



Develop Circular Economy in the territories: levers and concrete examples

1/ Levers for local governments that favor a swift shift towards circular economy in their territory

(Source: Guide de l'ARENE Ile-de-France <https://www.arenidf.org/node/5706>)

Jump start circular economy in public procurement

- Think in advance on how to integrate circular economy: identify needs, usage vs ownership, sourcing, innovative partnerships
- Register circular economy in tender specification: subject of the contract, technical precisions and environmental clauses favoring circular economy (product life cycle, eco-design, recycling, repair and reuse capacity, environmental performance, eco-product, etc.)
- Render circular economy engagement a criterion to obtain the public procurement: multiple criteria evaluation system, aggregate cost (acquisition, utilization, maintenance, end-of-life management)

Mobilize civil society

- Stimulate responsible consumption: promote labels and eco-design, sharing, second-hand, extend lifetime, etc.
- Rely on sustainable development, environmental and education stakeholders to raise awareness
- Develop collaborative and functionality economy
- Usher show event-driven stakeholders towards zero waste
- Launch and organize a challenge for “zero waste families”

Understand the territorial metabolism and act accordingly

- Qualify and quantify the flow of resources and, incoming, transformed and exiting energy
- Carry out a stakeholder interactive map
- Single out local production capacity and potential collaboration
- Conceive and organize a territorial cooperation space with an adapted governance

Mobilize economic stakeholders

- Raise awareness about circular economy issues among economic stakeholders: access to resources, eco-design, waste sorting, stakeholder cooperation, etc.
- Identify stakeholders' needs and apply the most suitable stimulants: financial, property related, networking, territorial planning, shared services, collective waste management, etc.
- Organize or participate in industrial and territorial ecology procedures, especially in zones with high economic activity

Aim for a “positive energy territory” trajectory

- Favor energy sobriety in public buildings and in private sector
- Develop local renewable energies (geothermal, biomass, methanization, solar power) and recapture (lost thermal energy from sewage, industry, data centers, etc.)



- Support local community renewable energy projects: co-construction, provisioning land-owners, project company participation and their governance, etc.

Take action in food industry and agriculture

- Develop sustainable supply through nearby short food circuits
- Usher transition towards environmentally respectful and resource efficient production processes
- Fight against citizen, food supply and restaurants food waste
- On site bio-waste segregation and valorization

Aim for a “zero waste, no waste” trajectory

- Pursue prevention actions among citizens and economic stakeholders
- Financially incentivize waste reduction: pricing or incentive charging, rewards system, deposit system, etc.
- Improve recyclables’ sorting and pick-up
- Scout and flag the resource hubs in the territory: voluntary landfill disposal, stationary and mobile landfills, waste sorting and recovering centers, etc. Cover the territory with « resource » centers.

Take action in urban planning and building industry

- Act before designing: eco-design, grey energy, life-cycle analysis, use of eco-materials or reused or recycled materials, favor renovation
- Take action during the construction phase: construction waste recovery, reuse site, temporary space planning, stocking areas, exchange platform, synergy between construction sites
- Anticipate new usages of scraps after end of life of buildings: waste and resource diagnosis, on site sorting, diversify uses, building adaptation, dismantling, deconstruction, reuse, traceability and material non toxicity

2/ Concrete actions that showcase circular economy in relation with levers

(Source: *Plan économie circulaire de Paris 2017-2020* + experience feedbacks in Auvergne-Rhône-Alpes, OREE)

Organic waste recovery

- [Green areas’ wooden waste recycling](#)
- [Christmas trees recovery](#)

Material recovery (building materials and public works)

- [Recycling scraps from funerary monuments](#)
- [Recycling road scraps](#)
- [Recovery of scraps from heavy restoration works](#)
- [Digital inter-service exchange platform](#)

Space, areas and event eco-design

- [Eco design and green areas frame of reference](#)
- [Eco-friendly event charter](#)
- Green areas eco-friendly maintenance
- Eco-designed-bicycle inflation-stations
- Buildings built with a circular economy mindset (examples: local timber usage, long lasting materials, opt for solar energy and co-generation in order to supply part of energy and heating needs, triple glazed windows and balanced ventilation system, integrated sewage treatment plant before discharge, etc.)
- Eco-designed signage panels (throughout life-cycle)



Sustainable and responsible supply

- Supply of organic and sustainable produce in collective restaurants
- Socially and environmentally responsible diagram of public procurement
- Urban agriculture development
- Sharing of event industry equipment
- Agricultural industry product recovery (breweries, pastry-shops, starch producers, dairy-shops, etc.) for animal feed
- Establish an organization “organic-based construction” to use organic based materials in the construction and renovation industry and simultaneously favor local materials and emerging sectors.

Energy

- Sewage water heat recovery for public building heating
- Data-centers heat recovery
- Public building cooling
- Supply energy to buildings through biomass scraps
- Organic waste conversion to heat and electricity
- Mechanization “in farm” and local-loop for vehicle fuel-supply NGV/CNG
- Biomass condensing boiler fueled by corncob granulates
- Fuelwood platform near wood-drying production sites in a road network to easily supply neighboring clusters
- Volatile Organic Compounds (VOC) Incinerator with triple heat recovery
- Multi-service charging stations for electric vehicles

Water management

- Develop water use and non-potable water network
- Restricted water management for green areas

Mobility and goods transport

- Development of Urban Logistics Spaces (ULS)
- Shared fleets (cars and bicycles)
- Cargo grouping for servicing assembly lines
- Electric-assisted utility freight tricycles
- Dynamic management of street parking spots

Bio-waste: separate pick-ups to promote recovery

- Bio-waste pick-up (local markets and restaurants)
- Launch separate waste material pick-up between food waste and household waste
- Help and guidance for communal composting

Consumer goods: facilitate extended product lifetime

- Recycle computer and mobile parts and components
- Recycle furniture
- Sharing Fablabs
- Support to main recycling stakeholders and repair workshops (recycling centers, repair-café, self-repair bicycle workshops...)
- Internal recycling of passive waste to reduce purchase
- Collection of office equipment, computing and corporate electronic waste

Zero-waste trajectory: ease waste sorting

- Deploy solidary collection through i.e. Emmaüs Eco-systèmes
- Improve collection-points' proximity of occasional wastes

Fight against food waste

- Fight against food waste within local communal restaurants



- Retrieve unsold produce in food markets
- Support to organizations in charge of collection of unsold food
- Encourage the development of “take-out bags” in restaurants and food-courts (free bags for wine and unfinished dishes)

Territorial and industrial ecology

- Industrial substitution synergy projects
- Brine industrial residue-reuse for road defrosting
- Resource mutualisation between multiple structures
- Develop recycling sectors, such as plastic

Economy of functionality

- Sale/purchase of data instead of measuring instruments
- Sale/purchase of light instead of lighting equipment
- Tech platforms for teleworking
- Sale/purchase of heating through the installation of micro-boiler filled with shredded wood
- Make public space more versatile (metal-locks concept to add and remove components to urban furniture)

Education

- Sustainable Development education, schools curriculums’ pillars at every level
- Local energy and sustainable development agencies visiting high schools (classes focused on specific sustainable subjects and educational projects)
- Resource-recycling-supports to implant circular economy in every young citizen

3/ Success indicators examples (Source: *Plan économie circulaire de Paris 2017-2020*)

- More than 6 000 m3 of gardening waste are produced on the ensemble of Parisian green areas,
- An average of 3 000 tons of gravel are derived from funerary monuments’ recycling,
- 7 to 8 000 tons of granite are reused on Parisian roads every year,
- 32,9% of Paris’ administration food supply was of sustainable origin in 2015, out of which 29,12% was organic (51,2% for daycares). This makes Paris the first public French buyer of organic products,
- 28 new projects devoted to urban agriculture projects, equivalent to 5.3 hectares,
- 44% savings in energy consumption of the city hall for cooling through the use of non-potable water,
- Energy-consumption reduction-objective in pools through the reuse of heat,
- 40% reduction of sedans and city-cars in the municipal motor-fleet,
- 2 Velib’ bike rentals per second: 286 000 members,
- 875 Autolib’ stations: 67 500 members,
- 15 Urban Logistic Spaces (ULS) conceived,
- 116 tons of bio-waste collected in 2015 for food markets and administration restaurants,
- Approximately 300 tons of avoided waste in 2015 through communal composting spread through the 422 communal composting sites and 6 neighborhood composting sites,
- 3 000 tons of collected objects by the Parisian recycling centers in 2015,
- 141 tons of objects were collected in 2015 thanks to the “solidary collections”,
- Carbon footprint: 9.2% decline of greenhouse gases between 2004 and 2014,
- 13% decline in 10 years of emissions linked to waste material,
- 7% reduction of household waste tonnage between 2011 and 2015,
- A strong decline in road transport’s emissions at around 23%.