sustainable development at local level, through training, technical assistance, expertise and exchanges of best practices, many of which contribute directly or indirectly to meeting climate challenges (access to water and sanitation, as in Jericho and the Jenin region; or support for the development of urban agriculture to boost food security in Nouakchott).

Many of the supports provided by Paris to French NGOs for their actions in the field, via its calls for projects (in particular SOLIDAE and SOLIDEV), are part of this international solidarity for the climate.

Likewise, Paris supports populations facing many types of crisis, particularly natural disasters, many of which are climate-related (storms, floods, cyclones, famines): nearly 1.5M€ have been devoted to this since 2008.

1,5 M €
devoted to support populations facing many types of crisis

E • International plea to get off fossil fuels

The UN Secretary General is encouraging sub-national actors at the forefront of climate action to commit to halving fossil fuel use by 2030. The C40 is fully in line with this objective of pushing for the gradual elimination of fossil fuels.

In this context, the City of Paris will support the initiative in favor of a fossil fuel non-proliferation treaty, spearheaded since 2015 by a group of Pacific states and supported by thousands of actors, including the World Health Organization (WHO), the European Parliament and numerous cities around the world. This initiative proposes to incorporate into international law a halt to all new fossil fuel exploration and production projects. It also proposes the implementation of a just transition plan in which the countries historically responsible for the highest emissions finance the transition on a global scale, and the massive deployment of renewable energies

Paris also wants to take proactive action against the major oil companies (IOCs): ExxonMobil, Shell, BP, Chevron Texaco, ConocoPhillips, Eni, REPSOL, TotalEnergies. Through this action, Paris intends to gain recognition of their historic responsibility for climate disruption, and to compel them to implement a strategy compatible with the Paris Agreement. With this in mind, Paris has joined NGOs and other French and international local authorities, including the City of New York, in taking legal action against TotalEnergies.

Lastly, the City of Paris is asking the French government to refrain from granting any new oil and gas drilling authorizations on its territory, and in particular to reverse the authorizations granted for the Nonville oil concession in Seine-et-Marne, located within the perimeter of the protection of Eau de Paris' strategic water catchments.

The C40 is fully in line with this objective of pushing for the gradual elimination of fossil fuels.

Clément Dorval / City of Paris, 2023

IV. BY LOCALIZING CLIMATE ACTION WITH THE MAIRIES D'ARRONDISSEMENT

As part of the reinforced territorialization of Parisian policies since 2020, which aims to make the arrondissement the reference level for municipal action, the 17 arrondissements were closely involved in drawing up the Climate action plan, with the aim of adapting it to local characteristics and specific issues. As a result, each arrondissement has its own local plan for the 2024-2030 timeframe, based on its priority areas of action.

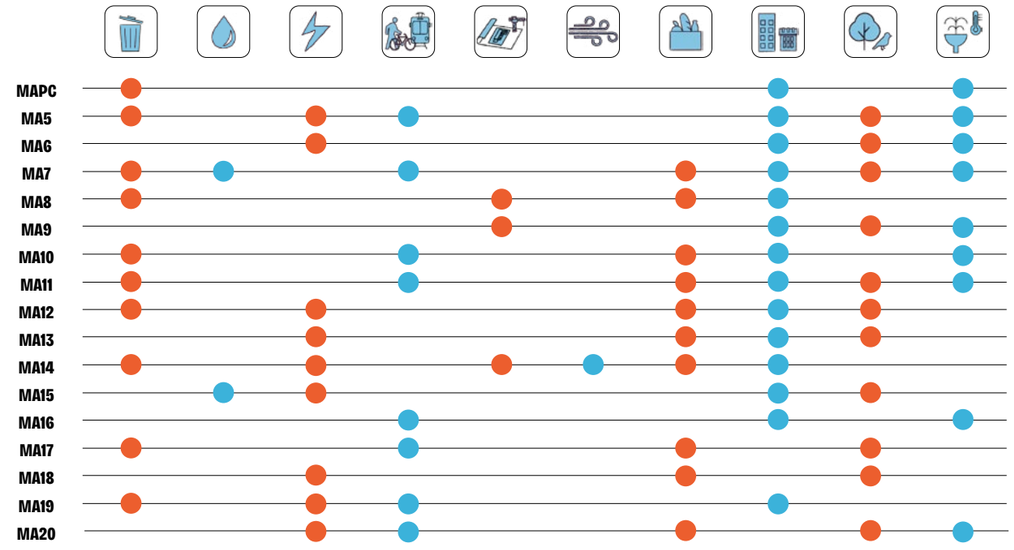
More than 300 measures have been defined in response to local issues and based on the many contributions made by local residents and actors at over 140 events organized during the consultation process at the end of 2022.

More than half (54%) of these actions involve works or development. Of the remainder, 19% are devoted to studies or optimization of existing facilities, 18% to awareness-raising/communication initiatives, and 9% to partnerships or pooling.

While each area prioritizes specific themes and plans a particular action, measures shared by a majority of boroughs stand out. More than half have set themselves the goal of renovating private and public buildings, with priority given to work on schools. The boroughs also agree on the need to decarbonize heating systems (connection to the heating network, support for the replacement of oil-fired boilers) and to equip roofs (schools, nurseries, offices) with photovoltaic panels. The need for a massive greening of the area is shared by virtually all the arrondissements, through the expansion of parks and gardens, the planting of trees, the creation of new Oasis courtyards and the deployment of the new CoprOasis scheme. In order to combat the effects of urban heat islands, the boroughs are looking to develop cool islands by various means, such as installing shaded areas, planting vegetation, opening up private gardens or installing misters. Almost all arrondissements are undertaking to encourage cycling, by creating cycle paths and committing to the development of shared mobility (pedestrianization). With regard to catering, increasing the proportion of sustainable and local food is a priority for several arrondissements. Lastly, three quarters of them will be stepping up their actions to limit and sort waste on the territory by massively deploying collection points, particularly for bio-waste, and by developing zero-waste territories.

Figure 29

Themes selected by arrondissement



City of Paris – Department of Ecological Transition and Climate

For the first time, the Paris Climate action plan is accompanied by a booklet presenting the 17 Climate initiatives of the arrondissements.

City of Paris

EXAMPLES OF LOCAL ACTIONS

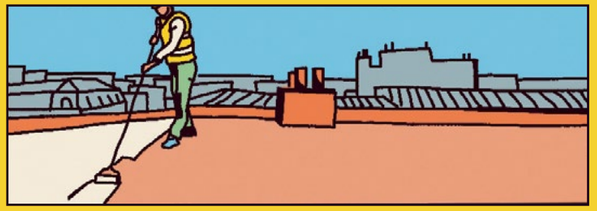
ACTIONS ACROSS THE ENTIRE TERRITORY, IN ALL NEIGHBORHOODS AND ARRONDISSEMENT

- Provide healthy, sustainable, homemade meals at affordable prices for children in the 18th arrondissement
- Create a food hall and new Associations for the Maintenance of Peasant Agriculture (AMAP) to support accessible and quality food in the 10th
- Renovate the Mathis swimming pool in the 19th with a 30% reduction in water and energy consumption and a 40% reduction in greenhouse gas emissions
- A new ecological transition component in "Clean Up Your Neighborhood" to support residents in their 17th arrondissement community
- Financially support the three recycling centers (ressourceries) in the 20th arrondissement
- Make Surène elementary school a pilot school for the progressive renovation of schools in the 8th arrondissement
- Promote soft mobility in the Belleville Saint-Maur neighborhood in the 11th arrondissement
- Install shade canopies in parks and schoolyards in Paris Centre, starting with the Saint-Merri school
- Redesign and green the Rue de Clichy in the 9th arrondissement
- Pedestrianize and green the Rue Mouffetard in the 5th arrondissement
- Multimodal urban logistics station at the Pont de Grenelle, including a hydrogen refueling project in the 16th arrondissement
- Energy renovation of 603 social housing units in the Fécamp-Tourneux-Robert group in the 12th arrondissement
- Calm traffic and green the Saint Thomas d'Aquin neighborhood and square in the 7th arrondissement
- 3 Oasis courtyards per year in schools in the 13th arrondissement

- Equip 20 municipal buildings in the 15th arrondissement with water collection bins for irrigating plants and cleaning streets
- Ecologically renovate the annex of the 14th arrondissement City Hall and turn it into a space dedicated to ecological transition
- Develop Rue Littré into a calming street (pedestrianization and greening) in the 6th arrondissement

BUT ALSO :

- Transform 15 major traffic axes to promote pedestrian movement and soft mobility
- Create Oasis cooling public squares in every arrondissement
- A large pedestrian heart in each arrondissement
- Open three natural swimming areas
- Etc.



GLOSSARY

A

ABF: Architectes des Bâtiments de France (French Building Architects)
Accorderies: communities of life and solidarity based on a system of exchange of services using a time currency.
ADEME: Agence de l'Environnement et de la Maîtrise de l'Energie (French Environment and Energy Management Agency)
Airparif: Association de surveillance de la qualité de l'air en Île-de-France (Association for monitoring air quality in Île-de-France)
AMAP: Association de Maintien de l'Agriculture Paysanne (Association for the preservation of local agriculture)
AMI: Appel à Mobilisation d'Intérêt (Call for Interest)
Anah: Agence Nationale de l'Habitat
ANSES: Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail (French Agency for Food, Environmental and Occupational Health and Safety)
AP-HP: Assistance Publique - Hôpitaux de Paris
APC: Agence Parisienne du Climat (Paris Climate Agency)
APUR: Atelier Parisien d'Urbanisme (Parisian Urban Planning Workshop)

B

Bilan Carbone®: A method for assessing greenhouse gas emissions created by ADEME and managed by the Bilan Carbone Association.
Organic: organically grown
BMP: Mid-term review of the Climate action plan
BTP: Building and civil engineering

C

C40: Cities climate leadership group, an international network of 91 of the world's leading cities, dedicated to climate action. Paris Mayor Anne Hidalgo has been its President since December 2016.
CAUE: Conseil d'Architecture, d'Urbanisme et de l'Environnement (Council for Architecture, Town Planning and the Environment)
CCC: Climate City Contract
CEE: Energy Savings Certificates
CDP: Carbon Disclosure Project, an international reporting platform for assessing the environmental impact of companies and local authorities.
Contrat de Ville (city contract): a contract defining the priority areas for action under city policy.
COP: Conference Of the Parties, United Nations international conference
CPCU: Compagnie Parisienne de Chauffage Urbain (Paris district heating company)
CPE: Contrat de Performance Énergétique (Energy Performance Contract)

D

DAE: Déchets d'Activités Économiques (Economic Activity Waste)
HHW: Household and similar waste
DRIEE: Direction Régionale et Interdépartementale de l'Environnement et de l'Énergie (Regional and Interdepartmental Directorate for the Environment and Energy)
DRIHL: Direction Régionale et Interdépartementale de l'Hébergement et du Logement (Regional and Interdepartmental Department of Housing)

E

E+C: Positive Energy & Carbon Reduction Building Standard
DHW: Domestic hot water
EDF: Electricité de France
SEE: Social and Solidarity Economy
EHPAD: residential establishments for dependent elderly people
EIS: Socio-economic impact study
EIVP: City of Paris Engineering School
ELU: Urban Logistics Space
Carbon footprint: All greenhouse gas emissions (direct and indirect) of a territory, according to the Bilan Carbone® methodology.
Energy Cities: European Association of Local Authorities in Energy Transition
ENP: Eau Non Potable
EnR, ENR and ENR²: Renewable and recovered energies
ERP+: Eco-Rénovons Paris + (Let's renovate Paris)
ESG: Environment, Social, Governance
ESS: Social and Solidarity Economy

F

GFCD: Global Fund for Cities Development
FNCCR: Fédération Nationale des Collectivités Concédantes et Régies (National Federation of Local Authorities)
FSATME: Fonds Social d'Aide aux Travaux de Maîtrise de l'Énergie (Social Fund for Energy Management Work)
FSL: Fonds de Solidarité pour le Logement (Housing Solidarity Fund)

G

GHG: Greenhouse Gases, all gases present in the air that have an impact on global warming, including carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), ozone (O3), fluorinated gases (PFC, HFC, SF6, CFC).
IPCC: Intergovernmental Panel on Climate Change
CNG: Natural Gas for Vehicles
GREC: Regional Group of Experts on Climate and Ecological Transition
GWh: 1
= 1,000 MWh
= 1,000,000 kWh
= 1,000,000,000 Wh

H

Ha: Hectare, measure of area equivalent to 10,000 m².
HAROPA: Ports de Paris Seine Normandie, the Seine axis port grouping the ports of Le Havre, Rouen and Paris.

I

ICU: Urban Heat Island
IDF: Île-de-France
IFPEB: Institut Français pour la Performance Energétique

du Bâtiment (French Institute for Building Energy Performance)
INRA: French National Institute for Agronomic Research
INSEE: French National Institute for Statistics and Economic Studies

J

JOP 2024: 2024 Olympic and Paralympic Games

K

kWh: Kilowatt-hour, energy consumed by a device with a power equal to 1 kilowatt (1 kW
= 1,000 watts) for one hour (1 kilowatt x 1 hour)
KWhep: Kilowatt-hour of primary energy, 1 kWh which takes into account the energy required to produce and transport the energy consumed.

L

LHNS: Ligne à Haut Niveau de Service (High Level Service Line)
TECV Law: Energy Transition Law for Green Growth

M

MGP: Greater Paris Metropolis
MGP: Global Performance Contract
MOOC: Massive Open Online Course.
MPE: Energy Performance Contract
MtCO2: Million tonnes of carbon dioxide (or million tonnes CO2)
MWh: 1 Megawatt-hour
= 1,000 kWh = 1,000,000 Wh

N

NDC: Nationally Determined Contribution, the national contribution to climate change mitigation to be made by governments under the Paris Agreement.

O

ICAO: International Civil Aviation Organization
OAP: Orientation d'Aménagement et de Programmation (Development and programming guidelines)
OLS: Social Housing Organization
WHO: World Health Organization
NGO: Non-Governmental Organization
ORDIF: Île-de-France Regional Waste Observatory

P

PACB: Paris Biodiversity & Climate Action Pact, designed to mobilize economic actors around environmental issues
Paris&Co: Paris economic development and innovation agency
PCAET: Plan Climat Air Energie Territorial (Territorial Climate Air Energy Plan)
PIM: Programme d'Investissement de la Mandature (Mandate Investment Program)
PLU: Local Urban Development Plan
PLPDMA: Programme Local de Prévention des Déchets Ménagers et Assimilés (Local Program for the Prevention of Household and Assimilated Waste)
Atmospheric pollutants: gases and particles present in the air that can have an impact on health, including nitrogen oxides (NOx) including nitrogen dioxide (NO2), fine particles (PM10 and PM2.5), ozone (O3), benzene (C6H6), volatile organic compounds (COV).
PPD: Waste Prevention Plan
PTRE: Plateforme Territoriale de Rénovation Énergétique (Territorial Energy Renovation Platform)
PUU: Single-Use Plastic

Q

QPV: Quartiers prioritaires de la politique de la ville (Priority neighbourhoods for urban policy); geographical perimeter on which policy is based.

R

RATP: Régie Autonome des Transports Parisiens (Paris transport authority)
RER: Regional Express Network
RIVP: Régie Immobilière de la Ville de Paris (Paris real estate company)

S

SCIC: Société Coopérative d'Intérêt Collectif (Cooperative Society for Collective Interest)
SEM: Société d'Économie Mixte
SEM Énergie Posit'if: regional semi-public company dedicated to supporting renewable energy and energy efficiency projects in multi-family housing.
SIAE: Structures d'Insertion par l'Activité Économique (economic integration structures)
SLIME: Service Local d'Intervention pour la Maîtrise de l'Énergie (Local Intervention Service for Energy Management)
SNCF: Société Nationale des Chemins de Fer français (French national railway company)
SP: Floor area
SRCE: Schéma Régional de Cohérence Écologique (Regional Scheme for Ecological Coherence)
SSA: Sécurité Sociale Alimentaire (Food Social Security)
Syctom: Metropolitan household waste agency

T

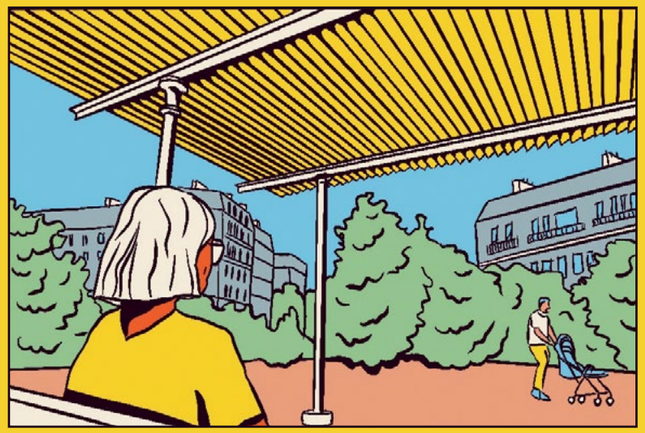
tCO_2: Ton of carbon dioxide (or ton CO2)
tCO_2e: Ton of carbon dioxide equivalent (or ton of CO2 equivalent), a unit used to account for the various greenhouse gases emitted into the atmosphere (CO2, but also CH4, N2O, PFC, HFC, SF6, NF3, etc.), using carbon dioxide as a standard measure for the other gases.
TGV: Train à Grande Vitesse
TWh: 1 terawatt-hour (or 1 billion kilowatt-hours)
= 1,000 GWh
= 1,000,000 MWh
= 1,000,000,000 kWh

V

Carbon valuation: Monetary valuation of CO2 emissions to assess the profitability of public investments.
VNF: Voies Navigables de France (French waterways)

Z

ZAC: Zone d'Aménagement Concerté (joint development zone)
ZFE: Low Emission Zone
ZFEm: Low Emission Mobility Zone
ZTL: Zone à Trafic Limité (Limited Traffic Zone)



SHARE LIST

PROTECTING PARISIANS

REFRESHING PARIS

1. Open up 300 ha of additional green space to the public, to reach the target of 10 m² of green space per inhabitant.

2. Prioritize the revegetation of areas where there is a shortfall, to achieve a minimum vegetation rate of 20% over half the territory.

3. Create 10 urban parks as part of development projects linked to metropolitan areas.

4. Open a large park in northern Paris

5. Develop debitumination operations to reach 40% of the territory without waterproofing

6. Extend the "streets to schools" program to reach 300 by 2026.

7. Create urban forests, including 3 by 2026

8. Encourage local citizen greening initiatives

9. Develop the Copr'Oasis program

10. Green up the hearts of blocks and building courtyards in social landlords' properties and open them up to the public

11. Plant 170,000 trees, giving priority to the open ground

12. Sanctarize 100,000 trees and 250 remarkable trees with the PLU.

13. Develop compensation or over-compensation in the event of felling, in line with the PLU.

14. Increase canopy index by 2 points

15. Create a "trees and climate laboratory", to experiment with the trees best suited to Paris's future climate.

16. Increase the number of linear hedges to 500 meters to several linear kilometers per arrondissement.

17. Create 40 new biodiversity refuges in public spaces

18. Deploy the biodivscore on 100% of the City's projects and those of its operators.

19. Introduce a minimum level of summer habitability in new buildings - provision in PLU regulations

20. Introduce a minimum level of summer habitability in renovations through regulations - PLU bylaw provision

21. Plan the creation of air circulation corridors & preserve existing ones

22. Implement a "shutters and shading" plan & diagnose priority buildings

23. Equip 100% of sensitive municipal buildings with solar protection.

24. Achieve 100% cool roofs for municipal facilities: reflective paint, vegetation, attic insulation, etc.

25. Apply reflective paint to 40,000 m² of roofs on buildings open to the public.

26. Develop a "1000 anti-overheating roofs" program

27. Work with ABFs to find solutions for adapting zinc roofs.

28. Protect 100% of nurseries and schools from heat

29. Create heat refuge areas in nurseries and schools

30. Create 60 oasis courtyards a year to reach all nurseries, schools and middle schools by 2030.

31. Renovate and adapt 100% of CASVP senior residences to heat conditions

32. Increase ERP+ aid for adaptation

33. Step up controls on individual air-conditioning systems

34. Expand cooling network (+27km between 2023 and 2030)

35. Priority connection of establishments serving sensitive populations

36. Communicate on alternatives to air conditioning every summer

37. Develop dedicated support for passive cooling solutions as part of ERP+.

38. Invite companies that are members of the Paris Climate Action Biodiversity Pact to experiment with free cooling on their sites.

39. Develop a thermal observatory to model urban heat islands

40. Create new cooling islands to ensure that all Parisians have access to them within 7 minutes, day and night.

41. Reinforce and adapt communication on the map of cooling islands for all audiences.

42. Create refreshing Oasis squares in all arrondissements

43. Study the definition of a shading index for the area.

44. Deploy 40 shaded areas each year in public spaces where natural shade is lacking.

45. Develop a hundred or so "artificial" shade systems.

46. Install 120 new misting fountains

47. Reach over 1,200 businesses participating in "ici, je choisis l'eau de Paris" (here, I choose Paris water).

48. Reinforce the deployment of misting fountains in public spaces, particularly in green areas.

49. Develop a renaturation program for the river banks and quays

50. Create 20 new wetlands

51. Reopen the Bièvre river at Parc Kellerman and study the possibility of opening another site.

52. Create a new river on the Mortemart plain in the Bois de Vincennes

53. Open 3 additional natural bathing sites

54. Open lighter natural bathing sites that do not require heavy infrastructure in the event of early or late heatwaves.

COMBATTING ENVIRONMENTAL INEQUALITIES

55. Set up a energy poverty observatory

56. Support 1,200 households by 2025 via SLIME

57. Reinforce SLIME with the Bricobus®

58. Implement zero out-of-pocket expenses for low-income households in ERP+.

59. Experiment with the development of Territoires Zéro Exclusion Energétique (Zero Energy Exclusion Territories).

60. Support nearly 50,000 Parisians via the FSL and PEF.

61. Support thermal renovation of emergency hotels in conjunction with SAMU social

62. Achieve a 60% vegetarian diet in collective catering

63. Achieve 75% organic food in catering.

64. Achieve 60% local farming (-250km) in foodservice.

65. Achieve 100% vegetarian dishes at City receptions

66. Develop a "home-cooked" label

67. Lobby at national level for the introduction of a food exception clause in the public procurement code.

68. Reduce food waste by 50%.

69. Test the "Climat Cantines" method in 1,300 Parisian canteens.

70. Bring all City initiatives (sustainable food) to CROUS level

71. Structure and pool supply channels for food aid to the most vulnerable.

72. Support the creation of purchasing groups, AMAPs and mobile markets in working-class neighborhoods.

73. Lobby at national level for an enforceable right to sustainable food.

74. Make social food security a reality by supporting the proliferation of food solidarity, diversity and democracy schemes.

75. Prioritize sustainable transition measures (e.g. cool air islands, revegetation, shaded areas, oasis courtyards, etc.) in urban neighborhoods.

76. Experiment with a local, territorial approach to initiate or reinforce transition in working-class neighborhoods.

77. Accompany each new action carried out under the Climate action plan in working-class neighborhoods with specific communication as part of an "outreach" approach.

78. Assess the impact of the city's ecological transition activities and projects from a gender perspective.

79. Support a new Women4Climate promotion in Paris

80. Create a "gender and ecological transition" office

IMPROVING THE HEALTH OF PARISIANS

81. Carry out shared territorial diagnoses of environmental health issues in neighborhoods identified as environmentally fragile zones.

82. Prevent the risk of epidemics linked to climate change through a policy of health monitoring and preventive action.

83. Advocate that the regional Atmosphere Protection Plan should aim to achieve the values set by the WHO for 2030.

84. Advocate at metropolitan level for an ambitious Low Emission Zone (ZFE).

85. Advocate at national level for the extension of traffic calming measures in anticipation of heatwave periods.

86. Work with Ile-de-France Mobilités to offer free transport during heatwaves.

87. Continue the "Paris prend l'air! initiative

88. Support energy conversion for households heated with fuel oil

89. Complete the conversion of the city's oil-fired power plants, in particular those under public service delegation (Délégation de service public - DSP).

ANTICIPATING AND MANAGING CRISES

90. Develop a territorial atlas of vulnerabilities to climate change in Paris.

91. Participate in or organize crisis exercises

92. Renew communication on risks and crises

93. Develop solidarity missions to raise awareness of the right gestures and means of volunteer involvement in times of crisis.

94. Strengthen the city's resilience to flood risk

95. Open some twenty major Paris parks all night & adapt swimming pool opening hours in the event of heatwaves

96. Systematically step up the city's communications in the event of a heatwave when alert thresholds are reached.

97. Work on offering free admission to museums and cinemas to the most vulnerable during heatwaves.

98. Organize a night-time cultural program, along the lines of the Nuit Blanche, to provide Parisians with more islands of coolness at night.

99. Following on from the "PARIS at 50°C" Municipal Observation Mission, consider the mobilization required in the event of a crisis.

100. Mobilize Paris volunteers to visit vulnerable people during heatwaves.

101. Develop cooled rooms and offer social support and entertainment.

102. Offer pregnant women the opportunity to register on an information file in response to heatwaves.

103. Provide shelters for young parents and their infants in the event of heatwaves, by adapting the PMI.

104. Work with the French government to set up an "Extreme heat plan".

105. Hold annual solidarity nights.

106. Make reception facilities available within 24 hours in case of need.

107. Extend opening hours of 17 bath-showers

108. Include the risk of heatwaves in public procurement rules (public contracts, public service contracts).

109. Review opening hours for public facilities and transport services

110. Advocate at national level for measures to adapt to heat waves and heatwaves to be reinforced in the Labor Code.

ACCELERATING THE REDUCTION OF CARBON EMISSIONS

STEERING PARIS' DECARBONIZATION TRAJECTORY

111. Implement a carbon budget (2024-2026)

112. Strengthen the city's carbon sequestration capacity

MASSIVE RENOVATION OF BUILDINGS

113. Work with renovation stakeholders to improve understanding of the issues involved in the environmental transformation of buildings.

114. Achieve 40% public housing by 2035

115. Renovate 5,000 social housing units per year (for an average gain of 60%).

116. Integrate sustainability objectives into the energy renovation of the social housing stock

117. Achieve 40,000 housing units renovated per year

118. Strengthen and extend ERP+ to support 2/3 of energy renovation projects in Paris

119. Follow up on the treatment of F and G poor insulated buildings

120. 3-year property tax exemption for condominiums carrying out energy renovation work

121. Sign a reciprocal commitment charter with condominium managers and lobby the French government to introduce a mandatory resolution on renovation at condominium general meetings, as well as to create a label recognizing committed managers.

122. Guarantee access to renovation grants for all eligible condominiums by reinforcing information and support.

123. Strengthen the renovation ambassador program.

124. Advocate the reinforcement of national renovation grants

125. Increase the environmental, technical and architectural quality of new equipment

126. Renovate the entire municipal building stock

127. Follow the Paris Museum renovation program - target -60% energy consumption by 2050

128. Mobilize the French government and major property owners to report on Parisian renovations.

129. Renovate all schools and crèches

130. Ensure implementation of tertiary decree

131. Advocate re-evaluation of the 1000 m^2 threshold in the tertiary decree

132. Organize a financing conference for the renovation of the Paris tertiary sector.

133. Set up a one-stop shop for information on energy renovation for small and medium-sized businesses.

134. Impose an energy consumption level 60% below the benchmark, and the use of recycled or reused materials in renovation work (City and partners).

135. Generalize the use of recycled or reused materials on municipal worksites.

BY MOBILIZING BIOCLIMATIC URBAN PLANNING

136. Gradually phasing out the use of concrete in construction, landscaping and renovation.

137. Reinforce energy performance requirements for new buildings (RE2020)

138. Increase subsidies for social landlords using bio-sourced/recycled materials

139. Implement a clean worksite charter for all worksites in Paris

140. continue experimenting with ecological transition on development projects, and ensure follow-up

141. Develop a new heritage policy in conjunction with government departments for the adaptation of buildings to global warming.

142. Develop an improved, streamlined procedure for preparing and monitoring urban planning applications

143. Develop specific procedures for low-tech adaptation solutions, in particular for the installation of shutters.

144. strengthen municipal roof conversion schemes

145. Organize an annual roof festival

146. Conduct a study on the potential for transforming underground spaces

PURSUING THE DECARBONIZATION OF TRANSPORT

147. Convert 50% of parking spaces (i.e. 60,000 spaces).

148. Return 100ha to pedestrians by 2030: greening of streets, widening of sidewalks, transformation of sidewalks into promenades.

149. Introduce a Limited Traffic Zone (ZTL)

150. create a major pedestrian hub for each arrondissement

151. Perpetuate the car-sharing, cab and public transport lane on the ring road

152. Reduce speed to 50km/h on the ring road

153. Densify the cycling network so that by 2030, cycling will account for 25% of intramural journeys.

154. Create 130,000 bicycle parking spaces

155. Introduce cycling lessons in all elementary schools, with the introduction of a Bicycle Permit.

156. Support local initiatives to encourage adults to learn to ride a bike, and set up a self-repair workshop in each arrondissement.

157. Strengthen the public transport network

158. Oppose any increase in fares for users, and instead work to reduce them

159. Guarantee 100% public transport accessibility for all.

160. step up investment in road improvements to improve bus flow

161. Support Ile de France Mobilités in converting 100% of bus centers to electric and bioNGV power.

162. Lobby Ile-de-France Mobilités to strengthen nighttime public transport services.

163. conduct a study on the resilience of the public transport network (via RATP-SNCF)

164. Oppose the development of complementary air transport, such as flying cabs.

165. support the European Union's ban on the sale of combustion-powered vehicles by 2035

166. Develop a public network of charging stations for electric vehicles in Paris.

167. require development projects to include rapid electric charging hubs, hydrogen stations or to develop the sharing of private charging infrastructures for professionals

168. Convert all service stations into ENR stations

169. Draw up a master plan for the energy transition in mobility

170. advocate a strengthening of means-tested or sales-tested conversion subsidies

171. Continue eco-mobility subsidies and facilitate access to them

172. Vote for the introduction of a parking fee based on vehicle type.

173. Penalize drivers for running their engines while stationary

174. Move the municipal vehicle fleet away from internal combustion engines, with an initial target of 50% of the fleet in low-emission vehicles by 2026

175. Convert municipal technical vehicles to electric power

176. convert refuse collection vehicles to bioNGV before electrifying the fleet as soon as the offer is mature

177. Develop a plan to transform & revalue under-utilized real estate assets

178. Develop an urban logistics space of at least 1,000 sq.m. for each Paris train station.

179. Set up 50 emission-free urban logistics sites

180. Create 1,000 additional delivery areas by 2026

181. Deploy 2,000 delivery areas for cargo bikes

182. Support the improvement of working conditions for self-employed delivery drivers and cyclists, with the creation of a permanent courier center, a social charter with shopkeepers, etc.

183. Strengthen promotion of river freight in conjunction with river and Seine Axis stakeholders, and help make it greener.

184. Subsidize the Modernization and Innovation Assistance Program managed by Voies Navigables de France.

185. Deploy a network of electric charging stations for river freight vessels

186. mobilize the entire logistics ecosystem to strengthen the sustainability of urban rail freight.

PRESERVING AND PROTECTING RESOURCES AS COMMON GOODS

MOVING AWAY FROM FOSSIL FUELS TO A 100% RENEWABLE ENERGY TERRITORY

187. Implement a municipal sobriety plan to reduce energy consumption by 15%.

188. Set the temperature for all municipal facilities at 18°C.

189. Reduce and optimize building heating times

190. turn off ornamental lighting earlier

191. Experiment with the installation of presence detectors to reduce consumption

192. Develop a network of energy-saving referents within the municipal fleet

193. Display consumption and production data for public facilities to the public and municipal employees.

194. Reduce public lighting energy consumption by 30% through maintenance contract

195. Develop a lighting master plan to combat light pollution

196. Monitor territorial energy-saving measures

197. Carry out a bi-annual communication campaign promoting energy efficiency.

198. Implement an energy-saving support program for condominiums

199. Offer a Class 'énergie challenge in Paris classrooms

200. Test the installation of heating cost allocators in volunteer condominiums

201. Develop a responsible digital strategy

202. Set up a portal to centralize local energy data

203. Set up a local renewable energy acceleration zone

204. Draw up a multi-energy master plan

205. Replace the last coal-fired power station in the heating network with biomass.

206. Develop a fossil fuel phase-out plan for public facilities

207. Lobby the French government to increase aid for the conversion of oil-fired boilers.

208. Ban thermal generators from public spaces and promote alternative solutions.

209. Achieve 75% renewable energy in the district heating network

210. Densify the district heating network

211. Develop and enhance the environmental performance of the district cooling network, and study synergies with the district heating network.

212. Achieve 10% direct purchase (PPA) of renewable energy for municipal energy consumption.

213. Study the launch of energy purchasing groups for Parisians and small businesses

214. Increase ENR production by 500GWh

215. Regularly update the Paris solar cadastre

216. Continue the Énergieculteurs program, with a target of 5GWh of solar renewable energy.

217. Support major Parisian property owners to achieve 20 to 25GWh of solar energy by 2030.

218. Develop a municipal subsidy for solar projects in social housing (study and implementation).

219. Set up a subsidy scheme for solarization projects in Parisian condominiums.

220. study the possibility of setting up an "organizing legal entity" (PMO) to facilitate collective self-consumption operations and purchasing groups

221. Experiment with surface geothermal projects in day-care centers.

222. Develop geothermal projects on city property to produce an additional 8.4GWh by 2030

223. Gradually convert the high-pressure steam heating network to hot water loops

224. Develop sewer heat recovery projects to generate 10 GWh

225. Develop 120 additional heat recovery facilities by 2030, recovering 30 GWh.

226. Launch the first renewable heat contract in the city.

227. Support the structuring of local biomass sectors (for the heating network)

228. Develop 6,000 micro renewable energy installations in the municipal park

229. Create Energie de Paris

230. encourage the creation of citizen energy communities (research, incubator)

231. Organize an annual Parisian renewable energy day

232. Mobilize SEM Axe-Seine to develop renewable energy projects

SUSTAINABLE WATER MANAGEMENT

233. Reduce drinking and non-drinking water consumption by 15%.

234. Implement a water sobriety plan

235. Reduce leaks on drinking water network

236. Implement an Energy Performance Contract (EPC) for swimming pools, with the aim of reducing water consumption by 30%.

237. Experiment with urine recovery and lobby the French government to change regulations and systematize this solution for events.

238. Implement a water-saving awareness campaign aimed at large-scale consumers.

239. Optimize the non-drinking water network, particularly on the distribution side

240. 20% reduction in non-potable water consumption by optimizing sewer flush tanks

241. Encourage the use of rainwater and non-potable water for watering green spaces, with a view to drastically reducing the use of drinking water.

242. For each new use, give preference to rainwater, mine water, non-potable water and, as a last resort, potable water.

243. Accelerate the deployment of rainwater harvesters in municipal facilities.

244. Create open-air retention areas for exceptional rainfall events

245. Advocate a ban on the use of pollutants, particularly pesticides, in water catchment areas.

246. Pursue a rational water purification strategy

247. Improve water quality in the Seine and allow bathing

248. Study the possibility of giving the Seine a legal personality.

BY MAKING PARIS A MORE ENERGY-EFFICIENT CITY

249. Develop a strategy to reduce the territorial material footprint

250. develop a strategy to reduce the municipal material footprint

251. Double the amount of waste recovered through reuse

252. Support the textile circular economy (alterations, repairs, shoemaking)

253. Support the electrical and electronics circular economy

254. Reduce packaging production by supporting deposit systems for retailers and restaurants.

255. Create platforms for the reuse of building materials

256. Support the creation of a storage and production facility for reused furniture.

257. Reach 30 ressourceries in Paris and develop mobile ressourceries

258. Create a "recycling hub

259. Pursue the strategy of developing the circular economy in cultural venues and establishments

260. 20% reduction in waste volume

261. Set up zero-waste territories

262. Continue to support local composting projects

263. Offer every Parisian a sorting solution less than 3 minutes' walk from home.

264. Achieve 60% waste recovery by 2030

265. Support zero landfill waste policy

266. Advocate the inclusion of local authorities in the governance of eco-organizations.

267. Advocate for Parisian specificities to be taken into account in the creation of new recycling channels, and for preference to be given to waste reduction over recycling.

268. Move away from Single-Use Plastics within the scope of the administration and the Olympic Games.

269. Eliminate plastic in municipal catering services

270. Eliminate plastics from structures in contact with young children

271. Use plastic pots from horticultural production centers wherever possible.

272. Eliminate plastic leaks in public spaces

273. Eliminate the use of single-use plastic in the catering of cultural establishments supported by Ville.

274. Develop a network of actors committed to phasing out single-use plastic (SUP).

PROMOTING AND SUPPORTING THE DEVELOPMENT OF A LOCAL, SUSTAINABLE, LOW-CARBON ECONOMY

PROMOTING LOCAL, SUSTAINABLE TRADE AND CRAFTSMANSHIP

275. Encourage the installation of businesses and artisans committed to the ecological transition via Paris commerce.

276. Renovate premises pre-empted by Paris Commerce

277. Prevent the creation of dark stores via the PLU

278. Require prior application to the City of Paris before installing a dark kitchen.

279. Lobby at national level to regulate new forms of quick commerce.

280. Lobby at national level for the introduction of a tax on e-commerce.

281. Communicate more on the "Made in Paris" label to reach 500 applications each year.

282. Develop a "buy in Paris" platform

283. Lobby at national level for the introduction of a carbon label for products along the lines of the nutriscore.

284. Gradually phase out commercial advertising on urban information furnishings.

285. Lobby third parties (SNCF, RATP, shops, etc.) to eliminate digital advertising screens.

286. Triple the number of areas dedicated to the Social and Solidarity Economy (SSE) with a positive impact on the climate in social landlords' housing stock.

287. Implement a "Sustainable Culture" plan in Paris

288. Strengthen the mobilization and support of cultural actors around transition issues

289. Generalize the reuse of scenographic elements from Paris Musées museum exhibitions

290. Reducing the carbon footprint of major cultural events

291. Favoring serial productions or performances for the performing arts

292. Set up cool islands in conservatories and Beaux-Arts studios

293. Implement an ecological transition plan for film shoots, and initiate changes to the rules governing filming facilities.

BY PROMOTING TOURISM THAT IS COMPATIBLE WITH CLIMATE CHANGE

294. Lobby at national level for a reduction in air traffic at airports serving Paris.

295. Include emissions from tourist air traffic in the city's GHG balance.

296. Ensure the development of a night train service to Paris

297. Advocate the creation of bicycle carriages on trains in Paris.

298. Communicate more about existing international night trains.

299. Support investment in decarbonization of cruise lines and tourist transport

300. require regular tourist bus routes to convert to crit'air 0 engines

301. Accelerate deployment of the "accueil vélo" label

302. Promote major cycle routes through Paris

303. provide financial support for energy-efficient renovation of buildings used by the tourism industry

304. Support tourism operators in implementing energy and water-saving measures

305. Support tourism sector actors in phasing out single-use plastics (SUPs)

306. Give priority to less carbon-intensive accommodation (youth hostels, camping sites, etc.).

307. Lobby at national level for a higher tourist tax for luxury hotels and palaces.

308. Support nightlife operators in their ecological transition by implementing a roadmap for the sector.

309. Develop a charter for eco-responsible events, excluding any partnership with a company involved in the production of fossil fuels.

310. equip 10 key sites with water and electricity connection points

SUPPORTING A LOW-CARBON, SUSTAINABLE AND RESILIENT FOOD SUPPLY

311. Reach 20% of useful organic farmland in Ile de France

312. Reach 50% of useful agricultural area in Ile de France

313. Support the structuring of AgriParis Seine

314. Preserve agricultural land by mobilizing the assets of the City and its partners

315. Sign an environmental rural lease to preserve agricultural land

316. Support project developers in their search for land

317. Support the development of solar power plant projects on farms in the Paris region

318. Subsidize 28,500 ha of sustainable cultivation around water catchment areas by Eau de Paris.

319. Acquire 450ha of farmland around water catchment areas by Eau de Paris

320. Eau de Paris to contribute to 5 water-saving agricultural commodity chain projects.

321. Support local plant-based protein chains via public procurement

322. Create a network of logistics spaces adapted to reuse and local food chains, with priority given to the outskirts of Paris, in urban policy districts and in areas where there is a shortage of sustainable food.

323. Develop a network of sustainable restaurants and food shops, in particular via Paris Commerce, with priority given to areas >400m from a sustainable food access point.

324. Develop new food processing facilities, particularly for unsold products

325. Develop canning facilities and shared kitchens, particularly in student and working-class neighborhoods.

326. Develop urban agriculture by spreading out across the city, through the mobilization of land and Parisculteurs.

327. Develop "edible streets" in working-class neighborhoods

328. Enhance the “Ferme de Paris”, Paris farm, as a demonstrator of a low-carbon agroecological model.

ACCELERATING THE TRANSFORMATION OF WORK AND EMPLOYMENT

329. Systematize a module on the ecological transition in city schools.

330. support higher education actors in developing transition-related educational content

331. Continue the city's partnership with the GREC (Groupe régional d'experts sur le climat et la transition écologique) in Paris.

332. Develop climate research projects co-sponsored by universities and the City as part of "Paris recherche".

333. Increase the use of participatory science to raise awareness of the challenges of the transition.

334. Promote eco-renovation and ecological transition professions by bringing together all actors in the sector at events (notably Paris pour l'emploi).

335. Organize recruitment days and forums with Youth Neirgborhoods («Quartiers Jeunes») and Climate Academy.

336. Set up a renovation training site on a municipal building

337. Continue financial support for ESS structures to double the number of people benefiting from integration through economic activity schemes and focus on ecological transition trades

338. Continue the "Paris Boost Emploi" program and support employment training structures.

339. Promote jobs in the ecological transition through ParisEmploi points

FINANCING AND INVESTING FOR THE CLIMATE

340. Define a climate budget for the period 2024-2030

341. Strengthen the budget's climate assessment by integrating the various sustainability issues.

342. Integrate climate budget assessment into the budget construction process

343. Identify actions undertaken by Parisian companies that have signed up to the Paris Action Climat Biodiversité scheme.

344. Finance ecological transition projects through the "Paris 2050" endowment fund.

345. Use green bonds on an annual basis, integrating the new provisions of the climate action plan into their reference framework.

346. Mobilize the City's satellites in the operational implementation of the Climate action plan

347. Take greater account of climate issues in public procurement.

348. Examine the possibility of introducing carbon criteria into public procurement contracts.

349. When renewing public service delegation contracts, include provisions to ensure that the City's assets take into account the requirements of the Climate action plan.

350. implement eco-conditionality in calls for projects and City subsidies

351. Monitor and support the Coopérative Carbone Paris & Métropole du Grand Paris.

352. Finance the City's ecological transition projects via carbon finance

WORKING TOGETHER FOR THE CLIMATE

BY ADOPTING SHARED GOVERNANCE

353. Involve the Citizens' Assembly in monitoring the climate action plan

354. Involve the Future Generations Council in monitoring the climate action plan

355. Organize annual meetings with associations working in the fields of solidarity, the environment and working-class neighborhoods to discuss the climate action plan.

356. Set up an ecological transition dashboard

357. Ensure operational monitoring of the Climate action plan

BY MOBILIZING PARISIANS

358. Organize consultations, set up citizens' conferences, continue voting exercises

359. Set up climate demonstrators within the Academy

360. Develop an awareness-raising program for the Climate Academy (schools, associations, the business world, the general public and elected representatives, with priority given to priority education networks and working-class neighborhoods).

361. Open an "outdoor school" training center (Square des Deux-Nèthes, 18th arrondissement).

362. Deploy a "climate action" catalog in all the city's schools.

363. Train City Schools Department staff, parents & children and the educational community in "Good heat risk practices".

364. Develop training programs and climate communication tools for associations, with the support of the Parisian Council of Associations.

365. Extend ecological transition training for City employees to neighborhood councils and associations.

366. Integrate ecological issues into induction and training cycles for newcomers to the City.

367. Develop climate training modules specific to departmental issues.

368. Offer all elected municipal officials training on climate issues and the Climate action plan.

369. Support Parisians with the Paris Climate Agency

370. organize major collective climate days to mobilize the whole of Paris.

371. Develop a climate pathway in the Paris Volunteers program.

372. Develop a community of small Paris volunteers

373. Invite students to join the Paris Volunteers climate program.

374. Offer climate-focused civic service missions and internships within the community.

375. Offer students opportunities to participate in discussions on the Climate action plan and its applications.

376. Create a student climate scholarship

DEVELOPING SOLIDARITY AND COOPERATION IN FAVOR OF THE CLIMATE

377. Continue partnership with Seine Saint Denis local authorities to transform the Saint-Denis and Ourcq canals.

378. Cooperate with the Seine et Marne region to open up white-water bathing areas.

379. Strengthen green and blue corridor interconnections with neighboring areas

380. cooperate with neighboring cities to transform areas bordering the ring road

381. Continue technical cooperation with the Metropole and the Region on cold networks, the creation of inter-municipal biodiversity corridors and the monitoring of land artificialisation projects.

382. Organize a COP of cities

383. Lobby for a reserved seat for cities on the decision-making bodies of international financing funds.

384. Support the creation of a European fund that would lend directly to local authorities to finance ecological transition projects.

385. Advocate an increase in the volume of international funding for cities.

386. Contribute to the "loss and damage" fund created at COP27.

387. Advocate that cities should be direct beneficiaries of loss and damage mechanisms.

388. Strengthen the climate/adaptation aspects of decentralized cooperation initiatives

389. Continue international cooperation to preserve forests

390. continue to anticipate climate migration phenomena

391. Welcome and protect environmentalists threatened in their own countries

392. Get involved in climate litigation

393. Support the initiative for a fossil fuel non-proliferation treaty

394. Continue legal action against Total Energies

395. Lobby the French government to stop granting new oil and gas drilling permits on its territory.

TERRITORIALIZING CLIMATE ACTION WITH ARRONDISSEMENT TOWN HALLS

396. Territorializing climate action

VILLE DE
PARIS

Graphic conception : KIBLIND Agency - 2025