Strategic Energy Planning, Project Development and the Importance of Champions

Roger Taylor
Group Manager
State, Local & Tribal Initiatives

November 18, 2009
Renewable Technology Options

Power Direct Use
- PV - Remote Homes
- CS Power & Heat
- Buildings
- Stock Watering

Biomass Heat, Power & Fuels

Small Wind

Diesel Hybrids

Big Wind

Small Hydro
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 tribal energy baseline
Develop a common tribal energy vision
Identify and support a tribal energy champion
Identify culture and environmental constraints
Identify and evaluate resource options
Demand-Side Options
Supply-Side Options
Integrate supply and demand alternatives
Establish organizational and human resource needs
Strategic Energy Plan
Programs & Projects
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 tribal energy baseline
- Develop a tribal energy vision
- Identify and support a tribal champion
- Identify culture and environmental constraints
- Identify and evaluate resource options
  - Demand-Side Options
  - Supply-Side Options
- Integrate supply and demand alternatives
- Establish organizational and human resource needs
  - Strategic Plan
  - Programs & Projects
Develop a tribal 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
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 tribal energy baseline
- Develop a common tribal energy vision
  - Identify and support a tribal champion
  - Identify culture and environmental constraints
  - Identify and evaluate resource options
    - Demand-Side Options
    - Supply-Side Options
  - Integrate supply and demand alternatives
  - Establish organizational and human resource needs
  - Strategic Plan
  - Programs & Projects
Develop a common Tribal energy vision

Place a “marker” on where the tribe wants to be – in 10, 20, or 30 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 (where not how)

Draft a Vision Statement
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 tribal energy baseline
- Develop a common tribal energy vision
- Identify and support a tribal champion
- Identify culture and environmental constraints
- Identify and evaluate resource options
- Integrate supply and demand alternatives
- Establish organizational and human resource needs
- Strategic Plan
- Programs & Projects
A tribal champion (or team) is key – this individual or, more likely, team must empowered to:

- explore the range of supply & demand options,
- facilitate tribal consensus,
- lead the strategic energy planning process forward,
- make recommendations to Tribal Council, and General Council

What are the challenges you face in your community to establishing a tribal energy champion or team?
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 tribal energy baseline
Develop a common tribal energy vision
Identify and support a tribal champion
Identify culture and environmental constraints
Identify and evaluate resource options
Demand-Side Options
Supply-Side Options
Integrate supply and demand alternatives
Establish organizational and human resource needs
Strategic Plan
Programs & Projects
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
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 tribal energy baseline
Develop a common tribal energy vision
Identify and support a tribal champion
Identify culture and environmental constraints
Identify and evaluate resource options

Demand-Side Options
Supply-Side Options

Integrate supply and demand alternatives

Establish organizational and human resource needs

Strategic Plan

Programs & Projects
Electricity

Fuels
Project Development Steps

See also: http://www1.eere.energy.gov/tribalenergy/guide/assessing_energy_resources.html

• Phase I
  – Strategic plan completed
  – Champion identified and empowered
  – Initial project planning meeting(s)
  – Project team/company formed
  – Secure early stage funding (grant? equity investment?)
  – Feasibility assessment
  – Go/No-Go

• Phase II – Development
  – Permits, interconnect, PPA, finance

• Phase III - Construction
Feasibility study (FS) general steps

See also:
http://www1.eere.energy.gov/tribalenergy/guide/assessing_energy-resources.html

Last chance to spend a little money before you spend a lot

• Resource assessment
• Market analysis (community vs. commercial scale)
  – Load assessment if looking at community or small-scale
• Site analysis/site selection
  – interconnection, water, roads, host site, natural gas, rail
• Technology characterization
• Preliminary environmental review
• Economic and financial analysis
• Barriers and opportunities

The level of complexity of your project will dictate whether you do the FS in-house or hire a consultant.
The Tribal Energy Development Challenge

General Council

Tribal Council

Community Champion
Or Team

Legal
- Sovereignty, Codes & Standards, Contracts, Legal Authority

Environment
- Earth, Air, Water, Parks, Open Space, Wildlife & Plants

Financing
- Local Resources, Federal Grants, "Green Tag" Sales Partnerships

Power Markets
- On-Site Energy Displacement, Merchant Power Sales, "Green Tag" Sales

Community Energy
- Use & Growth
- Residential, Commercial, Industrial Loads

Technology
- Energy Resources, Technology Options

Strategic Plan

Projects
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