Federal Government Financing Programs for Energy

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My Background

- Currently: Advisor to the Secretary of Energy on Finance & Investment in Clean Energy (2012-Present)

- Past:
  - MBA/MS, Stanford University
  - BA, University of Virginia
  - White House National Economic Council
  - Senior Consultant, Booz Allen Hamilton
  - Co-Founder/CFO, Editas
Overview: U.S. Department of Energy

Department of Energy at a Glance:

- Mission: To ensure America’s security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions.
- Budget: $27.2 billion (FY 2014)
DOE’s 17 National Laboratories are the largest supporter of basic research in physical sciences in the United States.
Diverse Mix of DOE-Financed Energy Technologies

- Solar
- Wind
- Geothermal
- Transmission
- Storage & Batteries
- Nuclear
- Biomass
- CCS
- Powertrains & Advanced Vehicles
New Investment in Clean Energy

2004-14 ($bn)

Note: Total values include estimates for undisclosed deals. Includes corporate and government R&D, and spending for digital energy and energy storage projects (not reported in quarterly statistics).

Source: Bloomberg New Energy Finance
SunShot Initiative

5 - 6¢/kwh without subsidy

A 75% cost reduction by the end of the decade
DOE Programs Support the Full Arc of Commercialization

- DOE Applied Science Programs
  - Energy Efficiency & Renewable Energy (EERE)
  - Fossil Energy (FE)
  - Nuclear Energy (NE)

- Commercial Maturity
  - R&D: DOE Labs; ARPA-E

- Technology Maturity
  - Initial Commercial Deployment: DOE Loan Programs Office (LPO)

- Technology Risk
  - Commercial Financing: Private Sector Financing (Banks & Bond Market)
  - Debt: US Gov’t; Equity: Private
  - Debt: Private; Equity: Private

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Grants

Grants

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Examples of DOE Financing Activity

- **Grants and Cooperative Agreements**
  - $35 billion assigned to DOE through Recovery Act (2009) that supported more than $80 billion in capital investment
  - Support to technologies including:
    - Coal Carbon Capture and Storage
    - Renewable Energy (Solar Photovoltaic, Solar Thermal, Wind, Geothermal, Biofuels)
    - Grid Technology (including Smart Meters)
    - Energy Efficiency upgrades

- **Loan/Loan Guarantee Solicitations (Active)**
  - Advanced Fossil Energy Solicitation ($8 billion)
  - Renewable Energy and Energy Efficiency Solicitation ($4 billion)
  - Advanced Technology Vehicle Manufacturing Loans ($16 billion in available authority)
  - Nuclear Energy Technology ($12 billion)
Resources: Financing Opportunities

Visit: Energy.gov/finance
“You have the capacity to fundamentally change our direction... We need you to continue to work to bring even more philanthropies and investors on board.”
- Vice President Biden, June 16, 2015

White House Summit (June 2015)

White House Clean Energy Investment Summit

- $4 billion in private sector investment commitments
- More than 100 private sector participants
- Coverage from sources including:
  - Fortune
  - ABC News
  - Wired Magazine
  - Bloomberg
  - The Guardian

February 10: ARPA-E Summit Announcement
February 26: DOE SLAC Roundtable
April 6: DOE NYC Roundtable
April 21-22: Chicago Event
June 16: White House Summit
Revolution Now Report: Exciting Future from Economies of Scale

Solar PV

Wind

Lithium-Ion Batteries

LED Lighting