



Energy Opportunities in Indian Country



Assistant Secretary – Indian Affairs
Office of Indian Energy and Economic Development
DIVISION OF ENERGY & MINERAL DEVELOPMENT

Summary of Economic Activity on Indian Lands (FY 2017)

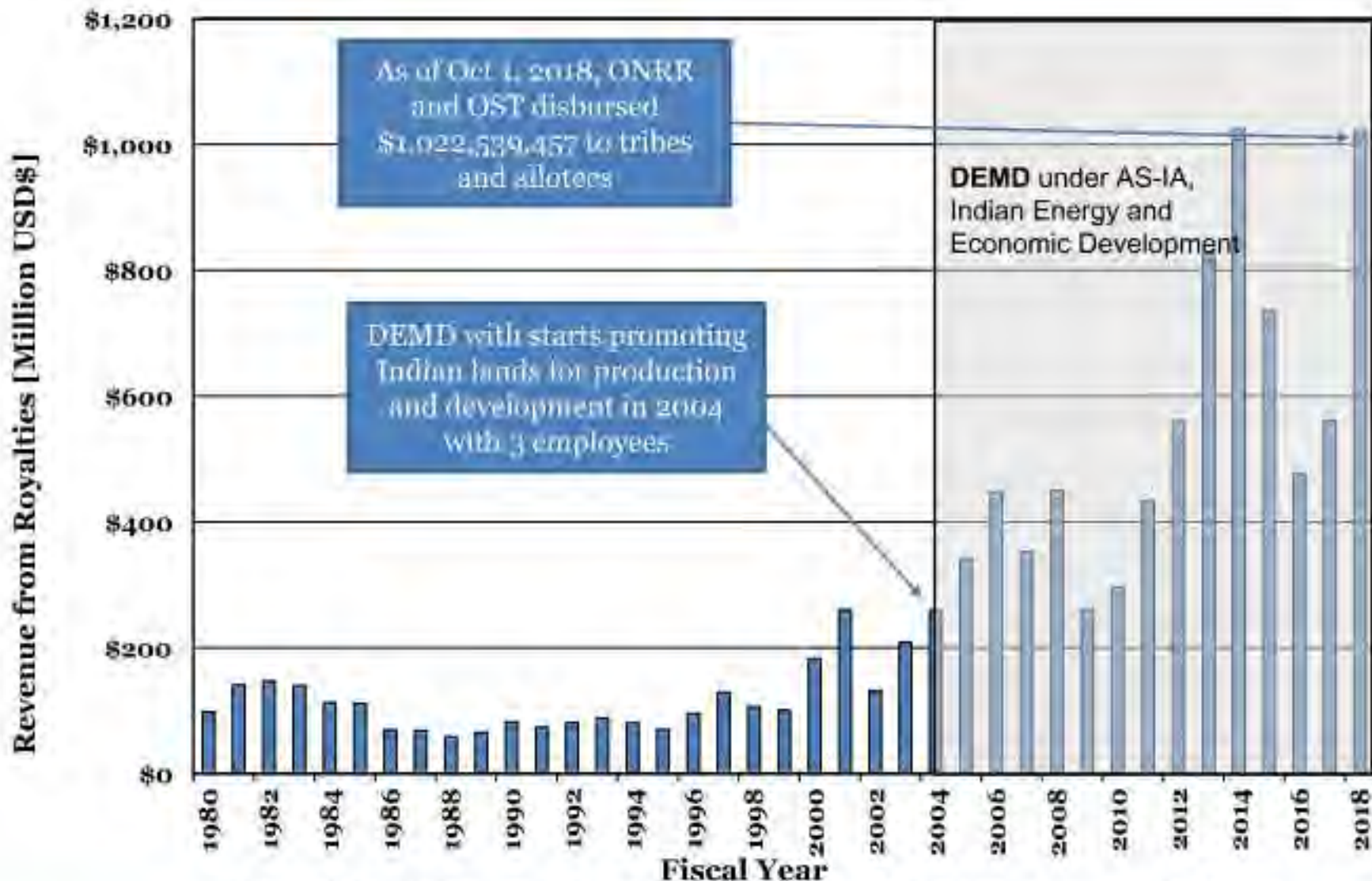
DOI Activity (FY 2016)	Direct Economic Contribution (sales in billions)	Jobs	Value Added (billions, \$)	Total Economic Contribution (billions, \$)
Crazing	0.02	595	0.06	0.05
Irrigation water ^a	2.61	47,003	3.31	7.96
Energy**	4.17 (61%)	45,786 (49%)	6.02 (64%)	9.85 (54%)
Other minerals***	0.01	347	0.05	0.10
Timber	0.05	508	0.04	0.12
Total Contributions to the National Economy	6.86	94,238	9.40	18.09

^a Includes value of crops and jobs produced from irrigation water

**** Does not include renewable energy.** Tribal renewable energy production was associated with about \$100 million in value added, about \$171 million in economic output, and supported an estimated 638 jobs.

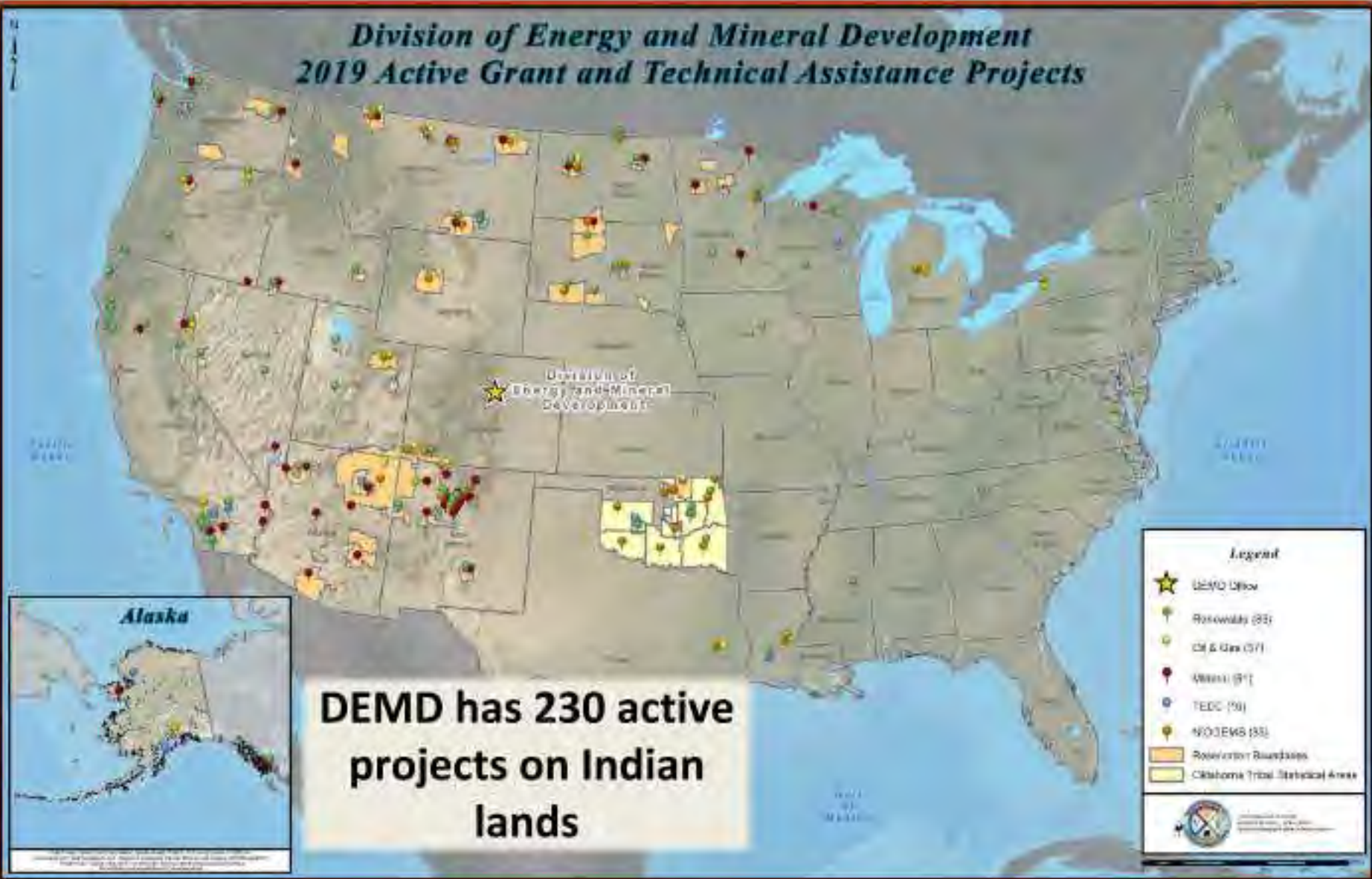
***** Does not include sand and gravel or other industrial minerals.** In FY 2017, tribal sand and gravel production was associated with about \$103 million in value added, about \$189 million in economic output, and supported an estimated 834 jobs.

Source: U.S. Department of the Interior Economic Report, Fiscal Year 2016



Royalty Revenue from Energy and Minerals on Indian Lands from 1980-2018

Division of Energy and Mineral Development 2019 Active Grant and Technical Assistance Projects



DEMD has 230 active projects on Indian lands

What is DEMD?

- **Purpose and Mission**
- **Authorities and DOI Priorities**
- **Structure and Role in IA Energy**
- **Impact of Energy Development for Tribal communities**
- **Budget**

DEMD's Mission Statement

Provide the best possible technical and economic advice and services in assisting Indian mineral owners to achieve economic self-sufficiency by creating sustainable economies through the environmentally sound development of their energy and mineral resources.

We serve tribal communities by helping to stimulate job creation and economic development

DEMD is part of the mandates of the Indian Mineral Development Act of 1982, which in part states at Section 7:

“...the Secretary shall ensure that upon the request of an Indian tribe or individual Indian and to the extent of his available resources, such tribe or individual Indian shall have available advice, assistance, and information during the negotiation of a Minerals Agreement. The Secretary may fulfill this responsibility either directly through the use of Federal officials and resources or indirectly by providing financial assistance to the Indian tribe or individual Indian to secure independent assistance.”

DEMD also carry out mandates in Section 2602 of the “Indian Tribal Energy Development and Self-Determination Act of 2005” to

“...provide development grants to Indian tribes and tribal Energy resource development organizations for use in developing or obtaining the managerial and technical capacity needed to develop energy resources on Indian land, and to properly account for resulting energy production and revenues

DEMD supports Department priorities including

“(2) Sustainably develop our energy and natural resources,”

“(4) Ensure tribal sovereignty means something,” and

“(7) Strike a regulatory balance.” <https://www.doi.gov/ourpriorities>

In addition, DEMD implements Department Strategic Plan objectives including

Mission Area 2: Generating Revenue and Utilizing Our Natural Resources,

Goal #1: Ensure Energy and Economic Security for America,

Strategy #1: Promote safe and robust oil, gas, coal, and renewable energy resource development; and

Mission Area 4: Fulfilling Our Trust Responsibilities,

Goal #1: Support Self-Determination, Self-Governance, and Sovereignty,

Strategy #1: Support self-governance and self-determination.

Energy and Mineral Development Responsibilities for Leased Trust Resources



DEMD Characteristics

- **Like a consulting firm of geologists, engineers, marketers, and economists.**
- **Provides technical assistance to Indian mineral owners covering the entire spectrum of energy and mineral resource development.**
- **90% of senior staff from the energy/minerals private sector.**
- **The assistance is hands-on, project specific, and lasts throughout the life of projects, beginning with resource assessment and culminating in signed agreements to develop tribal resources.**

Steps for Generating Effective Development Strategies

1. **Identify long term community goals and priorities**
2. **Identify available resources**
 - Energy resources
 - Business resources (investment capital, business capacity, etc.)
 - Tribal government resources
3. **Evaluate options**
 - Iterative process of feasibility studies



Programs and Services

- **Technical Assistance**

- Liaison between Tribes and Industry
- Consultation on developing business models on reservations
- Assist Tribes with negotiation of resource development agreements
- Strategic and economic planning



- **Energy and Mineral Development Program**

- Grant program to assess, evaluate and promote development of tribal energy and mineral resources



- **Tribal Energy Development Capacity Program**

- Grant program to develop tribal managerial, organizational, and technical capacity to maximize the economic impact of energy resource development on Indian land.

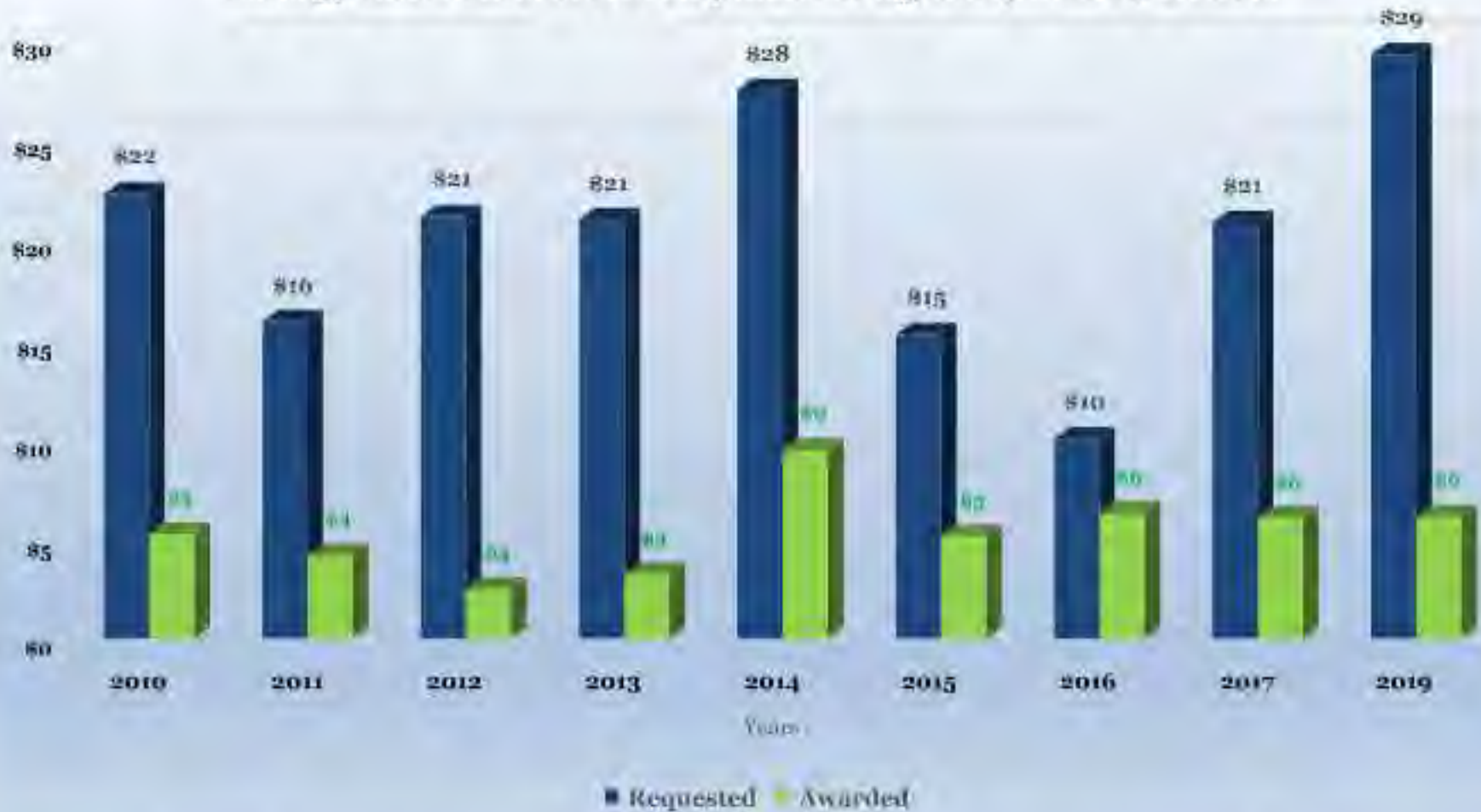
- **National Indian Oil and Gas Evaluation and Management System (NIOGEMS)**

- NIOGEMS is a map-oriented computer application for managing reservation oil and gas lease, well, production, and other energy/mineral resource data.



Budget for Grants

Energy and Mineral Development Program (EMDP) Grants



Budget for Grants

Tribal Energy Development Capacity (TEDC)



Tribal Energy Drivers

Primary reasons behind a Tribe's desire to develop energy projects included one or more of the following topics:

- **Enhance Sovereignty**
- **Energy Independence**
- **Environmental Benefits**
- **Economic Impacts**
 - Reduce costs for local users
 - Improve security and reliability
 - Revenue and jobs through resource development
 - Energy for new development

Tribal Consultation

One project often cannot address all of these topics – must prioritize goals and assess opportunities that align with top goal(s).

Breakeven Prices / Hotspots

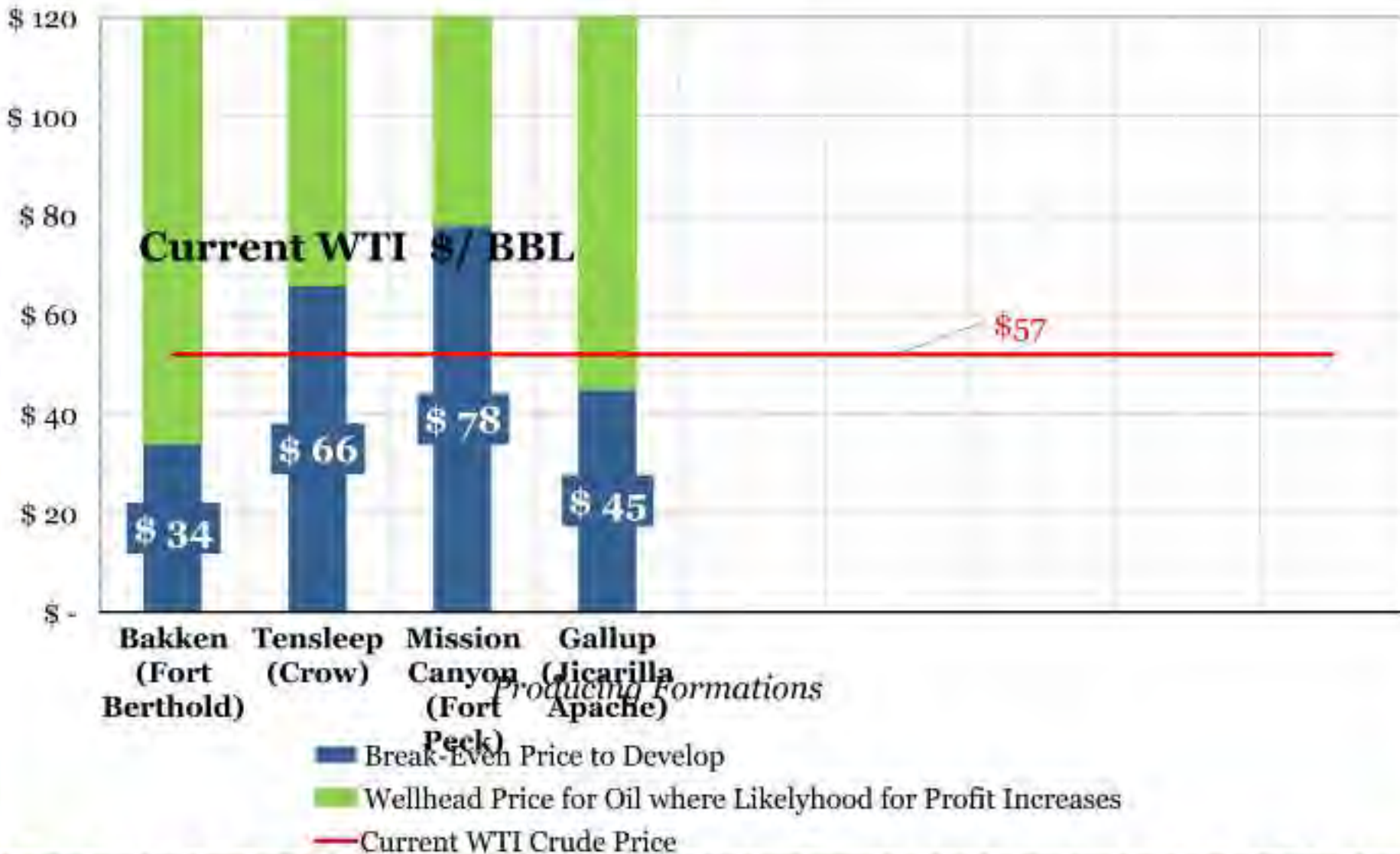
Formations recently drilled and production established

Specifically analyzed horizontal wells.

		Production		IP		Realized Breakeven Wellhead Price		Assumed Royalty	Est Capex	Est Opex	Depth
TRIBE	FORMATION	OIL	GAS	OIL	GAS	OIL	GAS	%	M\$	\$	ft
		mbo	mmcf	bpd	mcf	\$/bbl	\$/mcf				
Utes of Uintah & Ouray	Wasatch	163.4	314.0	137	130	38.44	-	16.67	1900	1000	9700
	Green River	95.6	285.4	45	52	34.60	-	16.67	1100	1000	7000
Jicarilla Apache	Gallup	106.7	665.2	270	641	44.90	-	16.67	4000	1100	TVD 5300 TD 10600
Ft. Berthold	Bakken	396.2	374.8	557	397	33.59	-	16.67	6000	Depr. Schedule	TVD 10400 TD 19200
Southern Ute	Fruitland	0	4705	0	384	-	1.12	16.67	600	1000	3850
Rocky Boys	Eagle	0	2180	0	10000	-	2.82	16.67	300	1000	1800
Wind River	Fort Union	2.5	2068	40	30000	-	2.56	16.67	1000	1000	6300
Crow Nation	Tensleep	33.6	0	220		66.20	-	16.67	245	1000	2100

\$/BBL

Break-Even Wellhead Price – Formations on Indian Lands



Tribes spend on average **\$3,385,606 per year on electric power**. If this number is extrapolated to all federally recognized tribes, Indian Country spends an estimated **\$1.939 Billion on Electricity every year**. The value of physical assets (power poles/lines, transformers, substations, etc.) can be estimated at 2x-6x the annual power sales, or **\$4-\$12 Billion** (depending on age and condition). There are only 18 operating tribal electric utilities, leaving a huge power sales market (\$1.9Billion) and billions of physical assets (\$4-\$12Billion) under the control of third-party incumbent utilities.

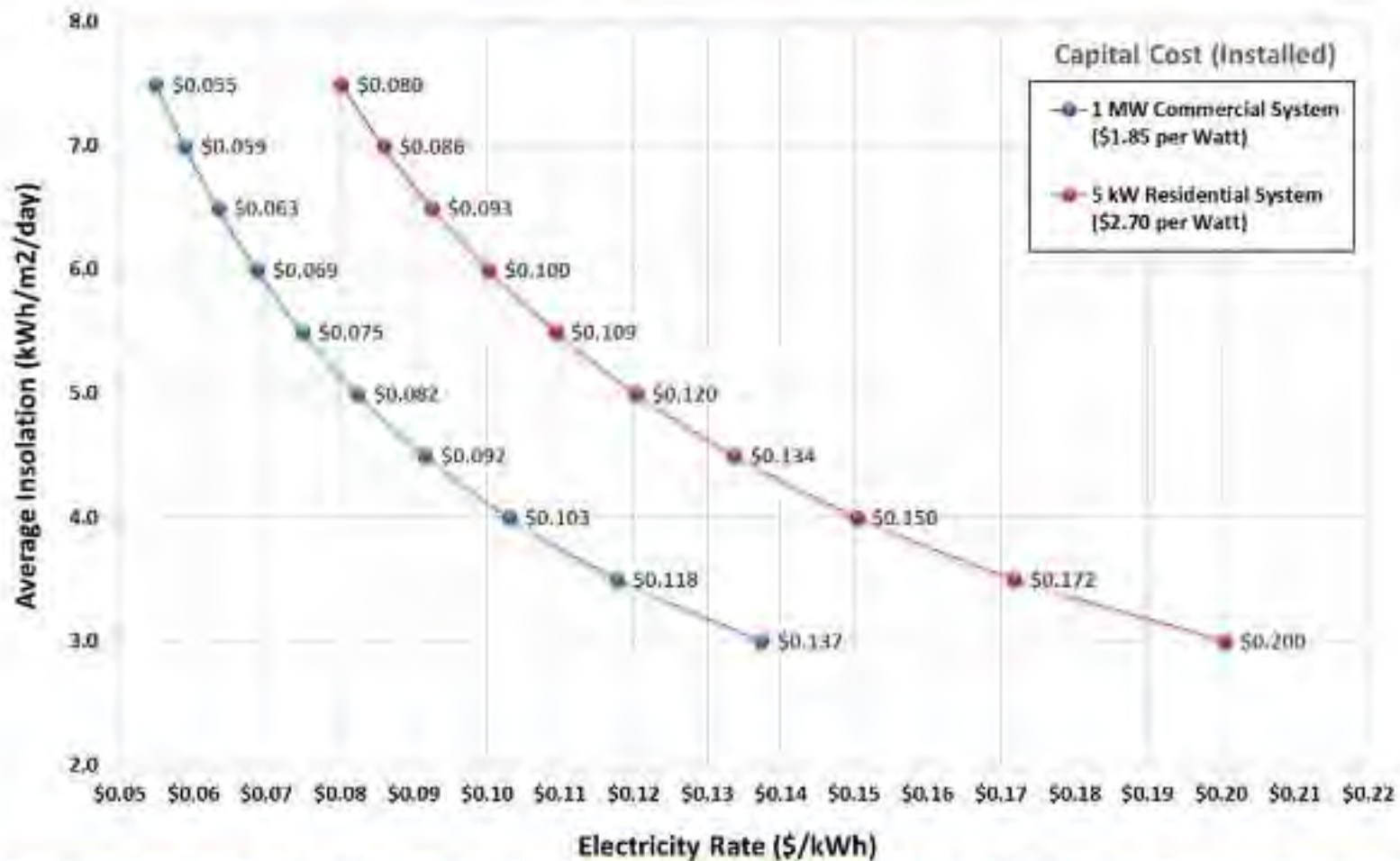
Home Heating Fuel Cost Comparison

1,500 square foot home with average insulation (prices as of 8/1/2109)

Appliance	Fuel Cost*	Total Heating Cost / Year (1500 sq ft)			
		Equipment Cost (excludes installation)	US Average (fuel cost per year)	Savings per Year (compared to propane)	Break-Even Years vs. Propane
Electric heat (Electric Furnace/Strip Heat, AFUE 99%)	\$ 0.13 per kWh	\$1,000	\$838	\$394	3
Propane furnace (Standard AFUE 80%, 45,000 BTU)	\$ 2.40 per gallon	\$974	\$1,232	-	-
Fuel Oil furnace (Standard AFUE 83%, 72,000 BTU)	\$ 3.22 per gallon	\$1,809	\$1,059	\$173	10
Wood Pellet Furnace w/ Hopper (65,000 BTU)	\$ 5.19 per 40 lb bag	\$4,800	\$742	\$490	10
Nat. Gas furnace (Standard AFUE 80%, 54,000 BTU)	\$ 12.40 per mmBtu	\$1,255	\$537	\$695	2
Ground Source Heat Pump (2 ton unit, COP: 3)	\$ 0.13 per kWh	\$5,000	\$279	\$953	5

Solar PV Economics

1 MW Community Scale vs 5 kW Residential Scale



NIOGEMS

National Indian Oil & Gas, Energy and Mineral System

Problem: The need for timely processing of Energy and Mineral permits

- Users had to access multiple databases to obtain all relevant information.
- There was a lack of geospatial tools and data management tools.
- Data quality was poor.

NIOGEMS

National Indian Oil & Gas, Energy and Mineral System

Solution: NIOGEMS provides efficient access to permit related information and other data

- NIOGEMS pulls from TAAMS, BLM, Commercial (IHS), ONRR, State, USGS, Census, USDA, Tribal, and others – so that NIOGEMS users can access data from just one source.
- Provides Tribal and Federal users with data management and map-based tools.
- NIOGEMS staff regularly updates data and conducts data scrubbing & quality control.

On-going Activities

V Increase Technical Activity

- **Oil and Gas**

- Prospects and enhanced recovery opportunities
- "Oil & Gas Atlas"
- Breakeven costs for selected O&G formations

- **Solid Minerals**

- Road construction
- Promote economic opportunities via aggregate development

- **Renewable and Distributed Energy**

- Increase technical assistance for Phase 1 Opportunity Assessments
- Planning and problem definition
- Promote low cost heating alternatives

V Re-ignite the Native American Energy and Mineral Institute (NAEMI)

V Continuously improve interagency collaboration

- U.S. Department of Energy
- Western Area Power Administration
- U.S. Department of Agriculture
- Tribal Organizations (MTERA, ATNI, USET, etc.)

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