

Hydrogen, Fuel Cells, and EFSC

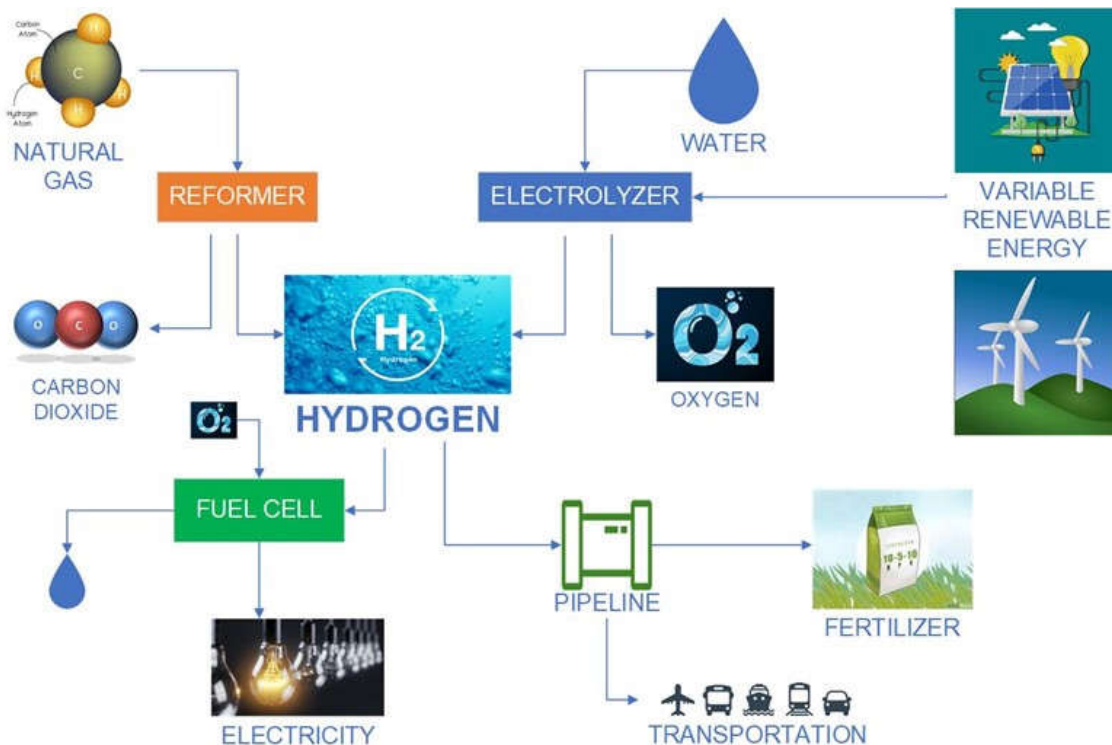
Hydrogen generation and fuel cells are emerging technologies that have great potential for helping Oregon meet its clean energy goals. There are a number of ways in which hydrogen can be produced, stored, and used, and several of those can have regulatory implications.

The [Energy Facility Siting Council](#) (EFSC) is responsible for overseeing the development of large electric generating facilities, high voltage transmission lines, gas pipelines, and other projects in the State of Oregon. The Council consists of seven members who are appointed by the Governor and confirmed by the Oregon Senate.

Fuel Cells

Hydrogen fuel cells are devices which convert the chemical energy of hydrogen into electricity. Per the definition of “Energy Facility” in ORS 469.300(11)(a)(A), unless otherwise specified, any electrical generating facility, or combination of facilities that function as a single facility with a nameplate capacity of 25 megawatts (MW) or more is state jurisdictional and must receive a site certificate, or an exemption per ORS 469.320 and OAR 345-015-0350 from EFSC prior to construction.

Facilities below 25 MW would fall under the jurisdiction of the city or county where the project is proposed to be located.



Hydrogen Generation

Hydrogen fuel cells require hydrogen to operate, and the source of the hydrogen may also have regulatory implications. Hydrogen is typically produced by one of two mechanisms.

From natural gas:

The most common way to make hydrogen is from natural gas, and most hydrogen in the world today comes from fuel processing units that are known as reformers. In a reformer, hydrogen is produced through a chemical process which liberates it from the natural gas. Carbon dioxide is created as a byproduct of this process. A common method of supplying hydrogen to a fuel cell is to use a small reformer or similar unit to produce the hydrogen.

In 2021, the Oregon Legislature passed HB 2021. Section 28 of this act prohibits EFSC from issuing a site certificate for new natural gas plants.

SECTION 28. Notwithstanding ORS 469.320 and 469.405, the Energy Facility Siting Council may not:

(1) Issue a site certificate for a new generating facility that produces electric power from fossil fuels, including natural gas, petroleum, coal or any form of solid, liquid or gaseous fuel derived from such material, unless the council determines that a new generating facility will generate only nonemitting electricity as defined in section 1 of this 2021 Act;

Section 1 defines nonemitting as follows:

(7) *“Nonemitting electricity” means electricity, including hydroelectricity, that is generated and may be stored in a manner that does not emit greenhouse gas into the atmosphere.*

In simple terms, this means that a project for a fuel cell installation of over 25 MW nominal generating capacity which uses hydrogen derived from natural gas would only be allowed if the carbon dioxide generated is captured and stored in a manner that does not emit greenhouse gas into the atmosphere.

By electrolysis:

Hydrogen can also be produced in a device called an electrolyzer. An electrolyzer uses electricity to dissociate water molecules into hydrogen and oxygen. Hydrogen which is produced by electrolysis is often called “green hydrogen”, especially when variable renewable energy sources such as wind and solar are used to produce the electricity to power the electrolyzer.

Since electrolyzers consume power as opposed to producing it, they do not fall within the jurisdiction of EFSC unless they are coupled with a fuel cell installation of 25 MW or larger.

For more information on electrolysis, check out the “Power to Gas” section of ODOE’s Biennial Energy Report by following this link: [PtG](#)



Pipelines

From ORS 469.300(11)(a), an energy facility also includes:

(E) A pipeline that is:

(ii) At least 16 inches in diameter, and five or more miles in length, used for the transportation of natural or synthetic gas, but excluding:

This means that a pipeline constructed to carry hydrogen gas may fall under the jurisdiction of EFSC and require a site certificate.

Please note that the U.S. Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) has authority for the safety of hydrogen pipelines, as well as natural gas pipelines. If someone were interested in injecting hydrogen into a natural gas pipeline, they should contact the PHMSA for interstate pipelines, or the Pipeline Safety department of the Oregon Public Utilities Commission (PUC) for intrastate pipelines.

Jurisdictional Determinations

The Oregon Department of Energy (ODOE) Siting Division conducts no-fee jurisdictional determinations for potential projects. If you are considering a project but are unsure whether it will fall under EFSC jurisdiction, please contact the Department. ODOE asks that you submit your request in writing and provide as much detail as possible.

ODOE Contact: Wally Adams, Operations and Policy Analyst, walter.adams@energy.oregon.gov, Tel.: 971-273-9778

Finally, please keep in mind that even if your facility does not fall within EFSC jurisdiction, there are other permits that may be required.

Additional Resources

Oregon Revised Statutes Chapter 469: https://www.oregonlegislature.gov/bills_laws/ors/ors469.html

Oregon Administrative Rules Chapter 345: [Oregon Secretary of State Administrative Rules](#)

Oregon HB 2021 – 2021 Legislative Session: [HB2021 \(oregonlegislature.gov\)](#)

[The Oregon Department of Energy's Biennial Energy Report: https://www.oregon.gov/energy/Data-and-Reports/Pages/Biennial-Energy-Report.aspx](#)

SB 333 (2021) directs the Oregon Department of Energy to conduct a study on the potential benefits of, and barriers to, production and use of renewable hydrogen in Oregon. For more information, visit ODOE's webpage: <https://www.oregon.gov/energy/energy-oregon/Pages/rh2.aspx>

