INTEGRATED RESOURCE PLANNING
PUBLIC ADVISORY GROUP MEETING

RENEWABLES/CONVENTIONAL POWER PLANT SITING

ENVIRONMENTAL CONSIDERATIONS

August 24, 2011

RENEWABLES/CONVENTIONAL POWER PLANT SITING ENVIRONMENTAL CONSIDERATIONS

- In general, the environmental considerations for siting renewables , electric generation facilities, and transmission-distribution lines are identical. However, the degree of environmental regulatory input will vary depending on the type of energy project.

- The highest regulatory scrutiny is associated with power plants, and to a lesser degree, renewables.

The Environmental Assessment Standard

- The gold standard for environmental assessment associated with renewable / power plant siting are the NEPA standards.

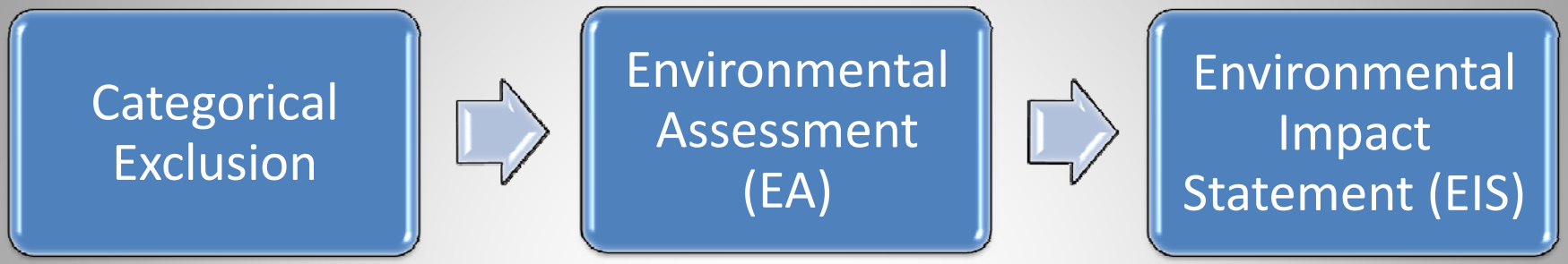
- NEPA standards apply to predominantly federal / tribal lands. However, this is the highest level of environmental assessment, and those same processes could be utilized in assessing sitings located on private land.

The NEPA Process

- **NEPA** is the National Environmental Policy Act.
  - NEPA is intended to help public officials make informed decisions based on an understanding of environmental consequences and take action to protect and restore the environment.

- ***What "triggers" NEPA?***
  - NEPA is "triggered" when a major federal action significantly affecting the quality of the human environment is proposed.

Three Levels of NEPA Evaluation



Determination that the proposed action will not individually or cumulatively result in a significant effect on the environment and will not require further study (i.e., EA or EIS).

Determine if proposed action could have significant impacts. If so, then an EIS-level evaluation will be needed.

Proposed action will have significant environmental impacts. The EIS will evaluate and identify the environmentally preferable alternative and discuss the implementation process.

An Environmental Assessment Should include

- The need for the proposed project
- Alternative courses of action for projects which may involve alternate resources
- The environmental impacts of the project and suggested alternatives to reduce impact
- A listing of agencies and persons consulted

The NEPA Process (continued)

- NEPA
  - Promotes diligent agency decision-making by ensuring that crucial information is available to officials and general public before the agency decides to develop and take on a major federal action.
  - Intended for major federal actions that may significantly affect the quality of human environment requiring an Environmental Impact Statement (EIS) to be prepared.
  - EIS is a detailed analysis of the effects of a proposed action and the range of reasonable alternatives, including a No Action Alternative.

The NEPA Process (continued)

The NEPA process includes:

- Public scoping to solicit comments from interested parties.
- Consultation and involvement with appropriate federal, state, local, and Tribal governmental agencies.
- Public review and hearings on the draft EIS
- Publication of a final EIS and Record of Decision

Considerations for Renewables Site Selection

- Site selection criteria need to be developed that reflect the specific purpose and need of the project as well as the local setting. Among the constraints of siting a solar electric generating facility is the need to be in close proximity to suitable electrical transmission lines.

- Another constraint in siting, especially in the construction phase, is the need for suitable surface transportation infrastructure (roads/highways) while minimizing the need for access road construction.

- Therefore, proximity of the site to transmission and transportation infrastructure is important, as well as the avoidance of negative social, environmental, and regulatory impacts. **Environmental Assessment is needed.**

Considerations for Renewables Site Selection

- **ADJACENT LAND USE:** To minimize social impacts and be consistent with land use policies, surrounding industrial use or commercial land is preferred. **Site Selection** should also favor a site that minimizes impacts to parks, public recreational areas, natural areas, historic properties, and important cultural resources

- **IMPACTS ON FLOODPLAINS:** Construction on floodplains needs to be avoided to prevent negative environmental impacts, as well as to avoid damage to the facility

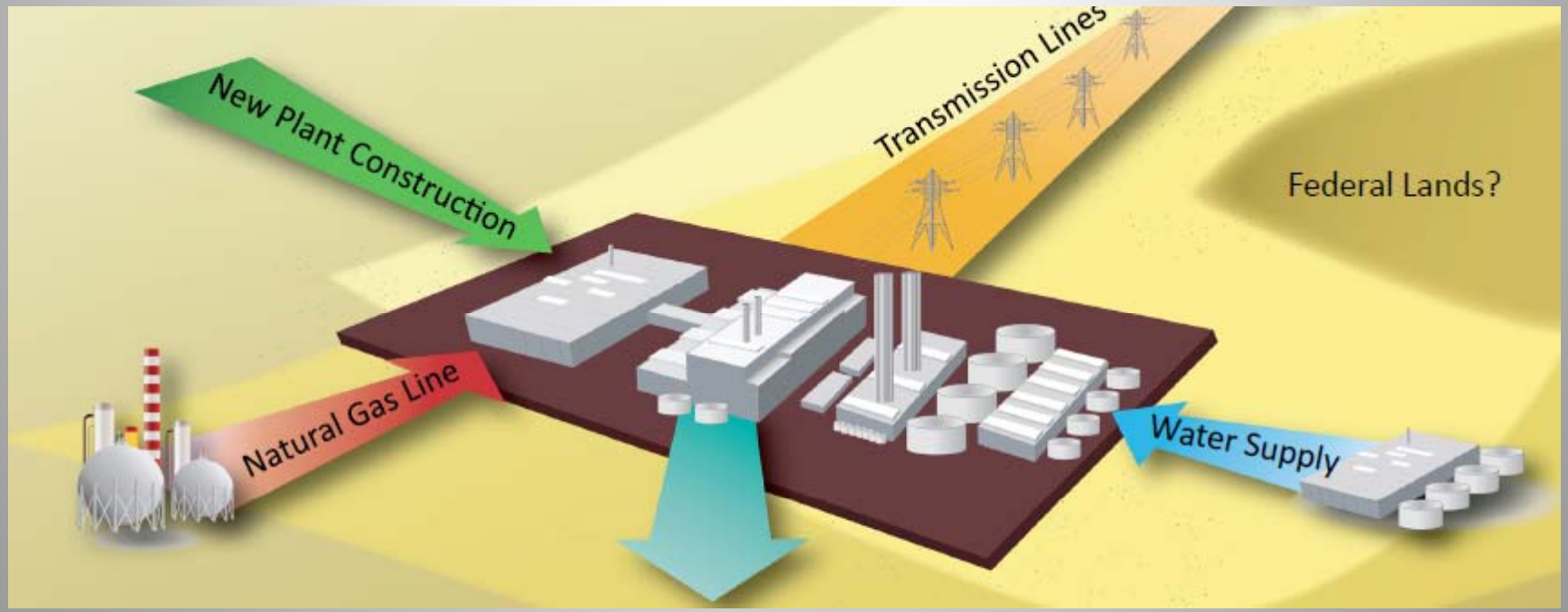
- **IMPACTS ON WATERS OF THE UNITED STATES:** Construction in Water of the United States (including ponds, streams and wetlands) needs to be avoided/minimized to avoid impacts to these resources and preclude potential delays to the project associated with the need to obtain permits under the Clean Water Act

Preferred Site Selection Characteristics

- Transmission line adjacent or near to project site
- Near a major highway
- Property available as private land not state or federal land, and private land preferably acquired from one landowner
- Located on relatively level topography
- Few nearby residences or schools, and no nearby parks, recreational areas or important natural or cultural resources
- Not located on a floodplain
- Not impacting waters of the United States

Major Regulatory Permitting Acts

- Clean Water Act
- Clean Air Act
- Migratory Bird Treaty Act
- NEPA
- Lead State Permitting Agencies



Endangered Species Act

- If there is a potential for federally listed species to be impacted by renewable projects, the following assessments need to be conducted:
  - Biological Assessments and Evaluations
  - Mitigation Plans
  - Endangered Species Surveys
  - Habitat Conservation Plans
  - Mitigation Monitoring

Mitigation Measures

- Avoidance : Avoid impacts altogether by not performing certain activities or restricting where they will occur

- Protection and maintenance: Include in the project scope, engineered systems (i.e.. Erosion control devices, air pollution scrubbers, oil/water separators) or management actions that preclude the emission of pollutants to all mediums (air, water, soil)

Clean Water Act

- If the project impacts wetlands or the waters of the U.S., (eg. Rio Grande) there may be a need to conduct the following:
  - Wetland Delineations
  - Wetland Mitigation Plans
  - National Pollutant Discharge Elimination System (NPDES) Permits
  - Stormwater Pollution Prevention Plans (SWPPPs)
  - Water Quality Inventory and Monitoring
  - Groundwater impact studies

Example Renewable Solar Projects

- El Paso Electric has added solar power to its Newman and Rio Grande power plants.
- The photovoltaic systems are expected to generate 260,000 kWh per year.
- Proposed Newman 7 MW Solar Power Project
- Minimal environmental studies are required if project is located on private land.

Migratory Bird Treaty Act (MBTA)– Most applicable to wind farms

- **The Migratory Bird Treaty Act**
  - Impacts can include human-induced alterations to a previously used nest site
  - Violations can result in fines
- **The project's Level of Risk may require the following:**
  - Avian Surveys
  - USFWS and State agency Coordination on ESA, MBTA and Bald and Golden Eagle Protection Act (BGEPA)
- Preparation of Avian Protection Plans
  - **Category 1** – High risk to migratory birds (primarily raptors) may require project relocation or redesign
  - **Category 2** – High to moderate risk to raptors
  - **Category 3** – Minimal risk to raptors
  - **Category 4** – Uncertain risk to raptors
- **Consult with USFWS**

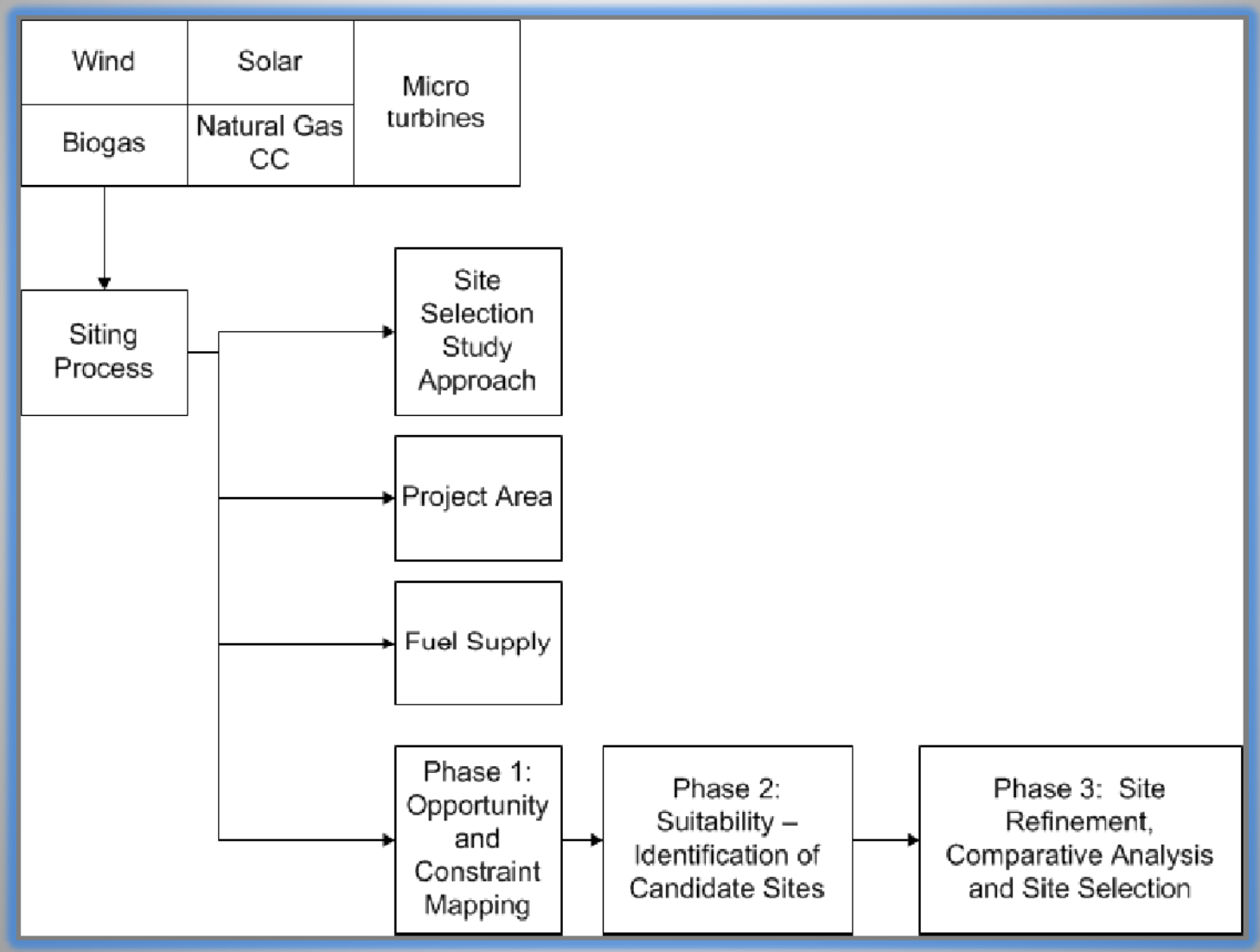
National Historic Preservation Act

- **May be enacted by these triggers:**
  - Federal funding
  - Federal permit required
  - Federal property will be used by the proposed project
- **Project may require the following:**
  - Cultural Resource Overviews
  - Cultural Resource Inventories
  - Archaeological Testing and Data Recovery
  - Historic Building Documentation
  - Traditional Cultural Property Studies
  - Tribal Consultation
  - Construction Training and Monitoring
- **Agencies involved –Federal, State agencies – State historic preservation officer/native American graves protection and repatriation act**

PUBLIC SCOPING PERIOD

New Generation Power Plant Siting Study
Public Scoping Meetings
Invite agencies to participate as cooperating agencies in preparing EIS
Inform the public of preliminary identification and evaluation of significant issues
Develop environmental analysis process to address scoping issues
Legal and public notices required
30-Day Public Comment Period
Land use assessment
Determine agency and contact
Review regulatory requirements for land use
Perform impact analysis for land use
Assess geological impact
Assess wildlife and wildlife fire ecology impact
Assess cultural resources
Assess traffic
Assess noise
Assess visual impact
Air Resource Impacts
Ecological Resources Impacts
Water Resources Impacts
Solid Waste Impacts

GENERAL SITE SELECTION CRITERIA



EXAMPLE PROJECTS

QUESTIONS?