Hydrogen Demand and Resource Analysis (HyDRA) Model
*(National Renewable Energy Laboratory)*

Objectives

To allow analysts, decision makers, and general users to view, download, and analyze hydrogen demand, resource, and infrastructure data spatially and dynamically.

Key Attributes & Strengths

HyDRA is an application that has the look, feel, and functionality of a traditional client-based GIS application. Users are able to create their own spatial datasets and upload them into the HyDRA application to create a completely customizable and dynamic analysis tool. HyDRA contains more than 100 datasets, including resource cost and availability, hydrogen production potential, hydrogen production cost, resource consumption, hydrogen demand, infrastructure, and results from integration with other hydrogen models.
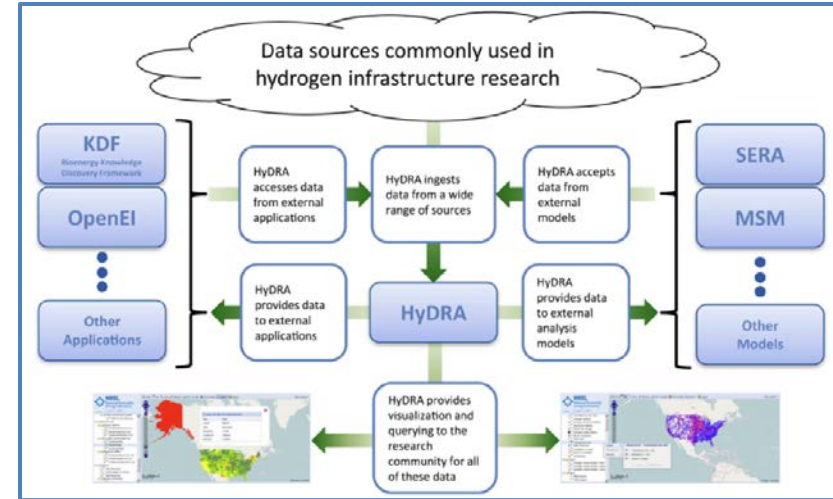
Platform, Requirements & Availability

HyDRA exchanges data between different platforms and provides a user interface with customizable maps and querying and download capability. Freely available to the public from the website: http://maps.nrel.gov/hydra, but a user account needs to be created first before accessing the model.

INPUTS	ASSUMPTIONS & DATA	OUTPUTS
• Data from various external models and applications.	• Transportation infrastructure data from U.S. Department of Transportation.	• Transportation logistics for resources.
• Data from EIA, DOE, DHS, and other sources all available in the same application interface.	• Resource data from Solar, Wind, Biomass, and other Energy Efficiency and Renewable Energy offices of the U.S. DOE.	• Resource limits as demand increases and impact on resource cost.
• Analytic results from the SERA model and the Macro System Model.	• Cost of energy data from the U.S. EIA.	• Region specific limits for transportation and resources.
	• Geographic specific data for resources from NREL database.	• Impact of competing demands for resources.
		• Utility limits such as electrical and pipeline systems, water resources.