

PowerCell Sweden AB

March 2018



An Innovative Commercial Pioneering Company

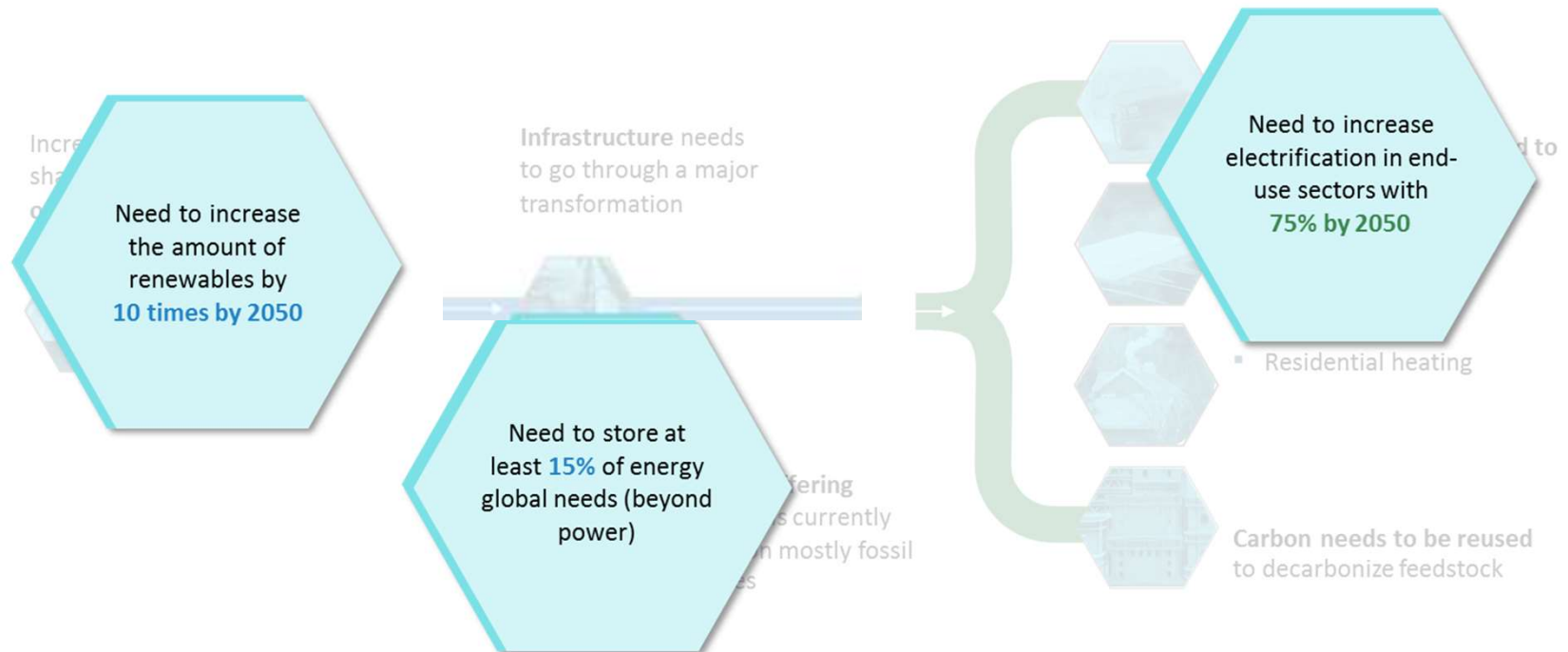
- Outstanding Fuel Cell Expertise
- All central functions located in Sweden
 - Northern Europe largest fuel cell lab
 - Production in Gothenburg
 - Subsidiary in Germany
 - Distributors: Japan, S. Korea & S. Africa
 - JV in Norway
 - Powunit AS Business partner in Norway
- Over 13 000 shareholders
- Strong industrial main owners



The energy transition creates multiple challenges

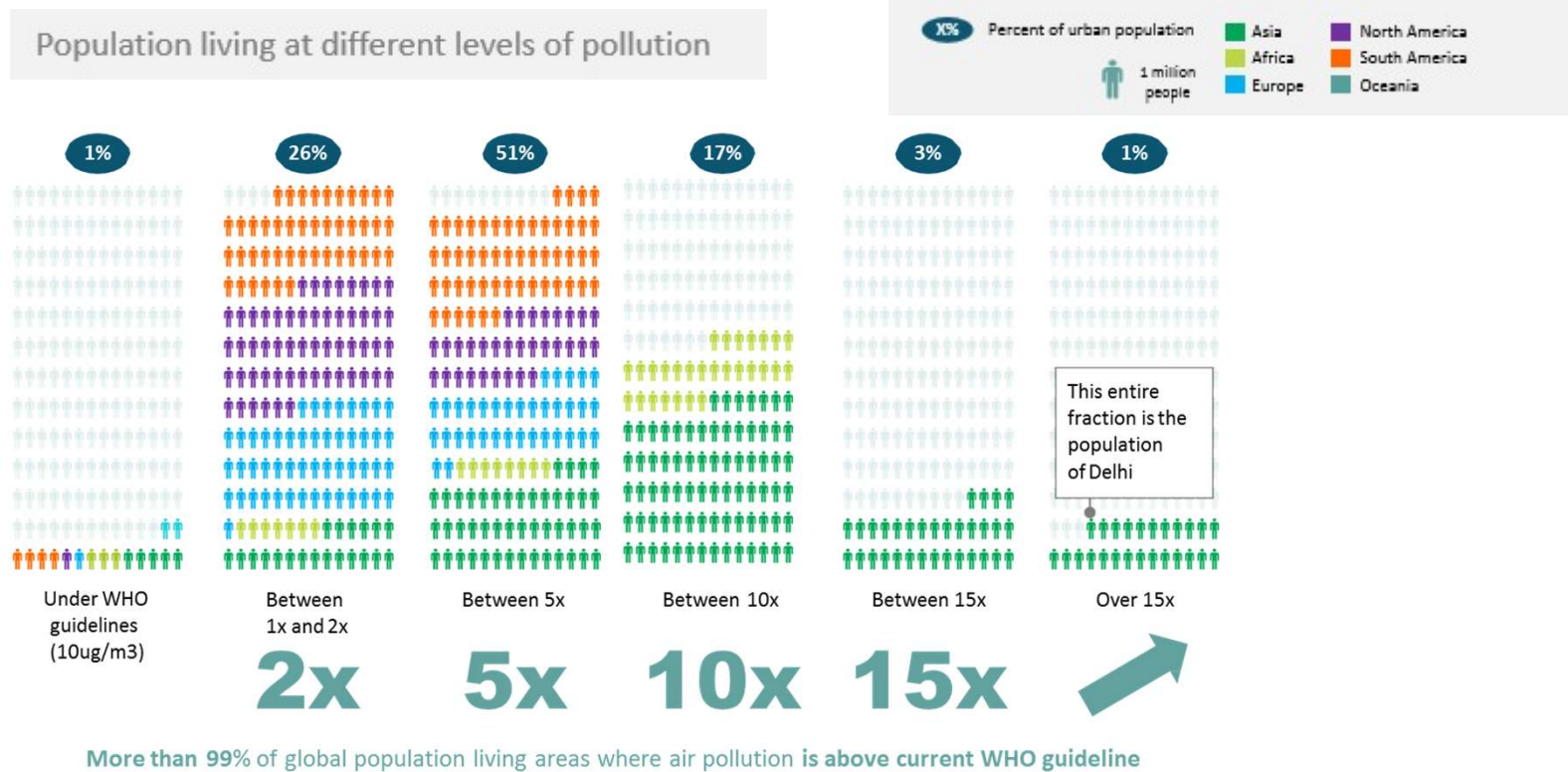
Enable the renewable energy system

Decarbonize end uses



SOURCE: Hydrogen Council

Simultaneously, local air quality of cities to be improved urgently



Source: World Bank, 2014, WHO 2014

NOTE: Africa is underrepresented since only 8 African cities reported emissions in 2014 (population of 42M)

Fuel Cells – The Game Changer

In several billion years nature has never evolved any complex organism that uses batteries for energy storage to run the organism.

**All complex organisms use fuel cell technology.
That indicates that batteries are not the only way.**



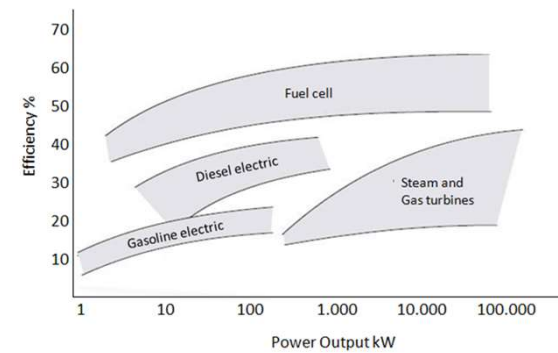
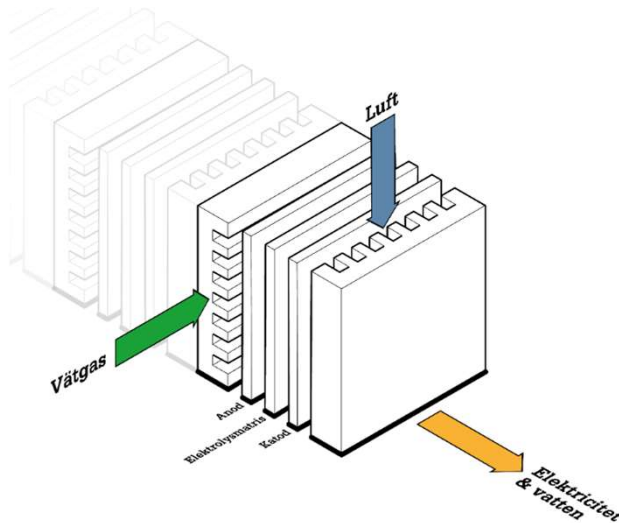
Kobolt, batterier och lidande i Kongo

[BLOGG: Kobolt, batterier och lidande i Kongo](#)

Power Circle - 2018-01-26 13:15 CET

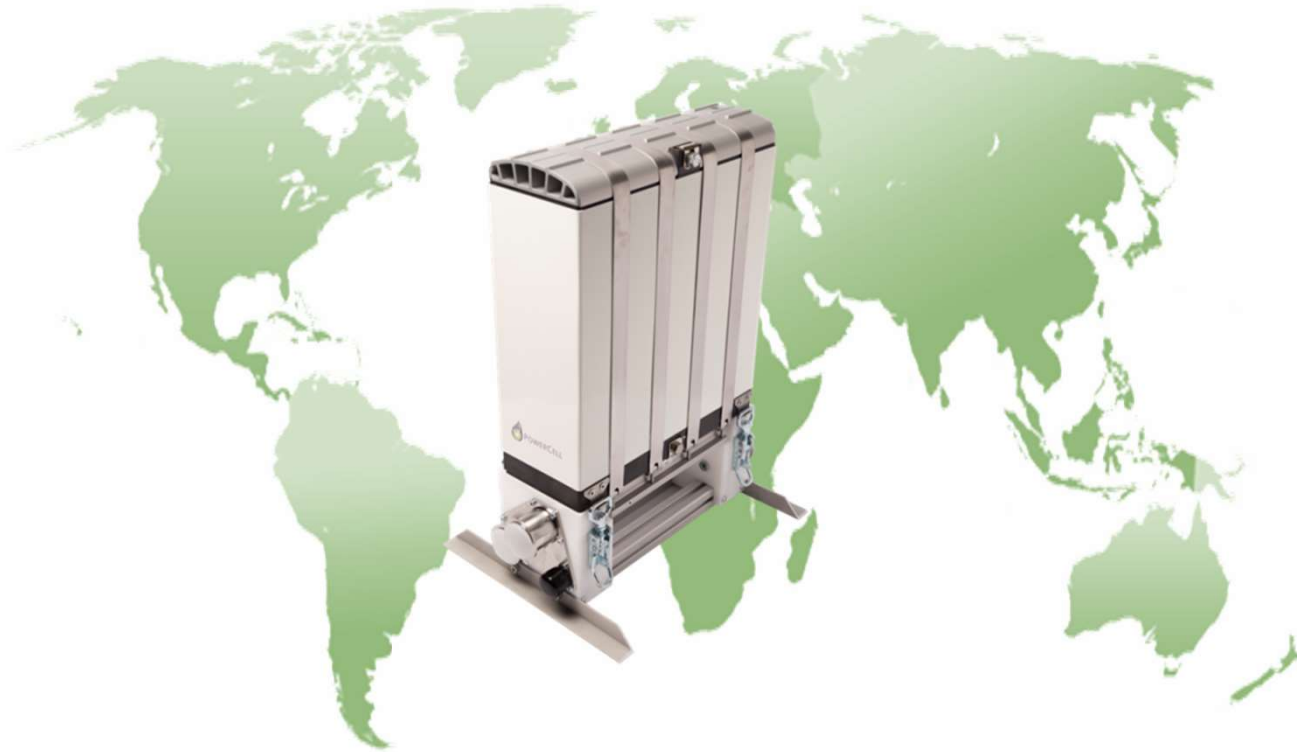


Fuel Cells – The Game Changer

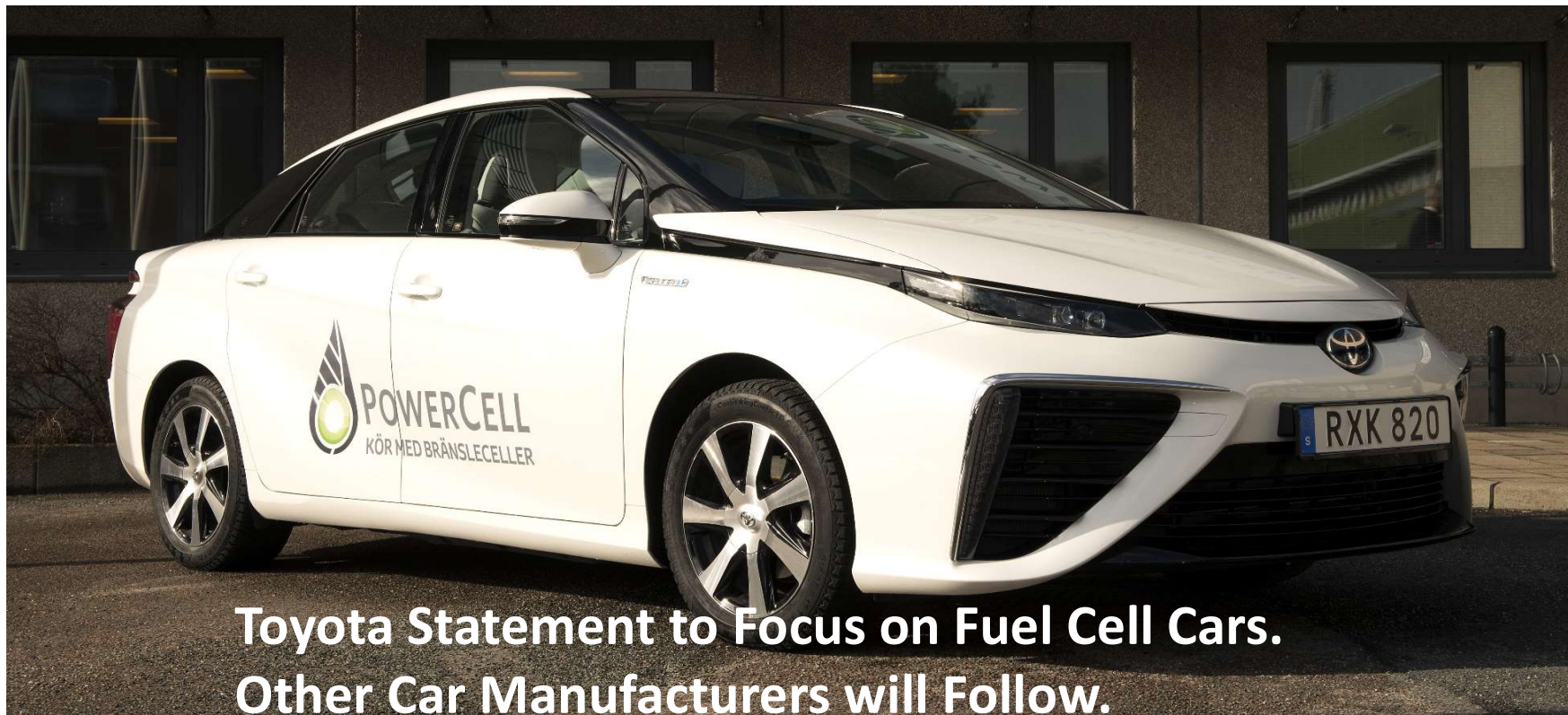


- The only exhaust from a fuel cell system is water and heat –ZERO EMISSION
- High Efficiency in a broad range
- A minimum of maintenance is needed

Increasing Strength of Driving Forces Cooperate in Creating Heavy Growth for Fuel Cells



Market Demand for Carbon Free Solutions



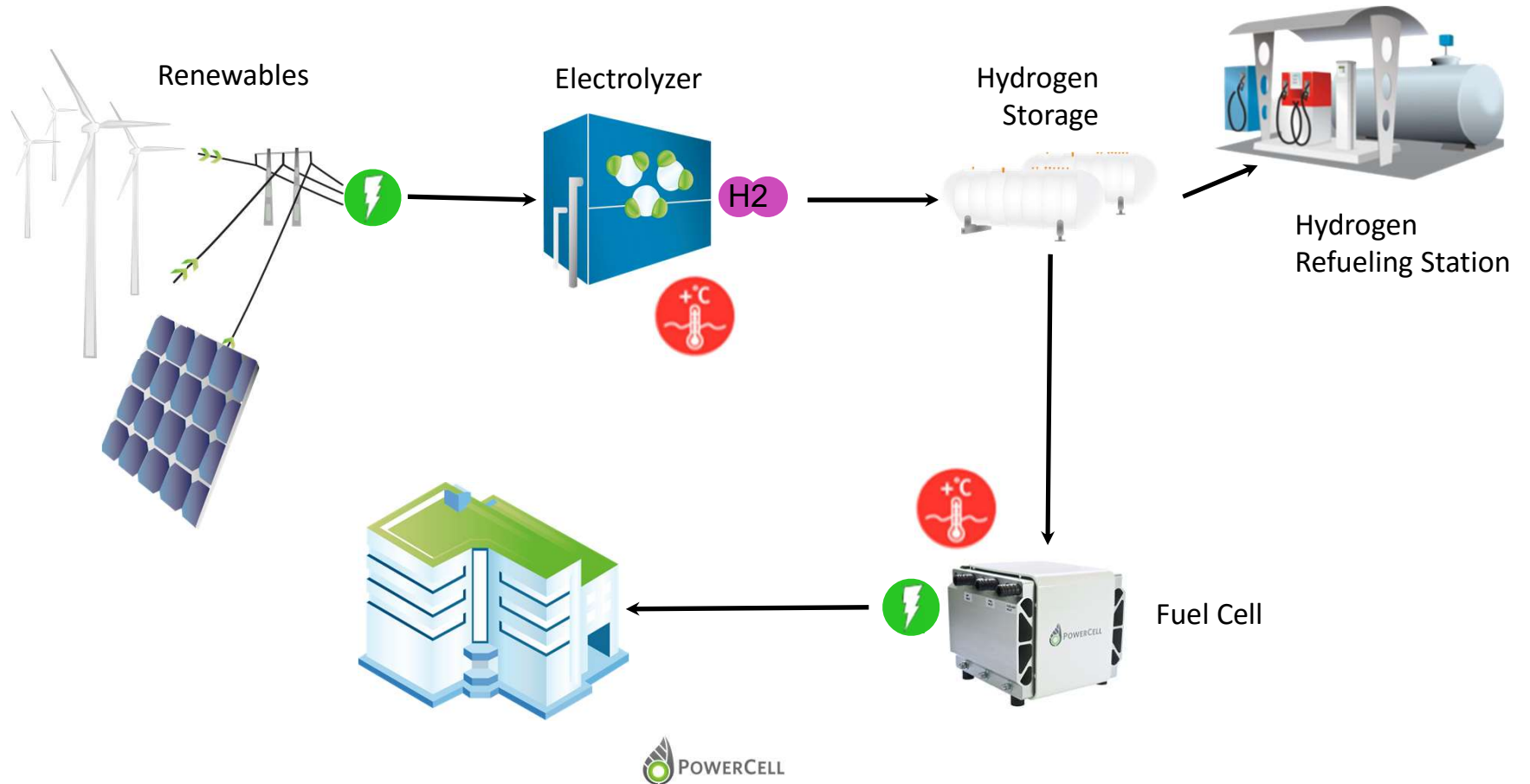
**Toyota Statement to Focus on Fuel Cell Cars.
Other Car Manufacturers will Follow.**



Hydrogen Infrastructure is Increasing



Energy Society Convergent with Automotive



Disruptive Change – Japan and China will Take The Lead





PowerCell

- Products & Customer Segments



Customer Segments



PowerCell's Product Platform Strategy

- Scalable and modular product platforms
- PEM fuel cells – standard in automotive
- Low temperature, water cooled
- S1 and S2 fuel flexible - hydrogen or reformat
- S2 and S3 designed for high volumes



PowerCell S1 (1-5 kW)



PowerCell S2 (5-35 kW)



PowerCell S3 (30-100 kW, prototype)





PowerCell

- Customer Cases

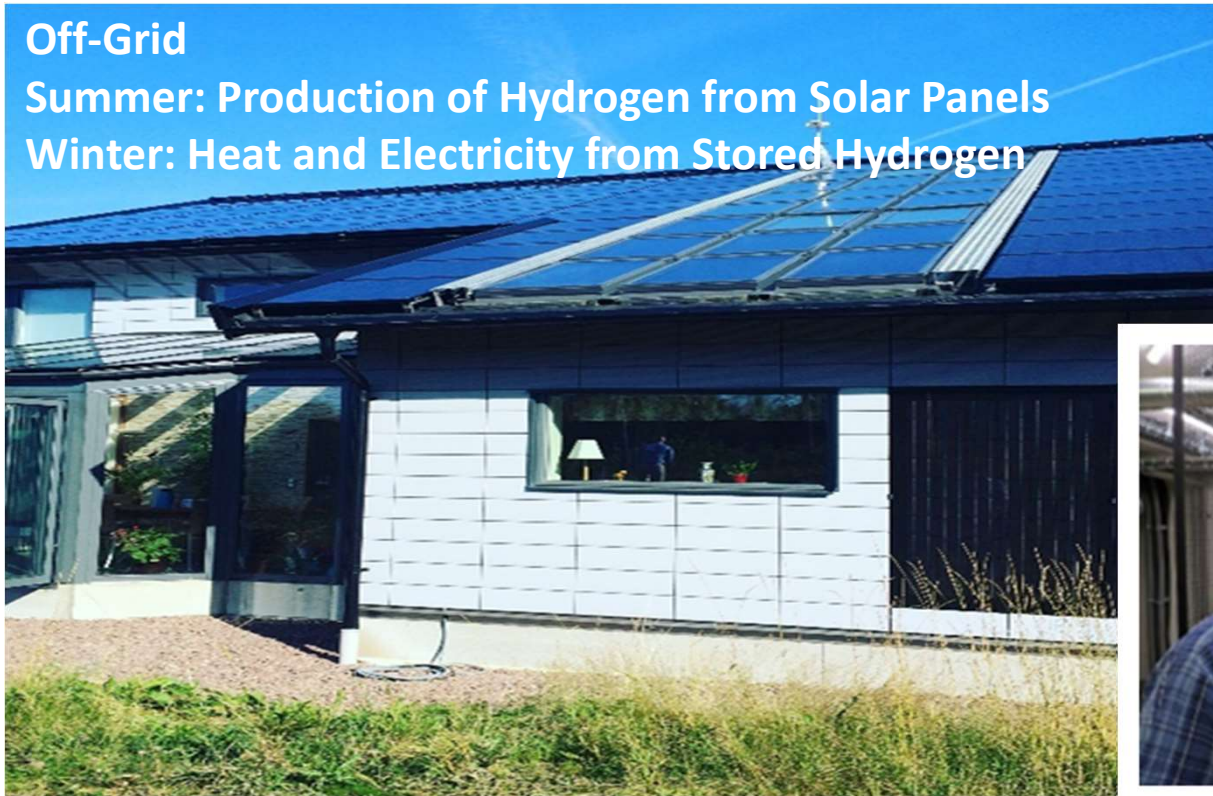


Decentralized Smart Houses

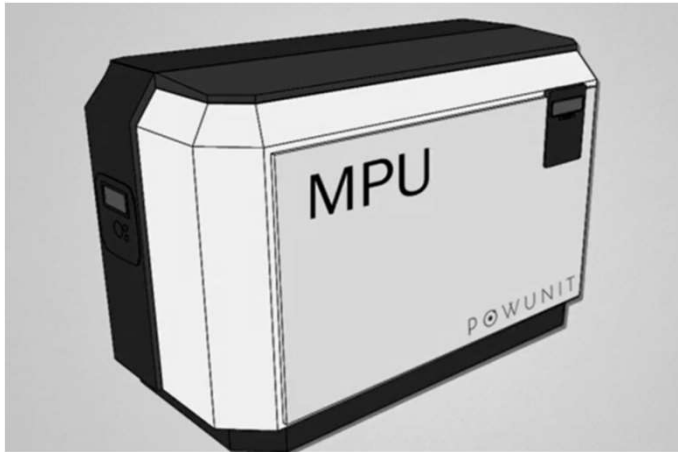
Off-Grid

Summer: Production of Hydrogen from Solar Panels

Winter: Heat and Electricity from Stored Hydrogen



Powunit MPU



○ [Video](#)

Material Handling: Kalmar and SSAB

- Fuel Cell System based on PowerCell S2
- Middle sized Forklift for SSAB
- Test until 2018



PowerCell S2



The World's First Distribution Truck: Coop Switzerland

- Test in electrified 34 tonner with trailer
- PowerCell S3, as a range extender
- Reduce over 1.5 tons of batteries



PowerCell S3



Marine Application: Maranda & Nimbus

- Maranda Consortium (ABB among others)
- A marine system based on PowerCell S3
- Power generation to electrical equipment and dynamic positioning
- Nimbus Boats (LOI)
- Feasibility study
- Construction of a demo vessel
- Propulsion



PowerCell S3



Photographer Panu Hämmäinen



PowerCell MS20 (S2)

Hyon AS – JV Enable Customer A One Stop Solution

- World Class Hydrogen & Fuel Cells Technologies
- Clean and profitable energy solutions
- Tailored and integrated systems

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Hydrogen production



HEXAGON
COMPOSITES

Hydrogen storage



POWERCELL

Power generation



POWERCELL

PowerCell is Highly Requested in China

- Fuel stack of 30 kW, range extender
- PowerCell S2 is extremely attractive
- New subsidy to Hydrogen vehicles:



400 000 SEK



600 000 SEK



1 000 000 SEK



Nikola Motor Company: Heavy Duty Transport Trucks

- PowerCell appointed as primary fuel cell stack supplier
- Nikola Two, a 100% zero emission day-cab, will be brought to market in 2021
- Starting with pre-production testing vehicles in 2018.



PowerCell S3



Driven by the Idea of Creating Something Extraordinary



PowerCell

- the Leading Nordic Fuel Cell Company



www.powercell.se

Nasdaq First North: PCELL.ST