Resources and Tools to help Arizona plan for the Clean Power Plan

ASU WORKSHOP ON THE CLEAN POWER PLAN
FEBRUARY 24, 2015
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There is much we don’t know about how to address the Clean Power Plan (CPP), but we have tools and resources to help us begin planning.

Arizona is not the only state in the West that may feel they are not good partners for submitting plans with other states.

But, we should not take the option of multi-state collaboration off the table yet.
What we do know

- Regardless of the CPP, the electric system in Arizona will change: adding more renewable energy and natural gas; increasing energy efficiency and demand-side management; decreasing coal use; and increasing energy storage and electric vehicles charging loads.

- The expertise, study tools, and data needed to analyze different resource choices are largely in place at the Western Electricity Coordinating Council (WECC) and in sub-regional transmission planning groups.
  - Arizona lies in the footprint of the WestConnect sub-regional transmission planning group that includes NM, CO, NV and parts of WY and N. CA. The sub-regional groups plan transmission based on resource choices of participating utilities.
What we know

- General Electric and the National Renewable Energy Laboratory have conducted recent studies (Western Wind and Solar Integration Study, Phases I, II and III) for the WestConnect footprint that analyzed greater coal retirements and higher renewable energy penetrations than is contemplated in the CPP. It is evident from these studies that system changes and coordination will be needed, but no insurmountable issues were identified.

- The Southwest Area Transmission group (Az and NM) studied multiple scenarios of coal retirement and renewable energy increases. The studies did not determine system issues until modeling a scenario that replaced 5,000 MW of coal exclusively with renewable energy.
What we know

- Regardless of the CPP, the West is starting to coordinate more to share resources and more fully utilize the existing transmission system. Increased coordination is good from a reliability, efficiency and consumer cost standpoint.
  - Examples: Colorado’s joint dispatch agreement, the Energy Imbalance Market and the Joint Initiatives of Northern Tier, WestConnect and ColumbiaGrid.

- FERC Order 1000 requires sub-regional planning groups (WestConnect) to develop transmission plans that address public policy goals. CPP is a public policy goal which WestConnect will have to consider in its transmission planning efforts.
States, including Arizona, have already identified the best renewable energy resources areas which allows utilities and transmission companies to plan and build transmission to these low conflict, high value areas.

In the last Biennial Transmission Assessment, Arizona’s utilities identified their three highest-priority transmission lines to access quality renewable energy resource zones.

The larger the area for balancing renewable energy, the less variability in the power production.

Arizona residents overwhelmingly want more solar energy and less coal-fired energy.
1. Arizona should define a small number (possibly three) scenarios for the state to study in the WestConnect planning process and to provide to WECC for its westwide study.

Utilities and stakeholders need to define these scenarios (or resource choices) in the next few months so that they can be studied this spring and summer. (WECC has requested such information)
Opportunities for Arizona

2. Reliability concerns need to be carefully defined. Vague, unspecified statements about reliability are not helpful in understanding potential issues.

Reliability concerns should identify what NERC, WECC or other standard may be violated and whether a reliability concern is about resource adequacy, grid operational balancing or disturbance response.

Those making allegations should identify the specific concern, as well as possible mitigation measures.
Opportunities for Arizona

3. Solar and wind technology have advance capabilities to provide voltage support, VARs and other ancillary services. As we study future conditions, we need to ensure that we are including and can assess the advanced capabilities of these electronic, inverter-based technologies.

Ultimately, an electrical system containing increasing penetrations of electronic, inverter-based wind and solar technologies can provide higher reliability than the current system based primarily on coal, natural gas, nuclear and other synchronous generators. Solar and wind inverter-based generators can respond faster and be more precisely controlled to support reliable grid operations.
4. WestConnect is required to develop regional transmission plans every two years. State regulators need to make sure that WestConnect, and its utility members, are producing the plans in time to inform CPP decisions. WestConnect is going through its first planning process now. The CPP must be considered in this first process and in every subsequent two-year planning cycle.
5. WECC has developed vetted, consistent data for use in transmission planning processes. It is imperative that Arizona and WestConnect use this data to ensure consistency for planners and decision-makers. WECC data includes load information for all utilities, as well as costs for technologies and other assumptions that inform credible and effective transmission planning. Not using this data will mean Arizona decision-makers will not have a common basis for cooperation and coordination among utilities and other states.
Conclusion

The state can view the CPP as a compliance obligation only, or as an opportunity to define our energy future. The state needs to begin this process with the end in mind. What resource mix will provide the greatest benefits to the state, what do we want to build and where do we want to invest scarce capital in the next 15 years?

The state should use the tools at its disposal to evaluate different futures so that we have the information necessary to make the best choices as the state develops its State Implementation Plan for the CPP.
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