National Congress of American Indians

Energy and Mineral Activities in Indian Country

October 11, 2016

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Assistant Secretary – Indian Affairs
Office of Indian Energy and Economic Development (IEED)
What We Do

Division of Energy and Mineral Development

Minerals
- Construction aggregate projects
- Precious metals
- Base metals

Renewable Energy
- Biomass
- Wind
- Solar
- Hydro

Geothermal & Conventional Energy
- Geothermal
- Oil & Gas
- Coal

Business Development
- Tribal Business Structures
- Financial Analysis
- Good Governance Practices

IEED Business Model

RESULT:
Tribal Jobs and Income
## Summary of FY2014 Economic Contributions

**Bureau of Indian Affairs**

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Sales Value ($ billions)</th>
<th>% of Sales Value</th>
<th>Total Economic Contribution ($ billions)</th>
<th>% of Total Economic Contribution</th>
<th>Total Value Added ($ billions)</th>
<th>% of Total Value Added</th>
<th>Total Domestic Jobs Supported</th>
<th>% of Total Domestic Jobs Supported</th>
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<tbody>
<tr>
<td>Oil, Gas, Coal</td>
<td>6.97</td>
<td>73.0</td>
<td>22.52</td>
<td>74.7</td>
<td>14.95</td>
<td>82.9</td>
<td>83,753</td>
<td>64.3</td>
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<td>Minerals</td>
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<td>0.0</td>
<td>.01</td>
<td>0.0</td>
<td>.004</td>
<td>0.0</td>
<td>22</td>
<td>0.0</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td><strong>6.97</strong></td>
<td><strong>73.0</strong></td>
<td><strong>22.53</strong></td>
<td><strong>74.7</strong></td>
<td><strong>14.95</strong></td>
<td><strong>82.9</strong></td>
<td><strong>83,775</strong></td>
<td><strong>64.3</strong></td>
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<tr>
<td>Irrigation</td>
<td>2.50</td>
<td></td>
<td>7.40</td>
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<td>3.03</td>
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<td>45,153</td>
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<td>Timber</td>
<td>.06</td>
<td></td>
<td>.15</td>
<td></td>
<td>.06</td>
<td></td>
<td>644</td>
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<tr>
<td>Grazing</td>
<td>.02</td>
<td></td>
<td>.06</td>
<td></td>
<td></td>
<td></td>
<td>715</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>9.55</strong></td>
<td><strong>30.14</strong></td>
<td><strong>18.04</strong></td>
<td><strong>18.04</strong></td>
<td><strong>130,287</strong></td>
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*Source: Table modified from The Department of the Interior’s Economic Report – June 23, 2015 Chapter 2 – Value Added, Output, and Employment Estimates*
Oil Supply / Demand

- Information from Short Term Energy Outlook (STEO) Report from Energy Information Agency (EIA)
- STEO Forecast:
  - Average 0.8 MMBBL / Day inventory BUILD in 2016
  - Average 0.2 MMBBL / Day inventory DRAW in 2017
World Oil Production and Consumption.

Historic

Projection

Oversupply

Undersupply

Data obtained from: www.eia.gov
Supply and Demand Driven Prices.

Data obtained from: www.eia.gov
Energy Information Agency WTI Price Projection.

Historic

Projection

95% Confidence Window

$40-$60

Data obtained from: www.eia.gov
FACTORS AFFECTING OIL PRICES FOR 2016
Supply and Demand

- **China’s Economy** – Second largest consumer of oil in the world is now experiencing a lower demand for oil owing to a slowing economy.

- **U.S. Shale Plays** – Drilling activity resulted in 80% increase in oil production from 2007 levels. The U.S. petroleum industry developed innovative technology to produce oil and gas from poor quality reservoirs and has been very successful, but at a cost of $70-80/ BBL. With WTI benchmark below $50/ BBL, rig counts will drop. Wells on production will continue, the average cost to operate an existing well in most of the US is around $20/BBL ± $5.

- **Demand** – It’s likely that demand will remain constant but decreasing rig counts will eventually result in lower supply.

- **OPEC** – The wild card in manipulating supply. Saudi Arabia has lowered prices by not cutting its production, claiming, they want to “defend market share,” much to the vexation of its OPEC partners (e.g., Venezuela, Iran, Nigeria) and non-OPEC countries like Russia.
Natural Gas Supply / Demand

• Intracontinental commodity

• Shifts in supply / demand curves
  
  **Short term controls**
  - Weather changes
  - Pipeline Outages

  **Long term controls**
  - New natural gas fired power plants
  - Increase in Manufacturing
Energy Information Agency Million BTU Price Projection.

Data obtained from: www.eia.gov
What to Watch for

• **Oil Prices**
  – Supply / Demand
  – Strength of Dollar

• **Gas Prices**
  – Weather
  – New natural gas power plants
  – Increase in manufacturing
DEMD Future Work

• Reservation Plays – Determine oil price thresholds

• Forward studies to find new plays
  - Investigation of Rio Grande Rift
  - Potential helium assets
  - Continued exploration including seismic acquisition
Renewable Energy Update
## Home Heating Fuel Comparison

State of Minnesota Fuel Equivalences and Cost Comparisons  
(Source: Massachusetts Division of Energy Resources amended by DEMD)

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Current Cost</th>
<th>Equivalent Cost</th>
<th>Cost Comparison</th>
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<tbody>
<tr>
<td><strong>Heating oil</strong></td>
<td>$1.67/gallon</td>
<td>$2.63/gallon</td>
<td>(Dec 2014 EIA)</td>
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<tr>
<td><strong>Propane</strong></td>
<td>$1.18/gallon</td>
<td>$1.83/gallon</td>
<td>(Dec 2014 EIA)</td>
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<tr>
<td><strong>Natural gas</strong></td>
<td>$12.50/mmcf</td>
<td>$12.71/mmcf</td>
<td>(Sep 2014 EIA)</td>
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<tr>
<td><strong>Electricity</strong></td>
<td>$0.04/kWh</td>
<td>$0.13/kWh</td>
<td>(Sep 2014 EIA)</td>
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</tbody>
</table>

For heating one ton of wood pellets equals...

| Heating oil     | 120 gallons |
| Propane         | 170 gallons |
| Natural gas     | 16 mmcf     |
| Electricity     | 4775 kWh    |

Paying **$200/ton** for wood pellets is the same as paying...

Compared to recent Residential Retail costs in Minnesota...
# Energy Development Strategies

Local resources → Local energy → Local economic impact

<table>
<thead>
<tr>
<th>Scale</th>
<th>Community</th>
<th>Commercial/Industrial</th>
<th>Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>Offset community energy needs</td>
<td>Supplying energy to businesses</td>
<td>Exporting energy to distant users</td>
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</tbody>
</table>
| **Economic Impact** | - Cost savings  
- Temp. construction and installation jobs  
- Limited O&M jobs | - Cost savings  
- Potential revenue  
- By-products  
- Full time jobs at base load power plant  
- Energy for businesses on the reservation  
- Spin-off industry | - Revenue from lease payments and/or energy sales  
- Temp construction jobs  
- Part time operation jobs; few full time jobs |
| **Resource/Technology** | Biomass heating; Geothermal heat pumps; solar | Biomass; Geothermal; Hydro; Natural Gas | Wind; Solar; Geothermal; Hydro; O&G leasing   |
Tribal Energy Development Capacity (TEDC) Projects

- Chemehuevi Indian Tribe – Formation of a Tribal Power Exchange
- Mesa Grande – Enhance capacity to manage Tribal solar enterprise
- Big Valley Rancheria – Tribal Utility Authority Formation
- Zia Pueblo, Jemez Pueblo – Tribal Utility Authority Formation
- Ute Mountain Ute – Development of Fracking Regulations
- Spirit Lake – Tribal Utility Authority Formation
- Bad River Band of Chippewa - Establish regulatory infrastructure that will support its development and management of a major biomass facility
- Winnebago Tribe of Nebraska – Tribal Utility Authority Formation
- Passamaquoddy Tribe – Tribal Utility Authority Formation

2015 Project Locations
Beyond DEMD

• **DOE/DOI MOU**
  – Planning underway
  – Quarterly Meetings
  – **Partnership Opportunities:**
    • Education
    • Federal Power Purchasing (DOD, GSA)
    • Specific Tribal Projects

• **White House Council on Native American Affairs**

• **Tribal Energy Summit – May 2017**
Outlook for Renewable Energy in Indian Country

• Tribal Drivers
  – Enhance Tribal Sovereignty
  – Energy independence
  – Environmental Benefits
  – Economic Impact
    • Reduce Energy Costs
    • Generate Revenue
    • Create Jobs
    • Energy for new development

• General Market Drivers
  – State Renewable Portfolio Standards
  – Tax credits
  – EPA’s Clean Power Plan
  – State voluntary carbon reduction plans
    • California
Key Issues

• High Opportunity for Small Scale

• Limited Opportunity for Utility Scale
  – Locations with access to California

• High Interest in Tribal Utilities and Micro-grids

• Alaska Land into Trust

• DOI Economic Report
  – To include Renewable Energy
Aggregate Development

Safe Roads and Emergency Preparedness
Road Safety

- 83% of all roads in Indian Country are classified as not acceptable
- Indians have the highest per capita number of road deaths of any demographic group in the country
- Poor roads can be viewed as a basic civil rights issue. Indian children are disproportionately absent from school because school buses and private vehicles cannot travel during inclement weather on these substandard, hazardous roads.
Importance of Aggregate on Reservations

• The common need for any road maintenance and new road construction project is an adequate source of high quality construction aggregate

• Nationwide, 80% of Reservation roads are unpaved gravel roads

• Most Tribes have aggregate resources, especially Tribes in rural settings where economic opportunities are desperately needed
Cost Savings on Reservations

- Can be costly to import gravel.
- Typical sales radius: 30 miles
- Remote reservations have paid up to THREE times as much for concrete than consumers in metropolitan areas
Economic Benefits on Reservations

- Aggregate development provides high-paying jobs and provides income and cost savings to Tribes.
- Keeps money in the local economy by providing an alternative to purchasing higher priced aggregate resources from non-Tribal lands.
Other Needs for Aggregate on Reservations

Flooding caused by:
- Rapid snow melt
- Heavy precipitation
- Lack of ground cover due to forest fires

Tornadoes
Hurricanes
Economic Reality on Reservations

• But there are too many examples of construction projects on or near reservations that rely on supplies of aggregate resources from non-Indian sources.

• This represents lost economic opportunities.
Summary of Benefits

- Safer roads
- Rapid response to emergencies
- Jobs and income
- Retains funds in the local community
- Reclamation

Former Gravel Pits
Contact Us!

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stephen Manydeeds</td>
<td>720-407-0600</td>
<td><a href="mailto:stephen.manydeeds@bia.gov">stephen.manydeeds@bia.gov</a></td>
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<tr>
<td>Division Chief</td>
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<td>Winter Jojola-Talburt</td>
<td>720-407-0668</td>
<td><a href="mailto:winter.jojola-talburt@bia.gov">winter.jojola-talburt@bia.gov</a></td>
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<td>720-407-0669</td>
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<td>720-407-0603</td>
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Assistant Secretary – Indian Affairs
Division of Energy and Mineral Development

Website: http://www.bia.gov/DEMD/