The Case for a New Innovation Policy

E2Tech EXPO

Peter Rothstein, President,
NECEC – Northeast Clean Energy Council
November 16, 2017
NECEC is the premier voice of businesses building a world-class clean energy hub in Northeast United States

Convening, connecting, accelerating clean energy markets and solutions, hundreds of companies, regional ecosystem initiatives

Seven states – New York and New England (Massachusetts, Connecticut, Rhode Island, Maine, New Hampshire and Vermont)
Clean Energy Resources & Innovations

• Clean Energy:
  ▪ Distributed Energy Resources
  ▪ Grid-Scale Generation
  ▪ 21st Century Electricity System
  ▪ Clean Transportation

• Innovation models & federal funding challenges
• Regional opportunities
Grid-Scale Clean Energy Supply
21st Century Electricity System

- Bi-directional communications & metering
- Bi-directional power flows
- Millions of electric vehicles
- Applications

- Pervasive monitoring & digital controls
- Self-monitoring & high visibility
- Many consumer choices
- Condition-based maintenance

Source: AEG Power Solutions

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Decarbonizing Transportation

- Electric vehicles, related infrastructure, new business models
- Hydrogen vehicles, related infrastructure, new business models
- Urbanization, autonomous vehicles, new transportation models
- Northeast regional corridor; model for developed world
The Power of Change: Innovation for Development and Deployment of Increasingly Clean Electric Power Technologies

Committee on Determinants of Market Adoption of Advanced Energy Efficiency and Clean Energy Technologies

September, 2016
“Power of Change” Recommendation: Candidate Innovation Solutions

- Government should direct funds to broad innovation portfolio:

  - Technological Valley of Death
    - Fundamental Research
    - Option Creation / Proof of Concept
    - Pilot / Demonstration
    - Commercialization Valley of Death
      - Commercialization / Early Adoption
        - Large-scale Take-up / Improvements-in-use

  - ARPA-E
  - Roadmaps & Challenge Funding
  - Prizes
  - Network of Regional Institutes & Clusters; Incubators; Accelerators
  - Public – Private Venture Funds
  - Simulation & Test Bed Network
  - Regional Demonstration Funds
  - Results Based Regulation
  - Utility RD&D Set Aside Funding
  - Settlements Enabling Responsive Demand
  - Rate Recognition for Volt-VAr Control
  - On-Bill Repayment for Efficiency & Clean DER

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White House Proposes ARPA-E $0 Budget; EERE cut 70%

Report: Trump targets 70% cut to DOE energy efficiency, renewables office in revised budget
Recent Analysis of Proposed DOE 2018 Budget for RD&D

• White House proposed 57% reduction in federal energy RD&D at DOE, from US$3.8 billion allocated FY17 to $1.6 billion in FY18

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Innovation Battle Underway in DC: White House Cuts; Senate Pushes Back

Report: Trump targets 70% cut to DOE energy efficiency, renewables office in revised budget

With unusual candor, Senate appropriators ‘reject’ cuts to energy research

- White House seeks to eliminate ARPA-E
- *Science*: Senate says "The Committee definitively rejects this short-sighted proposal"
- Senate appropriators increased ARPA-E 8% to $330M
- Senate gives DOE's applied research in Energy Efficiency & Renewable Energy $1.937 billion, a 7% cut from last year, far above $636M proposed by White House
Northeast Path to Clean Economy, State / City / Business Leadership

- US Northeast focused on 2030 clean energy leadership — Halfway to mid-century clean energy economy
- Mid-term Clean Energy & Innovation Goals — Test, prove, begin scaling key sectors and models:
  - Connect ecosystem for innovation, policy, market initiatives
  - Include cross-border US-Canada regional cluster/market opportunities