



# Low Carbon Hydrogen Center of Excellence

August 14, 2024

# A New Structure for Changing Times

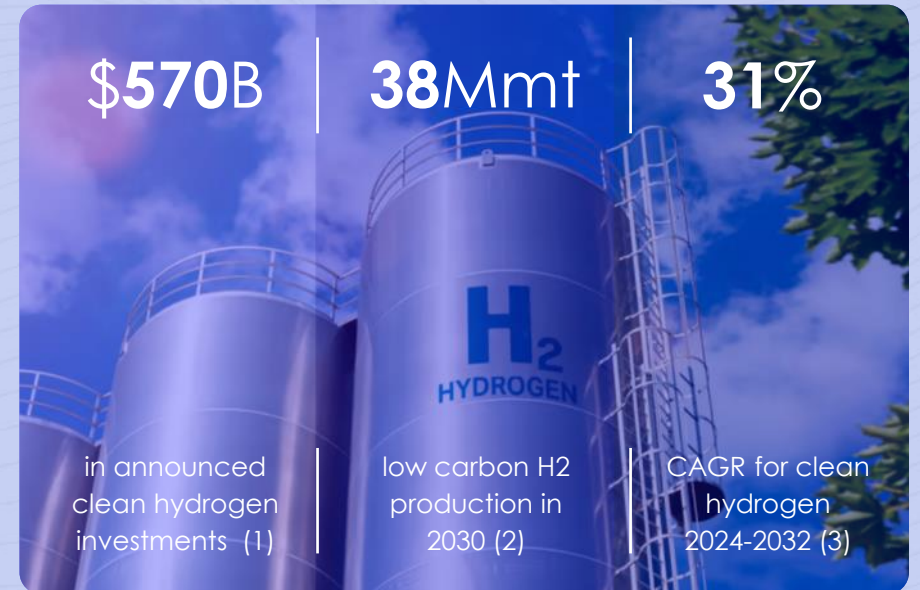
In January of 2024, LEC launched a first of its kind initiative for the company, the Low Carbon Hydrogen Center of Excellence (LCH2 COE).

The organizing principle was to bring together a cross-functional team of global hydrogen experts with deep sector knowledge across the hydrogen value chain.

From feasibility studies to business plan analysis to go-to-market strategies, LEC provides decision-makers with the support needed to anticipate future market conditions for hydrogen projects.

The LCH2 COE also provides technical services such as technology evaluation, techno-economic analysis, site selection, front-end engineering design, EPC selection and owner's engineer services.

To succeed now and in the future, businesses must pursue these opportunities to achieve sustainable and profitable outcomes.



(1) McKinsey: Hydrogen Insights 2023

(2) International Energy Agency: Global Hydrogen Review

(3) Plug Power: The Rise of Green Hydrogen

# Providing Insight and Expertise Across the Hydrogen Value Chain

Whether your company is a hydrogen producer, a hydrogen technology company, or a consumer of hydrogen and hydrogen derivatives, our community of hydrogen experts has the experience to guide you to success

## Global Market Analysis

LEC has hydrogen experts in Asia, Europe and North America. Our understanding of regional policies and trends provides high-value insights on hydrogen markets across the globe.

## Techno Economic Analysis

LEC experts also assess the economic viability of low carbon hydrogen projects by assessing feedstocks, CAPEX, OPEX, and risks.

## Technology Evaluation

Our experts evaluate the technical aspects of producing, storing, transporting, and using low carbon hydrogen as an energy carrier. We provide our clients with viable pathways for a sustainable hydrogen economy.

## Regulatory Analysis

We provide our clients with a full and detailed understanding of regulatory incentives, goals and mandates that are critical in understanding the functioning of low carbon hydrogen markets.

20+

Hydrogen Experts

30+

Average Years of Experience

95%

Advanced Degrees

7

Countries



# The Clean Hydrogen Future

The journey towards a low carbon future will require a growing use of clean hydrogen and its derivatives. With new information arriving on an almost daily basis, successful projects require a balanced approach towards the past and future based on experience with industry standards and the latest hydrogen technologies:

- Biomass to Green Hydrogen
- Blue Hydrogen via CCUS
- E-Fuels
- Fuel Cells
- Geological Hydrogen
- Electrolysis Technologies
  - AEW
  - PEM
  - SOC
- Green Ammonia
- Green Cement
- Green Methanol
- Hydrogen Transportation
- Methane Pyrolysis

# Our Services

For Your Unique Business Needs

HYDROGEN  
ENERGY  
STORAGE



## Funding & Due Diligence

Explore funding sources and ensure your investment assumptions have been validated.



## Engineering & Project Oversight

Gain valuable insights from engineering reviews to financial analyses.



## Project Development & Operations

Receive expert guidance from project planning through implementation.



## Market Analysis & Strategy

Achieve understanding of market conditions needed to develop successful business strategies.



## Regulatory & Specialty

Leverage our deep knowledge of regulatory frameworks and specialty consulting services.

# LEC's H2 Center of Excellence - Selected Experts

**Pete Rocha, MBA**

**Center of Excellence Lead**  
H2 Market Analysis  
Go-to-Market Strategies



**Terry Mazanec, PhD**

LEC Managing Director  
Blue Hydrogen  
Biomass Gasification to H2



**Kent Goeking, PhD**

LEC Managing Director  
Materials Science  
Asia/India Market Development



**Qi Chen, PhD**

LEC Expert  
Concept Design  
Front-End Engineering Design (FEED)



**Andres Comba, MSIM**

LEC Expert  
EU Green Hydrogen Market and  
Policy Analysis



**Jennifer LeRow**

LEC Project Director  
U.S. Compliance, Registration  
and Reporting



**Jeff Reed, PhD**

LEC Expert  
Techno-Economic Analysis  
Technology Evaluation



**Robert Starkey, MBA**

LEC Expert  
Hydrogen Transportation and  
Logistics Systems

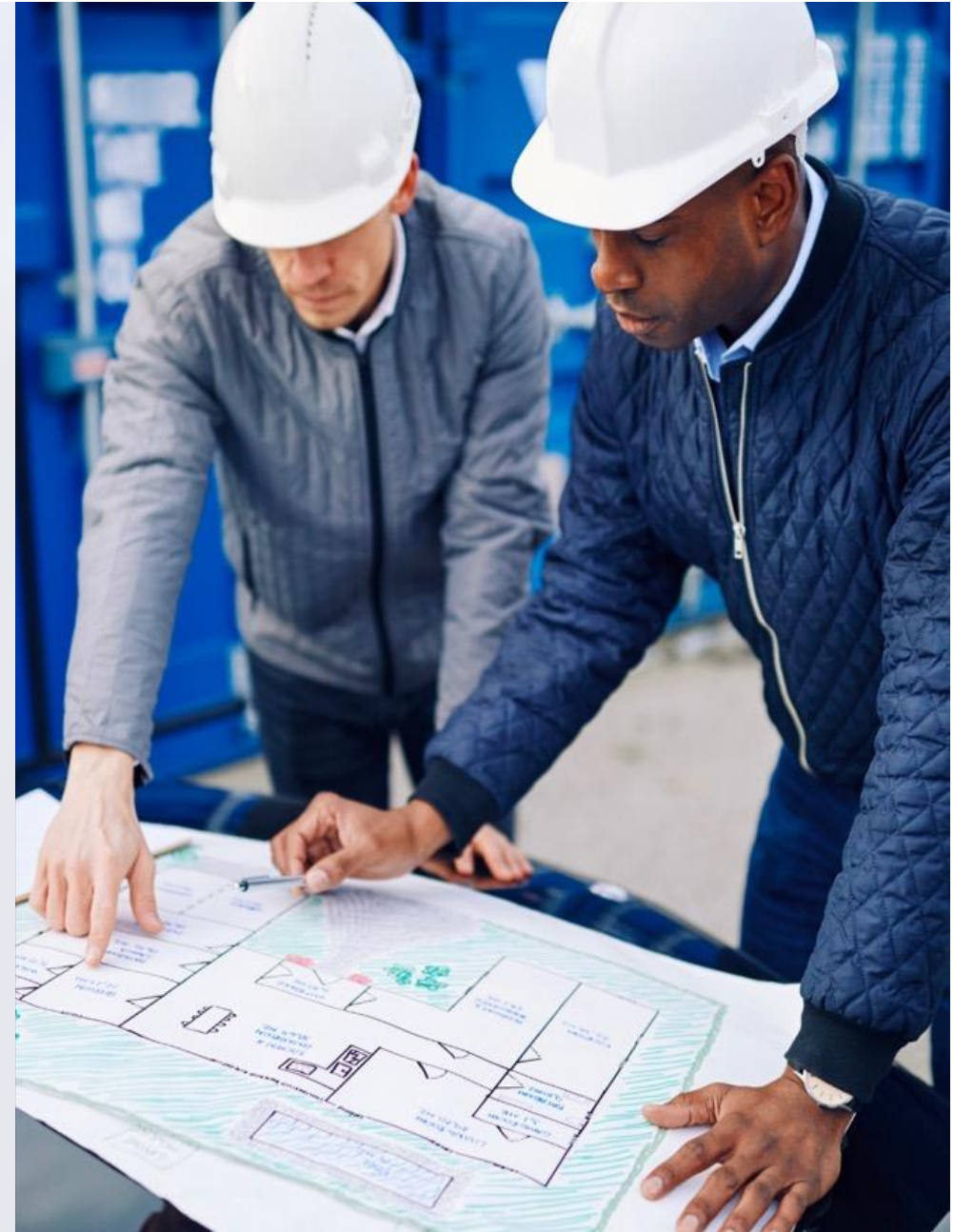


# Delivering Results for Clients

**Client Challenge:** A company in the lumber industry came to LEC to evaluate the potential to make hydrogen from electricity generated onsite from wood waste.

**LEC Approach:** LEC experts in cogeneration systems, hydrogen production and transportation, and hydrogen market analysis performed an evaluation of the business case including cost of hydrogen production and transportation, offtake markets, and regulatory incentives.

**Outcome:** LEC's expert team concluded that lack of local market maturity and current regulatory environment constituted significant project risk. Instead, LEC identified alternate pathways to monetize the wood waste that provided greater upside with less risk.

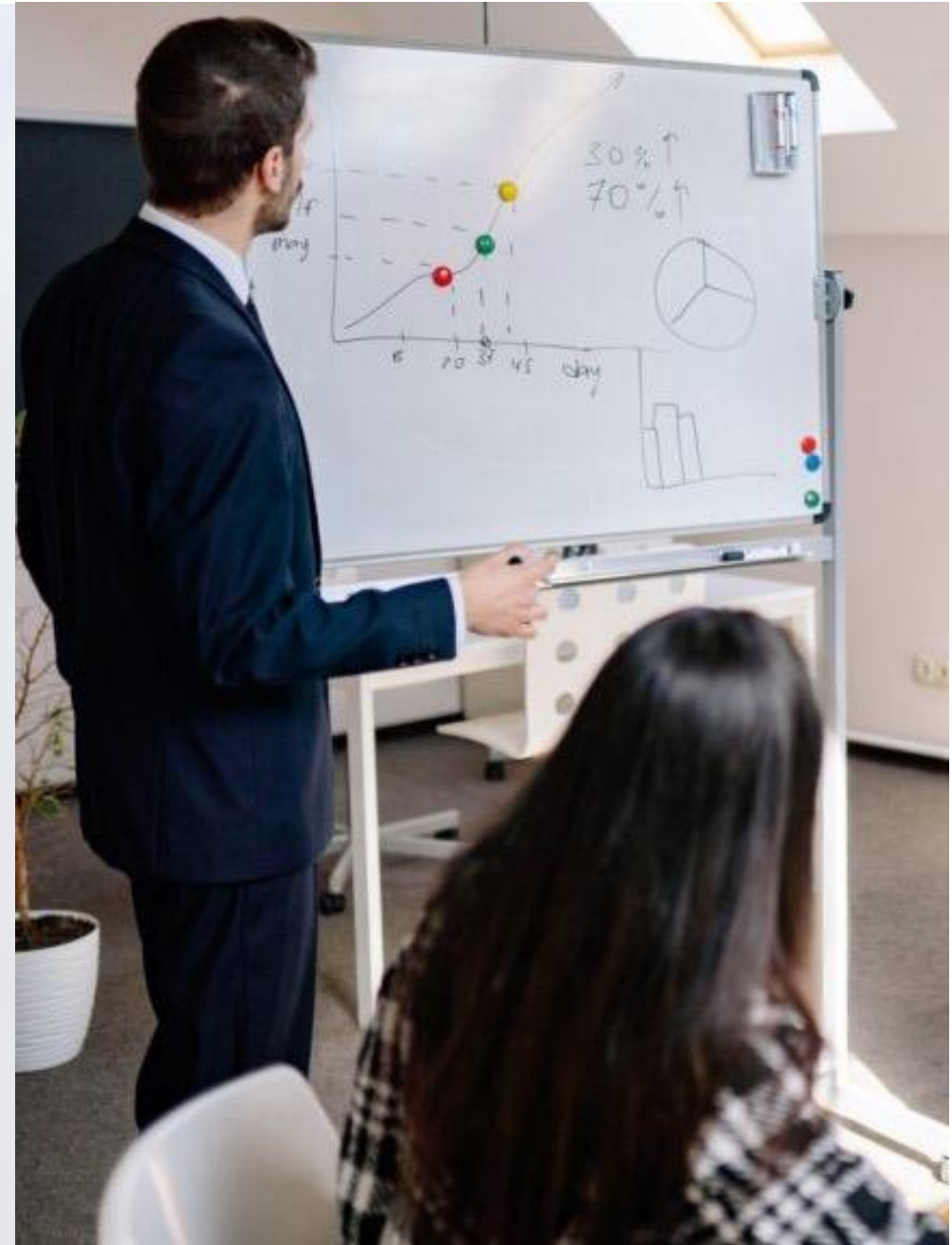


# Delivering Results for Clients

**Client Challenge:** A clean technologies investor retained LEC for due diligence on a biomass to hydrogen gasification technology.

**LEC Approach:** LEC assembled a team of experts in biomass gasification and green hydrogen offtakes to evaluate the OEM's technological claims and commercial contracts. After reviewing the data, LEC found significant holes in the claims of the manufacturer.

**Outcome:** LEC's analysis determined that OEM's claims could not be justified, and the technical risks associated with the investment were high. The Client passed on the investment opportunity, avoiding a potential costly error.







# Thank You!

Ready to get started? Have any questions?  
Let's schedule a call to learn how we can help you.

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