



Journée de réflexion

Économie circulaire en 2040

Quels impacts en santé et sécurité au travail ?
Quelle prévention ?



*Modified presentation:
Pictures having no copyright
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Workers in a circular economy in 2040, a foresight study

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FORESIGHT UNIT

The INRS foresight unit has conducted studies on different topics since 2013 (physical assistance robots, nanomaterials, future of production, gig economy platforms).

The aim is to provide analyses on the future of work to our board (social partners), focusing on health and safety issues.

Summaries of the reports are available in English on our website:


<http://en.inrs.fr/>

FORESIGHT STUDY

 **To have a vision of the main changes possibly occurring in a specific field and their impacts on OSH**

- Methodology:

- ❖ Establishment of a pluridisciplinary team
- ❖ Selection of the different variables which are likely to influence the development of the subject
- ❖ Construction of various scenarios by combining the different hypotheses of evolution of the different variables.
- ❖ The last step will consist in translating these scenarios into consequences for occupational safety and health.

 **In foresight studies, we do not claim to describe the future and the way things will happen. We highlight the indicators to be monitored.**

Circular economy

Linear economic model:

- Extraction, production, consumption, waste

Methodology

- Puridisciplinary working group with experts from INRS & other bodies (private firms, national agencies, social partners...)
- Investigation of 16 drivers: ex: mineral resources, digitalisation, consumer behaviour...
- Construction of 4 scenarios
- Workshops on the consequences of these 4 scenarios on occupational health and safety issues

Scenarios (overview)

1. Circular economy driven by globalisation,
 - Big companies organize a global circular economy through technological innovations that uncouple economic growth and resources consumption.
2. European political voluntarism to develop circular economy,
 - To counteract the growing instability around the world, Northern Europe and few other countries develop a circular economy. Specific arrangements are adopted at European, national and local levels.
3. Linear globalization acting against circular economy,
 - The priority of the dominant actors remains the linear model. Over the years it conducts to new crises. Some players promote actions to limit the consumption of resources and energy.
4. Circular economy managed locally,
 - Political inaction conduct citizens to build local self-government circular models, short circuits, frugality... The situation is conflictual.

OSH issues and opportunities

- Identification of the main drivers through the different scenarios.
- 5 Key items for health and safety: for each of them potential positive and negative incidences.
 1. A new way to design products and services
 2. Maintenance
 3. Materials
 4. Circular logistic
 5. Traceability

A new way to design products and services

- Circular economy means re-thinking products but also production organization. All the functions of companies will be affected.
 - It's a huge opportunity to integrate health and safety in operation,
 - It also means a conversion for all the trades,
 - > Can generate psychosocial risks
 - > Need specific training programs to adapt the skills
- Example: the goal of the marketing staff will not be to sell more products but to explain why a product is more eco-responsible

Maintenance

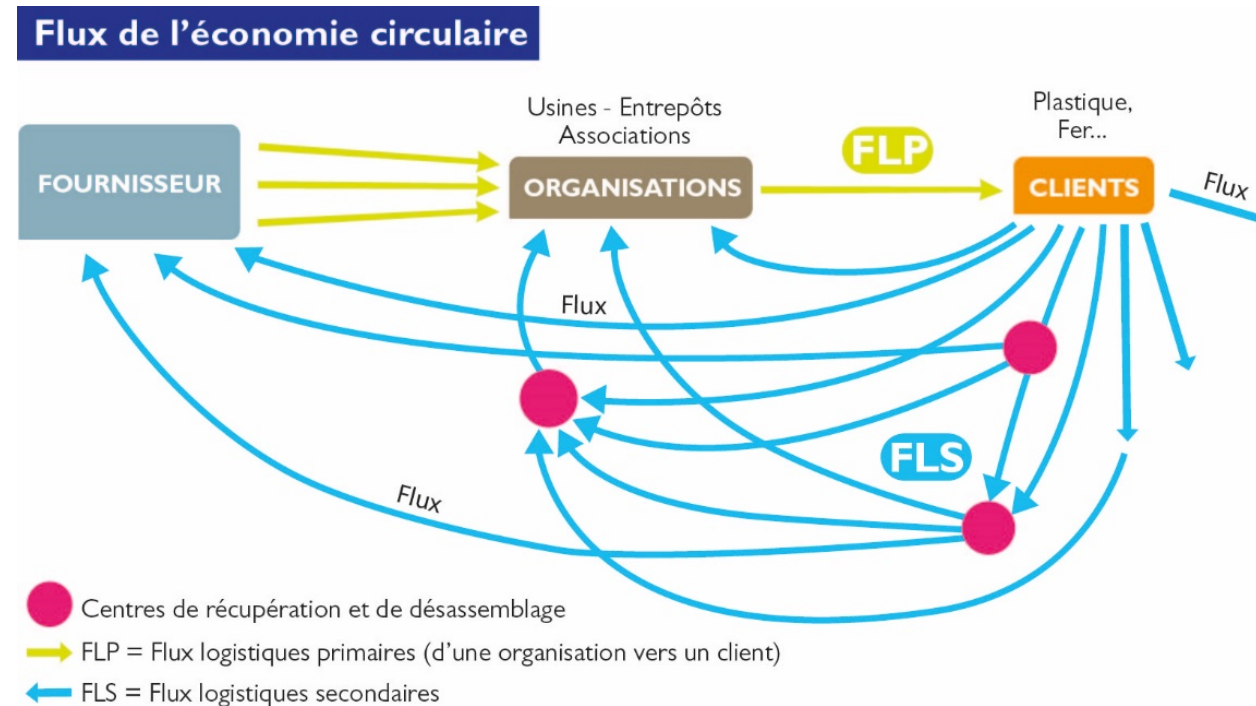
- Functionality means that companies sell more of a service rather than a product.
 - Equipment must be designed to be more repairable
- More reparability also means networks of micro-enterprises doing this job in the field :
 - Do those MSEs have the resources to tackle the risks?
 - What dialogue between the goods manufacturers and those MSEs?
- A standardization topic

Materials

- Circular economy means new materials:
 - New materials with specific properties: to reduce the environmental impact, to increase the useful life or to facilitate re-use and recycling,
 - Materials from recycling process (secondary raw materials):
 - > Matter of the physical and chemical properties of those materials
- What level of information enterprises to protect the workers who deal with those materials?
 - Heterogeneity of the sources of waste material
- A standardization topic

Circular logistic

- Circular economy means a multiplication of the logistic flows



- Circular economy could lead to increased mobility of goods
- A need to review management of logistics
- A solution: Physical Internet? => typical standardization topic

Traceability

- Circular economy means that a company's waste becomes another company's raw material,
 - Need for perfect traceability to ensure workers' health and safety,
 - A field for innovation (information embedded in the products...),
- Maybe the main standardization topic!



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Thank you for your attention



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