Product Environmental Footprint and some resource related activities

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Agenda

- Introduction – Joint Research Centre (JRC) and it's role
- Product Environmental Footprint (PEF)
- PEF Category Rules (PEFCR) development
- Related activities
- Summary

Who are we and what do we do?

The JRC is the European Commission's in-house science service. It provides the science for policy decisions, with a view to ensuring that the EU achieves its Europe 2020 goals for a productive economy as well as a safe, secure and sustainable future.

The JRC plays a key role in the European Research Area and reinforces its multidisciplinarity by networking extensively with leading scientific organisations in the Member States, Associated Countries and worldwide.

The JRC inside the European Commission

President
José Manuel Barroso

27 Commission Members

Commissioner
Mairé Geoghegan-Quinn
Research, Innovation & Science

Director-General
Dominique Ristori
Joint Research Centre

DG Research & Innovation (RTD)

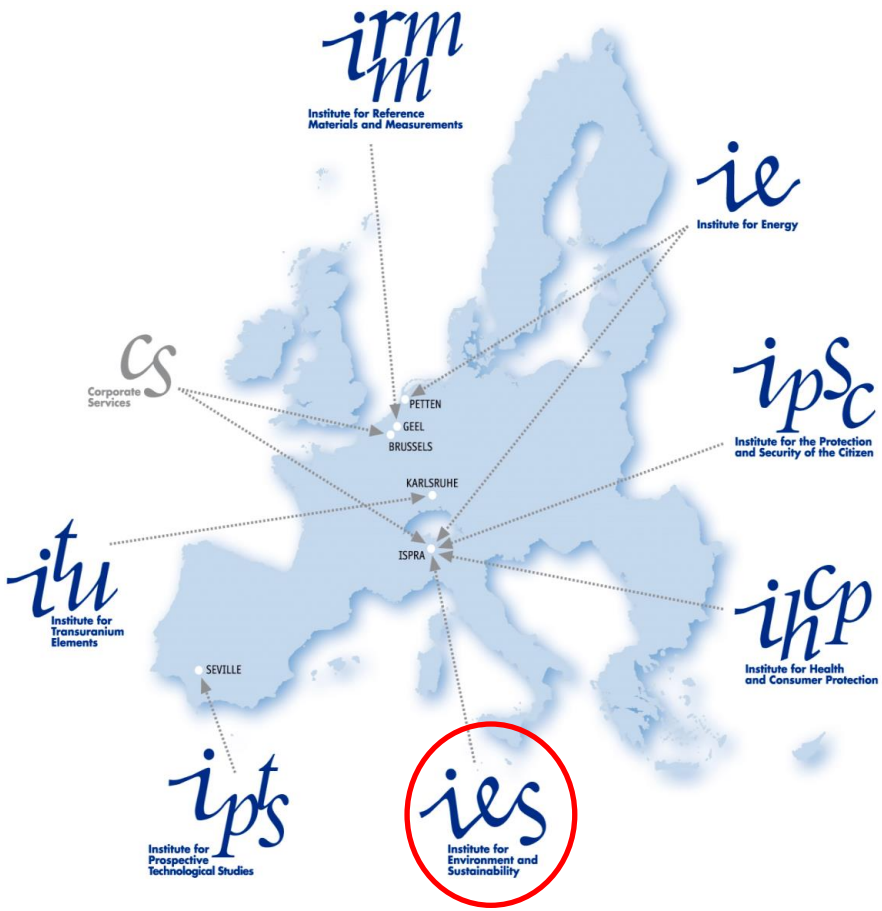
The JRC inside the European Commission

European Commission,

Joint Research Centre (JRC),

Institute for Environment and Sustainability (IES)

"The mission of the IES is to provide scientific-technical support to the European Union's policies for the protection and sustainable development of the European and global environment"



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EC Environmental Footprint as a common method to calculate the life cycle environmental impact of products and organisations

✓ **Sustainable Consumption and Production Action Plan, 2008:**
"To implement this policy, consistent and reliable data and methods are required to asses the overall environmental performance of products …" ;

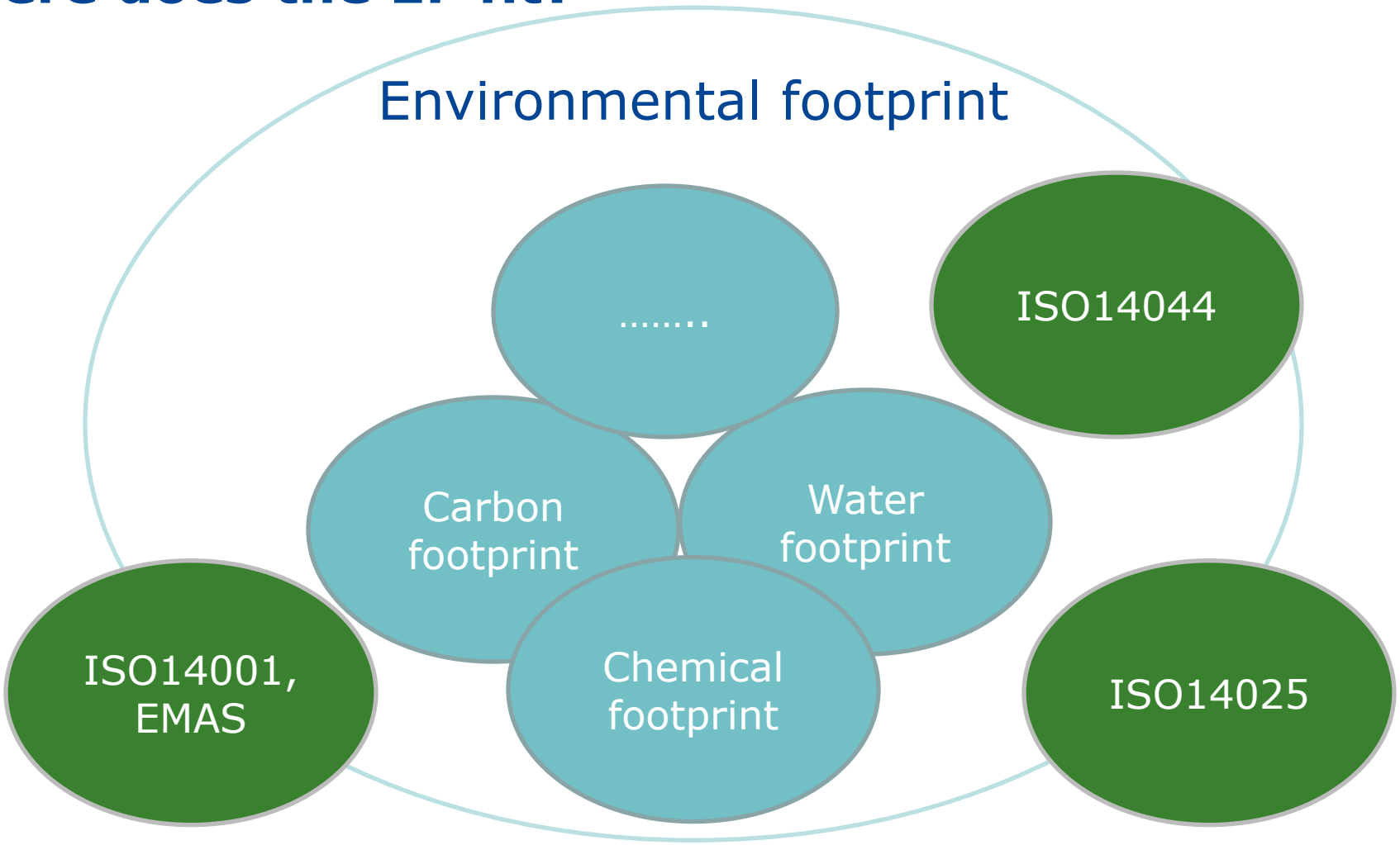
✓ **The Resource Efficiency Roadmap, 2011:**
Establish a common methodological approach to enable Member States and the private sector to assess, display and benchmark the environmental performance of products, services and companies based on a comprehensive assessment of environmental impacts over the life-cycle ('environmental footprint')

✓ **Building the Single Market for Green Products, 2013:**
Commission COM(2013) 196 final and Recommendation (2013/179/EU) **related to** the Product Environmental Footprint and Organisation Environmental Footprint to "improve the availability of clear, reliable and comparable information on the environmental performance of products and organisations to all relevant stakeholders, including to players along the entire supply chain."

Objectives

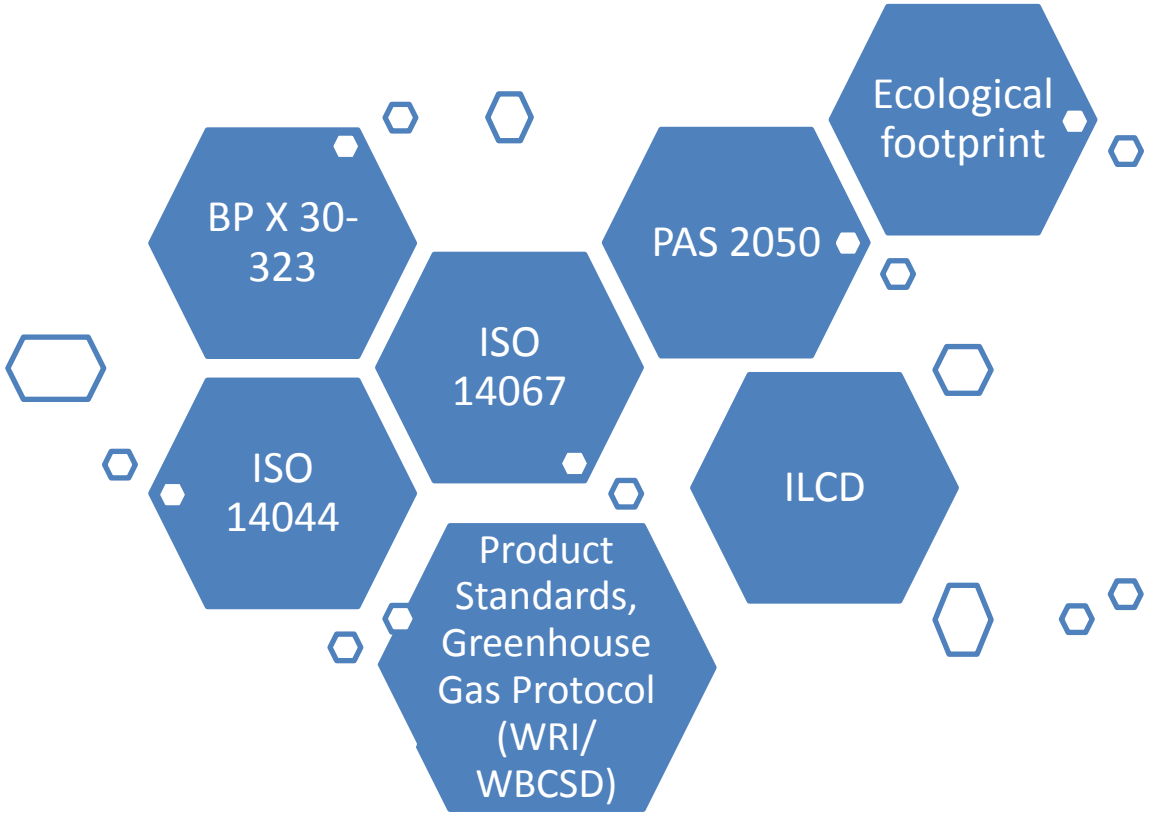
- Provide comprehensive evaluation along the entire life cycle (upstream and downstream)
- Provide comprehensive coverage of potential environmental impacts (no 'single issue' method)
- Ensure comparability
- Quality (coherence and quality assurance)
- Build on existing methods
- Be applicable without having to consult a series of other documents

Where does the EF fit?



How was the PEF Guide Developed?

Environmental assessment documents analysed:



Analysis of existing environmental assessment methods:

Several guides/methods for the environmental assessment exist, but

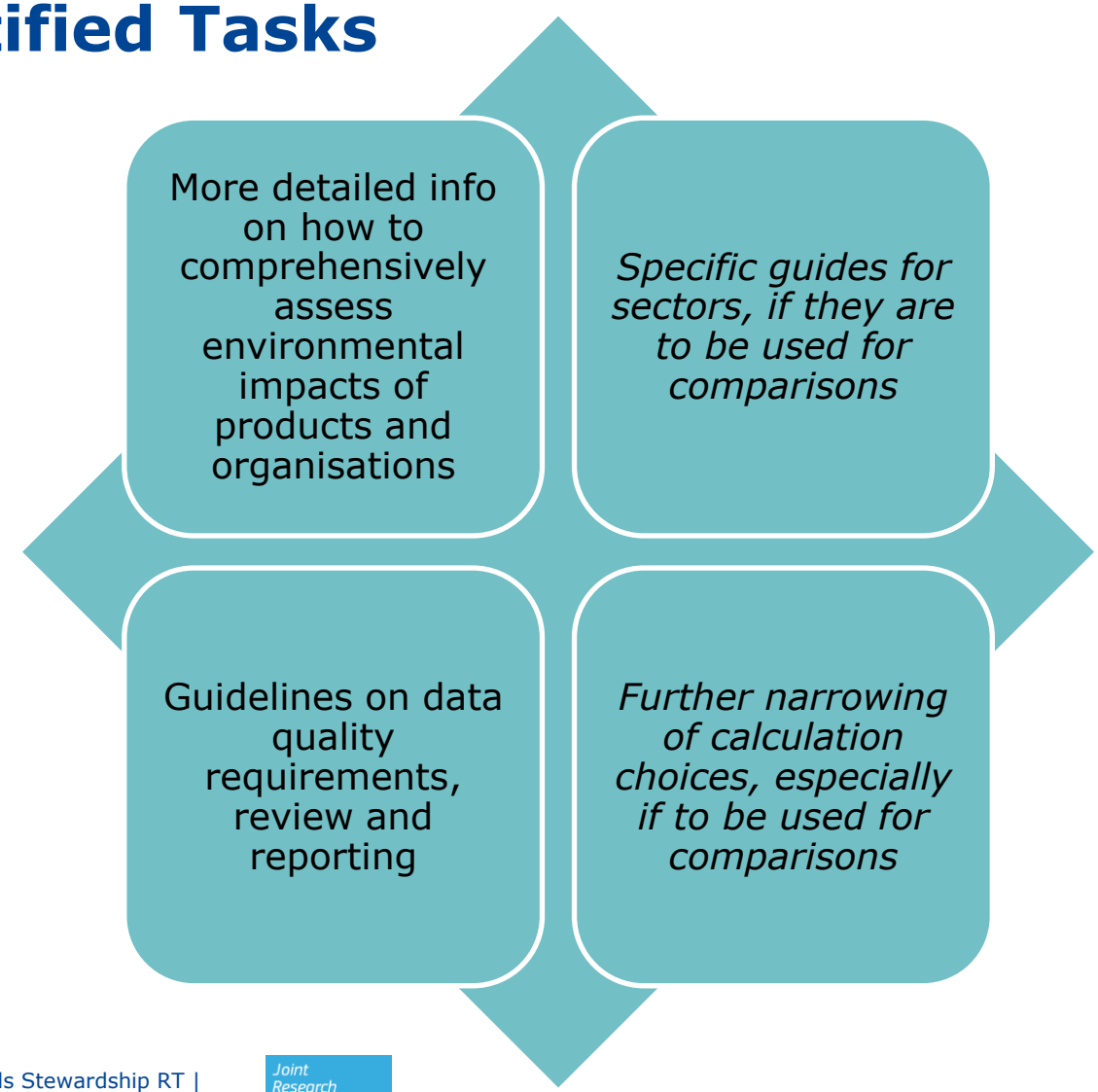
What is needed:

Not sufficient to serve as a recommended harmonised method for Europe

Have many strengths

Analysis: Identified Tasks

What is needed:



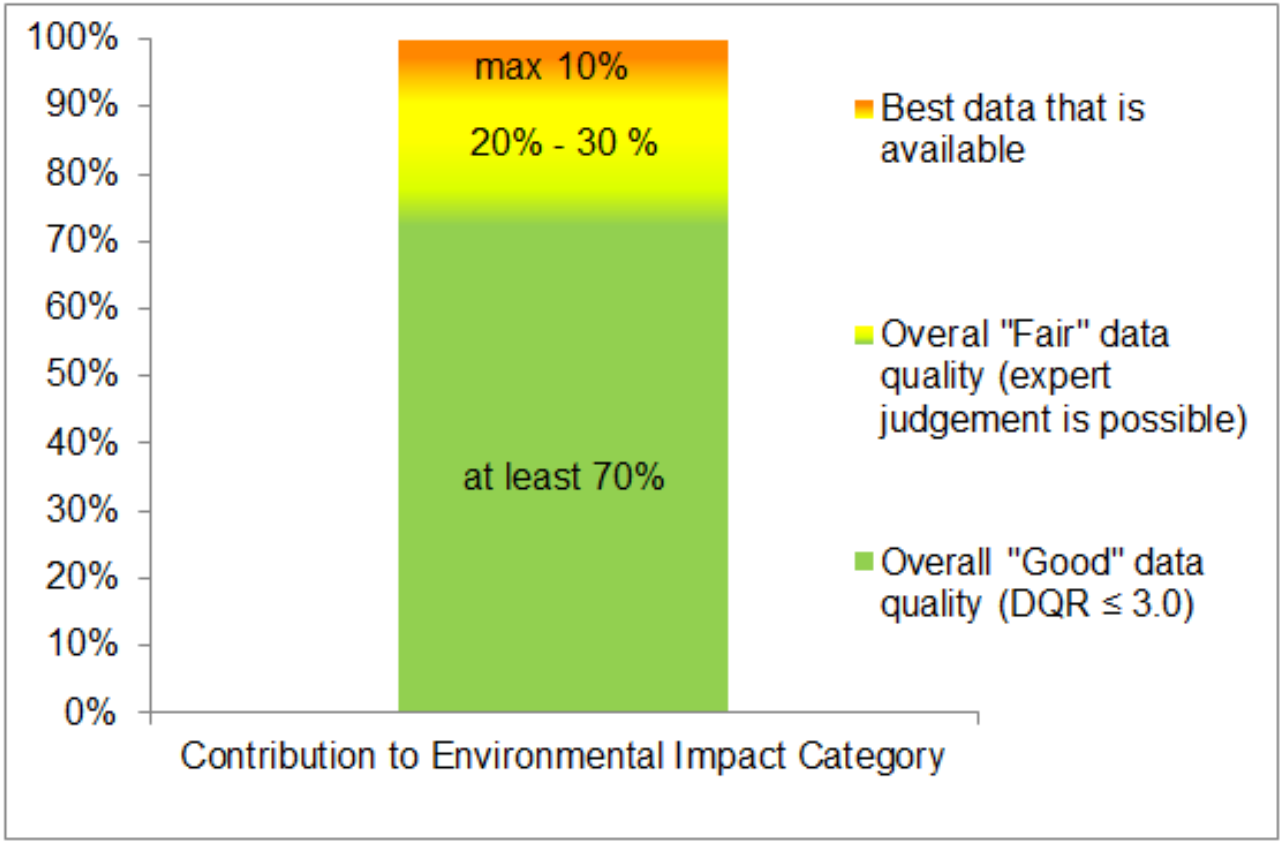
EC PEF method: LCA based method with

- **FULL SCOPE**
  - all products
  - all life cycle stages
  - comprehensive list of environmental impact categories

- **HIGH LEVEL OF TECHNICAL DETAIL - AND PRESCRIPTIVENESS**

  essential to obtain more consistent and comparable results
  - nomenclature
  - data quality
  - Allocation (co-products and EoL)
  - cut-off
  - impact assessment
  - biogenic carbon removals and emissions
  - temporary carbon storage
  - ...

Strict data quality requirements



Environmental footprint impact assessment

carbon footprint™

From Carbon Footprint to Environmental Footprint

EF impact categories (14+)
Climate change
Ozone depletion
Ecotoxicity - aquatic, fresh water
Human toxicity – cancer effects
Human toxicity - non-cancer effects
Particulate Matter / Respiratory inorganics
Ionising Radiation – human health effects
Photochemical Ozone Formation
Acidification
Eutrophication - terrestrial
Eutrophication - aquatic
Resource depletion - water
Resource depletion – mineral, fossil and renewable
Land use
…

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The EC PEF/OEF method and PEFCRs / OEFSRs

Increasing

- reproducibility
- comparability
- consistency

By providing

- technical detail
- choices that limit variability
- clear guidance

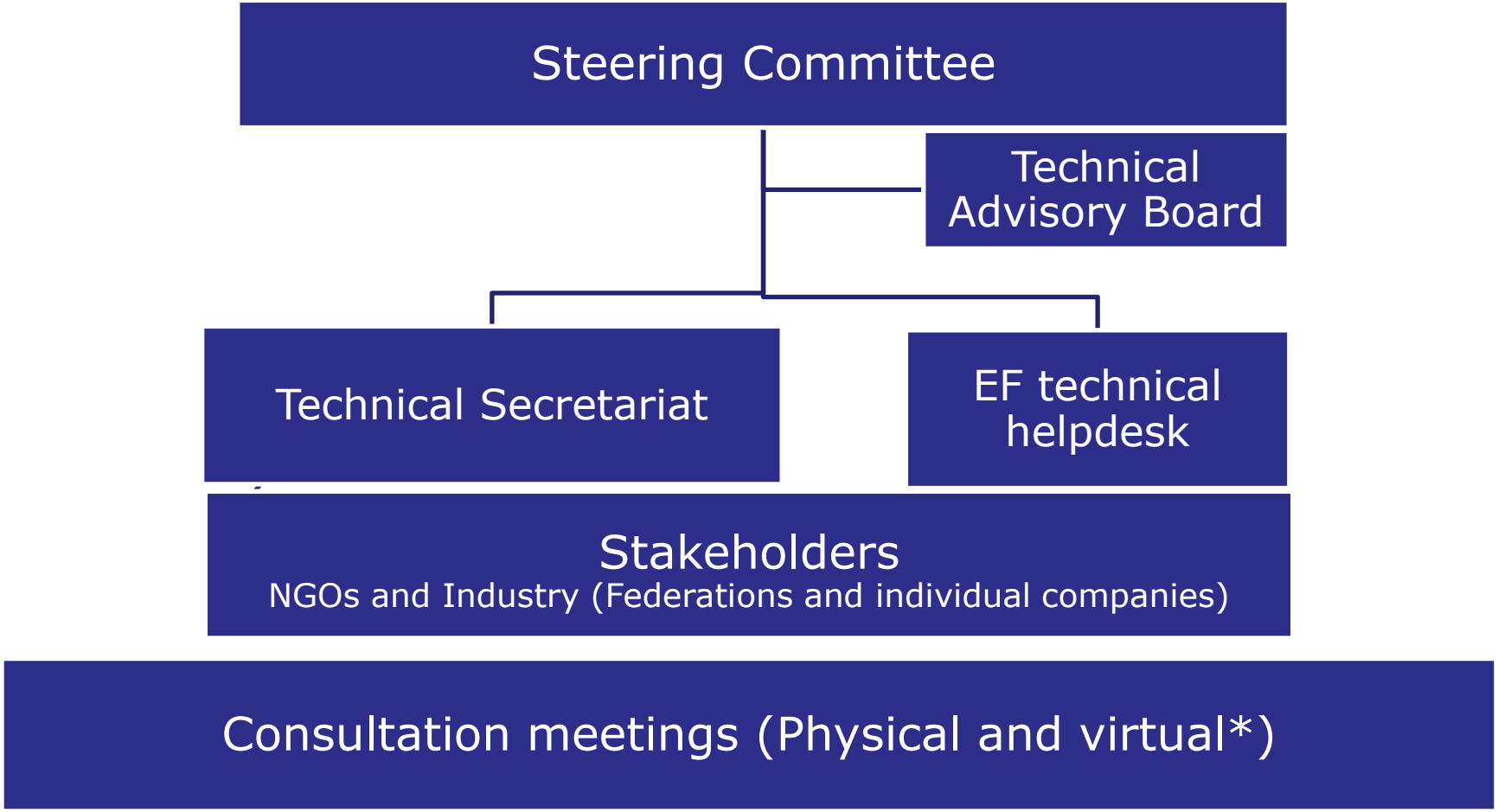
ILCD: International Reference Life Cycle Data System

PEFCR: PEF Category Rules
OEFSR: OEF Sector Rules

… which is realized through
(non exhaustive list)

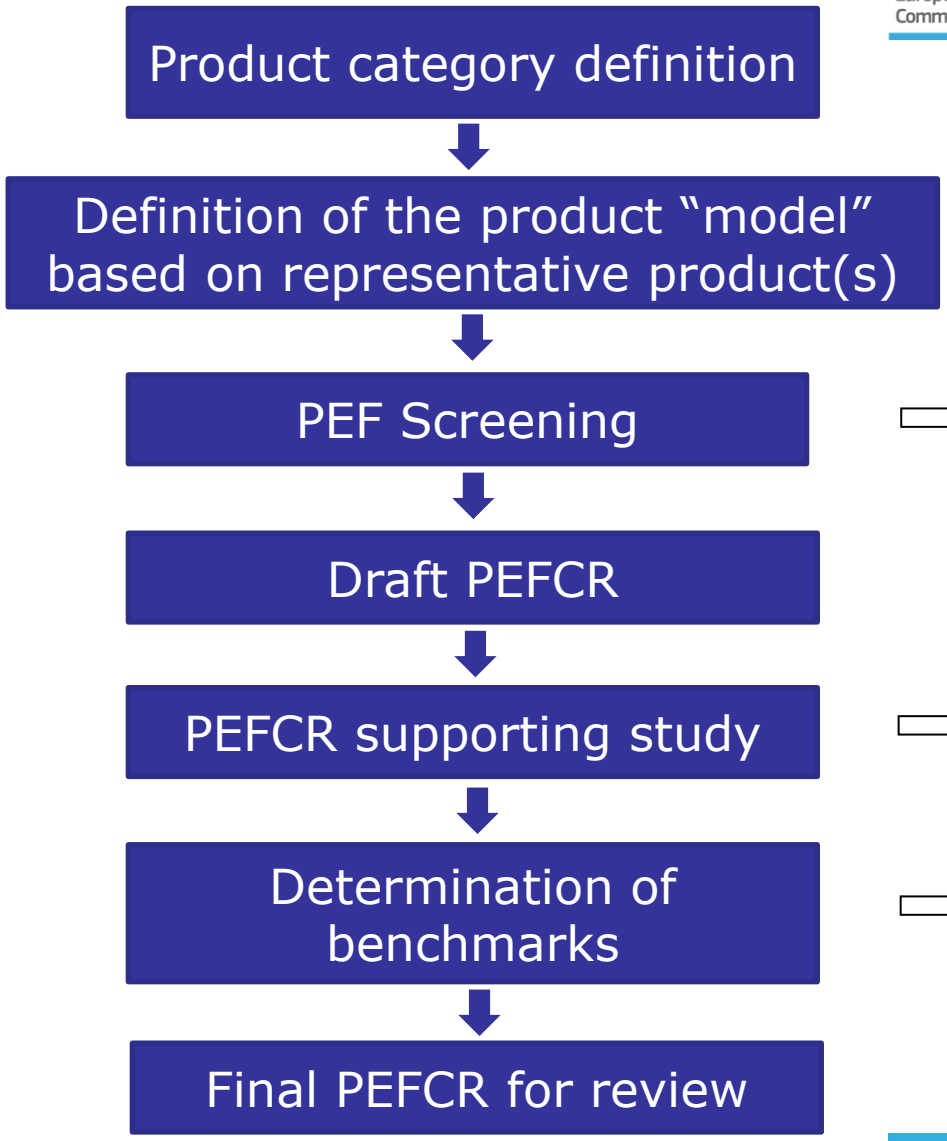
- Directing the focus on the most important parameters
  - Processes/activities to be included (system boundary)
  - Impact categories and other environmental information
  - Downstream scenarios (use, transport, distribution, storage, end of life)
- Further specifying data and data quality requirements
  - for which processes specific data shall be collected or use of generic data
  - the requirements for collection of specific data

Multiple stakeholders involved in a structured open process



*EF virtual consultation Forum: https://webgate.ec.europa.eu/fpfis/wikis

Process



Helps identify:
- Most relevant life cycle stages
- Most relevant processes

Identification of the most relevant environmental impacts

At this stage classes of performance are identified (if relevant and appropriate)

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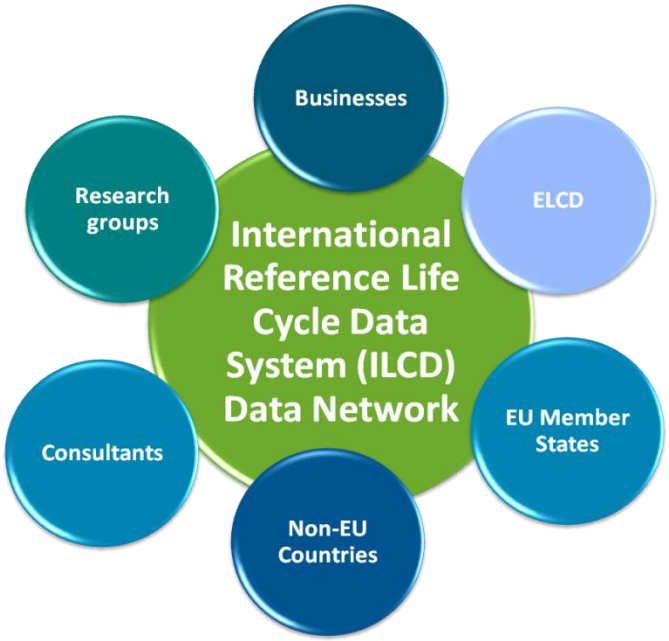
European Reference Life Cycle Database (ELCD)

Content	• 350 data sets , 150 core goods and services, EU market
Scope	• Core materials, energy , transport, end-of-life services
Provider	

ELCD 3.0 launched January 2013:

- 329 datasets
- 26 datasets on Metals and mineralic materials:
  - Aluminium
  - Steel
  - Copper
  - Minerals
- 38 ILCD entry-level compliant datasets (review reports available)
- ILCD recommended LCIA methods (characterization factors)
- New IT infrastructure

ILCD DN: a web-based infrastructure for better availability of quality-assured LCA data

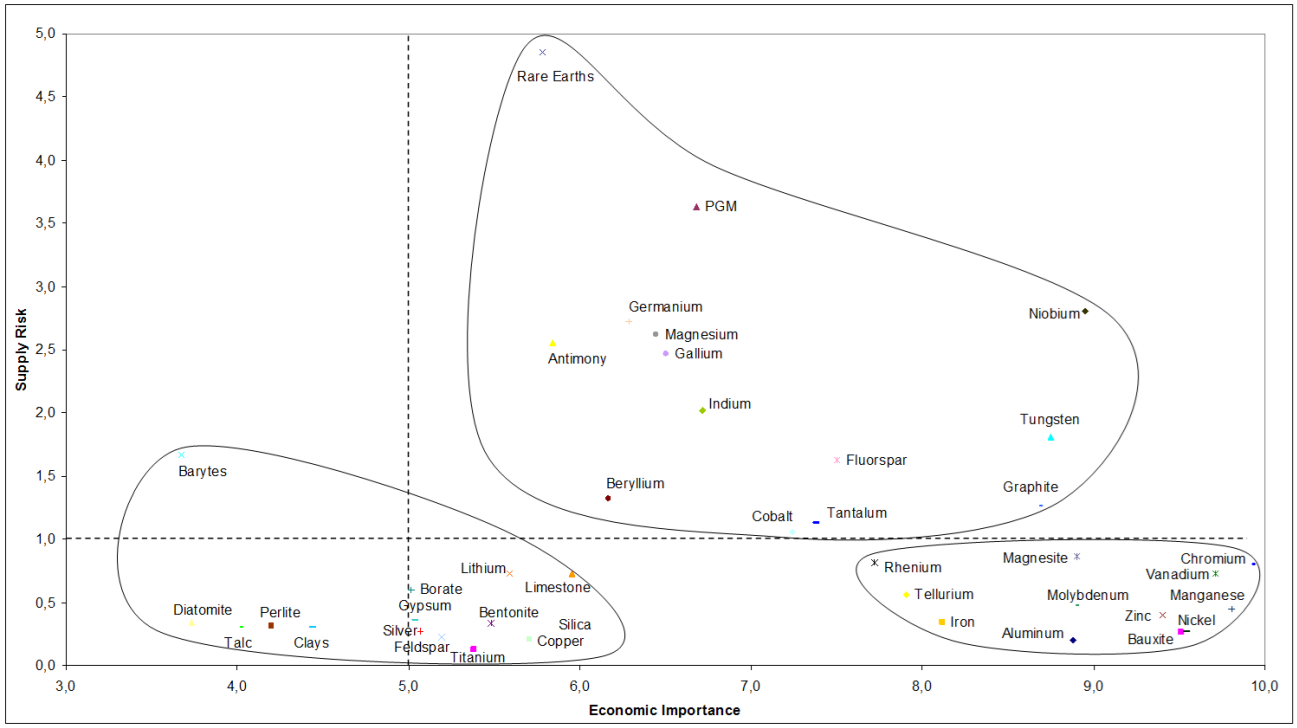


- **Open for all data providers:**
  - **International organization *(International databases)***
  - **States *(National Databases)***
  - **Industry Associations *(Sectorial Databases)***
  - **Business (*Commercial Databases)***
  - ***SMEs (few datasets on commercial product/process)***
  - **Academics *(few datasets on innovative process)***
  - ***…***
- **Non-centralised: data kept and published on website of individual owner/developer (under own conditions)**
- **Emphasis on quality of datasets : quality requirements should be complied with**
- **Ready to be launched soon with initial partners.**

Natural resources and Critical Raw Materials (CRM)

Critical Raw Materials at EU level defined by two variables:

- **Economic importance**
- **Supply risk**
  - ***Concentration of supply***
  - ***Governance***
  - ***Recycling rate***
  - ***substitutability***

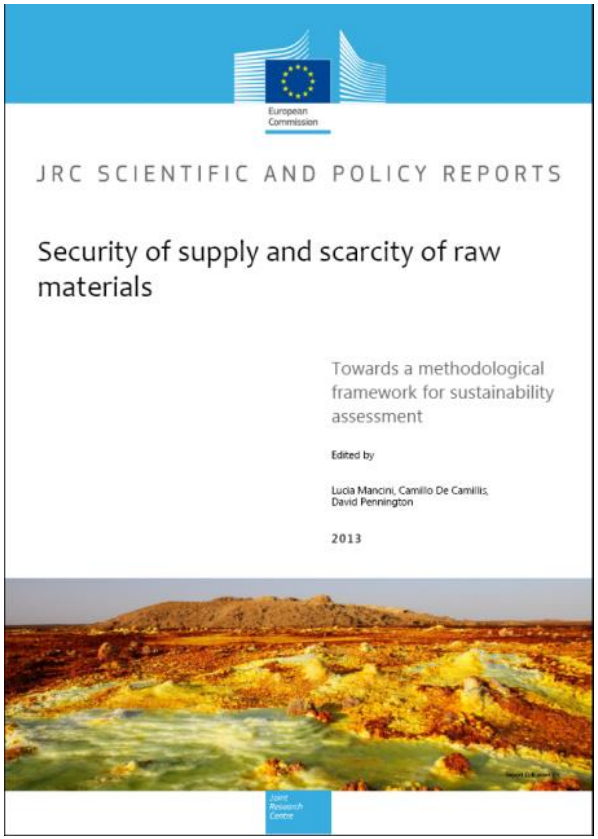


Source: EC - European Commission. 2010. Critical Raw Materials for the EU. Report of the Ad-Hoc Working Group on Defining Critical Raw Materials. edited by EC. Brussels. http://ec.europa.eu/enterprise/policies/raw-materials/files/docs/report-b_en.pdf

Natural resources and Critical Raw Materials (CRM)

JRC Workshop on Security of Supply and Scarcity of Raw Materials and links to Sustainability Assessment and LCA:

1. Life Cycle Assessment for the management of CRMs:
   I. LC inventories allow detecting the use of CRMs in supply chains
   II. need to further investigate how to combine /integrate supply risk in the assessment of resources
2. Methodological framework for the impact assessment of natural resources



Available at:
http://lct.jrc.ec.europa.eu/assessment/assessment/assessment/ResourceSecurity-SecuritySupply

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Take home messages

- Product and Organisation EF are recommended methods by the EC
- ~3 year pilot phase starting October 2013 to develop product group and sector specific guidance documents
- Objectives: more relevance, more consistency, more comparability, easier application
- Companies and trade associations active are invited to openly and constructively participate in the European pilot phase, possibility to lead pilots
- This European pilot phase would be an excellent chance to work collaboratively so that, at the end of it, PEF and OEF could be modified to take into account the lessons learned from the pilot phase

Thank you for your attention! Questions?

Further links and contact:

Joint Research Centre (JRC):
http://ec.europa.eu/dgs/jrc/index.cfm

Institute for Environment and Sustainability (IES):
http://ies.jrc.ec.europa.eu/

Sustainability Unit (H08):
http://ies.jrc.ec.europa.eu/the-institute/units/sustainability-assessment-unit.html

LCA/LCT website:
http://lct.jrc.ec.europa.eu/

Environmental Footprint guides:
http://ec.europa.eu/environment/eussd/product_footprint.htm

Email: LCA@jrc.ec.europa.eu

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