Annual Report 2024

Task 61

Photo: *Variable Renewable Energy (VRE).* *(Source: iStock)*

Variable Renewable Energy to Hydrogen (VRE-H2) Collaborative Task

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Task 61 was approved to be initiated by the IEA Wind Executive Committee in May 2024 and officially kicked off with a Task Kickoff meeting at the end of 2024. Task 61 is focused on the production of clean hydrogen from wind and solar resources, referred to as Variable Renewable Energy (VRE) Sources.

The task is a collaborative effort between three IEA TCPs, Wind, Photovoltaic Power Systems (PVPS) and Hydrogen (Figure 1). This multi-disciplinary and multi-technology collaboration aims to enable a more efficient and comprehensive approach to the interdisciplinary nature of this challenge.

The overarching objective is to contribute to and shape the international collaboration in the research and development of VRE-hydrogen plants. In order to achieve this, the Task seeks to answer the following questions:

1. What are the capabilities and needs of each technology component of a VRE-hydrogen plant and how can they be integrated effectively and efficiently?

2. What are the needed Research, Development and Innovation (RDI) measures and recommended practices for VRE-hydrogen plant integration?

3. What are the environmental and social ramifications of combining wind and solar for hydrogen production on a large scale?

In order to address these questions, the Task focuses its work packages on collecting research results and state of the art, developing VRE-H2 use cases and reference designs, recommending practices for technology integration, and collecting the environmental and social impacts. The United States' National Renewable Energy Laboratory (NREL) serves as the Operating Agent for the Task and leads the work packages focused on collecting research results as well as assessing of environmental and social impacts. Technical University of Denmark (DTU) leads the development of use cases, reference designs, and recommended practices for plant integration.

Task 61 officially launched its activities with a kickoff meeting followed by the initiation of Work Packages 2 and 3 in January of 2025, focusing on designing plant use cases and integration practices. With interest from representatives in 22 countries, the Task continues to engage a broad community of stakeholders across its three technology focus areas and is actively working to encourage these countries to formalize their participation. Task 61 is also collaborating closely with PVPS Task 20 on several joint deliverables. Additional activities include building a joint-technology public website, an internal Task webpage, and a joint in-person meeting with Task 50 held in June 2025.

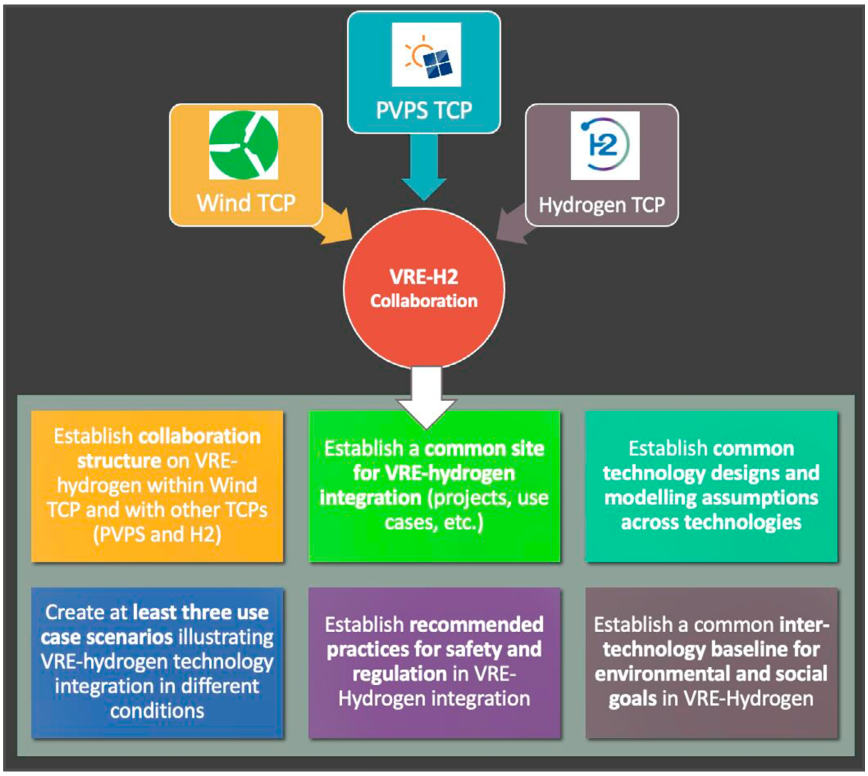

Figure 1. *Schematic of Task 61 structure and goals. (Photo Credit: ChristiAnn Vaughn, Genevieve Starke.)*

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