Why Hydrogen?



Hydrogen is highly versatile as either an energy carrier or feedstock and can serve a variety of downstream applications and processes.

AECOM's combination of global experience and integrated technical capabilities delivers strategic solutions that improve and modernize infrastructure, enhance sustainability and resiliency, and benefit the community.

We have engineered and/or constructed more than 280 GW of electrical generation capacity across the world.



More Information: AskEnvironment@aecom.com

Overview

When used to generate power, hydrogen releases no carbon dioxide into the atmosphere at the point of power production. Hydrogen can also be produced with little to no carbon emissions. There is a range of methods to produce hydrogen, and the resulting hydrogen is color coded depending on the production method.

Grey hydrogen is produced from conventional fossil fuels, such as natural gas. This method has high carbon emissions, but it currently accounts for most hydrogen production globally.

Blue hydrogen adds carbon capture to grey hydrogen processes, resulting in a low-carbon production path.

Green hydrogen refers to electrochemical production using renewable energy. Electrochemical production involves the use of an electrical current to split water molecules into hydrogen and oxygen. In cases where the electrolytic process is powered through renewable energy, such as wind, solar, or hydroelectricity, it becomes possible to produce clean (green) hydrogen. If produced at scale, green hydrogen has the potential to enable deep decarbonization across the energy and industrial sectors.

Despite the colorful naming convention, hydrogen is a colorless gas regardless of the production method.

AECOM is aware that the hydrogen market is undergoing a transition phase. Green and blue hydrogen production is increasing as many areas seek to use hydrogen as a clean fuel alternative to fossil fuels. The hydrogen produced today is mainly used as a feedstock for chemical and oil refining applications, but many companies have big plans to make hydrogen a viable transportation fuel.

AECOM has experience in a wide range of green hydrogen projects including engineering and environmental assessments. Projects include all aspects of the green hydrogen supply chain, from combining renewable power generation with hydrogen production to designing hydrogen fueling stations. AECOM also has extensive experience with the carbon capture technologies that are used in the blue hydrogen production process.

Our Customized Approach

AECOM provides a customized approach to project delivery, with comprehensive support from idea to operation. Understanding each client's unique conditions and project requirements is central to identifying the most appropriate approach for project delivery.

Whether it is overcoming a financing hurdle, guaranteeing cost, reducing risk or finding efficiencies, there are many reasons to look to alternative delivery methods.

Each approach has its own advantages and drawbacks, so we explore all the options to find the methods that best fit an owner's objectives, timelines and constraints.

When it comes to alternative delivery, no one has more experience around the world in a wider range of markets than AECOM. From public-private partnerships (P3) and design-build (D-B), to integrated project delivery and construction management-at-risk, AECOM can help find the most suitable approach for your needs.

Complete Hydrogen Solutions

Idea generation **Business** Case



- Master, city &
- network planning
- Design
- Strategy generation
- Feasibility studies
- Due Diligence
- Permitting

- HHSEQ Engineering
- Procurement
- EPCM/PMCM
- Construction
- Integrated Solutions
- Compliance, monitoring

AFCOM

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