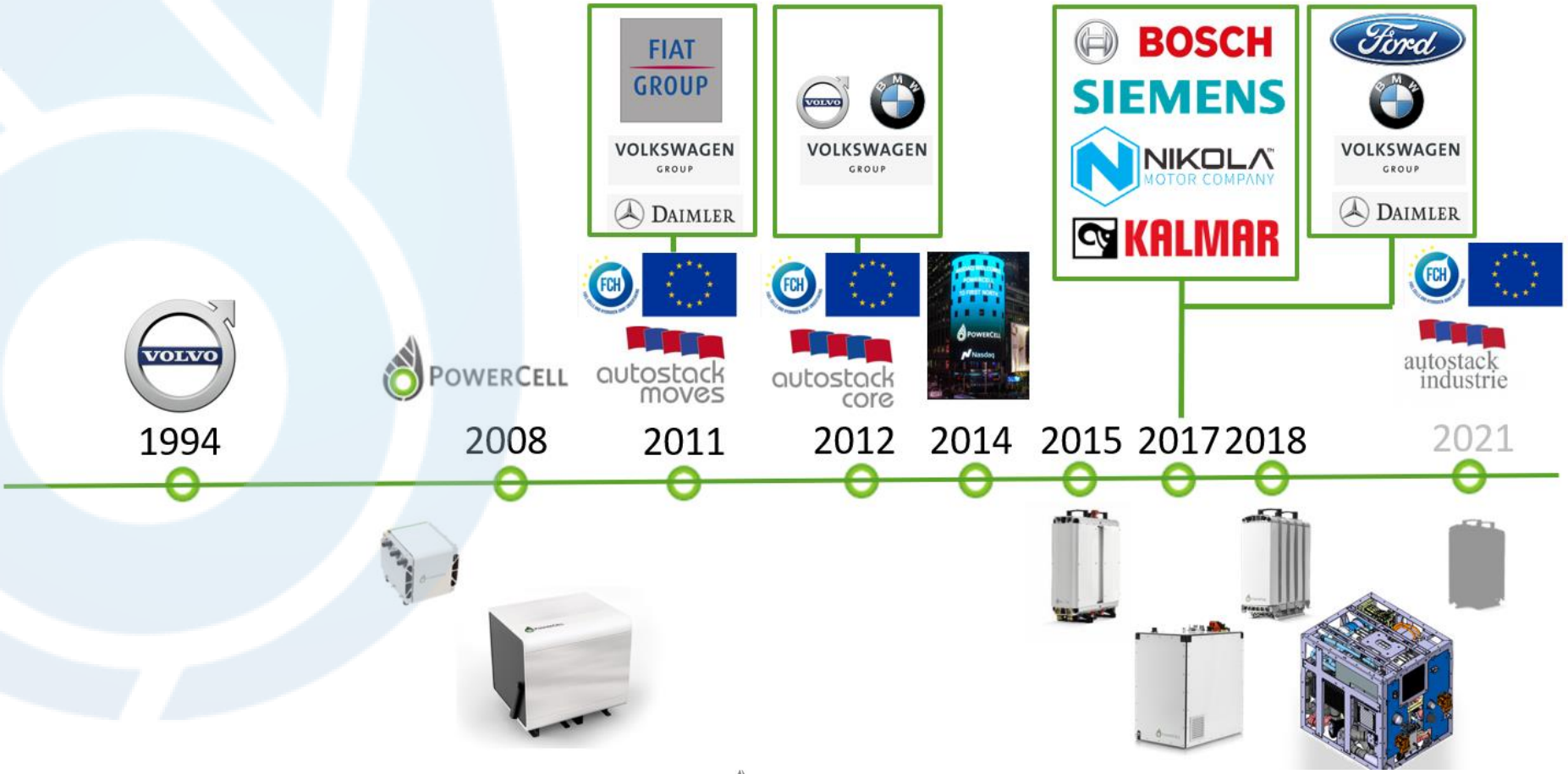
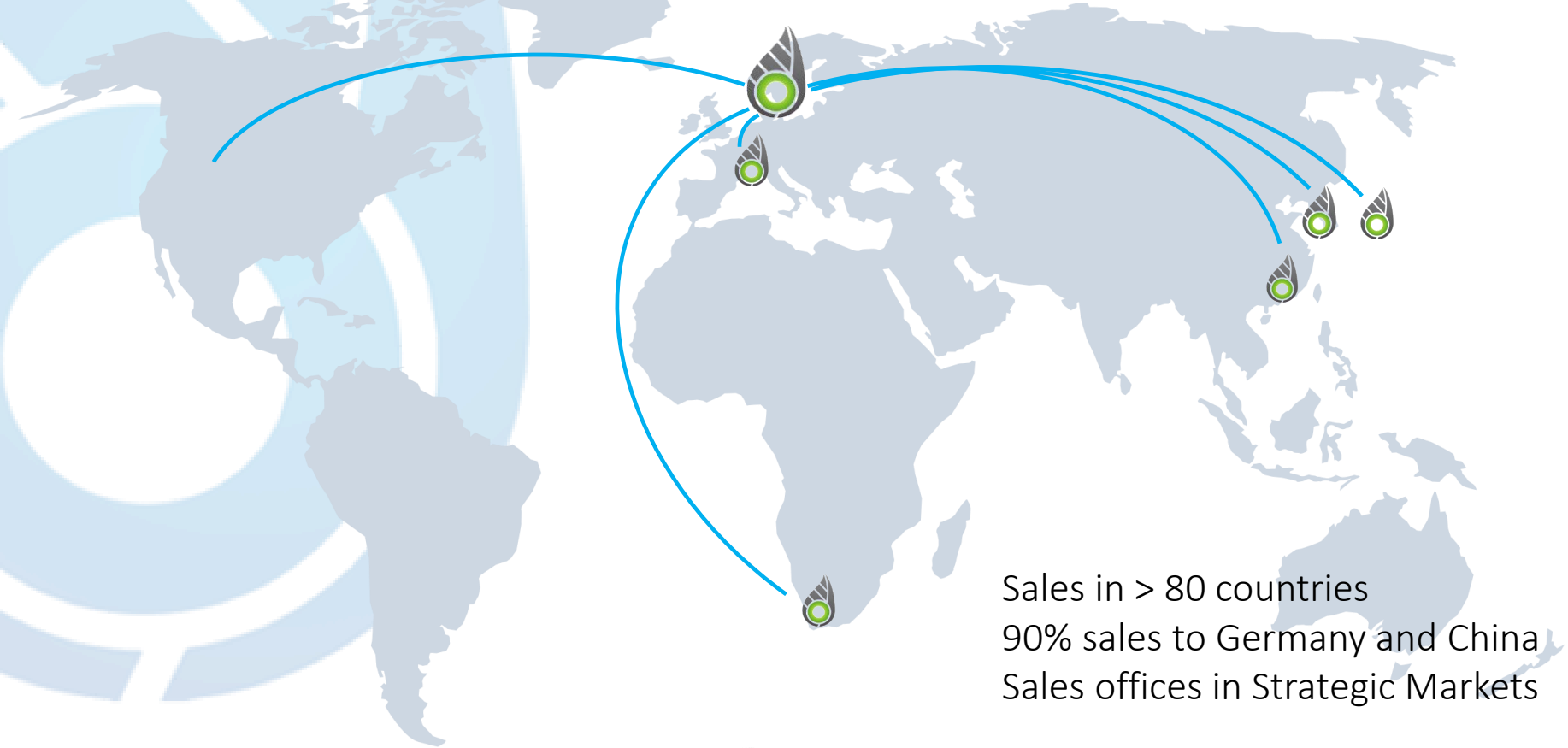
A paradigm shift for Maritime

Johan Burgren

Business Manager Marine


FIAT GROUP
VOLKSWAGEN GROUP
DAIMLER
VOLVO
BMW
VOLKSWAGEN GROUP
BOSCH
SIEMENS
NIKOLA MOTOR COMPANY
KALMAR
Ford
BMW
VOLKSWAGEN GROUP
DAIMLER
FCH
autostack moves
autostack core
autostack industrie
PowerCell
Nasdaq
VOLVO
PowerCell
1994
2008
2011
2012
2014
2015
2017
2018
2021

PowerCell in the World



Sales in > 80 countries
90% sales to Germany and China
Sales offices in Strategic Markets

Zero Emission For Maritime

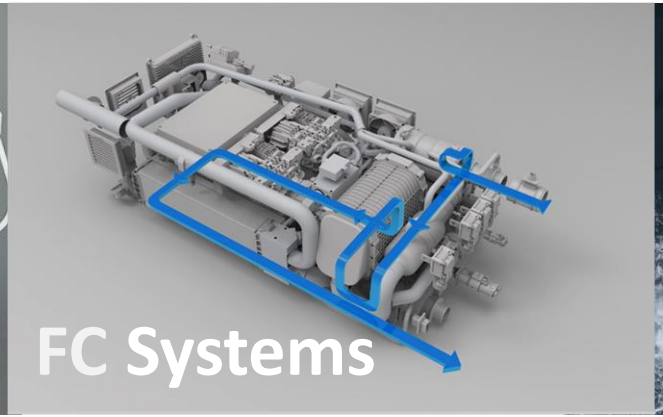
BRUSSELS (Reuters) - The European Union agreed on Tuesday to reduce emissions of carbon dioxide (CO_2) from new trucks and buses by 30 percent by a 2030 deadline as part of its commitment to cut its output of greenhouse gases. 15% by 2025!! All compared with 2019 levels.

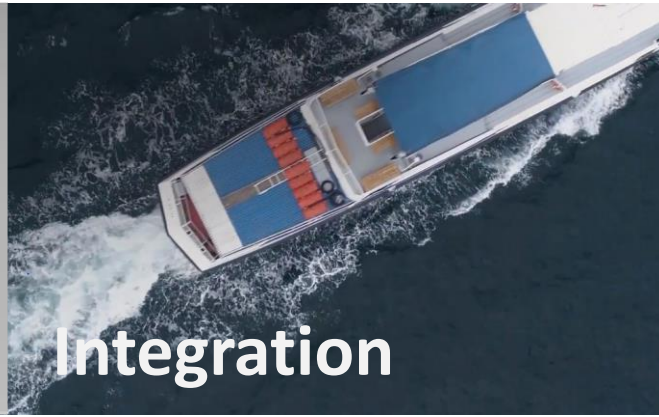
IMO

50% GHG reduction by 2050 compared to 2008 on your total tonnage

Evaluation ongoing for 40 % by 2030 and 70% by 2050!

Our solutions





Testing center of expertise

Fuel Cell stack development lab

FC system development

DCDC development capability

Marine build and test facility in Gothenburg harbor

Development partners

Automotive drives economy of scale for Maritime

Nikola has decided.

The fully-electric hydrogen-powered sleeper semi-truck. Available in North & South America.

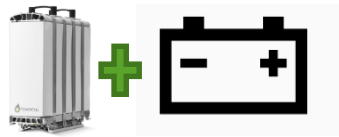
The fully-electric hydrogen-powered day cab semi-truck. Available in North & South America.

The fully-electric hydrogen-powered day cab semi-truck. Available in Europe, Asia and Australia.

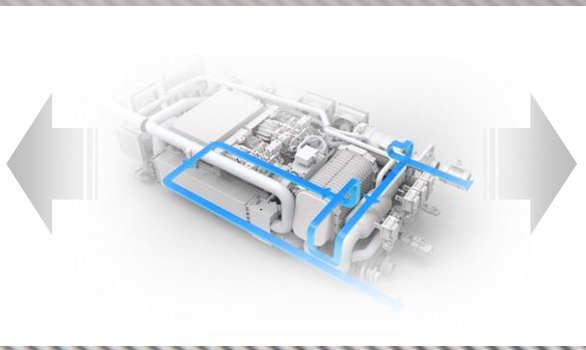
IVECO

BOSCH

POWERCELL



Automotive drives economy of scale for Maritime



Multi Mega Watt feasibility studies

PowerCell

H2 powered Heavy Fork Lift

- 54 kW Fuel Cell
- 60 kWh Lion battery
- 9 kg hydrogen
- DCDC
- 1000 hour test so far…

PowerCell

Aranda reaserch vessel

- 165 kW (2 x 82.5 kW AC) fuel cell powertrain based on S3 stack
- Powering Artic research vessel Aranda's electrical equipment and dynamic positioning during measurements - free from vibration, noise and air pollution
- 18-month marine field testing including extreme cold and saline conditions
- Container installation on deck

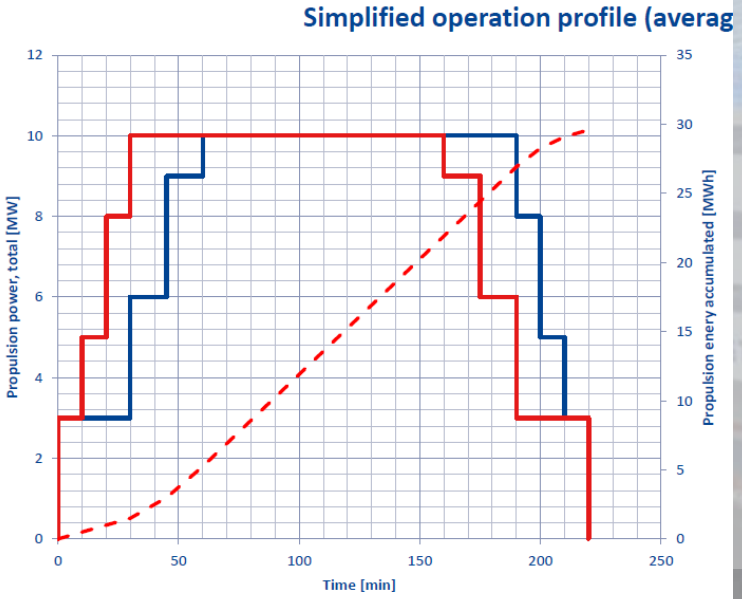
Photographer: Panu Hänninen

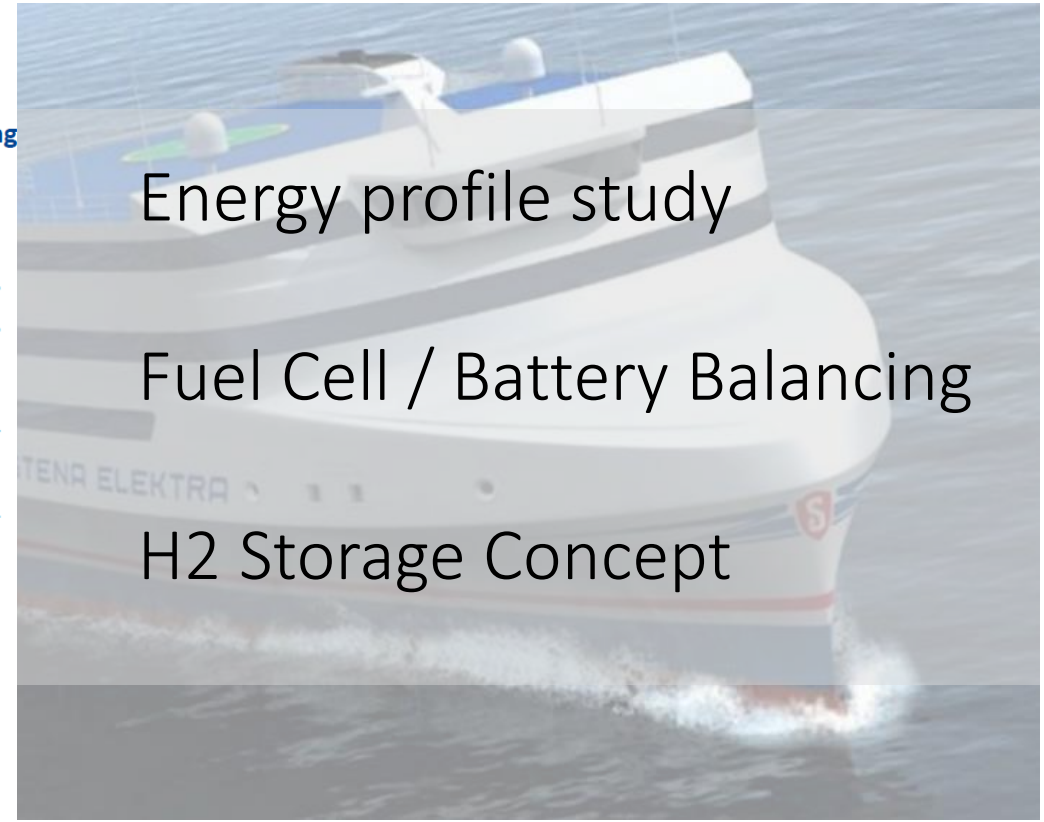
Project consortium:
- VTT Technical Research Centre of Finland Ltd
- Powercell Sweden AB
- ABB Oy
- OMB Saleri SPA
- PersEE
- The Finnish Environment Institute (SYKE)
- Swiss Hydrogen SA

POWERCELL

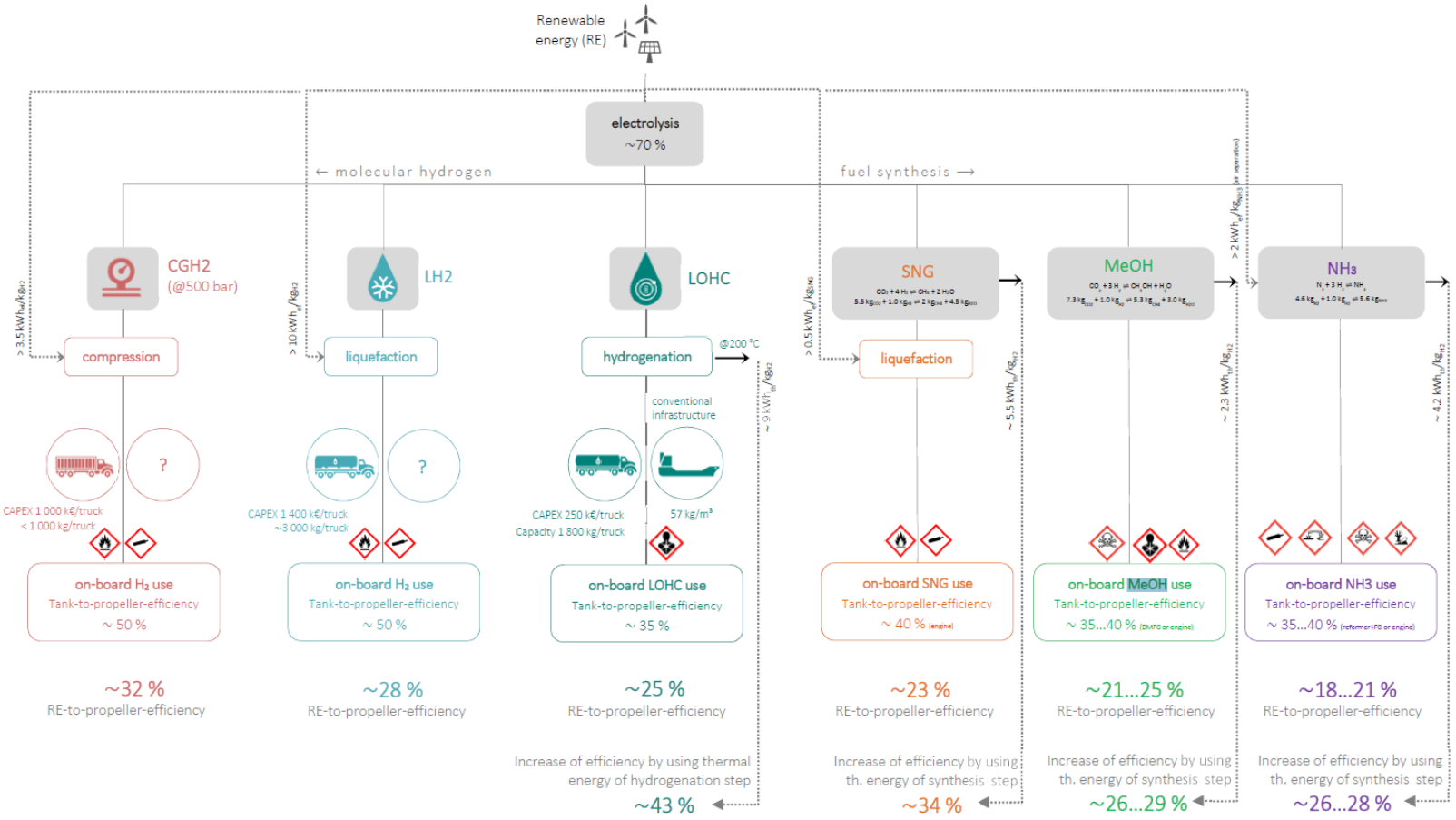
RoPax Ferry concept development

Assumptions





Electro fuels



Challenges for maritime implementation

- Bridging the cost gaps – Norway is in the forefront of implementing state funded demonstration projects- 12 projects running with hydrogen.
- Bridging the technology matureness versus commercial expectations.
- Making clean hydrogen available at a low cost in large quantities.
- The real z-emission alternatives are there – legislation is not!


Towards Zero Emissions
POWERCELL