Pennsylvania: Reinvigorating the Market

MDV-SEIA Solar Focus 2016

Allyson Browne
Agenda

• Pennsylvania’s Electricity Market and Generation Mix

• AEPS Design and SREC Market

• AEPS and the Clean Power Plan

• Recommendations for Reinvigorating the Market
Pennsylvania’s Electricity Market

• **Deregulated Electricity Market** – PA was one of the first states to deregulate its electricity market and offer customers choice in their electric generation supplier
  - 11 investor-owned EDCs, 14 electric distribution cooperatives, and munis

• Electricity Rates
  - **Residential** ($0.1412/kWh) and **industrial** ($0.0693) customers pay slightly *higher* than the national average electricity rates.
  - **Commercial** ($0.093/kWh) customers pay slightly *below* national average electricity rates.

• **Industrial sector** represents approx. 35% of state’s energy usage.
Pennsylvania’s Generation Mix

• PA is the 3rd largest generator of electricity in the nation, with approx. 200 major electric generation facilities.

• Traditional & Nuclear Resources
  
  • PA is home to 9 nuclear generators at 5 power plants, which generated a majority of PA’s electricity in 2015 (37.4%);

  • Coal (30.5%) and natural gas [hydraulic fracturing] (27.8%) account for most of the balance.

• Renewable development is driven primarily by the PA AEPS, and comprises a small but growing proportion of PA’s generation mix.
Pennsylvania’s Generation Mix

Sources of Electric Generation in PA, 2000-2015

Source: EIA. “Electricity Data Browser.”
Pennsylvania’s Generation Mix - Renewables

• In 2014, renewables produced less than 5% of PA’s electricity:
  • 3.2% from wind, water, and solar; and
  • 1.5% from biomass, biogas, landfill gas, and coal mine methane.

• Solar Development
  • Cumulative Capacity = 273 MW; 16th in the country (EIA, SEIA)
  • 2015 Capacity = 13 MW (25% YoY), 26th nationally (EIA, SEIA)

• Distributed Generation
  • 85% of PA’s DG capacity is solar PV (188 MW)
  • More than 10,000 solar NM customers to date
  • 2015: 44% commercial, 34% residential, and 21% industrial
Pennsylvania’s Generation Mix


Source: EIA. “Electricity Data Browser.” Note that distributed solar is omitted from the chart due to a lack of data availability.
Pennsylvania’s Generation Mix


Agenda

• Pennsylvania’s Electricity Market and Generation Mix

• AEPS Design and SREC Market

• AEPS and the Clean Power Plan

• Recommendations for Reinvigorating the Market
AEPS Design and SREC Market

• AEPS enacted Nov. 2004
  • Requires each EDC and electric generation supplier to retail electric customers in PA to supply specific amounts of electricity sourced from “alternative” energy each year
  • End target is 18% by Compliance Year 2021 (June 2020 – May 2021)

• “Alternative” vs. “Renewable” Definition
  • AEPS allows for non-renewable resources to quality for AEPS, including:
    • Coal byproducts: waste coal and coal mine methane;
    • Natural gas-powered facilities: fuel cells, small cogeneration units & industrial blast furnaces; and
    • Fossil generation-powered resources: pumped storage hydropower reservoirs.

• Solar carve-out is merely 0.5% of the 8% Tier I by CY2021
• PA allows most PJM generators to qualify for SRECs
AEPS Design and SREC Market

• Why does the “alternative” energy definition and out-of-state generators market design matter?

  • AEPS can be satisfied by non-renewable resources, which results in less incentive for EDCs to procure RE;

  • Allowing for out-of-state generators to qualify has the effect of under-incentivizing in-state development due to market oversupply; and

  • PA generates more total electricity than other states in PJM, so its annual AEPS targets on an absolute basis exceed those of other state RPS targets. But, in effect, it’s not incentivizing the same amount of RE growth as other states with more refined/restrictive RE definitions coupled with more aggressive carve-out targets.
AEPS Design and SREC Market

RPS/AEPS Obligations for States in PJM Interconnection, 2010-2035

Source: LBNL. See Sources Page.
Agenda

• Pennsylvania’s Electricity Market and Generation Mix
• AEPS Design and SREC Market
• AEPS and the Clean Power Plan
• Recommendations for Reinvigorating the Market
AEPS and the Clean Power Plan

• Future of CPP may be dependent on Trump SCOTUS Nomination.

• PA DEP has already issued a Draft 2015 Climate Change Action Plan in furtherance of complying with CPP.

• How does the AEPS come into play?

  • **AEPS can contribute directly or indirectly to CPP compliance**, whether PA pursues a mass- or rate-based plan.

  • **AEPS will need to be modified to harmonize** its objectives/targets and enforcement mechanisms with its CPP plan.
    • *Ex. Modifying definition of “alternative” energy to be in line with spirit of CPP.*
Agenda

• Pennsylvania’s Electricity Market and Generation Mix
• AEPS Design and SREC Market
• AEPS and the Clean Power Plan
• Recommendations for Reinvigorating the Market
Recommendations for Reinvigorating the Market

• What can PA do today to fix the AEPS?

1. **Remove unclean “alternative” energy technologies from AEPS definition to allow RE to be sole source for compliance** > disallows EDCs to shortcut compliance obligations with non-RE resources.

2. **Increase solar carve-out** > directly incentivizes solar development.

3. **Geographically limit market participation to in-state resources without violating Dormant Commerce Clause** > balances market to appropriately incentivize in-state solar development.

• Ron will elaborate on the state of the PA SREC market & state legislation under consideration.
Sources

- EIA. “Form EIA-826 detailed data: Solar PV estimate.” www.eia.gov/electricity/data/eia826/.
- For RPS/AEPS Obligations for States in PJM Interconnection, 2010-2035 Graph: Lawrence Berkeley National Laboratory. Compiled from “RPS Compliance Data” (February 2016) and “RPS Demand Projections” (March 2016). Note that renewable energy technologies other than wind, water, and solar and some non-renewable energy technologies are included in this figure, depending on the state-specific eligible technology criteria.
Contact

Allyson Browne
Director of Regulatory Affairs & General Counsel
Allyson.Browne@srectrade.com