



Hydrogen Europe: European Hydrogen & Fuel cell Project Database

Project NH34PWR

Ammonia based, fuel cell power for off-grid cell phone towers

The Cell Phone industry is a recent major business success story, with the EU significantly contributing and gaining from this success. (Three of the 5 cell phone equipment manufacturers are European (Ericsson; Nokia-Siemens; and Alcatel-Lucent) and many global cell phone companies are based in the EU (e.g. Vodafone, Orange, Telefonica). The developed markets are saturated, and growth is focussed in developing countries (Africa, Asia, Eastern Europe), where the operators' success has out-paced the electrical grid and power for cell phone towers is provided by inefficient, high maintenance, polluting and expensive diesel generators. This consortium has developed a low-cost, fuel cell based, self-contained power system (the PowerCube™), together with the relevant refuelling capability (using ammonia as the fuel) to cost-effectively replace diesel generators in this market, with a 2-year pay-back and an 80% reduction in greenhouse gases. The market is worth €7.5Bn per annum. This project will:

- Develop economic manufacturing routes, developing cost and quality targets for manufacture and validating multiple component suppliers, to establish a sustainable approach towards commercialization.
- Complete the build, deployment and remote measurement of 40 units, to validate the integrated fuel cell system readiness. Units will be tested in clusters of 10 units with multiple operators, countries and climates in Africa, Eastern Europe or Latin America.
- Build a scalable ammonia fuel supply infrastructure based on Linde's current NH₃ distribution network. Validate reliable fuel delivery and its integration with the fuel cell system.
- Define, test and prove the installation, maintenance and repair procedures
- Validate the cost savings and environmental benefits for operators, including end of life considerations
- Pave the ground for a large-scale field demonstration

Project Information

Type of project : Demonstration

Timing : 01/09/2010 > 31/08/2013

Project Budget : 8.204.327 €

Funding

European Union through FCH JU: [Grant agreement 256856 - CORDIS link](#)

Project partners

Coordinator :

DIVERSEENERGY Ltd

Partners :

[Linde](#)

[Nedstack fuel cell technology B.V.](#)

[WaterstofNet vzw](#)

Balton CP Ltd

LEADING LIGHT SOFTWARE SERVICES LIMITED

Sub project(s)

Sub project 1

Country: United Kingdom

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Sub project categories

Demonstration

Project Id: 1057

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