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Technology Transfer at DOE

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US Department of Energy
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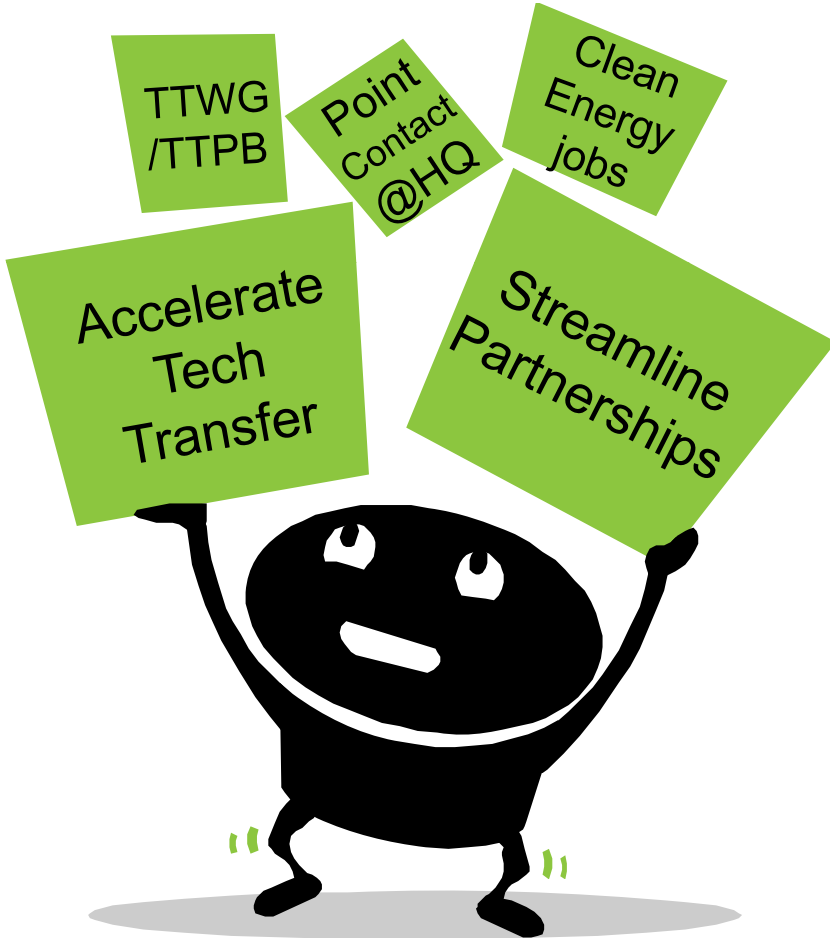
Major Role and Responsibilities



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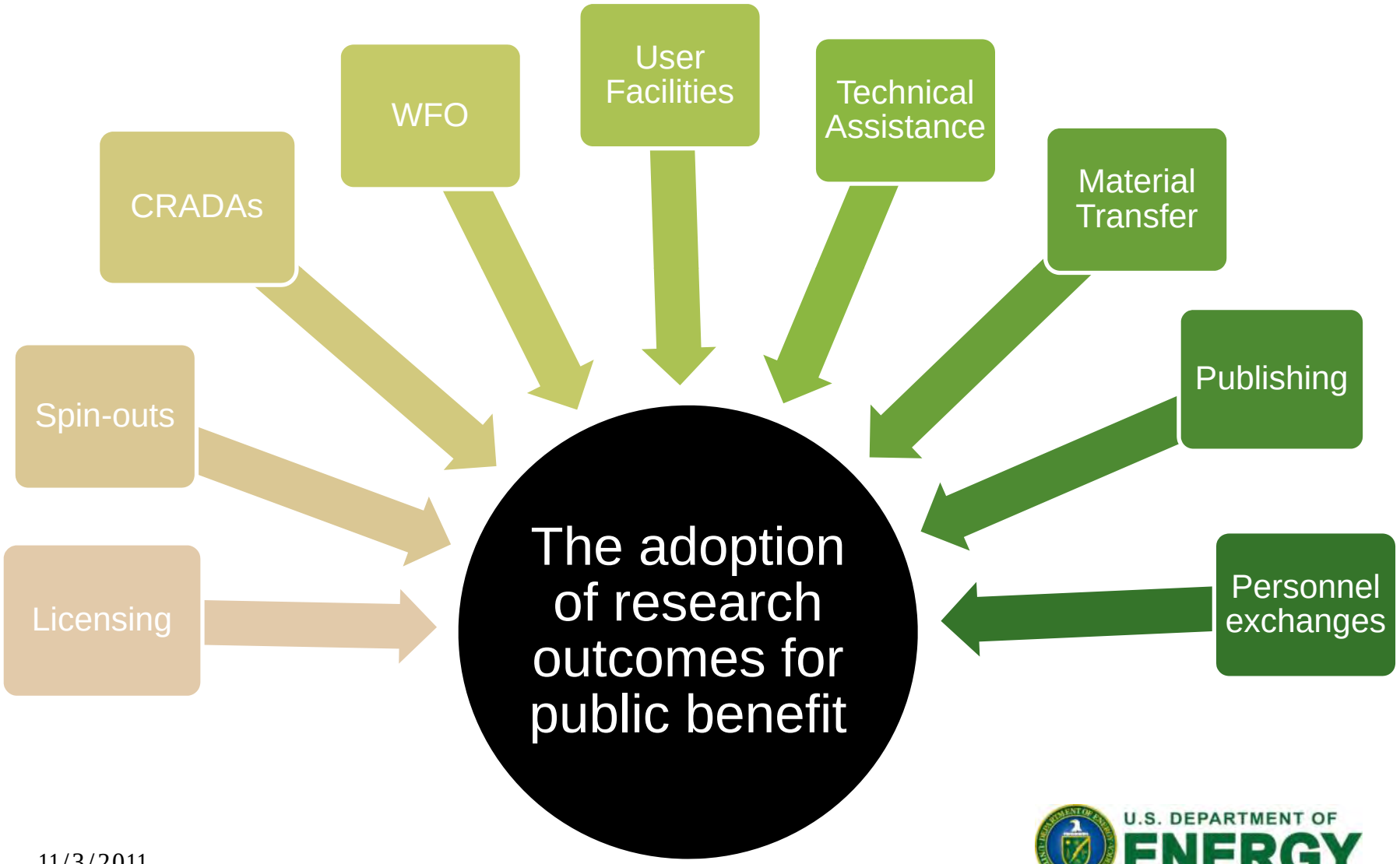
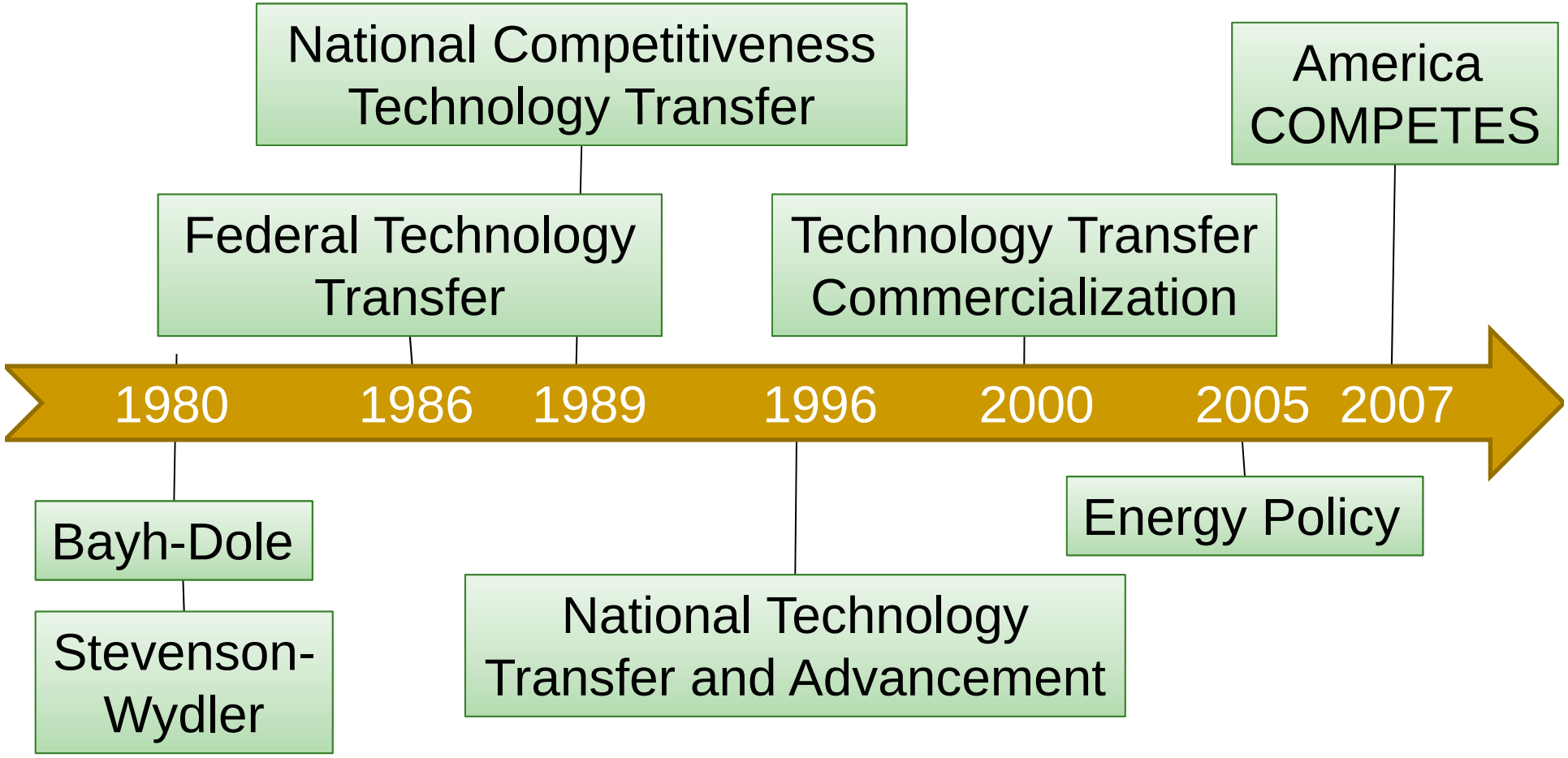
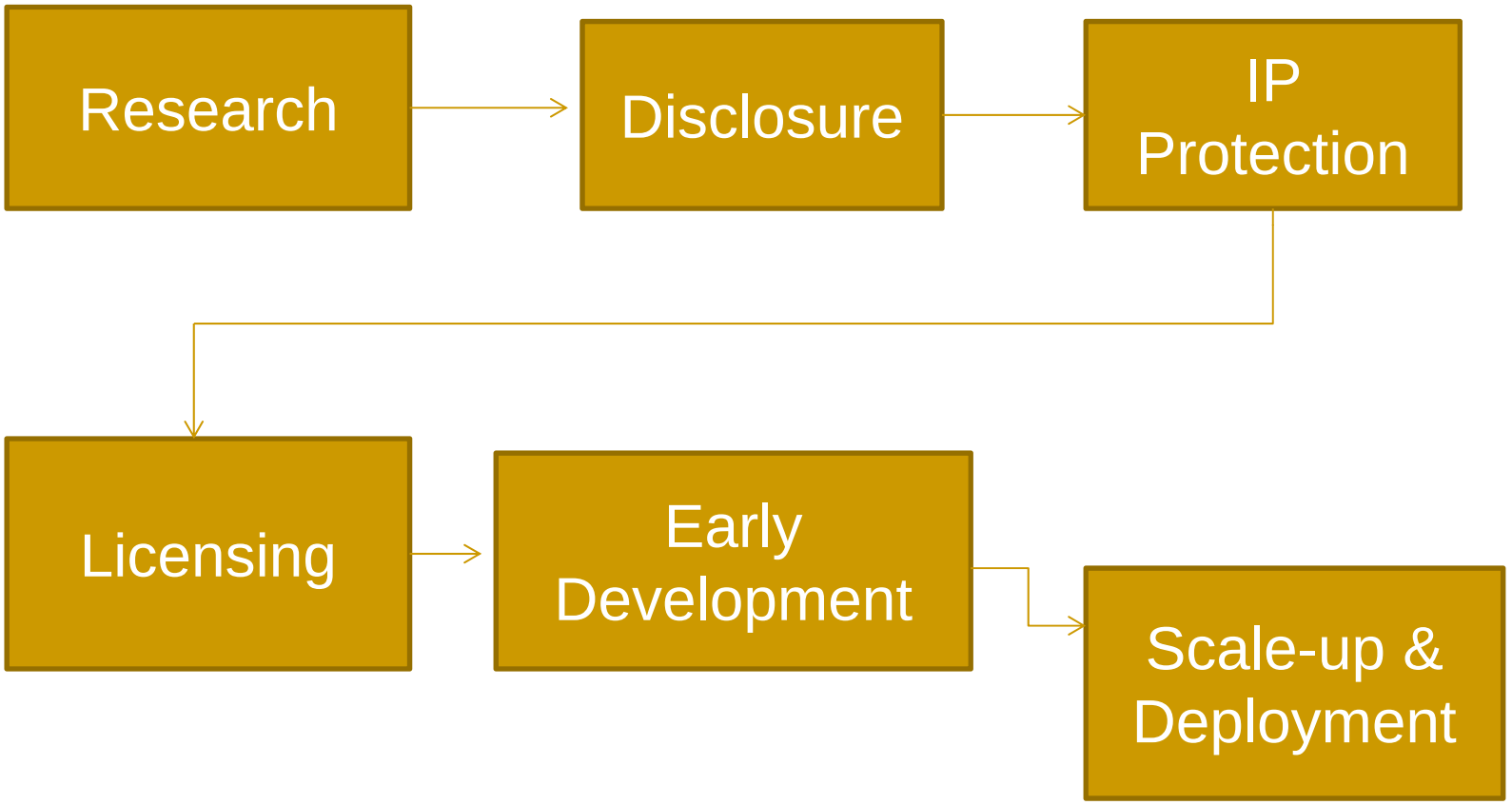
What is Tech Transfer?



History of TT in Congress



Technology Transfer Process



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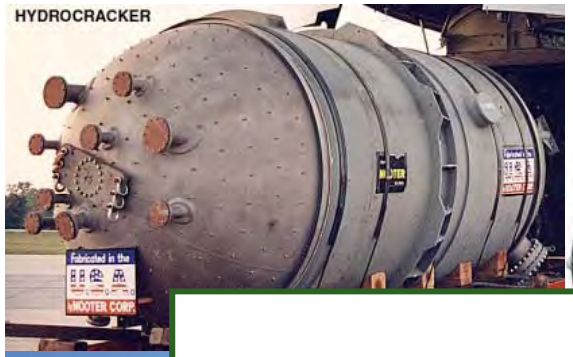
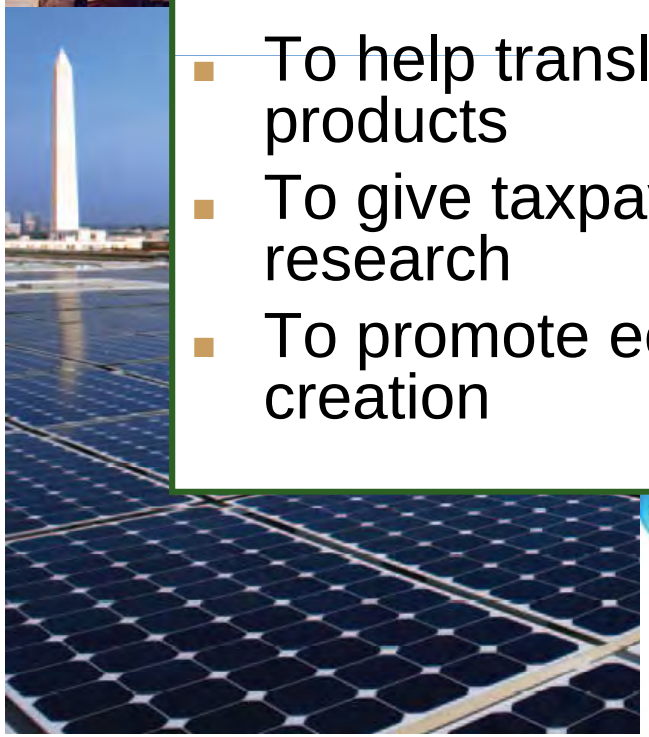
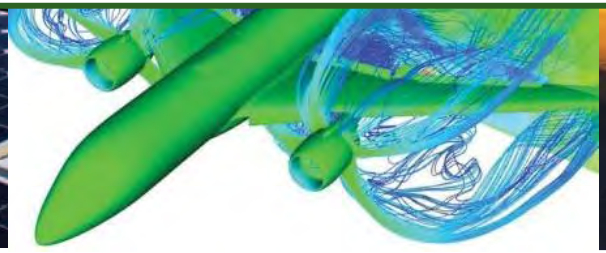
Why is TT important?



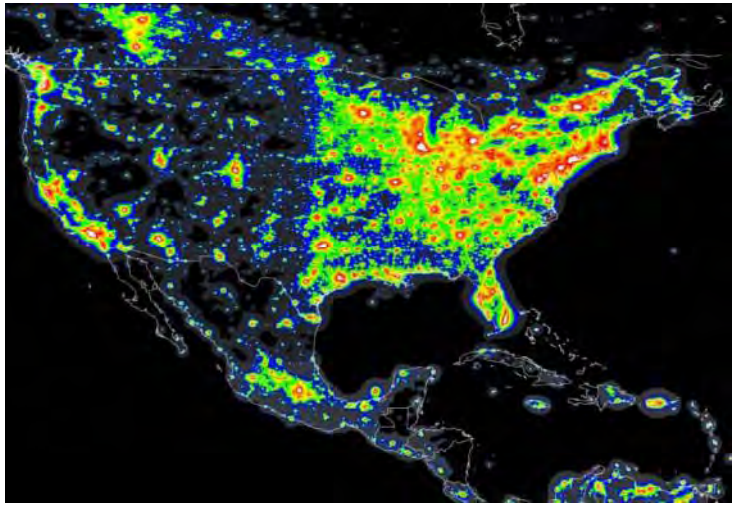




- To help translate research results into practical products
- To give taxpayers a return on their investment in research
- To promote economic competitiveness and job creation

Barriers to supply transformation

Ubiquity *Consider economic, political, and social dimensions*



Longevity *Stock of existing assets*

Incumbency

New technologies compete on cost

Scale

Large capital and access to existing infrastructure are required

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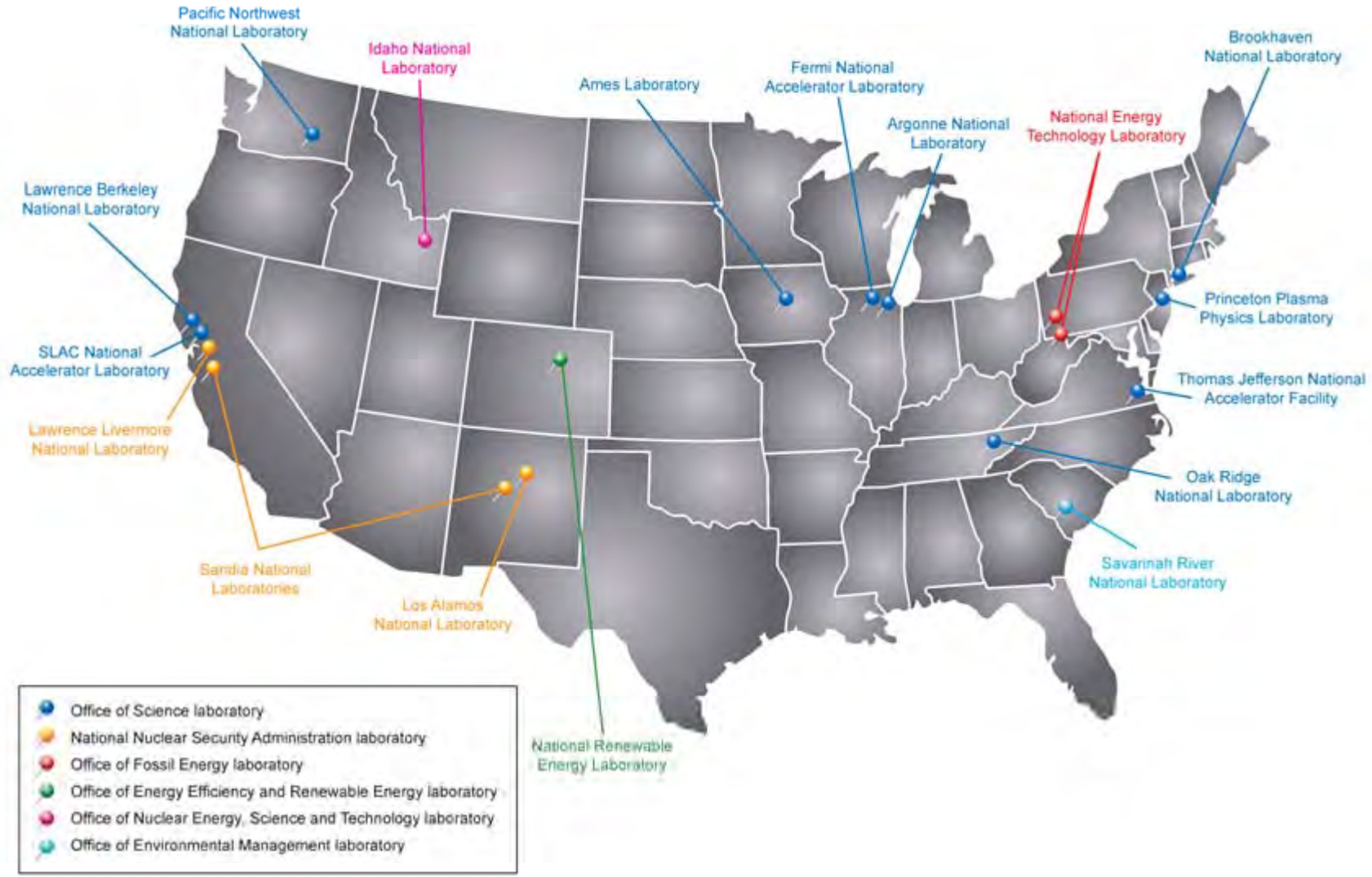

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- Energy Frontier Research Centers
- Energy Innovation Hubs

- ARPA-e
- DOE SBIR Phase III Xlerator Program
- Entrepreneurs-in-Residence
- Accelerating Discovery to Deployment

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DOE TT at a Glance

- Over 14,000 TT transactions
- ~15K Patents (~11.5K issued)
- ~3,500 Active Royalty Bearing Licenses
- ~4,400 User Facility Agreements
- ~21,100 Users
- 264 CRADAs

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A few program highlights from some DOE labs

Intellectual property licensing, technology assistance, funding, partnerships, initiatives & more

Program profile: Technology Licensing

All DOE National Laboratories and Some Facilities

- How it works:
  - Businesses, entrepreneurs, and others locate licensable technologies via lab websites, DOE sites, referrals, etc.
  - Contact laboratories for more information; NDA; negotiate terms
  - Programs at each lab are similar, but are not exactly alike
- How it's helped:
  - Thousands of technologies are licensed to companies each year, providing a basis for U.S. competitiveness and creating new jobs

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Contractual Vehicles

- CRADA (Cooperative Research and Development Agreement)
- WFO (Work For Others)
- User Facilities (Proprietary vs. Non-Proprietary)
- Grants
- SBIR
- Sub-Contracts (from Labs)
- Licensing

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Licensing Success Stories

High-Powered Battery for Hybrid Electric Vehicles (HEVs)

Berkeley Lab

Argonne NATIONAL LABORATORY

Ultrathin Film Solar Technology using Nanocrystal Semiconductors

Millimeter Wave Holographic Body Scanner

Pacific Northwest NATIONAL LABORATORY

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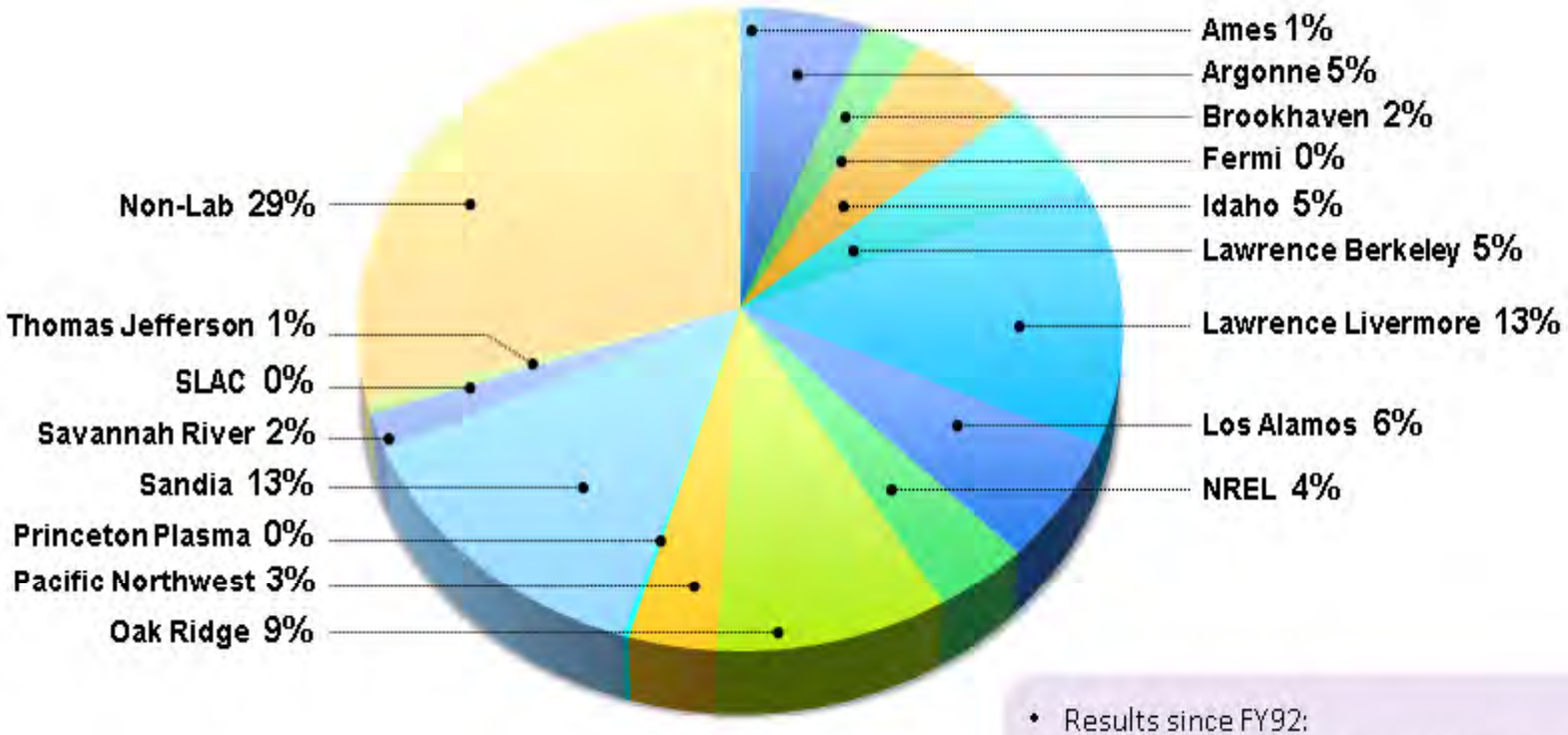
Portfolio Snapshot

R&D funding of patented inventions at the National Laboratories

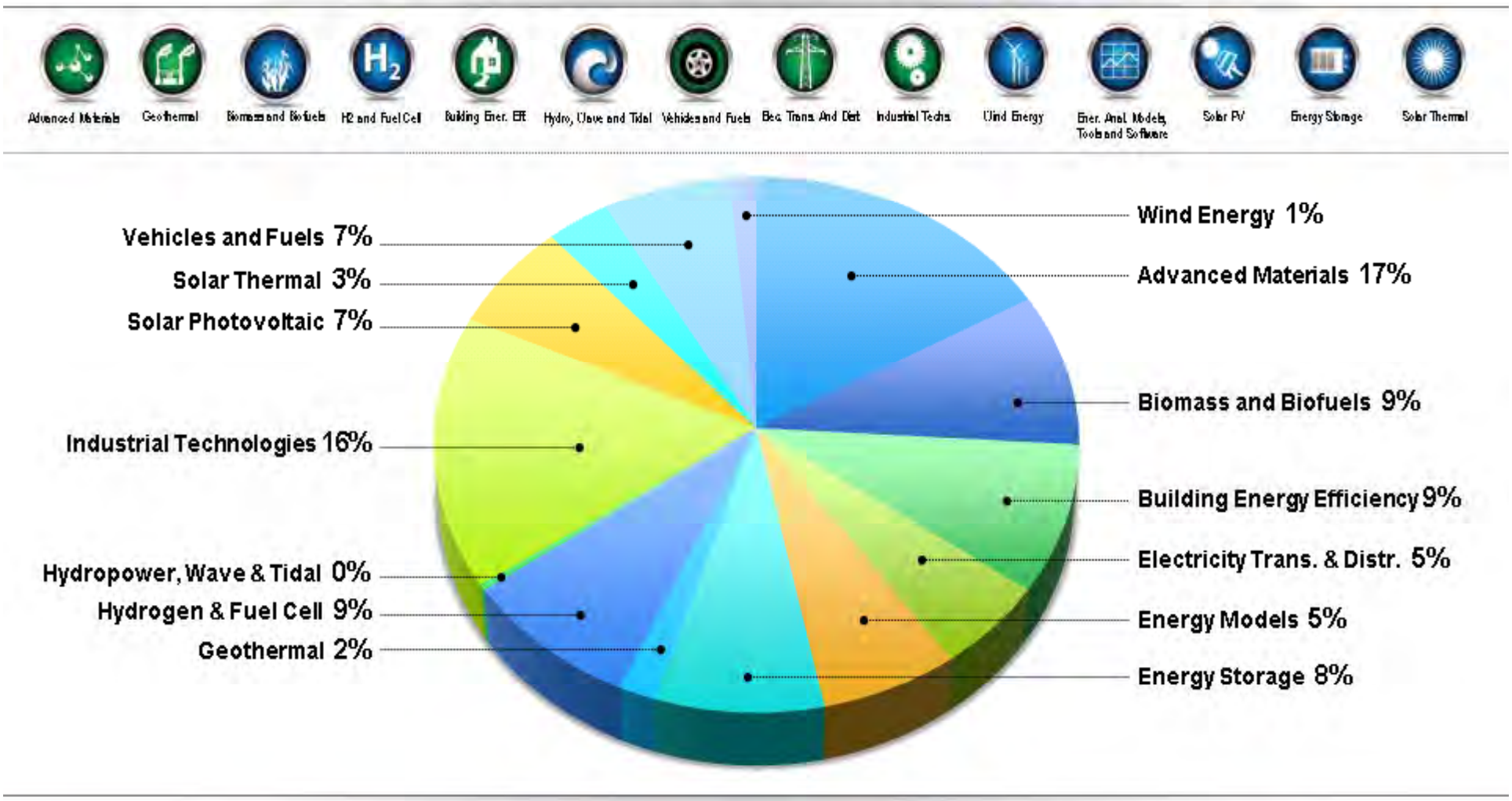
Patent Production by DOE Laboratory Since 1992



- Results since FY92:
  - U.S. Patents Issued from DOE Funding: **11,677**
  - U.S Patent Applications from DOE Funding: **3,523**

Portal Technology Content

14 Major technology areas of DOE R&D Interest



One vision, 17 labs, aligned missions

- World class laboratories
- Top-notch scientists
- One-of-a-kind
  User Facilities
- Driving innovation
- Wide range of contractual vehicles

The DOE national labs are open for business and ready to help!

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START-UP AMERICA

- http://www.whitehouse.gov/startup-america-fact-sheet
- Administration-level effort & private partnership
- Entrepreneur-focused policy initiatives in five areas:
  - Unlocking Access to Capital
  - Connecting Mentors
  - Reducing Barriers
  - Accelerating Innovation
  - Unleashing Market Opportunities

America's Next Top Energy Innovator

- Pilot Program from May 2 – December 15, 2011
  - Template option agreement for any DOE patent*
    - $1,000 up-front fee
    - Licensing option for up to 12 months
      - 6-month option with a no-cost extension for 6 months
    - Portfolio of up to 3 patents for a specific technology from a single laboratory
    - Deferment of patent costs for up to 2 years
    - Optional VC mentoring available
    - Showcase at ARPA-E Innovation Summit

*These are patents held by the contractors that manage DOE Laboratories. For patents owned by DOE, license agreements with similar terms will be offered.

Web Portals and Other Support

- EERE Portal & Tech Comm Fund (techportal.eere.energy.gov)
- DOE Patent Site (osti.gov/doepatents)
- DOE Tech Transfer Site (techtransfer.energy.gov)
- SBIR/STTR Alerting Service
  - Automatic free alerts sent every other week, includes solicitations, training, conferences, tips, and contact information with web addresses
  - Covers all 11 agencies, not just DOE
- How they help:
  - Connects business with emerging technologies and laboratories developing them, as well as grant opportunities

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NREL National Renewable Energy Laboratory
Innovation for Our Energy Future

Pacific Northwest NATIONAL LABORATORY
Proudly Operated by Battelle Since 1965

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Innovation Ecosystem Development Initiative

Goals and Objectives:

- Accelerate movement of cutting-edge efficiency and renewable technologies from university laboratories to the market
- Nurture and mentor entrepreneurs
- Pursue intellectual property protection for technological innovations
- Engage the surrounding business and venture capital community
- Integrate sustainable entrepreneurship and innovation across university schools and departments

Announced September 2010, 3 year contracts

"Many great clean energy technologies have been born in our nation's research universities. Accelerating linkages between university research, investors and the business world is essential to moving these great ideas to the marketplace. The innovative clean energy start-up companies spawned by these ecosystems will continue to keep America competitive and will create the jobs of the future."

—Steven Chu, Secretary of Energy

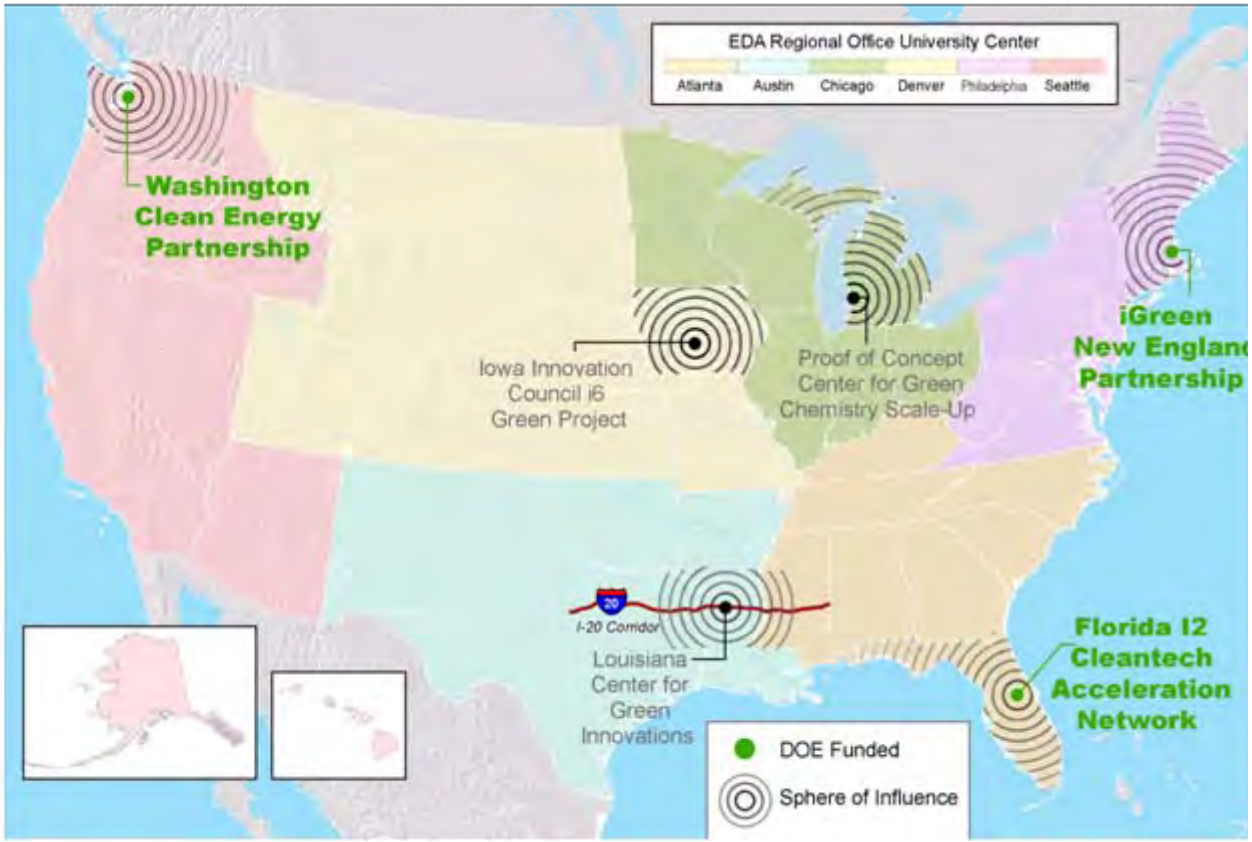
i6 Green Challenge
Proof of Concept Centers

Goals and Objectives:

- To help catalyze regional innovation cluster development
- To identify and support the nation's best ideas for technology commercialization and entrepreneurship
- To accelerate the commercialization of products and support the development of green jobs

Announced September 2011, 2 year contracts

"Investments in small business innovation through the i6 Green Challenge will play an important role in strengthening U.S. competitiveness and supporting economic development and job growth around the country. These centers will help companies test their innovations, a critical step in commercializing next generation clean energy technologies."
—Steven Chu, Secretary of Energy



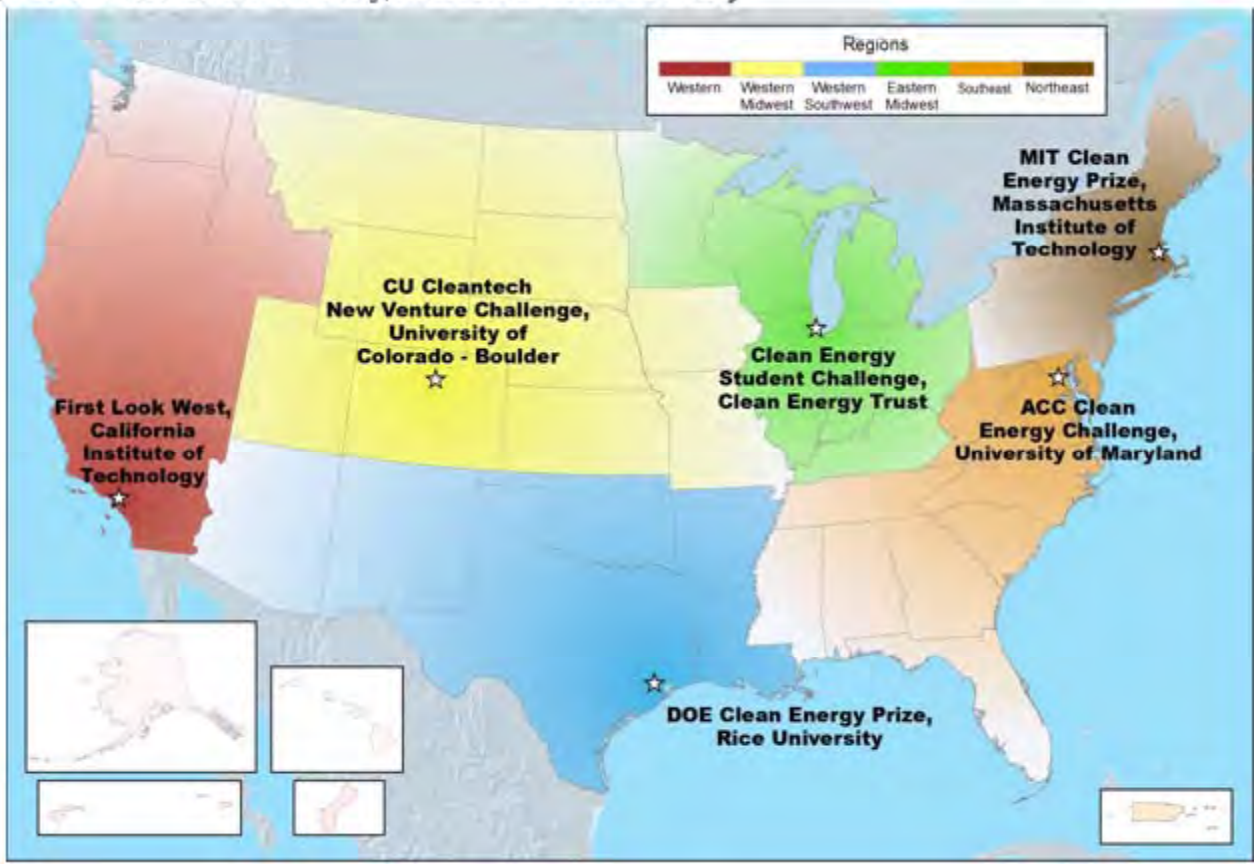
National Clean Energy Business Plan Competition

Goals and Objectives:

- Increase clean energy businesses coming out of universities and national labs
- Create a new generation of entrepreneurs to serve the nation's energy mission
- Capitalize on the U.S. investment in clean energy research and education to
  - Capture a leadership position in the global marketplace
  - Enhance our economic security, environmental security, and national security

Announced September 2011, 3 year contracts

"Fostering innovation at America's universities and producing our nation's next generation of clean energy entrepreneurs is vital to ensuring our nation's competiveness in the clean energy economy of tomorrow. This investment will train a new generation of scientific and technical leaders and support the Administration's continued effort to ensure that America has the workforce we need to secure our energy future, create jobs here at home, and win the future."
—Steven Chu, Secretary of Energy



Thank you!

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