

DEPARTMENT OF ENERGY INDIAN ENERGY



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www.energy.gov/indianenergy



Outline

- ☀ DOE and Indian Energy
- ☀ Indian Energy Resources
- ☀ Federal Energy Programs
- ☀ Key Challenges and Opportunities
- ☀ OIE Initiatives
- ☀ DOE Organization
- ☀ Additional Resources

Department of Energy and Indian Country

"We are fully committed to our Tribal policy and to early and meaningful consultation with American Indian Tribal governments and Alaska Natives on a government-to-government basis . . . By working together, we can promote economic development and help many more tribes and villages seize the clean energy opportunity."

Dr. Steven Chu, Secretary of Energy, DOE Tribal Summit, May 5, 2011.

The Energy Policy Act of 1992 (PL 102-486, Title XXVI)

Established a DOE demonstration program to assist Indian tribes in pursuing energy self-sufficiency and to promote the development of a vertically integrated energy industry on Indian reservations.

Established financial assistance grants for tribes to assess feasibility and potential development of renewable energy and energy efficiency projects

Indian Tribal Energy Development and Self-Determination Act of 2005

(Title V, Energy Policy Act of 2005, PL 109-58)

Established Office of Indian Energy Policy and Programs (“OIE”)

Amended EPA of 1992

New DOE authorities

New DOI authorities

New Tribal authorities (TERAs)

Office of Indian Energy Policy and Programs

The Director...shall provide, direct, foster, coordinate, and implement energy planning, education, management, conservation, and delivery programs of the Department that –

- promote Indian tribal energy development, efficiency, and use;
- reduce or stabilize energy costs;
- enhance and strengthen Indian tribal energy and economic infrastructure relating to natural resource development and electrification; and
- bring electrical power and service to Indian land and the homes of tribal members located on Indian lands or acquired, constructed, or improved (in whole or in part) with Federal funds.

Director shall establish programs to assist consenting Indian tribes in meeting energy education, research and development, planning, and management needs.

The Director shall develop a program to support and implement research projects that provide Indian tribes with opportunities to participate in carbon sequestration practices on Indian land.

Authorized through 2016.

Office of Indian Energy Goals

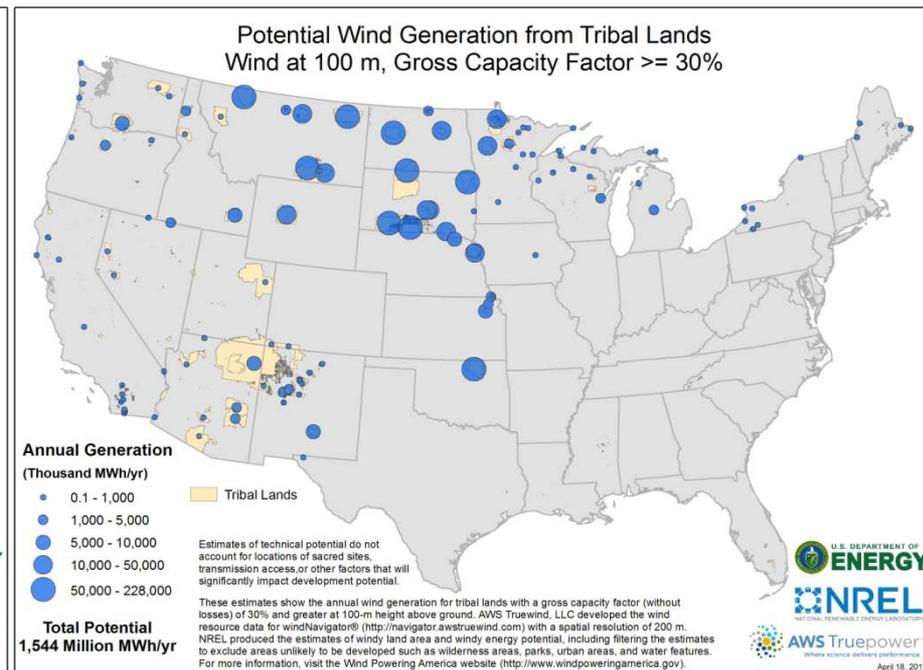
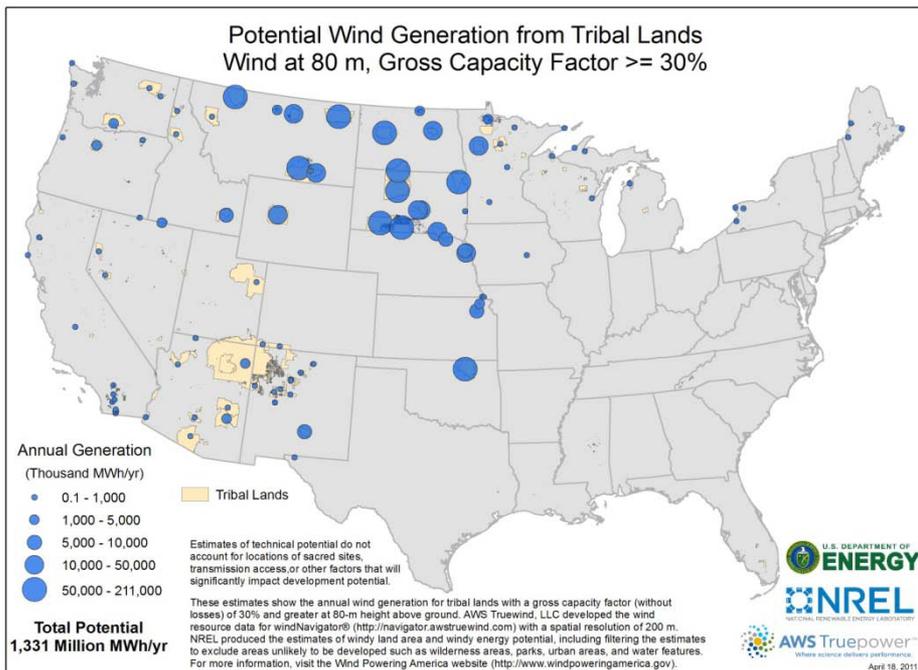
- ☀ Promote Indian tribal energy development, efficiency and use
- ☀ Reduce or stabilize energy costs
- ☀ Enhance and strengthen Indian tribal energy and economic infrastructure relating to natural resource development and electrification
- ☀ Bring electrical power and service to Indian land and the homes of tribal members

Estimated Indian energy resources

- 55 million acres in Indian Country
- 22 million acres under Alaska Native control
- 1,331 million MWh wind resources
- 9,275 million MWh PV solar resources
- 6,017 million MWh enhance geothermal resources
- 4 million MWh biomass (solids) resources
- 7 million MWh small/low hydropower resources
- 882 million barrels potential oil reserves
- 10 billion metric cubic feet potential gas reserves
- 1.2 billion tons potential coal reserves

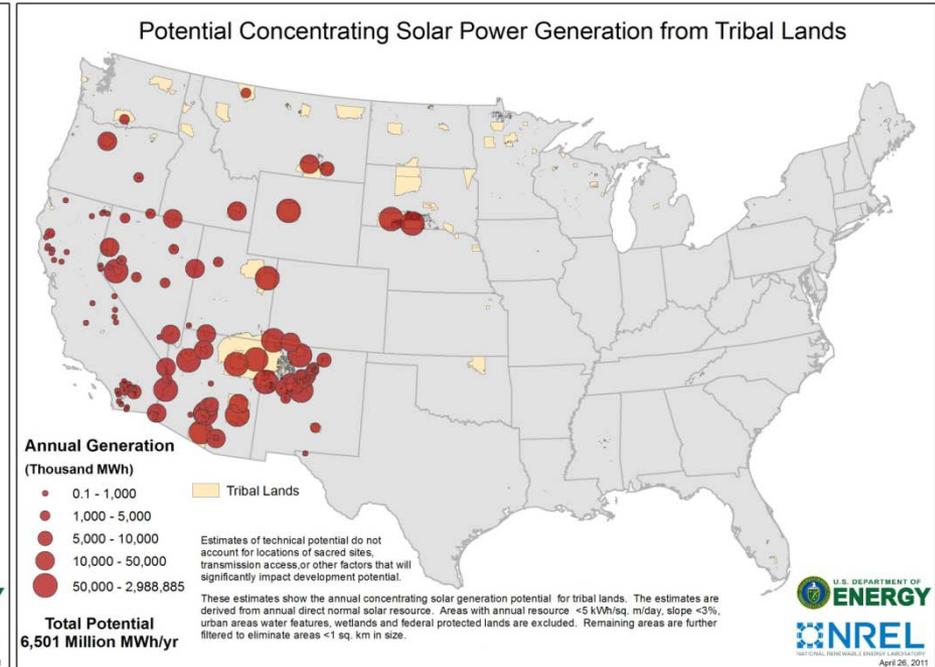
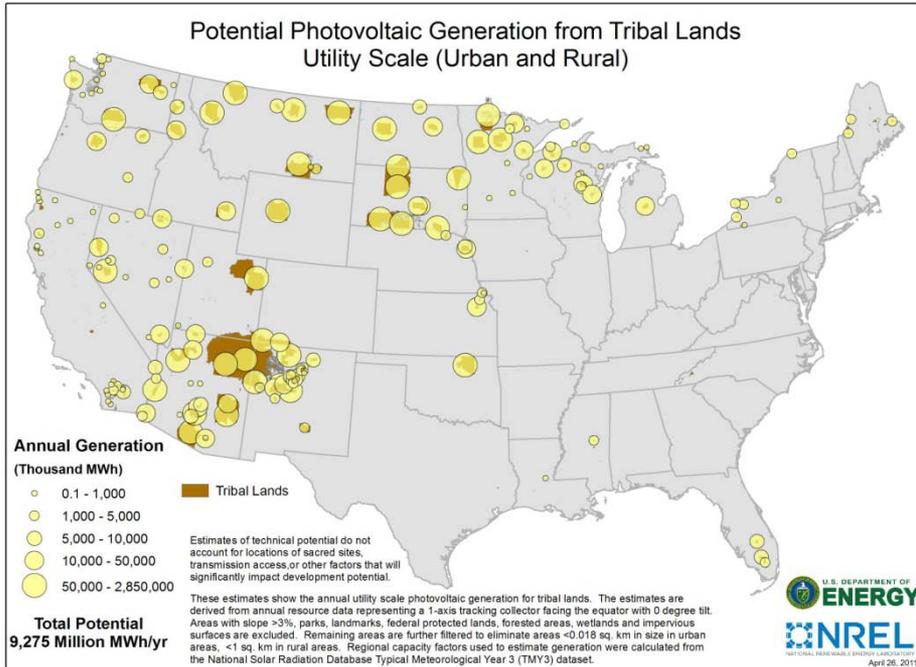
Wind Resources

Wind Potential on Tribal Lands could provide about 32%
of U.S. Annual Electric Generation (~ 4,120 Million MWh/year)



Wind potential of 1,331 Million MWh/yr (80m ht) or 1,544 Million MWh/yr (100m ht) on Indian Lands

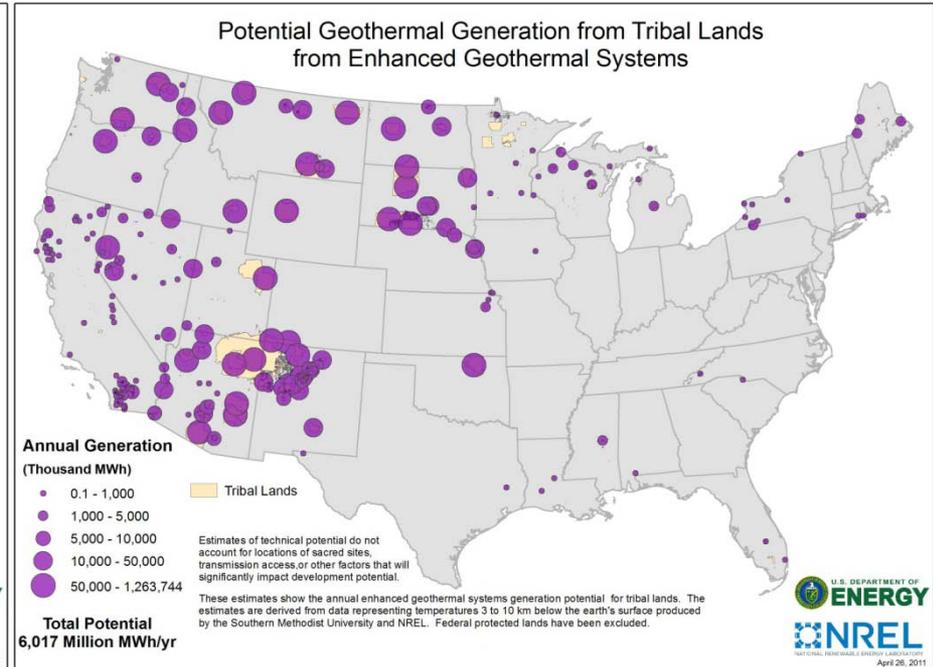
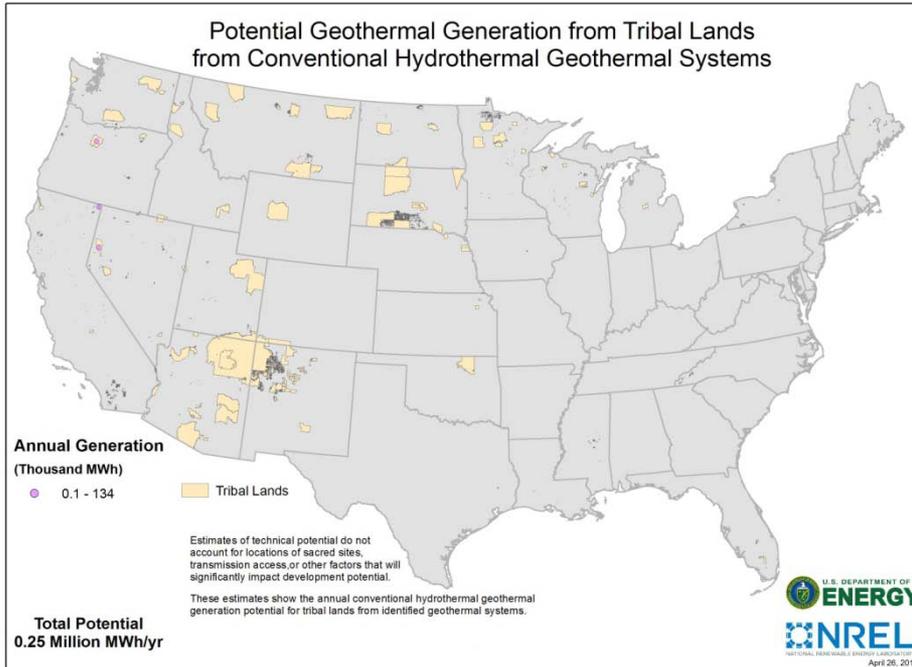
Solar Electric Potential on Tribal Lands Could Provide ~2 times the Total U.S. Electric Generation



Solar Electric Potential of 9,275 Million MWh/yr (PV) or
6,501 Million MWh/yr (CSP) on Indian Lands

Geothermal Resources

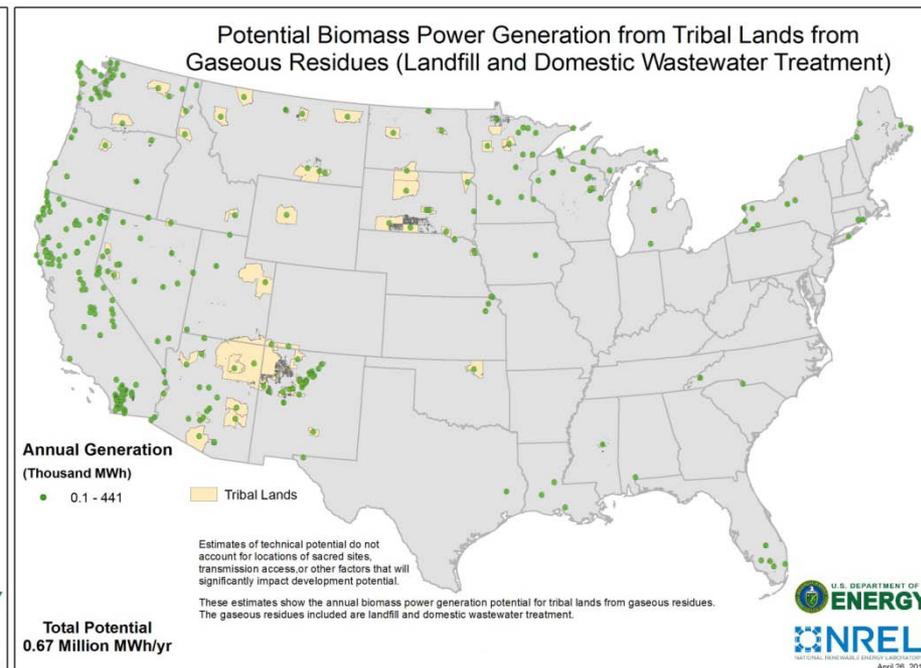
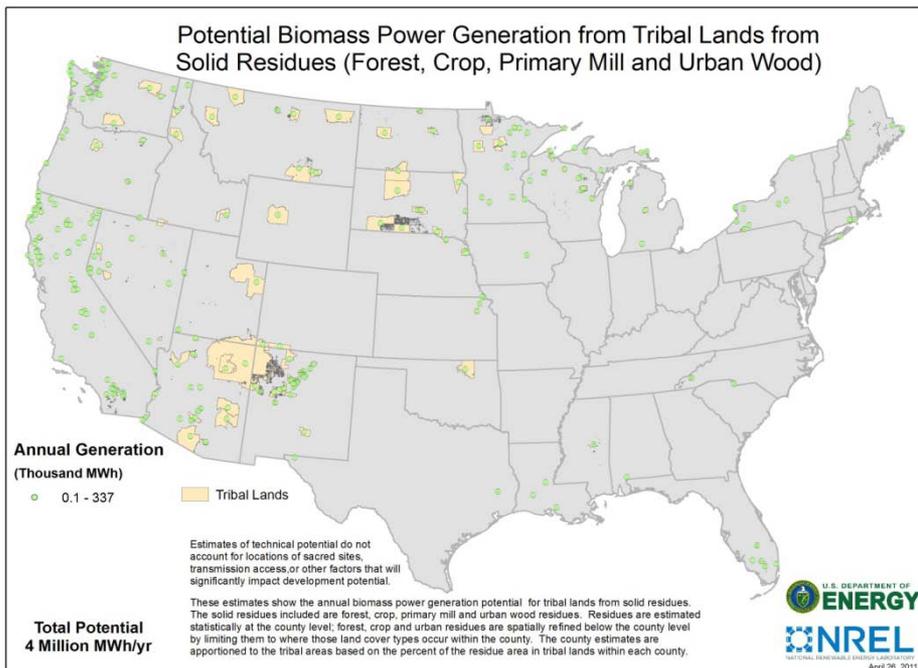
Geothermal Potential on Tribal Lands could provide 1.5 times the total U.S. Annual Electric Generation



Geothermal potential of 0.25 Million MWh/yr (conventional) and 6,017 Million MWh/yr (EGS) on Indian Lands

Biomass Resources

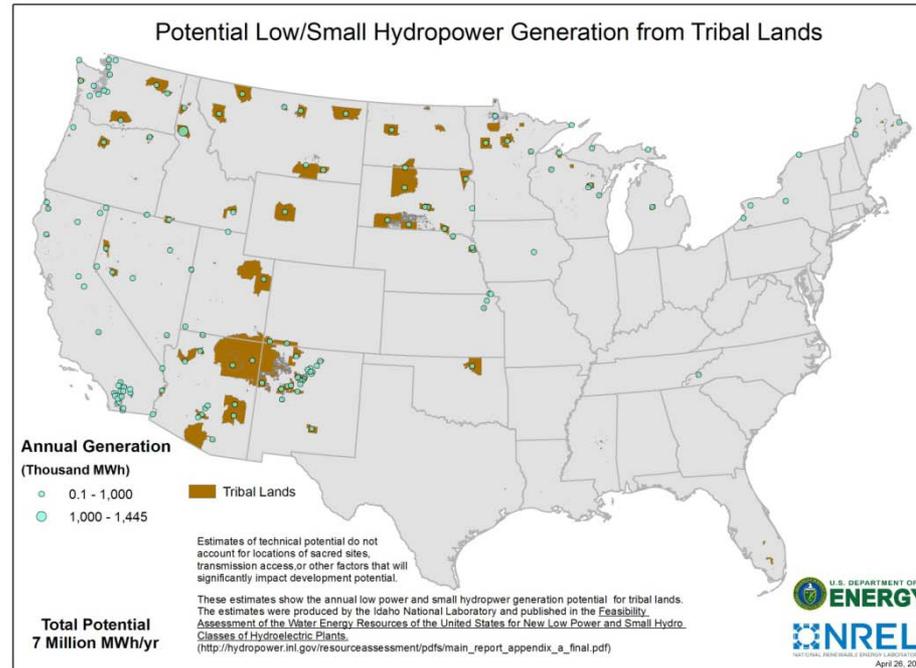
Biomass Potential on Tribal Lands $\leq 1\%$ of Total U.S. Annual Electric Generation



Biomass potential of 4 Million MWh/yr from solid residues and ~1 Million MWh/yr from gaseous residues on Indian Lands

Hydropower Resources

Hydropower Potential on Tribal Lands ≤1%
Of Total U.S. Annual Electric Generation



Hydropower potential of 7 Million MWh/yr from low/small hydropower sources on Indian Lands

EPA 2005 DOE INDIAN ENERGY PROGRAMS

- ☀ Tribal Energy Program
- ☀ Loan Guarantee Program
 - Up to \$2 billion in guarantees authorized
- ☀ Federal electricity or energy product purchase preference for Indian energy
 - Not more than prevailing market price
 - Not less than prevailing market terms and conditions
 - Double credit to meet federal agency RPS (203(c)(3))
- ☀ PMA Administrators
 - May purchase power from tribes for firming and reserve requirements – but no more than market prices
 - Provide technical assistance to tribes seeking to use transmission system
- ☀ Renewable Energy Production Incentives
 - Tribes became eligible for payments (202(b)(1))

Other Major Federal Energy Programs

☀ DOE Programs:

- ☀ Weatherization Assistance Program
- ☀ Energy Efficiency and Conservation Block Grant Program
- ☀ Solar Communities
- ☀ Wind Powering America
- ☀ Better Buildings Initiative

☀ USDA Programs

- ☀ Rural Energy for America (REAP)

☀ EPA

- ☀ Re-powering America
- ☀ Green Power America

☀ HUD

- ☀ Sustainable Communities

Key Challenges

- ☀ Funding, Financing, and Incentives
- ☀ Cost to develop and build
- ☀ Transmission / Grid access
- ☀ Buyers
- ☀ Permitting, lease approval turnaround time
- ☀ Energy education – policy, legal, regulatory, technical
- ☀ Disaggregate federal approach to Indian energy development
- ☀ Disaggregate tribal approach to energy development

Key Opportunities

- ☀ Promote USG collaboration on energy development programs
- ☀ Innovative project and financial structures
- ☀ Community-scale projects
- ☀ Tribal-led transmission planning
- ☀ Federal power purchasing market
- ☀ Reduced cost to develop and construct
- ☀ Rebuild energy education and capacity building platforms

Near Term Initiatives

- ☀ Indian Country Energy and Infrastructure Working Group
- ☀ Interagency Coordination
- ☀ DOE Power Purchase Preference Guidance
- ☀ Transmission and Electrification Technical Assistance Program
- ☀ Innovative Community Scale Development
- ☀ Energy Education and Capacity Building Platform Development
- ☀ Carbon Sequestration Research Program

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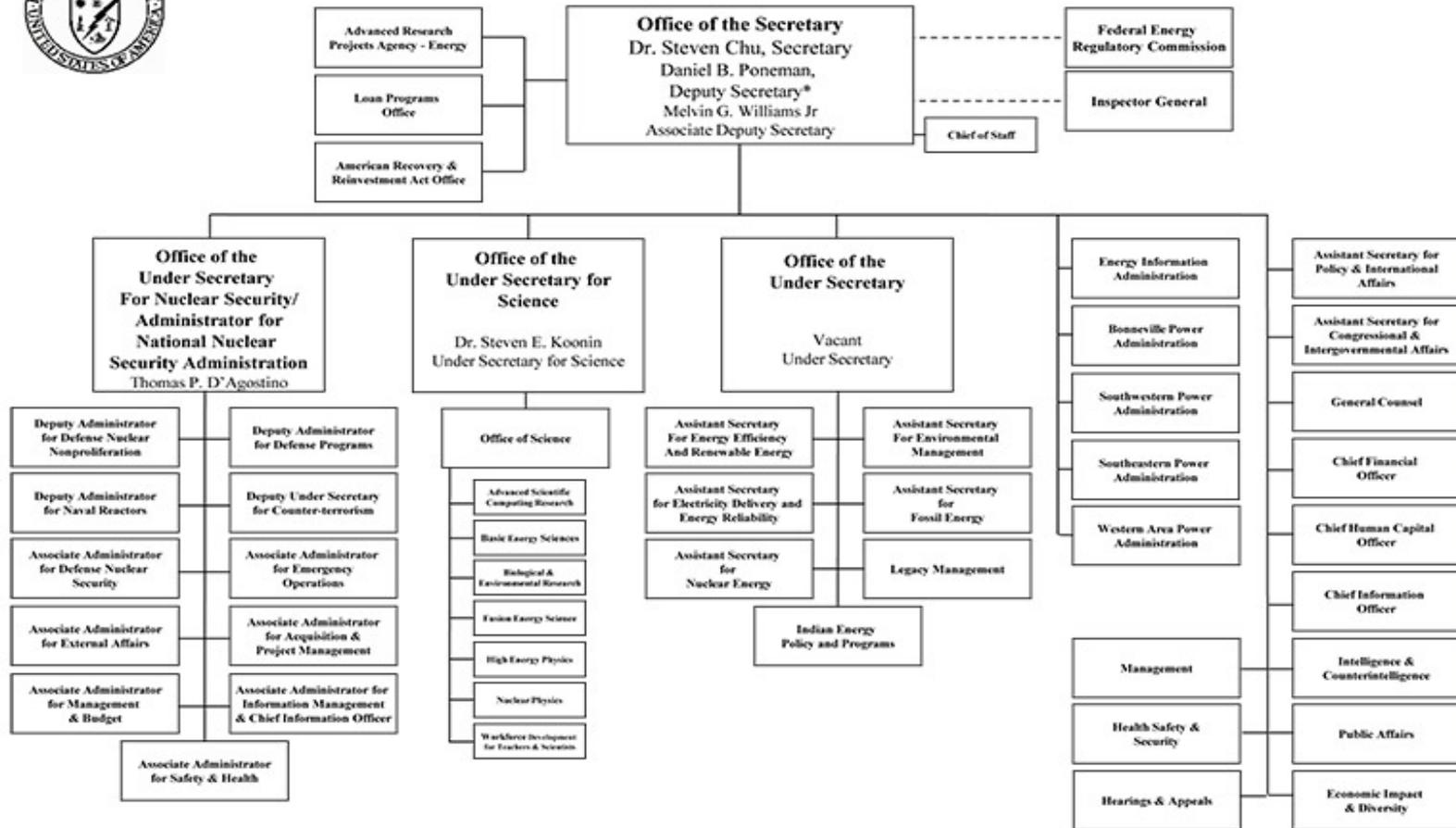
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Department Organization



DEPARTMENT OF ENERGY



* The Deputy Secretary also serves as the Chief Operating Officer

- **Office of Indian Energy**
 - Charged by Congress to direct, foster, coordinate, and implement energy planning, education, management, and programs that assist tribes with energy development, capacity building, energy infrastructure, energy costs, and electrification of Indian lands and homes.
- **Office of Energy Efficiency & Renewable Energy (includes the Tribal Energy Program)**
 - Invests in clean energy technologies that strengthen the economy, protect the environment, and reduce dependence on foreign oil.
- **Office of Environmental Management**
 - Works to mitigate the risks and hazards posed by the legacy of nuclear weapons production and research.
- **Office of Electricity Delivery and Energy Reliability**
 - Leads national efforts to modernize the electric grid, enhance the security and reliability of the energy infrastructure, and facilitate recovery from disruptions to the energy supply.
- **Office of Fossil Energy**
 - Ensuring that we can continue to rely on clean, affordable energy from our traditional fuel resources is the primary mission of DOE's Office of Fossil Energy.

Other Key DOE Offices/Labs

- **Office of Congressional and Intergovernmental Affairs – Tribal Affairs**
 - Serves as the liaison office for American Indian tribes and interested tribal organizations. The office acts as the principal advisor to the Secretary of Energy on any tribal matter pertaining to consultation, tribal sovereignty, maintaining the government-to-government relationship, and how the federal trust relationship applies to DOE.
- **National Renewable Energy Lab (NREL)**
 - Develops renewable energy and energy efficiency technologies and practices, advances related science and engineering, and transfers knowledge and innovations to address the nation's energy and environmental goals.
- **Argonne National Laboratory**
 - One of the Department of Energy's largest multidisciplinary research centers. Argonne research falls into five broad categories: basic research, scientific facilities, energy resources programs, environmental management and National security.
- **Power Marketing Authorities (WAPA, BPA, SEPA, SWPA)**
 - Power Marketing Administrations market power produced at federal water projects (Corp and BOR) in such a manner as to encourage the most widespread use at the lowest possible rates to consumers consistent with sound business principles.
- **Loan Programs Office**
 - Accelerate the commercial deployment of innovative and advanced clean energy technologies across America, at a scale large enough to help reach our national objectives for clean energy.

Additional Resources - Websites

DOE Office of Indian Energy -

<http://www.energy.gov/indianenergy>

DOE Tribal Energy Program -

<http://apps1.eere.energy.gov/tribalenergy/>

Tribal Energy and Environmental Information Clearinghouse -

<http://teeic.anl.gov/>

DOE Energy Efficiency and Renewable Energy (EERE) -

<http://www.eere.energy.gov/>

DOE EERE Database of State/Federal Incentives

<http://dsireusa.org/>

National Renewable Energy Lab (NREL) - <http://www.nrel.gov/>

NREL Project Finance - <http://financere.nrel.gov/finance/>

Interstate Renewable Energy Council (IREC) - <http://irecusa.org/>

Additional Resources - Publications

Guide to Tribal Energy Development

<http://www1.eere.energy.gov/tribalenergy/guide/index.html>

Renewable Energy Development in Indian Country

<http://www.nrel.gov/docs/fy10osti/48078.pdf>

Energy Consumption and Renewable Energy Development Potential on Indian Lands

<http://www.eia.gov/cneaf/solar.renewables/ilands/toc.html>

Native American Wind Resource Atlas

<http://www.bia.gov/idc/groups/xieed/documents/text/idc013229.pdf>

Solar Powering Your Community

<http://solaramericacommunities.energy.gov/pdfs/Solar-Powering-Your-Community-Guide-For-Local-Governments.pdf>

A Guide to Community Solar

<http://solaramericacommunities.energy.gov/pdfs/A%20Guide%20to%20Community%20Solar.pdf>

Wind Powering America

<http://www.windpoweringamerica.gov/nativeamericans/index.asp>