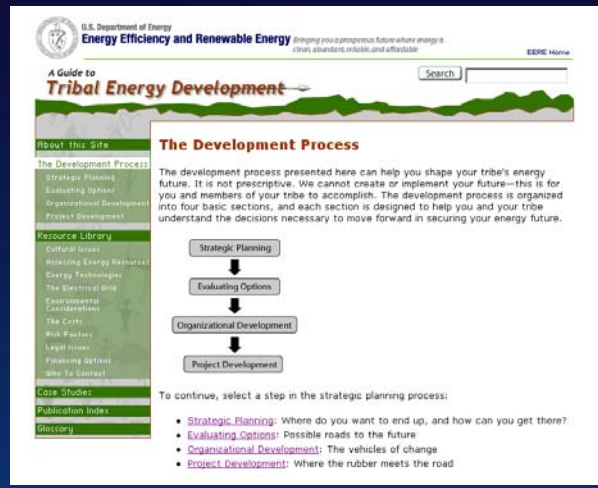
Tribal Energy Development – Process & "Guide"

http://www.eere.energy.gov/tribalenergy/guide



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

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

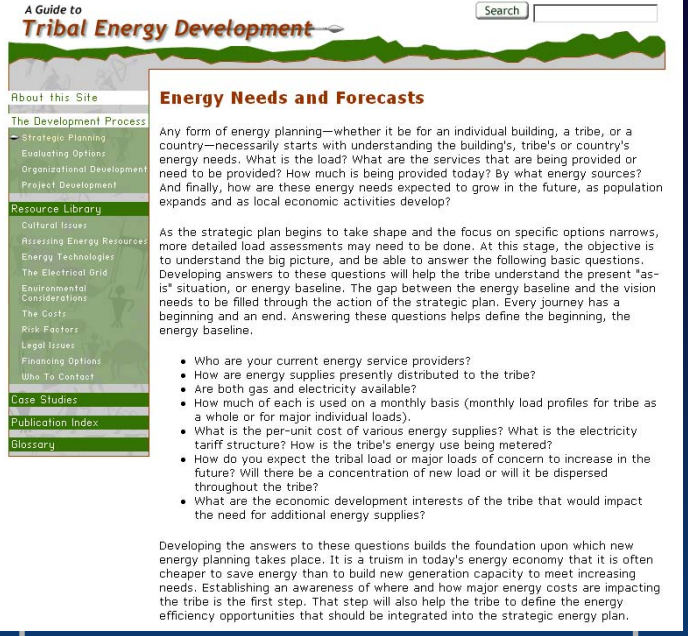
Establish organizational and human resource needs

Strategic Plan

Programs & Projects

Strategic Energy Planning

Defining where you are,
Where you want to go, and
Developing a plan to get there.



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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

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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

Examples of possible tribal energy vision statements might include:

- Establish tribal energy independence, self-sufficiency, and security through development of indigenous resources, capabilities, and institutions within the next generation.
- From the Navajo Tribal Utility Authority:
  "To provide electric, natural gas, water, wastewater treatment and related services at competitive prices, while contributing to the economy of the Navajo Nation, consistent with the improvement of the health and wealth of the residents of the Navajo Nation, and the employment of the Navajo people."
- From the Hopi *Hopit Potskwaniat* — Energy Related Goals:
  "To provide affordable and environmentally safe energy for local residents and businesses for the purpose of economic self-sufficiency."
- From the Cow Creek Band of Umpqua Tribe of Indians, Tribal Legal Code, Title 300 (PDF 239 KB) Download Acrobat Reader.:
  "The purpose for which the Utility is organized is to provide an entity through with the Tribe may exercise all natural gas utility, electrical utility, other energy utility, water and sewer utility, telecommunications utility, and mineral use and development functions for the benefit of the Tribe, and to regulate all such utility matters of third parties on the Reservation."
- From the charter of the Aha Macav Power System (AMPS), the tribal utility for the Fort Mojave Indian Tribe:
  "The Fort Mojave Tribal Council hereby finds and declares that the creation of AMPS is necessary and desirable in order to promote the development of the Tribe's resources, to promote the prudent economic vitality of the Reservation and surrounding communities, to protect the health and welfare of tribal members and to provide employment and training opportunities for tribal members."

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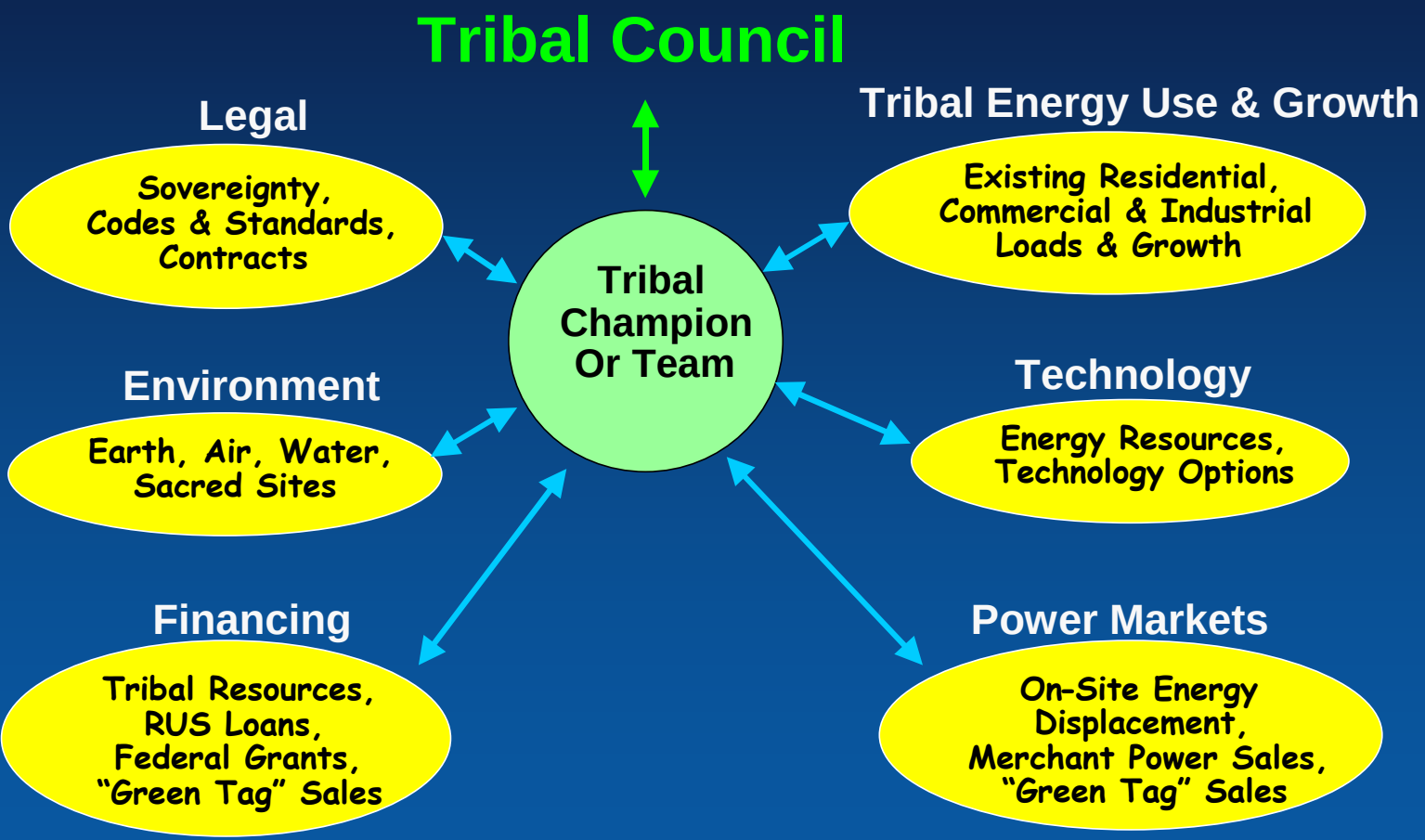
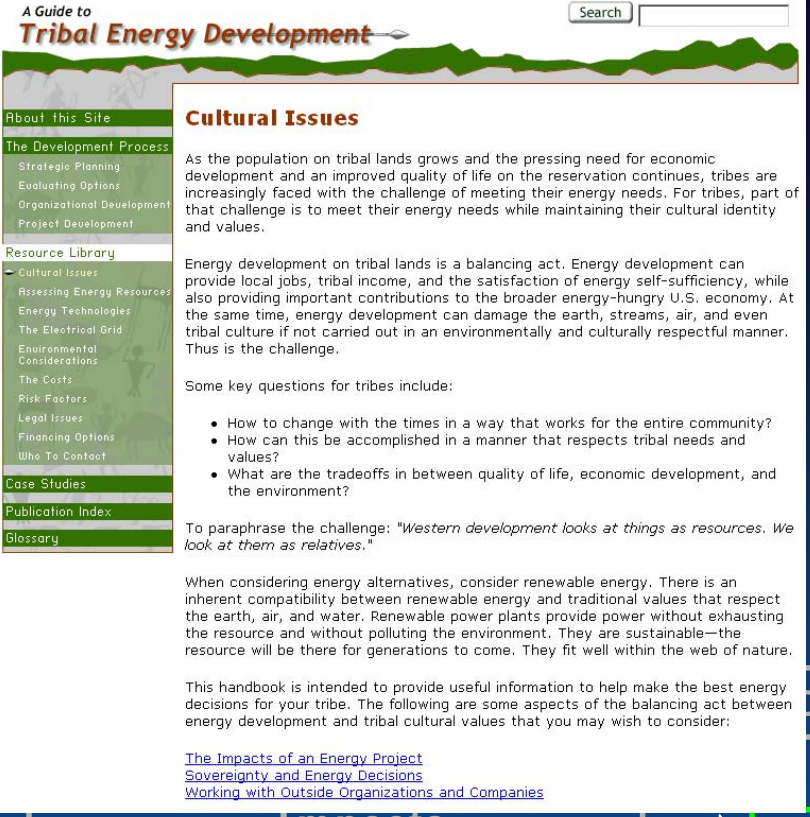
- **Others??**

Identify and support a Tribal champion

A tribal champion (or team) is <u>key</u> - empowered to lead the strategic energy planning process forward





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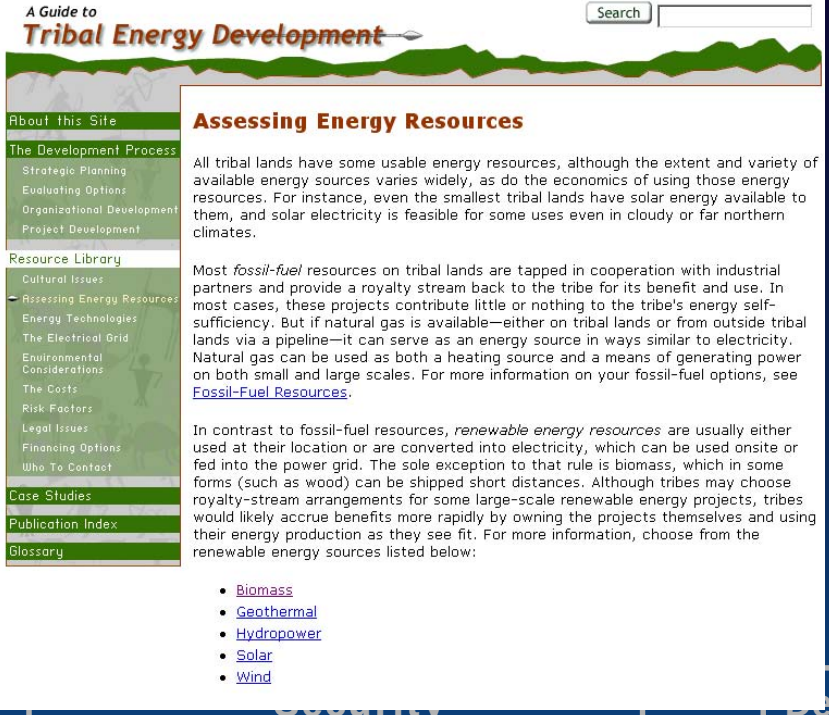
Identify culture and environmental constraints

- 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



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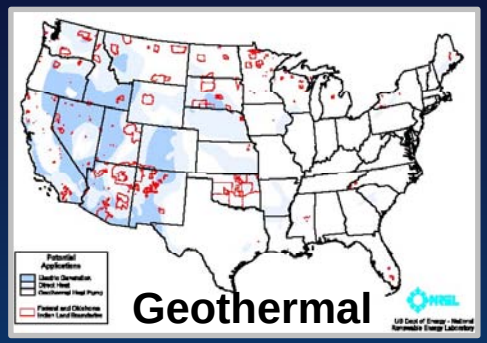

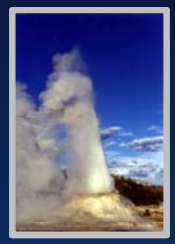

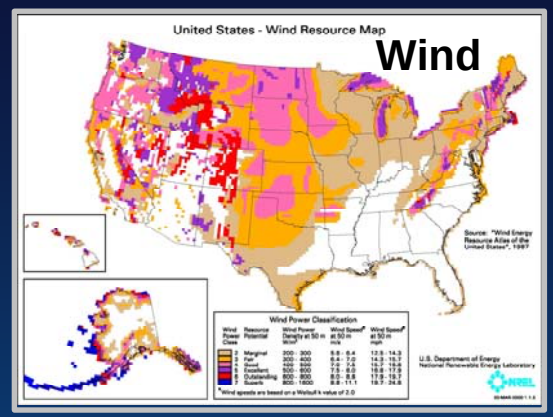

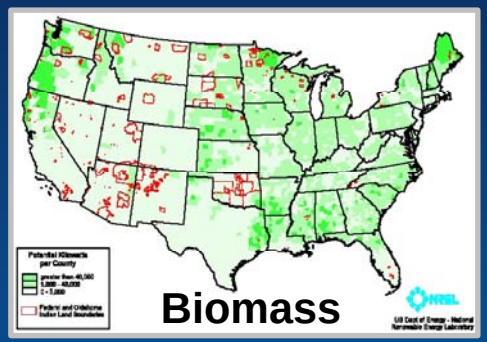

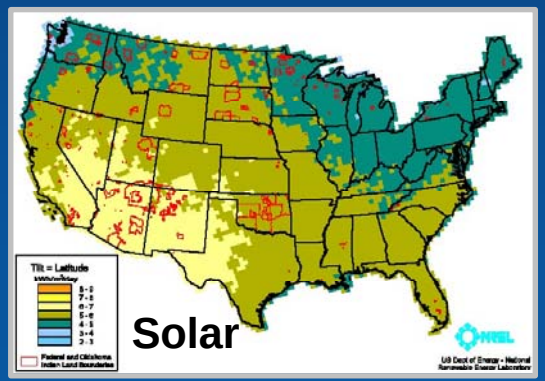

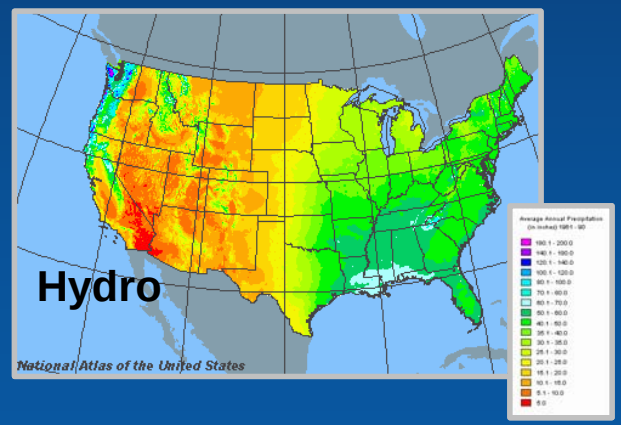

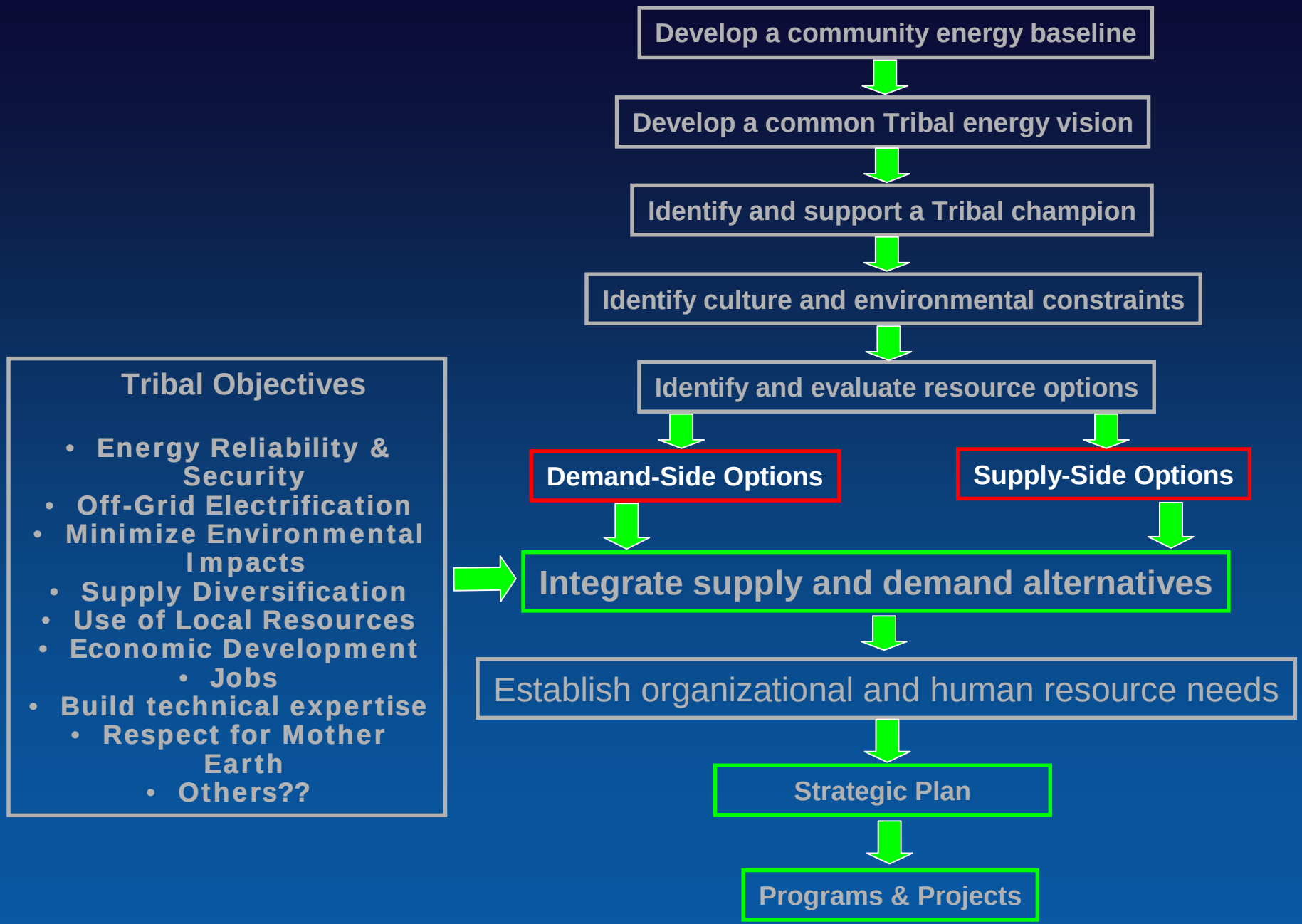
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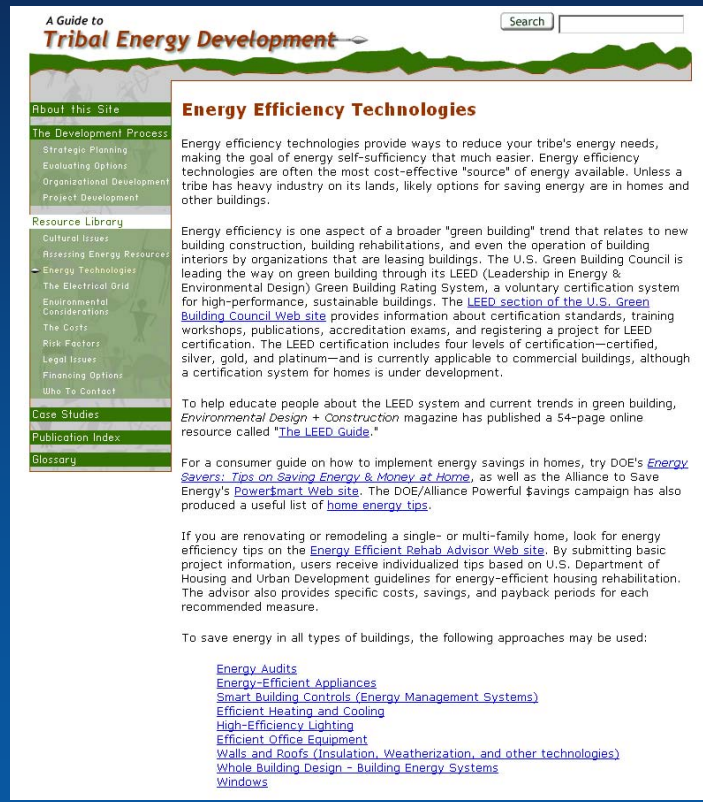
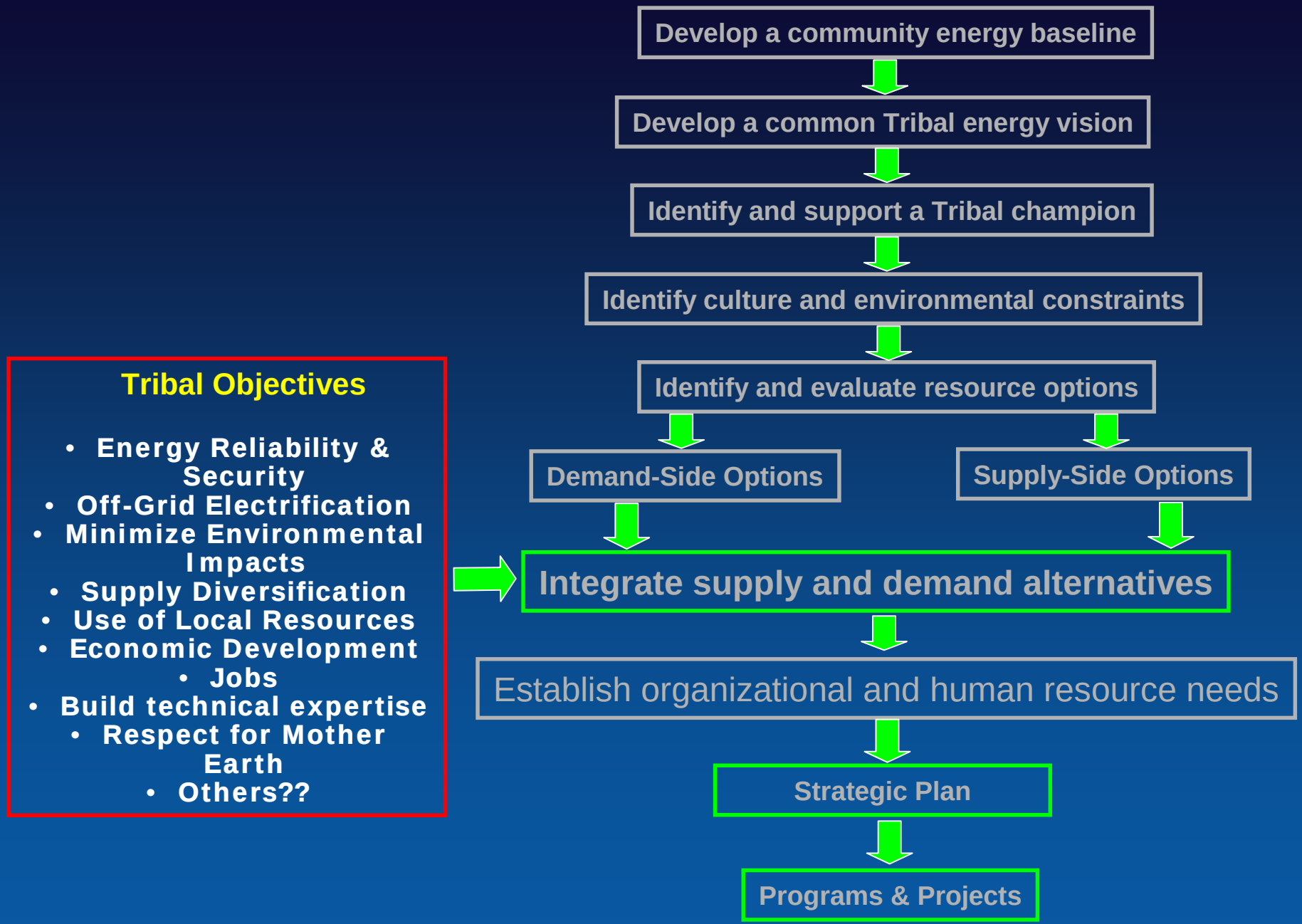
Demand-Side Options

- 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 Options

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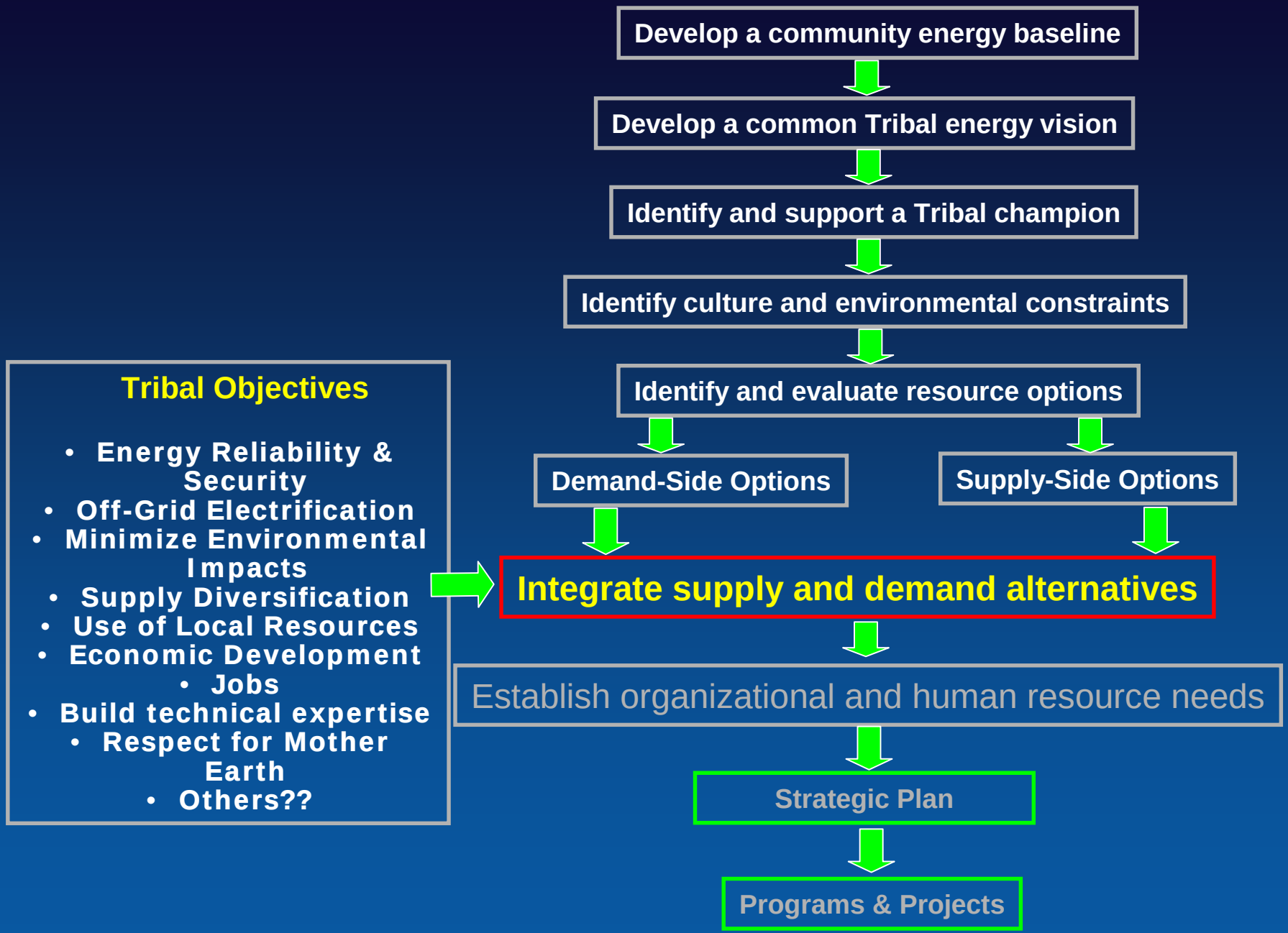
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Demand-Side Options

Supply-Side Options

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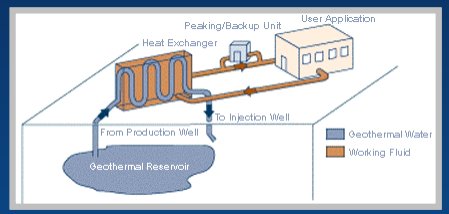
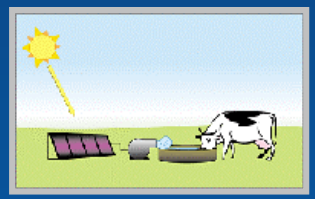
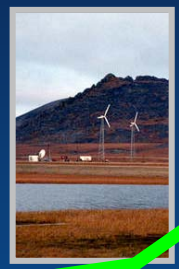
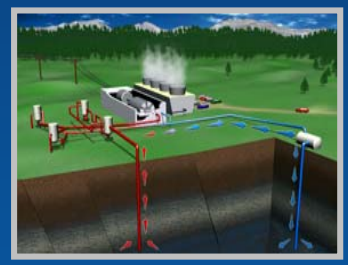
Demand-Side Actions

Supply-Side Actions









Community Activities

Merchant Power Activities

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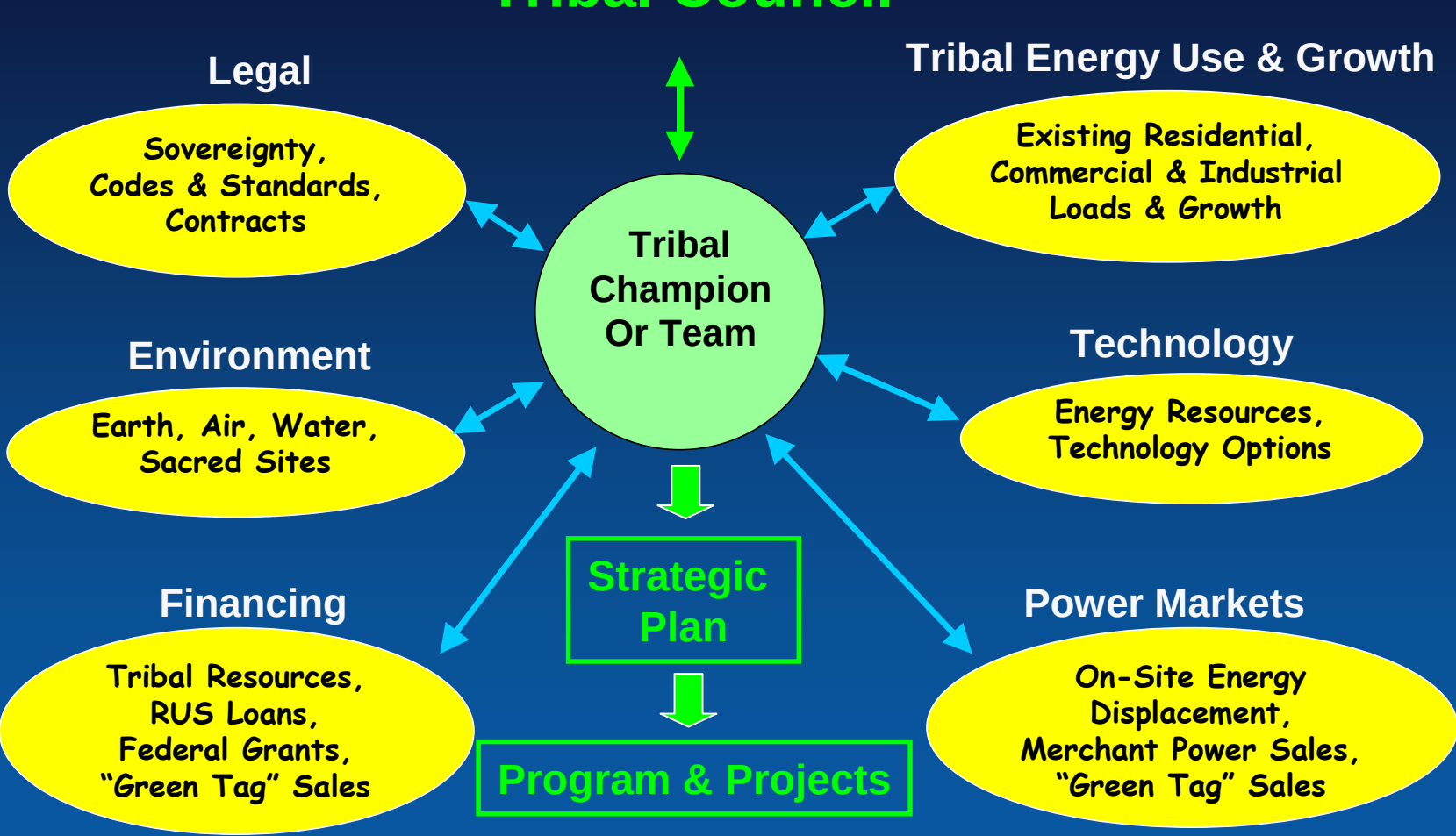
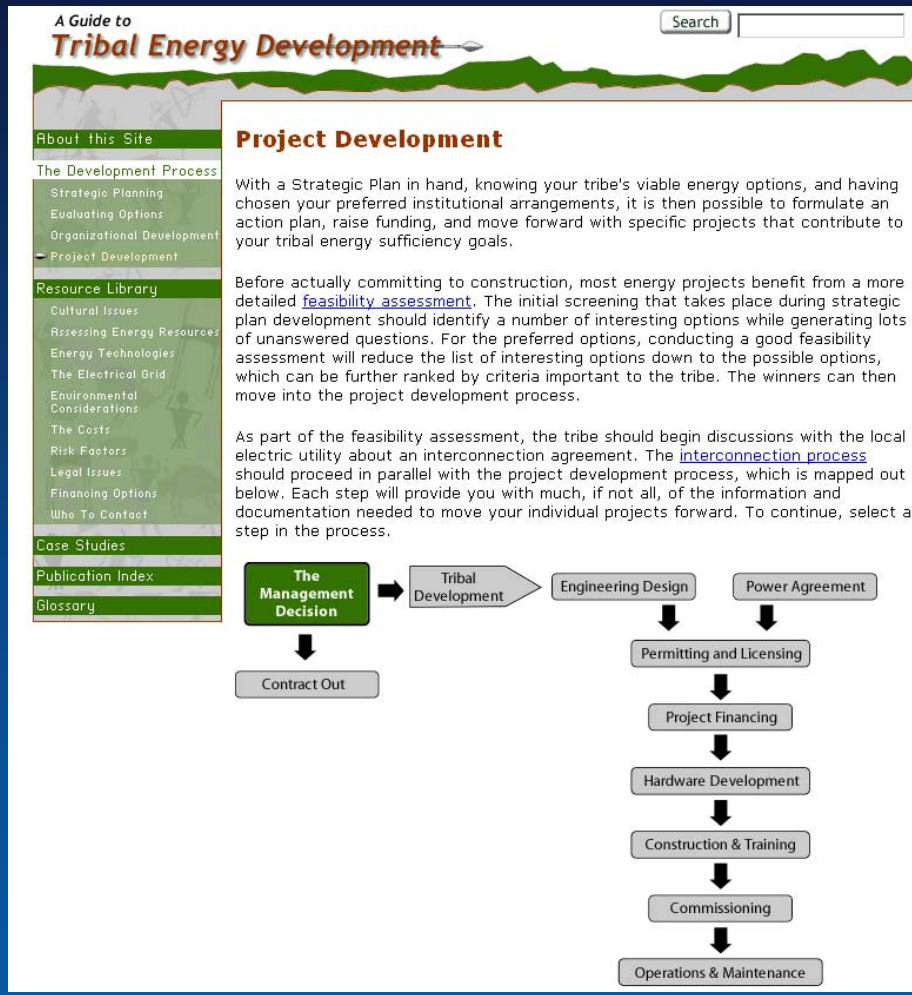

Legal
Sovereignty, Codes & Standards, Contracts
Tribal Energy Use & Growth
Existing Residential, Commercial & Industrial Loads & Growth
Tribal Champion Or Team
Environment
Earth, Air, Water, Sacred Sites
Technology
Energy Resources, Technology Options
Strategic Plan
Financing
Tribal Resources, RUS Loans, Federal Grants, "Green Tag" Sales
Power Markets
On-Site Energy Displacement, Merchant Power Sales, "Green Tag" Sales
Program & Projects

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
- Energy service companies
- Small businesses
- Education (link Tribal Community Colleges with Tribal needs)

Barriers Identification

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

Congratulations!

Those of you that make it through this process will be well on your way to tribal energy sovereignty.

A Guide to
Tribal Energy Development

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