The Energy Project Development Pathway

1 **First thing's first:**
Determine what the Project will **be.**

PROJECT DEFINITION
Project Size
Technology Type
Land Use (Required Area)

2 **Then pick the site.**

SITE SELECTION
Technical Viability
Land Acquisition
Transmission Access
Permitting/Process
Policy Stability
Local Jurisdictional Issues
Environmental Assets/Restrictions

3 **Meanwhile...**
Identify if any incentives apply to the project and site location.

PROJECT DEVELOPMENT INCENTIVES
Federal Incentives
State/Local Incentives
Utility Incentives
Expedited Permitting

4 **Once a site is selected, the Team can move forward with the next steps...**

PROJECT PERMITTING
Federal Requirements
State/Local/Tribal Requirements
Expedited Permitting Options

TRANSMISSION
Site Proximity to Transmission
Interconnection and Service Agreements
Upgrades

POWER PURCHASE AGREEMENTS (PPA'S) AND/OR ELECTRICITY MARKET ACCESS
Pricing Structure
Obligations Timeline
Term
Merchant Facility (Identify Market Hub(s))

5 **The following steps can occur at any time, but preferably *after* the site has been**

CONTRACTOR SELECTION / PROCUREMENT
Project Delivery System
Project Team Selection
Client/Owner References
Team Resources

SUPPLY CHAIN MANAGEMENT (VENDOR, MATERIAL & EQUIPMENT PROCUREMENT)
Quotes
Selection of Suppliers
Warranties and Guarantees

6 **Risk Management may begin earlier in the project, but must be in place *prior to* securing financing.**

RISK MANAGEMENT AND INSURANCE
Risk Workshop
Identify Risks and Opportunities
Risk Register
Risk Management Plan

7

PROJECT FINANCING
Identify Capital Source
Funding Availability
Financial Modeling

ARIZONA ENERGY CONSORTIUM
POWERING ARIZONA'S FUTURE

Phoenix Office
2800 N. Central Avenue, Suite 1920
Phoenix, Arizona 85004
O: 602.343.8324
F: 602.343.8330

Tucson Office
9040 South Rita Road, Suite 1150
Tucson, Arizona 85747
O: 520.382.3281

www.AZEnergy.org

Energy Development is Economic Development

Project Development Pathway

ARIZONA ENERGY CONSORTIUM
POWERING ARIZONA'S FUTURE

Energy Development is Economic Development

To bring 21st century employers to Arizona there must be a stable, consistent energy development policy in place as the foundation for project development. Arizona's energy policy should address the key elements developers consider when selecting locations for major capital investments.

The Project Development Pathway created by the Arizona Energy Consortium (AEC) provides a brief outline for stakeholders to gain a better understanding of the major components and considerations required to successfully deliver an energy-related project. The primary goal of this effort is to encourage economic development and job growth through energy related projects in Arizona. The components outlined herein are integrated and interdependent and in should not be viewed in isolation as they directly affect the ability of a developer to bring a project to fruition. In short, delays in one area will directly impact the ability to develop a project in a timely fashion. In order to attract and encourage energy related projects the stakeholders must have confidence in the stability of the regulatory and public policy environment.

Primary Project Development Pathway Factors

Project Definition: This document is focused primarily on commercial and utility scale projects, defined generally as one megawatt or larger.

Project Siting / Site Selection:

Important elements for consideration in the feasibility stage of project development include size, design, complexity, energy resources, interconnection points/transmission, environmental and cultural issues, water resources, ease of site acquisition, and consistency in policy and permitting requirements.

Policy Implications Large energy projects require significant parcels of land. Policies that streamline and simplify the process for securing the necessary parcels are critical to project success.

Permitting

The ability to permit a project is critical to its development. Significant delays due to permitting directly influence the ability to acquire necessary project financing. Examples of typical permit approvals are:

1. Federal and state environmental impact analysis and permits
2. Water use, to the extent applicable
3. Governmental utility and building code approvals
4. Cultural and historic land issues
5. Utility interconnection studies, approvals and agreements

Policy Implications Stability and consistency of the permitting processes across the state allows project developers to plan appropriately for the cost and time needed to navigate all necessary steps.

Power Sales Agreement

One option for selling power is through an offtaker agreement or power purchase agreement (PPA) between the project owner (the party providing power for sale) and the offtaker (the party that buys the power). Although each PPA is different in its specific terms, PPAs are typically 20 years or longer and create an obligation on the part of the offtaker to purchase power from the project.

Alternatively, many developers look to operate their plant as a merchant facility. In order to sell power into the power spot market they must cost effectively interconnect and deliver power to multiple markets to be viable.

Policy Implications Decisions on how to best sell power are directly affected by the regulatory climate. As the agreements are long term instruments the stability of future regulatory conditions is critical to making intelligent decisions when structuring these agreements.

Contractor Selection

The contractual relationships with the general contractor are paramount for project success. The appropriate delivery method is selected to best manage risk, control cost and schedule. Dependent upon the needs of the developer, the procurement and contract forms for the project can range from traditional design-bid-build (DBB), to construction management at risk (CMAR), to engineer-procure-construct-manage (EPCM).

Policy Implications The method of project delivery must be chosen based on factors specific to each project. Maintaining the flexibility to make these decisions wisely, without excessive regulatory interference, is key to a projects ultimate constructability.

Suppliers & Supply Chain Management

Every component between the point of production and the point of interconnection must be intact before power sales can occur. Lengthy lead times for essential and mission critical components/equipment will have a key impact upon project timelines and project costs.

Policy Implications A stable regulatory environment for general business, including transportation infrastructure support and development, will encourage developers to choose Arizona.

Risk Management

A project can appear strong on paper but if the risk factors are not addressed, investors will balk. The nature of power plant investment has historically required definitive timelines for development and delivery of the project. Methods used for managing risk include:

- Insurance
- Component and materials Warranties
- Performance Guarantees
- Fixed Cost contracts
- Risk Management Plans
- Strong Project Execution Team
- Completion of Fatal Flaw Analysis
- Change Management Plan

Policy Implications The insurance and commercial surety industries are some of America's most regulated. Stability in these regulations on both the state and national level are vitally important to secure needed risk management instruments to encourage investment.

Financing

Finance is contingent on managing or mitigating as much risk as possible; this includes securing all relevant permits, site control, power purchase agreements (PPAs) (if required), tax incentives, insurance policies, contractor and supply chain agreements, and transmission access. Capital sources vary considerably in risk tolerance which is routinely reflected in the cost of capital.

Policy Implications Risk tolerance is increasingly addressed by regulators involved with all aspects of the financial markets. While this is an extremely important consideration for the nation's economy the long term nature of energy projects require that risks associated with these projects must be evaluated on a global scale taking into consideration all aspects listed here.

Incentives and Consistent Policy

For many energy technologies, financial or government incentives can make the difference between a project that yields sufficient returns and one that does not. Examples of potential incentives include:

1. Federal Incentives: Eligibility for investment tax credit (ITC) programs, accelerated depreciation or modified accelerated cost recovery system (MACRS), New Market Tax Credits.
2. State Incentives: State ITC, sales tax incentives, property tax incentives and utility program incentives.
3. Accelerated permitting at the local, state or federal levels.

Policy Implications As large scale projects take years to develop, short term implementation and then withdrawal of incentives and processes adds uncertainty for project developers. Large scale projects require a long term view and stability for to incentives and processes.

Conclusion

All energy projects rely on policy certainty. With long lead times, many projects span multiple government administrations so it is imperative there is consistency across policy to ensure a project can be delivered.

Without policy consistency and certainty, developers are likely to seek alternate regions for projects. A stable energy policy equals a stable economic development policy.

ARIZONA ENERGY CONSORTIUM
POWERING ARIZONA'S FUTURE

Interested in learning more about developing Energy (and other) projects in Arizona?

Want us to give a presentation to you and your colleagues?

Want to get involved?

Contact us at info@AzEnergy.org