

Baker Hughes New Energy Frontiers

5th Annual J.P. Morgan Energy Technology Tour

Rod Christie

EVP, Turbomachinery & Process Solutions

Copyright 2020 Baker Hughes Company. All rights reserved. The information contained in this document is company confidential and proprietary property of Baker Hughes and its affiliates. It is to be used only for the benefit of Baker Hughes and may not be distributed, transmitted, reproduced, altered, or used for any purpose without the express written consent of Baker Hughes.

This presentation (and oral statements made regarding the subjects of this release) may contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, (each a "forward-looking statement"). The words "anticipate," "believe," "ensure," "expect," "if," "intend," "estimate," "project," "foresee," "forecasts," "predict," "outlook," "aim," "will," "could," "should," "potential," "would," "may," "probable," "likely," and similar expressions, and the negative thereof, are intended to identify forward-looking statements. There are many risks and uncertainties that could cause actual results to differ materially from our forward-looking statements. These forward-looking statements are also affected by the risk factors described in the Company's annual report on Form 10-K for the period ended December 31, 2020 and quarterly reports on Form 10-Q for the period ended March 31, 2020, June 30, 2020, and September 30, 2020 and those set forth from time to time in other filings with the Securities and Exchange Commission ("SEC"). The documents are available through the Company's website at: www.investors.bakerhughes.com or through the SEC's Electronic Data Gathering and Analysis Retrieval ("EDGAR") system at: www.sec.gov. We undertake no obligation to publicly update or revise any forward-looking statement.

The Company presents its financial results in accordance with GAAP; however, management believes that using additional non-GAAP measures will enhance the evaluation of the profitability of the Company and its ongoing operations. See the Appendix of this presentation for a reconciliation of GAAP to non-GAAP financial measures.



Baker Hughes is a differentiated energy technology company



A diverse portfolio across the energy landscape, industrials & new energy frontiers



Strategy focused on leading the energy transition



Leading driver & compression technology for LNG & new energy frontiers



~40% of revenue industrial in nature with strong aftermarket service entitlement



~\$15B aftermarket service backlog across TPS, OFE, DS



Strong balance sheet ... A3/A-rating, \$4.1B cash & additional liquidity, net capex 3.5% of revenue



Baker Hughes is positioning for new frontiers Enabled by growth in digital technology offerings

Carbon capture, utilization and storage



- · Consultation and feasibility
- CO₂ capture and liquefaction
- Compression and transportation
- Subsurface storage
- · Integrity and monitoring

Hydrogen



- Turbomachinery provider across entire value chain
- Hydrogen-fueled gas turbines
- Wide range of hydrogen compression solutions
- Integration capabilities for optimized design and operations

Energy storage



- Turbomachinery and process capabilities
- Technology partner for long duration, large scale energy storage
- Reliability and inspection solutions



Primary Baker Hughes technologies across decarbonization

Solutions to remove CO₂ emissions

- Post-combustion capture technologies
- Flue gas compression
- CO₂ compression
- CO₂ pumping
- Fugitive emission reduction solutions

Solutions to reduce CO₂ emissions

- Combustion solutions
 - More efficient gas turbines
 - Hydrogen-fueled turbines
 - Hybrid-fueled turbines
- Compression solutions
 - Compressors efficiency and power density
 - Fugitive emission reduction solutions
 - ICL product family
- Energy recovery solutions
 - Combined cycle & CHP
 - Organic rankine cycle
 - Waste heat & energy recovery

Solutions that enable renewables

- Thermo-mechanical storage solutions
 - Turbomachinery solutions
 - Process capabilities
- Chemical storage solutions
 - CO₂ & H2 compression
 - Ammonia & methanol process trains
- Heat pumps for cooling & heating
- Organic rankine cycle
- Supercritical CO₂ technology

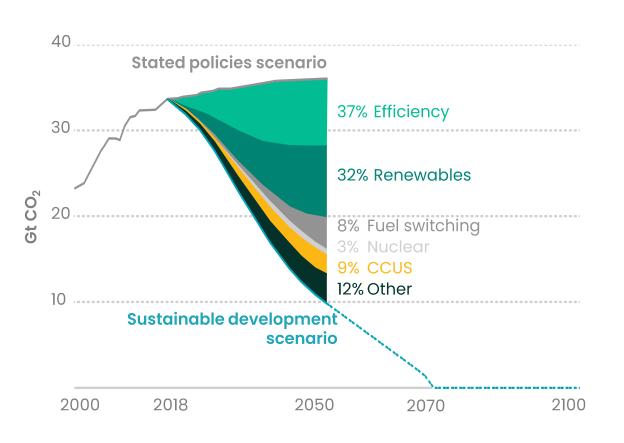


Carbon capture, utilization and storage

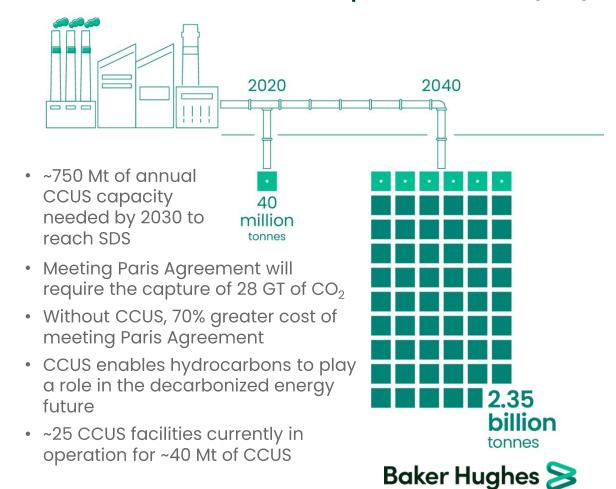


CCUS critical to meet climate goals and emission reduction targets

Global CO₂ emissions reductions by technology area



Annual CCUS capacity needed in power gen & industry to meet IEA Sustainable Development Scenario (SDS)



Breaking down the CCUS process



CO₂ Source

- Captured from multitude of industrial facilities, including:
 - Power generation
 - Natural gas processing
 - Petroleum refining
 - Cement production
 - Hydrogen reforming
 - Chemical production
- Flue gas, industrial emissions, biomass & atmospheric carbon are four main sources
- CCUS can reduce emissions from industrial process by over 90%



CO₂ Capture & Separation

- Three primary carbon capture systems:
 - Pre-combustion
 - Post-combustion
 - Oxy-combustion
 - Direct Air Capture (DAC) in pilot phase
- Once captured, CO₂ separated from other waste gases
- Three broad techniques of separation:
 - Solvents
 - Sorbents
 - Membranes





CO₂ Compression & Transportation

- Compression: CO₂ must be compressed to pressure between 1,500 to 2,100 psi to be transported
- <u>Pipelines:</u> most common method ... purpose-built pipelines required due to corrosive nature of CO₂
- Trucks & Marine Transport: Compressed & liquified before transport

Utilization

- Commercial applications remain limited
- Use cases being developed in building materials, petrochemicals, biomass and synthetic fuels

Storage

- Majority of captured CO₂ ends up in oil & gas reservoirs, unmineable coal seams and saline reservoirs
- CO₂ flood enhanced oil recovery most used application (mainly in US)



Baker Hughes technology across CCUS value chain

Consultation and feasibility

CO₂ capture

Surface transportation

Subsurface storage

Integrity and monitoring

BAKER HUGHES CAPABILITIES

- Economic and technical feasibility
- Reservoir evaluation and design
- Pre-FEED and FEED for capture and storage facility design
- Post combustion capture solutions
- Amines based capture process
- Chilled Ammonia process

- Advanced CO₂ compression, pump & valve technology
- Flexible non-metallic pipe
- Pipeline integrity management

- Standardized well designs
- Precise well placement
- Integrated well construction

- In well and surface monitoring, connected to reservoir
- Integrity assurance / cement & tubular evaluation

OUTCOMES AND VALUE DRIVERS

- Development concepts
 Techno economic
 feasibility
- Regulatory well permitting
- CO₂ monetization

- Uptime and yield optimization
- Scale and new capture technologies
- Energy efficiency

- Reliability and efficiency
- Emissions footprint
- Pipeline and equipment corrosion management
- Optimized Storage capacity
- Well integrity
- Reservoir containment
- · Real-time monitoring
- Predictive analytics
- Community consent to operate



Compact Carbon Capture, a Baker Hughes venture

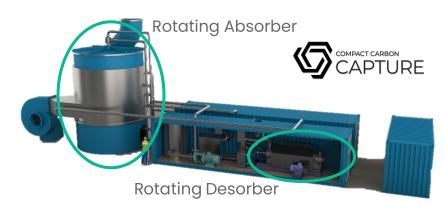
Compact Carbon Capture (3C) overview

- Pioneering technology development company specializing in carbon capture solutions based in Norway
- **Technology currently at pilot stage** ... incubated with various partners including Equinor and Fjell Technology Group
- Baker Hughes will accelerate development of technology leading to commercial deployment for customers globally
- Applications across a broad number of industries and industrial processes
- 3C technology is agnostic to OEM technology

3C tech differentiation vs traditional carbon capture solutions

- Centrifugal force replaces gravitational force for gas / liquid contact by means of rotating beds vs. static columns
- Solvents distributed in **compact and modularized** format
- Rotating bed technology enhances carbon capture process
- Up to 75% reduction in footprint leading to Capex reductions
- Modular and scalable configuration:
 - Retrofittable into existing brownfield applications
 - Optimizable for broad range of capacity and applications, including offshore and industrial emitters

Amine plant using 3C technology



Typical amine plant*





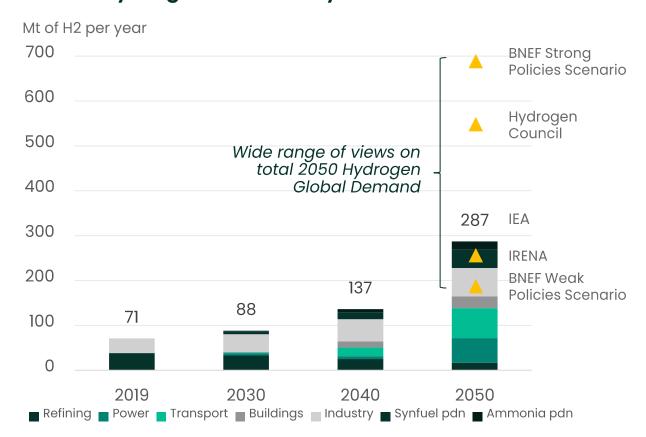
Hydrogen





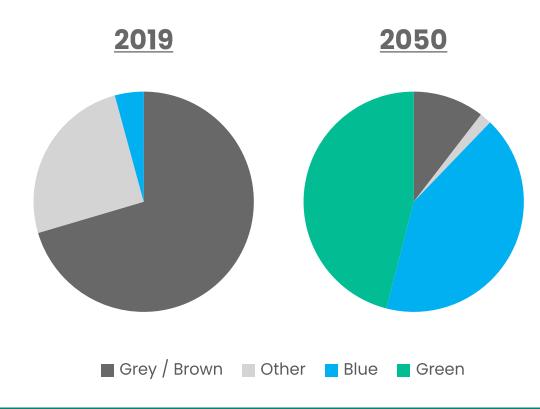
Hydrogen market overview

Global hydrogen demand by sector in IEA SDS



Hydrogen growth anticipated in '30's and accelerating in '40's as Green Hydrogen becomes scalable and cost competitive

Expected global hydrogen supply by technology



Blue and Green Hydrogen production replacing other forms of supply



Blue & Green Hydrogen production process overview

Green Hydrogen Process Blue Hydrogen Process Renewable Energy Source Natural Gas / Coal **Steam Reformation** (Synthetic Gas) Hydrogen Oxygen **Membrane Carbon Capture** Water **CO2 Compression Blue Hydrogen** & Storage **Cathode Reaction Anode Reaction** 4H+ 4e-> 2H2 2H₂O > O₂ + 4H⁺ + 46 Hydrogen

Green Hydrogen is fossil fuel free but requires significant amounts of renewable energy to produce commercial quantities

Industrial Heat

Transport



Residential Commercial

Uses

Downstream

Industrial Power

Baker Hughes is experienced in handling hydrogen content

H2 Compression technology

- Long history of handling H2 rich content across applications
- First H2 application in 1962 with a hydrogen compressor
- **2,000+** compressors installed
- High Pressure Ratio Compressors provide significant improvements in overall green H2 plant footprint, reliability, availability and weight



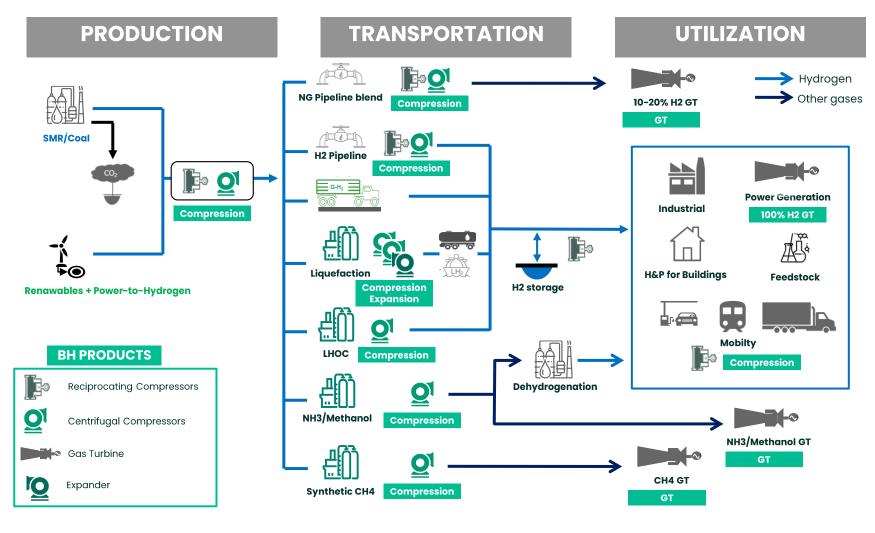
H2 Turbine technology

- 70+ projects worldwide using frame and aeroderivative gas turbines for variety of fuel mixtures with H2 content
- Complete gas turbine offering has hydrogen capabilities today
- Extended capabilities of NovalT turbine technology to start and run on 100% H2
- Commercially available for both new projects or to leverage existing infrastructure





Baker Hughes TPS portfolio across the Hydrogen value chain



- Almost 60 years of experience working with hydrogen
- Critical applications across compression and combustion / turbine technology
- Ability to work with renewable energy sources to provide grid support
- 100% or blended H2 fuel capabilities

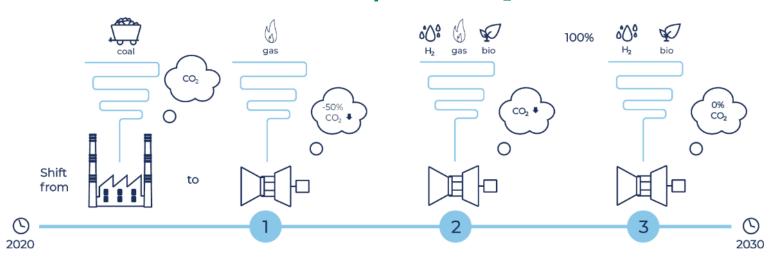


The importance of gas turbines in Energy Transition

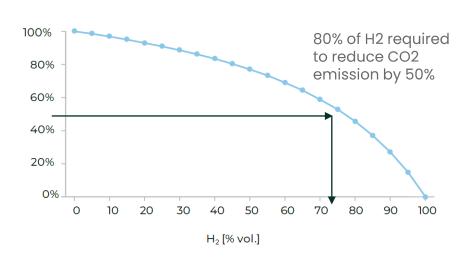
The role of gas turbines in energy transition can become critical with hydrogen fuel capabilities:

- Mixing renewable gas (e.g. Green H2, biogas, syngas) with natural gas enables further reduction in CO₂ emissions
- Gas turbines are flexible, well-suited for frequent starts and able to provide fast response to grid demands, making them complementary to variable resistors

Gas Turbine Roadmap to zero CO₂ emissions



Carbon intensity of CH4/H2 mixtures





Snam and Baker Hughes test world's first hydrogen blend turbine for gas networks

- In July 2020, Baker Hughes and Snam successfully completed testing of the world's first "hybrid" hydrogen turbine designed for a gas network.
- The test paves the way to implement adoption of hydrogen blended with natural gas in Snam's current transmission network infrastructure.





- Powered by blend of up to 10% hydrogen, the NovaLT 12 turbine was designed and manufactured by Baker Hughes in Italy
- NovaLT 12 will be installed at Snam's gas compressor station in Istrana, Italy
- Project represents new milestone for Italian infrastructure as it continues to adapt to transport hydrogen and reduce CO₂ emissions
- Today 70% of Snam's pipelines are already built with "Hydrogen ready" pipes



Baker Hughes >