GRMF WEBINAR ON HYDROGEN & GEOTHERMAL

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CHALLENGES OF THE HYDROGEN MARKET

Chicken and egg question

- Potential producers fear large investments due to low demand
- Potential customers fear low availability and too high prices

Timeline

H₂ Price that customers are willing to pay

H₂ Price charged by producers
The aim of the project is to promote the international market ramp-up through a double auction process. In this process, green hydrogen is purchased internationally and auctioned in the EU.

Processing via the subsidiary HINT.CO:
- **10-year contracts** with H₂ sellers
- **1-year contracts** with German & European companies for decarbonization measures

As the production/purchase price is currently still higher than the selling price, HINT.CO's losses are offset by government subsidies for a maximum of 10 years.

**Producers:** Vary depending on the tendering period

**Customers:** Companies in the EU that are interested in green hydrogen

- 900 million euros provided by the BMWK, with a further **3.6 billion euros** to flow into the H2Global fund
- First period: **€ 300 million per hydrogen carrier** spread over 10 years
**H2GLOBAL - PRINCIPLE OF DOUBLE AUCTIONING**

- **10-year purchasing contracts with H₂ producers**
- **Price difference compensation of HINT.CO with the help of subsidies**
- **1-year sales contracts with H₂ customers**

- **HINT.CO concludes 10-year HPAs with H₂ producers to create investment security**
- **H₂ is sold in 1-year HSAs to European/German companies**
- **The price difference/losses are compensated by the H2Global Foundation of Hint.CO**

Source: BMWK
The mechanism is designed to allow for **individual funding windows**

- **New parameters** can be defined for each window (modular principle)
  - **Green products**: e.g. ammonia, methanol and synthetic aviation kerosene (produced from green hydrogen) were selected for the first window
  - **Geographical application**: The first tender was outside the EU, but regional or country tenders may follow
  - **Product requirements and sustainability criteria** for production, transportation and purchase

**Price determination**

- The purchase and sales prices are determined through competitive tendering procedures. The bids with the **lowest supply price** and the **highest demand price** are awarded the contract in order to minimize the price difference to be compensated
  - The **contract price** includes product costs, transportation costs, logistics and import and export duties
  - The smaller the price difference, the more financing windows can be opened

Source: H2Global
H2GLOBAL - PROCEDURE

**Timetable for tenders**

**Phase 1**
- Status quo
- Prequalification (phases 2 - 5)
- Min. 30 days up to 3 months

**Transition**
- Min. 15 days

**Phase 6**
- Call for tenders (phases 7 - 9)
- Min. 30 days to 5 months
- Evaluation

1. **Call for applications** to participate
2. **Opening of the requests to participate received** after expiry of the participation deadline
3. **Evaluation of the requests to participate** on the basis of the eligibility and selection criteria
4. **Completion of stage 1** - Unsuccessful applicants will be notified
5. **Result of level 1**
6. **Invitation to tender** (limited to stage 1 selection)
7. **If necessary, negotiation rounds** in which the specifications are amended
8. **Opening of the bids received after** the tender deadline
9. **Evaluation of tenders** on the basis of the award criteria (final selection)
10. **Conclusion of the award procedure**

Source: H2Global
H2GLOBAL - REQUIREMENTS

Additional product specification

- **Electricity procurement:** i) Generator for renewable electricity connected directly to the electrolyzer  
  ii) From the grid within a zone that is certified as renewable (>90% RE)  
  iii) From the grid by means of a PPA for renewable energies

- **CO₂ sourcing:** The carbon used for the production of derivatives may only be obtained from certified sources

- **Reduction of greenhouse gas emissions:** The emission saving of the product must be at least 73% compared to a fossil fuel (set at 94gCO₂ eq/MJ) as part of a life cycle analysis

Additional sustainability criteria

- **Environment:** water management, desalination, environmental protection, no release of toxic substances, waste and pollutant management

- **Social:** compliance with ILO standards (minimum age, weekly rest period, ...), living wage, access to health services

Source: H2Global
Delivery of the product

- **Producers** are responsible for production, transportation, delivery point logistics and storage
- **Consumers** are only responsible for collection at the delivery point and distribution

First financing window

- Ammonia → €300 million (€30 million annually)
- Methanol → €300 million (€30 million annually)
- Synthetic aviation kerosene → €300 million (€30 million per year)

The funds will be disbursed over a period of 10 years (January 1, 2024 - December 31, 2033)

"Take or pay" commitment

- HPA includes a "take or pay" obligation for HINT.CO
- HINT.CO assumes the **commercial risk** that products cannot be sold at competitive prices
EUROPEAN HYDROGEN BANK

Intention

- Ensuring the REPowerEU target in **2030**: 10 million tons produced in Europe & 10 million tons imported
- Four pillars of the hydrogen bank:
  1. Creation of a domestic market
  2. International imports into the EU
  3. Transparency & coordination
  4. Streamlining existing financing instruments

Most important points

- **Target**: Activities in all four pillars to be launched by the end of 2023
- Enabling private investment in **hydrogen value chains**
- Development of a **European hydrogen market**
- Achieving the **EU hydrogen target**
- **800 million** has been set aside for the first auction in the fall under the Innovation Fund (target region: EU)
- Mechanism is based on **H2Global** (differential cost compensation - fixed premium for a maximum of 10 years)
- Tenders for imports from outside the EU to follow

Source: EU Commission
EUROPEAN HYDROGEN BANK

Supporting the expansion of **domestic hydrogen production** in the EU

Ensuring diversified **imports** of hydrogen (derivatives) from **outside the EU**

**Supply** - side auctions in which fixed **premium payments** are allocated to hydrogen producers in the EU

**Planned:** Auctions with fixed **premium payments** to international producers

**Within the EU "domestic leg"**

**Within the EU "domestic leg"**

**With the EU "international leg"**

**Innovation Fund**

Implemented by DG Clima

**Financing**

Still open

Implemented by DG Ener

Source: Competitive bidding (europa.eu)
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