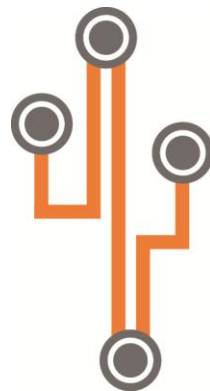


Arizona Energy Roadmap

**A Strategic Plan for the Growth of
Arizona's Energy Industry**

Christopher Davey
EnviroMission



**ARIZONA
ENERGY
CONSORTIUM**

POWERING ARIZONA'S FUTURE
A Committee of the Arizona Technology Council

Arizona Energy Consortium Mission

- Collaborate within the industry on the growth and retention of energy companies in AZ
- Promote economic development initiatives that support the energy industry and continued technological development
- Be a credible, member-driven voice for Arizona's energy industry
- Provide meaningful input into the long-term strategic planning for industry growth statewide

Arizona's Energy Industry Vision

Strong commitment to the long-term implementation of consistent energy policies = achieve the following vision over the next ten years:

Arizona is the primary energy hub of the Southwest, with a diverse energy mix supporting reliable transmission and low cost energy, a strong base of manufacturing facilities, increased numbers of higher wage jobs, and world-class research institutions, resulting in increased economic development for the state and region.

Arizona's Energy Economy

Arizona's energy industry has experienced many successes including:

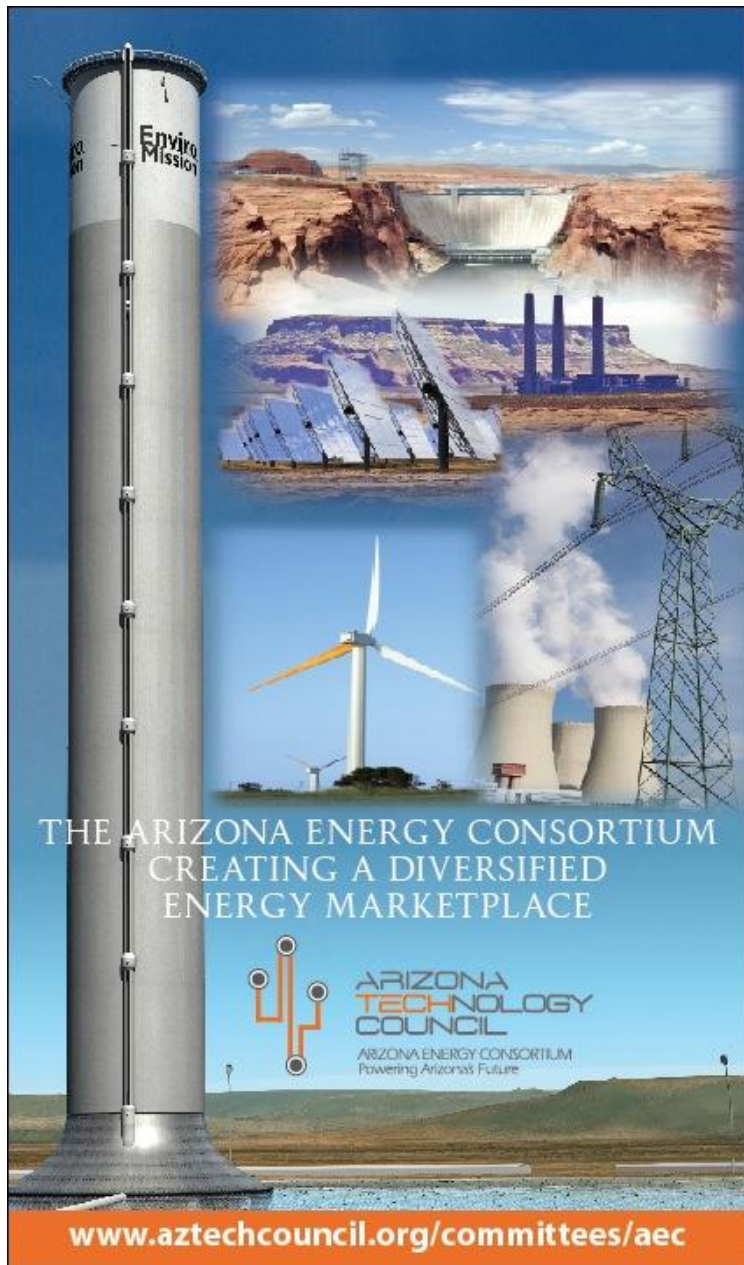
- Affordable, reliable power
- The nation's largest nuclear facility
- The first renewable portfolio standard in the country
- Distributed solar generation
- Energy efficiency standards
- Tax incentives for manufacturing

Need for an Energy Roadmap?

- An all encompassing energy plan = development of strong AZ position in region's energy future
- Maintain diversity, reliability, affordability and increased production of renewable generation



The Arizona Energy Roadmap is a dynamic plan developed by industry stakeholders to promote **clarity** and **certainty** for development of the industry via a diverse energy portfolio approach.

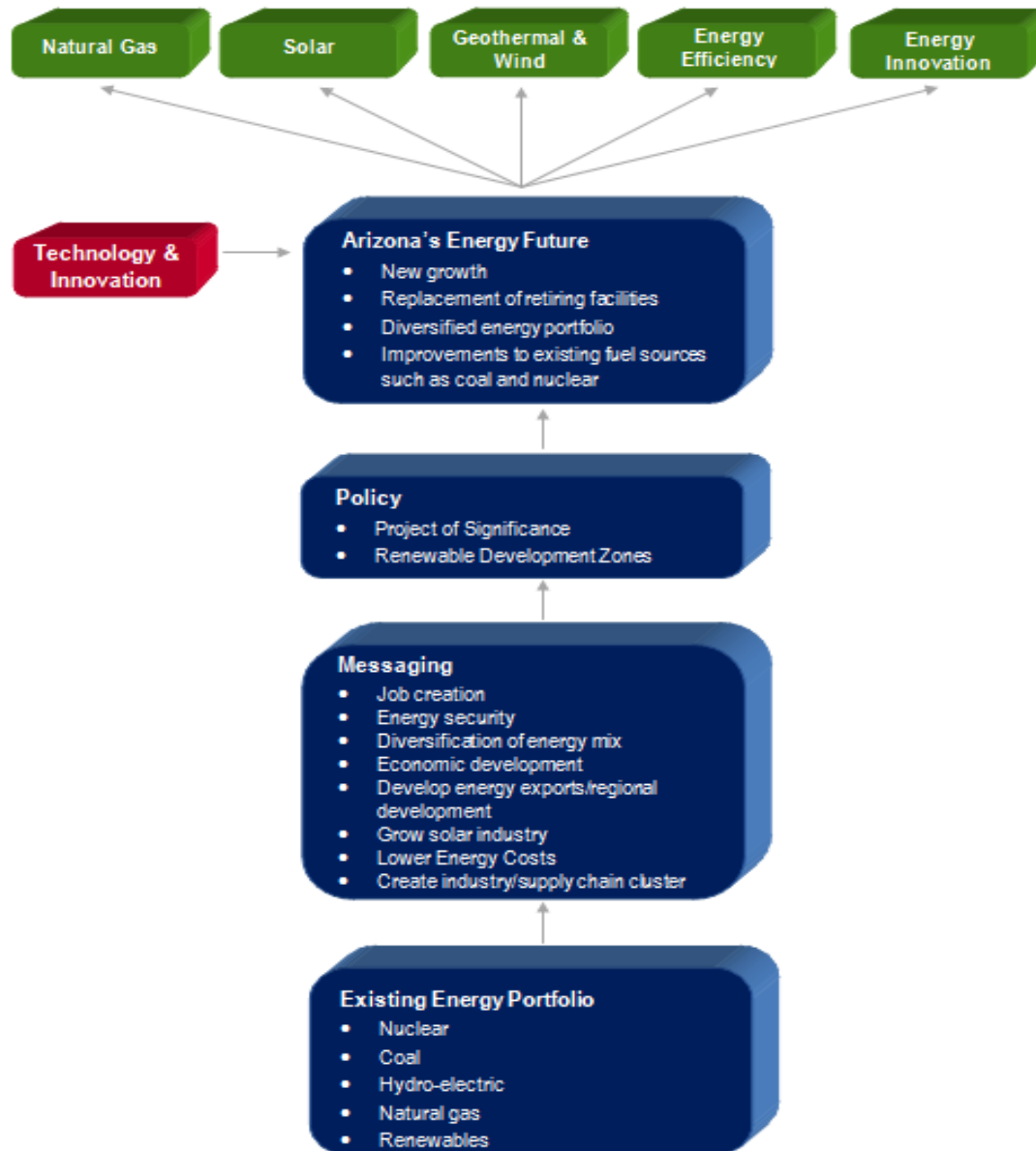


Arizona's Energy Industry Mission

- Enhanced job creation and higher-waged jobs within Arizona
- Enhanced energy export potential
- An increase in state economic revenue
- Heightened energy self-sufficiency and national security
- Increased system reliability



Overview of Strategic Goals



The Strategy

Create more stable environment for energy development through:

- better permitting mechanisms
- more attractive finance structures
- improved policy
- increased cross border potential
- consistent energy policy

Consistency and certainty in policy



**Development and sustainability
of industry**



How is the Arizona Energy Roadmap being implemented?

- Work with other entities and organizations to coordinate and support efforts toward the implementation of an all encompassing energy plan for Arizona
- Utilize a state-wide, energy resource-wide perspective, focus and approach
- Be results driven, focused on implementation of realistic and constructive objectives

Objectives Supporting the Strategic Goals

Strategic Goals	Objectives
<p>Messaging: <i>Diversity + Sustainability = Security</i></p>	<ul style="list-style-type: none"> • Job creation • Energy security • Diversification of energy mix • Economic development • Develop energy exports / regional development • Grow renewable energy industry • Create industry / supply chain cluster through enhanced demand
<p>Policy: <i>Consistency + Support = Development</i></p>	<ul style="list-style-type: none"> • Meaningful collaboration must occur among the executive government, legislative government, local government and the Arizona Corporation Commission to ensure the sustainability of Arizona’s renewable industry development, • Outreach to our neighboring states in efforts to discuss the Southwest regional need for enhancing regional energy development and in particular renewable energy
<p>Finance: <i>Certainty and Clarity = Investment</i></p>	<ul style="list-style-type: none"> • Project of State Significance • Master limited partnerships • Production based incentives • PACE or variation of program • Certainty in policy
<p>Incentives: <i>Production Based + Clarity = Generation</i></p>	<ul style="list-style-type: none"> • Implement policy/incentives that support generation to increase manufacturing sector • Utilize back-end incentives that reward success

Objectives Supporting the Strategic Goals

Strategic Goals	Objectives
<p>Permitting: <i>Clarity + Timeliness = Development</i></p>	<ul style="list-style-type: none"> • Standardization of permitting procedures within and across jurisdictions • Implement Projects of State Significance program to streamline permitting for utility scale generation projects • Support proliferation of overlay zones to promote development
<p>Siting/Public Lands: <i>Accountability + Participation = Development</i></p>	<ul style="list-style-type: none"> • Implement enforceable timelines • Remove the auction process of state land for energy generation projects • Incorporate and enforce achievable milestones to protect the landowner • Extend lease terms to mirror other energy leases – if producing power the lease term would continue • Utilize production based leases so the land owner shares in the success of the project
<p>Generation: <i>Demand + Development = Generation</i></p>	<ul style="list-style-type: none"> • Implement a regional approach to generation and consumption to provide the cheapest access to power, as well as security through geographically dispersed resources strength of the currently over-extended grid
<p>Energy Clusters: <i>Generation + Demand = Supply Chain Cluster</i></p>	<ul style="list-style-type: none"> • Focus to promoting new generation in the region to attract innovative companies to metropolitan areas in Arizona • Invest in training programs for the creation of a skilled workforce • Develop Arizona’s supply-chain to build a robust manufacturing sub-sector

Objectives Supporting the Strategic Goals

Strategic Goals	Objectives
<p>Transmission: <i>Policy + Demand = Transmission</i></p>	<ul style="list-style-type: none"> • Identify the appropriate paths for transmission development • Provide clarity in policy so private dollars can be invested • Capitalize on available federal programs (i.e., TIP/SMRT through Western Area Power Administration) • Engage neighboring states to allow intra-state transmission
<p>Energy Efficiency: <i>Education + Finance = Implementation</i></p>	<ul style="list-style-type: none"> • Develop an Energy Efficiency Campaign for educating the Arizona public on the benefits of energy efficiency and available efficiency programs and opportunities to modify current habits to ensure conservation and efficiency • Implement programs such as PACE
<p>Workforce: <i>Marketing+ Curriculum= Skilled Workforce</i></p>	<ul style="list-style-type: none"> • Utilize programs such as GO BUILD Arizona to drive greater interest in the skilled workforce careers • Continue to implement targeted training programs
<p>Education: <i>Information+ Effective Communication= Knowledge</i></p>	<ul style="list-style-type: none"> • Develop and leverage state and federal programs to provide broad-based energy education throughout all levels of education

Objectives Supporting the Strategic Goals

Strategic Goals	Objectives
<p>Technology and Innovation: <i>Reduced Costs + Reliability = Innovation</i></p>	<ul style="list-style-type: none"> • Elevate the state’s intellectual capacity in the form of research and development (R&D) • Educate and build an energy related workforce • Implement tax incentives and funding vehicles like Master Limited Partnerships to make investment in innovation easier • Increase state R&D tax credits and continue support of university partnerships within Arizona’s growing solar industry
<p>Transportation Fuels: <i>Investment + Strategic Planning = Price Stability</i></p>	<ul style="list-style-type: none"> • Develop and leverage emerging alternative fuels economy • Increased utilization of electric vehicles • Targeted tax incentives • Development of robust transportation system

Measures of Success

The successful implementation of the Arizona Energy Roadmap will be measured by the occurrence of a multitude of specified positive outcomes within Arizona's energy industry, including:

1. Increased economic revenue from Arizona's growing energy industry
2. Increased job creation and higher-waged salaries for the state's energy workforce resulting from increased manufacturing
3. Energy security or self-sufficiency due to a reduction in the nation's reliance on foreign energy sources and increased emphasis placed on domestic renewable and natural gas resources
4. Progressive advances within the industry's technology innovation sector
5. Reduced greenhouse gas emissions resulting from increased use of renewable energy, energy efficiency and cleaner burning fossil fuels
6. Expansion of Arizona universities' research and development
7. Expansion of energy related curricula



Arizona Solar Strategic Plan

Michelle De Blasi
Gammage and Burnham



Need for Strategic Plan

- Solar sector growth stifled by lack of long-term plan
- Several plans developed
- No implementation plan
- Newly formed Arizona Energy Consortium
- Timing was right to develop plan

Creating the Strategic Plan



Involvement of key stakeholders

- Developers/Energy Offtakers
- Utilities
- Policymakers
- Business Organizations
- Manufacturers
- Academia

Creating the Strategic Plan

- Three Key Sectors
 - Finance & Economic Development
 - Regulatory & Policy
 - Industry & Infrastructure

Creating the Strategic Plan

- Development of conference to educate, obtain input from diverse industry sectors
- Partnerships with businesses, cities/towns, trade groups

Partnerships



Chandler + Arizona



ARIZONA
COMMERCE
AUTHORITY



ARIZONA
TECHNOLOGY
COUNCIL
a place to connect and grow



ARIZONA CHAMBER
of Commerce and Industry



Greater Phoenix
ECONOMIC COUNCIL



IKOLOJI
SUSTAINABILITY • COLLABORATIVE

Sonoran Sustainable Building Advisor Program



SONORAN
INSTITUTE

Shaping the Future of the West



SURPRISE
ARIZONA



VALLEY
FORWARD
SINCE 1969



VALLEY
PARTNERSHIP

Creating the Strategic Plan

- Conference panelists introduced high-level issues
 - City, County, State, Federal Government
 - Business/Economic Associations
 - Industry and Utilities

Creating the Strategic Plan

- *Interactive* setting designed to obtain insight from participants
- Specific questions for each category
- Ideas gathered formed basis of Arizona's Solar Strategic Plan

Results

- Compilation of all responses received
- Listing of competitive advantages and barriers
- Breakdown of specific action items to be implemented
- Listing of measures of success

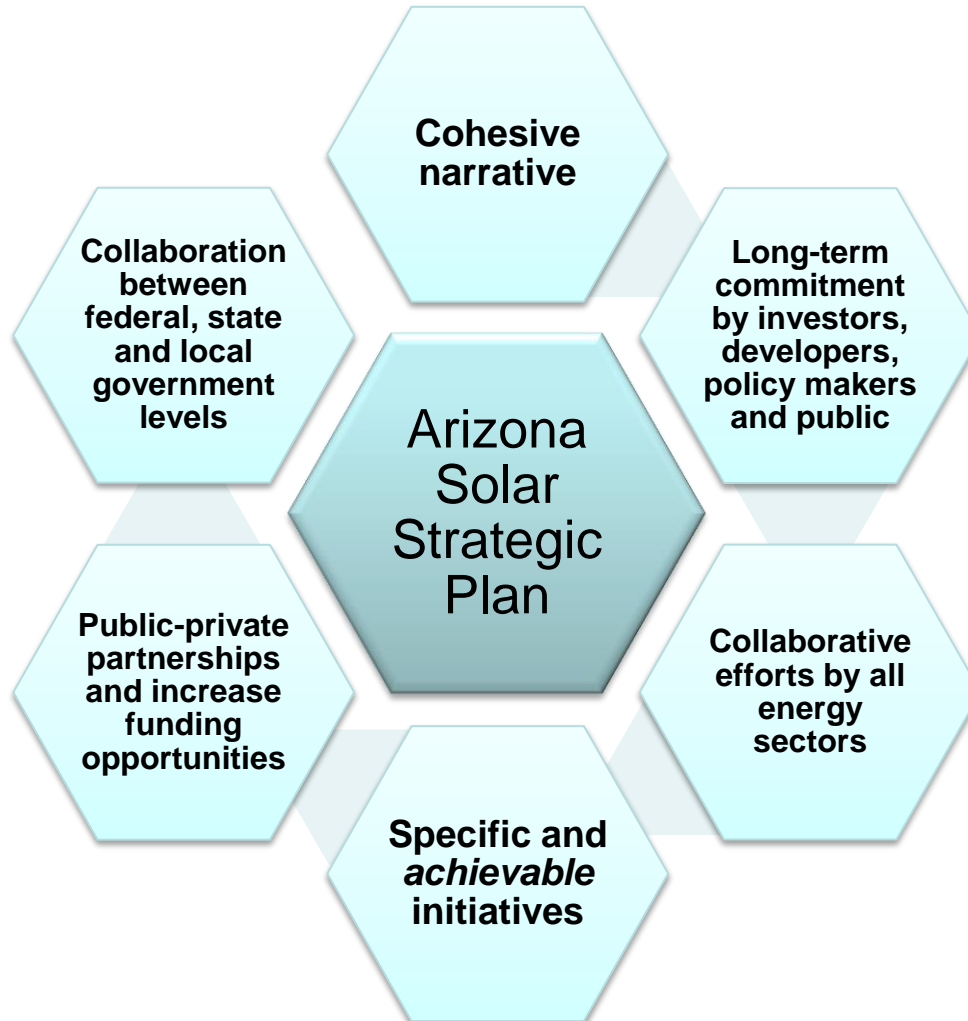
Vision of Strategic Plan

Arizona will capitalize on its competitive advantage —the sun — through collaboration across the finance and economic development, industry and infrastructure, and policy and regulatory sectors. The successful integration of generation, technology innovation and manufacturing will culminate with Arizona positioning itself to own the solar industry nationally.

Solar Industry Mission

- Enhanced job creation and higher-waged jobs within Arizona
- Enhanced export potential
- An increase in State economic revenue
- Heightened energy self-sufficiency and national security

Industry Requirements



Competitive Advantages

Abundance of exportable solar generation

Facilitated permitting process

High intellectual capacity

Abundant lower-priced land

Facilitated line siting procedure

Proximity to major solar markets

Development Barriers



Specific Opportunities

- Industry & Infrastructure
 - Energy Generation
 - Technology Innovation
 - Manufacturing

Specific Opportunities

- Finance & Economic Development
 - Capital Access
- Policy & Regulatory
 - Education

Implementation

- Identify key stakeholders
- Gaps in industry growth
- Potential policy needs
- Partnership opportunities

Measures of Success

Heightened solar manufacturing = increased job creation, higher-waged salaries

Increased internal economic revenue from heightened generation exportation

Progressive advances within the solar industry's technology innovation sector

Reduced greenhouse gas emissions

Energy security and self-sufficiency

A copy of the Arizona Energy Roadmap and Solar Strategic Plan can be found at:

<http://www.aztechcouncil.org/committees/aec>

Contact information:

Christopher Davey cdavey@enviromission.com.au

Michelle De Blasi mdeblasi@gblaw.com