



DEPARTMENT OF THE INTERIOR



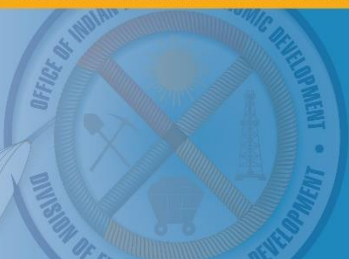
# Tribal Natural Gas Power Generation

## Office of Indian Energy Webinar

May 29, 2019



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





**Assistant Secretary – Indian Affairs**

**Principal Deputy – Assistant Secretary**

**Director  
Bureau of  
Indian Affairs**

**Director  
Bureau of Indian  
Education**

**Deputy Assistant Secretary  
Policy and Economic  
Development**

**Deputy Assistant  
Secretary  
Management**

**Office of Indian Energy  
and Economic  
Development**

**Office of Self-  
Governance**

**Office of  
Indian Gaming**

**Division of Energy and  
Mineral Development**

**Division of Economic  
Development**

**Division of Capital  
Investment**

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

# Division of Energy and Mineral Development (DEMD)

## DEMD's Mission Statement

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



**DEMD IS ADVISORY NOT REGULATORY**

**ASSISTANCE WITH ENERGY AND  
ECONOMIC CONSULTING**

**TECHNICAL ASSISTANCE**

**GRANTS**





# DEMD –

## Economic development and Jobs

**Engineers and scientists that provide free technical assistance to tribes to develop:**

- 1. Fluid Minerals (Oil & Gas)**
- 2. Solid Minerals (Aggregate, metals, etc.)**
- 3. Renewable (Wind, solar, and biomass)**
- 4. Business Services**
- 5. Data Mapping Services (NIOGEMS)**

## **Two DEMD grants**

- 1. EMDP (Energy and Mineral Development Program)**
- 2. TEDC (Tribal Energy Development Capacity)**



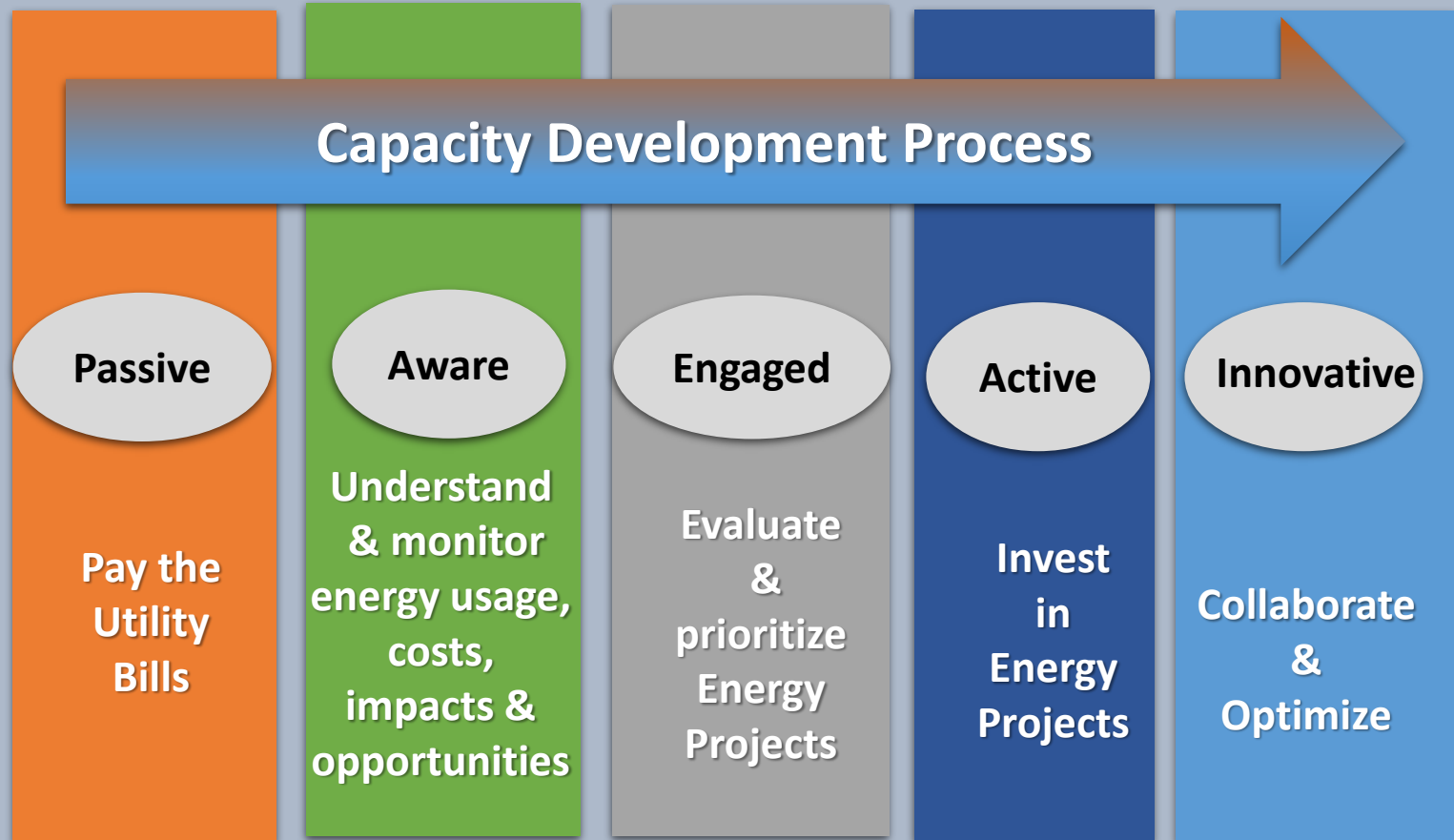
# Initial Evaluation

## Potential Economic Benefit

- **High utility rates**
- **Isolated gas fields**
- **Low well head prices**
- **Value added possibilities for gas**
- **Power Purchase Agreements available**
- **Job creation**



# ENERGY DEVELOPMENT CAPACITY



Source: Midwest Tribal Energy Resources Association (MTERA)



# Capacity Assessment & Development

## Business Structure – Gas & Electric

- **Understand existing energy dynamics**
  - **Existing Consumption**
  - **Infrastructure**
  - **ROW's**
  - **Capacity of Lines/Pipelines**
  - **Wholesale Market**
  - **Potential Leverage with Incumbent Utilities**





# Resource Assessment

## Type of business structure financing

- **Tribal Financed**
  - **Loans/Grants/Loan Guarantee/Opportunity Zones**
  - **DOI/DOE/USDA**
- **Joint Venture**
  - **Investors**
  - **Existing Utility Company**



# Resource Assessment

## Type of business structure financing

- **Tribal Utility**
  - **Generating power for utility**
  - **Off-take opportunities from generation**
  - **Funding benefits**
  - **Federal assistance**
  - **Tribal preference**



# **Natural Gas Supply Development Potential Opportunities**

- **Develop new reserves**
- **Use existing natural gas pipeline**
- **Use existing production and pipeline**



# Natural Gas Supply

- **Available Power Purchase Agreements**
- **Existing infrastructure**
  - **Pipelines**
    - **Size**
    - **Capacity available**
    - **Connection point**
  - **Power Transmission Lines**
    - **Voltage**
    - **Available capacity on line**
    - **Cooperation of utility company**



# Estimated Natural Gas Fuel Usage

| Generator Size (kW) | 1/4 Load (ft <sup>3</sup> /hr) | 1/2 Load (ft <sup>3</sup> /hr) | 3/4 Load (ft <sup>3</sup> /hr) | Full Load (ft <sup>3</sup> /hr) |
|---------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|
| 100                 | 510                            | 771                            | 1,056                          | 1,308                           |
| 150                 | 731                            | 1,135                          | 1,561                          | 1,946                           |
| 200                 | 952                            | 1,500                          | 2,066                          | 2,583                           |
| 250                 | 1,172                          | 1,864                          | 2,571                          | 3,220                           |
| 300                 | 1,393                          | 2,229                          | 3,076                          | 3,857                           |
| 350                 | 1,614                          | 2,593                          | 3,581                          | 4,495                           |
| 400                 | 1,834                          | 2,958                          | 4,086                          | 5,132                           |
| 500                 | 2,276                          | 3,687                          | 5,096                          | 6,407                           |
| 600                 | 2,717                          | 4,416                          | 6,107                          | 7,681                           |
| 1000                | 4,482                          | 7,332                          | 10,147                         | 12,780                          |





# Natural Gas Supply

- **Natural gas produced on Tribal lands**
  - **New field development**
    - **Higher Risk**
    - **Resource available**
    - **Development Costs – est. \$48,000,000+ total**
      - **Exploration - \$4,000,000**
      - **Drilling - \$ 30,000,000 – 10 wells**
      - **Infrastructure/generator - \$4,000,000**
    - **Timing to add reserves – 5 years +**
    - **Contract gas production – Delays in income to producer during development**
    - **Adequate reserves – 20 year supply**



# Producing a Well

- Amount of gas available per well – Reserves
- Estimated production rates
- Length of production per well
  - Estimated from production history
  - 5 years (Gulf of Mexico)
  - 100+ years (Gooseberry Field, WY)
- Complicated mathematics used to predict the future production of wells



# Resource Assessment

## Natural Gas Pipeline Access

- Access availability into pipeline – +\$1,000,000
- Gas available for purchase?
- Pipeline infrastructure required to generation location? \$1,000,000+
- Electrical infrastructure - \$2,000,000
- Gas marketing staff – purchase of available gas



# Natural Gas Supply

## Existing gas produced on Tribal lands & Pipeline

- **Existing production**
  - Reserves available for purchase
  - Value added incentive
  - Gas volumes available for purchase?
  - Gas marketing staff
- **Natural Gas Pipeline Access**
  - Access availability into pipeline – +\$1,000,000
  - Gas available for purchase?
  - Pipeline Infrastructure required to generation location? \$1,000,000+
  - Electrical infrastructure - \$2,000,000



**DEMD IS ADVISORY  
NOT  
REGULATORY**

**Plan your Work  
Work your Plan**



# DEMD Grants

<https://www.indianaffairs.gov/as-ia/ieed/division-energy-and-mineral-development>

## EMDP

(Energy and Mineral Development Program)

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## TEDC

(Tribal Energy Development Capacity)

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