DOE OFFICE OF INDIAN ENERGY

Foundational Courses

Energy Basics

STRATEGIC ENERGY PLANNING

Presented by the National Renewable Energy Laboratory

U.S. DEPARTMENT OF ENERGY | Office of Indian Energy

Course Outline

What we will cover…

- About the DOE Office of Indian Energy Education Initiative
- Course Introduction
  - What is Strategic Energy Planning
  - Developing a Strategic Energy Plan
- Key Aspects of Successful Planning
- Additional Information & Resources

Introduction

The U.S. Department of Energy (DOE) Office of Indian Energy Policy & Programs is responsible for assisting Tribes with energy planning and development, infrastructure, energy costs, and electrification of Indian lands and homes.

As part of this commitment, and on behalf of DOE, the Office of Indian Energy is leading *education* and *capacity building* efforts in Indian Country.

Training Program Objective & Approach

Foundational courses were created to give tribal leaders and professionals background information in renewable energy development that:

- *Present foundational information on strategic energy planning, grid basics, and renewable energy technologies*
- *Break down the components of the project development process on the commercial and community scale*
- *Explain how the various financing structures can be practical for projects on tribal lands*

Presenters on Strategic Energy Planning

Lesley Kabotie, Kabotie Consulting

ljkabotie@gmail.com

As a member of the Crow Tribe of Indians in Montana, Lesley Kabotie received her undergraduate degree from Stanford and a Master's in non-profit management from Regis University. She brings 20 years experience working with Tribes and has her own consulting firm: Kabotie Consulting. Ms. Kabotie consults with Tribes in the areas of education, healthcare, technology, energy, environment, and community development. Kabotie Consulting is a Native, woman-owned business.

Presenters on Strategic Energy Planning

Alexander Dane, NREL

alexander.dane@nrel.gov

Alexander Dane is a project leader at the Colorado-based National Renewable Energy Laboratory (NREL) where he specializes in strategic energy planning and sustainable community development solutions for local governments. With graduate degrees in urban planning and public administration from the University of Colorado, Mr. Dane brings a broad perspective to energy design with community and environmental sensitivities. Currently, he works with a number of tribal governments in the American West and Alaska, implementing renewable projects and engaging in long-range planning efforts.

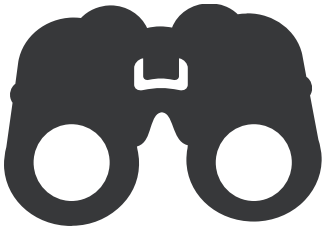
Course Outline

What we will cover…

- About the DOE Office of Indian Energy Education Initiative
- Course Introduction
  - What is Strategic Energy Planning
  - Developing a Strategic Energy Plan
- Key Aspects of Successful Planning
- Additional Information & Resources

What is Strategic Energy Planning?

And what does it do for you?

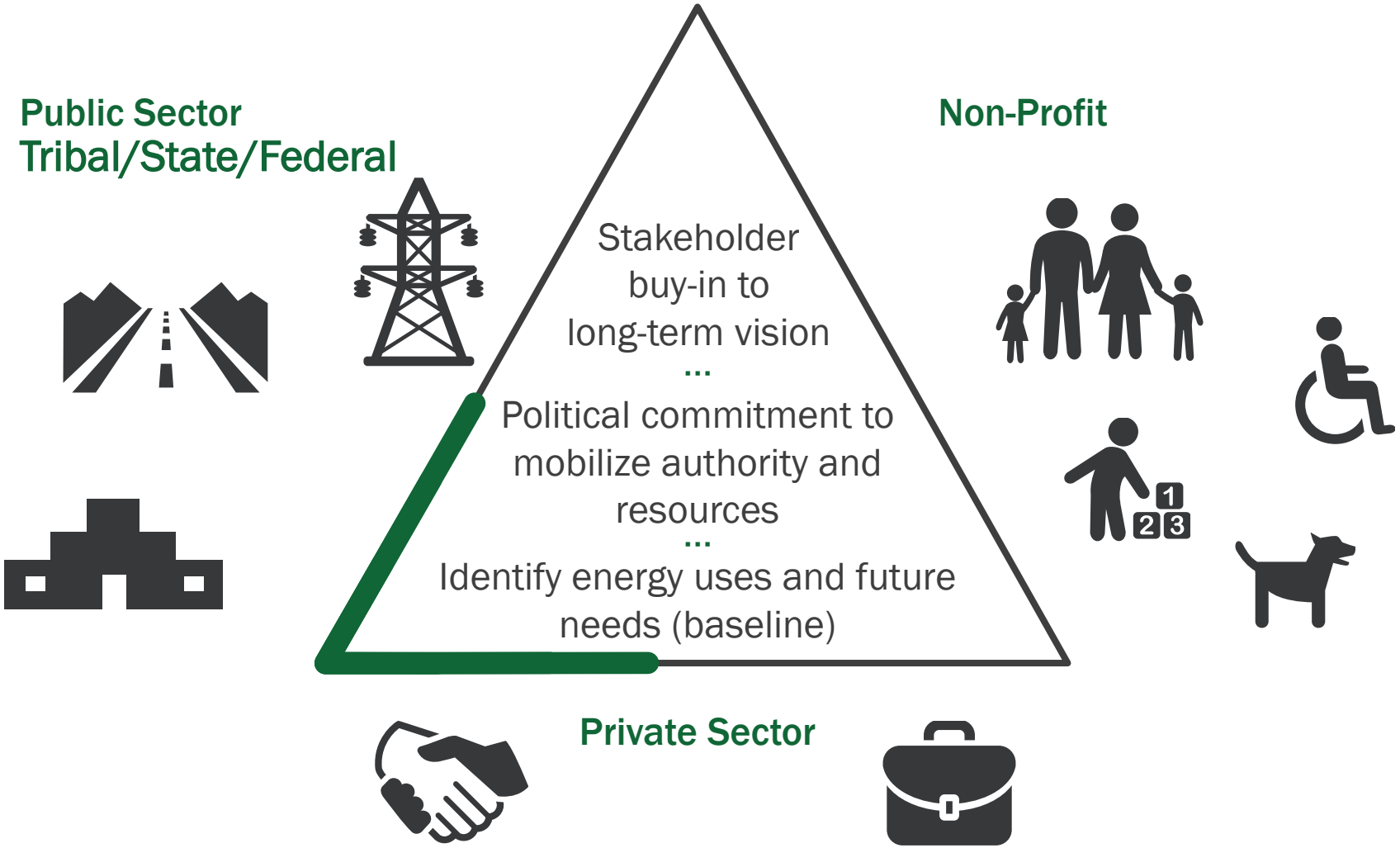


vs.

- Brings desired energy future into clear focus
- Considers current reality and leverages local resources
- Considers hurdles/challenges before you reach them
- Maps out efficient path to achieve your desired energy future
- Clarifies progress indicators
- Documents the game plan for short- and long-term success

What Makes Energy Planning "Strategic"?

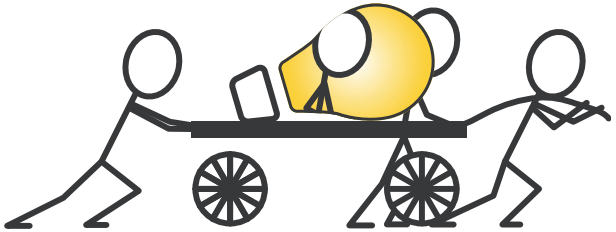
Inclusive Energy Planning Process



Graphic concepts reprinted with permission from Lesley Kabotie, Kabotie Consulting.

Strategic Energy Planning: Leadership Team

vs.



Not just people with the "right" idea, but those committed to the long-term task with personal and political influence

✔ Include

- Individuals with authority to direct resources
- Individuals with a passion for the "destination"
- Individuals with influence in the community and administrative abilities to keep the project alive
- Individuals with the technical ability
- Individuals who can "tell the story"

✖ Avoid

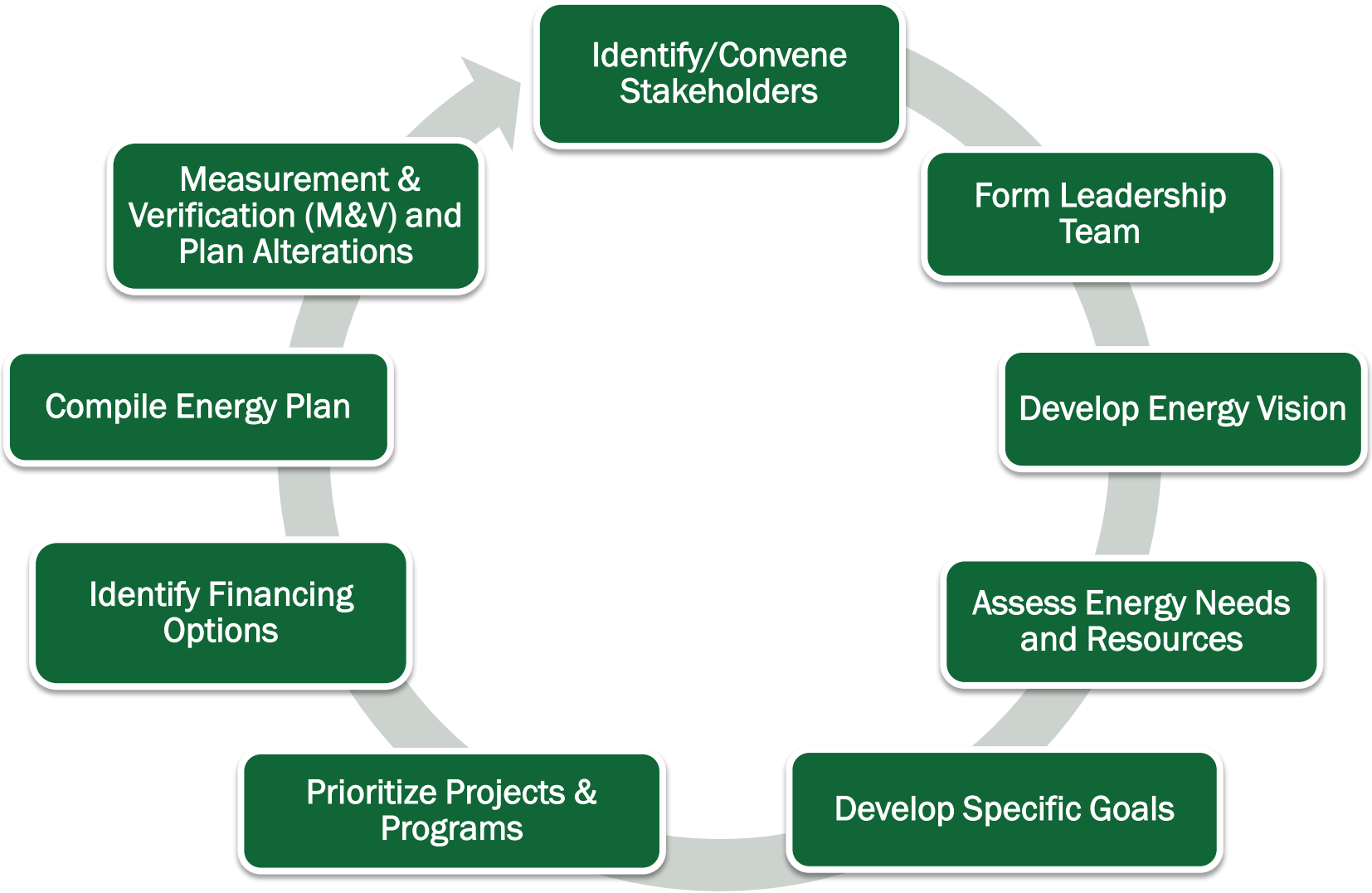
- Exclusively political appointees
- Exclusively technical staff
- Exclusively implementers

Course Outline

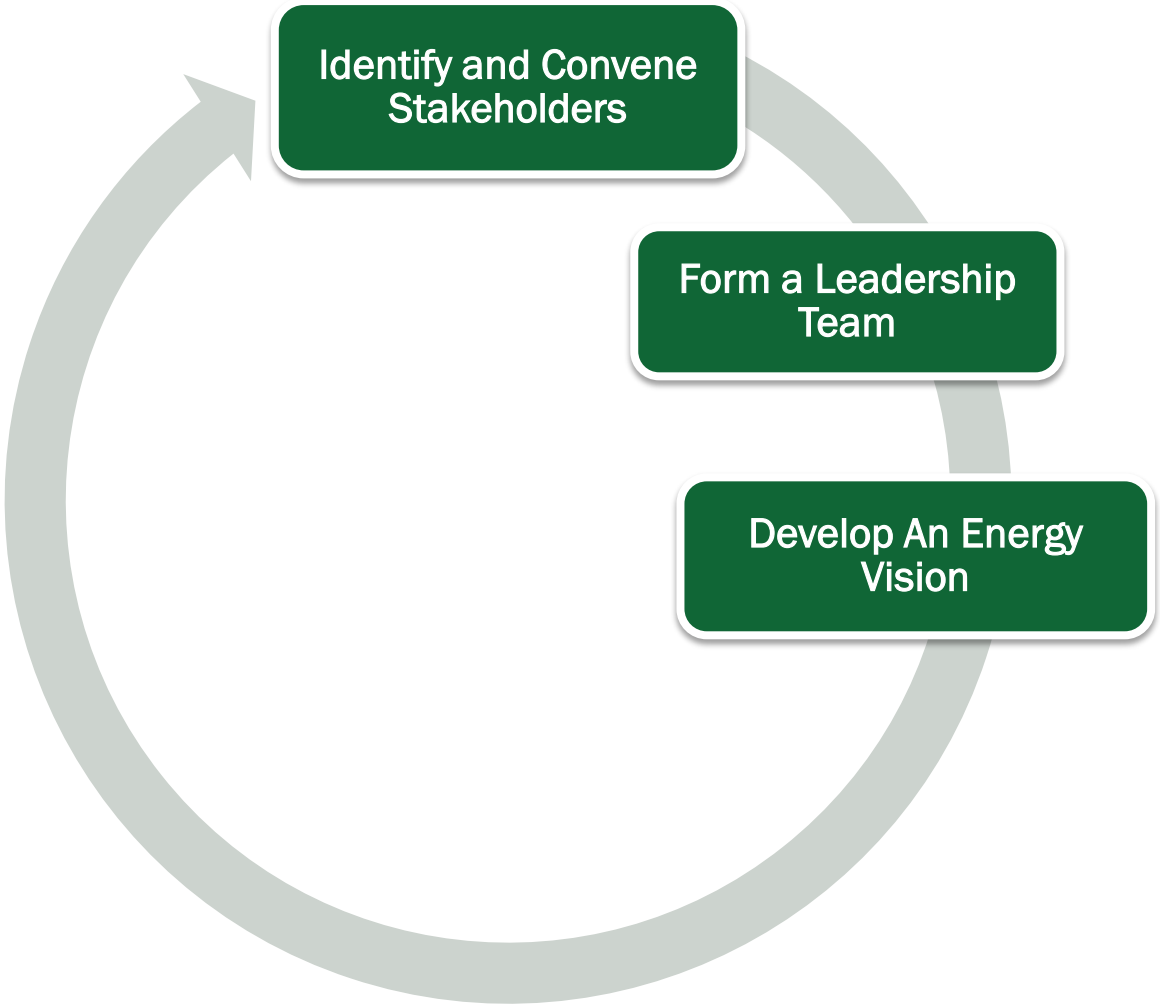
What we will cover…

- About the DOE Office of Indian Energy Education Initiative
- Course Introduction
  - What is Strategic Energy Planning
  - Developing a Strategic Energy Plan
- Key Aspects of Successful Planning
- Additional Information & Resources

Steps in Strategic Energy Planning



Strategic Energy Planning: First Steps



First Steps: Identify and Convene Stakeholders

- Tribal Members
- Tribal Council
- Tribal Government
- Tribal Utilities
- Tribal Enterprises
- Large Energy Users
- Local Utilities

Key success component: Identify and select an energy "champion" to shepherd the process

Photo by Dennis Schroder, NREL 21010

First Steps: Form a Leadership Team

Draw from the stakeholders:

- Tribal council member(s)
- Tribal government executives
- Tribal member representative(s)
- Tribal enterprise leader(s)

Photo by Dennis Schroder, NREL

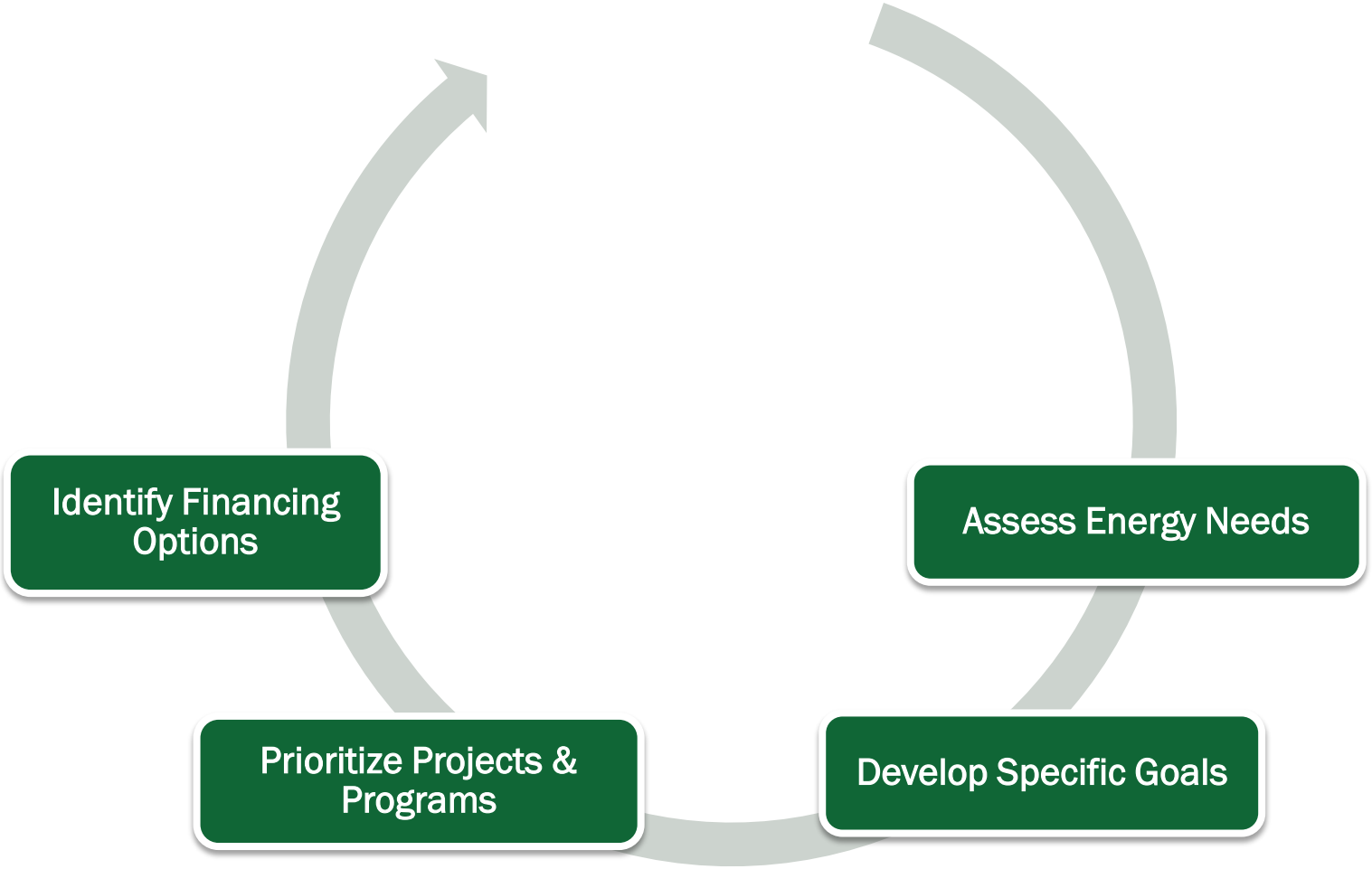
First Steps: Develop an Energy Vision

Common objectives, such as:

- Increase and ensure energy reliability
- Minimize environmental impacts
- Diversify energy supply
- Use local, renewable resources
- Strengthen, support economic development
- Build workforce/jobs
- Ensure energy affordability
- Generate revenue for Tribe
- Energy security/self-sufficiency
- Off-grid electrification
- Save money (offset energy costs)
- Keep money in Tribe
- Stabilize energy costs for Tribe and tribal members

Photo from iStock/14195508

Strategic Energy Planning: Priorities & Decisions



Priorities & Decisions: Assess Energy Needs

Document the community baseline:

- Determine energy use by "sector" including government, residential, school, commercial
- Use available tools:
  - Energy audits
  - EPA Portfolio Manager (non-residential buildings)
- Forecast future load
  - New housing
  - New government facilities
  - New/expanded enterprises
- Verify current service providers and rates for electricity, gas, propane, wood, and others

Photo by Alex Dane, NREL 22724

Priorities & Decisions: Develop Specific Goals

Examples:

- Reduce electricity use by ___% by 2022
- Obtain ___% of electricity from renewable sources within 10 years (similar to a renewable portfolio standard or RPS)
- Reduce energy costs by ___% within 5 years

Photo by Brooke Oleen, NCSL

Priorities & Decisions: Prioritize Projects & Programs

- Develop a ranking system to understand cost-effectiveness of different projects
- Best practice models:
  - Total Resource Cost
    - Model considers life-cycle benefits for projects
  - Levelized Cost of Energy
    - Allows comparison across different technologies
- Tribal energy policy/program examples:
  - Incentives to reduce energy use
  - Incentives to promote renewable energy
  - Sustainable/green building codes, standards, or other requirements or guidelines

Photo by Bob Gough, NREL 15954

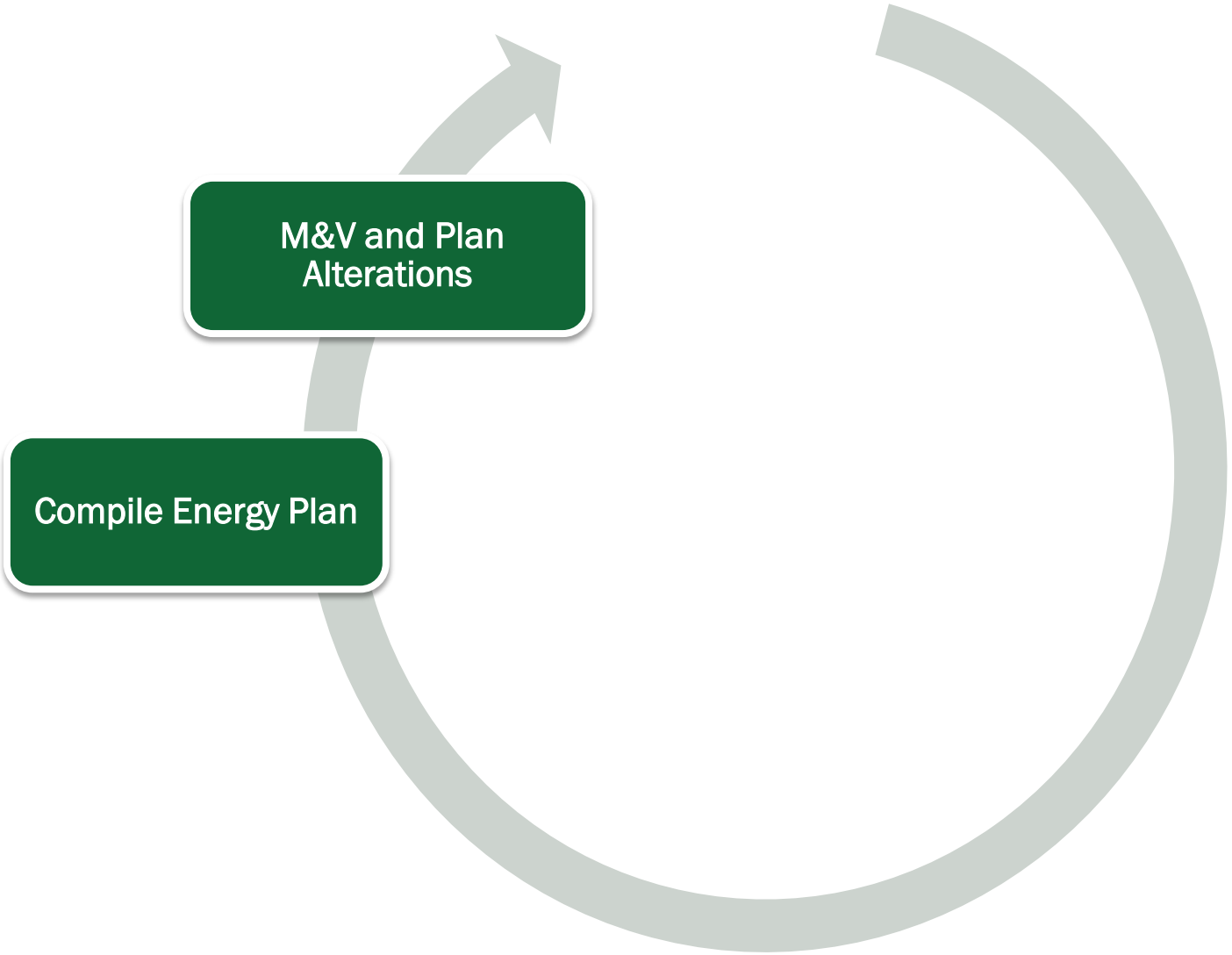
Priorities & Decisions: Identify Financing Options

Secure planning and project funding sources:

- Tribal funding
- DOE Technical Assistance (TA) Program
- Other federal agency TA and grant programs
- State programs
- Non-governmental organizations (NGOs)

Photo by Alex Dane, NREL

Strategic Energy Planning: Energy Plan



Energy Plan: Purpose & Functions

Purpose

- Document near-term goals
- Sustain momentum
- Achieve long-term goals

Functions

- Creates “road map” to hold accountability to the destination
- Provides the means to consistently share the story with others
- Creates resources to help guide and filter priorities, providers, and decisions

Energy Plan: Components

Include:

- Vision
- Objectives
- Goals
- Baseline
- Barriers
- Program/project options
  - Demand side
  - Generation
- Recommendations
- Adoption by Tribal Council

Photo by Bob Springer, NREL 21044

Energy Plan: M&V and Plan Alterations

- M&V
- Evaluate
- Fine tune

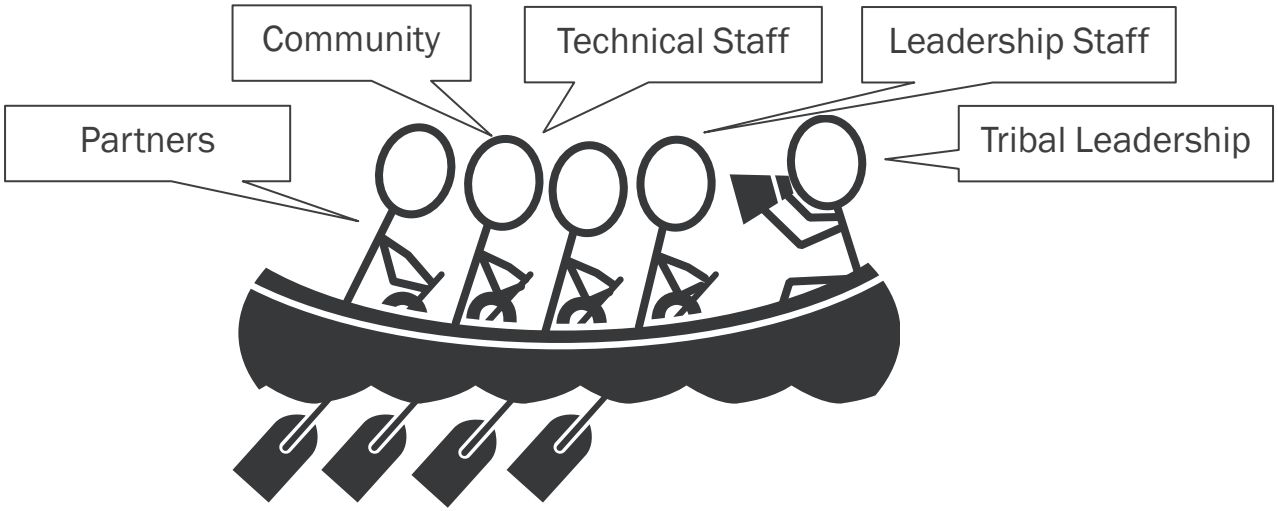
Photo by Brian Hirsch, NREL 20893

Course Outline

What we will cover…

- About the DOE Office of Indian Energy Education Initiative
- Course Introduction
  - What is Strategic Energy Planning
  - Developing a Strategic Energy Plan
- Key Aspects of Successful Planning
- Additional Information & Resources

Planning is Coordinated & Collective Action



Proper Planning and Strategic Energy Plan Development Helps:

- Direct action
- Sustain momentum
- Motivate involvement
- Reduce/minimize reactive decision-making
- Go the distance

Graphic concepts reprinted with permission from Lesley Kabotie, Kabotie Consulting.

Why does Strategic Energy Planning Fail?

- Short-sighted predictions of the situation, timeline
- Unrealistic predictions of resources
- Uncoordinated implementation
- Narrow ownership
- Failure to follow the plan
- Poor, or casual, communication

Graphic concepts reprinted with permission from Lesley Kabotie, Kabotie Consulting.

Course Outline

What we covered…

- About the DOE Office of Indian Energy Education Initiative
- Course Introduction
  - What is Strategic Energy Planning
  - Developing a Strategic Energy Plan
- Key Aspects of Successful Planning
- Additional Information & Resources

Useful Resources

Resource	• U.S. Department of Energy Office of Indian Energy Resource Library http://energy.gov/indianenergy/resources/energy-resource-library
Technology	• "Community Greening: How to Develop a Community Energy Plan," National Renewable Energy Laboratory http://www.nrel.gov/docs/fy10osti/45652.pdf
Policy	• "Guide to Tribal Energy Development," U.S. Department of Energy Office of Energy Efficiency and Renewable Energy Tribal Energy Program http://www1.eere.energy.gov/tribalenergy/guide/

Thank You & Contact Information

For Technical Assistance:
IndianEnergy@hq.doe.gov.

DOE Office of Indian Energy Website:
www.energy.gov/indianenergy

NREL Renewable Energy Technology Basics Website:
www.nrel.gov/learning/re_basics.html

Lesley Kabotie
ljkabotie@gmail.com

Alexander Dane
alexander.dane@nrel.gov

INFORMATION ON THE CURRICULUM PROGRAM & OFFERINGS

Curriculum Structure & Offerings

Foundational Courses

- Overview of foundational information on renewable energy technologies, strategic energy planning, and grid basics

Leadership & Professional Courses

- Covers the components of the project development process and existing project financing structures

Foundational Courses

Energy Basics

- Assessing Energy Needs and Resources
- Electricity Grid Basics
- Strategic Energy Planning

Renewable Energy Technology Options

- Biomass
- Direct Use
- Geothermal
- Hydroelectric
- Solar
- Wind

All courses are presented as 40-minute Webinars online at www.energy.gov/indianenergy