

Can you imagine what Europe would look like, running fully on a circular economy?

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spatial



foresight



territorial policy support and [research](#)



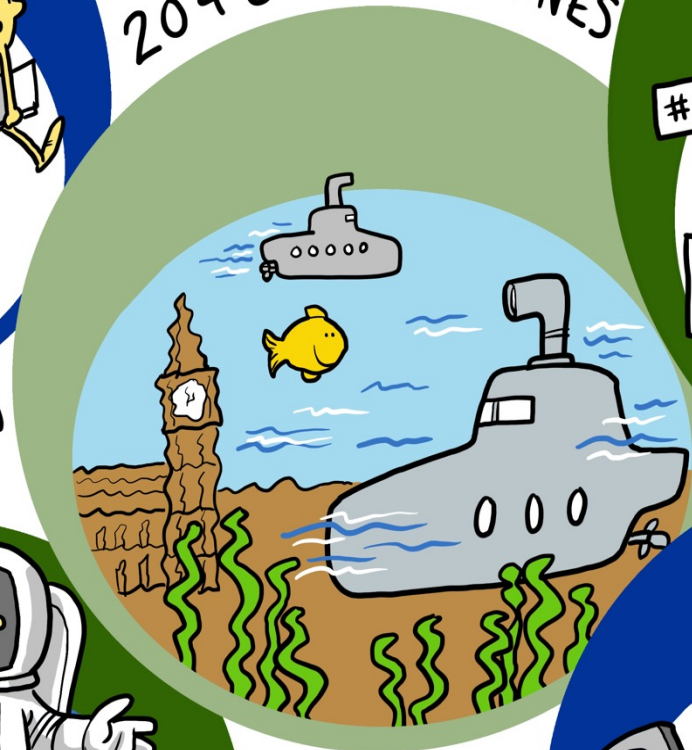
1

Territorial foresight perspective

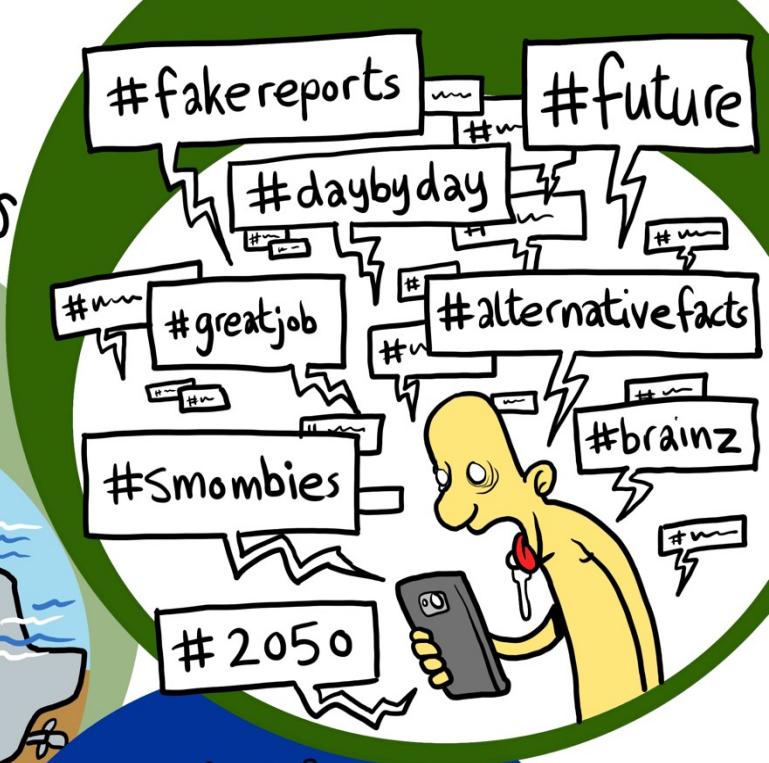




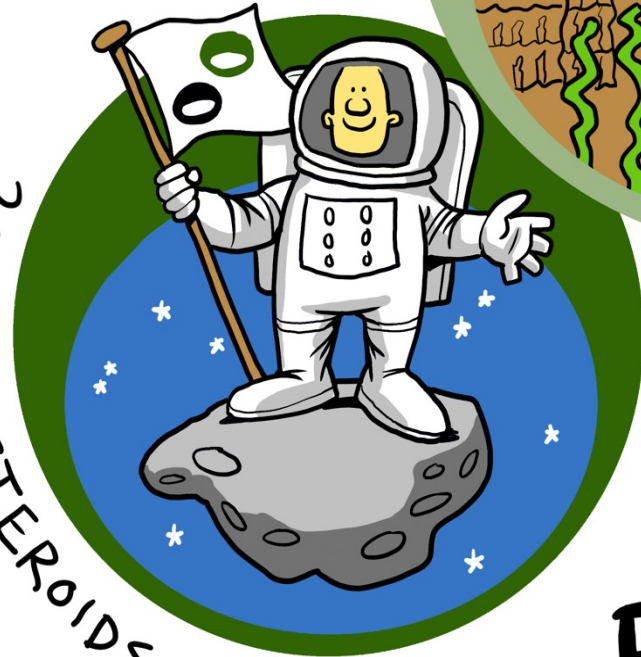
2020: BREAKDOWN



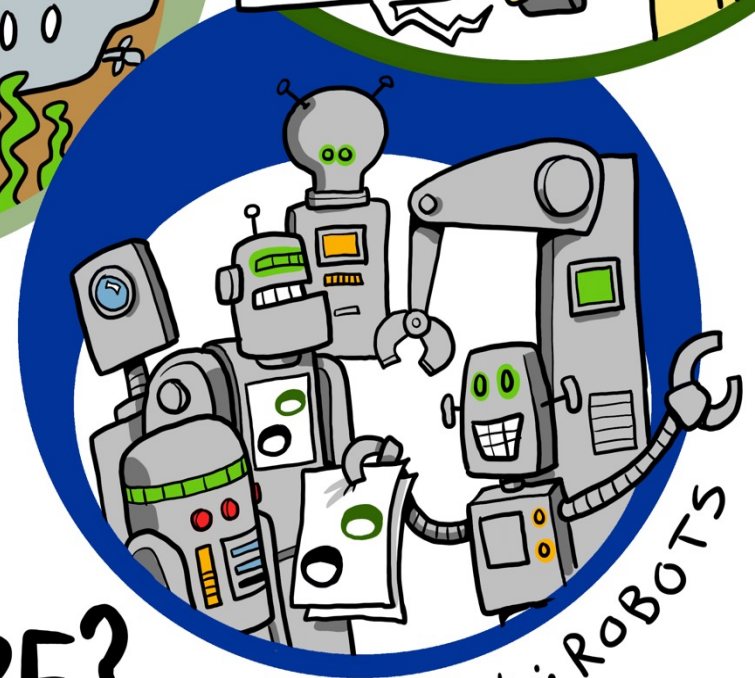
2048: SUBMARINES



- #fake reports
- #future
- #daybyday
- #greatjob
- #alternativefacts
- #smombies
- #brainz
- #2050



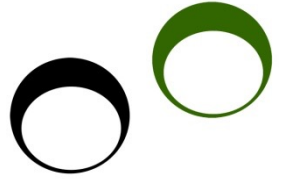
2032: ASTEROIDS



2024: ROBOTS

THE FUTURE?

Territorial Foresight



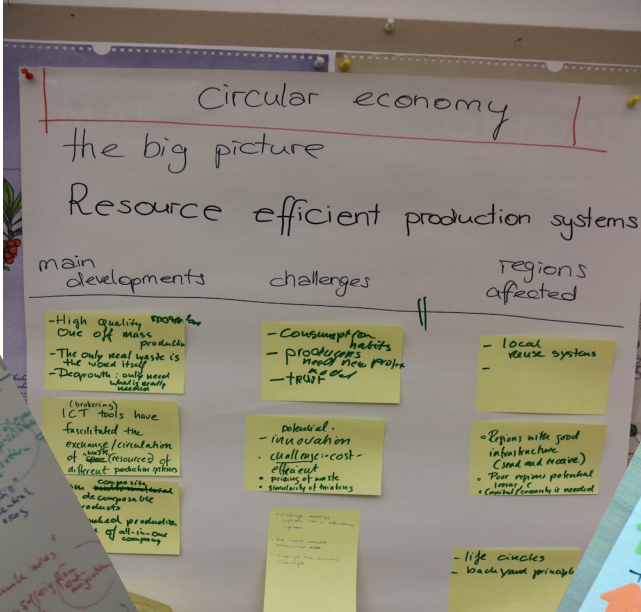
Framework to support participants in a structured forward thinking concerning territorial development.

Territorial foresight is a future oriented approach characterised by

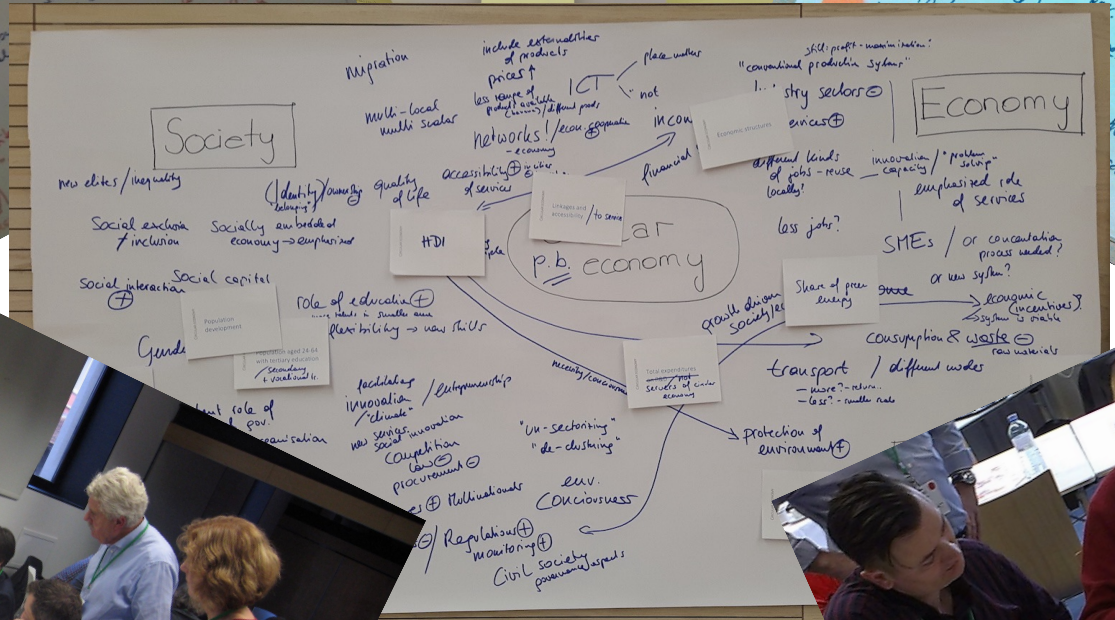
- (a) critical, lateral thinking on long-term developments and their impacts on territorial development,
- (b) wider participatory engagement and
- (c) informing public and/or private decision making.

Territorial dimension in foresight thinking

Include ESPON Territorial Impact Assessment approach in foresight work.



- Assembly-line type production will be severely hit
- Transportation hubs will stagnate
- + Companies with R&D capability find it easier to adapt
- + Areas with concentration of young people will thrive
- + Areas with skilled (older) people will have an advantage for repair-economy
- + Areas with higher awareness (copy: recycling)
- + Institutions

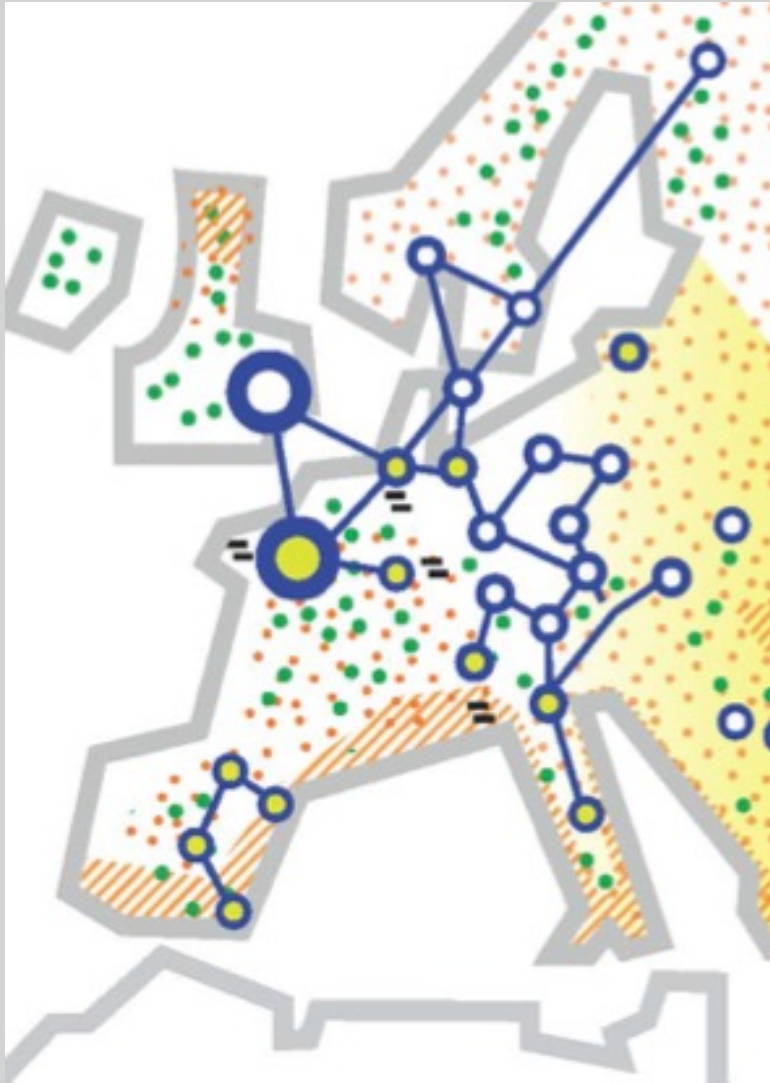


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The territorial dimension of a circular economy

European perspective

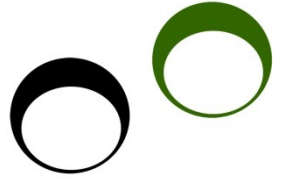




ESPON 2016-17

What could be the territorial consequences if Europe had a fully renewable energy system by 2030?

Place-based Circular Economy



Resource efficient production – changing production patterns

- Reducing waste to a minimum
- The value of products and resources remains in the economy for as long as possible
- Less products are produced
- Repair, reuse and recycling implies a shift from large to smaller production sites

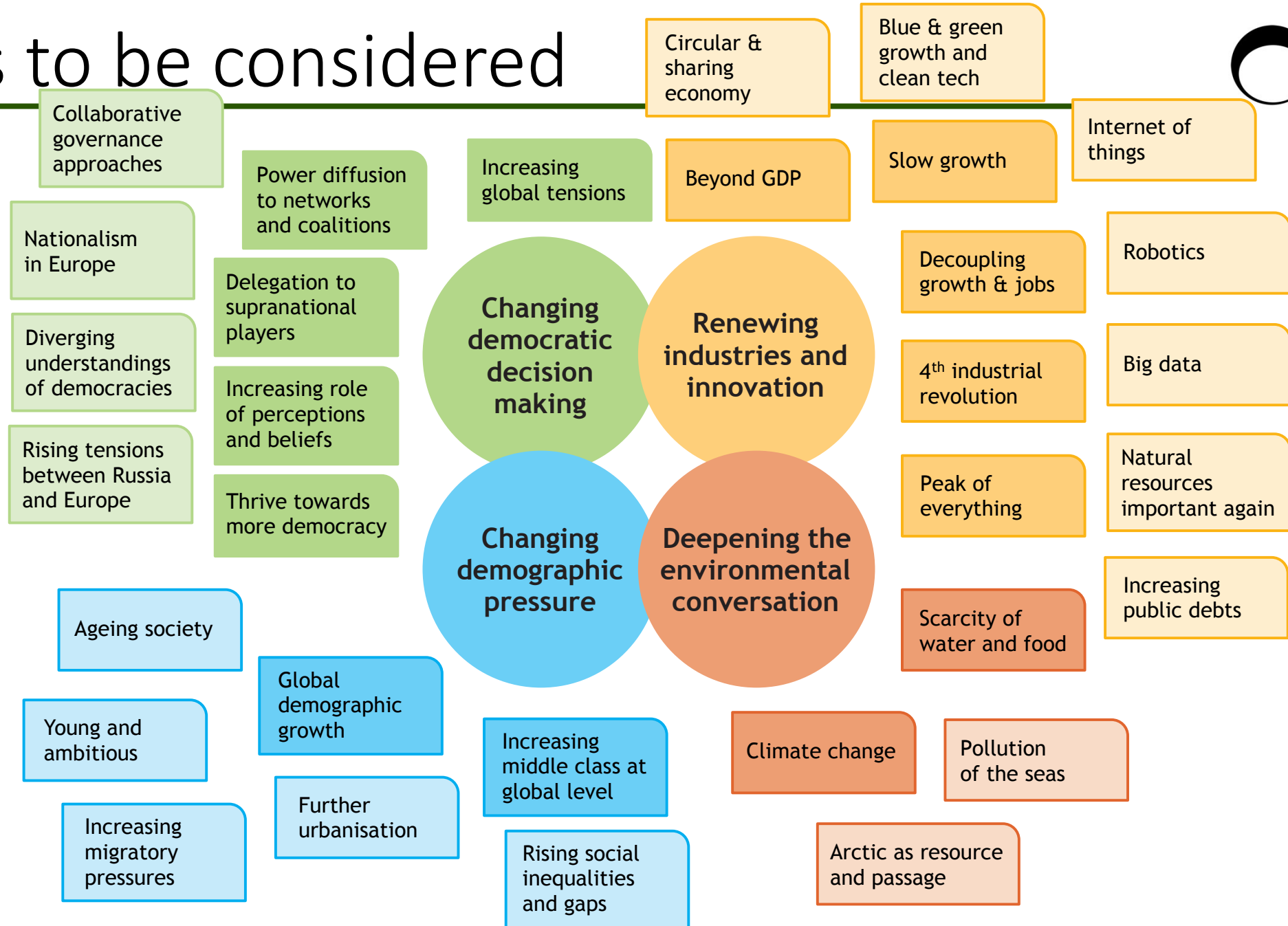
Resource efficient use – changing societal and behavioural patterns

- Focus on use rather than ownership, sharing resources
- The understanding of prosperity moves beyond GDP

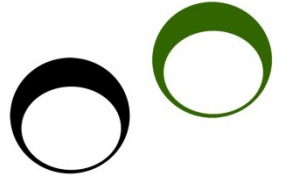
Place based – balancing local and global interaction

- Making the best use of a region's endogenous resources
- Involvement of local population and local influencers
- Transport and trade continue
- Migration continues

Trends to be considered



Resource efficient production



Territorial "impacts" of changes in production systems

- Large scale manufacturing experiences economic transition
- Innovations are needed for a transition to circular economy production systems
- Strong focus on repair, reuse and recycle implies new jobs in most parts of Europe

Place based Circular Economy: Production & New Economic Systems

Circular Economy



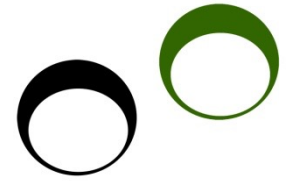
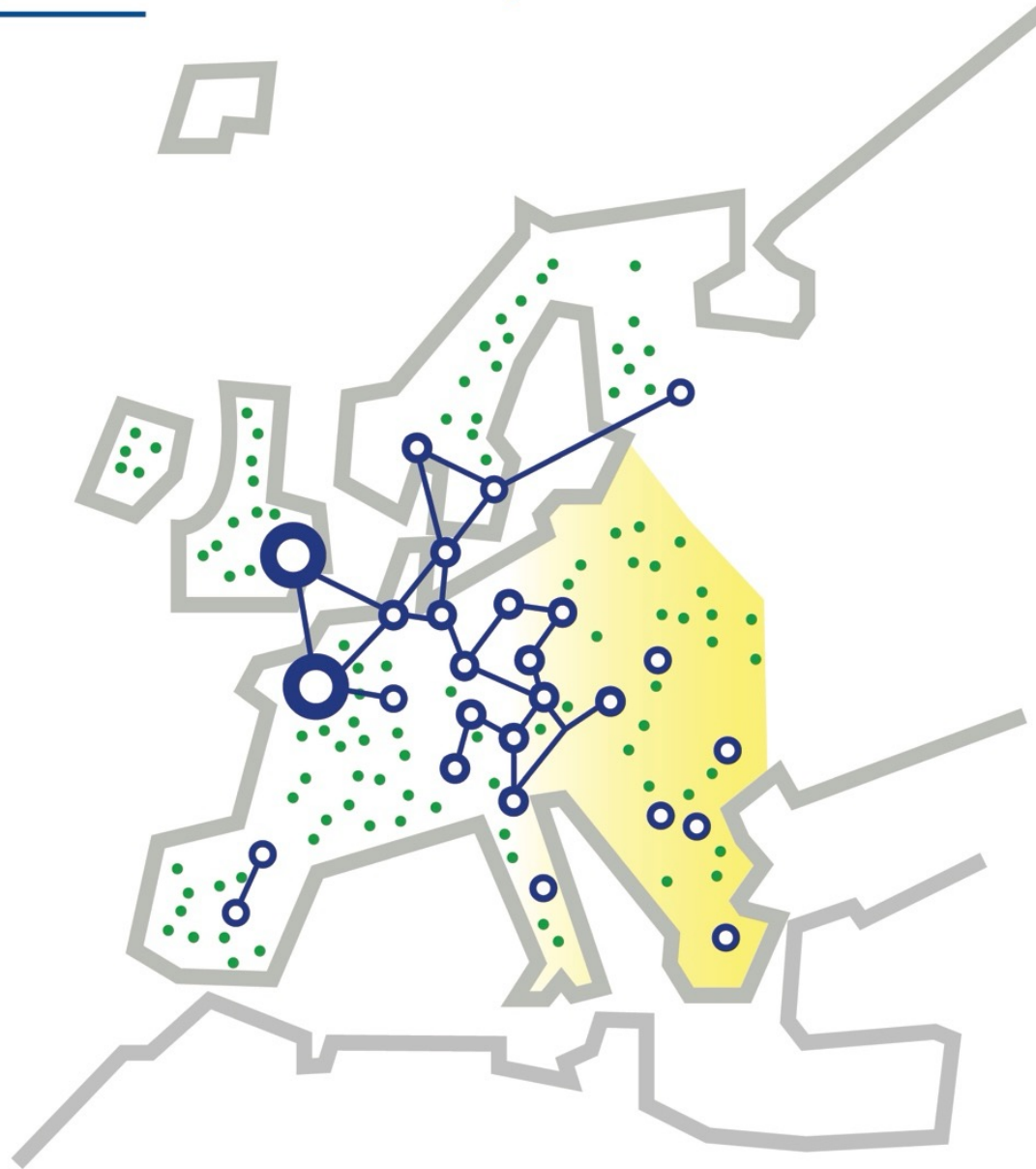
Leading technological change



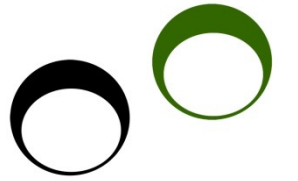
Risk for declining economic role due to change in manufacturing



Growing economic activities due to repair, reuse, recycle culture



Resource efficient use



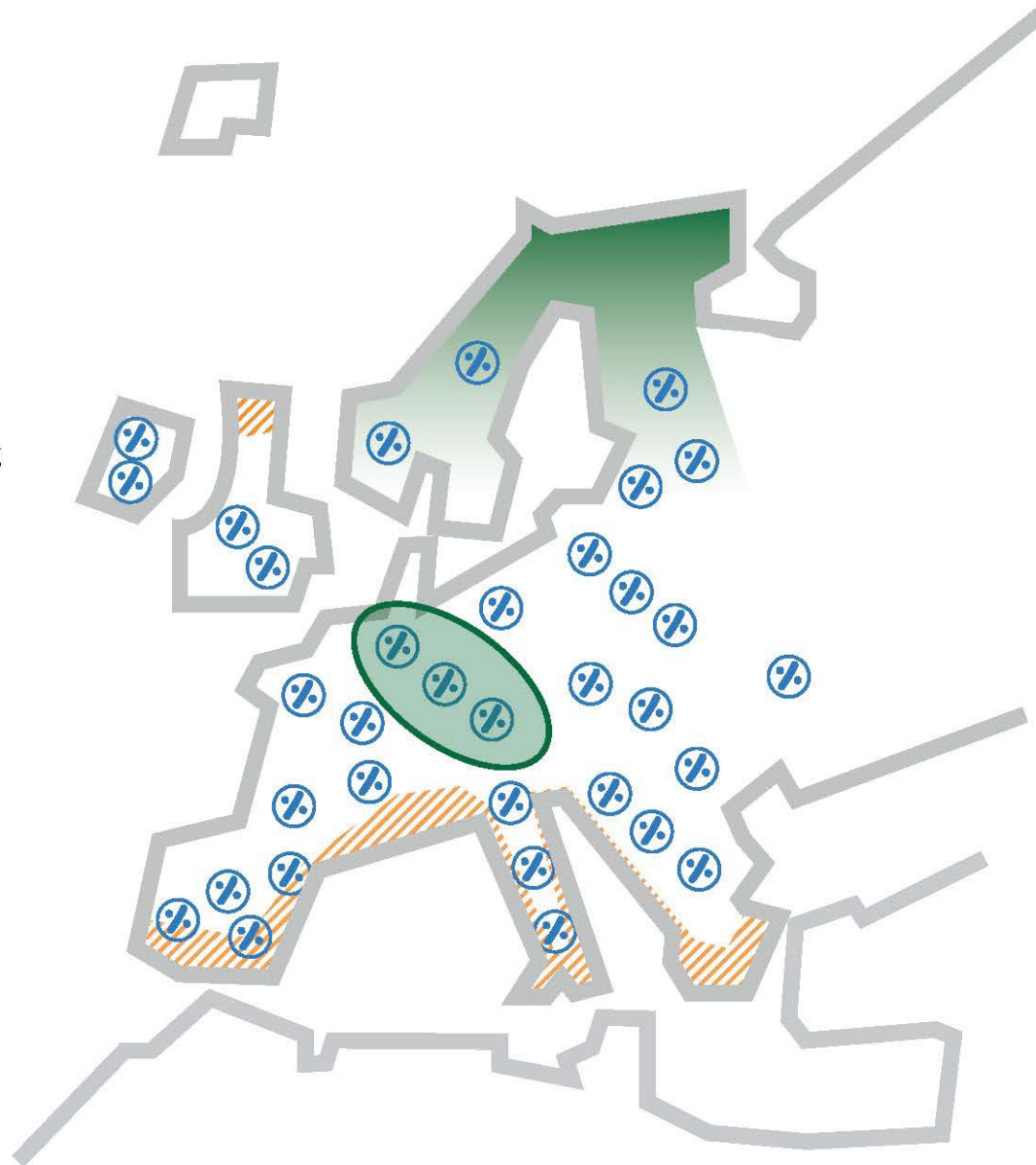
Territorial "impacts" of changes behaviour and use

- Focus on repair, reuse and recycle implies drastic changes in areas with high household waste levels
- Sharing economy requires critical mass
- Changing understanding of prosperity – beyond GDP and good governance

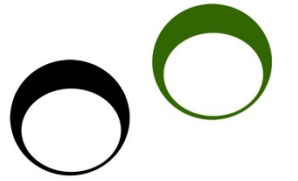
Place based Circular Economy: Consumption & Behaviour Change

Circular Economy

-  Challenges in terms of handling of households waste
-  Forerunners in recycling
-  Advanced in sharing economy



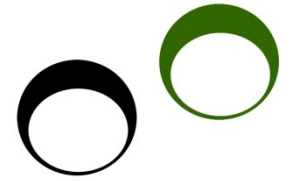
Place based – local & global





Territorial “impacts” of changes local-global interaction

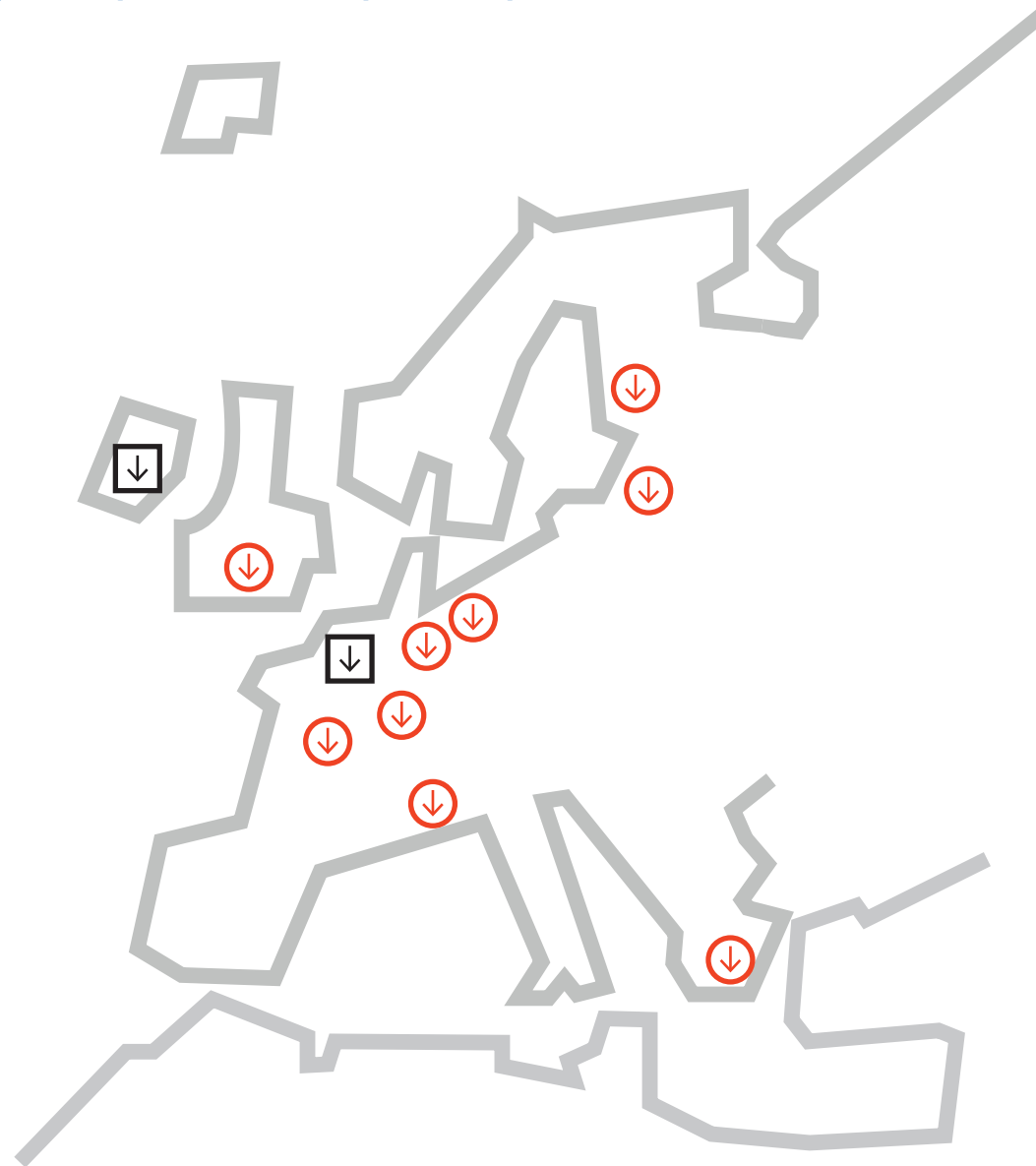
- Major transport hubs lose importance
- International export-import patterns change

Place based Circular Economy: Transport Flows & Export / Import

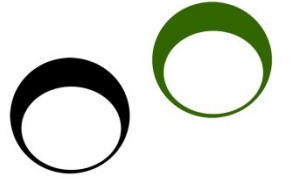


Circular Economy

-  Declining transport hubs
-  Declining export region



Place-based circular economy



Overall territorial consequences

- Dramatic changes for all parts of Europe
- Disparities between strong socio-economic areas and lagging regions may decline
- Potential for small and medium-sized towns
- Challenges for sparsely populated areas and inner-peripheries
- Challenges for major cities depending on transport and material production
- Networks driving innovations in a circular economy and leading areas in the sharing economy

Place based Circular Economy: Production & New Economic Systems

Circular Economy



Leading circular economy innovation



Forerunners in sharing economy



Declining manufacturing or export



Declining hub functions



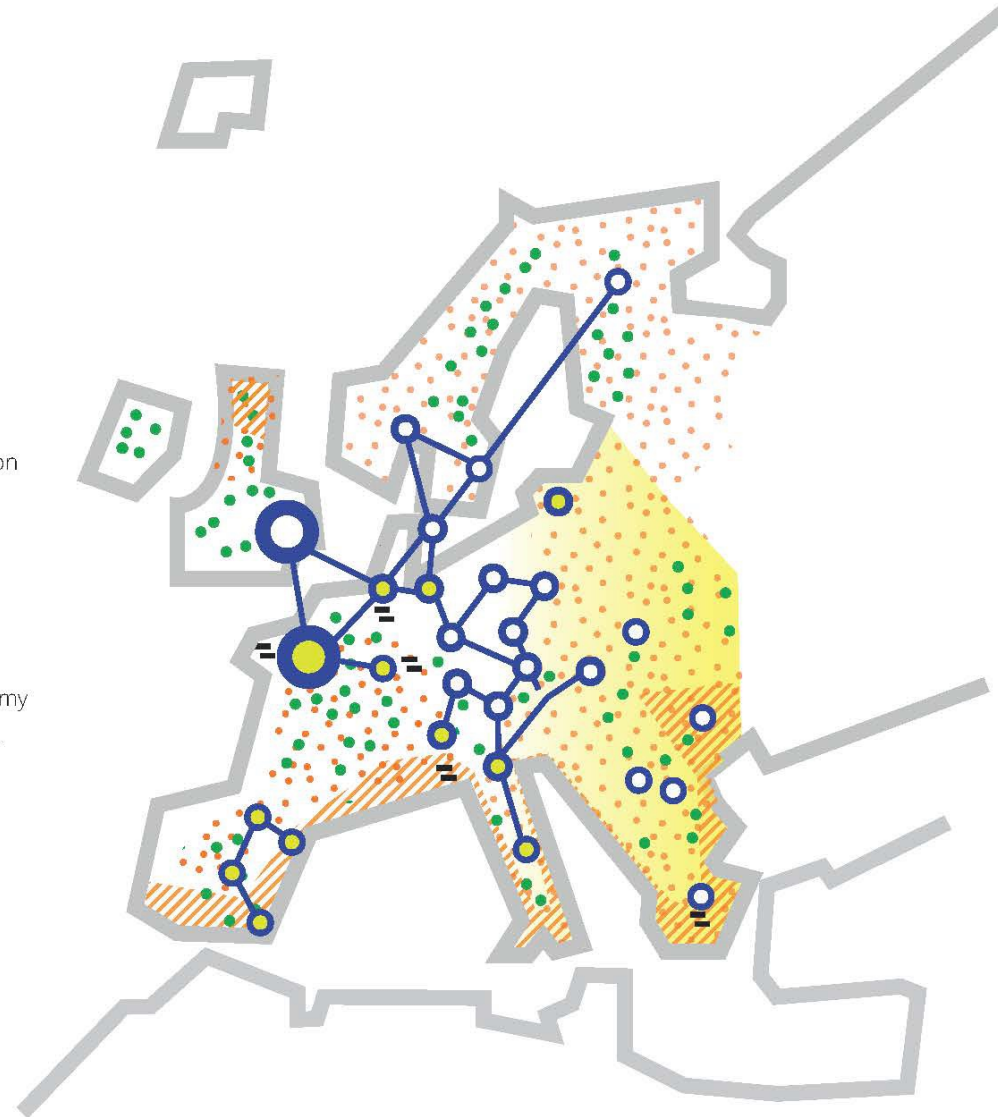
Smart cities growing in economic...



Too small places for sharing economy







Challenged in consumer behaviour



Renewable Energy: Consumption Possible Impacts

Renewable Energy

-  Transport energy consumption & GVA/employment in transportation
-  Household energy consumption
-  Household energy consumption & high risk. of energy poverty
-  Energy intense economy & dependence on manufacturing



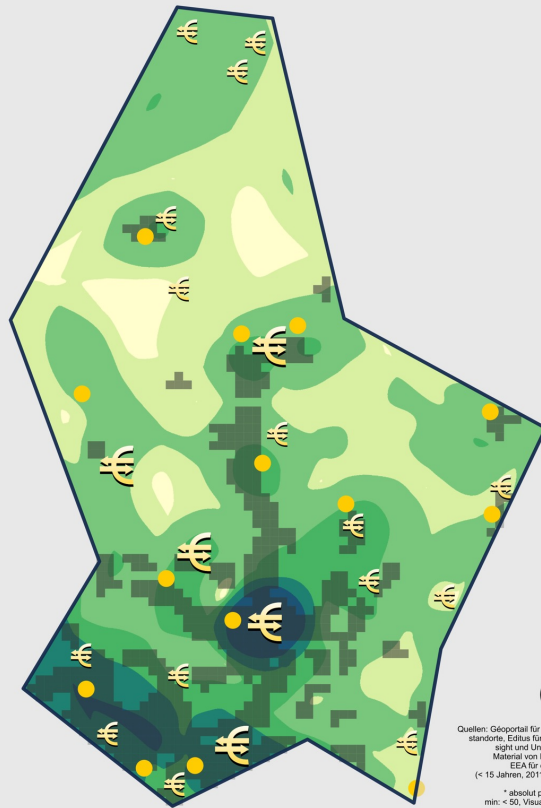
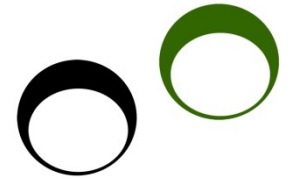
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The territorial dimension of a circular economy

Luxembourg perspective



Luxembourg dimension (2018)



Luxembourg der internationalen Kreislaufwirtschaft
- Prosumenten -

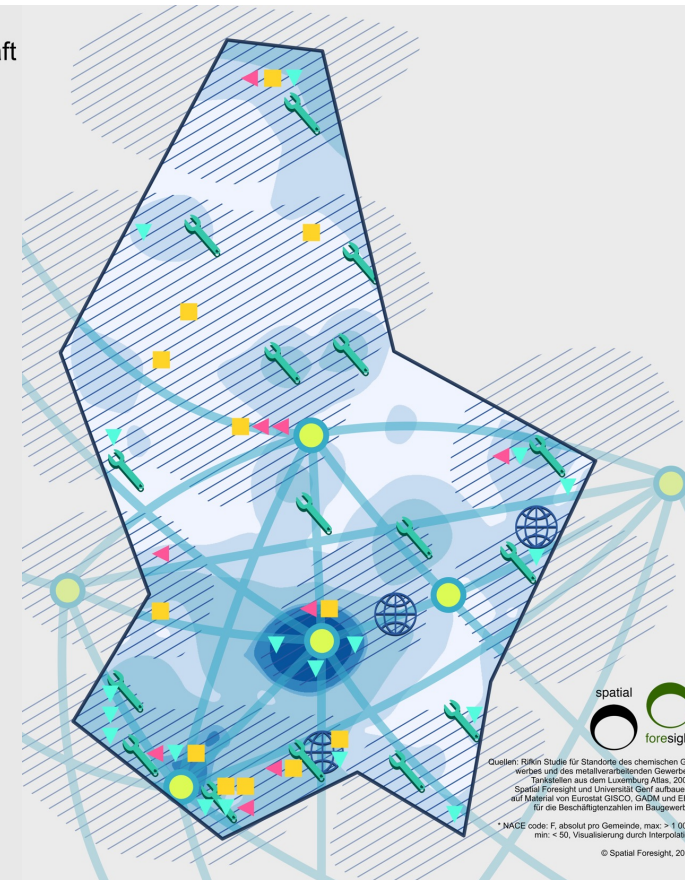
- Hohe Anzahl an jungen Einwohnern *
- Niedrige Anzahl an jungen Einwohnern *
- Schulstandorte Sekundarstufe
- Siedlungsstruktur
- mehr als drei Kooperativen
- weniger als drei Kooperativen



Quellen: Geoportal für Siedlungsstruktur und Schulstandorte, Editus für Kooperativen, Spatial Foresight und Universität Gief aufbauend auf Material von Eurostat GISCO, GADM und EEA für die Anzahl junger Einwohner (< 15 Jahren, 2011), Men.lu für Schulstandorte

* absolut pro Gemeinde, max: > 4 000, min: < 50, Visualisierung durch Interpolation

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Luxembourg der internationalen Kreislaufwirtschaft
- Industrielle Symbiose -

- Hohe Anzahl an Arbeitsplätzen im Baugewerbe *
- Geringe Anzahl an Arbeitsplätzen im Baugewerbe *
- Potentielle Forschungseinrichtungen
- Potentielle Vernetzung der Forschungsstandorte
- Chemisches Gewerbe
- Metallverarbeitendes Gewerbe
- Häufung von Tankstellen
- Potentielle Handwerks- und Reparaturzentren
- Potentielle regionale Gewerbegebiete und Kreisläufe
- Internationale Logistikzentren

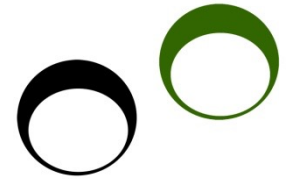


Quellen: Böker Studie für Standorte des chemischen Gewerbes und des metallverarbeitenden Gewerbes, Tonkellerei aus dem Luxembourg Atlas, 2009, Spatial Foresight und Universität Gief aufbauend auf Material von Eurostat GISCO, GADM und EEA für die Beschäftigtenzahlen im Baugewerbe.

* NACE code: F, absolut pro Gemeinde, max: > 1 000, min: < 50, Visualisierung durch Interpolation

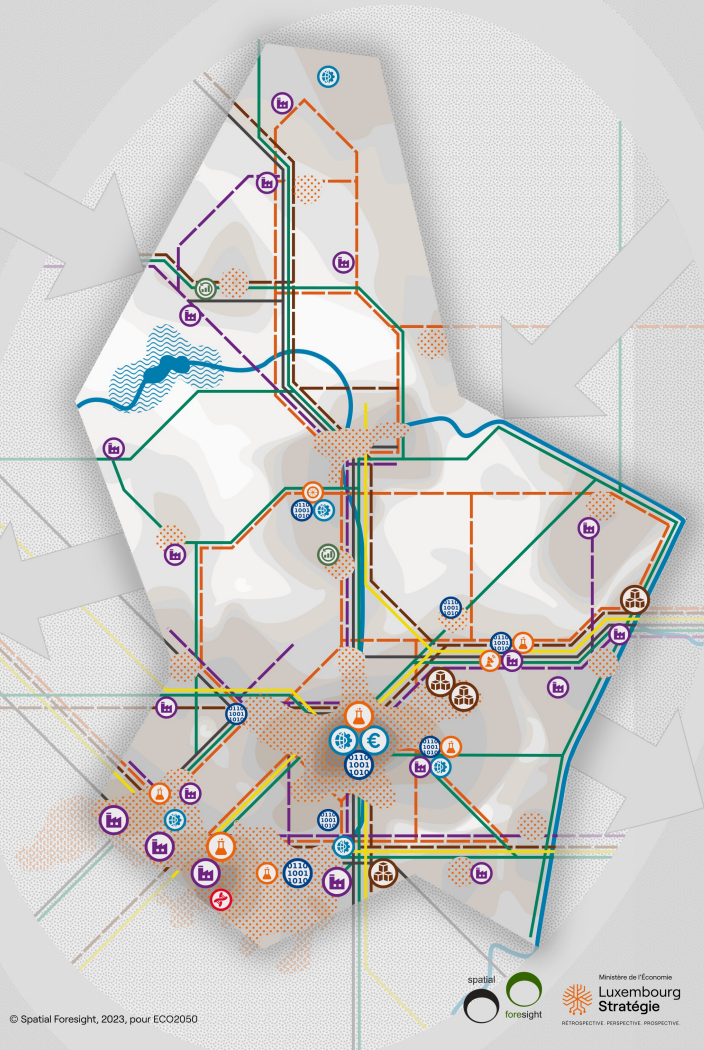
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Luxembourg dimension (2023)



ECO2050

Situation existante des activités économiques 2023



Principaux sites et activités économiques spécialisés et localisés

- Zones d'activités économiques existantes et projetées (PSZAE 2021)
- Cluster de construction durable/bois/artisanat (Wertstoffhaff, Gadderscheier, Esch Handwerkerhaff shared space, ...)
- Zone pilote multifonctionnelle Foetz
- Zone pilote géologique ou topographique (anciennes carrières, mines, bassins pour matériel de construction, entreposage/stockage énergie/eau/matériel etc.)
- Recherche et développement
- Parc audiovisuel et des télécommunications
- High Tech/Clean Tech Parc
- Space Parc
- Automotive Campus
- Entreprise(s) multinationale(s) majeure(s)
- Secteur financier et FinTech
- Infrastructures pour cloud et data
- HE:AL HealthTech Campus (physique et virtuel)
- Hub logistique (ferroviaire, aérien, fluvial, routier)

Principaux réseaux nécessaires à l'économie

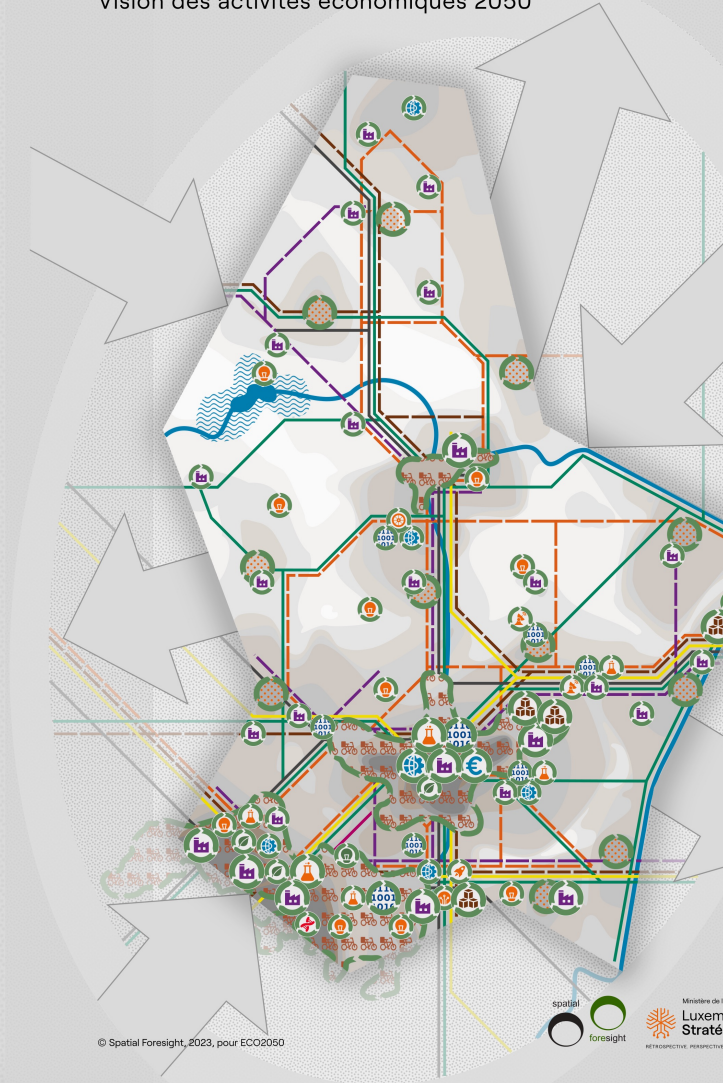
- Chemin de fer
- Autoroutes
- Réseau cyclable (travail/transport)
- Tram rapide
- Réseau de transport de gaz naturel/H₂ vert
- Réseau principal de fibre optique
- Réseau de transport d'électricité
- Coopération transfrontalière (PDAT)

Occupation et utilisation du sol

- Rivière
- Zones de protection sanitaires du barrage
- Lac
- Agglomérations urbaines/cyclo-logistique urbaine
- Centres de développement et d'attraction (CDA)
- Densité d'emplois/km²

ECO2050

Vision des activités économiques 2050



Screenshot



Dr Kai Böhme

Spatial Foresight

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