

FC-HyGuide

(Contract No: 256328 and 256850)



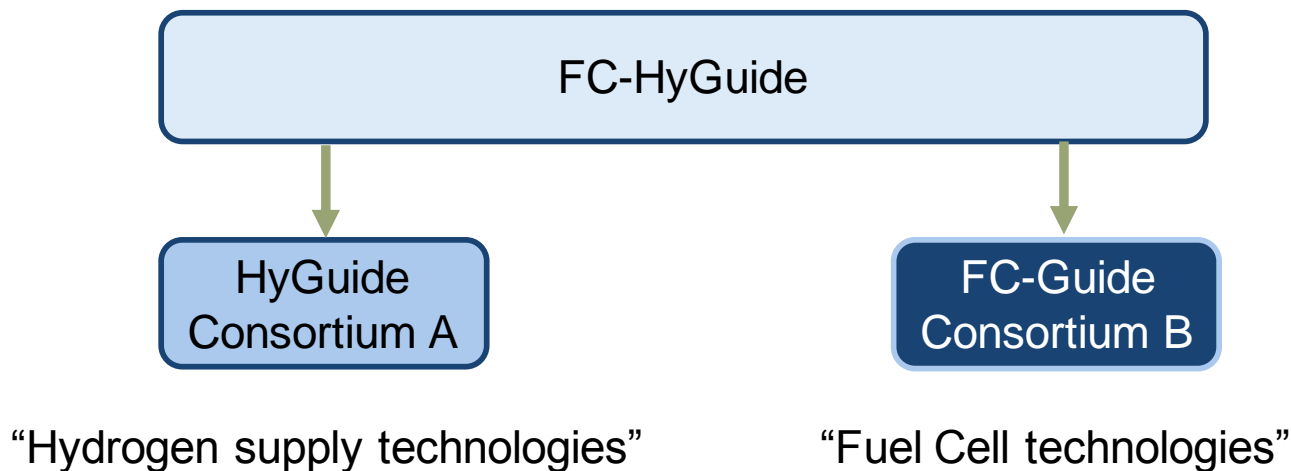
PE INTERNATIONAL
EXPERTS IN SUSTAINABILITY



Agenzia nazionale per le nuove tecnologie, l'energia
e lo sviluppo economico sostenibile

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- Application area: Cross cutting issue
- Funding Scheme: Coordination and Supporting Action
- Period: Oct, 2010 – Sept, 2011 (finalized)



→ FC-HyGuide = HyGuide + FC-Guide



HyGuide:



FC-Guide:



“Sustainability is a key driver of the FCH JU activities and it is necessary to assess the new developments towards these goals. Life Cycle Assessment will therefore be applied throughout the FCH JU on a programme level.”

[FCH JU, AIP 2009, SP1-JTI-FCH.2009.5.5 LIFE CYCLE ASSESSMENT (LCA)]

However, the main critics addressed to LCA are:

- Weak comparability among different studies on the same product
- Complexity of the method, which hampers its applicability in the industrial context

Weak comparability and reduction of complexity by sector specific guidance:

- ISO standards leave a high degree of freedom to practitioners: subjectivity linked to some methodological choices (e.g. system boundary definition, allocation, modelling, etc.).
 - ILCD Handbook addresses these topics, providing guidance on the LCA process, from the definition of the decision context to specific requirements for review process.
 - However, the ILCD Handbook is necessarily still generic as it applies to all possible industry sectors, technologies, decision context, etc.
- sector specific manual (guidance document) defines rules and the effort of the practitioners and data gathering, data quality, etc.

The overall **goal** is to develop a specific guidance document for application to hydrogen and fuel cell technologies and related training material with courses for practitioners in industry and research.

This is to be based on and in line with the International Reference Life Cycle Data System (ILCD) Handbook, coordinated/ co-developed by the EC's JRC-IES.

Expected outcome:

- A guidance document – based on the ILCD handbook – that is scientifically sound, industry accepted and quality assured (reviewed)
- LCA study reporting template, tailor-made to H₂ and FC technologies
- Broad dissemination among LCA practitioners and industry,
- A website, as a central information point and as fully integrated component of the ILCD data network, with public and restricted access areas.

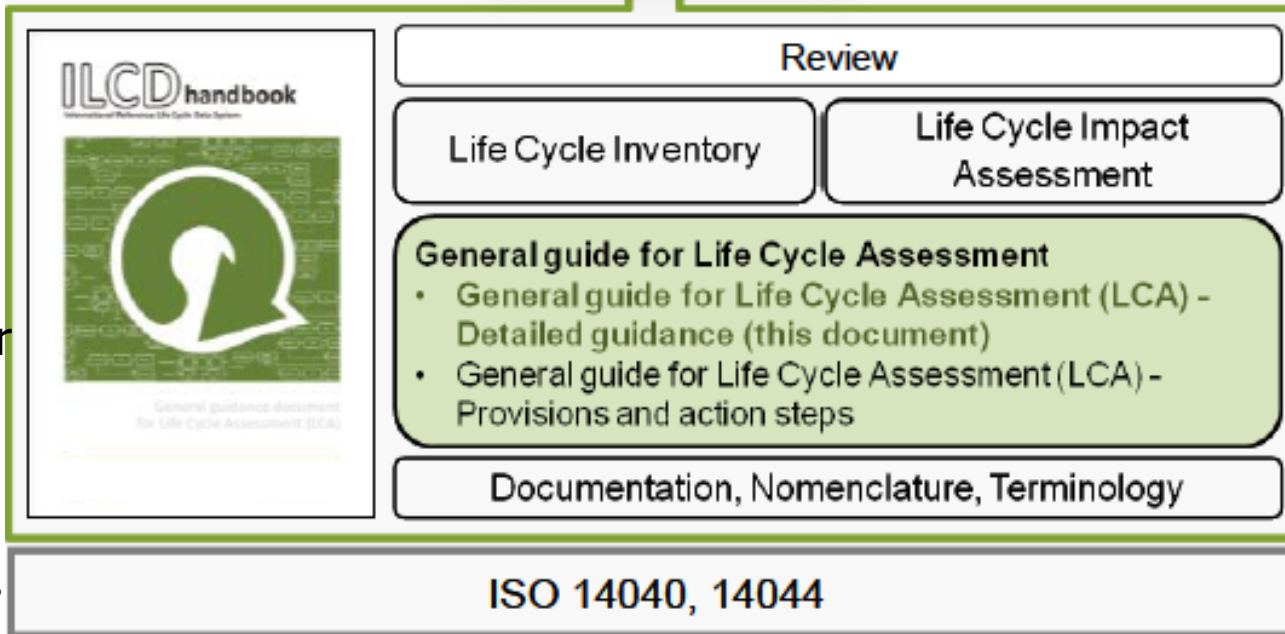


Specific LCA guidance for a product group (H₂ and FC).

3rd tier

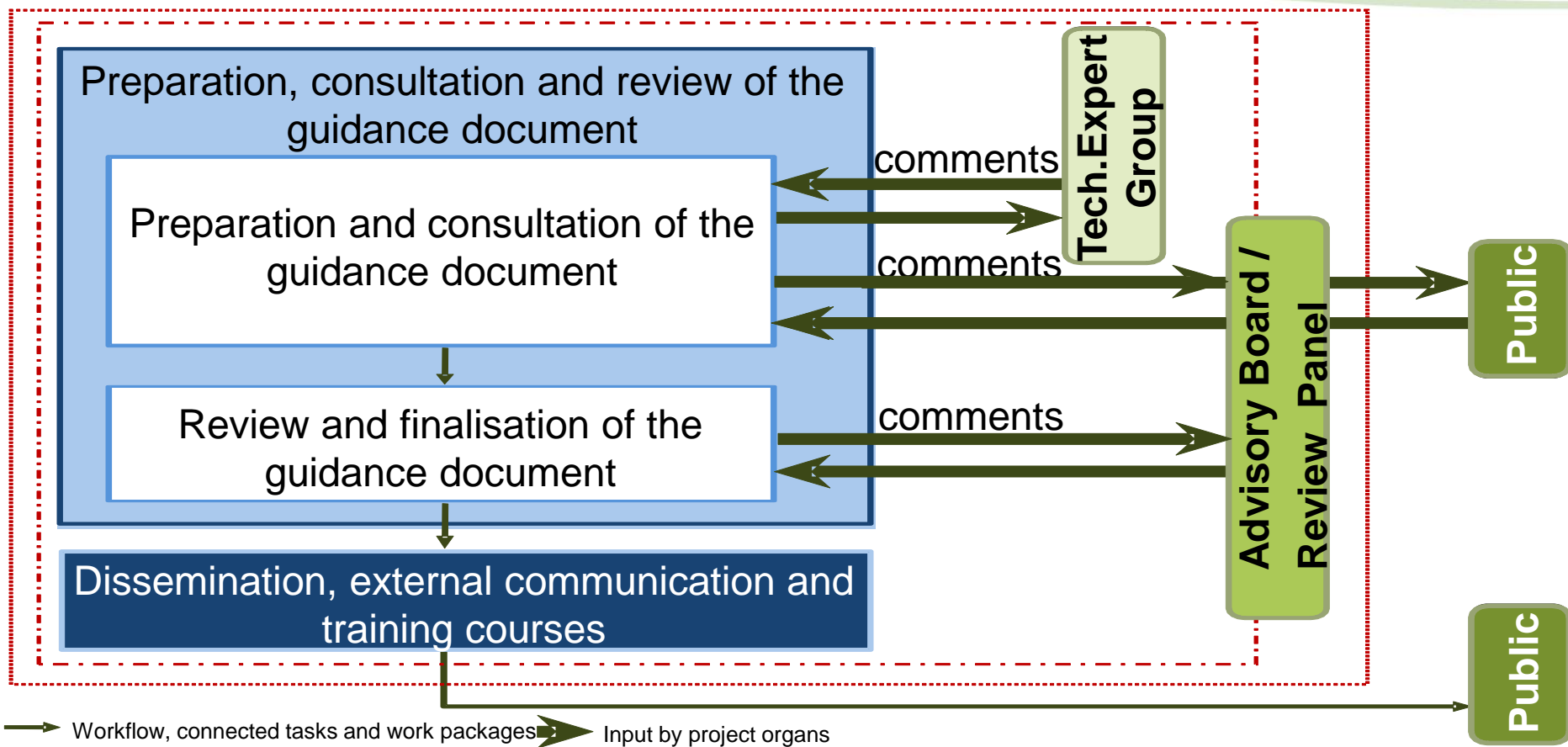
2nd tier

1st tier



Provisions depending on the decision context and application





Output of FC-HyGuide is a set of information, developed, reviewed and ready-to-use:

- LCA Guidance document on Fuel Cells and Hydrogen Production technologies (information and provisions)
- Templates: Data collection, Data documentation, Reporting
- Examples (LCA data sets incl. reporting template) from case studies
- Training courses



Main Objectives / *fulfillment by:*

- The guidance document will be in line with relevant ISO standards 14040 and 14044 as well as the ILCD handbook.
→ Experts in ISO and ILCD Handbook; Broad experience in LCA incl. Data base set-up; Knowing H₂ and fuel cell technologies, Review panel
- The document will be developed in a broad and widespread stakeholder process in accordance to international standards (ISO 14025)
→ good project management (1 yr), communication skills, dissemination network, moderation skills, teaching skills
- The guidance will be developed in liaison with the JRC-IES
→ integration on an early stage

Main Objectives / *fulfillment by:*

- The guidance document will be applicable for technologies at different stage of maturity (from lab- to commercial-scale) and to different technology-levels (from base technologies up to technology systems).
→ *modular structure of documents*
- The guidance document will be co-developed by a prof. expert in diction.
→ *Engl. native with expert knowledge in FC and H₂ and communication skills*
- The website will be part of the upcoming ILCD data network and will be hand over to the FCH JU.
→ *IT expert as project partner; platform more than just a “html website”*
- Two training courses will be conducted on the developed guidance documents to disseminate the findings
→ *experts in teaching*

Value of FC-HyGuide:

- *“Cross cutting issues are for the benefit of all Programme activities...”*
[MAIP 2008-2013]
- FCH JU environmental & sustainability goals *“...to develop and apply LCA...”*
is met resp. the foundation is provided to apply it.
- FC-HyGuide can be used in all Application Area (horizontal approach)
- FC-HyGuide supports in facilitating a more effective policy evaluation and decision making.

Main dissemination activates within 1 year (1/2):

“...efficient and pro-active communication and dissemination activities are of great importance for the success of the FCH JU...” [MAIP 2008-2013]

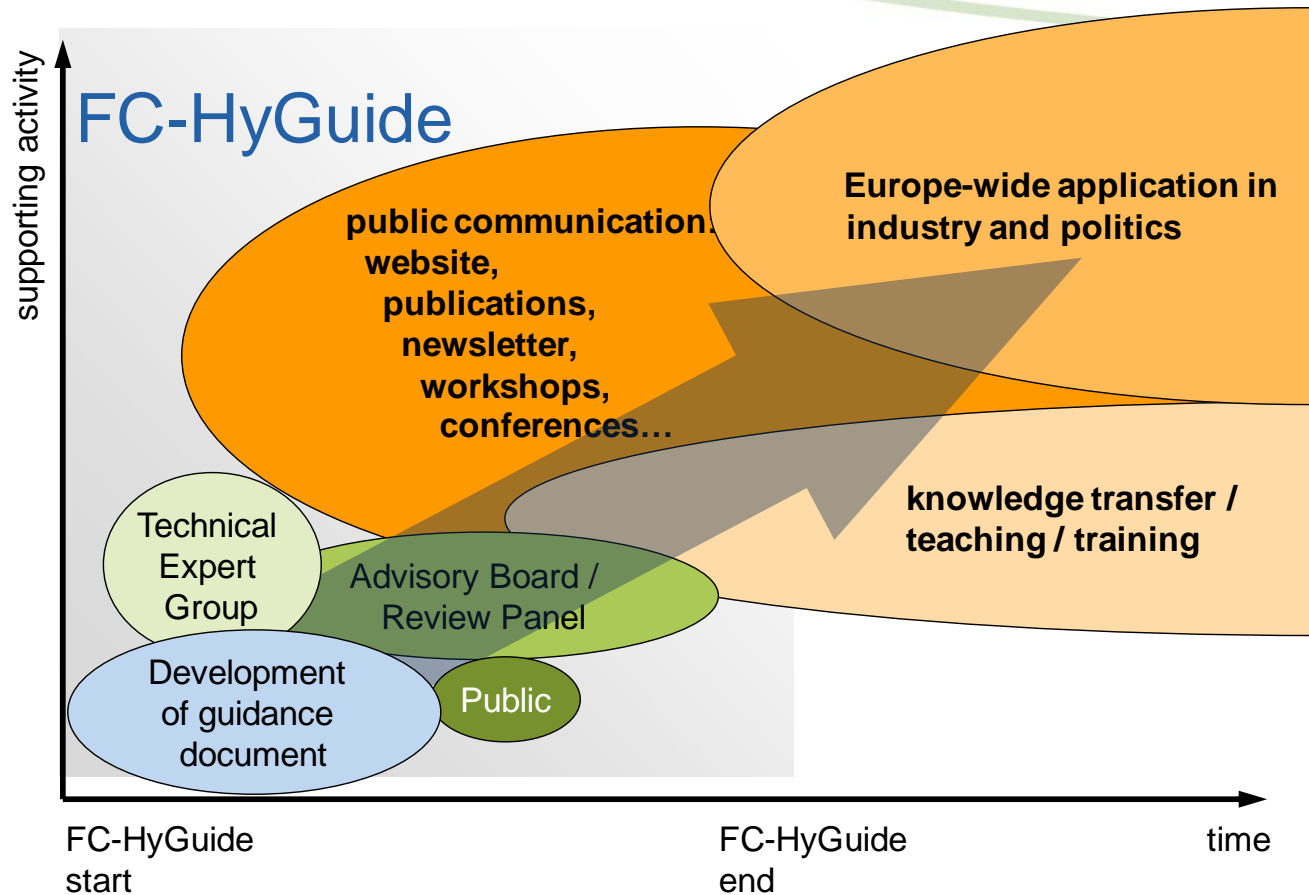
- European Parliament Seminar – March 15, 2011 (Belgium)
- H₂ FC Exhibition, Hannover Fair 4 Presentations during technical forums – Apr 4-8, 2011 (Germany)
- EU Sustainable Energy Week, 150 participants – Apr 12-14, 2011 (Belgium)
- UNEP-SETAC Europe 21st Annual Meeting, 15-19 May, 2011 (Italy)
- IPHE Hydrogen & Fuel Cells 2011 – May 15-18, 2011 (Canada)
- FCH JU Brokerage in Berlin – May 19, 2011 (Germany)
- Regional meeting on future demonstration projects – June 13, 2011 (Italy)
- Seminar on Life Cycle Assessment, JRC-IE, Petten – June 15, 2011 (the Netherlands)

Main dissemination activities within 1 year (2/2):

- H₂ IT conference – June 19, 2011 (Italy)
- International Conference on Hydrogen Production – June 22, 2011 (Greece)
- Life Cycle Management Conference in Berlin – Aug 29-31, 2011 (Germany)
- FC-HyGuide training course in Berlin – Sept 2011 (Germany)
- World Hydrogen Technologies Conference – Sept 16, 2011 (Scotland)
- KlimaMobility and Eco Dolmites – Sept 18-23, 2011 (Italy)
- Ökobilanz Werkstatt 2011 – Sept 20-22, 2011 (Germany)
- FuelCell Europe workshop on fuel cells and energy efficiency - Sept 21, 2011 (Belgium)
- F-cell Stuttgart, presentation by TÜV SÜD – Sept 27, 2011 (Germany)
- FC-HyGuide training course in Bologna – Sept 28, 2011 (Italy)
- Workshop of the Hungarian Hydrogen Association – Sept 29, 2011 (Hungary)
- EHA Board Meeting – Oct 12, 2011 (London)

How FC-HyGuide addresses and contributes to:

- Training and Education: 2 training courses were organized, training materials and case study examples were developed and are public available
- Safety, Regulations, Codes and Standards: LCA Guidance documents can be seen as an FCH JU standard for conducting LCA studies within the entire programme
- Dissemination & public awareness: Project identity, website, Newsletter, Leaflet, Conferences (LCM2010, UNEP-SETAC, ICH2P 2011, etc.), etc.
- Have a look at: <http://www.fc-hyguide.eu/>



Technology Transfer / Collaborations:

- Data platform is part of the ILCD data network (LCA hub for data sets), coordinated by the European Platform on LCA (JRC-IES, Ispra).
- Interlinkage to the FCH JU project “Technical Monitoring and Assessment (TMA)” → (was in the AIP 2009 together with the LCA call, but project postponed).
- Collaboration with other Private Public Partnerships (PPP):
Further sector specific LCA guidance documents to be developed by PPP on Energy Efficient Buildings and on Green Cars [FP7 NMP Work Programme 2011].

Project Future Perspectives:

- Feedback on developed guidance documents by FCH JU and JRC-IES very welcomed.
- Lessons learnt should to be transferred to EEB and GC consortia by JRC-IES/ FCH JU .
- “ILCD data platform” and “FCH JU database 1.0” needs an administrator
 - JRC-IES ? or FCH JU? or Service contractor?
 - IT and LCA content related admin needed
- Guidance documents are living documents, since the technology is developing
 - Update strategy (approx. every 3 yr., via project? Service contractor?)