

**Case Study**

*How We Enabled a*  
**Global Energy Leader to Capitalize on Energy Transition  
Through *Advanced Biofuels and Power-to-X Opportunities***

## Objective

A global energy-focused organization partnered with IeB to evaluate market opportunities across the alternative fuels landscape. Their goal was to build a clear, reliable roadmap for their next big investment. We didn't just look at the numbers. We dug into everything, covering how adoption trends are shifting. Our analysis centered around green hydrogen, renewable methanol, biodiesel, and renewable ethanol.

## Our Strategic Approach

To translate market complexity into actionable strategic direction, IeB applied a structured, multi-dimensional assessment framework integrating market sizing, regulatory analysis, regional benchmarking, and competitive intelligence.

### Fuel Landscape & Potential Assessment

Evaluated the current maturity and long-term growth outlook of major alternative fuels, identifying green hydrogen, renewable methanol, biodiesel, and renewable ethanol as high-potential segments expected to experience accelerated expansion.

### Regional & Regulatory Analysis

Assessed regulatory frameworks and policy directives across key regions, highlighting North America and Europe as leading markets driven by strict decarbonization mandates and incentives. Additionally, analyzed emerging economies such as Brazil, Indonesia, and India, where fuel blending mandates are accelerating biofuel adoption.

### Adoption & Blending Trends Evaluation

Mapped adoption patterns across developed and emerging markets, highlighting biodiesel and renewable ethanol as dominant fuels in high-growth economies driven by structured blending programs and strong domestic feedstock ecosystems.

## Supply-Demand & Pricing Dynamics

Modelled global demand scenarios and supply readiness across fuel categories, identifying significant long-term growth potential, particularly for green hydrogen and renewable methanol.

### Snippets

#### Executive Briefings – Alternative Fuels Demand Scenario

Growing alternative fuels demand primarily driven by decarbonization & electrification of mass transport sector; Green hydrogen, and renewable methanol markets are expected to see fast growth going forward, for instance, Maersk is collaboratively advancing renewable methanol space to ensure supply security with 730 kt annually by 2025

#### Global Alternative Fuels Market Demand



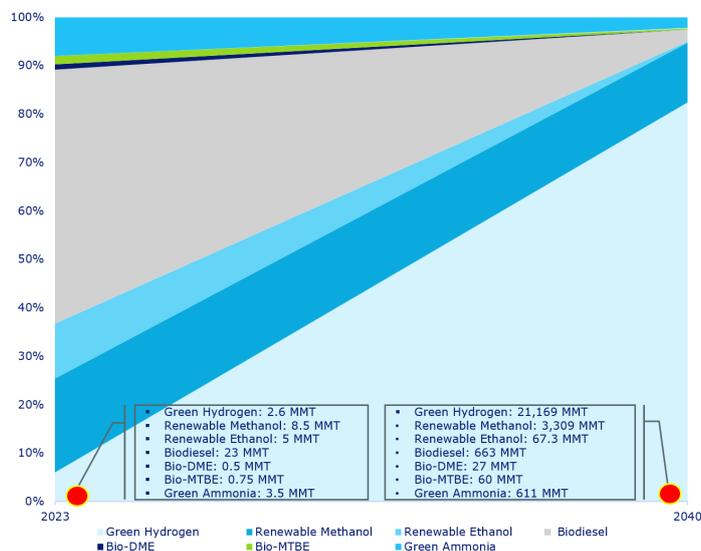
Source: IeB analysis

Note: Only 2<sup>nd</sup> and 3<sup>rd</sup> generation feedstock-derived fuels are considered for the study

#### Executive Briefings – Alternative Fuels Demand Scenario

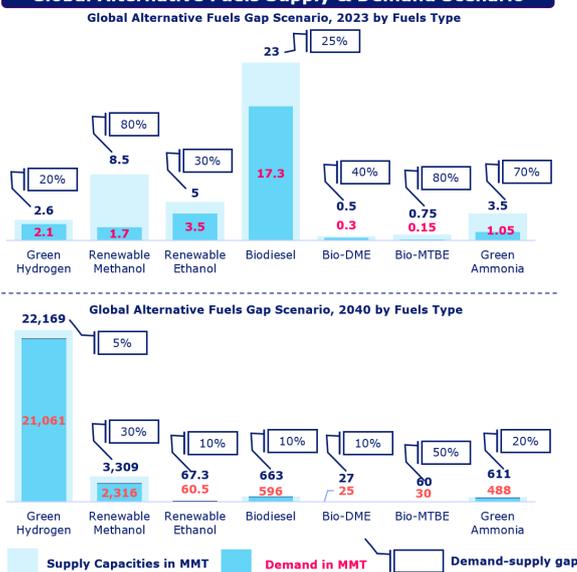
Strong tailwind for alternative fuels market is expected; Renewable methanol, and biodiesel markets must expand its areas of application from niche industrial application to mass transportation application

#### Global Alternative Fuels Market Supply Scenario



Source: IeB analysis

#### Global Alternative Fuels Supply & Demand Scenario



Note: Only 2<sup>nd</sup> and 3<sup>rd</sup> generation feedstock-derived fuels are considered for the study

## Impact

This comprehensive assessment converted macro-level fuel trends into clear strategic priorities by:

- Identifying biodiesel and renewable ethanol as the most widely adopted alternative fuels in emerging economies such as Brazil, Indonesia, and India.
- Highlighted strong demand momentum from blending mandates at 5–20% currently, with ambitions reaching 80–85%.
- Quantifying long-term growth opportunities, with projected global demand of approximately 21,000 MMT for green hydrogen and 2,000 MMT for renewable methanol by 2040.

## Conclusion

Through a comprehensive evaluation of fuel technologies, regulatory environments, and regional adoption dynamics, leB enabled strategic clarity within the rapidly evolving alternative fuels ecosystem. The insights positioned the organization to prioritize high-growth fuels, align with regulatory momentum, and capitalize on emerging demand across both developed and high-growth economies.

# Ingenious Brain

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