



Cella Energy Ltd

Safe, low-cost hydrogen storage





Stephen Voller, C.Eng
Chief Executive Officer

Experienced hydrogen and fuel cell CEO, raised over \$60m for start-up technology and automotive companies taking fuel cell company to IPO.

Launched world's first ever CE fuel cell product.



Bryan Sanderson CBE
Chairman

Bryan Sanderson joined BP in 1964 and held a variety of positions prior to being appointed Chief Executive Officer of BP Chemicals in March 1990.

He was awarded a CBE in 1999 and an Honorary Fellowship of the Institute of Chemical Engineers in 2002.

Served at Chairman of Standard Chartered Bank.



Professor Stephen Bennington
Chief Scientific Officer

Main inventor of Cella technology, several years of experience in hydrogen storage technology.

Head of a world-class scientific team from ISIS (STFC) and UCL. Group Leader for five spectrometers at the ISIS pulsed neutron source. Author of over 180 scientific papers.



Harry Swan
Non-Executive Director



Joined Thomas Swan in 2002 to launch the new Carbon Nanomaterials Business. In April 2006 he took up the position of Managing Director. As the great grandson of the founder, 'Tommy' Swan, he is the 4th generation of the Swan family to work at the company.

A Council Member of the Chemical Industries Association.



Charles Resnick
Non-Executive Director

Managing Director at Inflexion Partners. Accomplished business executive with a 25-year career in global M&A activity, involving over 100 transactions. The largest at \$1.8bn.

Charles has held senior management positions in the United States, South America, and Western Europe.



Janet Petro
NASA-KSC liaison



Deputy Director of NASA's John F. Kennedy Space Center KSC in Florida.

Began professional career as a commissioned officer in the U.S. Army after graduating in 1981 from the U.S. Military Academy at West Point, N.Y., with a Bachelor of Science in engineering.

Cella Energy Ltd

- Safe, low-cost hydrogen storage materials
- IP developed at the Rutherford Appleton Laboratory in Harwell Oxford, UK.
- Cella Energy Ltd founded as spin-out in January 2011



Science & Technology Facilities Council
Rutherford Appleton Laboratory

Cella Energy Ltd

- A Preferred Round of \$2.5m
- Led by Space Florida
- Cella to open facility at Kennedy Space Centre KSC



Safe, low-cost hydrogen storage for transportation and portable power

Email Us

www.cellaenergy.com

Carbon emissions



‘Hydrogen storage on a vehicle is problematic because, in order to achieve a reasonable energy density, it must currently be stored as a liquid at low temperature or as a compressed gas, the latter requiring a large and expensive tank.’

The King Review of low-carbon cars Part 1 – October 2007



Existing cars take
3 minutes to refuel
for 300 miles



Infrastructure



Existing liquid fuel infrastructure and supply chain well understood, providing fuel for 1 billion internal combustion engine vehicles



Infrastructure



Hydrogen vehicles also require new supply chain, major changes to vehicle design and major changes to consumer driver behaviour



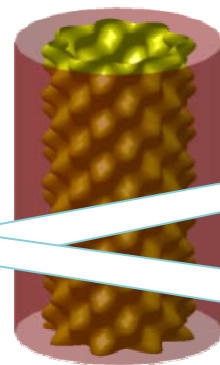
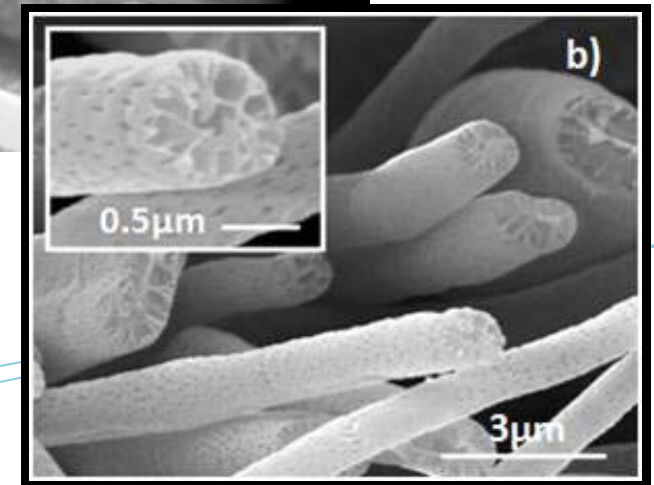
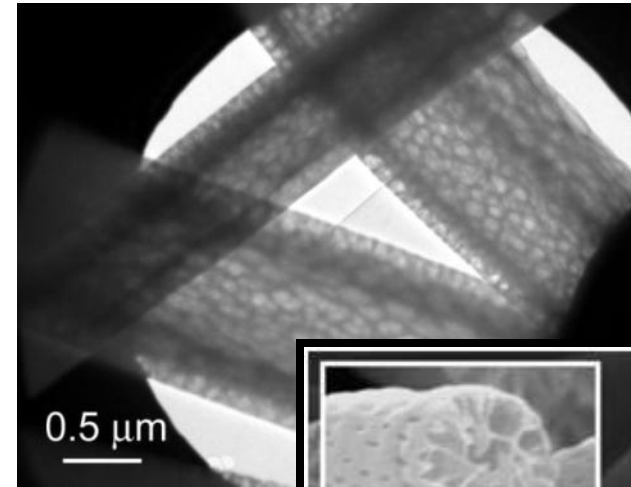
Welcome to the new hydrogen



How do we make hydrogen safe and low-cost ?



- Technology that nanostructures and encapsulates complex hydrides
- Micro-fibres or Micro-beads 30x smaller than a human hair or grain of sand
- Mass produced in a low-cost single-step automated process

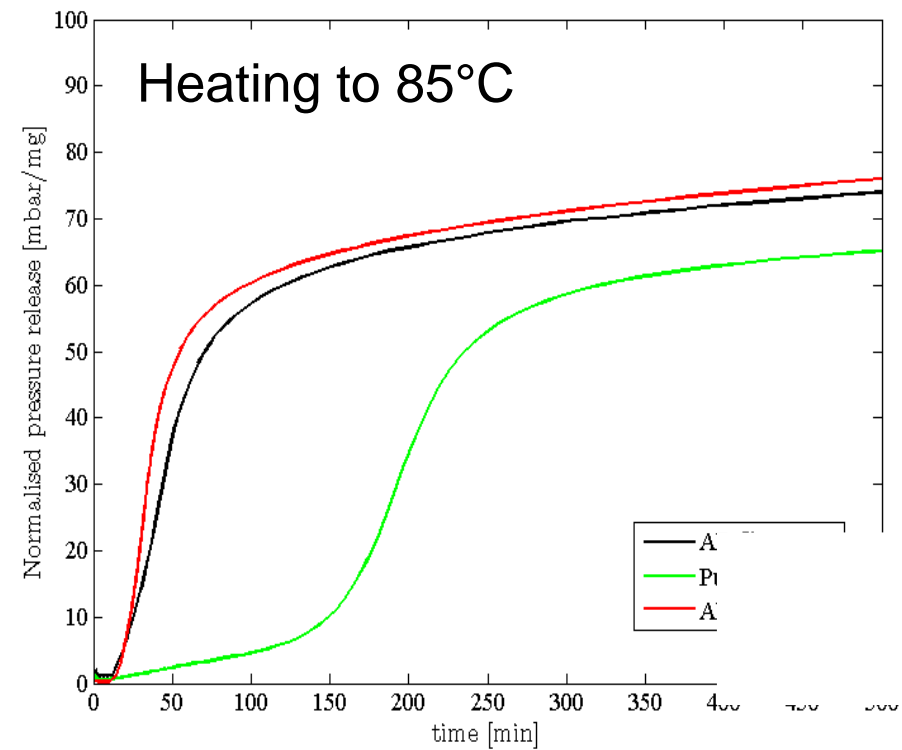


Core
Nano-structured hydride

Shell
Polymer carrier material

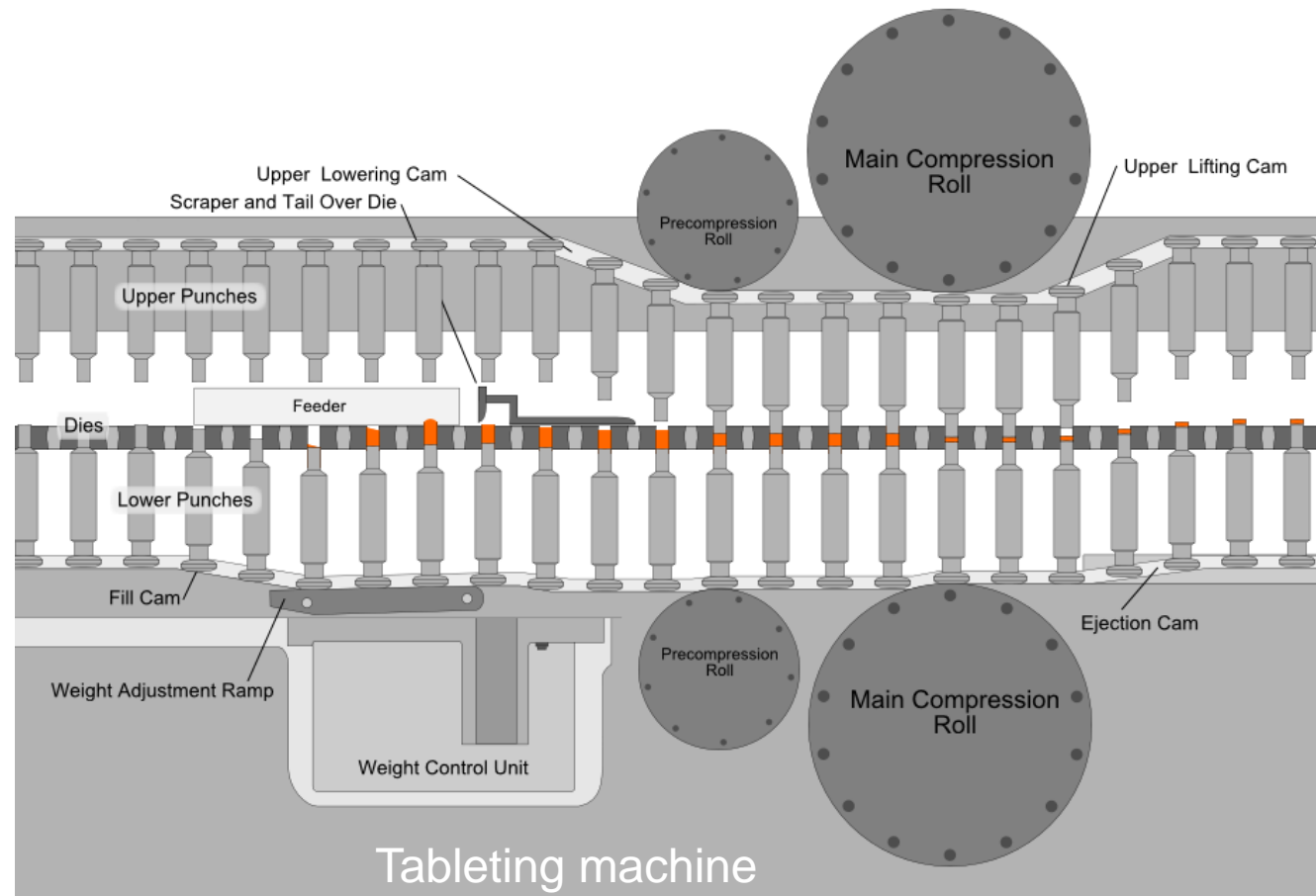
Cella pellets

The pellets release their hydrogen an order of magnitude faster than the fibres

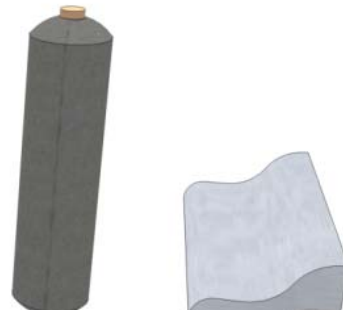


Tablet making

By Early 2012 we will have the capability to make kilogramme quantities of pellets



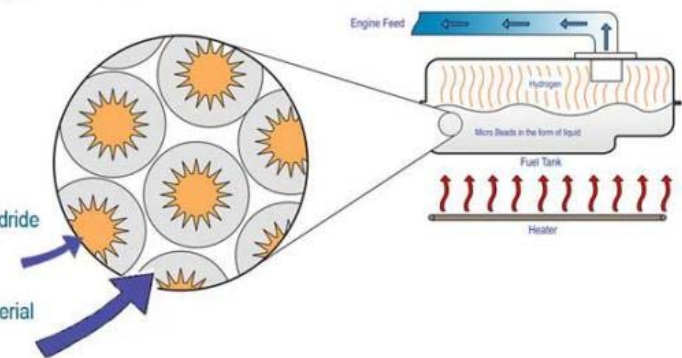
We use regular shaped fuel tanks no high pressures



Fill your tank the same way as you would with Petrol

Core
Nano-Structured hydride

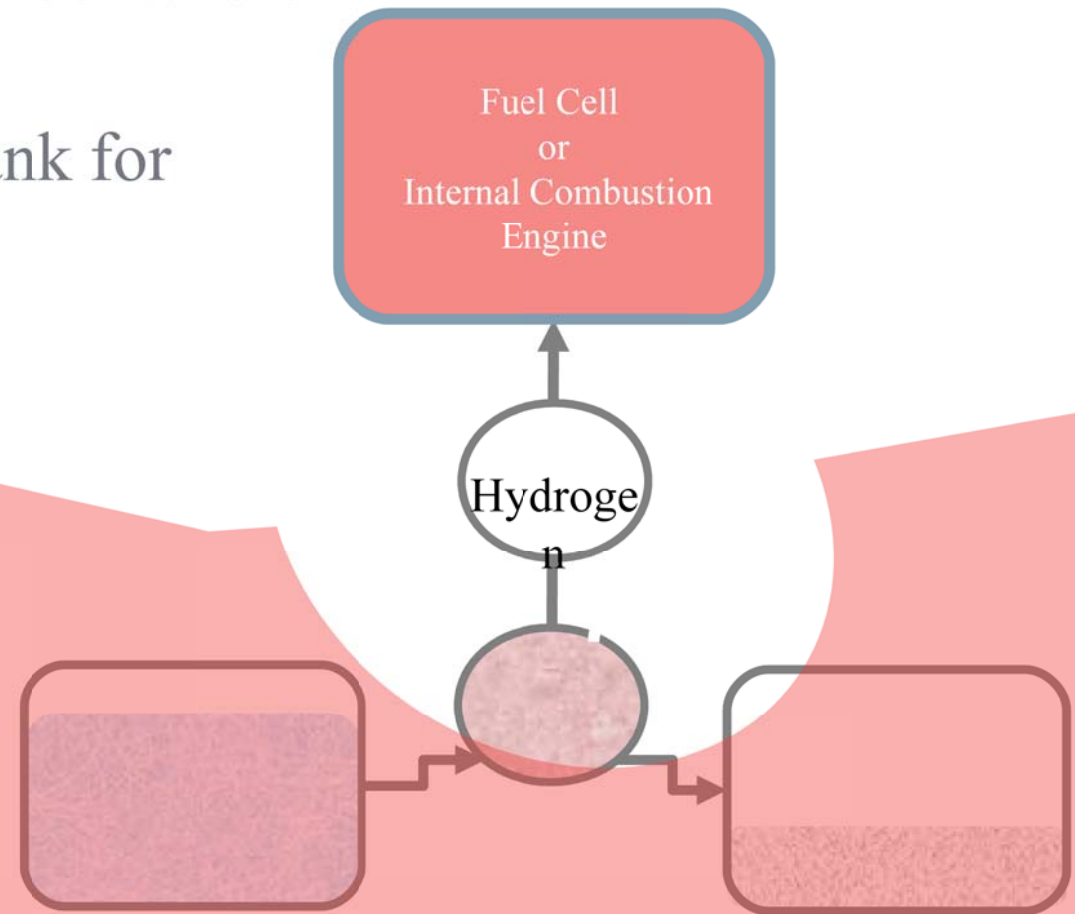
Shell
Polymer carrier material



Pure hydrogen vehicle : zero carbon emissions at the point of use

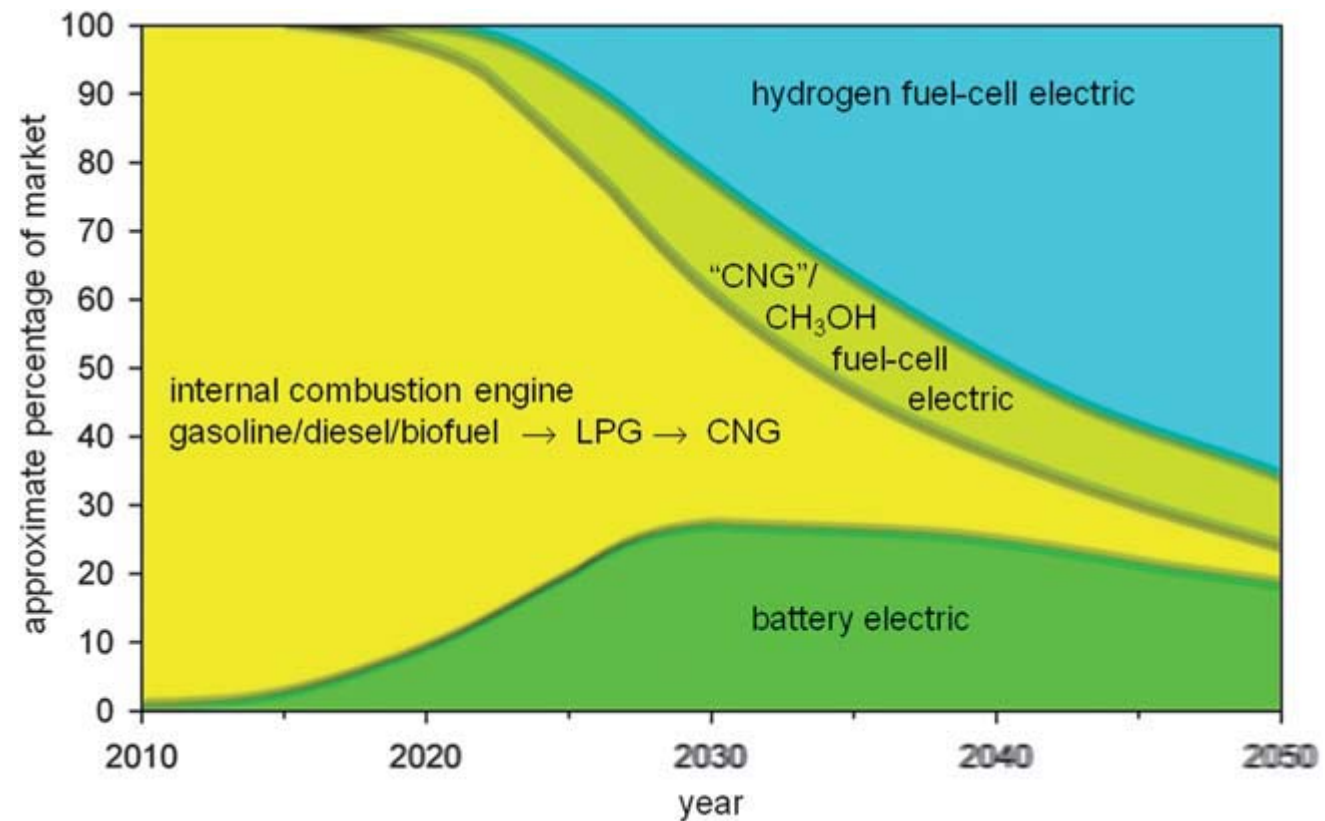


- Beads are pumped to heating chamber where the hydrogen is released
- Waste beads are stored in waste tank for removal and regeneration



Hybrid

- The future of hydrogen is almost certainly part of a hybrid electric vehicle



Pure hydrogen fuel :
zero carbon emissions at the point of use



Safe, low-cost hydrogen storage for transportation and portable power

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www.celloenergy.com

Infrastructure



Cella Energy provides fuels to existing supply chain that can be used with minimal vehicle modification or changes to consumer behaviour



90% of world hydrogen use today is used in oil refining :
This is enough to fuel 21 million hydrogen vehicles (GM)



Climate change

Security of energy supply