Our mission is to enable our customers throughout the world, to deliver reliable, long lasting, Pure Energy® solutions

– SMALLEST –
Community benefit of Hydrogen Installations
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Aims

To define what are the hydrogen benefits to communities

Provide a positive feedback from the Pure Energy® Centre.
Objectives

• To define what is Smallest
• To describe three community projects
• To provide clear positive feedback
• To say what we want as commitment.
What is Smallest

A European project with the aim:
– To make renewable energy more accessible
– To the smallest communities
– In the most remote areas of Northern Europe
– To reduce communities dependence on hydrocarbon
– Increase communities financial viability.
Smallest findings

The findings of a desktop survey are:

– A large number of communities
– Do not have access to grid connection
– For installing renewables
– But communities are highly interested in RE
– To become financially viable
– Many communities are interested in H2 and FC to solve
  • Their grid issues
  • And achieve in the long run energy independence.
Smallest findings

But communities say:

– There is no political backup for hydrogen and fuel cells
– No funding for H2 and FC projects
– No government supported Storage Incentive package
  • Similar to the FIT tariff
– Funders say that H2 are only at R&D stage
– The word is going around that H2 and FC projects are too difficult to do
– There is a strong lack of H2 & FC information compared to RE
  • Especially on financials.
So what did we do as the Pure Energy® Centre?
We provided them information on three community projects.
We focused our information on
  – Benefits of H2 & FC in the community
  – Not the technology.
H2SEED project by CNES

Benefits

– Increase use of Renewables
– Producing local fuel for local consumption
– No more high fluctuating petrol prices
– No more imports
– Communities can take charge of their fuelling infrastructure
– Provide a solution to the grid instability.
Benefits

- Local teaching skills used to train your local youngsters
- Your trained youngsters will support the local H2 infrastructure
- Exciting local H2 projects will keep your youngsters in the community
- Local education = lower brain drain.
Faroe islands

Benefits

– Zero carbon building
– New Research and Development programme for the country
– Retain highly skilled individuals
– Attract investment from private sector
– Attract new business ventures.
PURE® Project

Benefits

– Challenge the myth that H2 is a thing of the future
– Created a new business venture in a community
– Inward migration
– Support the local community by re-investing in it
– Green technology brought technology tourism
– Raised the profile of the island
– Though the locals says this is the island above all!
In summary
  – There are many benefits to H2 & FC
But
  – The communities are telling us that there is no support for H2 & FC projects.
This is not acceptable
It is simply no good enough
Positive feedback
This is the nicest way I can do this
What Governments are saying?

• Let us focus on transport sector only
• Government want to decarbonise the streets
• I think they mean
  – We want green vehicles
• But
  – I do not see anyone saying how this will be achieved
• There is no Plan
• No Vision
• Nothing really.
Let us look at other green industries

• In other industries we have the Feed In Tariff
  – Anaerobic digestion 20 years (between 9p to 11.5 per kWh)
  – Wind 20 years (between 4.5p to 35.5 per kWh)
  – Solar PV 25 years (between 29.3p to 41.3 per kWh)
  – Hydro 20 years (between 4.5p to 19.9 per kWh)
  – Micro CHP 20 years (10p per kWh)
  – Biomass 3 Government grant funding schemes
  – Grant funding for Marine industry
  – Green Hydrogen & FC?
    • 1 Government scheme of £1.5 million.
Well if there is no plan for H2 & FC
Then let us propose a plan
This is how we see it as the Pure Energy® Centre company
Background to the Plan

1. We need to take courageous decisions
2. We need to reduce the risks to investors
3. We need to develop or produce new legislation to support the sector
4. We need clear messages to the public.
The Plan

1. Politicians should legislate
   1. For 20% of hydrocarbon produced hydrogen currently sold in the UK
   2. To replaced by green hydrogen
   3. If the company does not sell green hydrogen
   4. Then the company is penalised
   5. This model is already used in other industries

2. Politicians should legislate
   1. That all fleet owners
   2. Must have 5% of their vehicles
   3. Running on Green fuel
   4. Green fuel must be an equal mix between H2, battery, biogas and others.
The Plan

1. Politicians should remove negative legislation
   1. That prevent H2 and Biogas vehicles to be on the road
   2. If we can override legislation for the bank
   3. Then we can override legislation for green fuel

2. Politicians should reduce financial risks
   1. Launch Grant funding scheme
   2. For 3 to 5 years
   3. No more one off grant funding scheme
   4. This will support investment
   5. And the creation of jobs / wealth

3. The H2 & FC industry does not need for prizes / award

4. Government to legislate retrofitting public buildings with FCCHP (H2 and Natural Gas).
The Plan

1. We need Government Ministers
2. We need Government officials
3. We need Public Sector officials
   1. To publically state green hydrogen and fuel cell targets
   2. To publically state their support for the hydrogen and fuel cell sector
4. What we are looking for is similar statements to
   1. The wind
   2. Offshore wind
   3. Marine
   4. And others
5. We need Government to provide guarantees for loans – at a later stage.
6. We need government to develop a Storage Incentive.
Outcomes of the basic Plan

1. There will be a lower risk to investors
2. There will be a lower risk to develop new products
3. There will be:
   1. More hydrogen heaters
   2. More hydrogen cookers
   3. More FCCHP
   4. More FCCCHP systems
   5. More H2ICE genset
   6. More green fuel cell vehicles on the road
   7. More green H2ICE vehicles on the road
   8. A more stable grid
Outcomes of the basic Plan

1. There will be:
   1. More training courses
   2. More higher education degrees
   3. Patents
   4. IP
   5. More jobs
   6. More wealth
   7. More tax income!
What is next?

1. We need to organise a get together with
   1. All of the councils CEOs in Scotland
   2. All of the transport sector in Scotland
   3. Hytrans, Zetrans, etc
   4. Government officials

2. We need to organise a second get together with
   1. Wind developers
   2. Hydro developers
   3. Grid owners
   4. Government officials

3. We need Scottish Government
   1. To buy into this
   2. To push for this and to attend.
What we really need is a cohesive public/private/academia involvement with a strong political message
We have already started building this cohesion with a new CEO staged at the H2Office
Pure® Vision of the Future Energy System in communities

Mini-Grid

Community

Power

Pure Hydrogen®

Ammonia fertiliser

fuel

Pure Hydrogen® Gas distributed
Conclusions

1. SMALLEST project has highlighted
   1. The lack of support available for hydrogen and fuel cell technologies

2. Benefits of H2 to communities must be shown

3. All other green technologies have received substantial public sector support

4. H2 technologies is lacking
   1. Political support
   2. Financial support
   3. Legislative support

5. There is a need for several get together meetings
   1. In each industry sector
      1. Transport
      2. Building maintenance
      3. Architects
      4. Developers
      5. Public sectors.
Any Questions?