



# The 10<sup>th</sup> IPHE Education & Outreach Event

## An Overview of the IPHE

at the

**Technische Universität Hamburg-Harburg**

by

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## IPHE Purpose and Mission

An inter-governmental partnership providing a policy oriented forum to share information and ideas to accelerate the cost-effective transition to clean energy, transportation, and industrial sectors through using fuel cell and hydrogen (FCHs).

Member partners are doing R&D, demos, deployments, and/or are implementing policies to increase the use of FCHs in the economy.



**Australia**



**Austria**



**Brazil**



**Canada**



**China**



**European Commission**



**France**



**Germany**



**Iceland**



**India**



**Italy**



**Japan**



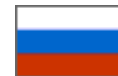
**Republic of Korea**



**Netherlands**



**Norway**



**Russian Federation**



**South Africa**



**United Kingdom**



**United States**



# IPHE Priorities and Near-Term Goals

## Priorities:

1. **Accelerate market penetration** of FCH technologies
2. **Highlight policy and regulatory actions** supporting widespread deployment;
3. **Raise the profile and potential opportunities** with policy-makers and the public; and,
4. **Monitor hydrogen, fuel cell, and complementary technology** developments.

## Near-Term Goals:

1. **Foster momentum** to accelerate the transition to clean systems through use of FCH;
2. **Facilitate collaborative work** across member countries; and,
3. **Encourage broader engagement** and information sharing.



# Trends: Technology and Systems

## 1. Role of Demonstrations

- Market demos are crucial in developing systems & supply chains

## 2. Early Commercial Deployments

- Sustained global R&D and Demos have led to technology maturity and early market deployment

## 3. Cost Reductions

- Need more work across the innovation spectrum

## 4. Market Focus

- Need internationally consistent market framework structures

## 4. Energy & Transport System Integration – and Beyond

- Recognition of longer-term use of hydrogen as an integrator – an “energy vector”



# Drivers: Based on National Circumstances

## 1. Energy Security

- Security of supply and ability to switch

## 2. Energy Efficiency

- Effective use of variable generation – at grid and community scale
- Moving from centralized to distributed generation

## 3. Economic Growth

- New products and supply chains
- Taxpayers return on R,D and D investments

## 4. Environmental Performance

- Clean Air, Climate Change, Noise



# Drivers: Necessary Conditions to Act

1. **Clear Industry Deployment Plan**
  - Vision on the roll-out of their product lines.
2. **Perceived Competitive Advantage Over Incumbent Technology**
  - More comfortable, easier to use, quieter, smoother, simpler, cheaper.
3. **Defined Financial Framework**
  - Trajectory to robust market conditions.
4. **Economic Impact**
  - Jobs, Taxes, Trade, Supply Chain Development.
5. **Environmental Impact**
  - Improve Local Air Quality, GHG Reductions, Noise Abatement.
6. **Efficiency and Security**
  - Complements new clean energy generation, enables ease of energy management, facilitate clean systems integration.



# Tim Karlsson

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