

# **Energy and Mineral Development Strategies**





#### WHO WE ARE

#### **Division of Energy and Mineral Development**

#### **Solid Minerals**

- Construction aggregate projects
- Precious metals
- Coal

#### Renewable Energy and Distributed Generation

- Wind
- Solar
- Biomass
- > Hydro

#### **Fluid Minerals**

- Geothermal
- ➢ Oil
- Natural Gas

#### **Business Development**

- Tribal Business Structures
- Good Governance Practices

**Our Staff:** Geologists, Geophysicists, Mineral Economists, Mineral Marketers, Engineers, Business Development Specialists, Financial Analysts, and Policy Analysts

#### **DEMD PROGRAMS AND SERVICES**

#### **Energy and Mineral Development Program**

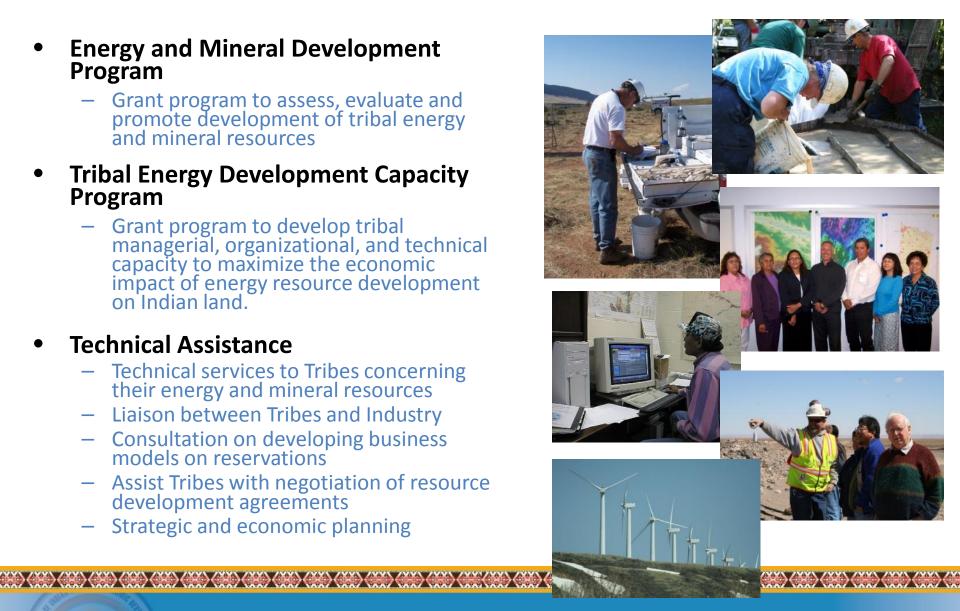
Grant program to assess, evaluate and promote development of tribal energy and mineral resources

#### **Tribal Energy Development Capacity Program**

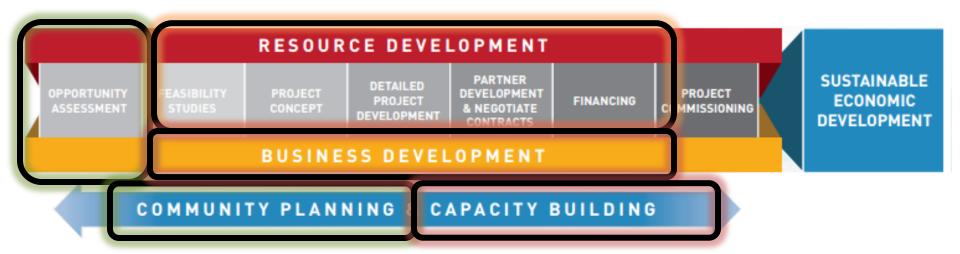
Grant program to develop tribal managerial, organizational, and technical capacity to maximize the economic impact of energy resource development on Indian land.

#### **Technical Assistance**

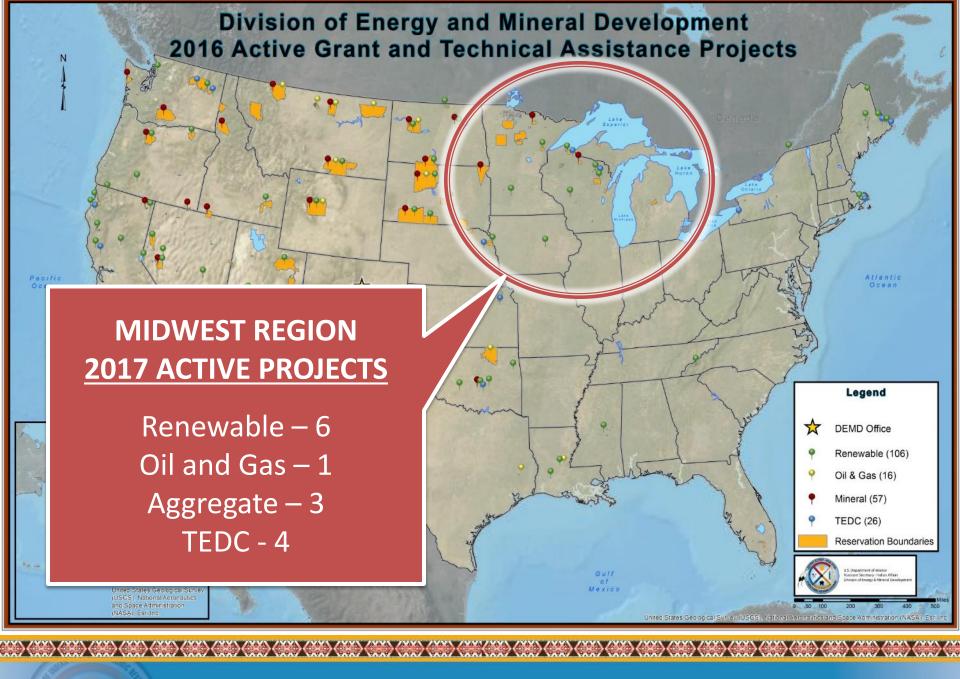
- Technical services to Tribes concerning their energy and mineral resources
- Liaison between Tribes and Industry
- Consultation on developing business models on reservations
- Assist Tribes with negotiation of resource development agreements
- Strategic and economic planning



#### **HOW TO USE OUR PROGRAMS**



- Technical Assistance
- Energy and Mineral Development Program grant
- Tribal Energy Development Program grant



#### MIDWEST REGION ACTIVE PROJECTS

Reservation	Project
Bad River Chippewa	- Tribal Utility Authority
Bay Mills Indian Community	- Tribal Utility Authority
Bois Forte Band of Chippewa	- Aggregate
Fond du Lac Band of Chippewa	<ul><li>Solar/Biomass Heating/Natural Gas</li><li>Solar-Net Zero Home Design</li><li>Tribal Utility Authority</li></ul>
Forest County Potawatomi	<ul><li>Renewable Energy Micro-grid</li><li>Tribal Utility Authority</li></ul>
Ho-Chunk Nation	- Renewable Energy
Lac du Flambeau	- Aggregate
Lower Sioux Indian Community	- Renewable Energy
Menominee	- Hydroelectric
Saginaw Chippewa	- Oil and Gas
White Earth Band of Chippewa	- Aggregate

#### **PANEL OVERVIEW**

- Renewable Energy in Midwest Region
  - Jennifer Reimann, Civil Engineer-Renewable Energy
- Aggregates in Midwest Region
  - Duane Matt, Geologist
- Tribal Energy Development Capacity
  - Payton Batliner, Economic Development Specialist

# MIDWEST REGION RENEWABLE ENERGY



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

# STEPS FOR GENERATING EFFECTIVE DEVELOPMENT STRATEGIES

#### 1. Define short term and long term goals

 Work with tribal leadership to assess priorities and articulate vision for their energy future

#### 2. Baseline assessments

- Current energy usage
- Existing infrastructure and generation assets
- Utility assessment

#### 3. Identify available resources

Conventional and renewable

#### 4. Evaluate options

Iterative process of feasibility studies

### ECONOMIC DEVELOPMENT THROUGH ENERGY DEVELOPMENT

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

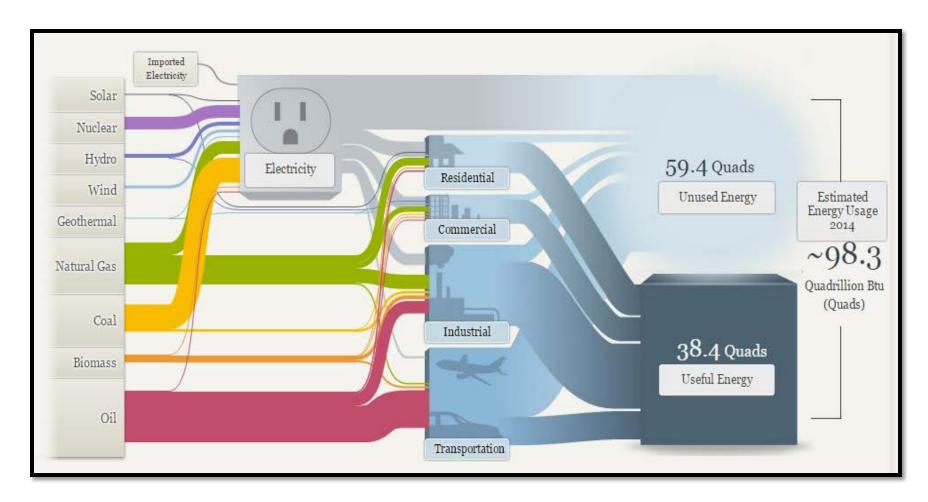
~70% of DEMD's projects are evaluating local resources for local use

#### **COMPREHENSIVE PLANNING**

Do you have a comprehensive plan? How do energy and mineral resources fit in?

"If you fail to plan, you plan to fail."
- Benjamin Franklin

#### **U.S. ENERGY SYSTEM**



http://needtoknow.nas.edu/energy/interactive/our-energy-system/

## RESIDENTIAL/COMMERCIAL

#### Energy Efficiency

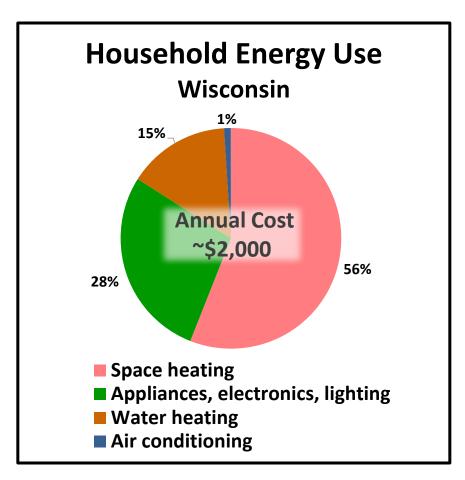
- Retro-fits on existing housing
- Energy Codes for new builds

#### Alternative heating

- Wood
- Propane/Natural Gas distribution business

#### Community Planning

- Infrastructure planning
- District energy systems and distributed energy



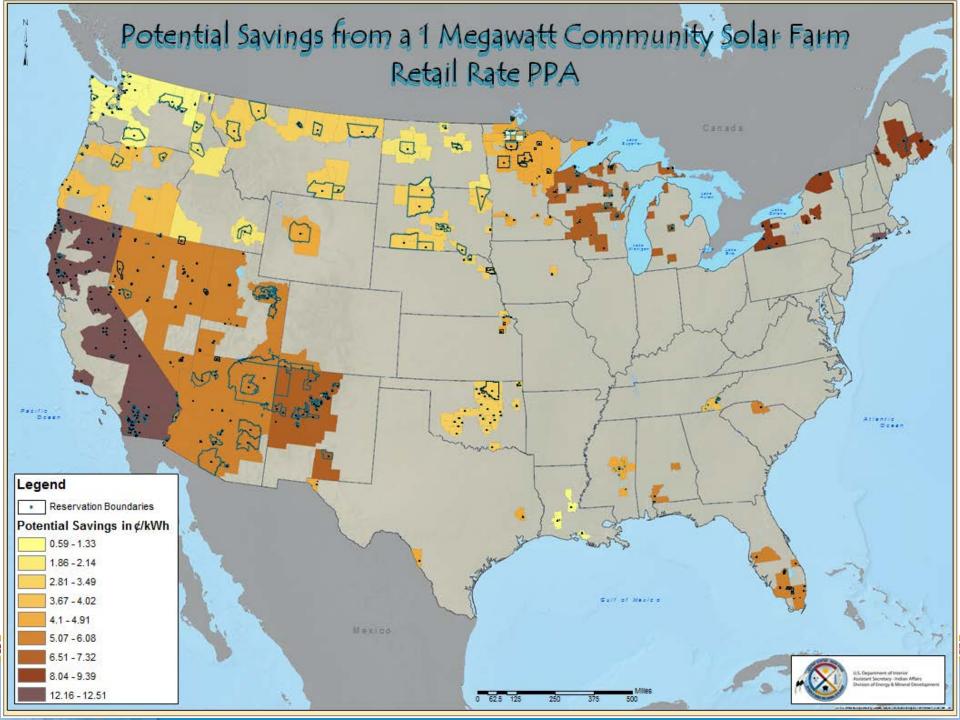
Source: Energy Information Administration

#### **NET ZERO HOMES**

Senior Design Partnership with Colorado School of Mines and Fond du Lac Band of Chippewa

#### Affordable, Net Zero Energy Home

- 7 MW ground mount solar system
- Structurally Insulated Panels
- ADA accessible design
- 100% electric loads (HVAC, appliances, lighting, etc.)
- HUD housing budget
- Smart Energy Display
- Home User Manual



#### **HEATING WITH WOOD**

- Cost stability
- Underutilized woody biomass
  - Tribal Forests
  - National Forests
  - Other Public and Privates Forests

#### Multiple benefits:

- Local forest health improvements
- Wildfire mitigation
- Low-cost, reliable fuel source
- Energy dollars stay in community (forestry jobs, purchasing local fuel resource) Who typically benefits through the purchase of propane & heating oil?

#### WOOD HEATING OPTIONS

#### Residential – 2,000 sqft or less

#### Cord wood appliances (\$1,000 - \$3,000)

- Fireplace inserts or freestanding
- New EPA certified appliances are clean burning and efficient
- Cord wood is cheap and local but requires larger storage area and labor

#### Wood pellet appliances (\$1,500 - \$3,000)

- Fireplace inserts or freestanding
- EPA certified appliances are highly efficient and very clean
- Simple operations and maintenance
- Pellets are convenient with high energy content, but are more expensive than cord wood
- Purchasing pellets may or may not be contributing to local economy

#### WOOD HEATING OPTIONS

#### **Commercial**

- Pellet Boiler (\$25,000 \$300,000+)
  - Good for large single family, light commercial, institutional
  - Simple operations and low maintenance
  - Pellet storage bin takes up less space and low moisture content (MC) means fewer storage issues
  - Bulk pellet fuel is more expensive than wood chip fuel
- Wood chip boilers (\$120,000 \$300,000+)
  - (commercial, institutional, light industrial)
  - Higher up front cost, but lower fuel costs
  - Wood chips require larger storage area
  - Higher moisture content means increased risk of degradation in storage
  - If applicable, local wood chip fuel processing would keep dollars local and provide low cost fuel

#### WOOD HEATING ECONOMICS

#### Commercial Building - 4,000 sq ft

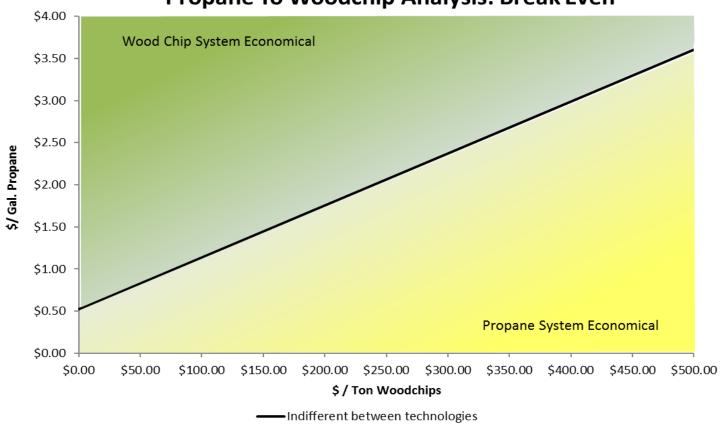
- Higher upfront cost than conventional heating appliances, but...
- Fuel cost savings is substantial – after system is paid off, those dollars can go back into the community rather than to the fuel companies

Retrofitting to:	Wood Chip Boiler System	
Capital Cost	\$26,000	
Life of System	20 yr.	
	Propane (gal)	Wood Chip (ton)
Fuel Price	\$2.00	\$75.00
Fuel Cost/yr.	\$4,939.00	\$1,142.00
Annual Fuel	\$3,797.00	
Savings		
Payback Period	7 years	
Net Present Value	\$49,952	

#### WOOD HEATING ECONOMICS

#### Commercial Building - 4,000 sq ft





#### **INTER-AGENCY AGREEMENTS**

#### Forest Service – BIA – Tribes

- Agreement with US Forest
   Service for forest management
  - Employees, Equipment, Transport
  - Opportunity for low cost biomass resource
- Tribes negotiate with Region Forest Supervisors for relative projects

#### **Tribes with USFS Agreements:**

- Mooretown Rancheria of Maidu Indians
- Jemez Pueblo
- Yurok Tribe
- Fort Bidwell Community
- Bishop Paiute Tribe
- Middletown Rancheria of Pomo Indians
- Mescalero Apache

Gerald Jones
BIA Forester, Pacific Region

#### **TRANSPORTATION**

- Community Planning
- Alternative fuels
  - Biofuels
  - Natural Gas
  - Electric



#### **ENERGY FOR EXPORT**

#### Utility scale projects

- Wind
- Hydro retrofitting existing dams

#### Regional planning

- Market
- Infrastructure

#### Development partners

- Power purchasers
- Experienced developers



#### Solid Minerals: Opportunities for Indian Country

Partners in Action Milwaukee, WI **July 2018** 

**Division of Energy and Minerals Development** 





# The most abundant- and profitable- solid mineral resource for most tribes is???

# Aggregate!

- Sand
   Gravel
   Crushed Rock



#### How does aggregate present an opportunity?

Aggregate is used for everything!

- Construction and maintenance of roads.
- Construction projects.
- Emergency preparedness.
- Economic development.

#### Road Construction and Maintenance

- 80% of reservation roads are unpaved gravel roads.
  - 83% of these roads are classified as "not acceptable."



- New road construction provides a safe reliable mode of travel.
- Native Americans have the highest per capita number of road deaths of any demographic group in the USA.





# Infrastructure Projects



**Residential Development** 



Casinos



**Septic Systems** 



Roads, barriers, buildings, breakwaters



Hospitals



Office Parks

Construction Aggregate's role in Emergency Preparedness

• The development and availability of the primary raw material required to mitigate, prepare, respond, and recover buildings, infrastructure, roads, bridges, and homes.



That raw material is
 Construction Aggregate



# Bad River Flooding 2016





# **Economic Development**



## **Economic Reality on Reservations**

- Most construction projects on or near reservations rely on supplies of aggregate resources from non-Indian sources.
- This represents lost economic opportunities.



# Cost Savings on Reservations

- Can be costly to import aggregate.
- Typical sales radius: 30 miles.
- Remote reservations
   have paid up to THREE
   times as much for
   materials than
   consumers in
   metropolitan areas.



# How can these opportunities be accomplished?

 Assistance from the Division of Energy and Mineral Development (DEMD!)

# Division of Energy and Mineral Development

#### DEMD can assist with the following:

- perform initial exploration;
- define potential targets for development;
- perform market analyses to establish production/demand for a given commodity;
- provide outreach and education to tribes concerning energy or mineral development issues;
- perform economic evaluation and analyses of the resource; and
- promote completed projects at industry conferences and to prospective partners or investors.

# Provide an option for economic diversity: Be proactive!

- Assess your Tribal aggregate resource(s).
  - Certification of the aggregate resource by testing its quality/quantity at a state certified laboratory.
  - Comprehensive testing of the aggregate at a state certified laboratory to determine its suitability for various uses (e.g. Asphalt/Concrete.)
- Obtain a permit to mine.

## Why should a Tribe obtain a permit?

- A permit allows for the immediate development of your resource.
- A permit provides assurances to the Tribe that the resource will be accounted for, and, that a proper mining and reclamation plan will be followed.
- A permit will allow for production verification and/or resource accountability.
- A permit will prevent future environmental issues.

### Results

 With a certified aggregate resource and a permit to mine the Tribe is open and ready for business.

## Summary of Opportunities

- Construction and maintenance of roads.
- Construction projects.
- Emergency preparedness.
- Economic development.





**Reclaimed Gravel Pits** 

## Summary

- DEMD's annual grant
   program can provide the
   necessary funding to assist
   Tribes in reaching their goals.
- https://www.bia.gov/WhoWeA re/AS-IA/IEED/DEMD/TT/TF/index. htm
- DEMD's staff can provide technical assistance to help create opportunities throughout Indian Country.



#### DEPARTMENT OF THE INTERIOR

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Assistant Secretary – Indian Affairs **Division of Energy and Mineral Development** 

#### Website:

http://www.bia.gov/WhoWeAre/AS-IA/IEED/DEMD/

SALIMIAN ENERGY & ECONOMIC HELE

OF ENERGY & MINERAL HEIELDS

# TRIBAL ENERGY DEVELOPMENT CAPACITY



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

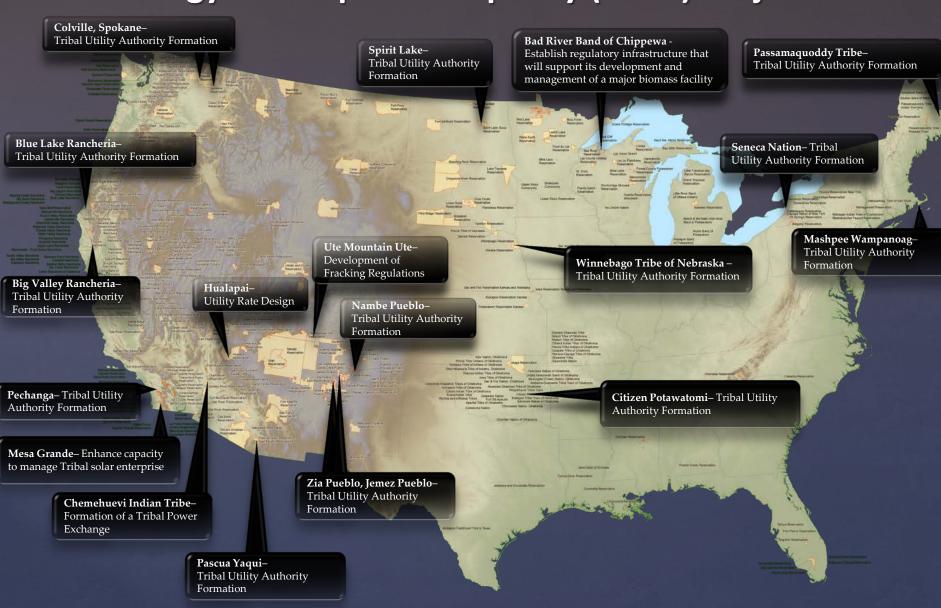
## TRIBAL ENERGY DEVELOPMENT CAPACITY (TEDC) GRANT PROGRAM

- Grant program to develop tribal managerial, organizational and technical capacity to maximize the economic impact of energy resource development on Indian land
  - Establish business entity structures and/or organizational structures related to energy resource development Business development capacity
  - Develop or enhance key regulatory activities
- FY 2015 over \$1.5 Million awarded
  - 10 Total Project Awards
- FY 2016 over \$1.4 Million awarded
  - 16 Total Project Awards

## bit.ly/tedcgrant

#### **Division of Energy and Mineral Development**

#### **Tribal Energy Development Capacity (TEDC) Projects**



2015 & 2016 Project Locations

## BUSINESS ENTITY FORMATION ACTIVITIES (TEDC)

#### **Examples:**

- Developing legal infrastructure for business formation
- Establishing tribally chartered corporations under tribal corporation codes
- Establishing tribal business charters under federal law (IRA Section 17 corporation)
- Establish Tribal Utility Authority

### **REGULATORY ACTIVITIES (TEDC)**

#### **Examples:**

- Developing or enhancing tribal policies, codes, regulations, or ordinances related to regulating and developing energy resource(s)
  - Land lease regulations for energy development purposes
  - Helping Expedite and Advance Responsible Tribal Homeownership (HEARTH) Act

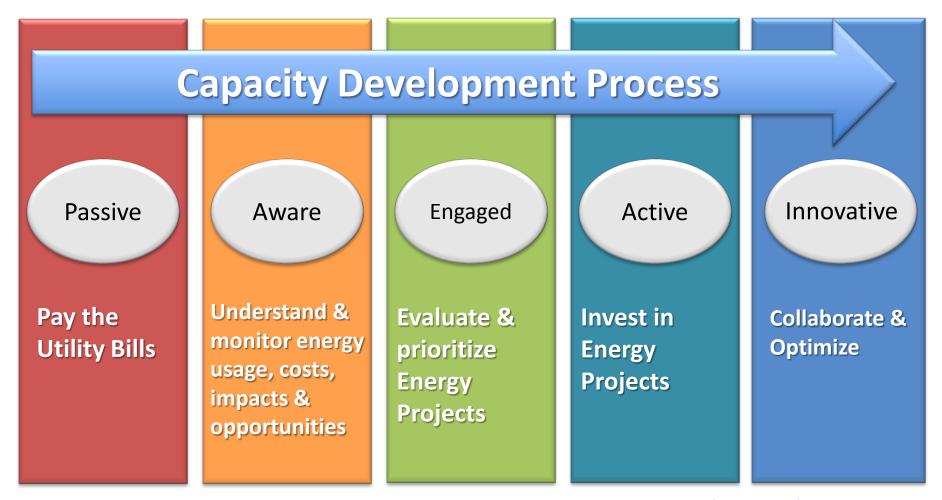
http://www.bia.gov/WhoWeAre/BIA/OTS/HEARTH/index.htm

 Adopting secured transaction codes and subsequent joint power agreement with the tribe's respective state.

### **INELIGIBLE ACTIVITIES (TEDC)**

- Salaries or fringe benefits for tribal employees;
- Establishing or operating a tribal office/ and/or purchase of office equipment;
- Purchasing or leasing equipment or hardware such as drilling equipment,
   computers and
- vehicles;
- Paying legal fees;
- Paying application fees associated with permitting;
- Academic research projects;
- Training;
- Conducting studies related to meeting NEPA requirements for project development; and
- Attending conventions or travel to foreign countries.

#### **ENERGY DEVELOPMENT CAPACITY**



Source: Midwest Tribal Energy Resources Association (MTERA)

#### TRIBAL UTILITY AUTHORITY FEASIBILITY WORK

The Tribal Energy Development Capacity (TEDC) Grant Program has funded nearly 20 TUA projects in FY 2015 & FY 2016. The below information is a case study from a FY 2015 TEDC Project.





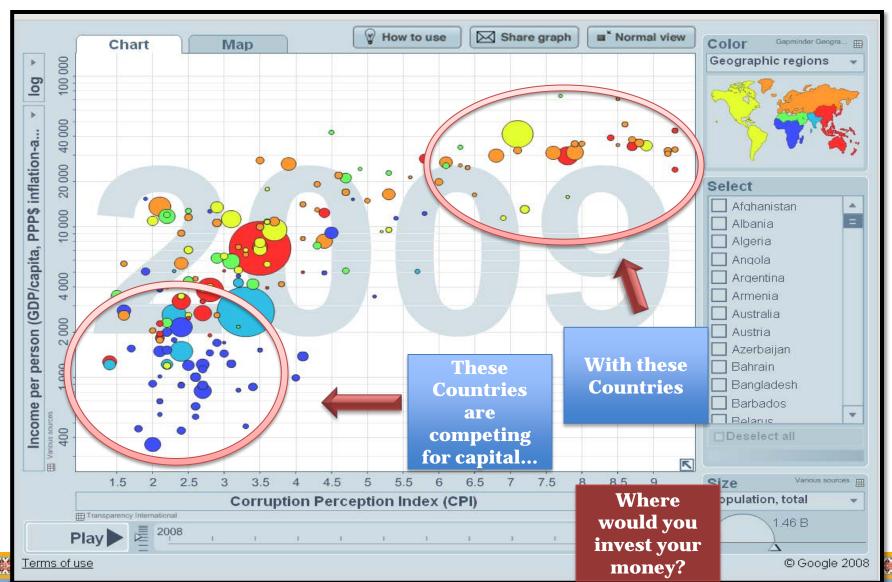
DIVISION OF ENERGY & MINERAL DEVELOPMENT

## WHY IS BUSINESS ENVIRONMENT IMPORTANT?

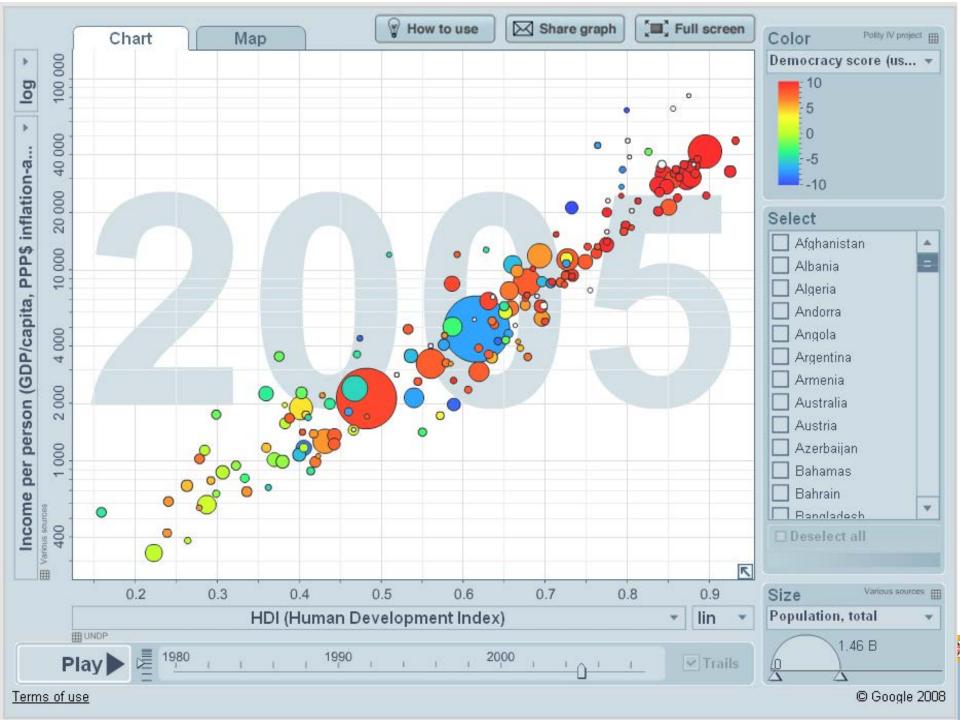
80% of the increase in Quality of Life (i.e. health, education, & living standards) is based upon economic growth. Economic growth will not occur if a good business climate does not exist.

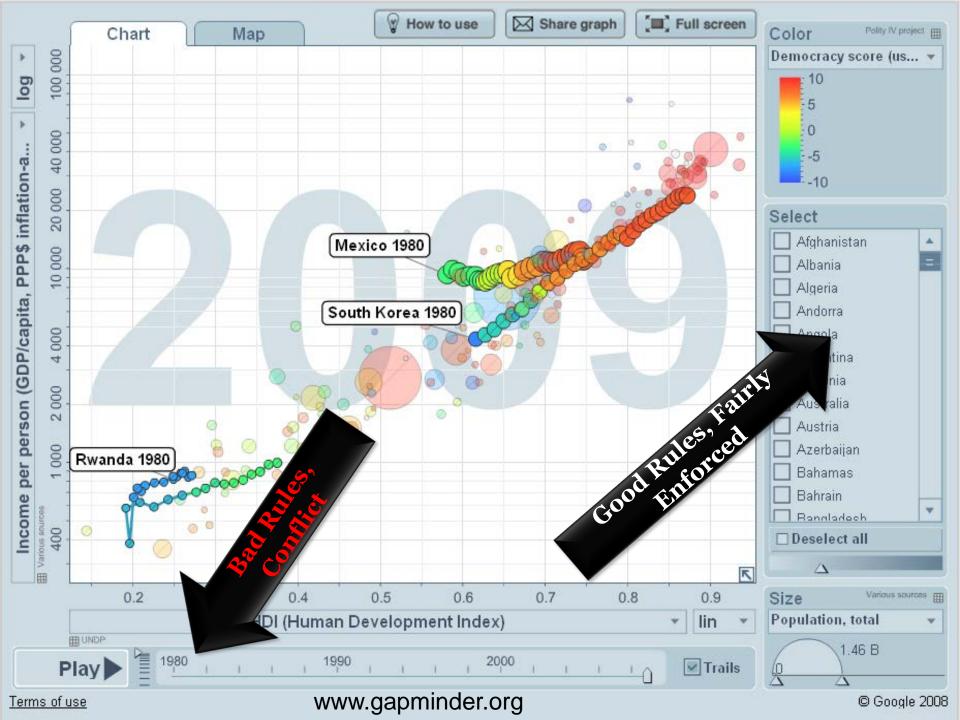


## ECONOMIC SUCCESS IS LINKED TO RULES AND FAIR ENFORCEMENT









## **DOING BUSINESS (WORLD BANK)**

- 1. Ease of Starting a Business
- 2. Construction Permitting
- 3. Getting Electricity
- 4. Registering Property
- 5. Getting Credit
- 6. Protecting Investors
- 7. Paying Taxes
- 8. Trading Across Borders
- 9. Enforcing Contracts
- 10. Resolving Insolvency

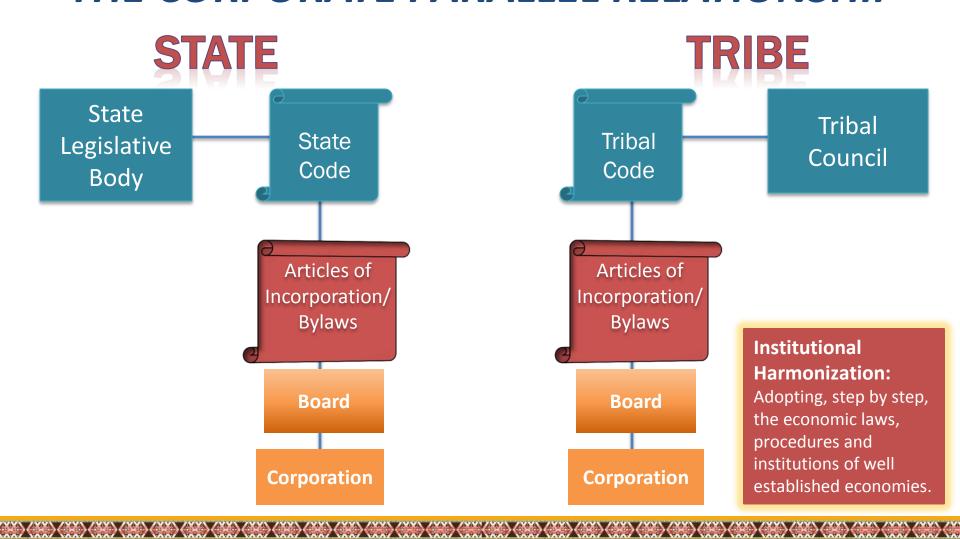
Corporate Code, LLC Code, Code of Ethics, Transparency, Zoning, Incentives

MTSTA, Article 9 UCC

UCC

**Taxation Code** 

## WHY ADOPT CORPORATIONS CODE: THE CORPORATE PARALLEL RELATIONSHIP



#### CREATE A BUSINESS FRIENDLY ENVIRONMENT

Step 1

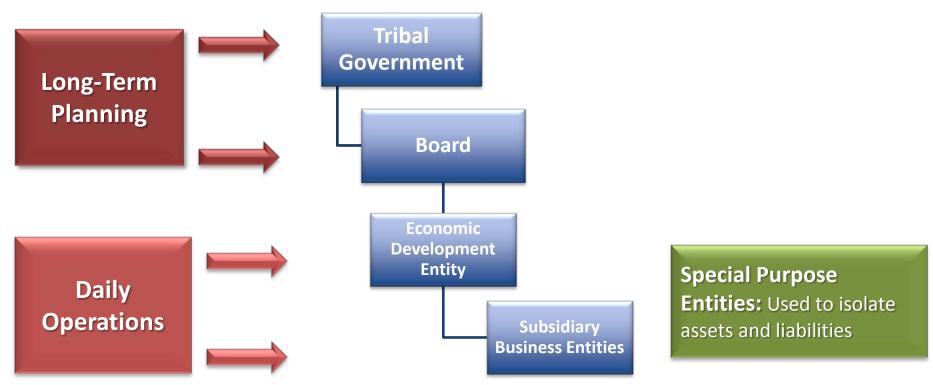
Governance & Proper Business Structure

#### **Key Components**

- 1. ADOPT VITAL CODES
  - Business Codes
    - Corporation Code
    - LLC Code
  - Uniform Commercial Code
    - Especially Articles 2 & 9
  - Taxation Code
  - Zoning Ordinance
  - Code of Ethics
- 2. Charter Economic Development Corporation
  - Separate Business from Politics
  - Establish Board Governance
    - Appoint qualified Board of Directors
- 3. Create a Comprehensive Economic Development Strategy (CEDS)

## GOOD GOVERNANCE: PROPER BUSINESS STRUCTURE

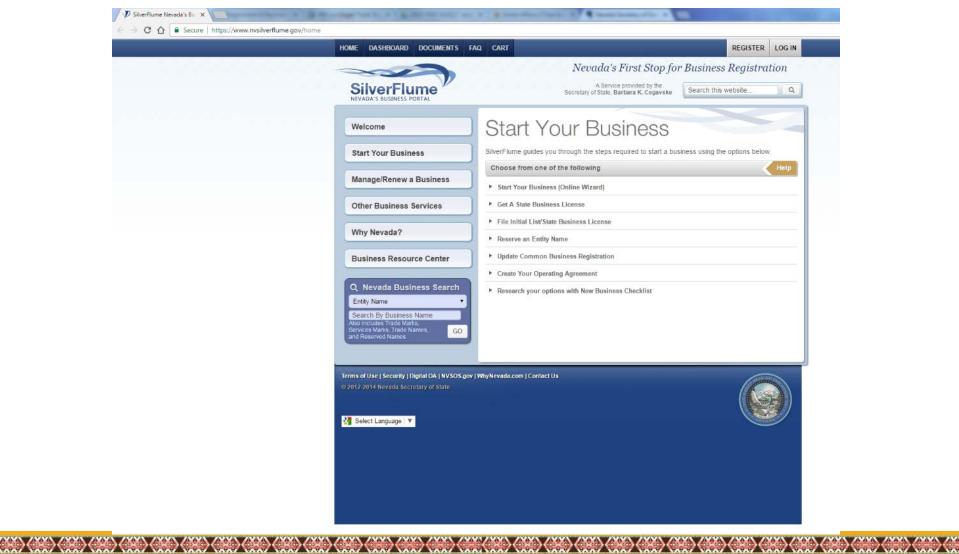
#### SIMPLISTIC VIEW



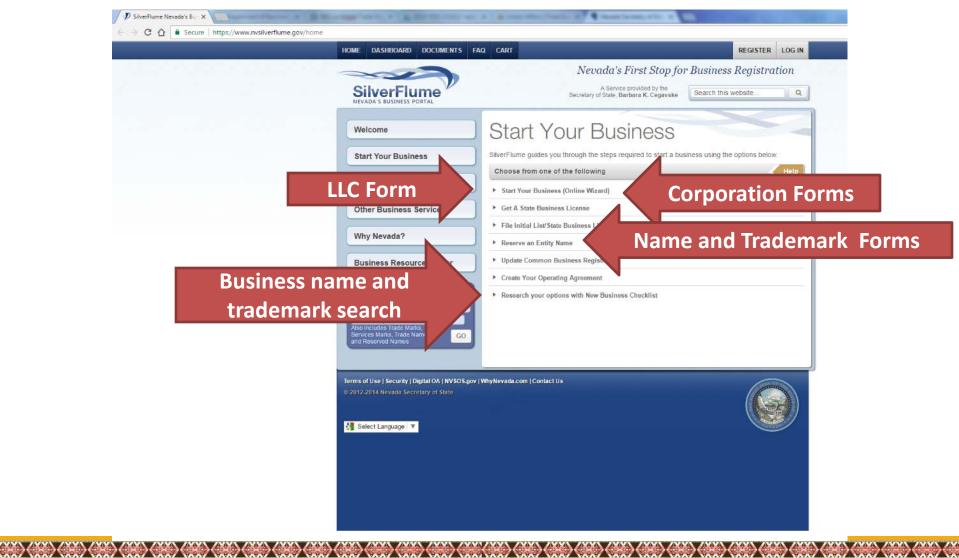
Businesses are 400% more likely to succeed if they are isolated from politics.

(Harvard Project)

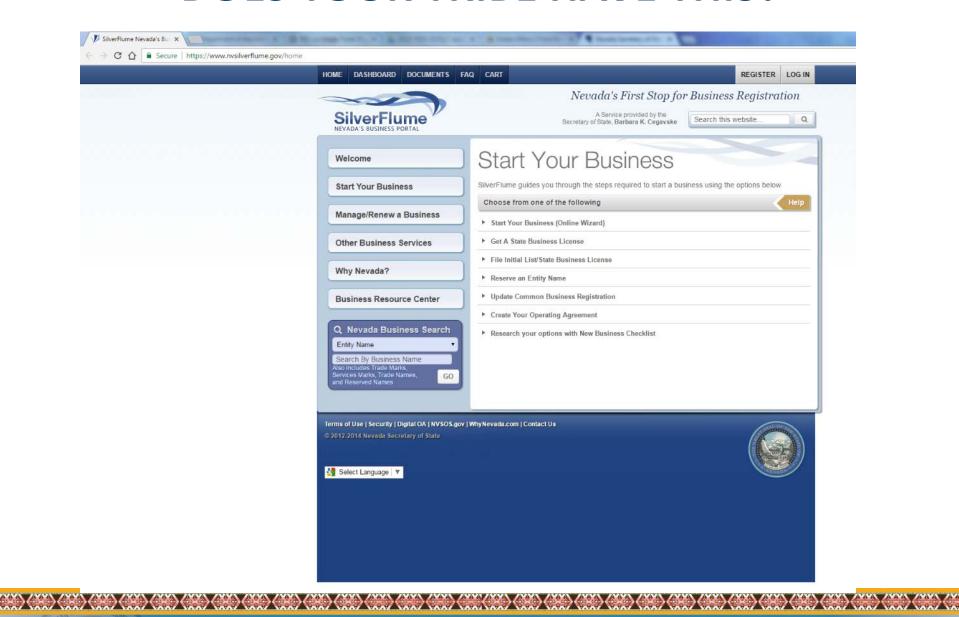
## STARTING A BUSINESS: NEVADA SECRETARY OF STATE



## STARTING A BUSINESS: NEVADA SECRETARY OF STATE



#### **DOES YOUR TRIBE HAVE THIS?**



#### DEPARTMENT OF THE INTERIOR

