Les états généraux
de l'économie circulaire
du Grand Paris

WHITE PAPER

ON THE CIRCULAR ECONOMY OF GREATER PARIS

240 participants
65 proposals

MAIRIE DE PARIS

ADEME
Agence de l'Environnement et de la Maîtrise de l'Energie
DIRECTION RÉGIONALE ÎLE-DE-FRANCE

List of participating organizations

Nearly 240 persons representing over 120 different organizations were assembled in the working groups:

Communauté d'agglomération Plaine Commune, Communauté d'agglomération Est Ensemble, Communauté d'agglomération Greater Paris Seine Ouest, Conseil Régional d'Île-de-France, Département des Hauts-de-Seine, Département de Seine-Saint-Denis, Département du Val-de-Marne, Paris Métropole, Ville de Clichy-la-Garenne, Ville de Fresnes, Ville de Meudon, Ville de Neuilly-Plaisance, Ville de Nogent-sur-Marne, City of Paris, Ville de Suresnes

5e Gauche pour CHECKFOOD, Acteurs du Paris, Durable, Initiative Garches, ADEME Île-de-France, Aéroport de Paris, Agence du don en nature, Agence nouvelle des solidarités actives, AgroParisTech, Alliance Carton Nature, Amelior, Amis de la terre, APC, APUR, ARENE Île-de-France, Artisans BioCycle, Association "sauve qui peut" porte Montmartre, Association Rejoué, Association SOLAAL, Atelier Acturba, ATEMIS, AURORE - Epicerie Solidaire, Banques alimentaires, Bellastock, Biens communs, Biocoop, Boursomat, Bouygues Construction, Bouygues Immobilier, Caisse des écoles du 14e arrondissement de Paris, CAPEB Greater Paris, Carrefour France Developement Durable, CCAS Saint Michel sur Orge, CCAS Suresnes, CCI Seine-Saint-Denis, Cervia, CGAD, CGAD Ile de France, CJD, CLCV, Com'Publics, Common Good forum/ Passerelles.info, Conseil national de l'emballage, Coopérative Mu, CPCU, Croix-Rouge française à Paris, CROUS, De mon assiette à notre planète, DIRECCTE Île-de-France, DRIAAF, DRIEE, Durapole, Eau de Paris, Eco-emballages, Ecofolio, École des Mines de Paris, École Nationale des Ponts et Chaussées, Ecologic, Eco-mobilier, Eco-systèmes, EcoTlc, EDF, Ecole des Ingénieurs de la City of Paris, Elior, Elipso, Emmaüs, Emmaüs Coup de main, Emmaüs Défi, Enckell Avocats, Encore Heureux, Energies 9, Enertime, Envie, Eqosphère, Ernest, Fédération des Entreprises d'Insertion d'Île-de-France, FEDEREC, FFB, Fondation Carrefour, Fondation de l'Armée du Salut CHU Mouzaia, Future Of Waste, GAB Île-de-France, Groupement National de la Restauration, Graine Ile-de-France, GrDF, Groupe La Poste Île-de-France, Haropa Ports de Paris, Helioprod, Hesus, iHOL, IKEA, Institut Caisse des dépôts et consignations pour la recherche, Institut de the circular economy , Jeune Chambre Économique de Paris, L'Atelier Centre de Ressources Régional de l'ESS, La Petite Rockette, La Poste, La Réserve des arts, Lafarge, Le Chainon Manquant, Le Relais, Le Relais 75, Le Relais VDS, Les joyeux recycleurs, Les Ptits Débrouillards, Love Your Waste, LVMH, Metro Cash & Carry, Mutum.fr, Nacarat, Next Textiles Association, Nokto tago, Opus 3, ORDIF, ORÉE, Où Réparer, Paprec, Paris & Co, Paris Habitat, Passerelles.info, Phenix, PikPik Environment, RATP, Rcube, Re-Belle, Recommerce Solutions, REFEDD, REFER, Repair Café Paris, ReVIVRE Île-de-France, Sciences Po Paris, Secours Catholique, Seine Ouest Entreprise et Emploi, SEMAEST, SEMAPA, SEMAVIP, Société du Greater Paris, Sherpa CSFE, SITA Suez Environment, SIVU CO CLI CO, SNCF, SNFBM, SYCTOM, Synergence, SYNHORCAT, Tente des glaneurs Paris 19e, Terre de Liens Île-de-France, Tiru, UNICEM, UNIIC, Upcycly, UPM, Urei Île-de-France, Valdelia, Veolia, Verger urbain, Vinci, Wiithaa, Yprema, Yves Rocher, Zero waste France, Zone-AH.

Editorial

The circular economy is a concrete response to the major challenges of our time that are climate change and the massive loss of biodiversity. By lowering society's impact on the environment, climate and health, the circular economy has the potential to help limit global warming to less than 2 degrees Celsius by the end of the century and is hence the path we must follow.

The purpose of the circular economy is to end the uncoupling that has occurred between growth and environmental protection, between goods and resources and between exchange values and values in use. By substituting a logic that favors re-use over replacement, this economy allows each individual to renew, in the broadest sense, those fragile links with his or her environment without which any wealth creation must entail a depletion of resources.

It is an economy that encourages new forms of production and consumption, as well as sociability, sharing and democracy, as opposed to a short-term profit and consumerist diktat. It also holds the promise of new business sectors with strong regional roots and quality jobs that will not be relocated. It is, necessarily, a social and solidarity economy.

Now is the time to promote the circular economy that a number of players are already advancing at the regional scale, the first stage in the fight against climate change.

It is this ambition that Paris and some twenty Greater Paris co-organizing bodies wished to support through the General Assembly on the Circular Economy launched collectively in March 2015: planting the seeds of the circular economy in a territory as large and productive as Greater Paris, by seeking and exploring new possibilities together. I extend my warm thanks to all the participants, whose reflection over the last months has resulted in 65 proposed initiatives for a greener and more equitable economy, as summarized in this White Paper.

This General Assembly and its White Paper mark a significant first step, which must now encourage initiatives and raise awareness about this new economy. It is indeed as a group, by emulation and innovation, that we will demonstrate the numerous solutions available to preserve the planet and its inhabitants using a socially centered approach, and build a world that is at once more ecological, more equitable and more united.

Anne HIDALGO,
Mayor of Paris

The ecological transformation of the economy only makes sense if it benefits everyone.

Inventing a new business model that respects the environment, protects the common good, and creates jobs: quite a challenge!

A model that is based on sharing rather than profit, collective intelligence rather than individual competition, recovery rather than waste: this is what Paris seeks in the circular economy.

Paris is fully committed to this new economy and its impetus by mobilizing local authorities, citizens and players that are active in the economic, associative and academic sectors, in order to advance a new regional project.

A world first at the city level, we are organizing a General Assembly on the Circular Economy with partner authorities to stimulate the region's transformation. This policy is the joint work of 21 local authorities, some 100 players and nearly 250 persons over the last six months.

The White Paper that we are presenting today, the fruit of this collaborative effort, offers a large number of proposals. The momentum that it inspires, the direction it gives, and the paths it opens come with a responsibility: the initiation of ambitious and inclusive circular economy policies that cross administrative lines to take into account the realities of energy, raw material and traveler flows within our metropolis.

This new model will revitalize our economy, by generating tens of thousands of jobs throughout the Île-de-France region. It will also improve the lives of our fellow citizens. As we create the Greater Paris region, the circular economy will symbolize a collective and unifying political horizon. Local authorities will be able to examine the feasibility of these proposed initiatives, further refine them and transform them into a roadmap. They will also be able to act with the European Union, the French State or regional economic, associative and academic players so that they too can participate in this process. Based on this General Assembly, a coordinating committee for the Circular Economy White Paper will regularly report to you on the progress of these proposals.

Francois Mauriac said: "What does it serve man to win the Moon if he loses the Earth." Let us make the planet's protection a political priority!

Antoinette GUHL,
Deputy Mayor of Paris responsible for the social and solidarity economy, social innovation and the circular economy

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Challenges of the circular economy

Limiting our consumption of natural resources

In 1931, observing man's control of the planet and the endless surveys, mapping and statistical measurement, Paul Valéry wrote: "The time of the finite world has begun." Today, this notion of the finite is no longer a matter of our knowledge of the world or its conquest. The time of a finite world in terms of resources began some ten years ago, and the circular economy is the response to this primary challenge.

Throughout the life cycle of goods and services, the circular economy minimizes the use of resources and reduces the impact of economic activities on the environment.

The French Agency for the Environment and Energy Management (ADEME) defined the circular economy according to seven pillars in order to uncouple economic growth and the consumption of natural resources: Sustainable supply, eco-design, Industrial and Regional Ecology (IRE), Product-Service System, sustainable consumption, extending the duration of use (re-use, repair, and re-utilization), and recycling.

Changing the economic paradigm

The circular economy's pillars are not only effective at the environmental level since they can be linked to a model that is also economically viable. In a long-term context marked by multiple supply risks and pressures on raw material and energy prices, the circular economy offers economic players the opportunity to change model. The improvement of processes and products, and the securing of sustainable supply flows represent a first step towards a more efficient use of resources for each individual company. The fact that companies open themselves to their surrounding environment is the guarantee of a truly circular approach. Companies can thus transform their neighbors into partners (using IRE), clients into suppliers (based on a reverse logistics cycle), products into services (by shifting towards a Product-Service System), and brands into communities (within a collaborative consumption rationale)[1].

Adopting a sustainable economic development regional strategy

The circular economy goes beyond the framework of a single company by generating new activities and jobs. Its inclusive approach calls on everyone to participate (citizens, associations, local authorities and companies). The circular economy is a regional project par excellence. The densely populated Parisian metropolis, with its tightly woven logistics network, abundant resources and businesses, represents an important echelon and promising ground for the circular economy. Initiatives have already begun for the Greater Paris region, some of which are presented in this White Paper as local solutions that respond to the global resource challenge. The Greater Paris ambition is also integrated within in a larger context:

- Section 4 of the French energy transition law, adopted by the National Assembly on July 22, 2015, has the following dual objective: "Combat waste and promote the circular economy." With respect to the messages or proposed initiatives of this White Paper that have a national scope, Greater Paris could be considered as the voice and testing ground of France;

[1] For examples of companies, see: Le Monde (2015), Économie circulaire, ces entreprises qui ouvrent la voie (Circular Economy: Companies that are showing the way)

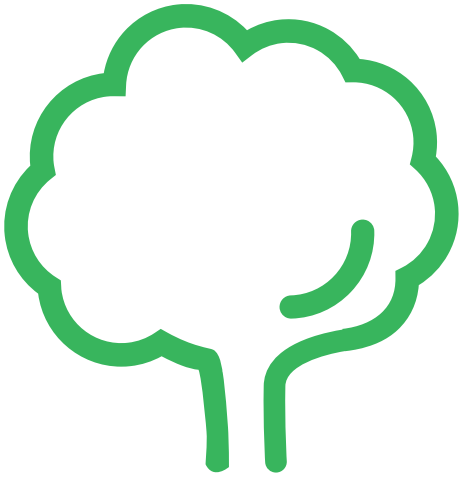
- The European Commission initiative, "Towards a circular economy: A zero waste program for Europe" will be supplemented with a European circular economy strategy by the end of 2015, for a competitive and low-carbon Europe. In 2011, the Commission had also established "The Roadmap to a Resource Efficient Europe," setting the major strategies to be implemented by 2050;
- The Paris Climate conference to be held in December 2015, COP21, which should culminate in an international agreement to limit global warming to less than 2 degrees Celsius by the end of the century.

Greater Paris Metropolis

The French MAPTAM law (Modernization of Territorial Policy and the Cities) of January 27, 2014 created the Greater Paris Metropolis (GPM). The latter is organized into regional government agencies (EPTs) and will unite Paris with the municipalities of the inner suburbs (Hauts-de-Seine, Seine-Saint-Denis and Val-de-Marne départements), i.e. 124 municipalities. Other municipalities of the outer suburbs may decide to join the metropolis or not, keeping in mind that only two cities have decided to link up thus far (Argenteuil and Paray-Vieille-Poste).

The GPM will thus have a population of nearly 7 million, or more than half of the region's inhabitants, and will lawfully exercise four major authorities: metropolitan area planning, local housing policy, economic, social and cultural development and planning, and air and environmental protection. The Metropolis will also be responsible for harmonizing electricity, gas, heating and cooling distribution networks. Thanks to its planning and operational authorities, the GPM will thus be able to promote the circular economy on a wide scale, even though the EPTs will still be responsible for water supply, sanitation and waste management.

This White Paper proposes 65 initiatives that can serve as unifying work strategies in connection with metropolitan planning.



General assembly on the circular economy of greater paris

Co-organized by several Île-de-France authorities at the initiative of the City of Paris and supported by the Île-de-France regional office of the ADEME, the General Assembly on the Circular Economy of Greater Paris was launched on March 11, 2015. Its purpose was to bring together a wide spectrum of players (government authorities, business, associations, NGOs, academia, research, etc.) to work on tackling the circular economy's challenges for the Greater Paris Metropolis.

To this end, Working Groups (WG) met three times during workshops organized between April and June. Each group was in charge of a specific topic:

- WG 1 : Food, from urban agriculture to bio-waste;
- WG 1 (b): Fight against food waste, awareness-raising and redistribution[2] ;
- WG 2: Planning, from eco-design to green construction;
- WG 3: New economies, performance and re-use;
- WG 4: From eco-design to end of life, products with short lives (everyday products);
- WG 5: From eco-design to end of life, products with medium or long lives (equipment);
- WG 6: Development of recoverable energy;
- WG 7: Industrial and regional ecology.

These groups gathered more than 240 persons, representing over 120 different organizations. The list of organizations participating in each working group is available in Appendix 5.
This consultation resulted in a set of recommendations, compiled in this White Paper under 65 proposed initiatives. These proposals are addressed to public decision-makers of the Parisian metropolis, as well as to economic players and citizens. The White Paper represents a first step in developing the Greater Paris region's circular economy.

Proposals

The contributions of participants during the workshops resulted in 65 proposals, based on 7 strategies:

- Strategy I: Encourage and support economic players;
- Strategy II: Innovate and experiment;
- Strategy III: Scale up and establish momentum in the region;
- Strategy IV: Change attitudes and practices;
- Strategy V: Involve local authorities, businesses and citizens;
- Strategy VI: Create a network linking players;
- Strategy VII: Change legislation.

The terms defined in the glossary (Appendix 3) are highlighted when they first appear.

WG 2 There is a referral to an initiative or similar action.

To the right of each proposed initiative appears the WG that made the proposal.

[2] WG 1 (b) was organizd by the City of Paris and the Agence Nouvelle des Solidarités Actives (ANSA) (New Agency for Active Solidarity)). Some forty people with diverse profiles participated in three specific workshops on the issue of food waste, based on two strategies: awareness-rasing and redistribution.

Strategy 1

Encourage and support economic players

Strategy 1

Encourage and support economic players

Leveraging public procurement

I.1 Introduce and emphasize circular economy clauses in public contracts

WG 2

Only 6.7% of the public contracts concluded in 2013 included an environmental clause (for contracts amounting to €90,000 or more excluding taxes)[3]. Current environmental clauses are generally seen as complex and there are no specific and objective indicators for clauses related to the circular economy as such. The Greater Paris region, working with various partners (ADEME, Regional agency for the environment and new energies (ARENE), a group of responsible public purchasers, etc.), could develop incentive clauses and promote projects that include them. These clauses would include both upstream (eco-design, product use phase) and downstream (re-use, product end of life) components.

Initiative I.1
Recycling and recovery of used uniforms

At the end of 2014 and as part of a program to replace its operators' uniforms, the RATP launched an initiative aimed at collecting and recycling used clothing. This example of responsible public procurement, which was set up over the 2014-2016 period, involves 27,000 operators. The collection logistics are handled by the RATP, while Le Relais (Emmaüs France) is in charge of the recovery process. Each piece of clothing is channeled towards a recovery sector according to its composition and transformed into rags or spools of recycled thread, frayed to produce insulation materials, or selected for re-use if the items are free of logos. To date, 8.3 tons of clothing has already been collected.
This initiative actively contributes to the emergence of a work clothing recycling sector in France (the presence of logos restricts the programs in relation to personal clothing).

[3] French Ministry of Ecology, Sustainable Development and Energy (MEDDE) (2014), 2015-2020 National initiative plan for sustainable public procurement

I.2 Increase the percentage of eco-designed products in public procurement

WG 4

Labels are rarely used by public purchasers in their specifications, even though they do exist to identify the most eco-friendly products. The initial goal would be to increase the share of eco-designed products and services in public procurement, before making the purchase of these products and services systematic[4]. In the wake of the "Exemplary State" circular published at the time of the Grenelle de l'Environment, and the 2015-2020 National initiative plan for sustainable public procurement, Greater Paris could pilot initiatives that could then be extended throughout France, provided that there are clear timelines and a strong willingness. In some cases, some thought will be needed in order to shift from the acquisition of a product to the purchase of a service.

I.3 Develop a Product-Service System rationale in public procurement

WG 3

When specifications are drafted for tenders, public purchasers could further question their actual need and the result they hope to achieve: a rationale emphasizing the purchase of a service over the acquisition of goods could be developed (from a good sold to a service rendered). Businesses would likewise be involved in this change of practice. They would also be called to develop more extensive offerings, proposing a service rather than a good, or at a minimum the re-use of a good at the end of its life. Such a life cycle analysis approach would reduce the environmental impact of services offered (with the same result), while in many cases preserving local employment.

The budget impact for local authorities would be assessed on a case-by-case basis by comparing investment and operating costs. In order to move towards a Product-Service System, the training of advocates would seem to be a prerequisite, as would legal support vis-à-vis public procurement and competition law for public players. Relying on a "Responsible Purchasers Club" would trigger a stimulus and potentially develop collective purchase orders to enable new sectors to emerge.

Acting on products and waste

WG 5

I.4 Encourage product eco-design

Today, eco-design is not a reflex for manufacturers or consumers. The manufacture of products that respect the environment throughout their life cycle involves investment costs, which companies tend to pass on to consumers, in the form of upscale if not niche products. In order to consider a product's overall cost (including manufacture, use, disposal, and environmental and social aspects), the following eco-design incentives could be put into practice:

- To encourage the manufacture of eco-designed products, a research or similar tax credit could be considered or, in the case of extended producer responsibility (EPR) sectors, the pursuit of efforts to change eco-tax rates (incentive to manufacture recyclable products for example);
- To encourage the purchase of eco-designed products, several means are available (relaunch of product environmental labels, "green purchase" tax credits or zero-rate loans for the most costly goods, reduced VAT, carbon tax, etc.).

[4] The energy transition law adopted by a final vote of the French National Assembly on July 22, 2015, includes, by way of example, a minimum percentage of recycled paper in stationery items purchased by government departments: 25% as of 2017, 40% in 2020.

I.5 Gradually adapt and regionalize the French General Tax on Polluting Activities (TGAP) to increasingly discourage waste disposal and incineration

WG 7

Incineration (without energy recovery) and disposal, the last treatment methods in the European waste hierarchy, have the disadvantage of creating fewer jobs than waste recovery activities. In addition, the over-saturation of local facilities can at times result in long-distance waste hauling.

Yet the current regulatory framework does not truly inhibit the incineration and disposal of waste and does not demand better and more local waste recovery. For example, the French General Tax on Polluting Activities (TGAP) varies according to activity and product categories and not according to the volume of waste incinerated or disposed. To adapt and regionalize the TGAP and to recover waste at the local level, a worthy strategy would be to increase the TGAP where there is incineration and disposal overcapacity, to avoid drawing waste from outside the region.

The appropriate scale of the territory would be determined by initiative leaders (municipalities, groupings of municipalities, etc.), keeping in mind that the method of calculating the TGAP would involve a legislative change at the national level.

I.6 Include transformation and packaging costs to facilitate the donation of unsold food

WG 1 (b)

In order to give a second life to unsold food, it is often necessary to (re)package these products, to transform them (into soup, jam or juice for example) or to cook them to increase their shelf life and facilitate their subsequent consumption. To accelerate the development of these activities, two phases are to be explored and broadened:

- The inclusion of the transformation and packaging cost in the food donation cycle. The conditions necessary to resell a donated and transformed product should also be determined;
- A possible tax break for food that is donated and subsequently transformed or packaged.

I.7 Make progress on the incentives for donations in kind and support for repaired products

WG 3

Unsold products of companies are still often destroyed or left to wholesalers. Generally speaking, manufacturers or distributors do not seek to repair products with a (slight) defect. The goal of this proposed initiative is to ease the current restrictions surrounding the donation of products for re-use and repair. Companies must be further encouraged to work with players involved in the second life of products, so as to abandon a waste rationale. There could be tax incentives:

- An increase in the tax break for donations in kind of unsold goods (60% to 80% for example);
- A drop in the VAT for repaired products;
- The recognition of a status for some environmental associations, which would offer tax breaks to companies donating to them.

Greater Paris could convey these messages on a national scale, before they are relayed at the European level.

Initiative I.2
La Banque Solidaire de l'Équipement (BSE) (Solidarity Bank for household articles)

The BSE project provides low-priced household articles (dishes, furniture, electrical appliances, linen, etc.) to people living in precarious situations who are accessing permanent housing. The BSE supports and provides security to families acquiring housing. This initiative is made possible through partnerships with large companies that donate their unsold or discontinued goods to Emmaüs Défi. BSE beneficiaries are identified and oriented by social workers, while the project's operational aspects are carried out by employees enrolled in inclusion schemes.
Having equipped over 1,000 families in Paris over 3 years, the current objective is to expand the project and multiply its impact throughout France (with a target of 10,000 beneficiary-clients), thanks to the support of companies and local associative partners.

Initiative I.3
Towards "Zero-Waste" cultural events

Spearheaded by Phenix, the "Towards "Zero-Waste" events" endeavor asks events planners to enter into a circular economy rationale by turning to scenography eco-design upstream and reducing and recovering waste downstream. This approach is reflected in two types of initiative:

- Upstream to the event: help supply designers and architects with recycled materials, to better control the decor and scenography budget;
- Downstream to the event: recover and redistribute surplus food at the end of a festival and give it to charity associations.

I.8 Reform the terms and conditions governing the award of grants so as to favor new economies

WG 3

Over and above the debate on the number or amount of grants awarded to associations dedicated to the re-use and re-utilization of products, a consensus is emerging regarding how grants are awarded, under which:

- The administrative load of the grant process being significant for associations, a simplification would be needed from the initial grant application to the final assessment.
- Current grants are generally based on a short-term approach, targeting first and foremost innovation development. This runs counter to the need for visibility conveyed by the associations. However, a long-term grant plan would not necessarily be compatible with the wish expressed for simplification.

The nature of the grants could also be modified, in the view of the beneficiaries, to better focus on the start-up phase, so as to develop permanent associative business models.

Initiative I.4
Support resource stores and recycling centers in Val-de-Marne

Through the financing of feasibility studies, the Val-de-Marne département supports the start-up and development of several resource stores in its region: "Approche", "Chic ! On ressource" and "RIP (Resist Insist Persist)." This initiative contributes to facilitating the return to work for individuals in reintegration (through a specific support), and the re-use of second-hand materials and furniture. This initiative is part of the regional plan to eliminate waste, with the objective of creating 30 resource stores by 2019.

The development of resource stores and recycling centers contributes to the creation of regional eco-systems, which promote human beings and their potential, and enable the emergence of a new economy that respects the environment, through local hires and community channels.

Rethinking buildings and energies

I.9 Develop new economic models for green construction

WG 2

Based on an economic value that does not include environmental and social externalities, the current economic approach is in part preventing the emergence of construction initiatives that are modeled on the circular economy. Greater Paris could conduct phase one of a project to create and test a software tool for economic analysis, in order to compare two approaches to the same construction project, one being linear and the other circular. Fiscal incentives such as a VAT exemption for re-used, recycled or bio-sourced materials could also be employed, additional surface area for circular construction projects could be allocated, or a real estate investment scheme could be developed, based on a recognized circular economy label (Pinel law covering low consumption buildings or the circular economy). As a general rule, these levers should favor results over means obligations, so as not to impede innovation.

I.10 Create a single recoverable energy wicket dedicated to government aids and administrative procedures

WG 6

Intended for potential recoverable energy producers, and their prospective clients, a single contact would respond to all questions relating to current government aids and related administrative procedures. A single wicket would simplify administrative processes (including those relating to project financing), and accelerate the development of recoverable energy. The single wicket should be independent and not overseen by a manufacturer so as to guarantee that players have a high degree of confidence. It must also establish a close relationship with current aid bodies (ADEME, Region, etc.) and, in this sense, the Renovation Information Service Points (PRIS) or Local Energy and Climate Agencies (ALEC) could effectively operate the single wicket.

I.11 Prioritize recoverable energy in the networks

WG 6

The French energy mix should include a minimum percentage of recoverable energy. Greater Paris, and the national public authorities, should consider the most appropriate economic incentive (reduced VAT[5], bonus, carbon tax, etc.), to capture recoverable energy in the networks (unused energy from waste incineration or data centers for example). In any event, it is vital to prioritize energy saving, and the use of energy that has already been produced rather than the production of new energy.

Initiative I.5
Recovery of the heat produced by data centers in Marne-la-Vallée

In the Marne-la-Vallée region, the heat produced by data centers is recovered for the Paris Val d'Europe business park network: water at a temperature of 48°C is channeled directly from the exchanger outlet to the municipal heating pipes of the business park. As the temperature is already sufficiently warm, there is no need for further heating. Ready to use, it is particularly virtuous from an economic and environmental point of view.

[5] The reduced VAT is already in effect for the variable portion of the rate applied to heating networks supplied by renewable and recoverable energy at a percentate exceeding 50%. The fixed portion of the rate already stands at 5.5% (identitical for the other energies).

I.12 Set up economic incentive mechanisms specifically for recoverable energy

WG 6

At present, recoverable energy is not very competitive when stacked against carbon fossil energy, whose price tends to remain stable or drop. There already exist aid mechanisms that ensure the economic viability of energy recovery projects. The heat fund managed by ADEME is an example. These mechanisms could be completed by specific and local aid, based on the regional energy sources identified, and limited to the authorized public aid limit. At the national level and over a longer term, consideration of how best to tax fossil energies would benefit recoverable energy.

Initiative I.6
Energy Performance Contract in the Hauts-de-Seine

In 2011, the Hauts-de-Seine département launched its first Energy Performance Contract (EPC). Its primary objective is to save energy, while increasing comfort, through the implementation of energy performance improvement initiatives of a technical and behavioral nature.

This seven-year EPC has been applied to six Hauts-de-Seine schools, and should gradually save 33% in primary energy on an annual basis and reduce greenhouse gas emissions by 46%, which translates into 2,200 tons of CO_2 equivalent avoided over the seven years of the contract. An energy saving of 4% was achieved between 2012 and 2013, while 14% was saved between 2013 and 2014.

Strategy II

Innovate and experiment

Developing Industrial and Regional Ecology (IRE)

II.1 Initiate new IRE approaches based on feedback from France and abroad

WG 7

Industrial and Regional Ecology (IRE) is still little known to companies, given the fact that the conditions for its implementation and its economic potential can vary significantly between regions. New IRE approaches could be initiated following:

- An inventory of IRE experiences in France and abroad;
- The identification of impediments, levers and related best practices;
- The sharing of best practices, which would stress the aspects that could be reproduced for the Greater Paris region.

This proposed initiative could be steered by a main player, with the involvement of several partners at different stages. The Île de France committee of circular economy players, regional authorities, planners, professional federations and the region's competitiveness clusters and hubs would all contribute to identifying feedback, by capitalizing on the work already achieved. Finally, meetings between players and site visits would facilitate the launch of new IRE approaches.

II.2 Organize new IRE financing models

WG 7

As part of the Third Industrial Revolution in Nord-Pas-de-Calais, a civic savings account has been created to finance innovative and responsible companies, a first in France[6]. Based on this example, the idea would be to organize new financing models to develop IRE approaches and motivate stakeholders based on:

- Designated civic savings accounts;
- Crowd funding for issues involving residents, creating local value (jobs), and reducing activity-related nuisances (transport, noise, odors, illegal dumping): for example, crowd funding could be used to develop wind farms;
- Third-party financing.

In addition to the financial tools available at the regional level, including responsible innovation aid (AIR), innovative project development aid (AIMA), and SMB development aid (PM'UP), and the financial possibilities offered to business groupings via project tenders, new financing models could rely on a multi-partner approach (Municipality, Regional Council, etc.), with legal forms such as a public-private company.

II.3 Create new business parks or reclassify business parks in decline by integrating IRE as a guiding principle

WG 7

There is generally little pooling within the same business park, and competition occurs between the various parks. Moreover, many of today's business parks are aging and cannot be reconfigured. The integration of IRE in these parks would create a new stimulus and ultimately retain companies, reduce their costs and enhance their image.

To encourage the emergence of business parks (new or reclassified) that integrate IRE as a guiding principle, one or more business park "examples" could be rolled out in the Greater Paris region. This would require three key steps:

- Identify business parks undergoing reclassification and industrial wastelands to be revitalized;
- Recruit companies based on their propensity to cooperate and their type of business flow;
- Define the conditions of access for these companies and encourage their establishment.

The example of one or several demonstrator companies could then be expanded to facilitate the emergence of business parks that integrate IRE.

[6] See: https://www.credit-cooperatif.coop/particuliers/ensemble-nos-actualites/lancement-du-livret-depargne-troisieme-revolution-industrielle.

Initiative II.1
"Reinventing Paris" call for innovative urban projects

Launched in November 2014, the "Reinventing Paris" call for innovative urban projects will rethink 23 Parisian sites so that they prefigure the future city in terms of architecture, new usage, environmental innovation and co-construction. A total of 372 projects were officially filed for the first selection board, which retained 75 candidacies in July 2015, breaking down into 3 to 4 candidates per site.

The City of Paris is thus asking the private sector to invest itself in order to accelerate the momentum surrounding urban regeneration and the adaptation to new economic, social and environmental challenges. Each project will have to demonstrate its contribution to a sustainable and intelligent city through its design, technical specificities, planning, and its place in the immediate and metropolitan environment. This will be expressed via the use of new circular economy technologies, as well as an ability to adapt and accompany, and even generate new lifestyles. Innovation will have to target energy resilience and efficiency: for example, an "income" property that is part of a circular economy cycle and becomes a "resource" for its new neighborhood or block.

Discovering knowledge and methods

II.4 Encourage Product-Service System academic research

WG 3

The Product-Service System is already the subject of research projects and even organizations such as the Product-Service System and Sustainable Development Club. However, if Greater Paris is to be a center of excellence, a specific academic research chair with an international influence would have to be created. This chair would be assigned several tasks, such as quantifying the economy of usage, reflecting on the emergence of new business models and practical recommendations, and providing expertise to assist lawmakers. The academic research chair would have long-term funding, and would operate based on strong partnerships with companies, universities, engineering and business schools, and existing research institutions.

II.5 Test new public project contracting practices in the circular economy

WG 2

Today, it is easier to build the new with new materials, than it is to renovate the old with recycled materials. One could ultimately imagine changing the rules for obtaining a building permit based on circular economy criteria. In the meantime, Greater Paris could be a driver for the initiative and launch pilot public projects for selective deconstruction, the re-use of project materials, the use of recycled or bio-sourced materials, etc. Strong political backing would guarantee support for the tests conducted.

II.6 Create a business incubator to facilitate eco-design processes

WG 4

In Greater Paris, and in geographical proximity to university and research centers, an incubator would be created to support companies wishing to undertake eco-design. Working as a resource center, the nursery would support start-ups and SMBs (as a priority) to raise awareness concerning eco-design issues, encourage innovation, assist with new strategic positioning and attract partners or investors. A center for expertise, the eco-design incubator would be backed by a recognized institutional player and motivated by local authorities, foundations, and chambers of commerce. A mentoring system, under which companies that experienced the incubator would in turn become mentors, could also be set up in order to promote eco-design processes.

Piloting innovative projects

II.7 Privilege innovative energy recovery projects

WG 6

While it is currently difficult to obtain financing in a highly regulated energy sector, a call for innovative projects would enable the selection of several pilot projects, which could then be reproduced on a larger scale. Following a project incubation phase of two to three years, the most profitable technologies from an economic and environmental perspective could be selected. Based on feedback, these technologies could then be deployed more extensively with less risk of financial or supply disruption. A support structure for the pilot projects, such as Paris & Co, would facilitate contacts, and TEDx-like events would be organized to spread the word on successful innovative projects.

Initiative II.2
Geothermal capture using diaphragm walls in the metro stations

At the RATP's initiative, and for the first time on the Parisian metro network, ground source energy will be recovered by a geothermal capture system installed within the metro tunnel's diaphragm walls. This experiment is being carried out as part of the line 14 extension, and the system will be introduced at the Porte de Clichy and Mairie de Saint-Ouen stations. The energy recovered from the Saint-Ouen station could partially supply a surface residential building.

The project, led by the RATP and the STIF, with SYSTRA[7] contributing, started in 2012 with studies; the first work began in 2014.

[7] SYSTRA : engineering consulting group for public transport infrastructures, partially owned by SNCF and RATP.

II.8 Develop agricultural or energy production on contaminated soil

WG 1

In the Île-de-France region, there are some 650 contaminated soil sites, listed in a database compiled by the Regional and interdepartmental directorate for the environment and energy (DRIEE[8]). Difficult to exploit, this available land could lend itself to agricultural or energy production. Based on the type of pollution, several solutions could be contemplated:

- Above-ground farming, although this would not be free of volatile pollutants, which are frequent in urban areas;
- Planting of "compatible" fruit trees;
- Dedicated energy harvesting;
- Phytoremediation to restore sites where the contamination is long-term or extremely long-term based on the pollutants present.

Agricultural or energy production on contaminated soil can also be contemplated on a temporary basis as part of a comprehensive planning zone (ZAC), a program which is now being examined in the Est Ensemble municipal agglomeration.

II.9 Launch calls for innovative greening projects

WG 1

In 2013, the call for innovative greening projects launched by the City of Paris retained 30 projects that met biodiversity, urban agriculture and climate change adaptation objectives. The production of strawberries on walls or roofs, communal chicken coops in urban areas, shared above-ground gardens, and mushroom farming in the petite ceinture (inner suburbs), are all initiatives resulting from the 2013 call for projects, to which others could be added. Greening projects could be given a pedagogical mission to educate young people and strengthen the intergenerational bond.

Proposed initiative IV.7
Look for exemplary schools in the area of sustainable food

[8] http://carmen.developpement-durable.gouv.fr/18/Zones_SSP.map. As of February 14, 2014, the database listed 800 sites, with pollution being confirmed at a little over 650 sites.

Strategy III

Scale up and establish regional momentum

Scaling up industrial and regional ecology (IRE) and energy recovery projects

III.1 Formally assess the current situation and establish an action plan for IRE development

WG 7

The first studies initiating IRE development have already been conducted in the Île-de-France region[9], and exemplary approaches have been launched, such as the redevelopment of the Jean Mermoz Economic Business Park in La Courneuve (Plaine Commune). Based on these current initiatives, a coordinating committee chosen by the Greater Paris local authorities would formally analyze the current situation, first at the Île-de-France level, and then concentrate on certain zones with high IRE potential. Minimum objectives for this analysis would include:

- The identification of regional policies that promote industrial and regional ecology;
- The mapping of business parks that generate significant resources and energy flows, based on the economic players considered (tertiary offices and businesses, industry);
- The specific definition of business needs in order to commit to IRE, and the identification of influential intermediaries to motivate businesses (associations, federations, chambers of commerce, entrepreneurs, etc.).

The Greater Paris industrial and regional ecology analysis will result in an action plan for IRE implementation at various levels (from the Île-de-France region to the business park), establishing among other things the strategies for involving players and indicating the complementary studies to be conducted.

III.2 Create a single IRE initiatives coordinating committee to support the operational development of IRE initiatives

WG 7

While the political, economic and social context favors the development of industrial and regional ecology, the creation of a single dedicated committee would support players that wish to commit to an IRE approach or scale up. Serving as a reference framework at the regional level, this single committee would have the following main tasks:

- Network the players;
- Communicate best practices;
- Accompany future leaders with their various approaches;
- Directly coordinate, promote, accompany and observe;
- Introduce concrete synergies;
- Conduct studies, develop methodologies.

This committee would address all players likely to be involved in an IRE approach, such as regional authorities, business associations, consular chambers, professional federations, business park developers or social housing bodies. Working in cooperation with laboratories and competitiveness clusters, the single committee would have its own budget and a dedicated work team. It would rely on existing entities, particularly the Île-de-France committee founded by DRIEE, ADEME and the ORÉE environmental protection association.

Initiative IV.1
Coordinate the Île-de-France committee of circular economy players

[9] Specifically:

- Sabine Barles, Laboratoire Théorie des Mutations Urbaines (2007), Mesurer la performance écologique des villes et des territoires: Le métabolisme de Paris et de l'Île-de-France (Measuring the ecological performance of cities and regions: The metabolism of Paris and Île-de-France)
- Institut d'Aménagement et d'Urbanisme d'Île-de-France (2013), Économie circulaire, écologie industrielle: Éléments de réflexion à l'échelle de l'Île-de-France (Circular Economy, industrial ecology: Elements to be considered at the Île-de-France level)

Strategy III

Scale up and establish regional momentum

III.3 Set up a coordinated development strategy for recoverable energy at the municipal level

WG 6

So as to coordinate the initiatives planned in the area of recoverable energy, an authority should be designated to accompany public and private projects (developers, local authorities, businesses). Among other things, it would identify the existing data and tools covering renewable and recoverable energy, as presented in proposed initiative IV.4. This coordinating authority would also be tasked with increasing the share of recoverable energy. It would position itself upstream to projects as much as possible, in order to ensure feasibility. The strategic authority for recoverable energy would rely on a multi-disciplinary team with diverse profiles able to respond to technical, legal and economic questions.

Proposed initiative IV.4
Identify the existing data and tools covering renewable and recoverable energy

Collective land planning, preservation and management

III.4 Integrate a recoverable energy vision in land planning

WG 6

Local Urban Planning (LUP) could serve as a useful tool for recoverable energy development. All LUP players could include the production of recoverable energy in urban planning projects, with the potential assistance of energy consultants (such as energy information centers). LUP in the regions should be compatible with the future Territorial Cohesion Plan (SCOT) at the metropolitan-area level, and consistent with planning documents such as the Île-de-France region master plan (SDRIF) or the Île-de-France climate, air and energy regional plan (SRCAE).
Incentives could also be introduced at the national level, such as a supplemental constructible volume granted for projects that feature recoverable energy. The essential idea is to change land planning thinking to include current and future energy resources and needs in LUP.

Proposed initiative I.9
Develop new business models for green construction

Initiative III.1
Recovering heat from the sanitation network

Supported by the ADEME Île-de-France regional office, the City of Nanterre has built the Centre Sainte-Geneviève eco-district by using a heating network whose energy is recovered from wastewater and near-surface geothermal energy. The five- hectare district comprises 650 new housing units, 1,000 m² of shops as well as schools.
The heating network uses the Degrés Bleus d'Eau & Force system to recover energy from wastewater (kitchens, bathrooms, etc.). The central heating, with a total capacity of approximately 3.5 MW, relies on two heat pumps (800 KW) that will exploit the heat recovered by means of 200 linear meters of heat exchanges installed in the Departmental Council sanitation network, close to the eco-district.
The initial buildings were delivered in 2011, and the program represented a first in France for an eco-district heated using this principle.

III.5 Protect farmland to enable local food systems

WG 1

Many Greater Paris local authorities still have significant parcels of farmland, which are often of high quality. Threatened by urbanization, farmland should be protected to enable local food systems, and to maintain a close relationship between producers and consumers. The SDRIF plan includes a protection and development objective for farmland, but no firm guarantee, such as a farmland quota system. Greater Paris and its partners (the départements, the Île-de-France region and the French State) could formulate a land strategy based on the new agricultural challenges and simplify the procedures for protecting land with agricultural value.

III.6 Facilitate the establishment of circular economy and social and solidarity economy players in Greater Paris by organizing office sharing

WG 3

Although costly and difficult to access, land nevertheless remains a key factor for circular economy players as a general rule and for social and solidarity economy bodies in particular. An initial assessment would be needed to map the available office space that could be shared. The Greater Paris local authorities would act as an intermediary between supply (public and/or private lessors) and demand (social and solidarity economy bodies, and associations or businesses), to:

- Optimize office use – which could ultimately reduce grant requirements;
- Provide a service of general interest developed by subsidized players.

In Paris, this effort could rely on the mobilization of Local Development Teams (LDT), who would be responsible for coordination and communication in twelve districts considered as "priorities."

Initiative III.2
General amendment to the Local Urban Planning scheme

The proposed general amendment to the City of Paris LUP scheme seeks to reinforce the regulatory provisions that privilege resource conservation and, more generally, quality of the environment. For example:

- **Regarding the energy and environmental performances of construction sites, an Article 15 is introduced, pursuant to the law, which covers rainwater management, waste collection, the greater use of thermal energy in mixed development zones (ZAC), and incentives to use renewable or bio-sourced materials;**
- **Regarding waste management, the amendment to the City of Paris LUP scheme seeks to facilitate the implementation of an extensive network of voluntary waste drop-off sites, in association with recycling centers;**
- **Regarding the development of urban farming, the new provisions will strengthen quality requirements and the standards governing open spaces and soil-grown planting on floors and roofs, and terraces and walls, which would be conducive to rainwater management among other things.**

Optimizing regional logistics

III.7 Think regional cooperation for waste prevention and recycling

WG 3

In terms of waste prevention and recycling, regional players do not communicate sufficiently among themselves (businesses, associations, local authorities), and privilege sectors over ecosystems. The Greater Paris local authorities could act as drivers and facilitate contact between players, so as to enable product donation, re-use, repair, re-utilization and recycling. A final objective of regional independence and resilience would also be pursued, served in the immediate term by:

- An upstream assessment to identify a region's major material streams that could be donated, re-used, repaired, re-utilized or recycled;
- Topical and operational workshops for innovation research and the exchange of best practices.

The consultations of the General Assembly on the Circular Economy of Greater Paris should be permanent, so as to pursue a collective momentum.

Proposed initiative V.8
Privilege the re-use and re-utilization of long-life products in extended producer responsibility (EPR) sectors

III.8 Develop and stimulate regional networking to optimize the re-use and recovery of materials at the local level

WG 2

The Île-de-France region is structurally loss-making in terms of construction materials, and the building and public works players use the Île-de-France road network extensively. The logistics and networking of the Greater Paris region for the responsible transit of construction materials and the facilitated disposal of building and public works waste materials should therefore be reconsidered. While the regional plan for the management and prevention of waste generated by building and public works sites sets objectives for the development of alternative transport modes and the optimization of road transport, Greater Paris could nevertheless consolidate the existing databases in order to better share the information between project managers, the local authorities and the Region[10]. Temporary storage space could at least be included in Local Urban Planning (LUP), and at most required under the law by taxing a minimal percentage of the land to be used for storage (based on the volume of projects scheduled for the region). A better regional networking would diminish the global environmental footprint of projects, by reducing distances and varying transport modes, with a greater use of waterways for example, and increasing the re-use and recycling of materials.

[10] Indexing of projects by the Atelier Parisien d'Urbanisme (APUR) (Paris Urban Planning Agency)) and the Institut d'Aménagement et d'Urbanisme (IAU) (Paris Region Planning and Development Agency)); application created by the Fédération Française du Bâtiment (FFB) (French Building Federation)); projects mapped via Boursomat (on-line materials exchange) and SOLDating (web platform for the exchange of inert soil between projects).

Initiative III.3
Contact platform for the local management of excavated soil

Specialized in project soil management, the company Hesus also offers a soil exchange service, SOLDating, which was launched in 2014. It acts as a broker for the supply and demand of inert soil between project sites, facilitates soil traceability, and thus enables soil exchanges between sites via a simplified platform (web and mobile). This secure, economic and ecological service recovers and re-uses building and public works soil that is not contaminated.
Created in concert with the Île-de-France region and the City of Paris, SOLDating has already recovered more than 30,000 m³ of soil in the Île-de-France region.

III.9 Privilege local logistics chains by adapting and diversifying transport modes for donated food products

WG 1 (b)

Faced with the diversity of donated food products and the fluctuation in quantities to be transported, it would seem necessary to adapt and diversify transport modes used for food donations. This would also respond to current ecological challenges and the quest for optimized logistics at the Greater Paris level. Various means of transport could thus be considered (truck, car, bicycle, waterway, pedestrian) based on urban or peri-urban regions, the route distance and the type of products concerned. It would also be interesting to look at pooling solutions with players that are not directly involved in food donation. By way of example, partnerships with private haulers could be set up to avoid empty truck trips in the region.

Strategy IV

Change attitudes and practices

Raising public awareness about the circular economy

IV.1 Create an on-line information platform for the circular economy

WG 5

The General Assembly on the Circular Economy of Greater Paris has introduced idea sharing and dialogue between all sector players that are concerned by a single issue surrounding the circular economy. But why stop at this? An on-line information and exchange platform, conceived in an atmosphere of cooperation, would sustain the spirit of the approach while opening it to citizens. Developed by a local authority or a third party, the platform would be coordinated via social networks, and updated in content through newsletters relating to the circular economy. The platform would become a reference on the topic, a portal that would better direct users to other more specialized sites. It would also unify players that are now dispersed, steer project leaders towards best practices and appropriate partners, and lastly communicate to the greater public.

Initiative IV.1
Coordination of the Île de France circular economy players

The objective of this committee, which was founded in 2013 by DRIEE, ADEME and the ORÉE association, is to provide practical tools and feedback, which the local authorities require in order to involve economic players in the ecological transition of their regions. Its members (DRIEE, ADEME, the ORÉE association, the City of Paris, the Île-de-France regional council, ARENE, Île-de-France regions, environment and sustainable development (TEDDIF), regional Institute of Urban Planning (IAU), Regional departments for business, competition, consumption labor and employment (DIRECCTE), and the Île-de-France Region Waste Management Observatory (ORDIF)) are conducting collective discussions on the circular economy regional strategy, in order to identify links and ensure that their initiatives are consistent. The Île-de-France Committee represents a unique governance body whose model has already inspired other regions (Limousin). The various local authorities should familiarize themselves with the tools the Committee has produced, including IRE methodological datasheets and the mapping compiled for exemplary Île-de-France circular economy initiatives[11].

[11] See: http://www.oree.org/3priorites/economie-circulaire/ressources.html.

IV.2 Create an on-line information platform for the circular economy

WG 5

Central and accessible, THE circular economy site would be a laboratory open to all, and would combine at a minimum the following functions: a desk to raise company awareness, a citizen information center, an area of creation and exchange for associations, etc. This circular economy hub would be permanently staffed and serve as a focal point vis-à-vis the external community, with a significant and dedicated communication tool. It would respond to the major knowledge and communication issues of the circular economy for all audiences, and raise awareness concerning all the possibilities the circular economy has to offer. It could also complement the previous proposed initiative.

IV.3 Design and roll out circular economy labels

WG 5

To inform consumers and steer them towards the "right products," labels would have to be invented or re-invented, if not highlighted. For new products, there are several official environmental labels guaranteeing the eco-design of products, including NF Environment in France or the European ecolabel. Greater Paris could provide greater visibility for these labels. For second-hand products (repaired or refurbished), there is both a lack of consumer confidence and substantial differences among the companies that provide them. This is why the development of a quality label for these second-hand products would be useful. This would require:

- A definition of the label attribution criteria;
- A third-party and independent organization;
- A clear graphic charter for a label that could be reproduced on different types of products.

Symbols of a responsible consumption, the various circular economy labels would both extend the duration of a product's use and save natural resources.

Initiative IV.2
Creation of a second-hand product labelling system, starting with the mobile phone via a "recycled and reconditioned mobile phone" label

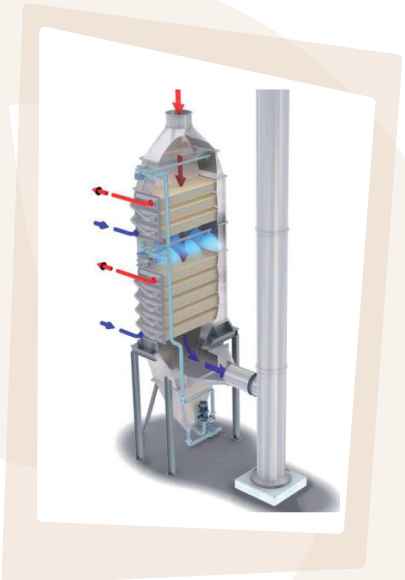
RCube.org is a federation of professional players involved in waste reduction, re-use and re-utilization. The project to create a second-hand product labelling system is led by RCube.org, in cooperation with the audit firm DNV GL – a specialist in certification system implementation – and Recommerce Solutions and Point Service Mobile – two telephony sector companies located in Île-de-France. The project consists in creating a labelling system that recognizes the quality of second-hand equipment. The purpose of this external system of recognition is to guarantee the quality of refurbished equipment and verify compliance with best practices in the second-hand sector. The first label to be launched will concern mobile phones. This labelling system can be extended to other products (IT, furniture, textile, etc.).

IV.4 Identify the existing data and tools covering renewable and recoverable energies

WG 6

The cornerstone of a metropolitan strategy to develop recoverable energy, the identification of relevant tools and data would be carried out in association with a coordinating entity and would serve project managers, businesses and all contractors. Currently, information is piecemeal with little access (for reasons of confidentiality in particular), and is sometimes dispersed or unsuited to needs (in terms of format)[12]. Hence, a more systematic identification of data and tools would save time, in that it would speed up the initiation of a project feasibility study. Subsequently, a complete on-line portal could be launched with several entry points (by player, energy source, network, region, etc.) and data updated on a highly regular basis.

Proposed initiative III.3
Set up a coordinated recoverable energy development strategy at the metropolitan level



Initiative IV.3
Energy optimization during fume treatment at the Saint-Ouen energy recovery unit

The project to replace the fume treatment system of the SYCTOM Energy Recovery Unit at Saint-Ouen has been steered towards the energy optimization of available waste heat. The recovery of latent heat contained in fumes offers significant energy recovery potential, such as the Docks ZAC, or the supply of low-temperature energy to the Compagnie Parisienne de Chauffage Urbain (CPCU). Possibilities for electricity recovery are also being examined (based on Organic Rankine Cycle systems), as is the capture of a portion of the CO_2 emitted for recovery by industrial players.
Setec Environment and the CPCU have contributed to this SYCTOM project, which began in 2015. The approach adopted could give rise to innovative energy recovery solutions, and exploit to a maximum the resources contained in our waste.

[12] Refer nevertheless to the heat recovery website created by the Aeoraulic and Thermal Industries Technical Center (CETIAT) and the ADEME: http://www.recuperation-chaleur.fr/.

IV.5 Raise the awareness of citizens regarding recoverable energy

WG 6

The subject of recoverable energy is still little known, even though it could potentially impact a significant number of citizens. In a building for example, the co-ownership could decide to exploit recoverable energy very much on a local basis. Hence, to accelerate the roll-out of energy recovery solutions and multiply civic initiatives at all levels, the population has to be better informed. To be effective, communication should be:

- Recurring, by using the consumer invoice for example;
- Positive and optimistic, rather than alarmist;
- Based on practical and quantified information;
- Adapted to the various audiences it addresses (children, employees, etc.).

The Local Energy and Climate Agencies (ALEC) could provide information on the recoverable energy issue and the Regional Climate-Energy Plans (PCET) voted by local authorities.

IV.6 Raise the awareness of local authorities and decision-makers regarding the major issues surrounding construction, the need for alternative planning, and best practices

WG 2

Highly dependent on the will of each project leader and often subject to policy changes, sustainable planning and construction are not systematic priorities that are shared among local authorities. There is thus a need for awareness-raising, based on descriptions of successful operations, on-site visits, or event days assembling several competencies (jurists, building trade bodies, architects, etc.). Greater Paris could expand the case, stressing the environmental motivations and the economic arguments (efficiency of resources, jobs created, rationalized project logistics, etc.). A compilation of updated data could be produced, containing cost ranges or standard ratios for certain services or categories of urban projects[13].

Teaching at schools

IV.7 Target exemplary schools in the area of sustainable food

WG 1

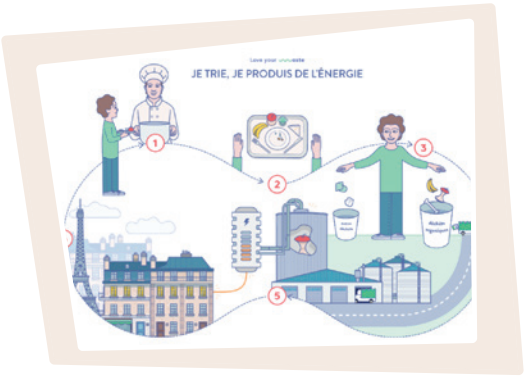
A subject we all share, food is rarely discussed in classrooms and school canteens. Teachers, extracurricular facilitators, kitchen staff, and even parents could participate in taste education, anti-food waste and bio-waste sorting initiatives. The preliminary training of future "facilitators" would be crucial, as would the availability of educational kits covering these topics and, more generally, sustainable food[14]. This kind of initiative would also require training for kitchen staff, and sometimes the redesign of facilities. The objective is to give schools the means to choose sustainable food as a collective project, so that children become, thanks to the school, sustainable food ambassadors. This initiative is consistent with the City of Paris 2015-2020 Sustainable Food Plan, which is applied in over 700 schools.

[13] Ekopolis, the Île de France resource center for sustainable planning and building, could be called on for this work.
[14] The equipment made available for taste classes, developed by the Ministry of Agriculture, would represent a solid work base. The cost of teacher training would be assumed by DRIAAF, including the educational kit.

Initiative IV.4
Love your waste

Students lunching in certain school canteens in the 9th district of Paris already benefit from bio-waste sorting, set up by the Love your waste start-up. Collected by employees in inclusion programs, this bio-waste is converted to methane to produce energy in the form of biogas that is re-injected in the natural gas network. Accelerated by SenseCube, an incubator for social entrepreneurship, Love your waste is currently seeking to:

- **Make the production of renewable energy a reality for everyone;**
- **Enhance the credibility of bio-waste sorting;**
- **Involve the public in sorting, collection, bio-waste energy recovery and the fight against food waste;**
- **Enhance CSR strategies for mass catering companies, without adding to overheads.**



IV.8 Raise awareness about food waste depending on the various audiences

WG 1 (b)

Awareness of food waste is a general concern that should be adapted on an individual basis. To develop the relevant communication tools, the various audience categories should first be defined, based on survey data (surveys and weightings in colleges and schools for example). Various media and tools for awareness-raising could be imagined based on the target audience. An awareness-education approach that would highlight taste education and the pleasure of eating should be adopted. If the public is to appropriate the message, it would be advisable to have it participate in the awareness initiative and make it a co-contributor to the approach.

IV.9 Include certain new and circular economy principles in educational programs

WG 3

Certain circular economy principles could be covered at all teaching levels. The entire product life cycle could be addressed (eco-design, responsible consumption, product-service system, sorting, re-use, repair, re-utilization, recycling). The challenge would be to expose young people to a mindset other than "produce – consume – discard". Primary schools, high schools, colleges, universities and top-ranking higher education establishments could thus invite external contributors, possibly on a volunteer basis, in order to integrate theoretical and practical circular economy presentations in school programs. Associations that promote sustainable development awareness or "ambassadors" from the world of business could also participate. A "circular economy reference" label could be created, modelled on the "Handimanager" label of the Companieros association[15].

[15] See: http://www.companieros.com/les-labels-companieros/.

Initiative IV.5
Boîte à Malices (Box of tricks): educational tool to raise the awareness of children regarding steel sorting and recycling

Supported by the Recycled steel packaging information center (CIEMRA), the Boîte à Malices raises the awareness of children concerning steel products recycling. Among other initiates, it provides complete information on the recycling of packaging that can be used to manufacture new steel. It also demonstrates the steel sector's true contribution to the circular economy. This educational tool was especially designed for children aged to 6 to 12 and their teachers, but the information could also be communicated to the widest possible public.

Training professionals

IV.10 Include "alternative planning" and "green construction" modules in the training of architects

WG 2

The training offered to future architects and building engineers includes few social (local employment, regional value creation) and environmental (construction project life cycle, sustainability over time, transport distances) components. The convergence of engineering methods, under which all project players are committed from inception, could also be extended. "Alternative planning" and "green construction" modules could also be included in the training of:

- Student construction architects and engineers;
- Practicing professionals, in the form of a "carbon footprint" authorization.

The French State and the Regions could contribute to the development of this training, in partnership with project managers, the order of architects, insurers and organizations such as the Council of Architecture, Urbanism and the Environment (CAUE).

IV.11 Train professionals in re-use and repair

WG 5

In parallel with other measures undertaken in favor of re-use, repair and re-utilization, the use of training to structure these activities would seem to be vital. Training bodies, companies and social and solidarity economy entities would be consulted to assess the current training offer. Working together, these players could subsequently expand the available training offer, for both its initial and continuing phases. Certain training support tools could also be communicated via other channels or other audiences (for example, children as part of a school program).

Strategy V

Involve local authorities, businesses and citizens

Strategy V

Involve local authorities, businesses and citizens

Initiative V.1
Prevention of bio-waste production – Métro CCF Rhône-Alpes

The prevention of catering waste will help reduce the environmental impact, cut costs and strengthen customer loyalty for caterers. With the support of ADEME Rhône-Alpes and the Regional Directorate for Food, Agriculture and Forestry of Rhône-Alpes (DRAAF), Métro CCF has undertaken a project to prevent bio-waste in the catering sector. By uniting partner caterers in working groups, this project has given rise to recommendations and the identification of best practices with regard to catering bio-waste prevention. These working groups led to the creation of a film and factsheets on how to prevent bio-waste production in the catering business[17].

Initiative V.2
Recovery of bio-waste using an electromechanical composter in the Val-de-Marne département

This initiative forms part of a mass catering project in the Val-de-Marne département that consists in raising awareness among kitchen staff and school canteen users on food waste. In addition to the set-up of sorting tables with weighing equipment in several schools, two electromechanical composters were commissioned and have since their start-up transformed over 20 tons of food waste into nearly six tons of compost that can be used in urban green spaces. Taking into account the savings made on the bio-waste disposal costs, as well as the financial aid granted by the Île-de-France region and SYCTOM, these machines may be amortized in 10 years.

Reducing and recovering food waste

V.1 Prévenir et valoriser les biodéchets de la restauration collective WG 1

As of January 1, 2016, mass catering establishments generating more than 10 tons of bio-waste per year will be required to sort and recover such waste by composting or anaerobic digestion[16]. In this context, Greater Paris could play an active role as mediator and propose solutions to local authorities in order to:

- Optimize the size of the quantities purchased, prepared and served in the mass catering sector. From a nutritional point of view, a full plate is not necessarily the "right portion";
- Encourage users to adjust their consumption, e.g. by offering portions labelled according to size (S/M/L), or by developing the pay-by-weight system for mass catering.

By strictly applying the necessary regulatory requirements governing their establishments, local authorities and private mass caterers will contribute to the emergence of organized channels for separate collection and bio-waste treatment in the Île-de-France region.

[16] Circular of January 10, 2012 concerning the conditions for applying the obligation for major producers to separate bio-waste at its source

[17] The factsheets are available on-line: https://www.metro.fr/services/commerce-responsable/gaspillage-et-gestion-des-dechets/fiches-pratiquesgaspillage-alimentaire.

V.2 Recover unsold produce and food waste at municipal markets

WG 1

Unsold produce at municipal markets refers to foodstuffs that are still edible but which traders no longer wish to keep. To help prevent food waste, this unsold produce should be redistributed to charity organizations. Market waste, often organic, should be sorted and recovered. In both cases, to improve practices at the food markets of Paris and Greater Paris, it would be necessary to:

- Quantify the foodstuffs that are still edible and the food waste produced;
- Raise awareness among traders, by distributing information leaflets or putting together a group of sorting ambassadors;
- Set up adapted logistics, e.g. to collect unsold produce, in compliance with the cold chain.

Furthermore, to effectively manage unsold produce, restrictive and incentive clauses must be incorporated into the contracts signed with market managers.

Initiative V.3
Collection of unsold fruit and vegetables by the association La Tente des Glaneurs (literally "the Gleaners' Tent") in Paris

In 2012, the City of Paris decided to test the redistribution and recovery by composting of fruit and vegetables at two municipal markets:

- **At the Joinville market in the 19th district, the association La Tente des Glaneurs encourages traders to hand over their edible unsold produce so that it can be redistributed at the close of the market to the underprivileged (gleaners). Thanks to the involvement of around ten volunteers throughout 2014, every Sunday approximately 400 kilos of fruit and vegetables were redistributed to about sixty people, thus preventing more than 20 tons of bio-waste;**
- **At the Ornano market in the 18th district, and the Joinville market, inedible fruit and vegetables are now recovered by composting. The City of Paris has provided traders with specific containers to collect bio-waste, which is then transported to the composting facility used by SYCTOM (waste treatment union). Following a break-in period, one ton of bio-waste on average is now composted every week.**

The City of Paris plans to gradually extend these practices to the French capital's largest markets.

V.3 Use existing equipment for the (re) packaging or processing of unsold foodstuffs

WG 1 (b)

Finding appropriate sites to process and package unsold foodstuffs appears to be one of the keys to giving such products a second life. On the one hand, there are numerous food processing sites across France, such as mass catering kitchens; on the other hand, those involved in redistribution generally do not have the necessary equipment for processing. The solution would therefore be to take advantage of existing processing and (re)packaging sites, when they are not used for their primary activity (e.g. at the end of the day or during school holidays).
This proposed initiative would have to be examined in more detail from a regulatory perspective, in the same way as the following ideas:

- Setting up shared kitchens where surplus supplies would be made freely available, thus allowing anyone to come and cook (for on-site or take-out consumption);
- Grouping the surplus from several canteens in a single establishment, which could be opened in the evening to food aid recipients.

V.4 Encourage local composting

WG 1

Out of the 47,000 joint properties in Paris, only 300 are currently involved in local composting. At the foot of a building or on a dedicated neighborhood site, composting could significantly reduce household organic waste[18]. Local composting could become popular among residents if the latter were encouraged to re-use the compost on site, on balconies, or in joint property green spaces, shared gardens, etc. Support should also be offered to residents by neighborhood representatives or associations to promote composting, thereby increasing awareness and improving communications.

Limiting disposable products

V.5 Propose a rechargeable transport ticket to replace single-use transport tickets

WG 4

More than 600 million metro tickets are sold in Paris every year[19]. Like other major European cities, Paris could develop a sustainable, eco-designed rechargeable transport ticket that could be used for several journeys: in terms of duration (1, 2, 3 days), or number of single tickets (equivalent to the current book of 10 tickets). Recharging the transport ticket using a smartphone could also be considered, together with other passes such as Vélib' or "Paris visite", which provides access to the city's monuments and museums. This proposed initiative could be both practically and environmentally beneficial; however, from an environmental perspective, an impact study should confirm that a rechargeable transport ticket is indeed better than single paper tickets.

[18] According to ADEME, each French person generates on average 288 kilograms of Residual Household Waste every year, including a substantial portion of organic waste. See: ADEME (2014), Waste collection by public services in France – 2011 data; ADEME (2009), National campaign for the characterization of household waste – 2007 data

[19] Grégoire Thonnat (2010), Petite histoire du Ticket de métro parisien

V.6 Reduce the use of disposable packaging

WG 4

The packaging of a large number of products, particularly foodstuffs, is almost systematically discarded. Numerous psychological, logistical and regulatory barriers prevent traders and consumers from re-using their packaging. In order to reduce waste at its source and create social cohesion between inhabitants, Greater Paris could initiate the following projects:

- Launch of a competition for the creation of re-usable eco-designed containers;
- Set-up of experiments connecting consumers, following the example of receptacles managed as re-usable cups;
- Work with wholesalers on regulatory issues and informing consumers.

To accompany these projects, Greater Paris could publish a sector-based best practices guide, prepared in conjunction with all parties involved (packaging manufacturers, traders, take-out retailers, local authorities, consumers, etc.).

Initiative V.4
Mon commerçant m'emballe durablement (My store uses sustainable packaging)

Initiated in the 11th district of Paris in 2011 and driven by Zero Waste France, the "Mon commerçant m'emballe durablement" project develops the use of re-usable packaging and the re-introduction of deposit-refund schemes in the local food trade. It proposes an original blueprint for action that can be reproduced in other regions, thereby creating a momentum for change at the local level.

This kit, comprising a booklet, small poster and sticker for traders and a leaflet for customers, satisfies the need for local authorities to have practical tools for local prevention schemes (usable by the local authorities or the citizens themselves).

Initiative V.5
Refill service for beauty cream jars in Guerlain Paris stores

In its Paris stores, Guerlain has set up a refill service for its Orchidée Impériale product range: customers bring back their empty jar of cream for a refill and, while waiting, enjoy a special moment in the store (tea, beauty advice, quick make-up). Giftset packaging has been reduced by 15% and recyclable materials are now used for the box and the thermoformed insert.

Initiative V.6
Repair Cafés

Repair Cafés are cooperative repair workshops set up to give objects a second life. Free and open to everyone, these workshops are run by volunteer DIY (Do-It-Yourself) enthusiasts who share their know-how and expertise with those bringing objects for repair. They help reduce the quantity of waste, especially Waste Electrical and Electronic Equipment (WEEE), and change behaviors (stop discarding and get into the habit of repairing); transmit know-how, DIY expertise; inform the public about environmental issues regarding waste, overconsumption, etc. and raise awareness; and finally, create social cohesion by promoting cooperation and solidarity.
In Paris, the first Repair Café event took place in April 2013. Within two years, the association Repair Café Paris, which launched the initiative, has proposed around thirty Repair Café events and organized a day event dedicated to repairs. In early 2015, the frequency of the events doubled (2 workshops per month). Since its creation, Repair Café Paris has involved more than 180 volunteers (120 repairers and around sixty organizers). Over 2,000 people have attended the workshops. Each event mobilized between 20 and 30 volunteers and welcomed between 70 and 80 participants. The repair success rate was around 60%. During the 2014-2015 season, Repair Café Paris prevented the production of approximately one ton of WEEE.

Extending product life

V.7 Promote object repairs through a set of complementary initiatives WG 5

"We can fix it!": this would be the mindset to which Greater Paris could contribute. By organizing discussion and training workshops, promoting the Repair Cafés, as well as providing tools or information to facilitate repairs, and in cooperation with associations, the Chamber of Trades and Crafts in Paris, spare parts wholesalers or federations, Greater Paris would strive to extend product life and reduce waste quantities produced. Regulatory changes could also promote object repair, e.g.: additional manufacturer warranties, simpler product design or easier access to inexpensive spare parts. This would result in a shift in paradigm towards reduced consumption, while developing the satisfaction of being able to repair an object or to have it repaired.

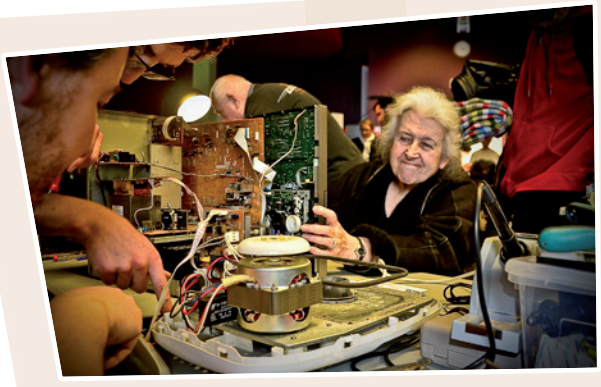


Photo Credits : © Repair Café Paris

V.8 Promote the re-use and re-utilization of long-life products in Extended Producer Responsibility (EPR) sectors

WG 3

The specifications appended to producer responsibility organization accreditations contain little or no product re-use or re-utilization objectives. A minimum re-use and re-utilization percentage could be allocated to each sector for long-life products, as and when producer responsibility organization accreditations are renewed. This would involve:

- Strengthening existing partnerships between producer responsibility organizations and those entities specializing in re-use and re-utilization (mainly in the social and solidarity economy);
- Learning more about the influx of waste into re-use and re-utilization sectors, and those waste streams that are eventually recovered.

In any case, the financial support given by producer responsibility organizations to re-use and re-utilization specialists should comply with the European waste hierarchy: reduction, re-use, recycling, incineration (with and without energy recovery) and finally disposal[20].

Initiative V.7
UpCycly Fest roadshow in the Greater Paris region

UpCycly Fest is a cooperative event, where participants build furniture using recovered materials (mainly wood from pallet boxes). The members of the UpCycly community and numerous volunteers assist the participants with their creations by helping them to gain expertise and use manufacturing tools.

UpCycly events boost regions by creating intercommunity and intergenerational ties based on urban planning and cooperative responsible manufacturing using scrap materials. UpCycly hopes that an UpCycly Fest roadshow between the municipalities and districts of Greater Paris would encourage others to cooperate in urban areas and use waste for the manufacture of sustainable installations.

[20] Directive 2008/98/EC of the European Parliament and Council of November 19, 2008 on waste and repealing certain directives

Initiative V.8
The Joyeux Recycleurs (The Happy Recyclers), to facilitate sorting in homes and offices

In the Île-de-France region, the volume of household and similar waste channeled for material and organic recovery was 26.4% in 2012, well below the Grenelle de l'Environnement targets set for 2012 (35%) and 2015 (45%)[23]. The remainder is either incinerated or buried. Improving recycling performances is not just an environmental challenge, but also an economic challenge, given the increasing scarcity of raw materials. To respond to these issues, the company Joyeux Recycleurs has developed three additional solutions to facilitate sorting:

- **A recycling handbook for homes;**
- **An Internet portal so that each citizen can find out what can be discarded, and how and where[24];**
- **Joyeux Recycleurs boxes for offices, providing a turnkey solution in order to recycle several types of office waste.**

Encouraging waste sorting and recycling

V.9 Commit Greater Paris to sorting by making it compulsory

WG 4

In 2010, green bins in Paris continued to be half filled with unsorted recyclable materials (paper, cardboard, plastic, glass)[21]. To commit to sorting, Greater Paris could make it compulsory. From a regulatory standpoint, the decree adopted by the City of Paris in October 2007 may serve as a working basis[22].

From an operational viewpoint, Greater Paris could:

- Harmonize waste collection bins, e.g. by selecting a color by type of waste stream, and communicating on the practice of sorting;
- Increase the number of voluntary drop-off points and renew the approach to collection: Greater Paris could create local multi-stream (glass, plastic, textiles, papers-cardboard, etc.) collection points in public areas, particularly in neighborhoods whose buildings do not have sufficient room for bins. To properly integrate these collection points in urban areas, and unite residents around the practice of sorting, a design competition could be organized, bringing together both experts and users;
- Support the roll-out of solutions that facilitate sorting in homes and offices.

Proposed initiative VII.1
Harmonize sorting rules

[21] Mairie de Paris (2013), Annual report on the price and quality of the public waste disposal service in Paris – 2012 data

[22] Decree of October 10, 2007: "Determination of the terms and conditions for the selective door-to-door collection of household and similar waste"

[23] ORDIF (2014), Management of Household and Similar Waste in Île-de-France in 2012

[24] The following sites have a similar function: www.consignesdetri.fr and www.ademe.fr/particuliers-eco-citoyens/dechets/bien-jeter/faire-dechets

V.10 Set up an ambitious cardboard collection plan

WG 4

Today, there is a massive amount of paper and cardboard, which is easily identifiable by households and businesses, but insufficiently picked up by waste collection operators. Despite simple sorting advice ("all paper can be sorted and recycled"), only 1 out of every 2 sheets of paper is today recycled in France, compared with 2 out of every 3 in Spain and the UK, and 3 out of every 4 in Germany and Sweden[25]. To catch up with its European neighbors, and set the example in terms of waste recycling, Greater Paris could organize an ambitious cardboard collection plan. For businesses, specific bins for cardboard could be installed in companies that do not yet sort their waste. For households, the creation of local voluntary drop-off points could increase the amount of cardboard collected. The awareness-raising and communication initiatives required for these operations could be coordinated by producer responsibility organizations, in partnership with local authorities.

V.11 Roll out new initiatives to improve battery, cell and electrical equipment collection rates

WG 4

In France, battery and accumulator collection rates (34.4% in 2013) and the amount of waste electrical and electronic equipment collected (WEEE, 6.9 kg per inhabitant in 2013) were below European targets (respectively 45% and 9.5 kg to be reached in 2016)[26]. To improve these collection rates and the subsequent recycling, Greater Paris, in cooperation with producer responsibility organizations in the relevant sectors, could drive several initiatives, including:

- A European benchmark for collection best practices;
- Creation of a higher number of voluntary collection points, particularly in busy thoroughfares;
- Communication with the general public to improve the practice of sorting;
- An incentive mechanism like a deposit-refund scheme, which would reward people who return cells, batteries and WEEE.

Initiative V.9
Selective collection of office paper within a local community by Ecofolio

Situated in a dense urban area, a test local community set up a selective collection of office paper within its government offices to improve its recycling performance and better control its paper management costs. Based on a cooperative approach, the equivalent of 8 kg of paper per employee per year is now collected thanks to this project. The paper collected by the municipality is then sorted by a specialized company based in the neighboring municipality and sent to a recycling firm in Aisne. With an initial investment of €4,000 for collection equipment, the project should in the long run enable the local community to save €6,000 per year. This saving stems from two impacts: an increase in revenue, with the sale of paper to the recycling firm, and a reduction in expenditure, with fewer tons being managed as Non-Hazardous Industrial Waste (NHIW).

[25] Source: Ecofolio (French PRO for paper waste)
[26] ADEME (2014), Batteries and accumulators – Annual report, 2013 data; ADEME (2014), Electrical and Electronic Equipment – Annual report, 2013 data

Strategy VI

Create a network linking players

Promoting the second life of products

VI.1 Facilitate donations and product repair by networking

WG 5

Today it is nearly always easier to discard things than to donate or repair them. Even though there are on-line platforms for donations, they are actually more comparable to exchange sites for private individuals than collection solutions, strictly speaking. Voluntary drop-off points are not always close to home, or even known to residents. As for product repair, available spare parts are generally lacking. Craftsmen, businesses, local authorities and associations, possibly with the coordination of Greater Paris, should implement solutions to facilitate donations and product repair (recreational events, community of ambassadors, etc.).

Initiative VI.1
The Amistocks network of Emmaüs Défi

The Amistocks network focuses on the development of a web platform facilitating goods donations, based on:

- **A tool for making on-line appointments for home collections;**
- **A global positioning tool to locate the closest Emmaüs Défi Amistock drop-off point to home: Amistocks, volunteer drop-off points (private individuals, companies, local businesses, etc.), set aside a space in their place of business for collecting donations to Emmaüs Défi.**

Currently only available in the 9th and 17th districts of Paris, the Amistocks network hopes to expand and propose an easy and local on-line solution for the collection of donations.

EMMAÜSDÉFI

Initiative VI.2
Mutum, connecting all those involved in the use of an object

Mutum is a lending and borrowing platform, which seeks to link all those involved in the use of an object: user, distributor, local recycling, repair firms, etc. The purpose is to qualify the object throughout its life and optimize its uses and recovery, while educating users in an entertaining manner.

This initiative raises awareness among numerous players in the circular economy, by widely promoting enhanced product use and extended product life cycles.

mutum
mutum.fr

Strategy VI

Create a network linking players

Initiative VI.3
Solidarity-based Makeover Workshop

With 4.7 million women living below the poverty threshold in France, deprived of a whole range of essential everyday items, the Agence du Don en Nature (ADN) (French association collecting in-kind donations) is working to help and take care of them. The Solidarity-based Makeover Workshop, run in partnership with Le Comptoir des Cotonniers and Le Foyer Marie José, has enabled more than 60 women living in poverty to benefit from new unsold clothes and clothing advice provided by company employees. This re-use of unsold goods enables people living in poverty to regain their self-esteem.

VI.2 Create a community of ambassadors for the second life of products

WG 5

Following the example of the sorting ambassadors, whose role could be reviewed and expanded, Greater Paris could create a community of ambassadors for the second life of products. By choosing to re-use and repair, we are all potentially future ambassadors, insofar as each and every one can adopt a best practice. This community of ambassadors would help give a collective meaning to the approach, promote the selection of second-hand products and encourage individual commitment. Reporting to one or more supervisory organizations, product second life ambassadors would however adopt horizontal governance for more efficient strategies and actions. The community would also be on-line, for example, via a mobile application, where each donation, re-use or re-utilization could be assessed by its initiator using a points system.

VI.3 Create "Wastebook", the first social network on waste and resources

WG 4

Greater Paris could become the first major city to create a social network on new raw materials. A dedicated website with its own mobile application, run by one or more on-line community operators, would put waste owners (businesses, associations and private individuals) in contact with waste recovery firms: at minimum, voluntary drop-off points would be indicated, and all the information that is already available would be compiled (networks, directories, business sectors, ORDIF, etc.)[27]. Misplaced waste would be the primary focus (batteries, paper, WEEE, etc.), so as to prevent them from entering household waste, and instead channel them towards re-use or recycling.

[27] ORDIF: Observatoire Régional des Déchets d'Île-de-France (Île-de-France Region Waste Management Observatory)

Reducing food waste

VI.4 Develop one or more shared platforms for the collection of food donations

WG 1 (b)

In this context, "platform" refers to a set of resources in terms of IT tools, labor, transportation and premises, designed to facilitate the conditions for the collection and storage of food surpluses, enhance the dissemination of information (on donors and the products they offer, on receivers and the products they can redistribute), and improve the organization of redistribution in Greater Paris. These shared tools would help to clarify the positioning of the various players, and go beyond the competition between entities by appropriately allocating actions and resources across the region. For a platform to be operational, it must be continuously updated so as to strengthen links between donors and receivers, in close coordination with their volunteers, thereby enabling them to effectively grasp and use these tools[28].

VI.5 Develop food aid distribution areas, promoting social and intergenerational diversity

WG 1 (b)

The recipients or potential recipients of food aid may feel stigmatized at certain distribution areas. These areas should be accessible to a wider public, and food aid distribution should be combined with activities promoting social ties (cooking classes, introduction to composting, goods exchange, and cultural events), in order to allow people to meet one another and feel less shame and embarrassment, which sometimes prevents recipients from seeking this form of aid. It is also a way of incorporating food aid into a more general integration strategy. Furthermore, food aid recipients must be allowed to cast their views on food aid systems and how they can be improved.

VI.6 Define the conditions for setting up across Greater Paris a transversal network of ideas, exchanges and work for those contributing to the fight against food waste

WG 1 (b)

The purpose of this network would be to promote coordination between contributors in the region, and the roll-out of genuine actions against food waste. This network should meet the challenges and interests of each contributor; it could also be based on an organization with topical committees, following the example of the Comité Régional de l'Alimentation (CRALIM) (French Regional Committee for Food). The working groups would involve contributors from all segments, such as agro-food production and processing, bio-waste management, mass catering or food aid redistribution associations. Such a network of contributors could not be envisaged without setting up common rules to ensure its activity: political backing, member attendance, choice of topics, organization.

[28] The interactive mapping of food aid associations in Île-de-France (http://aidealimentairepna.cartographie.pro/carte.php) could serve as a working basis for this proposed initiative.

Strategy VI

Create a network linking players

Facilitating exchanges on industrial and regional ecology (IRE) and energy topics

VI.7 Set up a cooperative platform for discussions between IRE players at the metropolitan level

WG 7

To facilitate synergies between industrial players, a cooperative tool could be set up for the Greater Paris region, such as the ACT'IF quantification and GPS tool set up by the Tarn-et-Garonne Chamber of Commerce and Industry or the National Industrial Symbiosis Programme (NISP) in the UK. This platform would serve several purposes:

- Coordinate industrial and regional ecology strategies. This proposed initiative could be driven by a reference entity in charge of coordinating IRE, which would update the platform (continuous data updating);
- Identify flows that are not considered locally as important (including flows of raw materials, energy, water, tools, people, services, etc.), but which would be in other regions. Work would also be initiated with consular chambers and professional federations to accurately identify players' needs;
- Bring supply and demand together, for the various flows. To mitigate the risks surrounding data confidentiality, information could be exchanged initially on flow types only and bilaterally between the economic entities.

Proposed initiative III.2
Create an entity to coordinate IRE initiatives in the form of a single committee to support the operational development of IRE initiatives

VI.8 Create a platform to bring together renewable and recoverable energy producers and consumers

WG 6

There is currently a certain disconnect between individual producers whose energy production does not represent the core of their business and consumers who do not know about the possibilities of using recoverable energy or local energy sources. A platform combining supply and demand, e.g. an energy exchange, would facilitate the emergence of projects and the joint creation of technical solutions. A relevant project led by a non-profit or parapublic player, this unifying platform would update the knowledge portal on renewable and recoverable energies.

Proposed initiative IV.4
Identify current data and tools on renewable and recoverable energies

Initiative VI.4
20% of buses running on biogas by 2025

In 2014, the Syndicat des transports d'Île-de-France (STIF) (Île-de-France transport authority) and the Régie Autonome des Transports Parisiens (RATP) (Paris transport operator) undertook an energy transition project for their bus fleet. The aim of the RATP is that by 2025, 20% of buses will run on biogas (and 80% on electricity). The bus network currently has 350 lines for a fleet of around 4,500 vehicles. This project, mobilizing the STIF, the RATP, manufacturers and regional authorities, requires an extensive review of the network's organization. The technical challenge also consists in being able to secure the necessary biogas supply. Because of its scope, this project may act as a catalyst in supporting the development of biogas throughout the region.

Strategy VII

Change legislation

Strategy VII

Change legislation

For re-use and recycling

VII.1 Harmonize sorting rules

WG 6

Today, there is still some confusion among citizens with regard to the different colored bins used for recycling, and the sorting instructions which vary from one district to another within Greater Paris. Harmonizing instructions to simplify practices would no doubt encourage citizens to sort more, reduce sorting errors and cut sorting center costs[29]. This initiative could be rolled out gradually, as and when the relevant contracts are renewed; it could also begin with the harmonization of sorting instructions by the Greater Paris waste treatment unions, then by member community collection services, before being extended throughout France. In any event, when determining the sorting rules, effective communications must be set up between the various players (French State, inter-municipal associations, producer responsibility organizations, waste treatment service providers), not to mention citizens.

For sustainable agriculture and food supplies

VII.2 Develop the measurement of the agronomic quality of compost

WG 1

Revised in April 2006, standard NF U44-051 on organic amendments does not provide for a sufficiently high level of quality for compost to be re-utilized on farming land, insofar as it authorizes, for one cubic meter of compost, the equivalent of 2.7 kg of plastic and 5 kg of glass and metal. A special committee uniting all parties concerned, possibly at a European level, could develop categories of compost quality. The classification by category would form a basis for a new standard, or failing that, a quality label, which would be useful to producers who are ready to propose higher grade compost. The various agronomic quality levels of compost could be tested for the Greater Paris region by public players, prior to the introduction of a national or European standard. In any case, this work on the amendment of the standard should include the issue of bio-sourced plastic packaging or other compostable materials, which will be developed in the years to come.

VII.3 Change the status of farmers to satisfy new local production expectations

WG 1

To develop urban and peri-urban agriculture, and facilitate the installation of producers, there must be a change in the status of farmers. Greater Paris could support the work of the Regional and Interdepartmental Directorate for Food, Agriculture and Forestry (DRIAAF) of Île-de-France and back candidates for installation, based on the best practices guide. Greater Paris would not have to assume the role of the French State with regard to defining a profession, but it could act as a messenger in order to enhance these new agricultural profiles.

For green buildings and construction

VII.4 Renovate rather than demolish

WG 2

Sometimes buildings that are of solid construction and still in a reasonable condition are demolished, and replaced with new edifices that are resource-intensive and a source of disturbance for the neighborhood. An alternative could involve a systematic study of renovation scenarios, compared with demolition and reconstruction scenarios (what financial, social and environmental impacts). A trusted third party could carry out the feasibility study for a renovation of the same standard as a new construction. Greater Paris would have a role in promoting renovations, by at least testing a communications strategy with prime contractors: "Consider renovating"; or more ambitiously, by imposing a renovation scenario analysis before each demolition.

[29] The Triman logo, mandatory since January 1, 2015 for recyclable product marketers subject to a system of extended producer responsibility associated with waste sorting instructions, is still shown on packaging with the green dot (indicating Eco-Emballages membership).

VII.5 Analyze resources, sort and recover building site waste

WG 2

Under current French regulations, before any building of more than 1,000 m² can be demolished, its waste must first be analyzed. However, the purpose of this analysis is not to optimize the management of resources, and it remains optional for public works. The aim of this initiative would be to impose a serious analysis, regardless of site type and scope, to promote the re-use of building materials and reduce the cost of operations. The materials could be re-used on site or could supply local storage platforms (mobile and adjustable platforms). Finally, the analyses would be compiled in the public database listing the available resources, to be aligned with the Building Information Modeling (BIM).

Initiative VII.1
Supply of recycled local public works materials

The City of Paris carries out public works by obtaining local recycled materials. All the finest materials (flagstones, sandstone or granite borders) are recovered from building sites, and once treated, are re-used for refitting or maintenance operations instead of new materials. This demand is formalized in the public procurement contract. Pursuant to Paris public works regulations, penalties are incurred if suppliers fail to deliver natural stone materials to be recycled.

In addition to the financial gain, this practice prevents natural quarry mining and the transportation of materials over several kilometers. More specifically:

- **7 to 8,000 tons of natural stone are now recycled every year in Paris, i.e. a saving of nearly € 1 million on the purchase of new materials;**
- **The equivalent amount of materials is not extracted from natural quarries and not disposed in a landfill;**
- **300 less 25-ton trucks on national roads, 600 less tons of CO_2 emitted.**

This initiative could be extended to the surrounding Paris area where natural stone is available in the public sphere.

Appendices

Appendix 1
List of proposals

Appendix 2
List of initiatives

Appendix 3
Glossary

Anaerobic digestion

Anaerobic digestion is a natural process by which micro-organisms break down organic material in the absence of oxygen. The process produces a biogas, consisting of methane, carbon dioxide and a residue, called digestate. The biogas can be used to produce electricity or heat, injected into natural gas networks or converted into fuel.

Bio-waste

Bio-waste is a type of waste that generally originates from plant or animal sources and may be broken down by other living organisms. Framework Directive 2008/98/EC of November 19, 2008 provides the following legal definition: "Biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises, and comparable waste from food processing plants."

Building Information Modeling (BIM)

BIM is a software, database, cooperative process and management method. The digital model contains a database and a 2D or 3D graphic representation of a building. More specifically, the database pertaining to the digital model contains all the building's technical components. The components are treated like objects, and each object can carry technical attributes, e.g. brand, model, size, fire resistance, acoustics, etc.

Business model

A business model is a schematic representation of how an organization generates wealth from its customer offering, and divides it up between the project stakeholders, including any external partners such as sub-contractors or creditors.

Circular economy

According to ADEME, the circular economy can be defined as an economic system of exchange and production designed to increase the efficiency of resource use and to diminish impacts on the environment at all stages of the product life cycle (goods and services). The overall purpose of a circular economy is to drastically reduce resource waste in order to disassociate resource consumption from growth.
Collaborative consumption
Collaborative consumption refers to the phenomenon whereby consumers share access to products or services either free of charge or in return for payment.

Commercial and industrial waste (CIW)

Under Article R. 541-8 of the French Environmental Code, commercial and industrial waste is defined as "any waste, whether or not hazardous, not initially produced by a household". Commercial and industrial waste covers waste from all production sectors (agriculture-fishing, construction, tertiary sector, industry). Similar waste includes a portion of commercial and industrial waste.

Composting

Composting is the biological processing of fermentable waste or organic material in an area with a high oxygen content. When substantial amounts of materials are processed, heat with a temperature of more than 60°C is released, resulting in their hygienization.

Deconstruction

Deconstruction is the selective dismantling of building components, specifically for re-use, recycling, and waste management.

Deposit-refund scheme

The deposit-refund scheme is a used packaging management system which consists in separating the price of the packaging, called the deposit, and the price of the contents at the time of purchase. In this system, the packaging remains the property of the manufacturer or retailer. The consumer can at any time return the empty packaging and either pay for it to be refilled or claim back his deposit.

Eco-design

Eco-design is an approach to designing a product, good or service that contributes to environmental protection. Its purpose is to reduce environmental impacts of products over their full life cycle, while striving to maintain quality or performance.

Energy performance

A building's energy performance corresponds to the amount or estimated amount of energy consumed during its normal use. It includes the energy used for heating, hot water, cooling, ventilation and lighting. The lower the amount of energy consumed, the better the energy performance.

Extended producer responsibility (EPR) sectors

The principle of extended producer responsibility (EPR) was enacted 40 years ago by Law 75-633 of July 15, 1975 on the elimination of waste and recovery of materials and codified in Article L. 541-10 of the French Environmental Code. It was also incorporated into Article 8 of Directive 2008/98/EC of November 19, 2008 on waste. French product marketers (national manufacturers, importers and distributors for their own brands) are required to contribute to or provide for the management of the waste originating from their products. They can fulfill their obligations individually, by setting up an individual waste collection and treatment facility, or collectively, by joining and contributing to a producer responsibility organization, which becomes responsible for their obligations. In practice, most marketers opt for the latter solution.

The waste streams concerned by EPR are as follows:

- Household packaging;
- Waste electrical and electronic equipment (WEEE);
- End-of-life vehicles (ELV);
- Used tires;
- Batteries and accumulators;
- Textiles, household linen and footwear;
- Printed paper and graphic paper;
- Unused medicinal products for human use;
- Household hazardous waste (HHW);
- Furniture waste;
- Infectious medical waste arising from patient self-injections.

Extension of the duration of use

The extension of the duration of use of a product refers to its repair, re-use, including second-hand sale and purchase, and its re-utilization.

Fossil energies

Fossils energies originate from natural resources buried deep underground and are non-renewable. All fossil energies, including oil, uranium, gas or coal, are exhaustible.

Household and similar waste

Household and similar waste refers to waste produced by households plus similar waste (see below). It does not cover waste produced by municipal services, community sanitation waste, street and market cleaning waste, etc.

Household waste

Household waste is defined as any waste, whether or not hazardous, produced by a household: food waste, packaging, bottles, papers, cardboard, newspapers, old furniture, electric household appliances, and green waste (bio-waste).

Incineration

Incineration is a waste thermal treatment method involving combustion, with varying technologies and temperatures according to the type of waste, and flue gas treatment. Incinerators are increasingly designed to convert waste into electricity or thermal energy.

Industrial and regional ecology (IRE)

Industrial and regional ecology is an organizational method whereby companies cooperate by exchanging flows, pooling services (e.g. waste collection) or sharing infrastructures for the shared management and/or conversion of certain material and energy flows. This cooperation can also be referred to as industrial symbiosis.

Inert waste

Inert waste is waste that will not decompose, burn or physically or chemically react with the environment. It is not biodegradable and does not decompose when in contact with other matter. Virtually all of this waste originates from minerals and is thus referred to as mineral waste in European definitions.

Life cycle assessment (LCA)

LCA is a method of assessing the environmental impacts of a product or service, taking into account all the stages of its life cycle, from raw material extraction through manufacture, distribution, use, and recycling.

Linear economy

The traditional linear economy model consists in "extracting-manufacturing-discarding". Companies extract raw materials, use them to manufacture new products and sell such products to an end user who discards the objects in question when they no longer function properly or become outdated.

Local food system

The notion of a local food system combines a reduced number of intermediaries and a short distance between production and consumption sites. Farming produce is sold either directly by the producer to the consumer, or indirectly, provided that there is only one intermediary between the producer and the consumer. Today, 1 out of 5 producers sell their goods in the local food system.

Natural resources

A natural resource is a raw material, whose properties are used by mankind or other living species, to satisfy a need. Natural resources can be sub-divided into two separate groups: renewable resources and non-renewable resources.

New economies

This expression defines the new economic trends in phase with the circular economy. New economies include the Product-Service System, responsible – and particularly collaborative consumption, as well as business models based on the extension of the duration of use (re-use, repair, and re-utilization). New technologies such as mobile applications are widely used in new economies.

Non-renewable resources

Non-renewable resources mainly comprise mineral raw materials and fossil fuels originating from deposits formed in the course of the earth's geological history that cannot renew themselves at a sufficient rate in human timeframes.

Producer Responsibility Organization (PRO)

Under French law, a producer responsibility organization is a non-profit entity to which producers – who must comply with EPR obligations – transfer their collection requirements in consideration for a financial contribution. The producers are responsible for governing the PROs (see Article L.541-10 of the French Environmental Code). To fulfil their tasks, these organizations are government-approved based on precise specifications.

Product-Service System (PSS)

The Product-Service System promotes use over possession and sells services relating to products rather than the products themselves. It applies to "durable" or semi-durable goods.

Recoverable energies

Recoverable energies are the result of a process whose purpose is not heat production. The heat generated by waste incineration, IT server rooms, sanitation networks or industrial activities are examples of recoverable energies.
Waste biogas is also a recoverable energy. As their name indicates, these energies, sometimes called unavoidable energies, are intended to be captured and used before they are lost.

Recycling center

A center for recovery through the re-use (renovation) of certain products deposited at civic amenity sites (bulky waste) or brought directly to the center. Four services are proposed: multi-product collection, re-use and recycling in workshops, sale and environmental awareness-raising.

Recycling

Under Article L. 541-1-1 of the French Environmental Code, recycling is defined as "any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations".

Renewable energy

A renewable energy is an energy source that is created or replenished more quickly that it is used. Thus, solar energy is inexhaustible on a human timescale, as are the energies derived from it: wind energy, hydraulic energy (water cycle), biomass produced by photosynthesis and certain marine energies. The same applies to tidal energy or geothermal energy.

Renewable resources

Renewable resources can be used within their capacity for regeneration. They include water, soils (agricultural land) as well as biological resources, comprising living communities used by mankind (forests, pasture, maritime fisheries, biodiversity – animals and vegetables) and genetic resources (cultivated plant varieties and domestic animals).

Responsible consumption

Responsible consumption should lead buyers, i.e. private or public economic players or citizens, to make their choice by taking into account the environmental impacts at all stages of the product life cycle (goods or services).

Ressourcerie (Resource store)

The term "Ressourcerie ®" is a trademark. Ressourceries use processes to collect waste (bulky waste, non-hazardous industrial waste, etc.) that are designed to preserve the waste product's original purpose so that it can be recovered primarily through re-use/re-utilization, and then recycling.

Re-use

Under Article L. 541-1-1 of the French Environmental Code, re-use is defined as "any operation by which products, materials or substances that are not waste are used again for the same purpose for which they were designed".

Re-utilization

Under Article L. 541-1-1 of the French Environmental Code, re-utilization is defined as "any operation by which products, materials or substances that have become waste are used again".

Separate collection

Under Article R. 541-49-1 of the French Environmental Code, separate collection is defined as "a collection where a waste stream is kept separate by virtue of its type or nature so as to facilitate a specific treatment".

Similar waste

Similar waste groups together commercial and industrial waste that may be collected with household waste, taking into account its characteristics and the quantities produced, with no particular constraints (Article L 2224-14 of the French General Code of Regional Authorities). It covers waste from businesses (craftsmen, retailers, etc.) and the tertiary sector (public offices, hospitals, etc.), collected under the same conditions as household waste.

Social and solidarity economy (SSE)

The social and solidarity economy refers to groups of companies organized into cooperatives, mutual aid societies, associations, or foundations, whose internal operations and activities are based on a principle of solidarity and social utility. These companies adopt democratic and participatory management methods and strictly monitor how their profits are used: individual profit is prohibited and earnings are reinvested. Generally, their financial resources are partly government-funded.

Sustainable food

Sustainable food is a viable food in economic and social terms, which is protective of the environment, healthcare and cultural diversity.

Sustainable supply chain

The purpose of a sustainable supply chain is to have water, air, soil and raw material supplies that promote recycled materials, efficient use of renewable resources (respecting their renewal conditions), as well as raw material extraction limiting environmental impacts and waste.

Urban agriculture

Urban agriculture is the emerging practice of farming in urban areas. It can take the form of shared lots, individual or collective gardens or even vertical or horizontal farming in buildings (roofs, walls). The types of activity involved are market gardening, animal husbandry and fruit tree growing. According to the Food and Agriculture Organization of the United Nations, urban and peri-urban agriculture already provides food for a quarter of the world's urban population.

Waste electrical and electronic equipment (WEEE)

Waste electrical and electronic equipment refers to electrical and electronic equipment (EEE) or some of its components that have reached the end of their life or become redundant from their original use. Under Article R. 543-172 of the French Environmental Code, EEE is defined as equipment which is dependent on electric currents or electromagnetic fields in order to work properly and equipment for the measurement of such currents and fields and designed for use with a voltage rating not exceeding 1,000 volts for alternating current and 1,500 volts for direct current.

Waste

Under Article L. 541-1-1 of the French Environmental Code, waste is defined as "any substance or object, or more generally any movables, which the holder discards or intends or is required to discard".

Appendix 4
Proposals from the working groups

WG 1 Food, from urban agriculture to bio-waste

Detailed proposals by the participants featuring in the White Paper
V.4 Encourage local composting
VII.2 Develop the measurement of the agronomic quality of compost
V.2 Recover unsold produce and food waste at municipal markets
III.5 Protect farmland to enable local food systems
VII.1 Harmonize sorting rules
VII.3 Change the status of farmers to satisfy new local production expectations
II.9 Launch calls for innovative greening projects
II.8 Develop agricultural or energy production on contaminated soil
IV.7 Target exemplary schools in the area of sustainable food
V.1 Prevent and recover bio-waste in the mass catering sector
Other proposals mentioned
Direct the Jobs for the Future (Emplois d'Avenir) scheme towards (peri)-urban agriculture
"Sanctify" land (particularly in small municipalities)
Create a mapping of available/suitable land
Financially support subsistence farming projects
Promote access to high quality water urban/peri-urban farming
Reduce the quantities served in the mass catering sector to prevent food waste (possibility of seconds)
Cooking lessons with no leftovers / awareness-raising (mass catering and household cooks)

WG 1 (b) Fight against food waste, awareness-raising and redistribution

Detailed proposals by the participants featuring in the White Paper
I.6 Include transformation and packaging costs to facilitate the donation of unsold food
V.3 Use existing equipment for the (re)packaging or processing of unsold foodstuffs
VI.4 Develop one or more shared platforms for the collection of food donations
III.9 Privilege local logistics chains by adapting and diversifying transport modes for donated food products
VI.5 Develop food aid distribution areas, promoting social and intergenerational diversity
IV.8 Raise awareness about food waste depending on the various audiences
VI.6 Define the conditions for setting up across Greater Paris a transversal network of ideas, exchanges and work for those contributing to the fight against food waste
Other proposals mentioned
Have detailed and shared knowledge of food waste data throughout the chain, and of current measures to combat this phenomenon (prerequisite)
Offer a positive image of redistribution and food aid, particularly by focusing specifically on the related vocabulary (prerequisite)
Attach importance to donors and their products
Develop activities to convert food surpluses using mobile equipment on production or sale sites

WG 2 Planning, from eco-design to green construction

Detailed proposals by the participants featuring in the White Paper
VII.5 Analyze resources, sort and recover building site waste
II.5 Test new public project contracting practices in the circular economy
IV.6 Raise the awareness of local authorities and decision-makers regarding the major issues surrounding construction, the need for alternative planning, and best practices
III.8 Develop and stimulate regional networking to optimize the re-use and recovery of materials at the local level
IV.10 Include "alternative planning" and "green construction" modules in the training of architects
VII.4 Renovate rather than demolish
I.9 Develop new economic models for green construction
I.1 Introduce and emphasize circular economy clauses in public contracts
Other proposals mentioned
Specify the responsibility of the entity which supplies the materials
Guarantee the traceability of materials
Promote awareness among insurers on the possibilities of using certain re-used or recycled materials
Jointly build assessment indicators and measure material deposits

WG 3 New economies, performance and re-use

Detailed proposals by the participants featuring in the White Paper
I.7 Make progress on the incentives for donations in kind and support for repaired products
I.8 Reform the terms and conditions governing the award of grants so as to favor new economies
I.3 Develop a Product-Service System rationale in public procurement
V.8 Promote the re-use and re-utilization of long-life products in Extended Producer Responsibility (EPR) sectors
III.6 Facilitate the establishment of circular economy and social and solidarity economy players in Greater Paris by organizing office sharing
III.7 Think regional cooperation for waste prevention and recycling
IV.9 Include certain new and circular economy principles in educational programs
II.4 Encourage Product-Service System academic research
Other proposals mentioned
Specify the responsibility of the entity which supplies the materials
Guarantee the traceability of materials
Promote awareness among insurers on the possibilities of using certain re-used or recycled materials
Jointly build assessment indicators and measure material deposits
Facilitate the relay of information using ICT, and encourage changes in consumption through marketing, to capture more consumers
Identify and remove barriers to change (social psychology)
Promote awareness among citizens on repairing and re-use
SSE, repair and re-use entities: communicate on existing offers and promote feedback
SSE, repair and re-use entities: create links between government players and project leaders to expand initiatives
Adopt a collaborative strategy between players (including those participating in the General Assembly)
Work with producer responsibility organizations and distributors for door-to-door collections by resource stores
Organization of repair and re-use sectors: encourage businesses and local authorities to grant access to their waste sources and map them
Enhance existing digital platforms
Provide training in new economies
Specify the positioning of local authorities in relation to re-use and repair
Promote (local) group dynamics and civic commitment

WG 4 From eco-design to end of life, products with short lives (everyday products)

Detailed proposals by the participants featuring in the White Paper
V.10 Set up an ambitious cardboard collection plan
V.9 Commit Greater Paris to sorting by making it compulsory
I.2 Increase the percentage of eco-designed products in public procurement
V.6 Reduce the use of disposable packaging
VI.3 Create "Wastebook", the first social network on waste and resources
II.6 Create a business incubator to facilitate eco-design processes
V.11 Roll out new initiatives to improve battery, cell and electrical equipment collection rates
V.5 Propose a rechargeable transport ticket to replace single-use transport tickets
Other proposals mentioned
Teaching on the practice of sorting in schools
Set up links for a shared collection of certain types of industrial waste
Shared promotional campaigns on the practice of sorting
Collection of cigarette butts
Information and tools to promote sharing at a neighborhood level
Clean vehicles for waste collection

WG 5 From eco-design to end of life, products with medium or long lives (equipment)

Detailed proposals by the participants featuring in the White Paper
I.4 Encourage product eco-design
IV.3 Design and roll out circular economy labels
VI.1 Facilitate donations and product repair by networking
V.7 Promote object repairs through a set of complementary initiatives
IV.11 Train professionals in re-use and repair
IV.2 Create a symbolic circular economy site
IV.1 Create an on-line information platform for the circular economy
VI.2 Create a community of ambassadors for the second life of products
Other proposals mentioned
Promote awareness on the circular economy using educational tools to motivate the general public and businesses – proposed initiative combined with the following: • Proposed initiative IV.7 • Proposed initiative IV.9 • Proposed initiative IV.11
Define the circular economy clauses in procurement contracts – proposed initiative combined with the following: • Proposed initiative I.1 • Proposed initiative I.2 • Proposed initiative I.3

WG 6 Development of recoverable energy

Detailed proposals by the participants featuring in the White Paper
IV.4 Identify the existing data and tools covering renewable and recoverable energies
I.10 Create a single recoverable energy wicket dedicated to government aids and administrative procedures
VI.8 Create a platform to bring together renewable and recoverable energy producers and consumers
II.7 Privilege innovative energy recovery projects
III.3 Set up a coordinated development strategy for recoverable energy at the municipal level
III.4 Integrate a recoverable energy vision in land planning
I.11 Prioritize recoverable energy in the networks
IV.5 Raise the awareness of citizens regarding recoverable energy
Other proposals mentioned
Integration of recoverable energy exploitation potential during the review of the regional plan for the elimination of household and similar waste (PREDMA) and the regional plan for the prevention and management of construction site waste (PREDEC)
Multiplication of energy sources supplying the same network
Obligation for businesses to recover their waste heat
Easing of administrative procedures for minor projects
Streamlining of procedures for pilot projects
Development of the public procurement code
Continuation of an exchange forum following the example of the General Assembly on the Circular Economy
Land planning for the development of a multi-purpose platform
Assistance for regions with responses to European projects
Sharing of feedback through travel

WG 7 Industrial and regional ecology

Detailed proposals by the participants featuring in the White Paper
III.2 Create a single IRE initiatives coordinating committee to support the operational development of IRE initiatives
III.1 Formally assess the current situation and establish an action plan for IRE development
II.1 Initiate new IRE approaches based on feedback from France and abroad
VI.7 Set up a cooperative platform for discussions between IRE players at the metropolitan level
II.3 Create new business parks or reclassify business parks in decline by integrating IRE as a guiding principle
II.2 Organize new IRE financing models
I.5 Gradually adapt and regionalize the French General Tax on Polluting Activities (TGAP) to increasingly discourage waste disposal and incineration
Other proposals mentioned
Not applicable: all the proposed initiatives were adopted.

Appendix 5
List of participating organizations

Working Group 1: Food, from urban agriculture to bio-waste	
APUR (Atelier Parisien d'Urbanisme)	Helioprod
AgroParisTech	Love Your Waste
Biocoop	Metro Cash & Carry
Communauté d'Agglomération Est Ensemble	ORDIF (Observatoire Régional des Déchets d'Île-de-France)
CGAD (Confédération Générale de l'Alimentation en Détail)	Phenix
Conseil Régional d'Île-de-France	SIVU CO CLI CO (Syndicat Intercommunal à Vocation Unique de la restauration collective entre les Villes de Clichy-la-Garenne et Colombes)
CROUS	SYCTOM (Agence métropolitaine des déchets ménagers)
DRIAAF (Direction Régionale et Interdépartementale Alimentation, Agriculture, Forêts)	SYNHORCAT (Syndicat national des hôteliers, restaurateurs, cafetiers et traiteurs)
DRIEE (Direction Régionale et Interdépartementale Environnement Énergie)	Terre de Liens Île-de-France
Département du Val-de-Marne	Verger urbain
Ecologic	Veolia
Elior	Ville de Clichy-la-Garenne
Jeune Chambre Économique	Ville de Nogent-sur-Marne
GAB Île-de-France (Groupement des Agriculteurs Bio)	Ville de Paris
GNR (Groupement National de la Restauration)	Zero Waste France
Working Group 1 (b): Fight against food waste, awareness-raising and redistribution	
5e Gauche pour CHECKFOOD	Elior Entreprises
Action Garches	Eqosphère
Agence nouvelle des solidarités actives	Ernest
Artisans BioCycle (Ex. Les Valoristes)	Fondation de l'Armée du Salut CHU Mouzaia
Association SOLAAL	Fondation Carrefour
AURORE - Epicerie Solidaire	Future Of Waste
Banques alimentaires	Graine Île-de-France
Biens communs	Le Chainon Manquant
Carrefour France Développement Durable	Ville de Fresnes
Caisse des écoles du 14e	Nokto tago
Centre d'hébergement	Passerelles.info
Cervia	PikPik Environnement
CCAS Saint Michel sur Orge	Phenix
CCAS Suresnes	Re-Belle
CGAD Île-de-France	ReVIVRE Île-de-France
CLCV / Dig Eat	Sciences Po Paris

Common Good forum/Passerelles.info	Secours Catholique
Croix-Rouge française à Paris	Tente des glaneurs Paris 19e
De mon assiette à notre planète	What the Food
DRIAAF	
Working Group 2: Planning, from eco-design to green construction	
APUR (Atelier Parisien d'Urbanisme)	Nacarat
Atelier Acturba	ORDIF (Observatoire Régional des Déchets d'Île-de-France)
Bellastock	Paprec
Boursomat	Paris Habitat
Bouygues Immobilier	Paris Métropole
Bouygues Construction	RATP
CAPEB Grand Paris (Confédération de l'Artisanat et des Petites Entreprises du Bâtiment)	SEMAEST (Société d'économie mixte d'animation économique au service des territoires)
Communauté d'agglomération de Plaine Commune	SEMAPA (Société d'Économie Mixte d'Aménagement de Paris)
Département du Val-de-Marne	SEMAVIP (Société d'Économie Mixte Aménagement de la Ville de Paris)
Conseil Régional d'Île-de-France	SGP (Société du Grand Paris)
DRIEE (Direction Régionale et Interdépartementale de l'Environnement et de l'Énergie)	SNCF
Enckell Avocats	UNICEM (Union Nationale des Industries de Carrières et Matériaux de Construction)
Encore Heureux	Veolia
FFB (Fédération Française du Bâtiment)	Ville de Paris
Haropa Ports de Paris	Vinci
Hesus	Voies Navigables de France
Lafarge	Yprema
La Poste	
Working Group 3: New economies, performance and re-use	
ADEME Île-de-France	Groupe La Poste Île-de-France
Agence du don en nature	La Petite Roquette
Amelior	La Réserve des arts
Association "sauve qui peut" porte Montmartre (les Biffins)	Les Ptits Débrouillards
Association Rejoué	Mutum.fr
Atelier Centre de Ressources Régional de l'ESS	Opus 3
ATEMIS (Institut Européen Économie de la Fonctionnalité et Coopération)	ORDIF (Observatoire Régional des Déchets d'Île-de-France)
Communauté d'agglomération de Plaine Commune	Paris & Co (Agence de l'innovation et du développement économique de la Ville de Paris)

CJD (Centre des Jeunes Dirigeants)	RATP
Conseil Régional d'Île-de-France	REFEDD (Réseau Français des Étudiants pour le Développement Durable)
DIRECCTE Île-de-France (Direction régionale des entreprises, de la concurrence, de la consommation, du travail et de l'emploi)	REFER (Réseau francilien du réemploi)
Emmaüs Coup de main	Repair Café Paris
Emmaüs Défi	Seine Ouest Entreprise et Emploi
ENVIE	Synergence
Eqosphère	Ville de Paris
Fédération des Entreprises d'Insertion d'Île-de-France	Zero Waste France et OuiShare
GPSO (Communauté d'agglomération Grand Paris Saine Ouest)	ZONE-AH !
Working Group 4: From eco-design to end of life, products with short lives (everyday products)	
Acteurs du Paris Durable	Les joyeux recycleurs
ADEME Île-de-France	LVMH (Louis Vuitton Moët Hennessy)
Alliance Carton Nature	Ville de Neuilly-Plaisance
Communauté d'agglomération de Plaine Commune	ORDIF (Observatoire Régional des Déchets d'Île-de-France)
Com'Publics	Paprec
Conseil national de l'emballage	Secrétariat du cabinet d'Antoinette Guhl
Coopérative Mu	UNIIC (Union Nationale des Industries de l'Impression et de la Communication)
Conseil Régional d'Île-de-France	UPM
Eco-Emballages	Veolia
Ecofolio	Ville de Paris
Elipso	Wiithaa
FEDEREC	WWF
La Poste	Zero Waste France
Working Group 5: From eco-design to end of life, products with medium or long lives (equipment)	
Amis de la terre	Next Textiles Association
CRIF	Où Réparer
Département des Hauts-de-Seine	Rcube
Ecologic	Recommerce Solutions
Eco-mobilier	Sherpa CSFE
Eco-systèmes	SNFBM
EcoTlc	Synergence
Emmaüs	Upcycly
Emmaüs Défi	Urei Île-de-France

IKEA	Valdelia
La Poste	Veolia
Le Relais	Ville de Paris
Le Relais 75	Wiithaa
Le Relais VDS	
Working Group 6: Development of recoverable energy	
ADEME Île-de-France	GrDF (Gaz réseau Distribution France)
APC (Agence Parisienne du Climat)	HELIOPROD
APUR (Atelier Parisien d'Urbanisme)	iHOL
Département des Hauts-de-Seine	ORDIF (Observatoire Régional des Déchets d'Île-de-France)
Conseil Régional d'Île-de-France	RATP
CPCU (Compagnie Parisienne de Chauffage Urbain)	SITA Suez Environnement
DRIEE (Direction Régionale et Interdépartementale de l'Environnement et de l'Énergie)	SYCTOM
EDF (Électricité de France)	Tiru
EIVP (École des Ingénieurs de la Ville de Paris)	Veolia
Énergies 9	Ville de Meudon
Enertime	Ville de Paris
GPSO (Communauté d'agglomération Grand Paris Seine Ouest)	Ville de Suresnes
Working Group 7: Industrial and regional ecology	
ADEME Île-de-France	École Nationale des Ponts et Chaussées
Aéroport de Paris	Institut Caisse des dépôts et consignations pour la recherche
ARENE Île-de-France	Institut de l'Économie Circulaire
CCI Seine-Saint-Denis	Jeune chambre économique Parisienne
Département de Seine-Saint-Denis	Haropa Ports de Paris
Conseil Régional d'Île-de-France	ORDIF (Observatoire Régional des Déchets d'Île-de-France)
DIRECCTE Île-de-France	ORÉE
DRIEE (Direction Régionale et Interdépartementale de l'Environnement et de l'Énergie)	SYCTOM (Agence métropolitaine des déchets ménagers)
Durapole	Veolia
Eau de Paris	Ville de Paris
École des Mines de Paris	We are Phenix
Lafarge	


PACTE DU GRAND PARIS POUR L'ÉCONOMIE CIRCULAIRE
paris pour le climat

ADEME
DON EN NATURE
AgroParisTech
Biens Communs
Agence Parisienne du Climat
Solidarités actives
apur
ARENE
ATELIER
ATEMIS
Aurore Association

Banques Alimentaires
BELLASTOCK
biocoop
BOURSOMAT
BOUYGUES CONSTRUCTION
RECYCLAGE
CAPEB
CEDA

CLER
COMMON GOOD FORUM
CPCU
de mon assiette à notre planète
DISCO SOUPE
DURAPOLE
l'eau de Paris
ECO DESIGN FAB LAB
AÉROPORTS DE PARIS

Laboratoire Ville Mobilité Transports
EcoLogic
écomobilier
EDF
EIVP
REFEDD
Coup de main
EMMAÜS FRANCE
NE PAS SUBIR TOUJOURS AGIR
EMMAÜS DÉFI
ea ENCKELL AVOCATS

Encore heureux
Énergies
envie
EQO SPHERE
ErDF
la fédération des entreprises d'insertion
FEDEREC
FFB
ENERGIE

GRAINE Ile de France
VEOLIA
hesus
INRA
Caisse des Dépôts
Institut de l'économie circulaire
JCI
lAtelier
ÎledeFrance
Crous Paris

LE GROUPE LA POSTE
LAFARGE
LE CHAÎNON MANQUANT
LE RELAIS
les joyeux recycleurs
AUX SCIENCES CITOYENS!
LVMH
METRO Cash & Carry France
MINES ParisTech
mutum

Bravo à tous !

NACARAT
NEXT TEXTILES
nokto tago
ORDIF
ÎledeFrance
orée
OÙ RÉPARER .COM
PAPREC GROUP
Passerelles.info
RATP
rejoué le jouet solidaire
Repair Café

REVIVRE DANS LE MONDE
semaest
SEMAPA
suez
tiru GROUPE EDF
UNICEM
unic union nationale des industries de l'impression et de la communication
UNIVERSITÉ de Cergy-Pontoise
ValdeliA
PHENIX

ZONE-AH!
PARIS & CO
IEEFC
GrDF
ECO TLC
elior
Artisans du Cycle
R .ORG
SYNHORCAT

la fédération des entreprises d'insertion
snarr
SNRC
SNRTC
Société du Grand Paris
Opus 3
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