

# Everybody Needs an Energy Plan

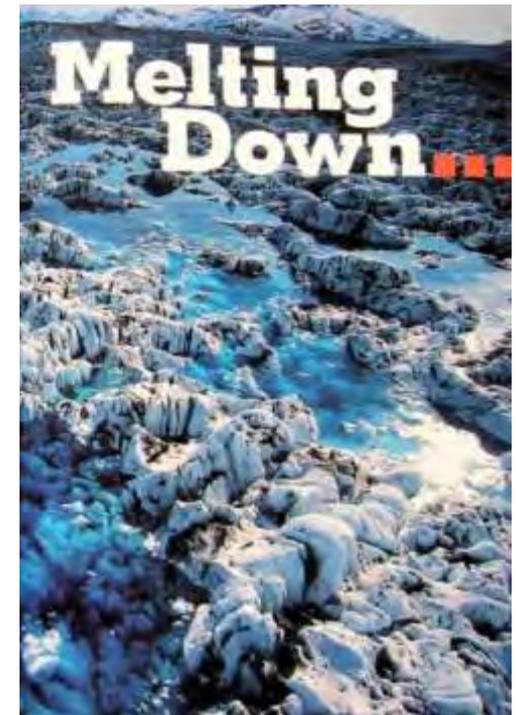
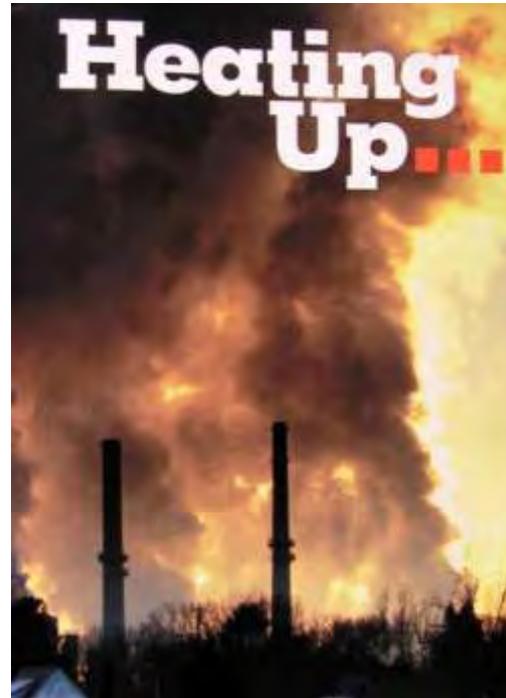
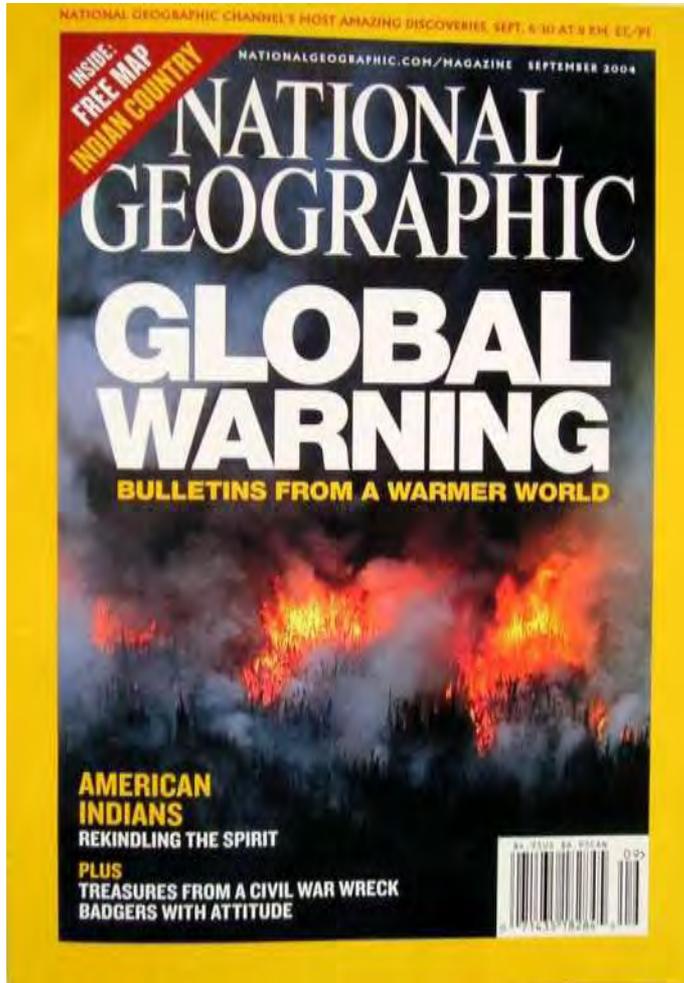


**Tribal Business  
Development &  
Financing**

**Roger Taylor**

**August 23, 2011**

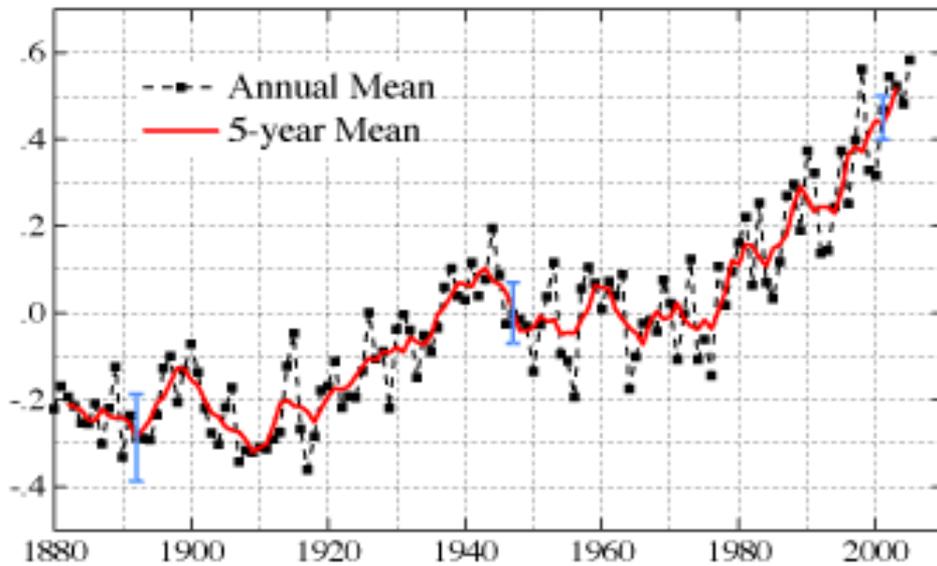
# We Live in a Changing World



# Where Carbon Reduction Is a Requirement

## 2005 Warmest Year on Record

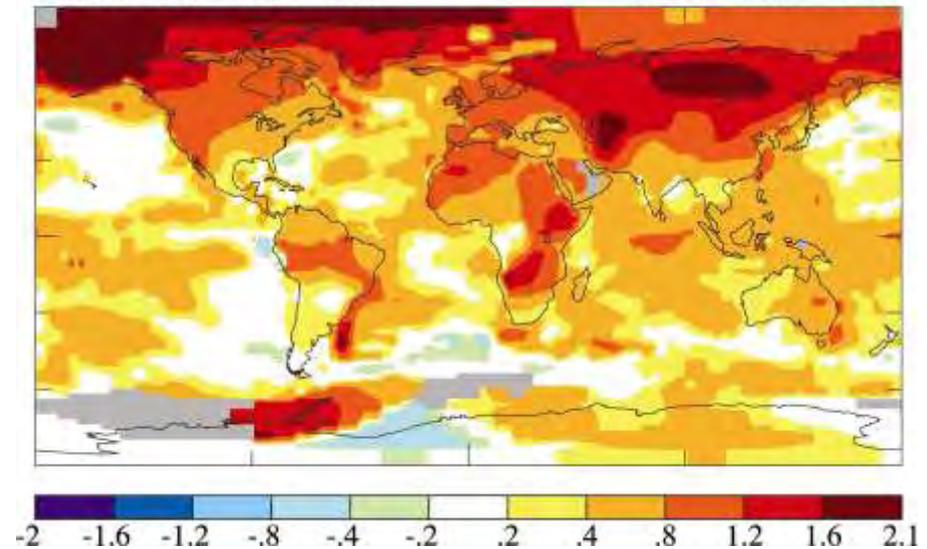
(a) Global-Mean Surface Temperature Anomaly ( $^{\circ}\text{C}$ )



2001-2005 Mean Surface Temperature Anomaly ( $^{\circ}\text{C}$ )

Base Period = 1951-1980

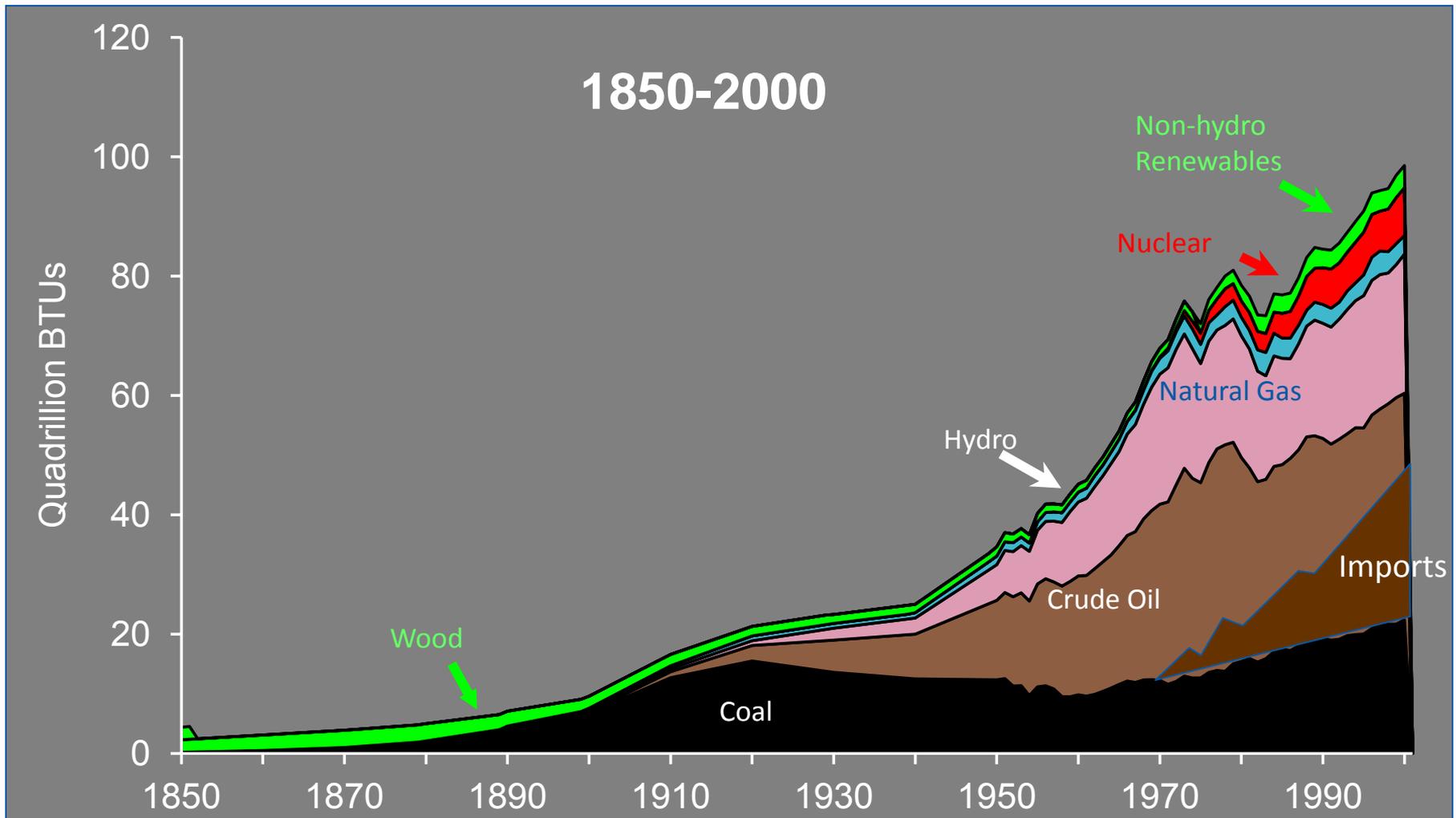
Global Mean = 0.53



Warming of  $0.2^{\circ}\text{C}/\text{decade}$  over last 30 years

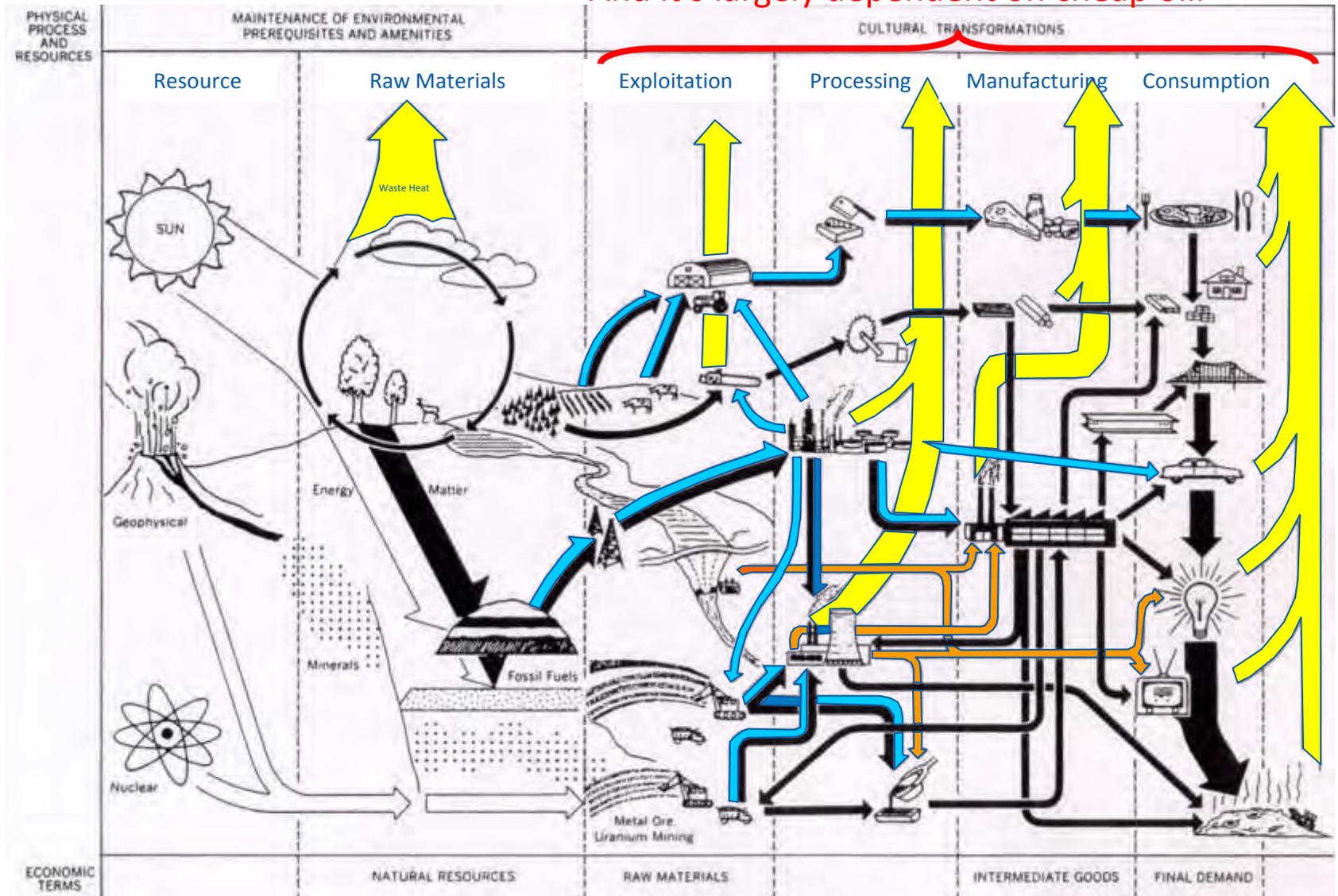
Source: J. Hansen, Goddard

# Where U.S. Energy Consumption Continues to Grow



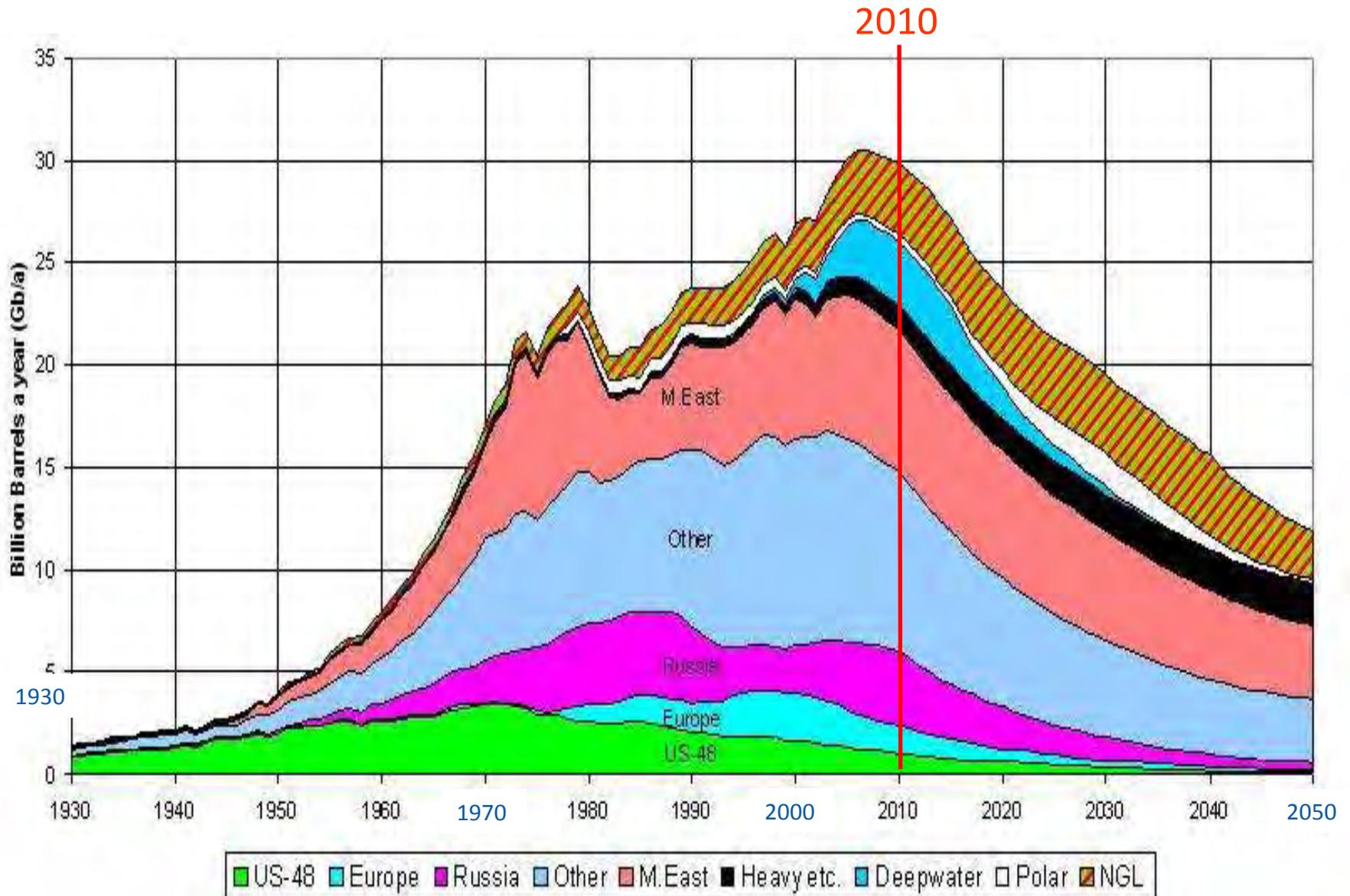
# Where the Global Economy Is Very Complex

And it's largely dependent on cheap oil.



After: Charles Hall, SUNY Syracuse, ASPO 2005

# We Live in a Changing World



# Where Resource Depletion Is Occurring in a Human Lifetime

Our Great Grand Parents

Our Grand Parents

Our Parents

Our Generation

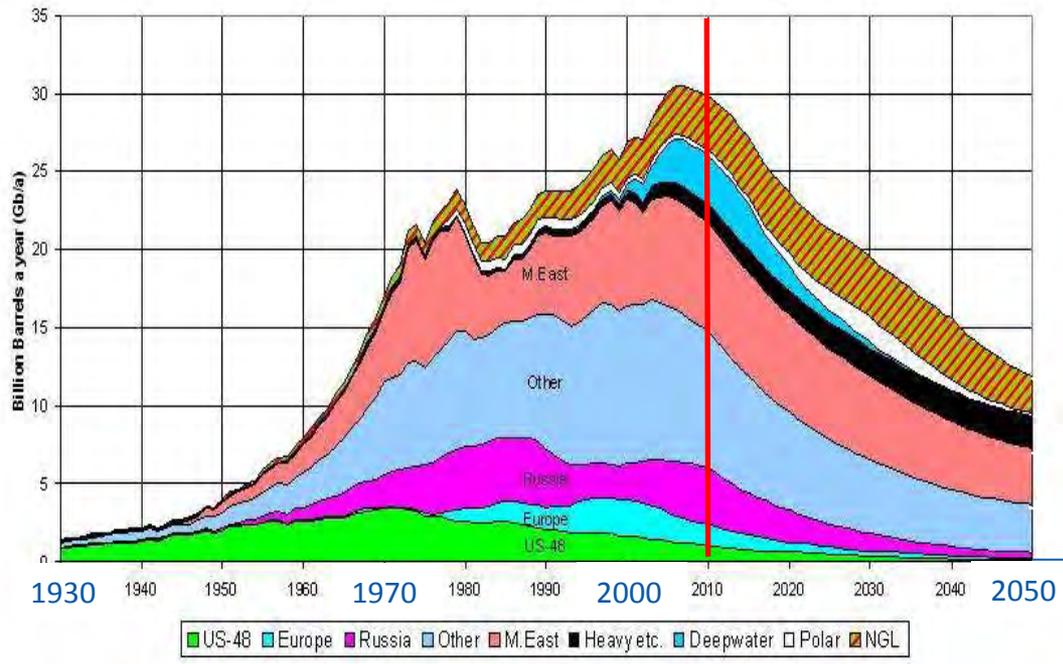
20

Our Children

80

Our Grand Children

Our Great Grand Children

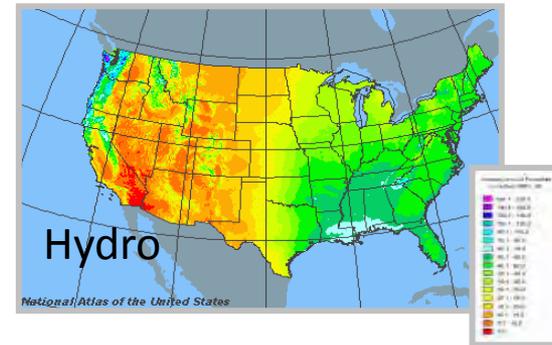
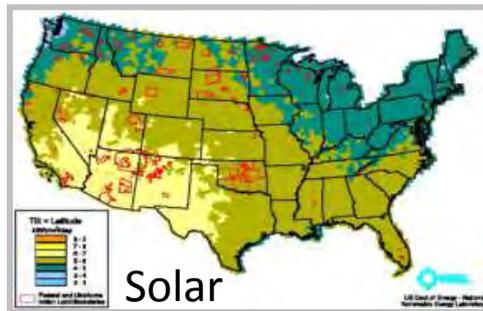
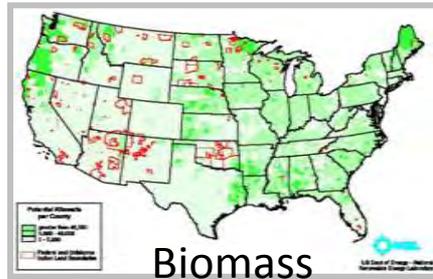
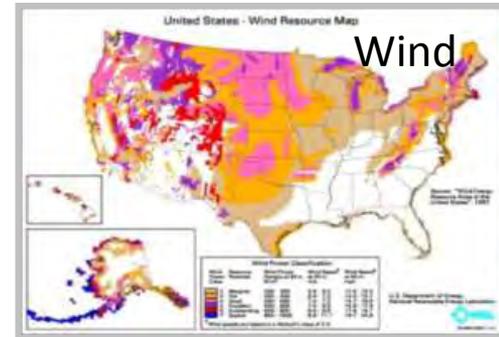
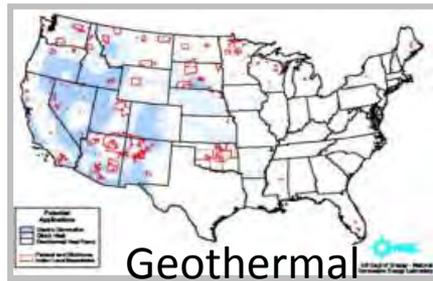


# We Live in a Changing World

## Where Everything Is Going to Become More Local

Our Energy  
Our Food  
Our Water  
Our Shelter  
Our Community  
Our Survival

# Renewable Energy Resources Are Abundant



But Everything Is Site-Specific

# The Energy Playing Field

## Electricity

## Fuels

Industrial



Community



# Tribal Energy Security & Sovereignty Through Local Self-Sufficiency

## Economic Dependence

Oil Imports  
Fuel at the Pump  
National Grid  
Coal-based Power  
Water Transport  
Foreign Manufacturing  
Industrial Agriculture

“He who has the gold,  
makes the rules.”



## Community Independence

Self sufficiency  
Food  
Energy  
Water

Skill Building  
Local Production  
Regional Sourcing

Sufficiency & Enoughness  
Human Satisfaction

“Community of Cooperation”

# Strategic Energy Planning

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

# Geography of Strategic Energy Planning

- **What energy-consuming buildings & facilities are in place?**
- **What is the geographic layout?**
- **Does the tribe have a land use plan?**
- **What new projects are in the planning stages?**
- **Where will they be built, and when?**

# Geography of Strategic Energy Planning

## Draw Individual Tribal Maps

### Infrastructure

- Reservation or community boundary
- Mountains/hills
- Roads (Primary, Secondary, Rail)
- Tribal industrial activities (sawmill, sand & gravel, coal, ...)
- Key community buildings (casino, hotel, C-store, school, gas stations, ...)
- Residential areas/houses
- Power lines, sewage treatment, solid waste, natural gas, water dams

### Lands Usage

- Agricultural areas, farm, pasture, feed lots
- Forest lands, range lands, protected areas

### Hydro

- Rivers & Lakes
- Water supply lines or wells

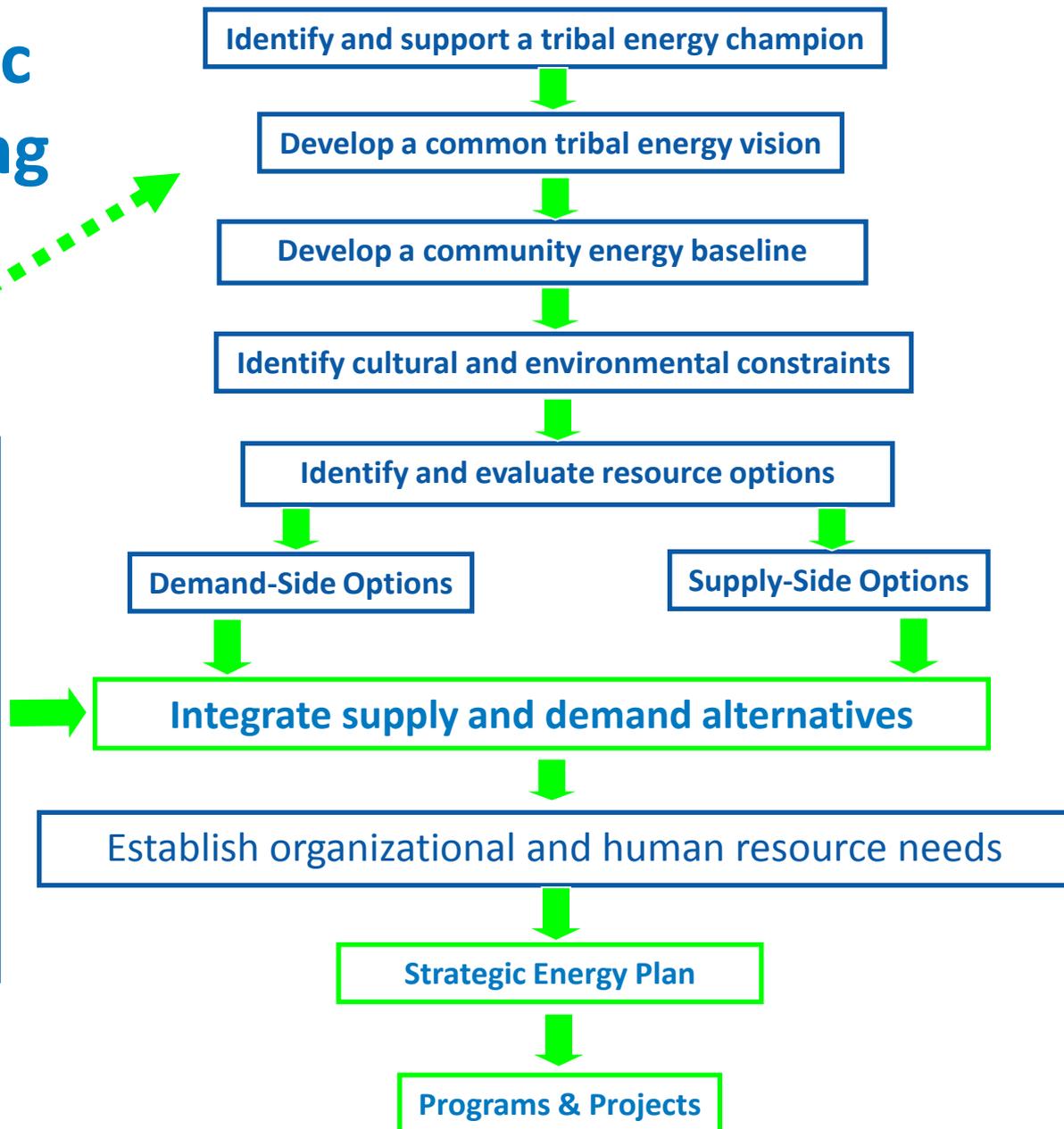
### Yellow Arrows in Direction of Energy Flow—

- Electricity
- Natural Gas, Propane, Fuel Oil
- Gasoline & Diesel

# Tribal Strategic Energy Planning

## Tribal Objectives

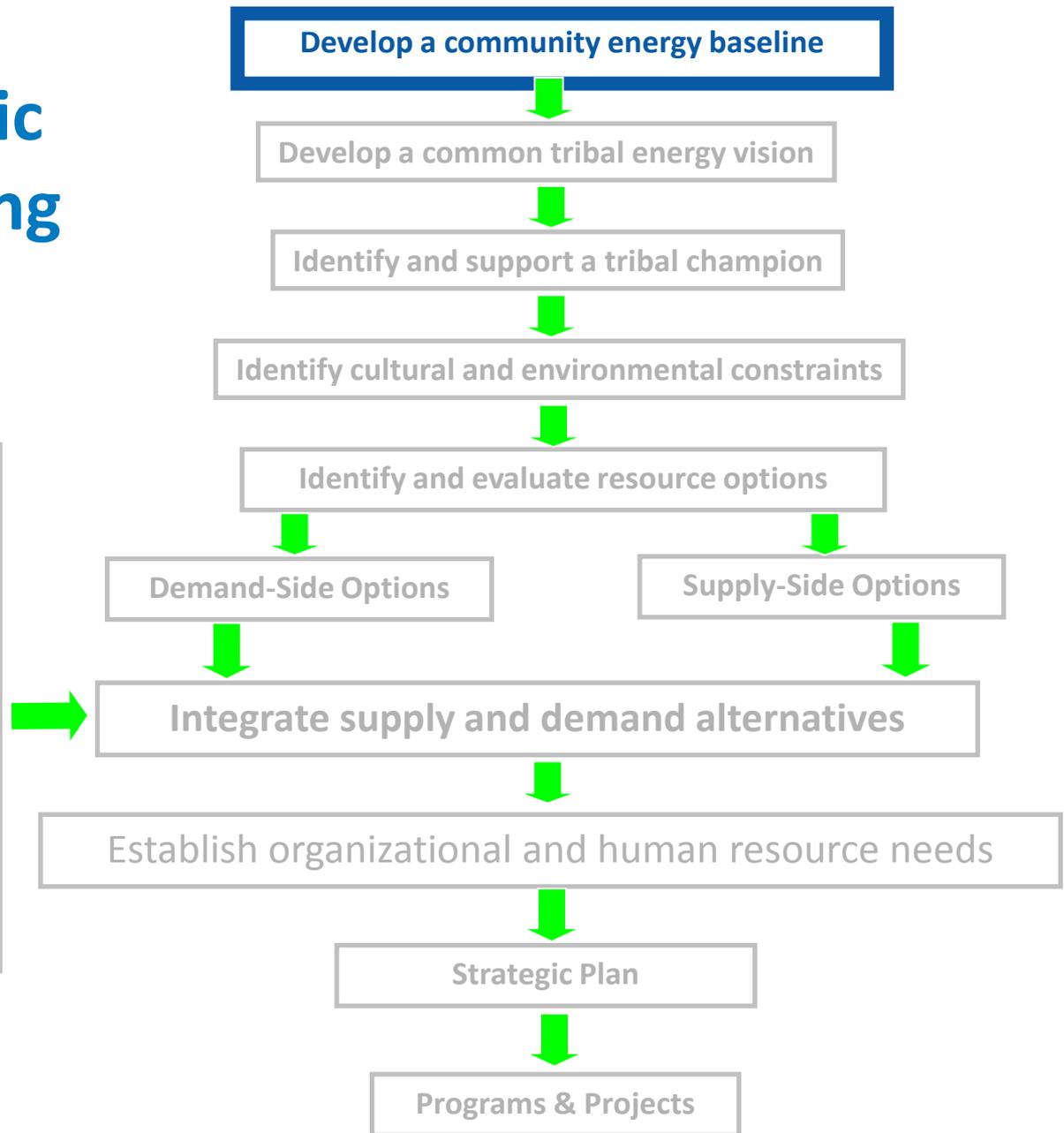
- Energy Reliability & Security
- Off-Grid Electrification
- Minimize Environmental Impacts
- Supply Diversification
- Use of Local Resources
- Economic Development
- Jobs
- Build Technical Expertise
- Respect for Mother Earth
- Others??



# Tribal Strategic Energy Planning

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# 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

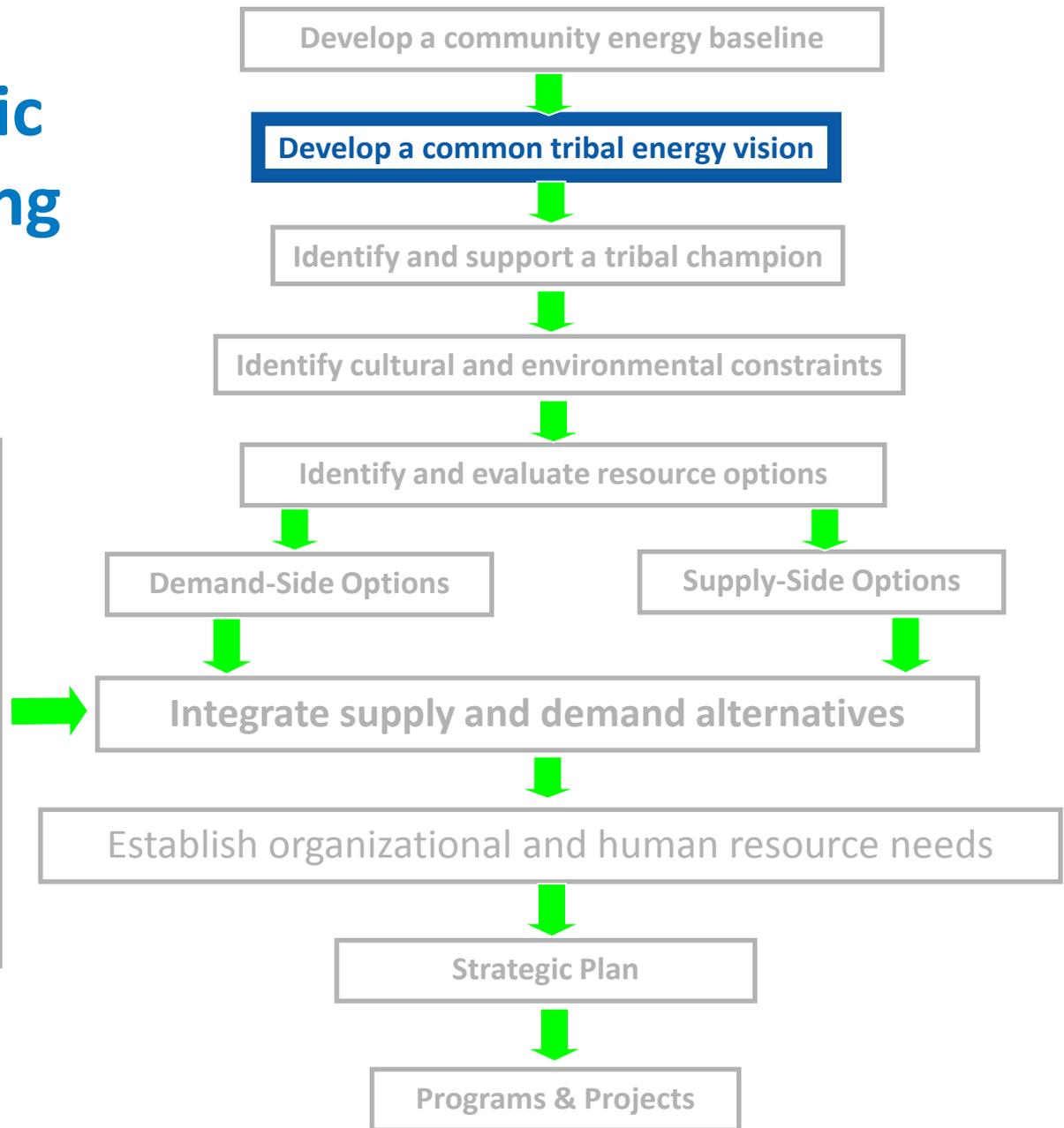
## Local Energy Supply Options

- RE and fossil fuel inventory

**Add it all up,  
categorize by load type (residential, commercial, industrial, agriculture),  
quantify load growth**

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## Develop a common tribal energy vision

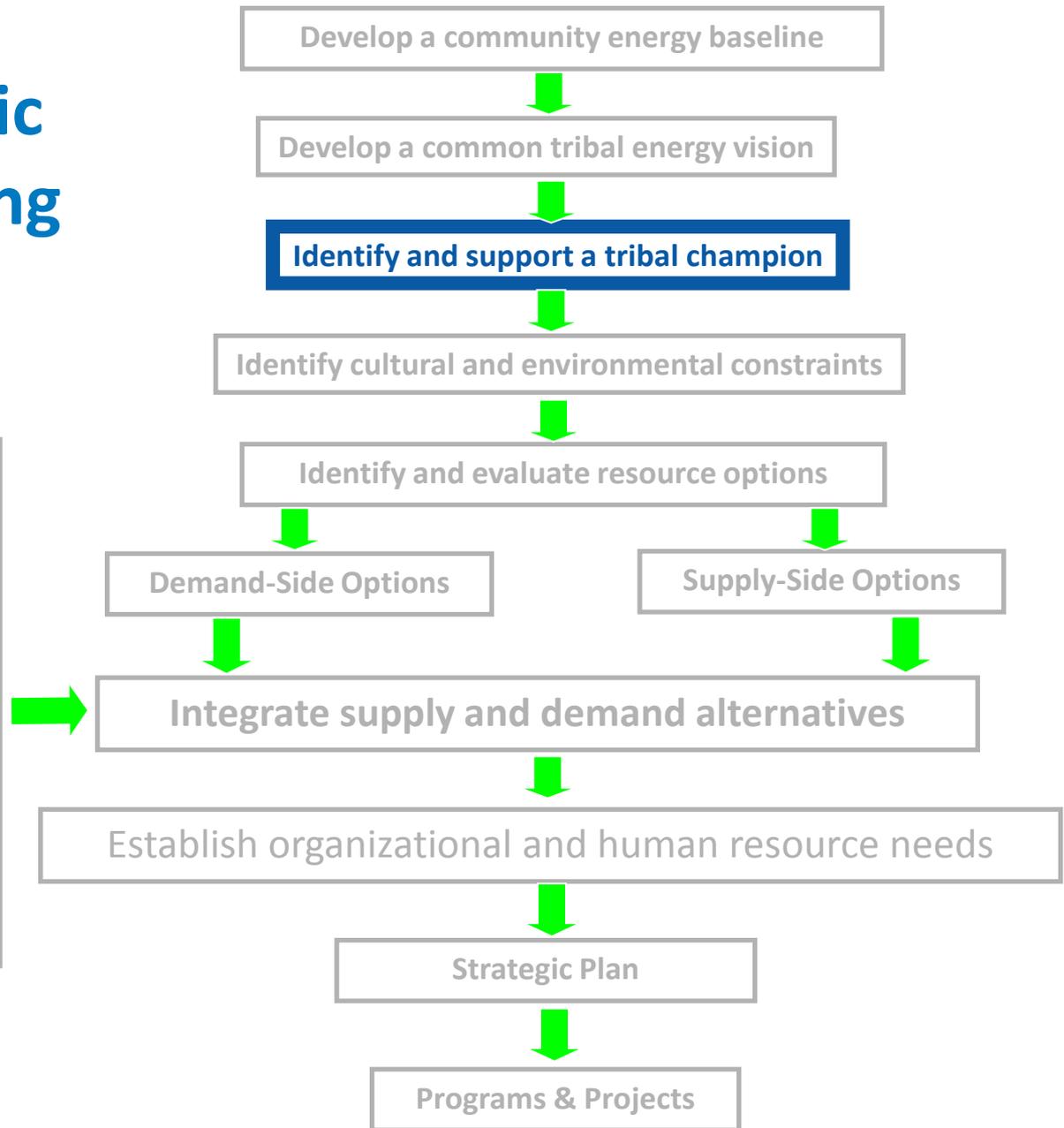


- Place a “marker” on where the tribe wants to be – in 1, 2, or 7 generations
- A statement, or resolution, approved by the Tribal Council following input from broader tribal community
- The vision sets clear direction, but is not too prescriptive (where not how)

## Draft a Vision Statement

# Tribal Strategic Energy Planning

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## Identify and support a tribal champion



A tribal champion (or team) is key

This individual or, more likely, team must be empowered to:

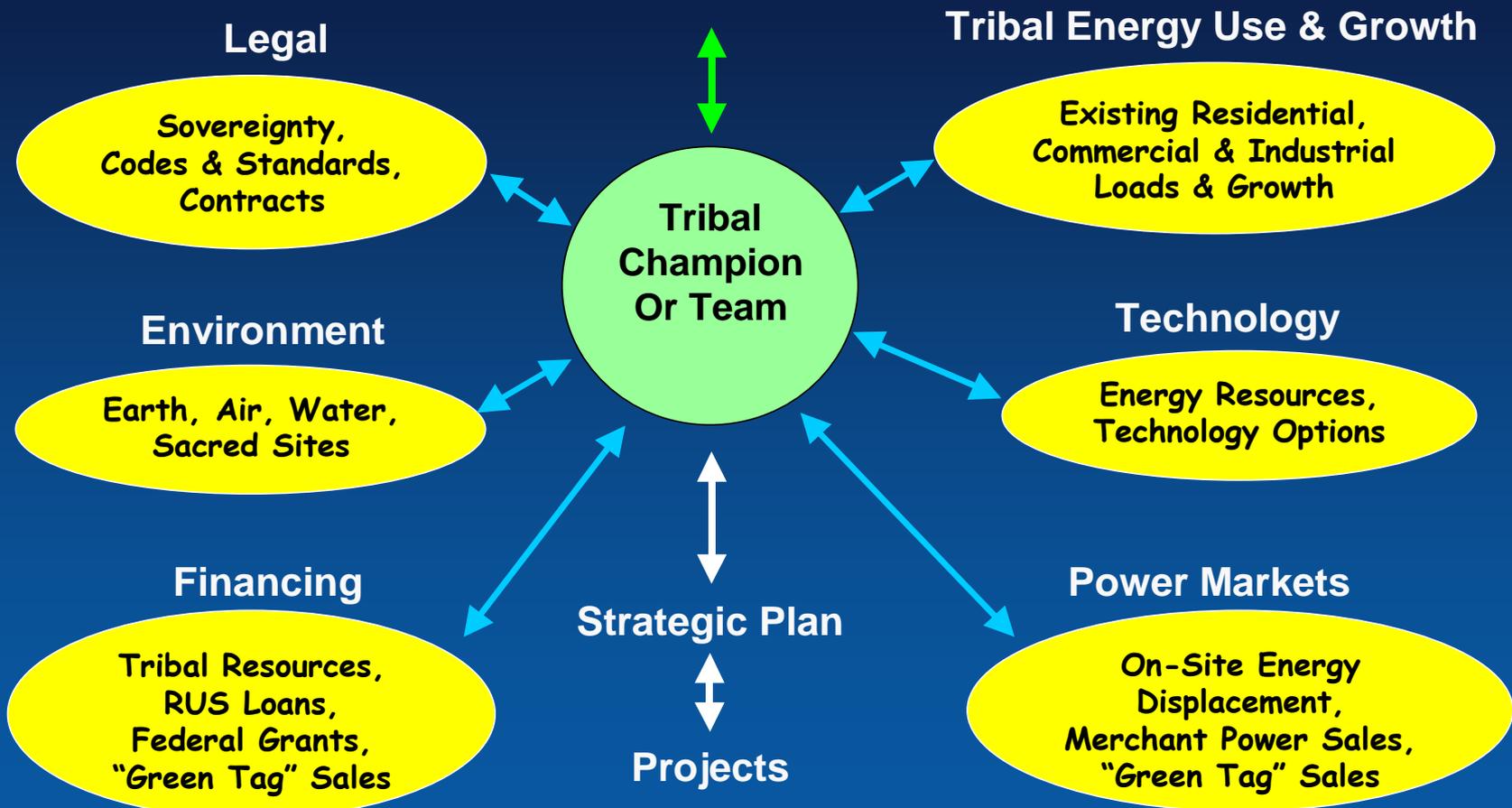
- Explore the range of supply & demand options
- Facilitate tribal consensus
- Lead the strategic energy planning process forward
- Make recommendations to Tribal Council, and General Council

**What are the challenges you face in your community to establishing a tribal energy champion or team?**

# Establish organizational and human resource needs

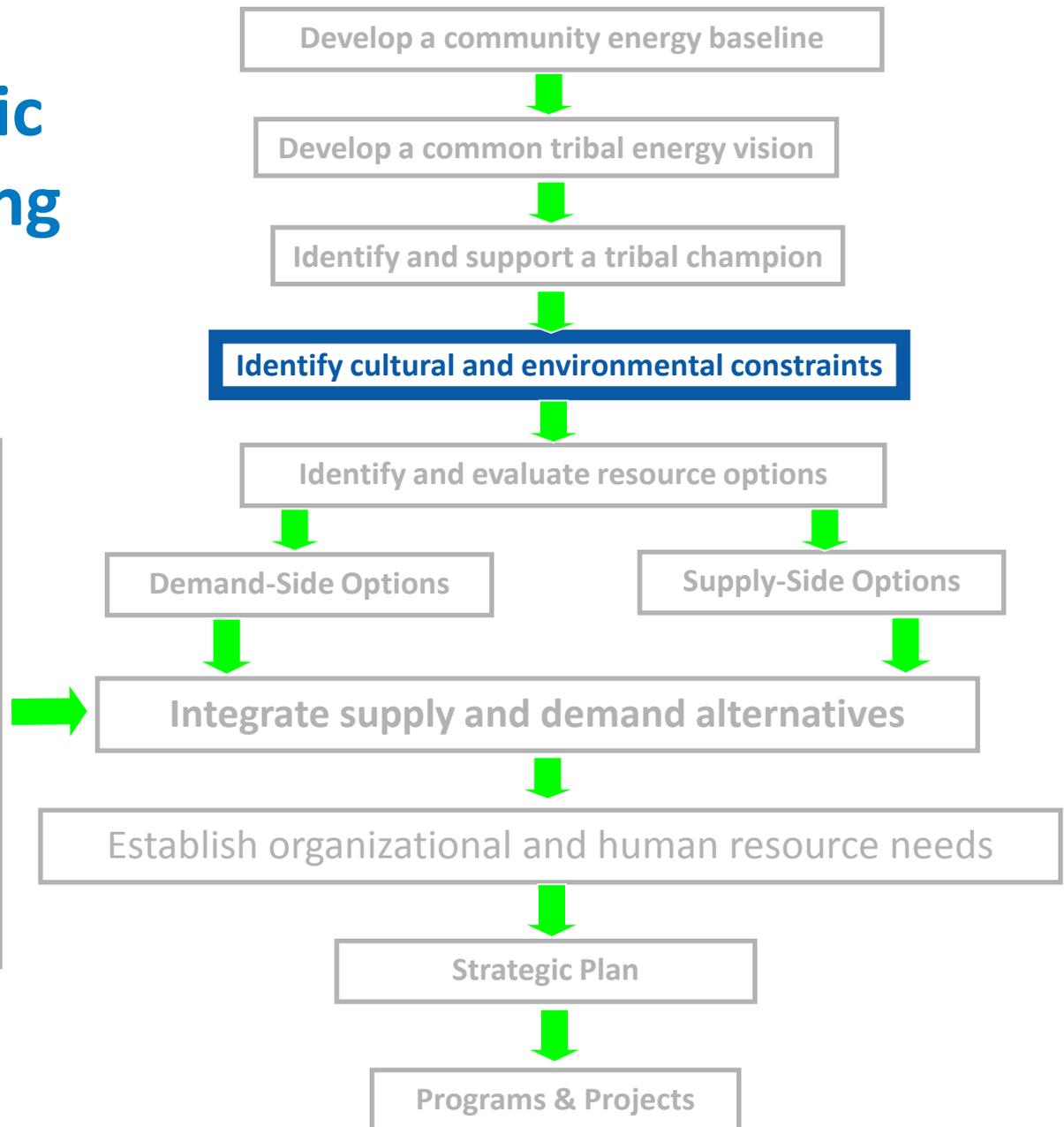
## *The Tribal Energy Development Challenge* How Do You Want to Make It Happen?

### Tribal Council



# Tribal Strategic Energy Planning

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# Integrate Cultural and Environmental Constraints

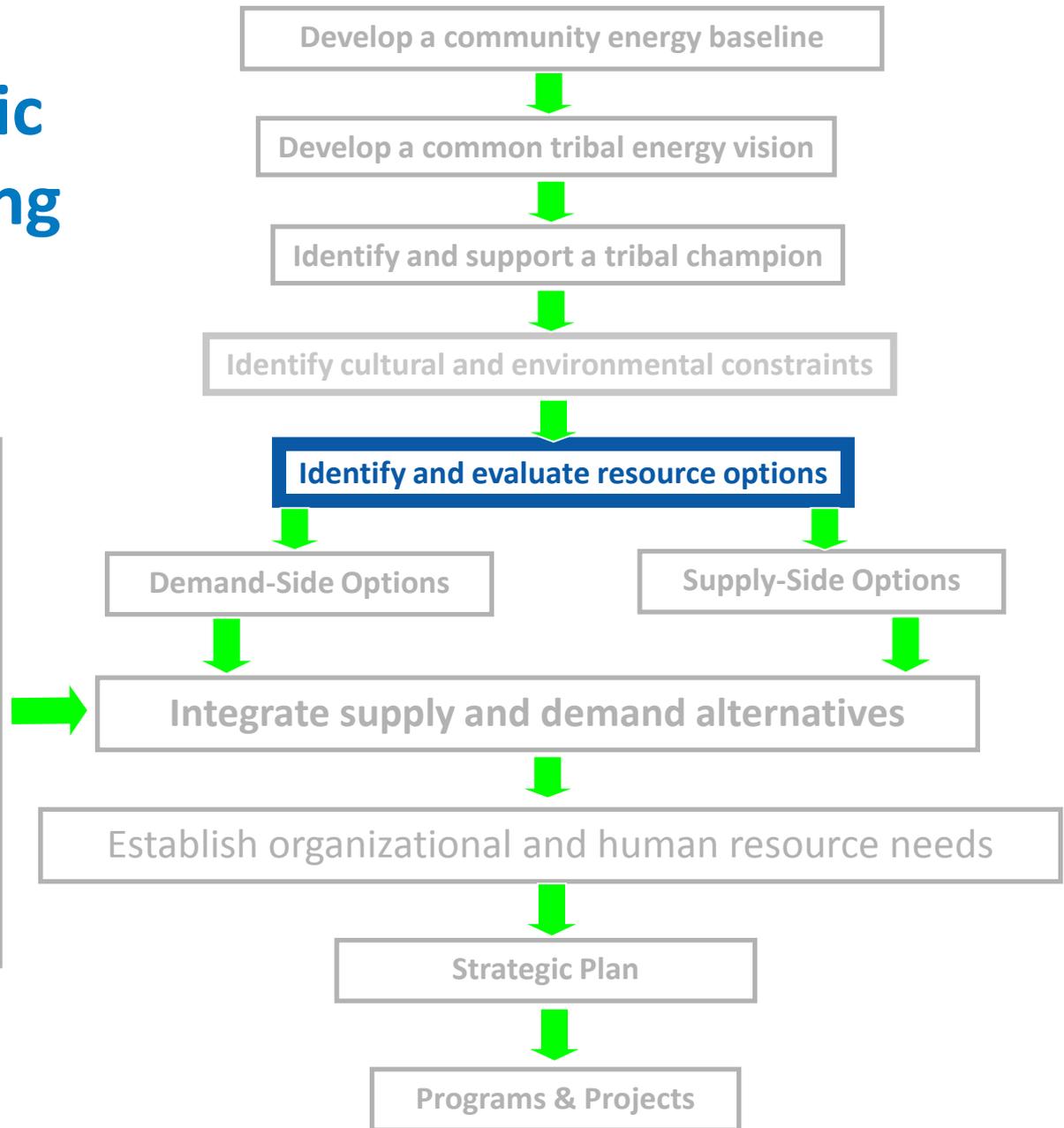


- Natural Resource Valuation
  - Water and air
  - Wildlife habitat
  - Forests, rangelands, wetlands, other
- Technology Effects
  - Emissions, aesthetics, noise
- Economic Development Trade-offs
- Cultural Impacts – (Sacred sites, plants, burial grounds)
- Tribal Impact – Community & Government
- Other Considerations

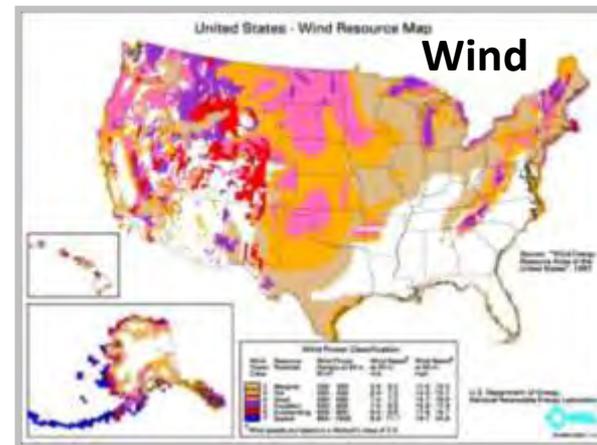
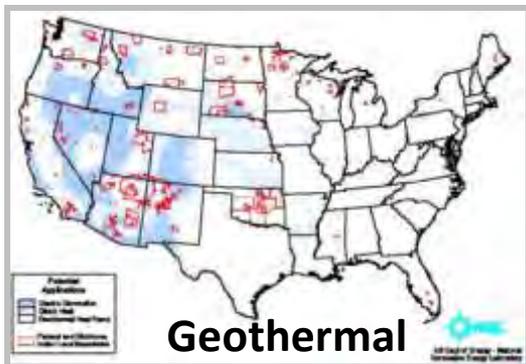
# Tribal Strategic Energy Planning

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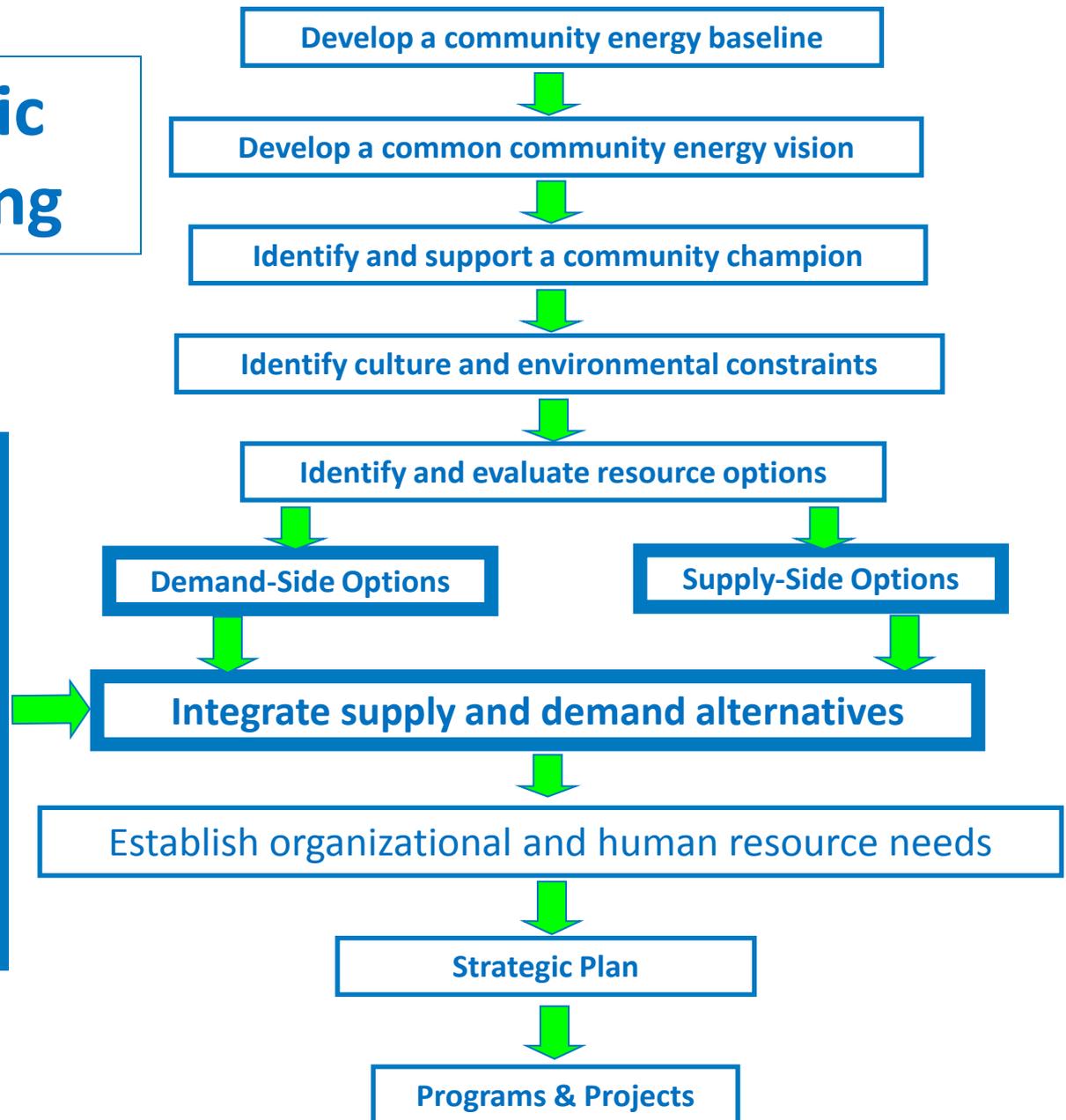
# Renewable Resource Options



# Tribal Strategic Energy Planning

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## Establish Implementation Program & Projects

### Characteristics of a Solution

- Rapid
- Technically & Institutionally Sustainable
  - Maximizes 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

# Where Are You Now?

What are the projects that you can identify?

What organizational strategies should be pursued?

What barriers do you foresee?

Can you build from the EECBG platform?

# The Strategic Energy Plan for Your Tribe



## Tribal Strategic Energy Planning



## The Tribal Energy Development Challenge

