Brown University

(Providence, Rhode Island)



Roundtable on

Clean Energy Technology and Mission Innovation Initiative April 18, 2016

Major Takeaways: Brown University

Roundtable to share potential from Mission Innovation

Goal: Explore RI, New England / Northeast potential for a Regional Clean Energy Innovation Partnership

Key Takeaways:

- Significant ecosystem collaboration today:
 - Across universities
 - Connecting universities, entrepreneurs, industry, state agencies
 - Within single states, as well as across New England and Northeast region
- Deep regional assets in:
 - University research
 - Industry and ecosystem innovation programs and organizations
 - State support for clean energy
 - Common markets and industry sectors (details on next page)
- Ecosystem collaboration among the states:
 - Commerce RI, MassCEC, and NYSERDA collaborate today supporting cleantech startups, network of incubators, university / investor / industry network
- More analysis needed to confirm scale and focus of ecosystem and a Regional Innovation Partnership

April 18, 2016, Roundtable Attendees

- DOE: Secretary Moniz, others from DOE
- RI Delegation: Senator Sheldon Whitehouse; Congressman Langevin; Congressman Cicilline
- Brown University (host):
 - Richard Locke, Provost; David Savitz, VP Research
 - Amy Carroll, Director of Research Development
 - Michael Miller and Rebecca Lorick, School of Engineering, Leading Edge tidal energy research project
- Other Universities:
 - Rob Stoner, Deputy Dir. for Science & Technology, MIT Energy Initiative
 - Mun Choi, UConn Provost
 - Dr. Gerry Sonnenfeld, University of Rhode Island VP Research
- RI Agencies:
 - Christine Smith, Director of Science Technology Advisory Council & Director of Innovation Programs at Commerce RI
 - Sam Marullo, Policy Advisor, Governor Raimondo's Office
 - Marion Gold, Director of RI Office of Energy Resources
 - Mark Huang, City of Providence, Economic Development Director
- Investors / Funders:
 - Thorne Sparkman and Rich Horan, Slater Technology Fund
 - Neil Steinberg, RI Foundation
- Industry / Innovation Ecosystem
 - Peter Rothstein, President, Northeast Clean Energy Council & NECEC Institute
 - Melissa Withers, Director of RevUp at Betaspring
 - Wendy Mackie, RI Composites Alliance
 - Tom Falcone, Tech Collective
- Corporate:
 - Tim Horan, President of National Grid, Rhode Island
 - Josh Brumberger, Utilidata
 - Jeff Gryzbowski, CEO, Deepwater Wind
 - Tim McDonald, SeaPotential
 - Chris Benzak, Managing Partner of Newport Biodiesel
 - Jessica Millar, Chief Technology Officer, vCharge
 - Jeff Flath, CEO, eNow
 - Paul Dunn, CEO, Enhanced Energy Group
 - Mark Hayward, RI District Director, Small Business Administration
 - Tim Burns, CEO, BioProcess Algae/BioProcessH2O

Major Takeaways: Brown University (continued)

Key Takeaways (continued)

- Sectors with regional opportunities for R&D, Demonstrations, Early-Adoption Customers, Deployment:
 - Offshore Clean Energy
 - Wind, Tidal, wave, ocean, river
 - Electricity System Modernization
 - Smart Buildings, Communities, Cities
 - DG, DR, Storage, Microgrids, Energy Efficiency
 - DER systems and business models
 - Advanced transportation & Infrastructure
 - EV vehicles and charging infrastructure
 - H2 vehicles and infrastructure
 - Autonomous vehicles & new business models
- Strong ecosystem & network of regional clean energy partners engaged in innovation from lab research to development, demonstration, deployment (partial list in graphic)
- Challenges
 - Complex region and large number of potential partners
 - Planning efforts to confirm partners and key sectors needs further investigation
 - Partnership model to be determined

Partial List, Leading Regional Clean Energy Potential Partners

Entrepreneurial Ecosystem:

- Greentown
- NECEC
- Cleantech Open NE
- **Social Enterprise Greenhouse**
- NYC ACRE
- Powerbridge
- Fraunhofer

Capital / Finance:

- State agencies
- Social impact funds
- State Green/Infras. Banks
- **Venture Captial**
- **Corporate Venture**
- **Angel community**
- Philanthropic capital

Universities:

- MIT SUNY
- UMass Brown BU UConn
- NYU Yale
- Columbia RPI
- Cornell WPI Brown Harvard
 - UMaine

MassCEC

- NYSERDA
- CT Green Bank

CommerceRI

Other Electricity Publics:

Government Agencies:

- NYPA
- NYISO, ISO-NE

Corporate:

- **GE**
- Schneider Electric
- **National Grid**
- ConEd
- **Eversource Energy**
- Veolia
- Enel
- **DONG Energy**
- NRG Energy