

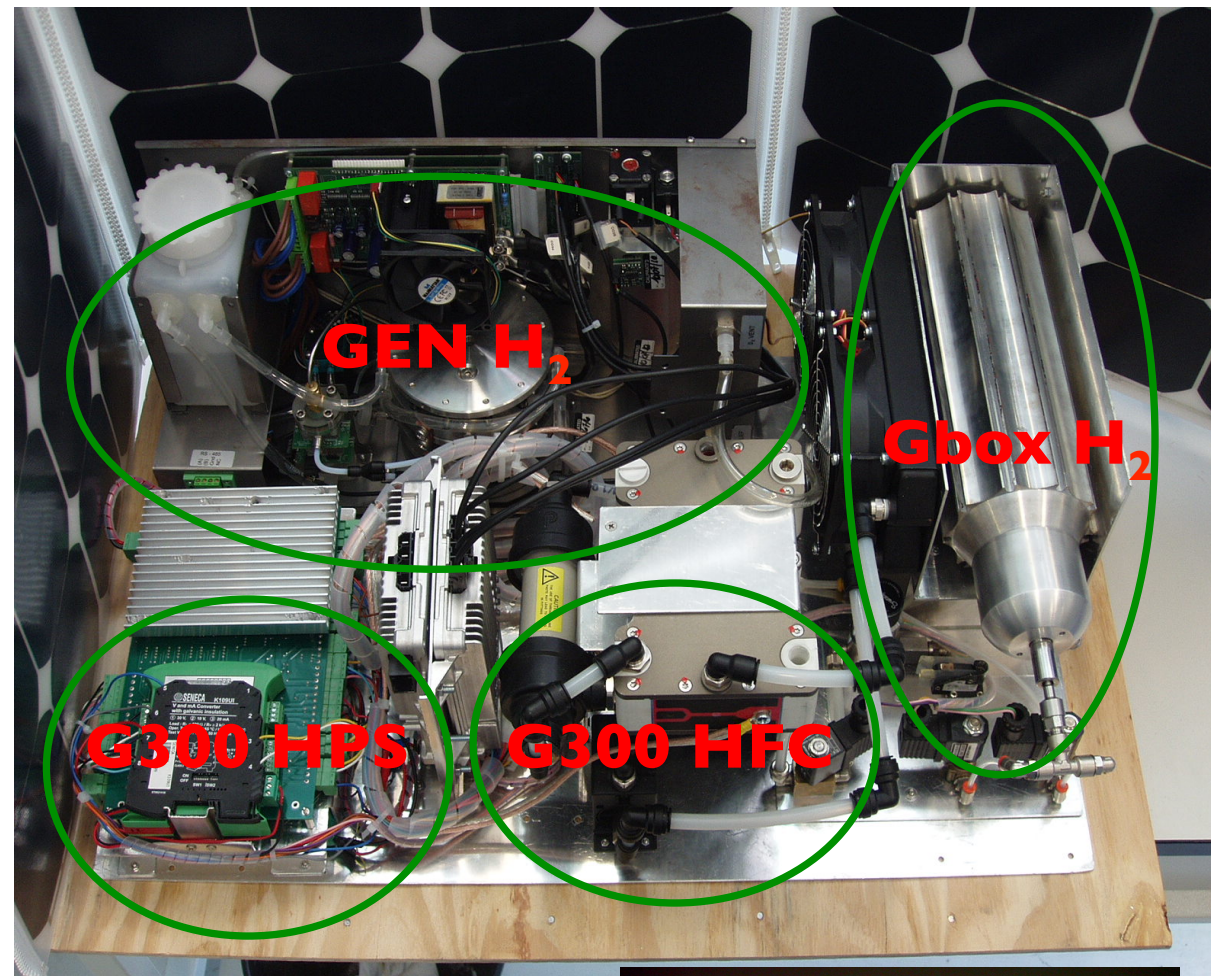


Premio all'Innovazione
Amica dell'Ambiente



Micro to Small Hybrid Power Sources For Extreme Environments

genport
Power Solutions
we power



Paolo Fracas – CEO

www.genport.it

Rome, 13 December 2013

Portable Power Sources



Acid Lead Batteries are heavy and bulky



Diesel Generators are noisy and unreliable

Mission

- Maximize energy density
- Zero environment impact
- Provide reliable power in extreme conditions

Core Technology

Hybrid Power Generators

- Fuel Cells long runtime
- Lithium Batteries easy, quick start
- Solid H₂ light, safe energy
- Dynamic RT Optimization Controls

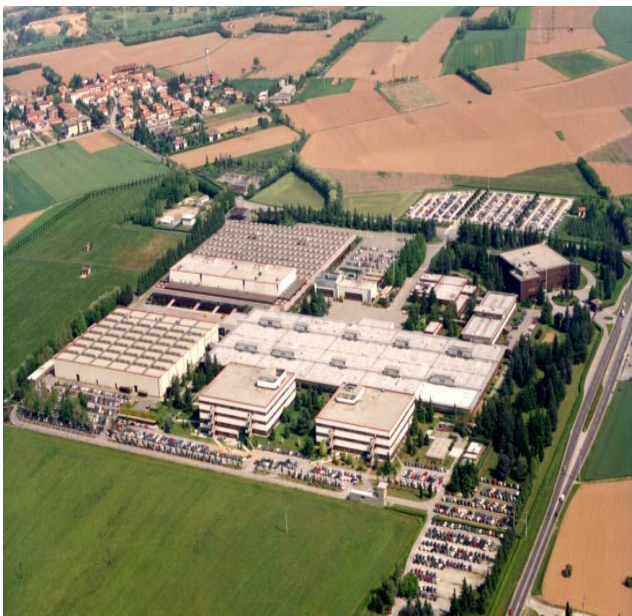
Smart Lithium Ion Battery Pack, Micro Harvesting

- Battery Management Systems
Monitoring, balancing, charging, MPPT
- Custom design supporting evolution

Owned Patents

- Hybrid battery fuel cell (pending)
- Solid hydrogen (patent nr. 0000271919)
- Ergonomic wearable (patent nr. 0000272516)
- Hybrid solar fuel cell (patent nr.0001394308)
- Hydrogen Storage for TLC (pending)

Company Overview



*Location in Vimercate
(Vimercate Technology Park)*



*Location in West Lafayette
(Purdue Technology Park)*

Established in 2009

Headquarter and Laboratory

Vimercate (MB)

Subsidiary

West Lafayette (IN)

Shareholders

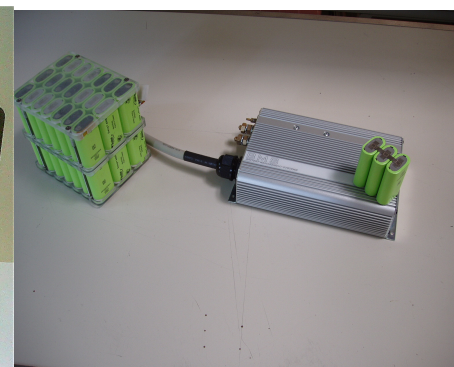
Politecnico Milan, Genbee, Petrone Group

Technology Partners

Texas Instruments (US), Linear Technologies (US) Arbin Instruments (US), Schunk (D), Politecnico of Milan (IT), Purdue University (IN)

Strong international scientific activity is resulted in more then 100 scientific publications and 8 patents

- 1996 Beginning of projects on ceramic materials technologies for Solid Oxide Fuel Cells (SOFC)
YSZ and alumina-based composites
Simulation and modelling of the ionic conductors electric behaviour
Sr,Mg-doped lanthanum gallates
Composites materials for cathodes (LSGM – LSM)
- 2000 Beginning of projects on polymeric materials technologies for Proton Exchange Fuel Cells (PEMFC).
Characterization and modeling of materials for Polymer Fuel Cells (PEM)
Synthesis and electrical, physical-chemical characterization of Polymeric Membranes
- 2003 Production of first prototype of Gas Diffusion Layers.
- 2004 Innovative plasma based surface engineering for GDL patented (PCT/IT2005/200297).
- 2005 Development of Catalyst Coated Membrane and Micro Porous Layer.
- 2006 Development of Gas Diffusion Medium and Gas Diffusion Electrode.
Joining the Advisory Board of PEMFLOW Project (Prediction and Management of Fluid Transport in PEM Fuel Cells DTI Project No: TP/6/S/K3032H Department of Trade and Industry – UK).
- 2008 Integration of our 5-MEA propriety configuration into 500 W stack.
- 2009 *Foundation* of GENPORT
- 2010 Release of First Generation of **G300 Hybrid Fuel Cell** - 4 IT patents , 2 PCT, 2 US patents pending
- 2011 Release **GENIOL** Series
- 2012 **G300 HFC CE compliant**
- 2012 Constitution of **Genport North America Corp.**



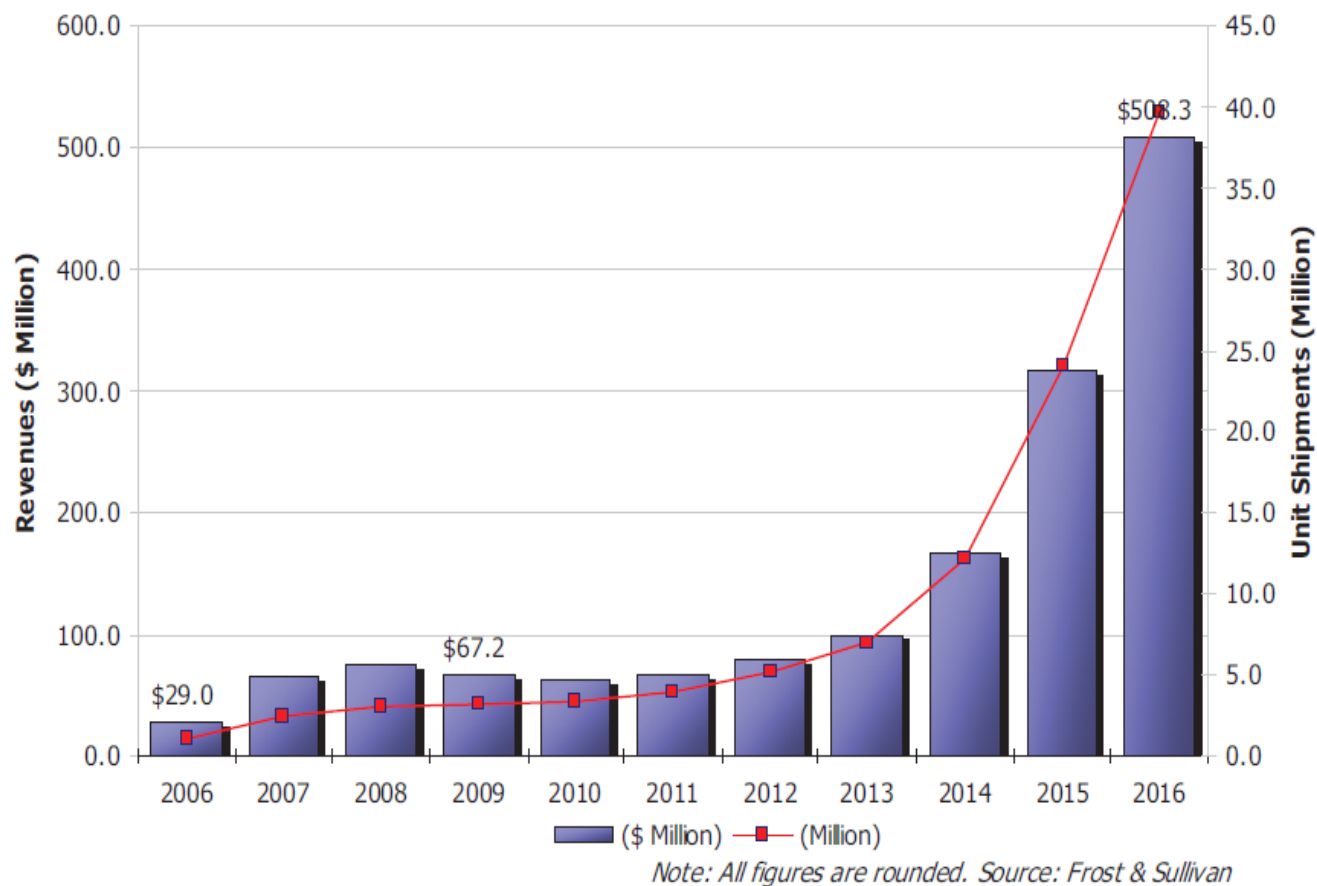
Market

Opportunities

Demand

Key Applications

Portable Fuel Cell Market: Revenue and Unit Shipment Forecast
(North America), 2006-2016



- Defense & First Responders
- Dismounted Soldiers
- Telecommunications
- Agriculture
- Residential
- Marine
- Medical Devices

Global Total Market Size (Pike Research, IDTechEx, Zervos)

~ \$9B (2020 – Small Fuel Cells) / ~ \$460B (2015 - Lithium Batteries) / ~ \$ 2,4 B (2020 – Machine-to-Machine micro energy harvesting)

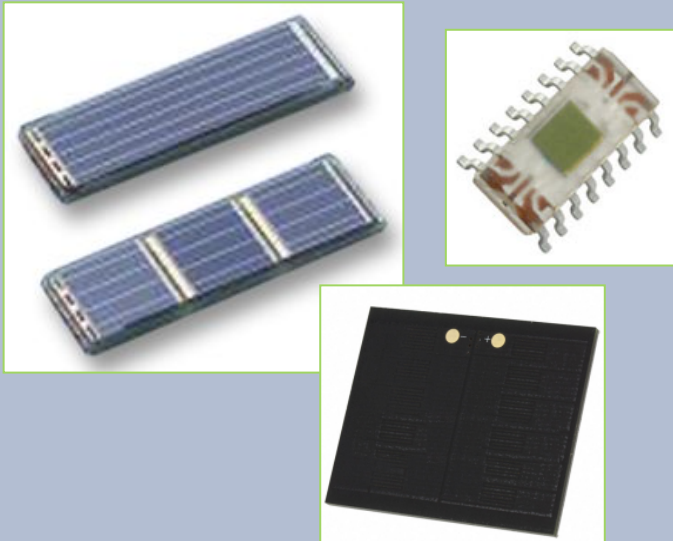
Market entry



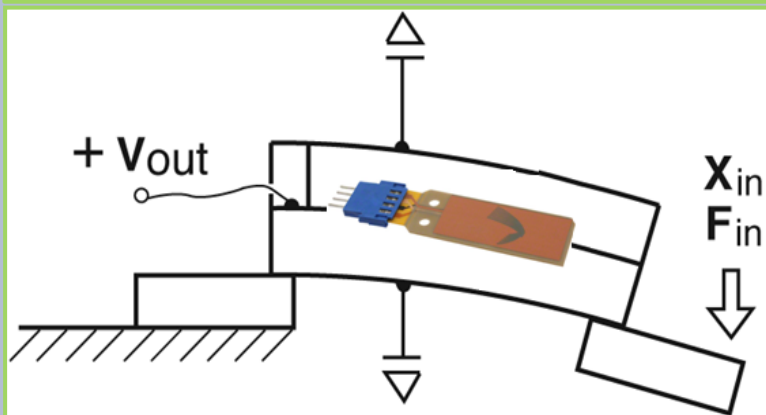
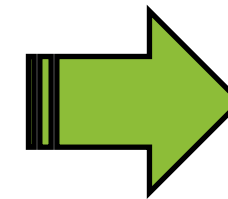
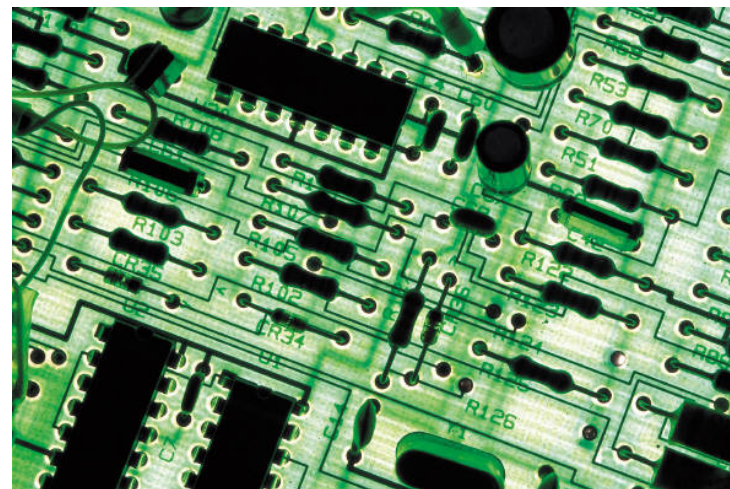
- Project Funding to demonstrate HFC technology (Horizon 2020, SBIR, MIUR, RL)
- Large engineering company / Gov (Autostrade, Finmeccanica, Telecom Italy, Sprint, US Dep. of Defense)
- Distributors / Agents (Arrows, Electronics, Dynacomp)

ENERGY SOURCES

MICRO PV PANNELS

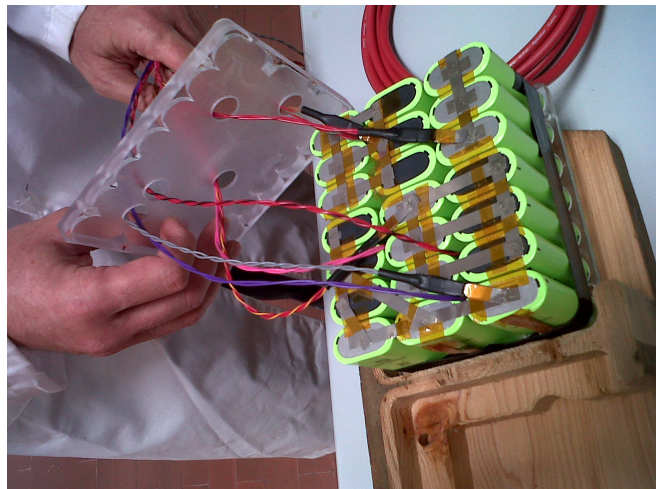


PIEZOELECTRICS SOURCE

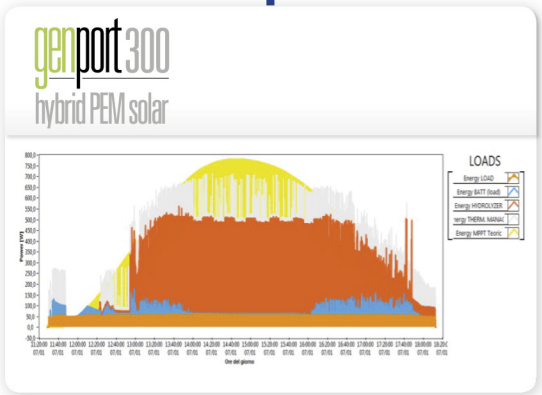
SUPERCAP AS MAINLY
ENERGY STORAGE

- Replacing Batteries in M2M
- Hybrid Micro Harvesting Custom Design
- Host equipment embedded
- Multiple intermittent primary power sources
- Extending reliability, lifetime of batteries
- Smart energy system with SMBs communication

Portable Hybrid Fuel Cell platform

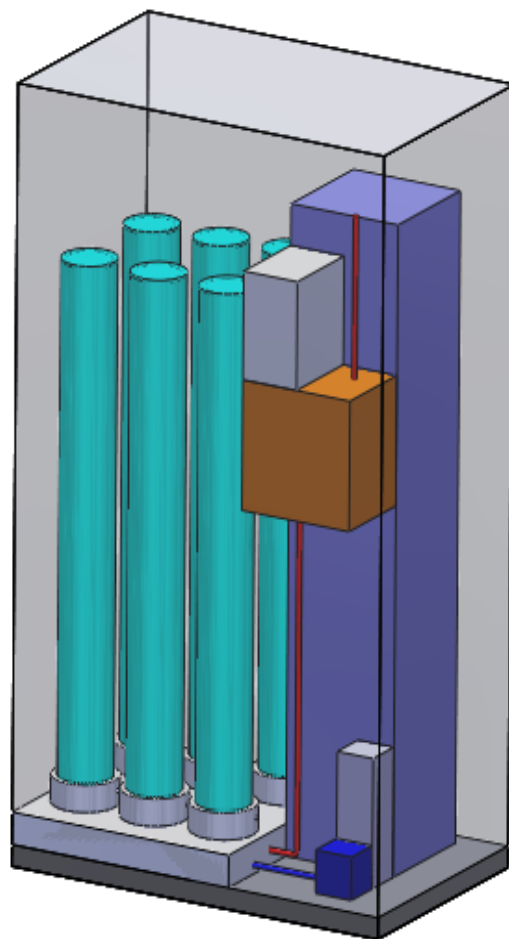


Oxygen for water purification

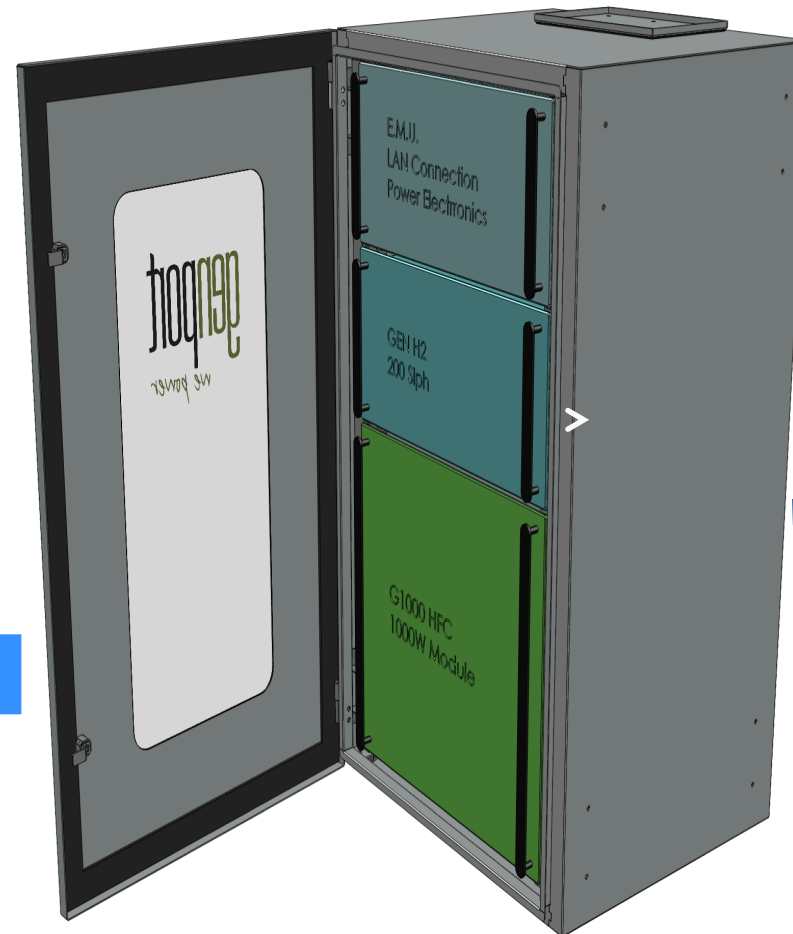


Small Hybrid Fuel Cell platform

RES (Renewable Energy
Source)
SOLAR/WIND

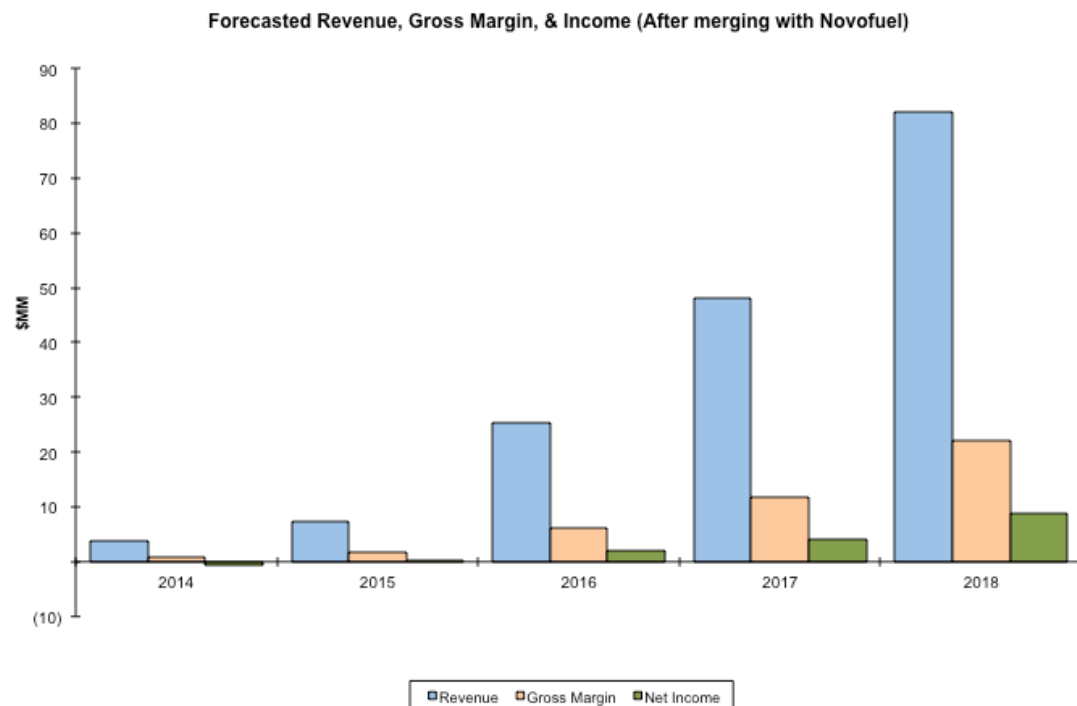


H₂ on demand



- Auxiliary generator based on fuel cell, Lithium battery and Hydrogen on demand
- Improve off-grid energy availability of RES.
- Real Time Energy Management, remote maintenance & control
- Plug & play installation, extremely low maintenance
- No noise and environmental impact

Short Term Projections



Our key Financials & Strategic Plan

- \$ 1M revenues in 2013 (+ 33% yearly)
- Upside Revenue potential + \$150M 2018 – 2020 (which means 100s jobs with traditional expertise).
- Merger with Novofuel Inc. early 2014, JV in Asia 2015.
- R&D Italy and PA, Manufacturing global.

What We need

- Crossing the Death Valley into Positive Ecosystems.
- Availability of Strategic Investors, Talent People driven by Passion.
- Ethical Environment, transparency, commitment.
- Strategic national approach to coordinate efforts, facilitate synergies among Gov, Research, Industrial Supply Chain, thru **National Clusters**.
- Effective and Qualified Political Support at EU level.
- Stimulus Programs (i.e. Tax Credit, Innovative Tenders) at National Level.



Thank you

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