The FCEV Experience
User Feedback on Hydrogen Vehicles in Denmark

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Who are we?

- Danish industry association
- Cluster of hydrogen stakeholders
- Business, research and policy
- Bridging the gaps between sectors
- EU project partner
- Dedicated to facilitating the green transition via hydrogen solutions

Energy storage

Research

Transport

Energy conversion
First of all...

Congratulations Iceland!
New hydrogen fueling stations

nel

Skeljungur
Current situation in Denmark

World’s first nationwide network of fuelling stations

84 licensed FCEVs

10 fuelling stations

- more on the way
News just in...

- Today the Danish government has put forward a proposal for a climate and air plan
- No new fossil fueled cars to be sold after 2030
- Lower taxation on company vehicles
- By 2020: All new busses must be CO$_2$-neutral
- By 2025: All new taxis and busses in the cities must be zero emissions
- By 2030: All taxis and busses in the cities must be zero emissions
- A variety of incentive schemes municipalities can implement
H2ME2 status in Denmark

- Continuous strategic efforts to increase deployment
- Communication, information and knowledge
- Gathering and sharing experiences
- Multiple events
  - "Mirai Road Trip"
  - The People’s Political Festival
  - Public handover of FCEVs to two Copenhagen mayors
- User experience report
- Expansion of the fuelling station network
Mirai Road Trip

- From Germany to Denmark
- 50 journalists
- Hydrogen Denmark arranged meetings with Danish industry and political officials
- Conference at parliament, Christiansborg
- More than 800 km. completed
The People’s Political Festival

- H2ME2 event
- Two panel debates
  1: User experiences
  2: Industry perspective
- Hosted by household name and climate activist, Jesper Theilgaard
- ‘Show-and tell’ presentation of the Toyota Mirai by a certified mechanic
Public Handover

- City Hall, Copenhagen
- Mia Nyegaard, Mayor for Social Services
- Cecilia Lonning-Skovgaard, Mayor for Employment and Integration
- Part of Copenhagen’s increasing fleet of FCEVs
- Decision demanding all vehicles providing services or goods to the municipality be zero-emission

"It’s just like driving a conventional car - only much, much nicer!"
User experience report

- Interviews
- Consumer needs and preferences
- Technology
- Buyer profiles
- Experiences of driving and fuelling
- Strengths and challenges
- Perspectives for FCEVs
Experiences

- Smooth and noiseless driving
- Great milage
- Strong reliability
- Easy to refuel
- Same mobility as a fossil fueled vehicle
- No change in driving habits and patterns
- Clear conscience

"We went on a ‘safari’ and it was amazing driving noiselessly among the animals!"

"This car is my office so comfort and easy fuelling is very important – this car has both."
FCEV buyer profiles

- Municipalities are the biggest investors
- Copenhagen as lead customer and H2ME2 partner
- Strong public responsibility and effort to lead the way
- Danish commitment to a fossil free future
- Ambitious efforts to combat air and noise pollution
- No new fossil fuel vehicles to be sold after 2030
The experience of an FCEV

On a scale of one to five (five being highest)...

A: What was your first impression of the FCEV?

B: How did you experience the infrastructure for FCEVs?

C: How did you experience the fueling process?

D: To what extend do you associate sustainability and FCEVs?

E: To what extend will having used a FCEV effect you to factor in sustainability when purchasing your next car?
## User evaluation

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<thead>
<tr>
<th><strong>Strengths</strong></th>
<th><strong>Challenges</strong></th>
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<tbody>
<tr>
<td>- High overall satisfaction</td>
<td>- Prize</td>
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<td>- Continuation of driving habits and patterns</td>
<td>- Infrastructure</td>
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<td>- Great driving experience – especially regarding acceleration</td>
<td>- Payment problems at the fueling station</td>
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<tr>
<td>- Comfort and noiselessness</td>
<td>- Car service and repairs</td>
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<td>- Easy to refuel</td>
<td>- Lack of local technical knowledge</td>
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<td>- Reliable and not whether sensitive</td>
<td>- Necessity to go abroad for extensive repairs</td>
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<td>- Taking responsibility and being an active part in the green transition</td>
<td>- Lack of general information for potential buyers regarding FCEV-technology</td>
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What’s next?
- perspectives for the future

- Strong **communication** and staying on **message**
  - technology, zero emissions, air pollution, FCEVs as an **actual alternative**
- Projects provide a pool of **knowledge** and **experience**
- **Learning** from initial teething troubles
- Increasing focus on **customers** and **industry**
- Moving from **projects** and **subjects** to **business** and **customers**
- Viable **expansion** of fueling network
- Identifying potential **markets** and buyer **requirements**
- Scaling up efforts
- Rectifying the **payment system** issues at stations
- Dedicated efforts regarding **public** and **heavy duty transport**
Technology, responsibility & sustainability

- Necessity for green hydrogen
- Electrolysis by renewable energy
- Certification scheme
- Economy of scale
- Long term strategies – business, industry and policy
- Investor security
- Local production
- HyBalance, Denmark
- Continuous communications efforts
Thank you for your time and attention