



Meeting Summary

ADEQ EPA CLEAN POWER PLAN TECHNICAL WORK GROUP MEETING SUMMARY

DATE: January 28, 2016
TIME: 9:30-11:30 a.m.
LOCATION: ADEQ, Room 3175, 1110 West Washington Street, Phoenix

STAKEHOLDER ATTENDEES
(See attached)

ADDITIONAL ATTENDEES
Kelly Cairo, GCI

ADEQ Staff
Eric Massey
Steve Burr
Kamran Khan
Marina Mejia

AGENDA

The meeting agenda included:

- Introductions
- Ground Rules
- Discussion E, M&V Follow-up?
- Discussion: Trading Between Mass and Rate Programs
- Discussion: Request for Administrative Reconsideration of Final rules
- Discussion Energy Strategies Update
- Comparison of Performance Rates and State Goal
- Discussion: Continued – Ranking of Options
- Action Items/Next Steps

INTRODUCTIONS

Air Quality Division Director Eric Massey welcomed attendees and facilitated introductions. More than 20 technical work group members attended in person and 15 via conference call.

DISCUSSION E, M&V FOLLOW-UP?

Massey noted that while ADEQ did not submit comments on EPA's draft evaluation, measurement, and verification guidance, some groups made submittals. He asked work group members whether they had additional discussion and follow-up issues.

Highlights of the discussion included:

- Organizations are still discussing things ad hoc as we move toward agreement
- Utilities may want to work on technical reference manuals
- There were many comments on E, M&V and they don't all agree. The discussion continues in Arizona and other locations, as well
- Arizona stakeholders did reach many agreements, but some small issues remain

DISCUSSION: TRADING BETWEEN MASS AND RATE PROGRAMS

Chico Hunter, SRP, presented information on how trading might occur between rate-based and mass-based states, and between states with different rate-based programs.

Highlights from the presentation and stakeholder comments and questions included:

- Many entities are disappointed in the lack of availability of trading
- Under the proposed rules, there is no trading between mass and rate programs, as well as no trading between states with differing rate approaches
- This may cause an issue between choosing the right plan for a state versus choosing a plan based on potential trading partners
- SRP proposed two trading mechanisms to EPA
- Option one would allow rate-based states to buy allowances from mass-based states
 - $\text{Rate} = (\text{emissions} - \text{allowances}) / \text{generation}$
 - Pros: trading occurs in units of tons, shows clear demonstration of avoided emissions in mass-based state, will work for any rate plan approach
 - Avoids dilemma of state that would work well on a rate-based approach, but is concerned about available trading partners
 - Shows a state is not violating Best System of Emission Reduction
 - Examples of a coal EGU using only ERCs for compliance, and a coal EGU purchase of 10,000 tons of allowances were provided
 - Comment: There may be some concerns that this constitutes leakage
 - If one EGU is over-complying, trading would allow a shift in allowances to another unit
 - An ERC has a range of values depending on the EGU
 - Convert ERCs to allowances at the final rate
 - If someone retired extra ERCs, they would be granted extra allowances which they could sell to other states
- Option two works for all rate plans
 - Compliance demonstration is the same
 - Only affected EGUs can create allowances
 - $\text{Rate} = (\text{emissions} + \text{created allowances}) / (\text{generation} + \text{ERC req.} + \text{ERC excess})$
 - Propose limiting the ERC conversion to 85% CP
 - Comment: Should have caps as actual emissions plus created allowances up to 85% CP emissions
 - Would have to wait until the end of a compliance period to allow for trading

- Question: Governance of base load makes sense, but how would we handle a peaking plant? SRP hasn't addressed this in the proposal, but there are some options. This is a framework
- Examples of a coal EGU using only required ERCs for compliance, and a coal EGU that retires 10,000 excess ERCs to create allowances were provided
- Examples of 85% CF cap verification were provided
- Steps include: Determine emissions of EGU and at 85% CF; then, compare to total emissions plus allowance to cap
- If EPA included this option in its model trading rules:
 - Any rate-based state could purchase allowances
 - Any rate-based state could create allowances for trading into mass-based states
 - Trading between states with different rate approaches could occur
 - All trades could be done in allowances
- EPA could adopt one of the mechanisms outlined or both
- If these mechanisms are not included in the model trading rules, states could try to get these mechanisms approved in their state plans to allow linkage to other states
- EPA could adopt a different mechanism to cap trades under rate- to mass-based approaches (lower than 85 CF limit for EGU if state had elected mass-based, or another approach)
- Comment: Market inefficiencies may be created
- Comment: If option 1 only were adopted, mass-based states would have a reduced market without getting anything in return
- Comment: This is attractive because it keeps the compliance obligation at the EGU level
- Comment: This creates an added complexity in a rate state, in that they would have to manage ERCs and track EGUs
- Comment: In a rate to mass example, now solar would have to go to an EGU. This would stymie markets which previously offered an easy transfer. All of the cards would be in the hands of the utilities, and not necessarily in the public interest.
- Having a mechanism to trade between mass and rate states would be a benefit
- A WRA approach may work better
 - Amanda Ormond will provide additional information and ADEQ will distribute to the TWG prior to the next meeting
 - The WRA approach converts ERCs differently
 - Demonstrations are more difficult under the WRA approach
- EPA's perception of how much these plants should be running will be a consideration
- In this approach it is each EGU's decision
- Question: Would an EGU buy ERCs on the open market then convert to allowances? We see this as existing ERCs or ERCs purchased then converted
- Question: Is tripping a cap legal evidence of negligence or of natural resource violations?
- Comment: I'm concerned that in a mass-to-rate buy, total emissions could go up. There would be no national platform
- Question: Would a mass-based state effectually enable a rate-based state to produce more emissions? Excess ERCs means you've built more than you need and would allow an in-state generator or an out-of-state generator use of credits elsewhere

- Question: If we only curtail in-state generation, doesn't that mean our customers in-state would pay more?
- Comment: It seems there would be questions of arbitrage between states with an environmental impact. Yes, but this would allow the BESR to operate as intended, with the lowest cost generator generating the most energy
- Comment: A broader market may allow for the lowest cost to consumers
- Question: Do you know if EPA is willing to consider these options? At a Denver meeting, EPA was curious. Informally, we have heard they originally looked at rate-to-mass trading mechanisms but were unable to create a methodology
- Question: Are other states interested, too? Yes, as well as other organizations
- Question: Is 85% CF SRP's opinion or that of the Arizona Utilities Group? AUG recognized a capping mechanism in general, but didn't specify an amount.
- Question: Is AUG ready to seek reconsideration of the final CPP to incorporate this? AUG is undecided if they want to pursue reconsideration of these topics. AUG would not mind if states took on this type of petition
- Question: Is there a deadline to file petition? Legally, there is no deadline. However, the likelihood of acceptance goes down with time.
- Question: Are there any other requests for a stay? We haven't heard of these requests, but monitoring this information has not been a priority. There is an alleged math error, and a state or trade association may have filed for a stay.

Massey noted that states and stakeholders need to proceed independent of potential changes to trading rules.

DISCUSSION ENERGY STRATEGIES UPDATE

Jeff Burks, Energy Strategies, updated the group on developments of a compliance tool Energy Strategies was hired by the Center for the New Energy and Freeport-McMoRan to create. Highlights of the presentation and stakeholder comments and questions included:

- Phase One includes developing a five state modeling platform and was completed earlier in January
- The goal is to create a user-friendly screening tool. The Center for the New Energy Economy felt it was critical to use a uniform modeling platform in comparing compliance options
- Users can estimate base case, various compliance pathways, quantify emissions reductions required, and evaluate combinations of measures to comply with the standard
- This is a screening level tool
- Phase Two includes seven additional states, with a March 15 completion date expected. It will also include additional functions such as evaluation of the federal plan, CEIP, set-asides, and enhanced multi-state functionality
- Freeport-McMoRan has provided data as well. Energy Strategies wants to add CNEE data to make the tool available to Arizona stakeholders.
- We hope to work with Arizona utilities to make sure the modeling components are captured accurately

- We are attempting to incorporate Arizona into the Phase One analytical tool, prior to the planned Phase Two time period
- The data set in CNEE model is probably historical, and we would like a fresh review
- There was a month-long beta test with 10 users. Those interested can register to get log in credentials and test the tool. Arizona information is not yet included, but we would value input on issues, errors, or omissions in data sets, and underlying assumptions. E-mail: info@westernstatecppmodeling.org for log in credentials. Send bug reports to Don Hendrickson (dhendrickson@energystrat.com) or Gibson Peters.

Massey will e-mail the contact information to the TWG. Energy Strategies offered to provide a live demonstration at the next TWG meeting. The stakeholders agreed that a demonstration should be on the upcoming agenda. Energy Strategies will try to add Arizona data prior to the February 11 meeting.

COMPARISON OF PERFORMANCE RATES AND STATE GOAL

Steve Burr, ADEQ, reviewed the functions of a spreadsheet tool previously e-mailed to the TWG. The purpose is to show which rate-based compliance options is least stringent for Arizona. Because ADEQ needs to draft an initial plan by June, it is important to limit options to be pursued.

Highlights of his presentation and stakeholder comments and questions included:

- The tool is designed to help compare use of a performance rate vs. a state goal for EGU types by comparing natural gas combined cycle to fossil fuel steam
- The tool shows that if the existing 2014 generation mix is assumed, the performance rate approach requires affected EGUs to acquire substantially fewer ERCs than a state-goal approach
- A shift of approximately 11 million MWh from FFS to NGCC would equalize the total ERCs needed under the state goal vs. total ERCs needed under performance rates
- Totals shown are annual
- RE and EE are not included. The assumption is the ERC deficit would have to be made up by these and other measures
- Comments on the tool itself or any errors should be sent to Steve Burr (Burr.Steven@azdeq.gov)

DISCUSSION: CONTINUED – RANKING OF OPTIONS

Massey explained that de-prioritizing some options would be beneficial so that ADEQ can put more time into drafting a plan based on options which are more viable for Arizona. Highlights of the discussion on regulatory framework options follow.

Rate-based individual rates

- Pro: No flat maximum restraint and utilities find this appealing. Other options seem similar, but require assumptions
- Would there be more availability for ERCs in Arizona? EPA states it will be a broad market similar to the SO₂/acid rain market. However, the programs are not as similar

as EPA claims. Also, states would be able to restrict market trading and it is unknown how this factor would play out

- Option potentially pits shareholders against consumers
- There is an assumption that the marketplace will work. While this may be true, it is still an unknown. In the past, three of four markets have worked well
- Pro: Option can be tailored to apply the 111(d) approach. The state plan must survive scrutiny under 111(d), whereas the individual approach follows 111(d) more closely. States are obligated to satisfy 111(d), separate from EPA.
- Based on precedent, a state's obligation to satisfy 111(d) separate from EPA is not a significant risk
- Con: The ERC mechanism is more burdensome to administer
- Those states who know they don't need trading could consider this approach

Rate-based statewide goal

- Pro: Direct recognition of RE and EE
- The simplicity and design of a state goal is appealing. It avoids the need to consider differences between units and there is a good chance of more credit especially at the beginning of the program
- In all rate-based programs, it is harder to see how CEIP is implemented effectively
- Con: This program is not trading ready, and we are not able to trade ERCs at this time

Rate-based using performance rates:

- Pro: Recognizes all technologies (steam, RE, etc.) that contribute to emissions decrease
- Con: Limited trading partners
- ERC generation by EGUs is dependent on gas shift ERCs
- Con: It is harder to see how CEIP is implemented effectively
- Pro: There is a more equitable treatment between fossil-fired units and other units. We should consider the best way to get there for our customers
- Con: A rate-based state goal adds inequity
- I support ADEQ's deprioritization of options as discussed previously
- We don't know the net effect under a rate-based option.
- Pro: More compliance measures would be eligible and monetized
- Con: Rate-based options, in general, cloud the line of authority between ADEQ, ACC, SRP board of directors, and also promotes jurisdictional creep
- It is unclear how existing EE programs can be maintained
- Issues would include segregation of duties, funding of new duties, voluntary issues potentially becoming non-voluntary
- We should consider whether ERC promotes energy reduction or ancillary services/reliability
- The approach provides a positive view of EE.
- Recognition of EE and EM&V would be more complex. Some may decide it is not worth the benefit of going through the process
- Pro: E, M&V gives direct credit to the denominator under the rate-based approach

- There is no guarantee an EE program will produce benefits. However, under the rate approach there is that benefit only if you generate the ERC
- Monetizing compliance measures to the customer is a consideration
- Option would need internal E, M&V otherwise it would not be able to be counted. While this occurs in existing EE programs, there could be a fundamental shift in counting. The outcome regarding jurisdiction and E, M&V would change
- Carbon emissions are currently quantified. From a utility perspective this is no change
- The reason we do EE is, in part, to avoid future capital costs

Due to time restraints the discussion was put on hold and will continue at the next TWG meeting. Written lists of pros and cons from TWG members were requested where possible. Massey emphasized the need to receive input as soon as possible.

Other comments included:

- We need to include costs to consumer as a consideration
- Examples of how an existing program might change would be useful

ACTION ITEMS/NEXT STEPS

The next TWG meeting will be held Thursday, February 11. Additional meeting dates include March 3, March 17, and March 31 with the option to cancel if needed.

The February 11 meeting agenda will include a demonstration from Energy Strategies and continued discussion on the pros and cons of each option.

- *Action Item:* Amanda Ormond will provide WRA information and ADEQ will distribute to the TWG prior to the next meeting
- *Action Item:* Massey will e-mail the information for Energy Strategies screening tool log in credentials (info@westernstatecppmodeling.org) and bug reports (Don Hendrickson, dhendrickson@energystrat.com, or Gibson Peters) to the TWG.
- *Action Item:* TWG members to provide written lists of pros and cons of plan options

Massey thanked stakeholders for their participation and thoughtful discussion on plan options.

STAKEHOLDER ATTENDEES (IN PERSON AND BY PHONE) AND ORGANIZATION

Erick Bakken	Tucson Electric Power
Andy Berger	Tri-State Generation and Transmission Association
Tom Broderick	ACC
Edward Burgess	ASU
Jeff Burks	Energy Strategies, LLC
Nonso Chidebell-Emordi	ACC
Michael Denby	APS
Doug Fant	Southwest Power Group
Jordy Fuentes	RUCO
Logan Gernet	AEPCO
Bob Gray	ACC
Eric Hiser	AEPCO
Holly Holfelder	Energy Strategies, LLC
Chico Hunter	SRP
Johnny Key	Freeport-McMoRan Inc.
Toby Little	ACC
Ann Livingston	Southwest Energy Efficiency Project
Amanda Ormond	Advanced Energy Economy
John Reissen	Tri-State Generation and Transmission Association
Josh Robertson	SRP
Ravi Sankaran	Sundevil Power
Jeff Schlegel	Southwest Energy Efficiency Project
Maureen Scott	Arizona Corporation Commission
Mike Sheehan	TEP
Paul Smith	APS
Frank Snyder	Sundevil Power
Chas Spell	APS
John Waltz	Sundevil Power
Todd Weaver	Freeport-McMoRan Inc.
Jeff Yockey	TEP
Ellen Zuckerman	Southwest Energy Efficiency Project