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Utility Scale Solar Leasing

Trends In the Energy Marketplace for the next Decade

2020 PA Solar Congress

Blairsville, PA

Edward Johnstonbaugh, Education Program Associate

2/15/2020

Transition of an Industry

What significant event took place in 1979?

Clean Air Act of 1992

Electricity Deregulation 1998

AEPS Act Implementation 2005

AEPS Act Sunset 2021

What's Next.....?



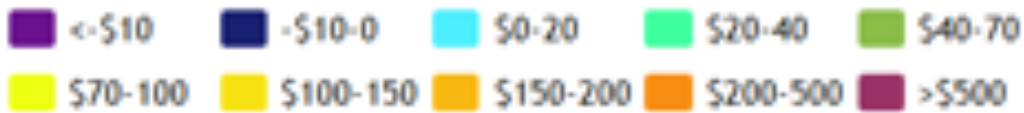
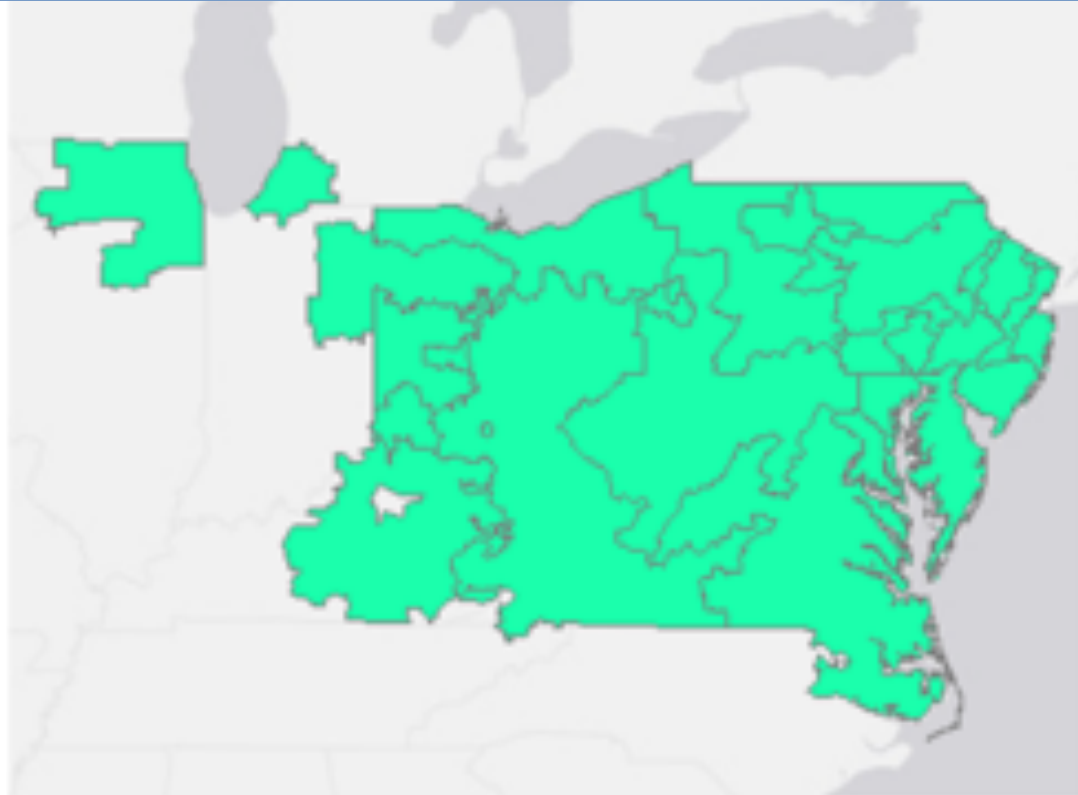
Market is segmented into retail and wholesale Markets:

In the Retail market, in Pennsylvania, Solar Capacity is limited to 50 kW for residential services and 3 mW for Commercial services. Consumer deal with Electrical Distribution Companies, Rural Electric Cooperative, or Municipal Electric Authorities at voltages below 1,000,000 volts.

In the Wholesale market the voltages are greater than 1,000,000 volts and PJM is the governing authority. Power sales are into the market or by bilateral contract.

Wholesale vs. Retail

Location Marginal Pricing



Zones	Selected Hubs	Selected
AE		\$27.66
AEP		\$44.62
APS		\$45.11
ATSI		\$47.99
BC		\$31.59
COMED		\$42.98
DAYTON		\$46.39
DEOK		\$44.06
DOM		\$34.61
DPL		\$27.80
DUQ		\$66.26



PJM Wholesale Pricing by Zone

Generation Fuel Mix

As of 9:00 a.m. EPT

All Fuels | Renewables



Total: 100,342 MW

Renewables: 5,802 MW

PJM Generation Fuel Mix 2/10/2020

AEPS Act Sunsets in 2021, proposals in play to expand Solar PV to **10% by 2030, 2.5% retail 7.5% wholesale**

Nuclear Industry seeking relief in the form of subsidy

Governor considering move to Regional Greenhouse Gas Initiative

PJM plans pricing carbon emissions into wholesale market

Smart Metering Technology Implementation underway

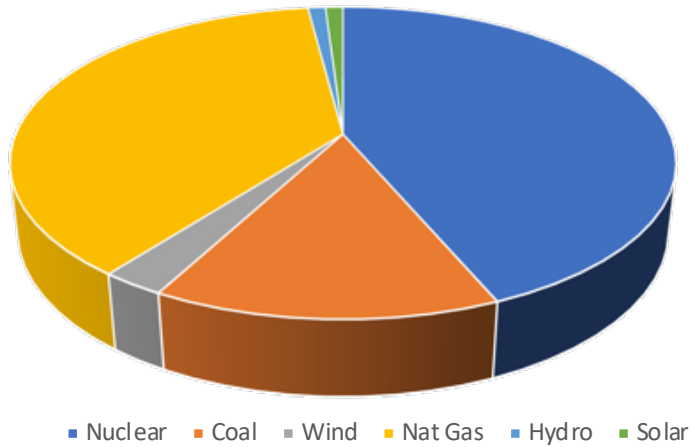
New Rate Design Options such as Hourly Pricing

Community Solar PV & Micro Grid legislation on Horizon

Public Policy In Transition

Public Policy Will Impact Diversity

Generation Diversity on 1/12/2020



Generation Diversity Year 2030

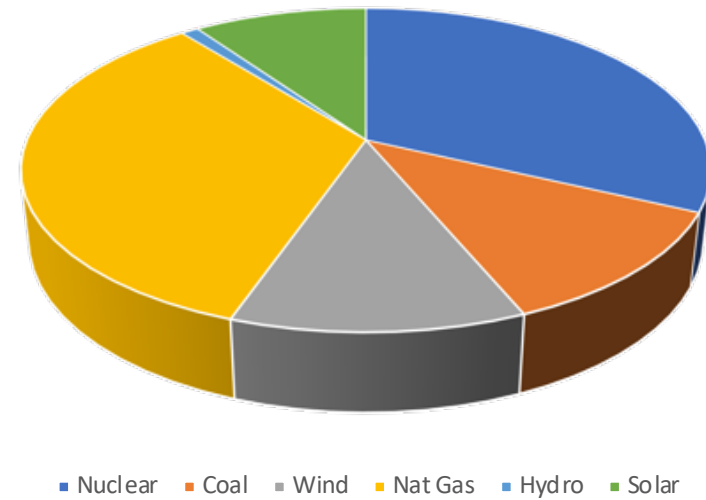
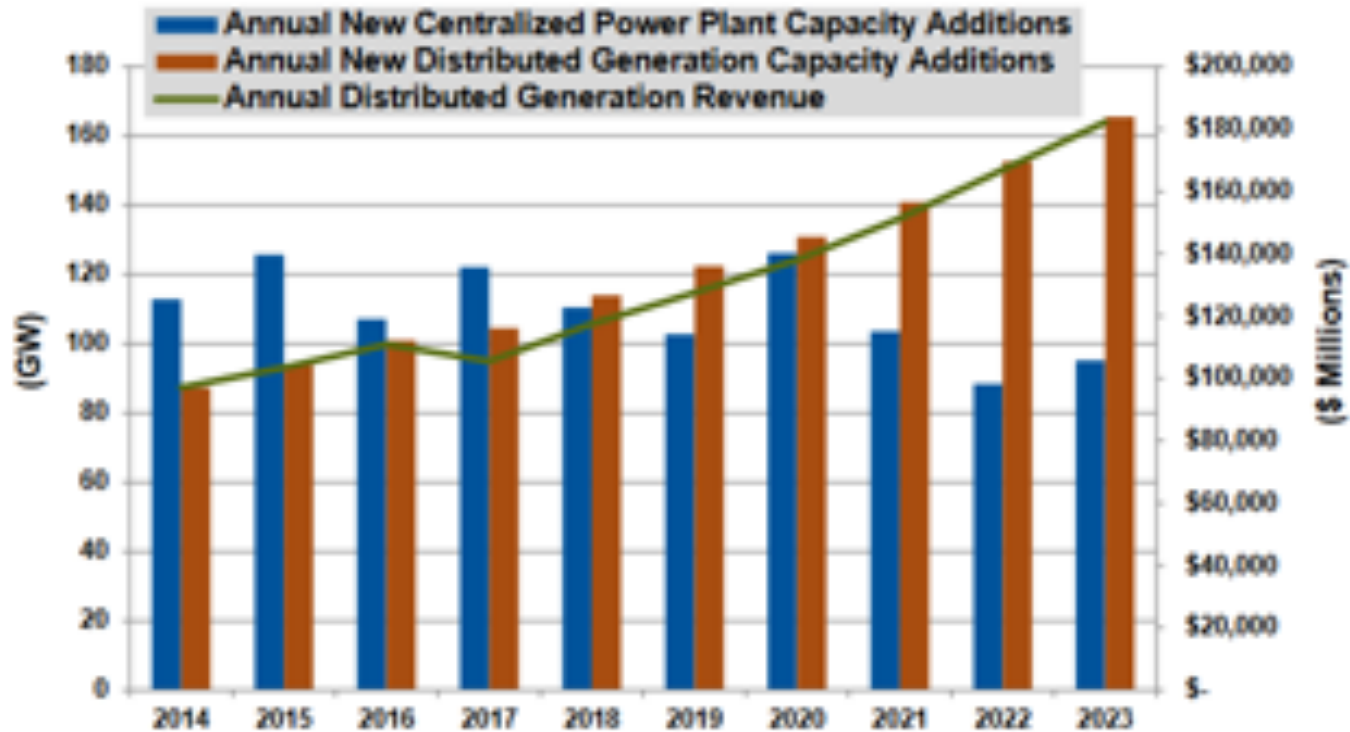


Chart 2.1 Annual Centralized Power Plant and DG Capacity Additions and Vendor Revenue, World Markets: 2014-2023



(Source: Navigant Research)

Growth of Distributed Energy Resources (DER)

Technology will drive continued change in the retail and wholesale generation market

The change will enable scalable renewable energy technologies as Distributed Energy Resources (DER)

DER resources will grow in market share

As DER gains market share other innovations like micro grids, hourly pricing, and ancillary services will lower costs and reduce carbon emissions

Takeaways



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INITIAL CONSIDERATIONS

- Length of Commitment
- Competing Legal Interests in the Land
- Impacts on The Farm and Land
- Family Matters
- Property Taxes
- Government Programs
- Liability and Insurance
- Neighbor and Community Relations
- Developer



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A TRANSACTION IN MULTIPLE PARTS

- Letter of Intent (if any)
- **Option Agreement**
- **Lease Agreement**





PARTIES:

Developer = tenant, lessee

Landowner = landlord, lessor

DEFINE THE PROPERTY:

Legal Description

Survey, Plot Plan, Depiction

Map, GIS image





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Brook Duer – Staff Attorney

EASEMENTS

- Construction Easement
- Access Easement
- Transmission Easement
- “Nuisance” Easement
- Solar Easement
- Catch-All Easement



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LANDOWNER OBLIGATIONS

Non-interference

Exclusivity Provision

“Quiet Enjoyment” Provision

Confidentiality Clauses

Owner Improvements



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PROPERTY MAINTENANCE

Vegetation and Noxious Weed

Crops?

Grazing?

Pollinators?



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TERMINATION & CLEANUP

Post-Construction Cleanup

Post-Project Cleanup

Escrow Funds

Restoration Standards



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MISCELLANEOUS LEGAL CLAUSES

- Warranty of Title
- Hazardous Materials
- Indemnity
- Condemnation
- Force Majeure
- Lender Protections
- Arbitration & Jury Trial Waiver
- Damages Waiver
- Choice of Law/Venue
- Attorneys Fees



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