

# Tribal Strategic Energy Planning

*Defining where you are,  
Where you want to go,  
What are your energy options, and  
Developing a plan to get there.*

# Tribal Strategic Energy Planning

## Tribal Objectives

- Energy Reliability & Security
- Off-Grid Electrification
- Minimize Environmental Impacts
- Supply Diversification
- Use of Local Resources
- Economic Development
  - Jobs
- Build technical expertise
  - Respect for Mother Earth
  - Others??



# Develop a community energy baseline



## Community Energy Audit

- All individual energy flows, in detail
- Buildings, Transportation, Agriculture, Water

## Forecast of New Loads

- Markets, Coops, Housing, Lodging, Casino, Warehouse

## Details of current Service Providers

- Who, where, how much, tariffs, level of cooperation
- Electric, Gas, Propane, Wood
- Load profiles, in detail

## Local Energy Supply Options

- RE and fossil fuel inventory

**Add it all up, categorize by load type, quantify load growth**

## Develop a common Tribal energy vision



- Place a “marker” on where the tribe wants to be – in 5, 10, or 20 years
- A statement, or resolution, approved by the Tribal Council following input from broader tribal community
- The vision sets clear direction, but is not too prescriptive

## Identify and support a Tribal champion



**A tribal champion (or team) is key** - empowered to lead the strategic energy planning process forward

# Integrate culture and environmental constraints



- Natural Resource Valuation
  - Water and Air
  - Wildlife Habitat
  - Forests, rangelands, wetlands, other
- Technology Effects
  - Emissions, Aesthetics, Noise
- Economic Development Trade-offs
- Cultural Impacts – (Sacred Sites, Plants, Burial Grounds)
- Tribal Impact – Community & Government
- Other Considerations
  
- Holistic Approach to development

# Demand-Side Resource Options



Fuel Switching (electricity, gas, propane, wood)

- Weatherization
- Efficiency
  - Appliances
  - Lighting
  - Heating & Cooling Systems
  - Commercial & Industrial Loads
- Demand Response and Load Shifting
- Direct Load Control
- Considerations
  - Quantifying available resource
  - Measuring effects of actions

# Supply-Side Resource Options



- Conventional Technologies
- Cogeneration
- Renewable Technologies
- Attributes to Consider
  - Plant Capacity
  - Fuel Type
  - Efficiency
  - Reliability
  - Capital, Operating & Lifecycles Costs
  - Lifetime & Decommissioning
  - Environmental Impacts

**Demand-Side Options**

**Supply-Side Options**

**Integrate supply and demand alternatives**

## **Tribal Objectives**

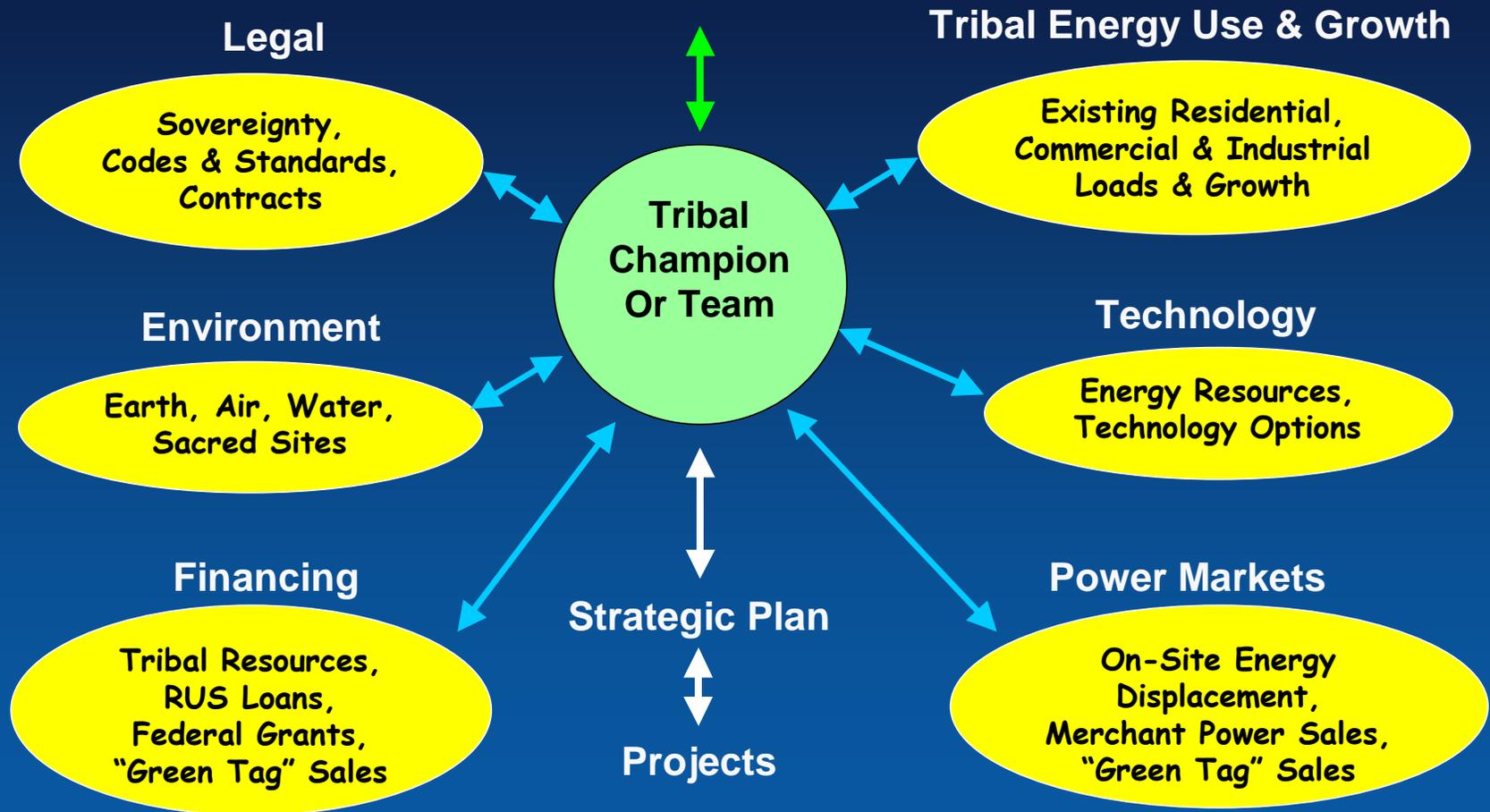
- Energy Reliability & Security
  - Off-Grid Electrification
- Minimize Environmental Impacts
  - Supply Diversification
  - Use of Local Resources
  - Economic Development
    - Minimize costs
- Acquire technical expertise
  - Others??

# Establish organizational and human resource needs



How do you want to make it happen?

## Tribal Council





## **Establish implementation program & projects**

### **Characteristics of a Solution**

- **Rapid**
- **Technically & Institutionally Sustainable**
  - **Maximize Coordination**
  - **Politically Feasible**
- **Attracts Financing, Capital, Sweat Equity**
  - **Reinforces tribal enterprises**

# Opportunities & Strategies

- Tribal utility formation
- Strategic industry partnerships
- Tribal cooperatives
- Education

# Barriers Identification

- Financing
- Human Capacity Development
- Organizational Development
- Tribal Laws and Regulations
- Clear Decision Making Process
- Stable Leadership