



Microgrid Activity around the World

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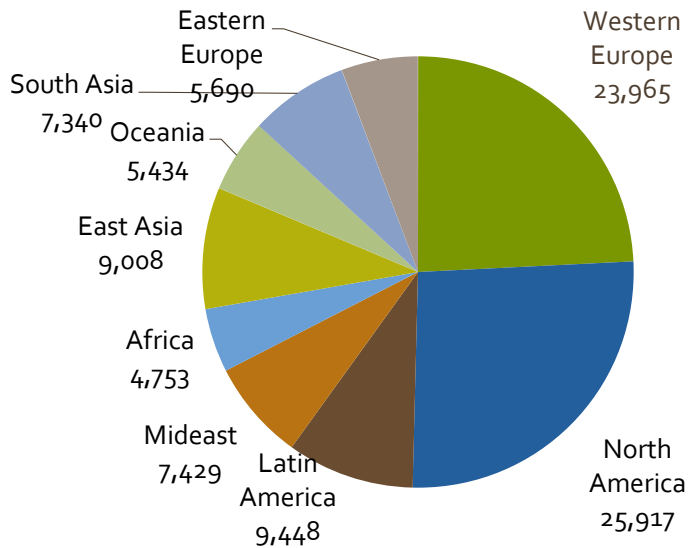
The Future of Power

The goal is to accelerate the transition to clean distributed power

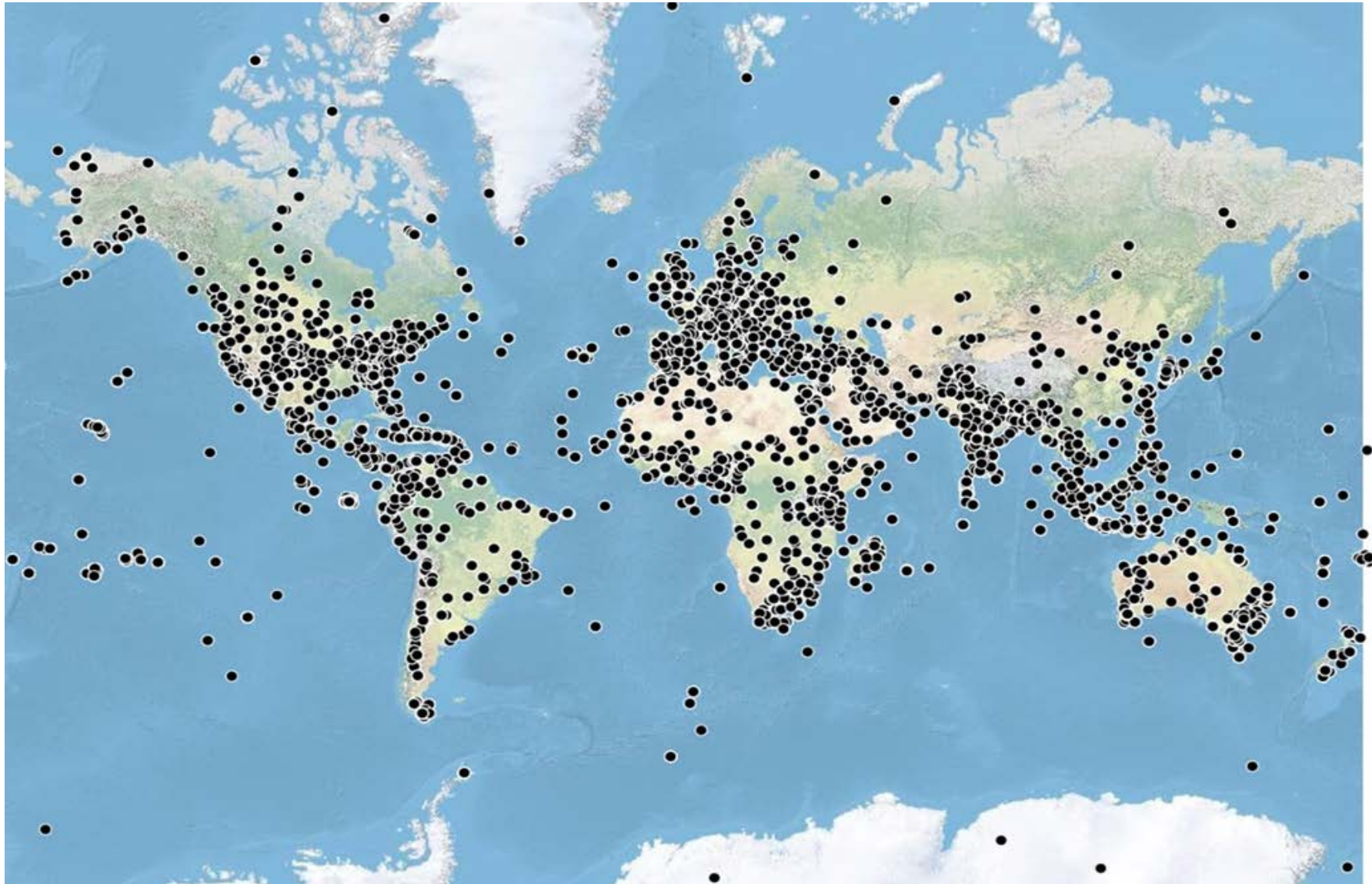


Who is HOMER?

- NREL: 1992-2008
- 170,000 users in 193 countries
 - 90,000 opted-in for monthly newsletter
- Global standard for microgrid design
 - Techno-economic analysis & optimization
- 5th Annual HOMER International Microgrid Conference
 - Cancun, Barcelona, Canberra, NYC, Denver 2017



25,000 distributed power projects



4 Kinds of Microgrids

- **Off-grid**

1. Island Utilities

- Thousands of diesel-powered utility systems

2. Energy Access

- 1.3 billion people without power

- **Grid-connected**

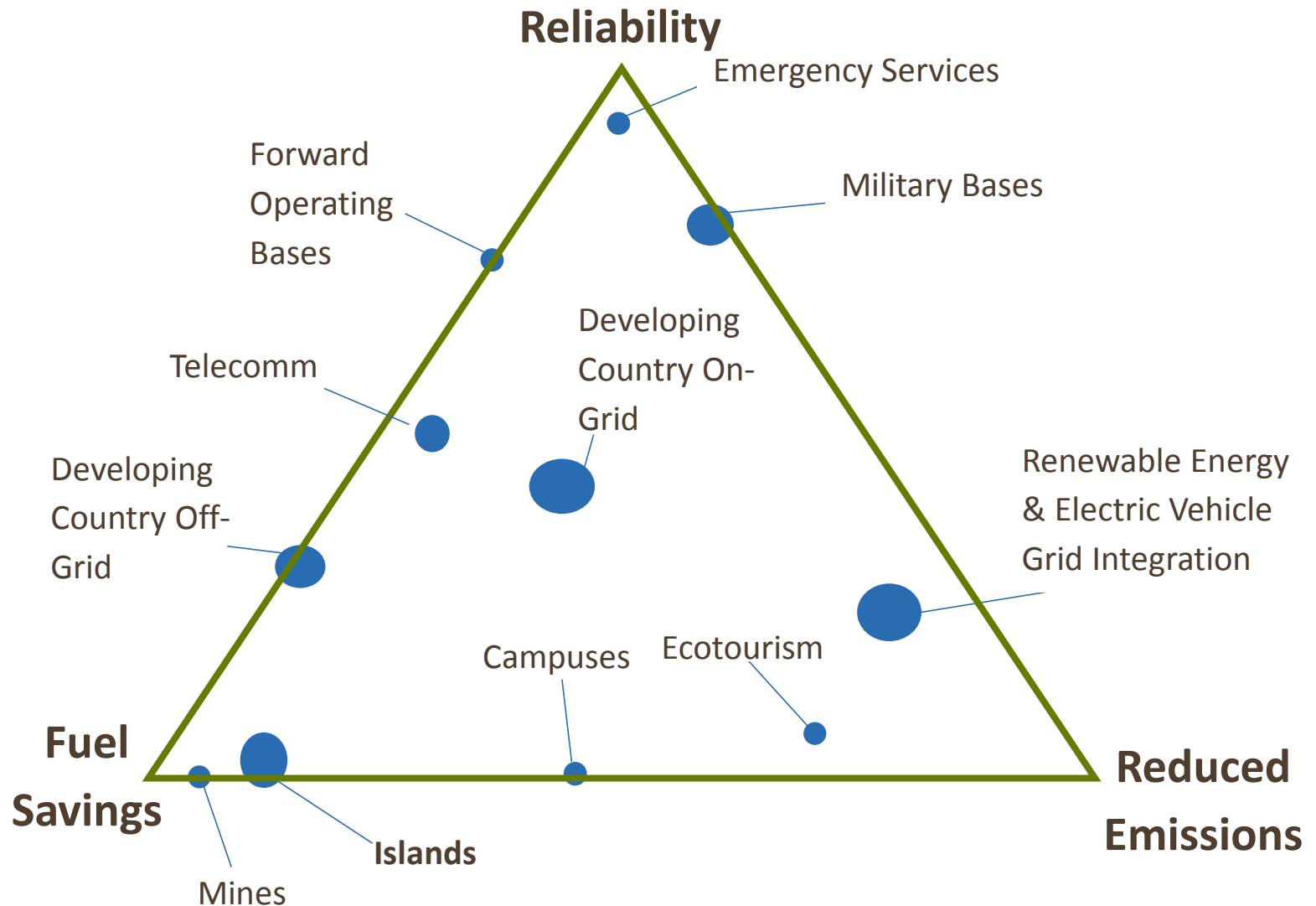
3. Resilience

- Sandy changed our view of critical infrastructure
- Focus of NY Prize

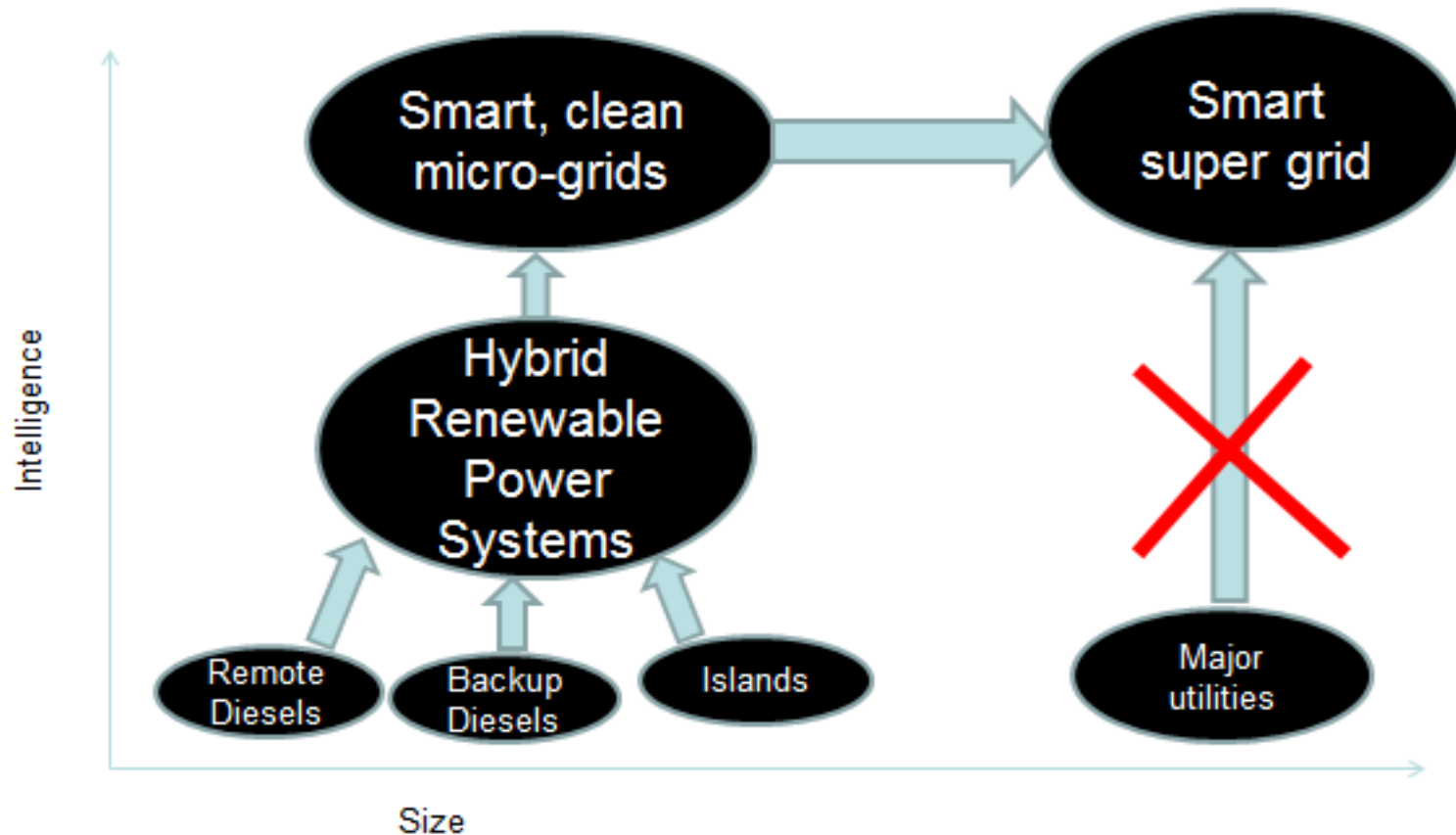
4. Backup of unreliable utilities

- Millions of diesel generators

Value Propositions



Clean Power Evolution



- Smaller systems
 - Liquid fuels from oil
 - High renewable penetrations
- Large utilities
 - Security obstacles
 - Regulatory obstacles