A Microgrid Platform for the Future

John S. Camilleri
EVP of Product Development
Green Energy Corp
June 29, 2012
The story beginnings ...

- Big Dreams
- Challenge of Global Proportion
- Little Project
Wouldn't it be cool!!
What is a MICROGRID?
Technology is a wondrous “Rabbit Hole”
But we need a community...

www.totalgrid.org

REEF
ATOLL
DNP3
...
...
Are you getting the picture?

Do Well. Do Good.
Haiti – Infrastructure Build Out

1. Energy Control Center
2. Eco-villages
3. Hydro Retrofit
4. Waste to Energy plant
5. Transmission grid
6. Education and Training

Source: GEM Institute
Platform “The Seed”

Open Source

Special Purpose Services

Standards

Architecture

The Platform Seed
The core project “Reef”
Old architecture
New architecture
Big Picture Again #1

Source: Edison

Source: PikeResearch – Peter Asmus
Use Renewable and Distributed Generation to Support DoD Microgrids and the Smart Grid

- Small combustion and μ-turbines
- Fuel cells
- IC engines
- Small hydro and wind
- Solar electric and solar thermal
- Energy storage (batteries, flywheels, ...)
- Plug in hybrid vehicles
- Small nuclear power

Ref. EPRI

<table>
<thead>
<tr>
<th>Type</th>
<th>Power Range</th>
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<tbody>
<tr>
<td>Residential</td>
<td>Less than 10-kW, single-phase</td>
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<tr>
<td>Small Commercial</td>
<td>From 10-kW to 50-kW, typically three phase</td>
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<tr>
<td>Commercial</td>
<td>Greater than 50-kW up to 10MW</td>
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Growing the ecosystem
Business enablers

API's
Apache 2.0

Industry Adoption

Standards
Liberal LIC
Architecture
SoA
A cool microgrid project

Source: FREEDM System
A cool microgrid project
Ride the GreenBus
Thank you for your attention ;}