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## Low Carbon Intensity Hydrogen

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**Whether you need to meet carbon intensity reduction goals or attain sustainability target, Linde can assist with meeting your objectives.**

Hydrogen has a wide variety of uses across industry and the economy as a whole and those uses are expanding every day as we look to alternatives to lower the carbon intensity of the cars we drive, the trucks that haul goods, the electricity that powers our homes and the products that we use every day.

Today, most hydrogen is produced through a process called steam methane reforming where natural gas is separated into hydrogen and carbon dioxide. The hydrogen is then compressed or liquified using power from the electric grid in order to facilitate distribution. Although energy efficient, this production method inherently produces carbon dioxide as a by-product.

Linde has invested in technologies to produce hydrogen through a variety of pathways beyond reforming natural gas. Depending on the feedstock and the production method utilized, we can provide hydrogen with a range of carbon intensity allowing us to sell hydrogen meeting the lower carbon intensity requirements demanded by our customers.

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**Gas Offering** Provide hydrogen that is certified to have a carbon intensity 60% lower than hydrogen produced through Steam Methane Reforming.

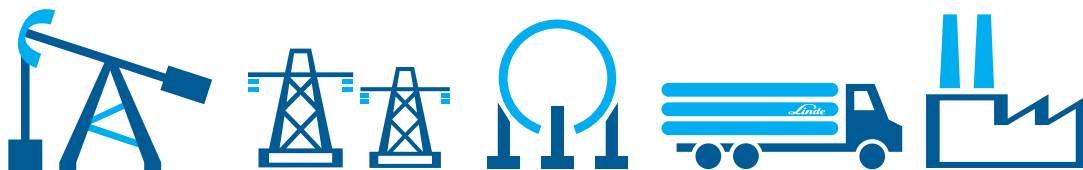
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**How** By utilizing a combination of lower carbon feedstocks, various production methods including electrolysis and obtaining power from low carbon sources such as wind, solar and hydropower.

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**Certification Program** Linde has established a program to track our production allowing us to certify the carbon intensity of the H<sub>2</sub> molecules produced. To qualify, each plant included in this program has undergone a third-party audit to establish the carbon intensity of the hydrogen produced.

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**Traditional production pathway relying on carbon-based fuels:**

Hydrogen is typically produced from hydrocarbon sources using one of a variety of available technologies.

**Potential lower carbon intensity production pathway utilizing carbon-free energy and electrolysis.**

\* no change to delivery mechanism using diesel-based fuels

**Linde Hydrogen provides a lower carbon intensity alternative to traditional hydrogen.**

Traditional carbon emissions associated with the production of hydrogen can be managed with renewable methane feedstock and/or renewable power coupled with electrolysis. If liquid hydrogen is required, liquefaction can be carried out utilizing renewable power further minimizing the carbon intensity of the resulting liquid hydrogen.

**Features**

- Hydrogen with a carbon intensity 60% lower than hydrogen produced via steam methane reforming
- Standard and ultra-high purity specifications available
- Same reliability as our standard product
- Ability to supply anywhere in the U.S.
- Audited program to certify the carbon intensity of product supplied

**Benefits**

- Meets CA regulatory requirements for renewable hydrogen
- Supports carbon intensity reduction strategies
- Allows you to meet the lower carbon intensity demands of your customers

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