



Finding Pennsylvania's Solar Future June 8, 2017 Stakeholder Meeting Summary

Regulatory and Ratemaking Workgroup

Opening Remarks from summary Facilitator, Ron Celentano:

About 30 or more participating stakeholders filled the room where we held our 2nd in-person Regulatory & Ratemaking workgroup breakout session, which lasted about 2 hours.

I wanted to thank Cheryl Dietrich for volunteering to take notes during the session, which she promptly delivered to me the next day. I also want to thank Ed Johnstonbaugh and Ryan Barnett for volunteering to scribe on the poster board sheets, as we brainstormed throughout our session. Cheryl's notes, which I tweaked, are attached after this write-up at the end of the document, as well as pictures of the poster board sheets.

I, and the *PASF Team*, greatly appreciate your ongoing participation in this project, as your input is very valuable for laying the groundwork and shaping the pathway to achieve more solar in Pennsylvania.

That said, we are continuing to open channels for conveying your input between these quarterly stakeholder meetings.

Overview

The session started with displaying the following draft Principles of the workgroup:

- *Discovering, not telling*
- *Facilitators guiding the dynamic process, not driving the process*
- *Working with a question-based framework for engagement*
- *Embracing feedback from all stakeholders*
- *Allow the time and space for exploring potential*

Then, followed by the draft Purpose Statement:

- *Developing a dynamic process for stakeholder engagement and empowerment, that will transform Pennsylvania's solar electric portfolio [or transform Pennsylvania solar market] over the coming decades, such that the Commonwealth is poised to achieve a solar future with diverse job opportunities at all income levels, locally resilient communities, a robust energy industry, and where both firms and families seek out Pennsylvania for the future.*

Stakeholders across all three workgroups felt the above Purpose Statement needed some revision for each of the workgroups. I stated that I would take a first shot at this – so, I am suggesting adding the following to the above regarding our workgroup's perspective:

The Regulatory and Ratemaking Workgroup gives focus on the critical pivotal factors that may help to foster or prevent reaching the 10% by 2030 Solar target.

I'll send out this suggested Purpose Statement revision to the group separately, for feedback.

We also briefly discussed VEIC's presentation of the reference and initial solar scenarios using the LEAP model. David Hill of VEIC was in our session and fielding many of the questions and clarified details for modeling the reference and initial solar scenario, as well general questions on the methods and approaches for the LEAP model overall. These points are highlighted in Cheryl's notes below.

Identifying Pivotal Factors

The rest of the session consisted of discussions about the pivotal factors. A few days prior to our June 8th meeting, I sent out a spreadsheet with a list of pivotal factors we initially came up with from our March 2nd meeting, along with others from the *Markets & Business Models* workgroup, and I asked stakeholders to rank these based on their perceived significance of how these factors could affect an increased penetration of solar in Pennsylvania by 2030. This list was presented to the group, along with the responses from eleven stakeholders representing a wide spectrum of categories. This triggered the group to walk down the list and discuss details of many of the pivotal factors, such as definition, range of impact, whether it needed legislative and/or regulatory action, etc. Some of the listed items were questioned and discarded, as well. The group then discussed reorganizing the list in a sub-categorized format, under broader headings. The original list and re-structured list of pivotal factors is shown under the **Pivotal Factors – Revised** section, below.

Take-aways

An overall take away from our breakout session was posing questions about the cost associated with the increased penetration of solar. Identification and fair allocation of costs to achieve the goal was agreed to be essential. Is 10% of PA energy production from solar too ambitious of a goal, possibly projected to cost about \$20B; who will bear this cost?

Another key take away was what appeared to be an interest from the utility stakeholders, if they were allowed to own and operate large scale solar facilities. If this is the case, then the Regulatory and Ratemaking Workgroup would want to address this as part of an overall strategy to get to 10%.

A third take away was the identification that rural electric cooperatives will need to be engaged at greater level since it is likely that a significant number of large scale solar projects will be built in their service areas. Since they are not regulated by PUC nor do they fall under AEPS, our group may want to consider additional rules and/or ratemaking suggestions to help facilitate solar adoption in rural electric territories.

A summary of highlights were reflected on the poster board sheets, which came out of the evolving brainstorming session discussed above. This started with the review of the initial list of pivotal factors and rankings, and led to the following main pivotal factors for consideration in the regulation and ratemaking arena:

Alternative Ratemaking:

- Net Metering and Virtual Net Metering Value of Solar
- TOU rates
- Revenue Decoupling

Capital formation

On bill financing / repayment Strategies
such as GreenBank and PACE

Also touched on ownership and potential for utility ownership.

Incentives

Requirements or rules to make sure that access to benefits from increased solar are available to LMI
Are incentives or rules to direct development to most favorable locations needed?

Grid modernization –

What roles does solar and DER play in utility T&D planning and possible investments?

Advanced inverters – rules to require them

AEPS

Closing the borders and extending the AEPS to provide a structured market may lead to more intentional and steady growth in the solar markets.

Pivotal Factors - Revised

Below, Table 1 shows the list of pivotal factors that was presented at our breakout session, along with the responses from the eleven stakeholders, where they prioritized the significance (good or bad) of each of the factors relative to how much they might influence an increased solar penetration by 2030. We really didn't discuss the stakeholders' responses in this table because it became clear that more clarification and the need to clean up/organize the list was needed, before ranking the factors.

Stakeholder Group --->	Utility Scale	Electric Distr. Co.	Council of Governmts	Electric Distr. Co.	Developer	Energy Policy Org.		SERC Aggreg.	Electric Distr. Co.	EGS	Transition Town
Pivotal Factors (Prioritize 1 to 10)	Urban Grid	Duquense Power	SEDA-COG	EAP	SR-Energy-LLC	Kleinman Center	Energy Gleaner	SREC-Trade	PECO	Next era Energy	Trans-Town Media
Alternative Ratemaking		2	2	2			4		2		7
Net Metering Aggregation	3	10	2				9			7	
Green Bank – Financing Opportunities			3				9	7			5
Utility Owned Solar		1	8	7		6			1		
Muni / Co-op Participation	1		1				8	7		6	6
Low Income (solar access)		8	5	9				8	5		
Energy Efficiency			1								
Community Solar		9	4	8		10	3	9	6	3	3
State Incentives	2		5		5			2		8	9
Revise AEPS	9		1		3		5	2		5	1
Long-Term Contracts					10	4			4	4	
Micro-Grids		3	2								4
Electrification (Grid Modernization)		7	3	3				10	7		
Gas Tax Policy (Export)			7								
Storage		6	3		9				8	9	
Change “alternative energy” definition to include more renewables and less fossil			6				6	4		10	
Legislative support for solar			2		4			6	3	2	2
On-bill financing and PACE (for commercial			6		8						
Stop subsidizing fossil fuels in PA			8								
AEPS – limit solar to PA projects (close the borders)	10		1		2	7	2	1			
Increase solar share of AEPS	6		1		1	3		5	10	1	
State Carbon tax			8			2					10
Sales tax exemption	4		10		6		10				
Property tax exemption	5		10		7						
Utility Scale Solar (not necessarily utility owned; PUPRPA)	8	5	10	6		8			2		
Net Metering	7	4	4	5	1		1				8
Community Choice Aggregation (CCA)											
Identification & fair allocation of costs to achieve the goal				1							
Engineering Issues				4							
Price of grid electricity (what customer is hedging against)						1					
Maintaining retail rate net metering						5					
Smart inverters and other technologies									9		

Table 1 – Initial List of Pivot Factors and Some Rankings of Significance Presented at June 8th Meeting

The group systematically walked through many of the pivotal factors and suggested reorganizing them in sub-categories, as well as tweaking some and removing some. Cheryl documented the changes and reorganized the table, which I further modified. This is shown below in Table 2.

Pivotal Factors	Regulatory/ Legislation
Alternative Ratemaking	
Revision of Net Metering	L/R
Revenue Decoupling	L/R
Revising Virtual Net Metering Aggregation	L/R
Demand response; time of use rates	
Value of solar	L/R
Energy Efficiency ?	
Capital Formation	
Green Bank – Financing Opportunities	
On-bill financing	L/R
On-bill repayments (private capital)	L/R
PACE	L
CPACE Comm only)	L
Long-Term Contracts	L/R
Incentives	
Low Income (solar access)	
Federal/State/Muni Incentives	L
(State) Carbon tax	L
Sales tax exemption	L
Property tax exemption	L
Tax credits	L
RECs/ZECs	L/R
Ownership model	
Community Solar	L/R
Utility Owned Solar	L/R
Leasing	
Private	
Utility Scale Solar (not necessarily utility owned; PUPRPA)	
Community Choice Aggregation (CCA)	L/R
Micro-Grids	L/R
Muni & Rural Co-op Participation	L/R ?
Revise AEPS	
AEPS – limit solar to PA projects (close the borders)	L/R
Increase solar share of AEPS	L/R
Introduction of ZECs	L/R
Electrification (Grid Modernization)	
Storage	L/R (?)
Micro-Grids	L/R
Smart inverters (CA's Rule 21) and other technologies	R (?)

Table 2 – Revised List of Pivot Factors for Regs & Ratemaking – Outcome of the June 8th Meeting

There are still some items on the above list that may be questionable and need further clarification as to why they are pivotal factors. More importantly, all these factors will need a brief definition, and some level of description to characterize the significance of the pivotal factor to the growth of solar in Pennsylvania, along with scaling it as a benefit, as well as a risk. Also note that some of these factors understandably show up in more than one category (i.e., ZRECs – suggested environmental credits from nuclear power generation).

We are developing a template for documenting the above information in the form of an Excel file, which will be located on Box. I will send out a link for this later this week (week of July 17th).

I will start filling in list of pivotal factors and some of the definitions, but it is very important for the *Regulatory & Ratemaking* workgroup stakeholders to fill in and edit this information, which can be done through Box. More details will be provided about how to go about this in the near future.

The following are the notes taken by the scribe, Cheryl Dietrich, during the workgroup breakout session:

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**Finding Pennsylvania's Solar Future: Second Stakeholder Meeting- Pittsburgh
Regulatory & Ratemaking Workgroup Meeting Notes
June 8, 2017**

GENERAL:

- **Ron will send an email to the group with a link to get connected to BOX** where documents/presentations for the working group will be housed
- The DEP website makes meeting materials publicly available
- **Questions/comments on the model should be communicated directly to VEIC** – deep dives won't be done during stakeholder meetings

REFERENCE CASE MODEL:

- Using national data where PA state specific data isn't available; VEIC asks that stakeholders review data used and raise any concerns with inconsistencies noted
- GW of installed capacity by 2030 is based on experience now; ITC phase out; but some continued growth in the market based on market trends
- **VEIC will provide the assumptions used to the working group**
- Alpha factor of 50 growth compared to what's installed today gets to the 10% target in 2030
- VEIC will do avoided costing on that to get the cost/benefit analysis to be presented at the Fall meeting
- Model is top down; scenario driven; it's not an optimization model; tracks available resources and associated costs
- VEIC will do sensitivities on level of utility scale vs. DG; DG may have more ratepayer impact
- Model will do an intangible benefits analysis; with both environmental and economic cost benefits considered; emission reductions of greenhouse gases and associated emissions
- Indicators of land use requirements will be considered as well
- It was noted that the federal government's climate action plan shows natural gas staying relatively flat; model is consistent with this
- Model assumes no APS changes until 2021; utilities will need to buy those RECs

WORKGROUP PRINCIPLES AND PURPOSE STATEMENT:

- Project has ambitious goals; can't be too broad with the purpose statement
- Purpose statement should include something related to regulation and ratemaking/rulemaking to support the overall plan
- Governance of decision-making hasn't been addressed
- **Ron will take a stab at revising the Statement and asks the workgroup to provide feedback**

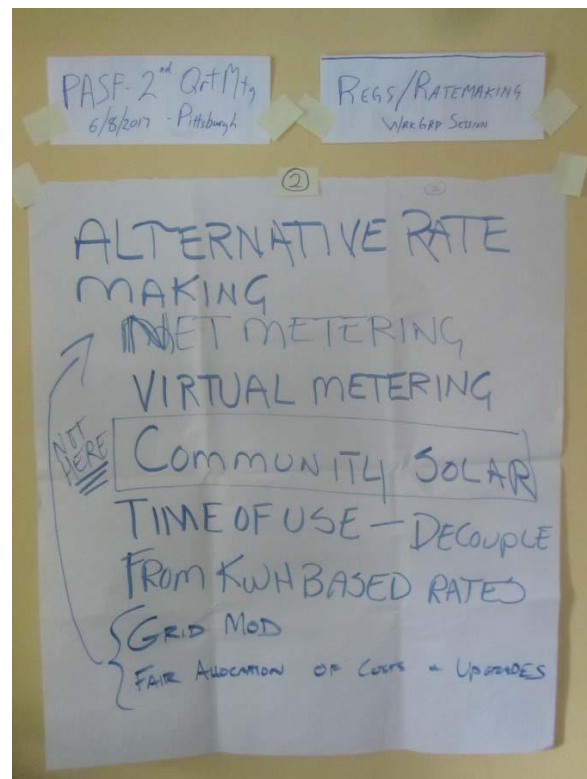
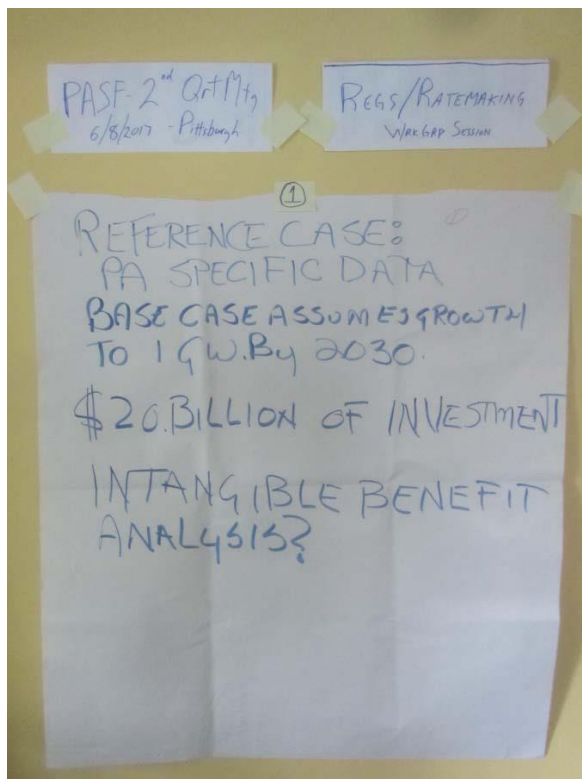
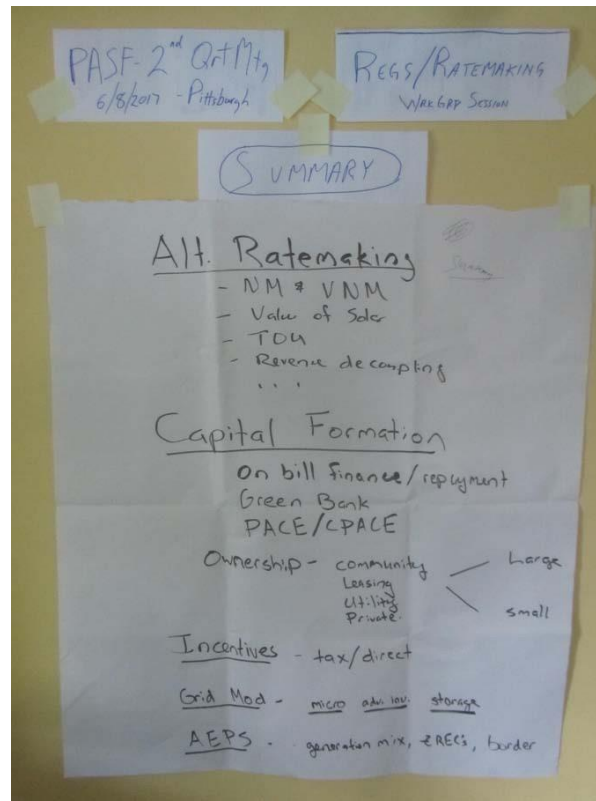
PIVOTAL FACTORS:

- Meant to address the most important/significant impact
- Need to rank both the benefits and risk
- Revise the list into categories and sub-categories
- **Cheryl to use Ron's spreadsheet to update the list based on meeting discussions**

July 18, 2017

- Determine which factors should be addressed by other workgroups
- Items that would be helpful to reference in regards to Alternative Ratemaking topics include **(consider posting these to the BOX or distributing via email links)**:
 - The Commission's April order
 - NARUC paper on DG
 - Texas Commission's white paper on alternative ratemaking
- Co-ops and munis each have their own statutes; munis don't fall under the APS requirements
- Eliminate the following topics from the list:
 - Gas Tax Policy (Export)
 - Stop subsidizing fossil fuels in PA
 - ~~Co-op Participation~~
 - Legislative support for solar

**Pics of the Poster Board Sheets Created During the Regulatory & Ratemaking
Workgroup Breakout Session on June 8th**



PASF-2nd Qrt Mtg
6/8/2017 - Pittsburgh

REGS/RATEMAKING
WRAK GAP Session

③

FINANCE/CAPITAL FORMATION

GREEN BANK
ON BILL SOLAR FINANCE/
PACE, GPACE REPAYMENT

INCENTIVES

ITC, STATE, PROPERTY
SALE TAX REBATES, CARBON TAX
PACE, GPACE 2 RECS, RECI

PASF-2nd Qrt Mtg
6/8/2017 - Pittsburgh

REGS/RATEMAKING
WRAK GAP Session

④

COMM CHOICE AGG (CCA)

- MUNI-CO-OP

UTILITY SCALE

- UTILITY OWNED
-
- MICROGRIDS
- IND. CUSTOMERS
- STORAGE

PASF-2nd Qrt Mtg
6/8/2017 - Pittsburgh

REGS/RATEMAKING
WRAK GAP Session

⑤

REVISE AEPS

- SB404
- SOLAR CARE CUT