



Energy, Jobs, and Transition—  
Our Opportunity Leap

March 22, 2015

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Office of the Secretary  
U.S. Department of Energy**

# Agenda

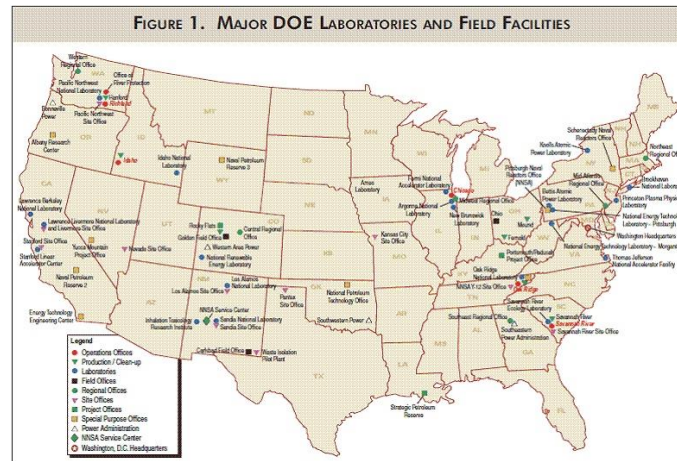
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- Macro view of energy and jobs.
- DOE's Job Strategy.
- POWER+ Plan.
- Energy transition strategy.



# Overview of DOE

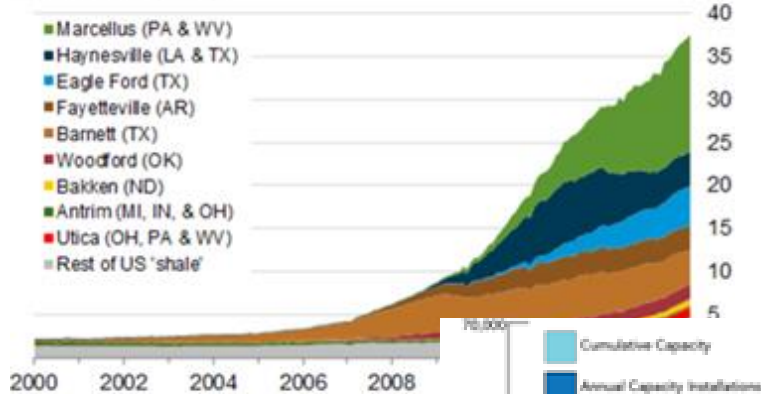
- The mission of the Energy Department is to ensure America's security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions.
- Founded in 1970, legacy in the Manhattan Project
- \$29 Billion Budget
- 115,000 direct and contractor employees
- Operates the 17 National Laboratory system, including Los Alamos, Oak Ridge, Argonne, Lawrence Livermore, NREL, etc.



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# The Energy Revolution

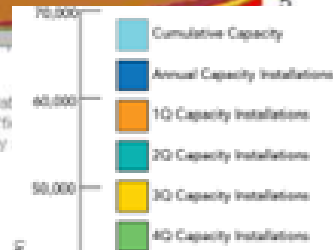
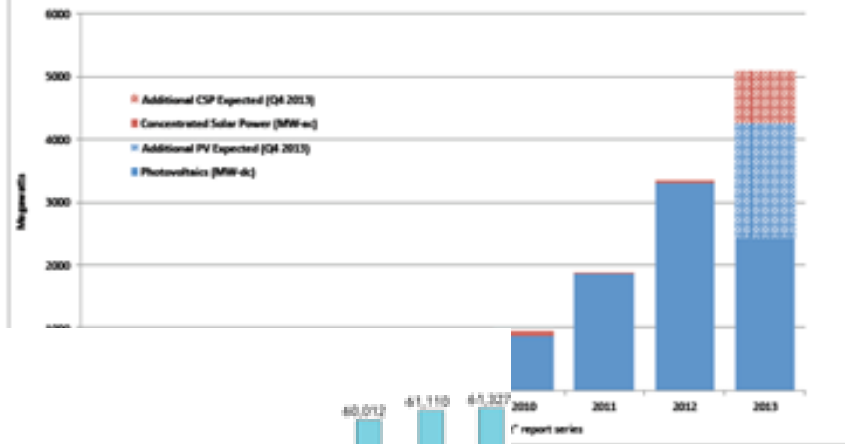
Monthly dry shale gas production  
billion cubic feet per day



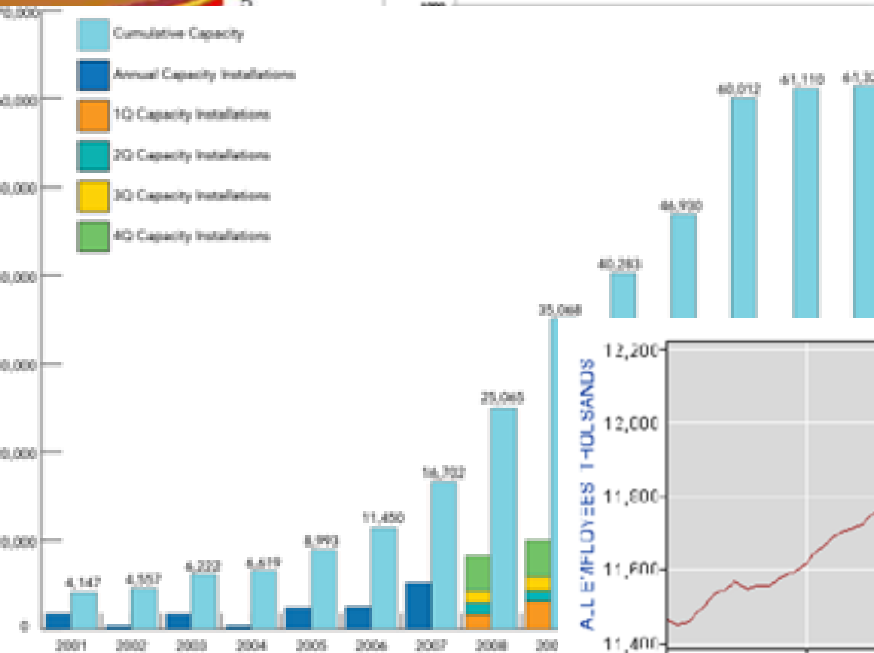
Sources: EIA derived from state administrative data through September 2014 and represent EIA's off-survey data. State abbreviations indicate primary.



Annual Solar Power Capacity Installations, 2005-2013



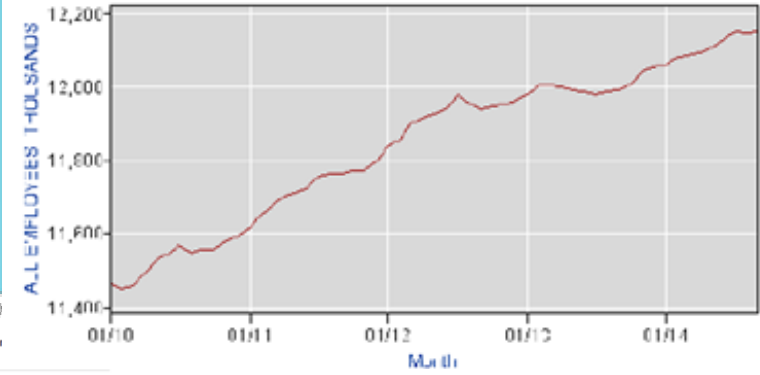
Wind Power Capacity (MW)



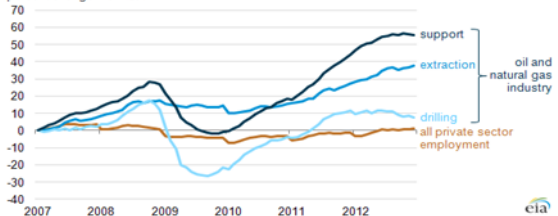
Active Wind-related Manufacturing Facilities end of 2013



NATIONAL SOLAR JOBS CENSUS 2013



Percent change in employment, oil and natural gas is



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# Some key takeaways

- Contradictory trends.
  - Rapid growth in some areas, declines in other, e.g. solar and gas vs coal
  - Increases in fuel and electrical efficiency are flattening demand while supplies are growing, e.g. oil supplies up while CAFÉ standards rise
  - Changes in fuel sources, efficiency standards and distribution systems are stressing utility models and stranding assets.
- An aging energy workforce at a time of rapid technology changes.
  - CEWD projects 55% of utility workforce to retire in next decade.
- Our energy infrastructure is overstressed at a time when it needs greater resilience.
  - Since 1980, the United States has sustained 144 weather disasters whose damage cost reached or exceeded \$1 billion (\$1 trillion total).
  - 7 of 10 costliest between 2004-12.



# Our Jobs' Challenge and Opportunity

- Between 2015 and 2020, we will need to fill 2 million jobs in the energy sector as a result of:
  - Retirements
  - Infrastructure growth and repair
  - Changing energy technologies driven by both markets and regulations
- A generational opportunity to rebuild US manufacturing capacity and infrastructure, driven by low energy prices.
  - 800,000 new manufacturing jobs added in last five years.
  - “High shale gas recovery and low prices could impact United States manufacturing industries by adding one million workers, and reduce natural gas expenses by as much as \$11.6 billion annually through 2025.”  
PwC
  - New investment in chemical-related manufacturing could result in 17,000 direct manufacturing using ethane as a raw material and over 395,000 related jobs.





# Jobs Strategy Council Mission

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- The mission of the Jobs Strategy Council is to accelerate the growth of and access to jobs in all sectors of the United States energy economy while meeting the goals of the Administration's Climate Action Plan.



# U.S. Department of Energy Jobs Strategy Council

- The United States Department of Energy Jobs' Strategy Council (JSC) is a cross-cutting initiative that integrates the research, technology, and economic resources of the Department to respond to the workforce and economic development needs of the energy industry and state and local governments.
- Focus Areas:
  - Improving energy jobs data
  - Coordinating DOE's energy and manufacturing economic development resources
  - Providing workforce development assistance in energy industries across a range of federal, local, public and private partners.



# JSC 2015-2016 Priorities

- Design and implement consistent measurement tools for job growth across all energy sectors.
  - Create a usable economy-wide definition of “energy work” across all sectors.
  - Particular focus on gap sectors, including renewables, energy efficiency, and clean energy manufacturing.
  - Publish annual energy jobs census.
- Establish a department-wide inventory of economic development resources.
  - Package resources in an easily accessible tool kit for state and municipal economic development agencies,
  - Implement an economic development outreach program, and
  - Initiate a national state-based energy jobs grants program.
- Complete a training and career pathways analysis by energy sector.
  - Identify training gaps with other federal agencies,
  - Analyze barriers to entry to disadvantaged communities, and
  - Provide project support to place-based pilots and initiatives



# Examples

- Detroit
  - Focus on job creation and redevelopment in energy and manufacturing—Joint efforts of Energize Detroit (Economic Impact and Diversity), Loan Program Office in auto supply, DOE Liaison to the City of Detroit and LED lighting, Mayor’s office, private equity firms.
- Houston/SW Louisiana
  - Focus on work force development in energy, providing curricula development, pre-apprenticeships in energy, working with community colleges and unions to strengthen access to disadvantaged communities.
- Pittsburgh
  - Focus on business, DOE/DOD/DOL/VA partnership to train and hire veterans to fill energy jobs vacancies, revamp work force system, with DOE’s innovative training in nat gas industries. ShaleNet success in training and placing over 3000 ee’s, including 1000 veterans.

# POWER+ Plan

- The Partnerships for Opportunity and Workforce and Economic Revitalization Initiative
  - FY 2016 Proposal
    - \$55M in investments in job creation and worker retraining
    - Legacy costs in coal country (underfunded retirement plans)
    - Investments in carbon capture, utilization, and sequestration (CCUS) technology
      - \$2 Billion in refundable investment tax credits
      - \$3-4 Billion in refundable sequestration tax credits
      - To finance retrofitting existing coal or natural gas power plants and “new builds” to capture for storage or beneficial use at least 75% of CO2 emissions



# POWER+ Plan

- The Partnerships for Opportunity and Workforce and Economic Revitalization Initiative
  - FY 2015 Down payment from existing agency programs
    - Track 1: Planning Grants
      - For communities impacted by coal mining and coal power plant job loss
      - To create economic development plans and labor market analysis
      - Funded by Commerce and Labor
    - Track 2: Implementation Grants
      - For communities impacted by coal mining and coal power plant job loss
      - To implement integrated economic and work force development plans that place affected workers in new jobs.
      - Funded by Commerce, Labor, SBA, and ARC
      - Support Services and Resources from USDA, EPA, Energy, Treasury, MEP, and Interior

# Summary

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- Key feature of U.S. 2015 economic advantage is its low-cost, diverse energy supply.
- Every state/region needs its own energy jobs' strategy, maximizing the spin-off benefits of our drive to a low-carbon future.