



Modelling of Hydrogen in TIMES models and collaboration
with Hydrogen TCP
ETSAP winter workshop, 17 December 2020

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12:45-13:45 **SESSION 5: COLLABORATION WITH IEA HYDROGEN TCP**

Chair: Kari Espegren

Status Report on the collaboration with Hydrogen-TCP

Kari Espegren, IFE

Hydrogen modelling in TIMES – a summary of the inputs, outputs, and best practice RES

Paul Dodds, UCL

Overview of Hydrogen TCP, Task 41. Introduce discussion points from the hydrogen TCP.

Arne Lind, IFE

Discussion on how Hydrogen TCP (and Task 41) might interact with ETSAP in future

Modelling of Hydrogen

A need for improved data and modelling

ETSAP Hydrogen modelling project (2020-21) was initiated because:

- National ETSAP/TIMES teams model hydrogen differently
- TIMES modelers need access to reliable data (costs, efficiencies etc)
- Scenario analysis: Hydrogen is rarely part of the solution (however this is changing)

IEA Hydrogen TCP task 41 goal is to:

- Provide updated parameters describing hydrogen technologies
- Develop knowledge of how to model hydrogen in the value chain
- Establish a closer collaboration between the Hydrogen TCP and ETSAP analysis community

Modelling of Hydrogen

Proposed activities and task in the project

- National TIMES teams document their current representation of hydrogen (following a template produced by project team)
- Organize an ETSAP internal workshop focusing on modelling hydrogen
- Joint workshop Hydrogen TCP Data and modelling and ETSAP
- Arrange a session on modelling of hydrogen at the regular ETSAP-WS
- Report with guidelines on improved modelling of hydrogen
- Create an example hydrogen subRES
- ETSAP partners can improve the modelling of hydrogen in TIMES

5 Modelling of hydrogen

Status of the project

- 10 TIMES teams have documented their representation of hydrogen
- ETSAP workshop focusing on modelling hydrogen
 - 5 June 2019 (in Paris)
 - 24 September 2020 (online)
 - 17 December 2020
- Joint workshop with Hydrogen TCP Task 41 on *Data and Modelling of Hydrogen Technologies*
 - Two joint meetings: 29 August 2019, 9 September 2020 (kick-off Task 41)
 - One joint workshop: 14 December 2020
- An example TIMES hydrogen RES that can enable all ETSAP parties to improve the modelling of hydrogen
 - Further develop best practice principles (ongoing)
 - Demonstrate best practice in a new hydrogen SubRES (ongoing)
- Report with guidelines on improved modelling of hydrogen
 - Final project report: fall 2020 (will be finalized Q1, 2021)
- Additional activity: Joint scientific papers (best-practice modelling and on model comparison)

Modelling of hydrogen

Wrap-up and way forward

- Report with guidelines on improved modelling of hydrogen
 - Hydrogen RES
 - Presentations from the workshops
 - Final version: Early 2021
- Collaboration with Hydrogen TCP (Task 41) on data
- Joint paper(s)