European Hydrogen Week

//EU HYDROGEN RESEARCH DAYS

15-16 NOVEMBER

Clean Hydrogen Partnership

Co-funded by the European Union

//EU HYDROGEN RESEARCH DAYS 15-16 NOVEMBER

eGHOST
Establishing Eco-design Guidelines for Hydrogen Systems and Technologies

Javier Dufour

IMDEA Energy

eGHOST

https://eghost.eu/

javier.dufour@imdea.org

Clean Hydrogen Partnership

European Hydrogen Week

Co-funded by the European Union

//EU HYDROGEN RESEARCH DAYS 15-16 NOVEMBER

Project Overview

- Call year: 2020
- Call topic: FCH-04-3-2020 — Development of eco-design guidelines for FCH products
- Project dates: 1st Jan 2021 — 31st May 2024
- % stage of implementation 01/11/2023: 85 %
- Total project budget: 1,133,541.25 €
- Clean Hydrogen Partnership max. contribution: 998,991.25 €
- Other financial contribution: 134,550.00 €
- Partners: CEA, UL, FHa, SYMBIO France, IAE, IME

Clean Hydrogen Partnership

European Hydrogen Week

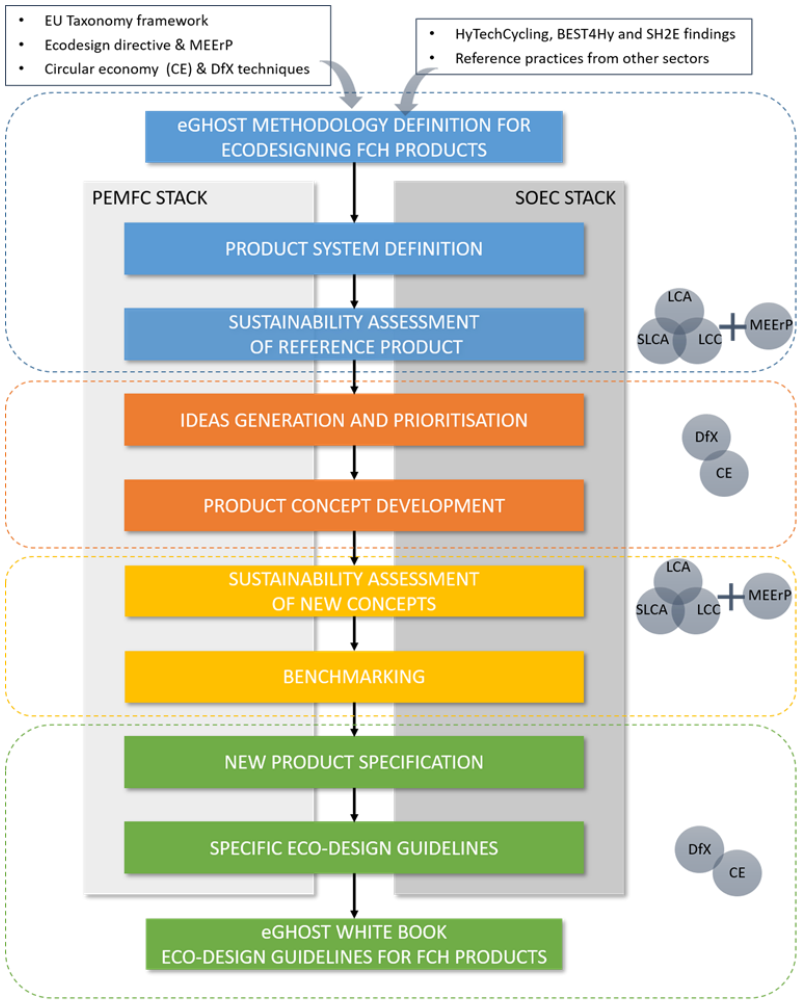
Co-funded by the European Union

//EU HYDROGEN RESEARCH DAYS 15-16 NOVEMBER

Project Summary

- First milestone in the eco-design of FCH products.
- To provide robust eco-design guidelines for FCH products at different levels of development.
- Towards sustainable-by-design FCH products.
- Specific guidelines for two different products: PEMFC stack and SOE stack.

https://www.youtube.com/watch?v=3AmJgzlHVk0



Clean Hydrogen Partnership

European Hydrogen Week

Co-funded by the European Union

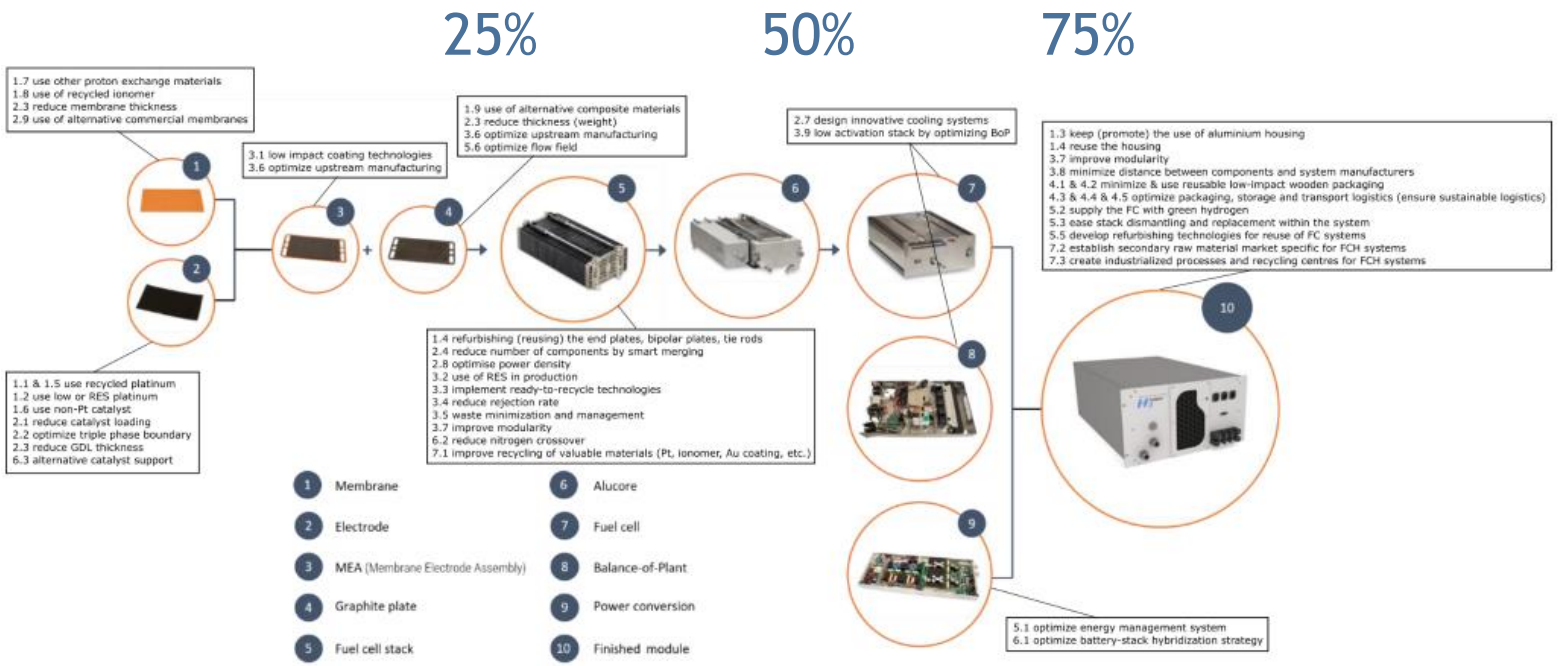
//EU HYDROGEN RESEARCH DAYS 15-16 NOVEMBER

Guidelines for SbD PEMFC stacks

Achievement to-date

0 docs → 1 doc

- Base case
- Product concepts:
  - **Realistic** product concept
  - **Optimistic** product concept
  - **Disruptive** product concept



Clean Hydrogen Partnership

European Hydrogen Week

Co-funded by the European Union

Guidelines for SbD SOE stacks

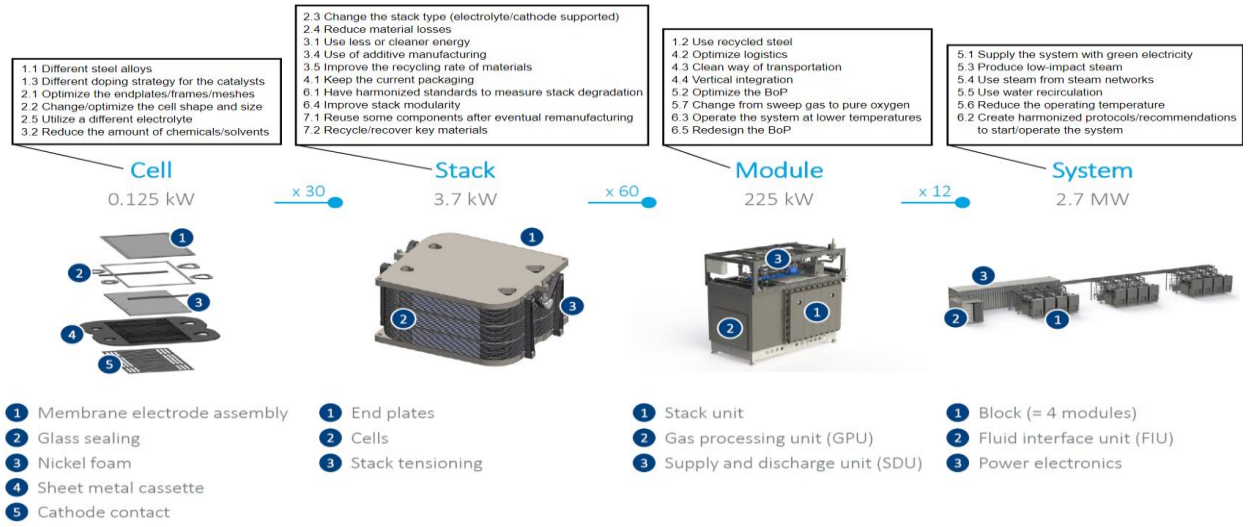
Achievement to-date

0 docs

25% 50% 75%

1 doc

- Base case
- Realistic product concept
- Optimistic product concept



Guidelines for SbD SOE stacks

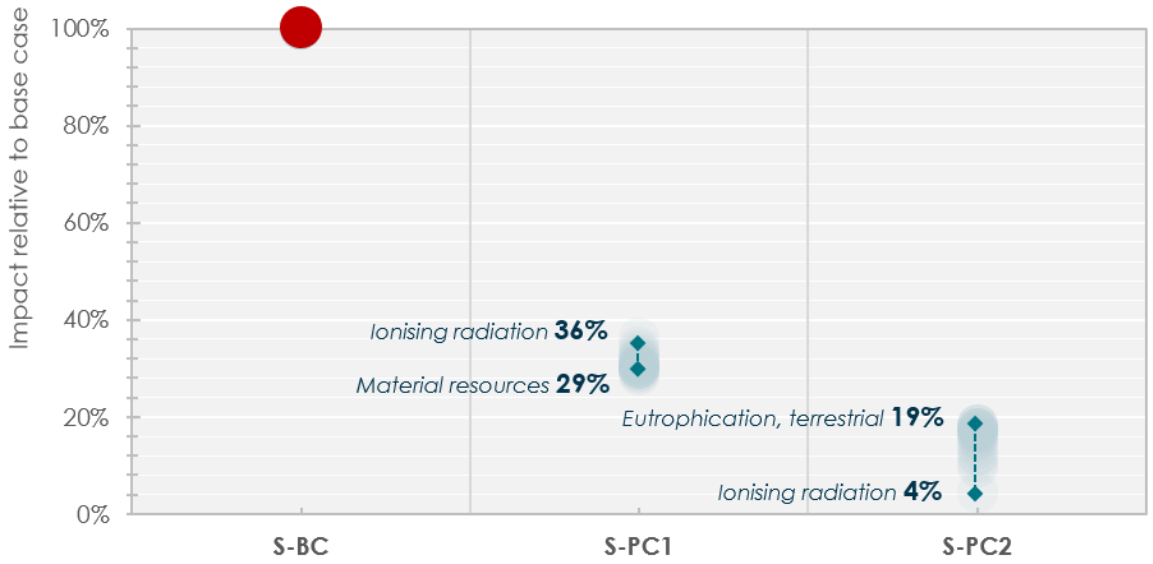
Achievement to-date

0 docs

1 doc

25% 50% 75%

- Base case
- Realistic product concept
- Optimistic product concept



Guidelines for SbD SOE stacks

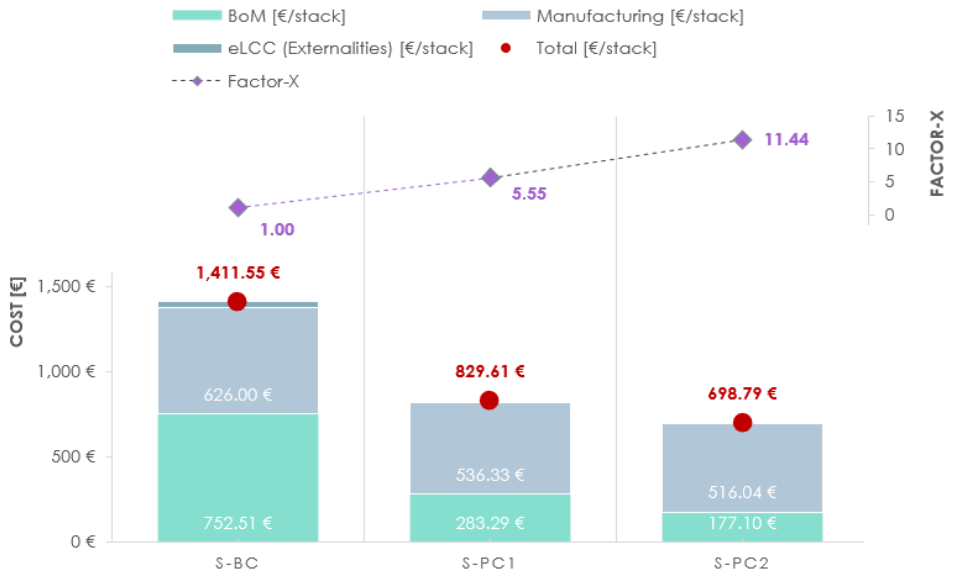
Achievement to-date

0 docs

1 doc

25% 50% 75%

- Base case
- Realistic product concept
- Optimistic product concept



Co-funded by the European Union

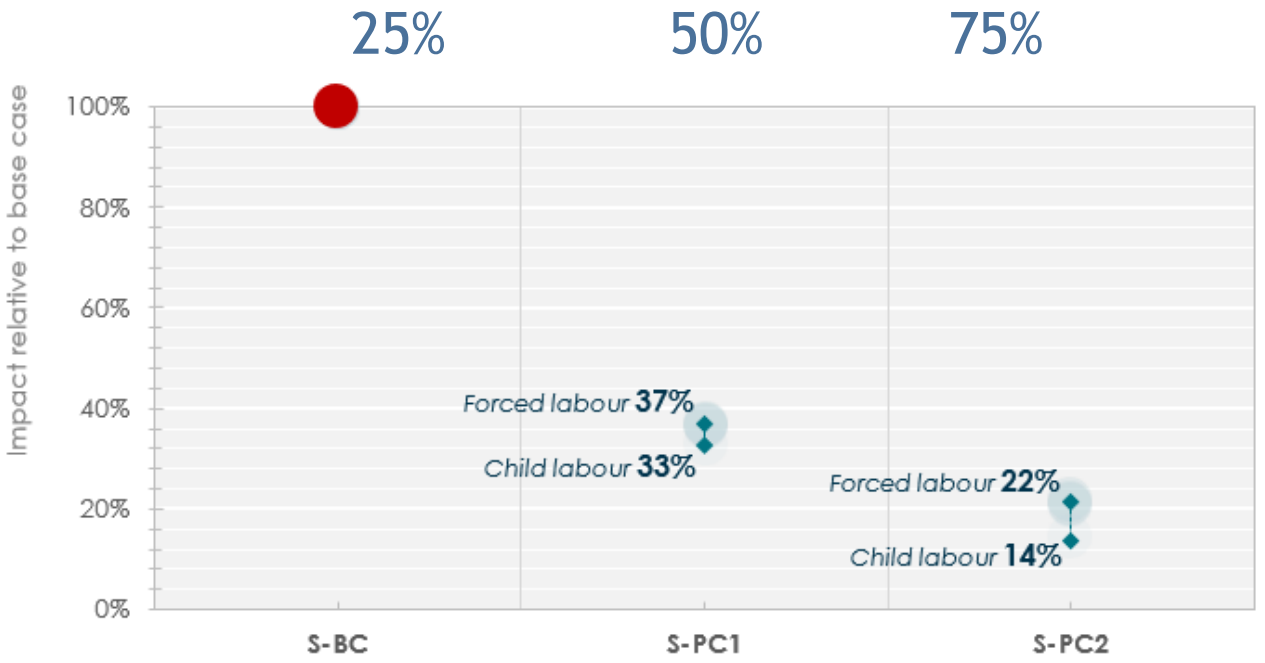
//EU HYDROGEN RESEARCH DAYS 15-16 NOVEMBER

Guidelines for SbD SOE stacks

Achievement to-date

0 docs → 1 doc

- Base case
- Realistic product concept
- Optimistic product concept



Clean Hydrogen Partnership

European Hydrogen Week

Co-funded by the European Union

Ecodesign Directive context

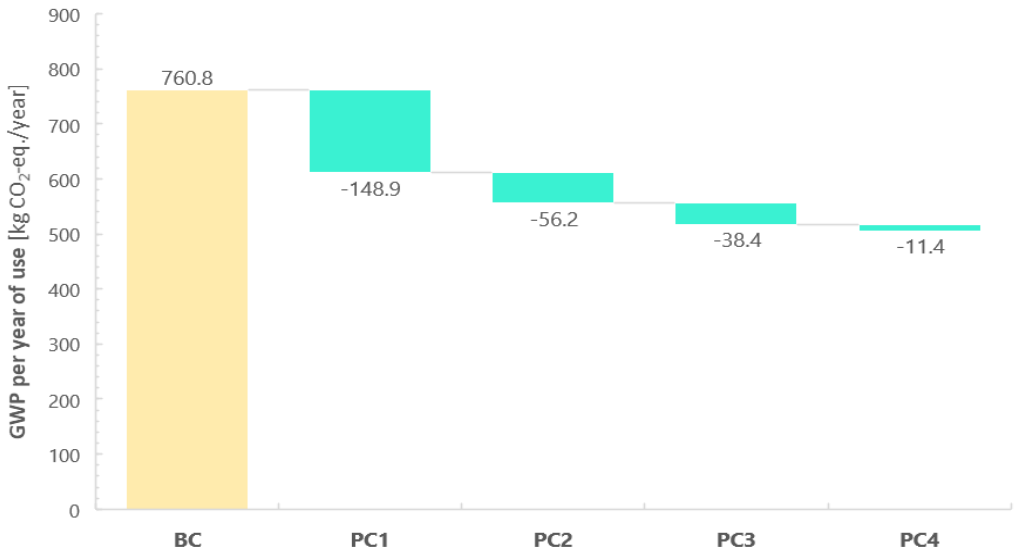
Achievement to-date

0 docs

1 doc

25% 50% 75%

- Reference documentation for a preparatory study according to the Ecodesign Directive
- PEMFC stack case study



Co-funded by the European Union

Ecodesign Directive context

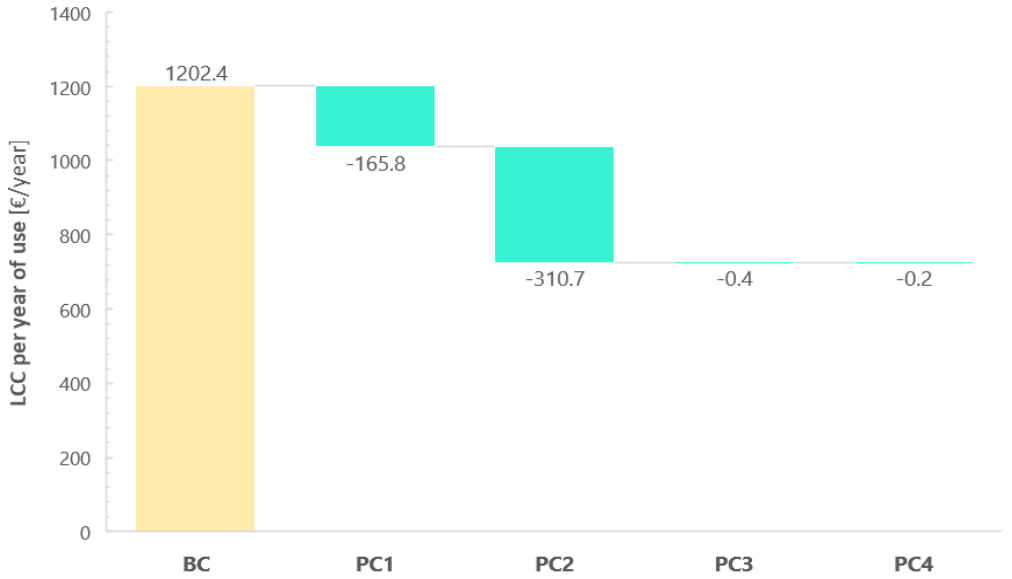
Achievement to-date

0 docs

1 doc

25% 50% 75%

- Reference documentation for a preparatory study according to the Ecodesign Directive
- PEMFC stack case study



Ecodesign Directive context

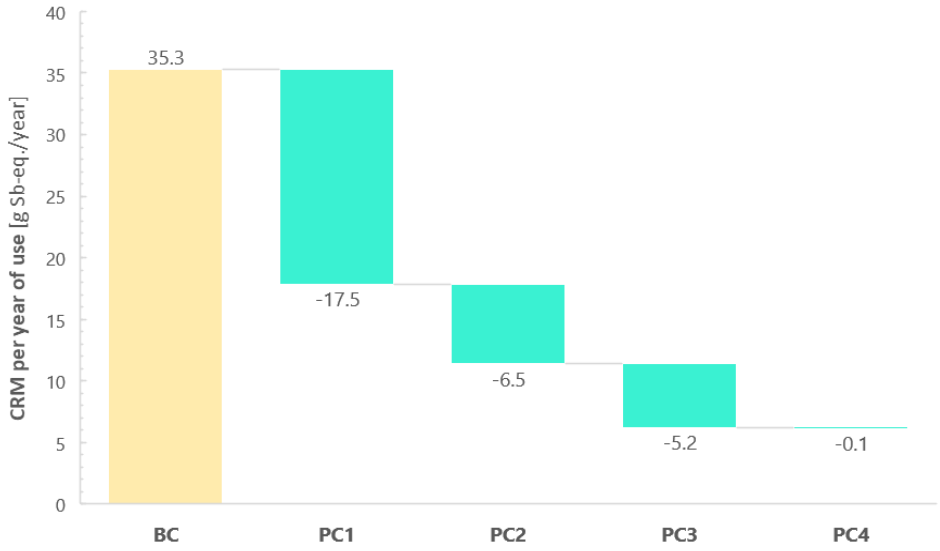
Achievement to-date

0 docs

1 doc

25% 50% 75%

- Reference documentation for a preparatory study according to the Ecodesign Directive
- PEMFC stack case study



Ecodesign Directive context

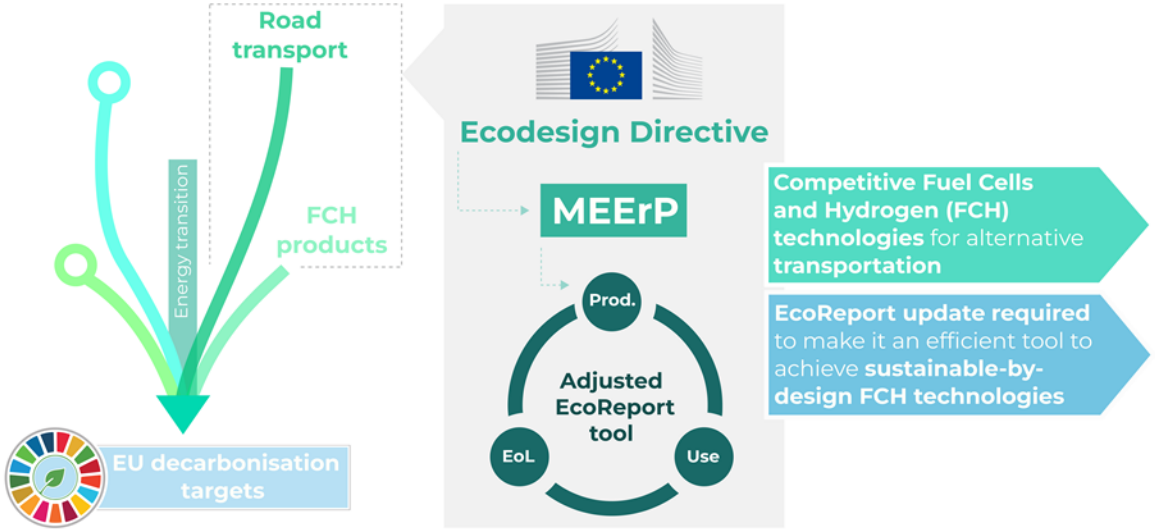
Achievement to-date

0 docs

1 doc

25% 50% 75%

- Reference documentation for a preparatory study according to the Ecodesign Directive
- PEMFC stack case study



https://doi.org/10.1039/D2SE01486F

Co-funded by the European Union

Risks, Challenges and Lessons

- Risks and challenges:
  - Involvement of key actors when generating ideas for product concepts
  - Widespread use → upcoming dissemination events (EHEC2024, URJC Summer School, etc.)

- Next steps:
  - Final SbD guidelines for PEMFC stack
  - Final SbD guidelines for SOE stack
  - Final general SbD guidelines for FCH products

Exploitation Plan/Expected Impact

Exploitation

- Supporting use as reference documentation for subsequent protocols and/or standards
- Exploitation plan (May 2024)

Impact

- Sustainable energy solutions through increased circularity and eco-efficiency, and reduced material criticality
- Supporting decision-making processes when it comes to designing and providing FCH products that reliably qualify as sustainable energy solutions

Co-funded by the European Union

//EU HYDROGEN
RESEARCH DAYS
15-16 NOVEMBER

eGHOST

Clean Hydrogen Partnership

European Hydrogen Week

Co-funded by the European Union