DOE OFFICE OF INDIAN ENERGY

Indian Country Energy Infrastructure: Adaption in a Changing Climate

Climate Change and America's Infrastructure – January 28-30, 2013

Tempe, AZ

U.S. DEPARTMENT OF ENERGY | Office of Indian Energy

DOE Office of Indian Energy

Charged by Congress to:

- 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

Energy Policy Act of 2005, Title V, Sec. 502

Office of Indian Energy Initiatives

- Education and Capacity Building
- Technical Assistance
  - START, Alaska START, START-UP, On-demand
- Innovative Deployment Support
  - Microgrid/storage
  - Military Partnerships
- Indian Country Energy and Infrastructure Working Group

Indian Country Energy Infrastructure

- Oil and Gas Pipelines, Coal conveyance
  - Generally owned and operated by non-tribal entities
- Electricity Generation, Transmission, Distribution
  - Generally owned and operated by non-tribal entities
  - Estimated 10-12 Tribal Electric Utilities in lower 48

Indian Country Energy Resources

- 1,331 million MWh wind resources
- 9,275 million MWh PV solar resources
- 6,017 million MWh enhanced 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

Value of Energy Development to Indian Country

- Energy security
- Economic development
- Jobs creation
- Energy cost control/reduction
- Reduce greenhouse gas emissions
- Climate change adaptation mechanisms

Climate Change Adaptation -Major Considerations

- Overall Planning
- Human capacity/capabilities
- Infrastructure Resilience
- Emergency Response
- Funding

Planning Resources

- Model planning activities
- Regional planning efforts
- Planning partnerships

Human Capacity

- What can Indian Country do to educate itself on climate change impacts to energy infrastructure?
- What can Indian Country do to acquire the skills necessary to plan, design, build, and protect tribal community infrastructure?

Infrastructure Resilience

A capability to anticipate, prepare for, respond to, and recover from significant multihazard threats with minimum damage to social well-being, the economy and the environment.

National Research Council. 2011. America's Climate Choices: www.nap.edu/catalog.php?record_id=12781

e.g. Alaska Native villages

Emergency Response

Once the event occurs, what are the abilities to respond and restore energy infrastructure to minimize negative impacts

- e.g. Winter 2010 – 3 Sioux tribes with major electric / water system failures
- Stafford Act amendments just enacted

Funding

- EPA
- DOI
- HUD
- USDA (RUS)
- FEMA

Adaptation Opportunities

- Education and capacity building
  - STEM
- Regional grids / microgrids
  - Self-generation
  - distributed generation
  - Tribal utilities to control infrastructure
- Innovative technologies
  - Micro scale
- Regional cooperation
  - Rural electric coops/utility providers
  - Local governments
  - Federal agencies
  - University/NGO partnerships