



East Kentucky Power Cooperative

Cooperative Solar Farm One



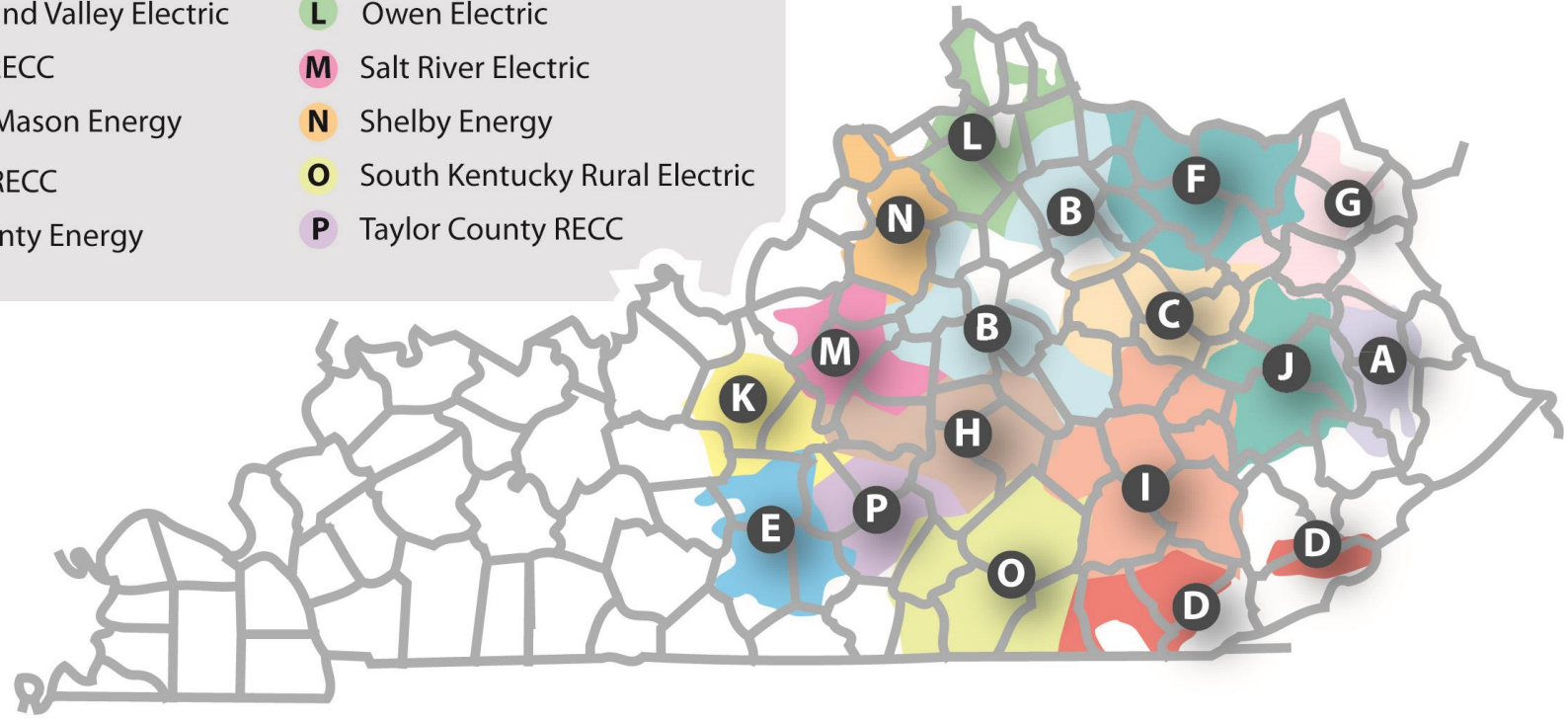
EKPC: *Company Overview*

- *Not-for-profit, member-owned generation and transmission cooperative based in Winchester, Ky.*
- *Provides wholesale power to 16 Owner-Member co-operatives*
- *Our Owner-Member co-ops serve more than 1.1 million Kentucky residents*

EKPC: Serving Rural Kentucky

Owner-Member co-ops provide electricity to more than 1.1 million Kentuckians in 87 counties

- A** Big Sandy RECC
- B** Blue Grass Energy
- C** Clark Energy
- D** Cumberland Valley Electric
- E** Farmers RECC
- F** Fleming-Mason Energy
- G** Grayson RECC
- H** Inter-County Energy
- I** Jackson Energy
- J** Licking Valley RECC
- K** Nolin RECC
- L** Owen Electric
- M** Salt River Electric
- N** Shelby Energy
- O** South Kentucky Rural Electric
- P** Taylor County RECC



EKPC: Serving Rural Kentucky



EAST KENTUCKY
POWER COOPERATIVE

A Touchstone Energy Cooperative



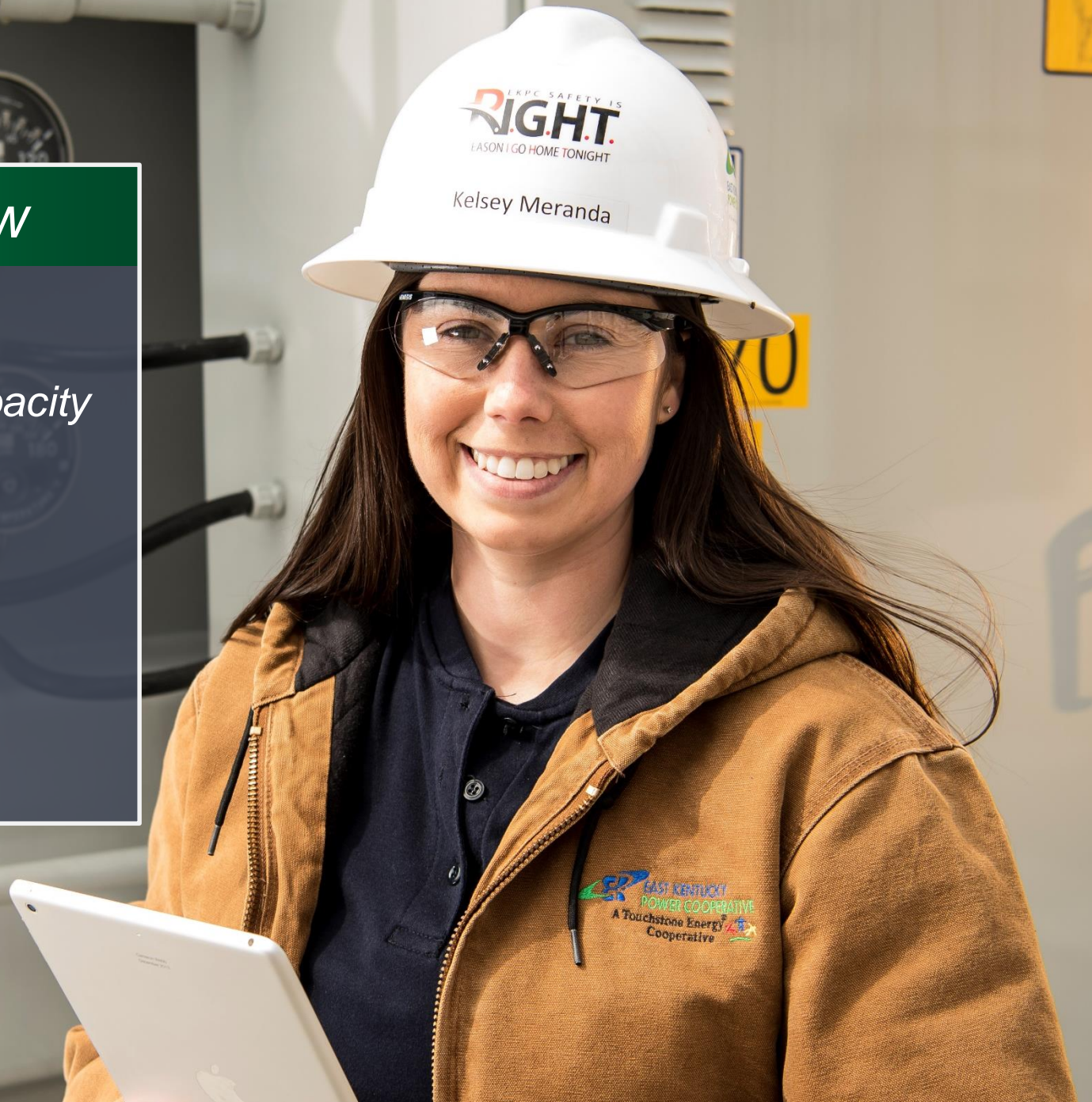
EAST KENTUCKY POWER COOPERATIVE

A Touchstone Energy Cooperative



EKPC: *Company Overview*

- *3,500 MW of winter generating capacity*
- *2,800 miles of transmission lines*
- *376 distribution substations*





EKPC: *Power Supply*

Coal

- Spurlock Station, Maysville, Ky.
- Cooper Station, Burnside, Ky

Natural gas

- Smith Station, Trapp, Ky.
- Bluegrass Station, LaGrange, Ky.

Renewables

- Cooperative Solar Farm One
- Landfill gas (six plants)

Power purchase agreements

- USACE Wolf Creek Dam, Laurel Dam

EKPC: *PJM*

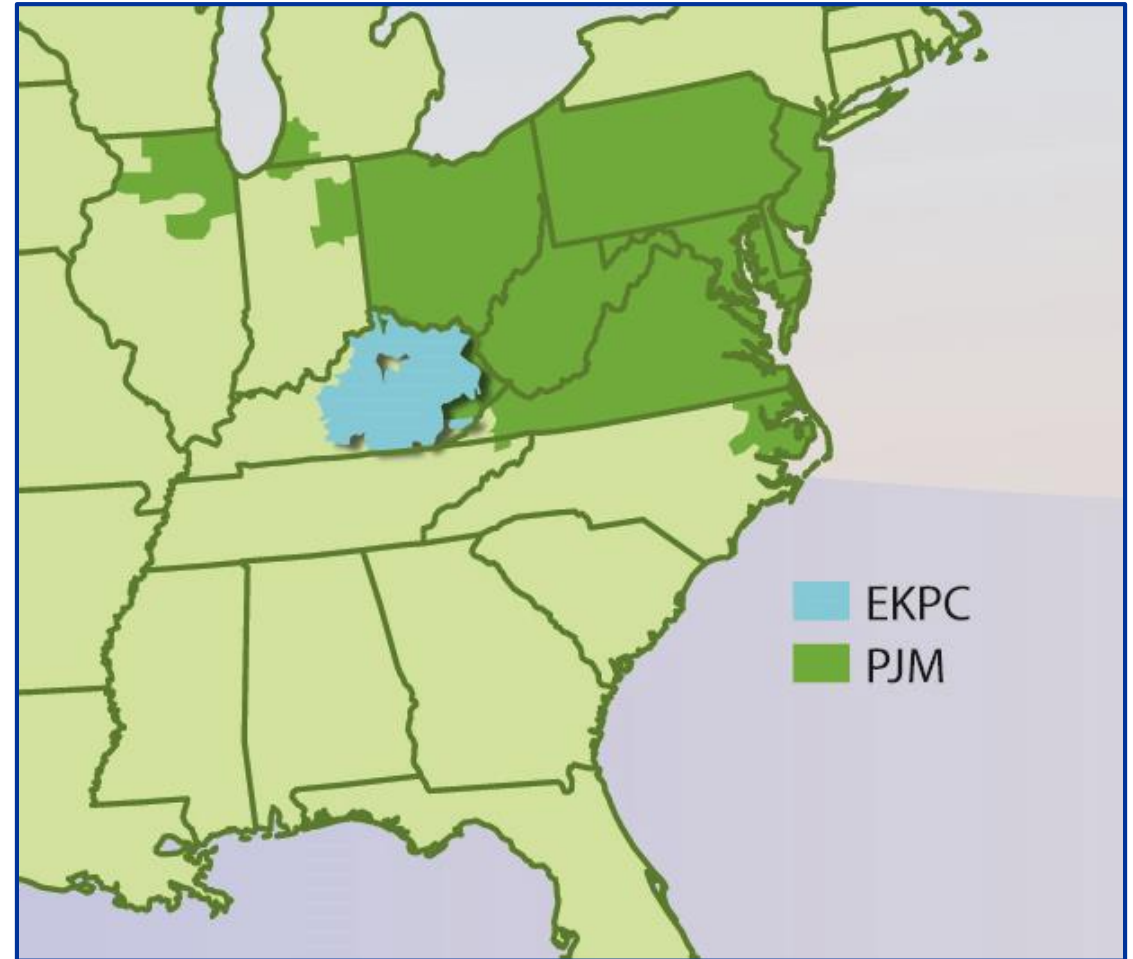
PJM coordinates the movement of wholesale electricity in 13 states and the District of Columbia.





PJM membership :

- Optimize the efficiency of EKPC's generating units
- Mitigate market risks for importing and exporting power
- Provide access to a much larger power supply marketplace
- Leverage the system's weather diversity
- Enable EKPC to reduce planning reserves from 12 percent annually to 3 percent across PJM's summer peak
- Increase opportunities to buy market energy and sell excess capacity
- Reduce annual purchases of 400 MW of import transmission and associated expenses



EKPC: *Power Supply*

Cooperative Solar Farm One Winchester, Ky. (Clark County)

- 60 acres, 32,300 solar panels
- 8.5 net megawatts
- Cost approximately \$17 million
- Online November 2017



Kentucky's Touchstone Energy Cooperatives
Cooperative Solar

www.cooperativesolar.com





Cooperative Solar Farm One Stats



- 32,300 panels
 - 30,400 fixed
 - 1,900 tracking
- Panels – each 330-335 watts DC
 - 79 in x 39 in x 1.5 in (including frame)
 - 53 lbs.
- Total of ~ 8.5 MWs AC
 - Enough energy to power about 1,000 homes
- 6 inverters
- Financed with Clean Renewable Energy Bonds

Cooperative Solar Farm One



Cooperative Solar Farm One



Cooperative Solar Farm One



Cooperative Solar Farm One



Cooperative Solar Farm One



Cooperative Solar Program



- **\$460/panel one-time payment for 25-year license.**
- Electric co-ops own, operate and maintain solar panels.
- Participants get the benefit of solar power on their monthly power bill.

Cooperative Solar Program

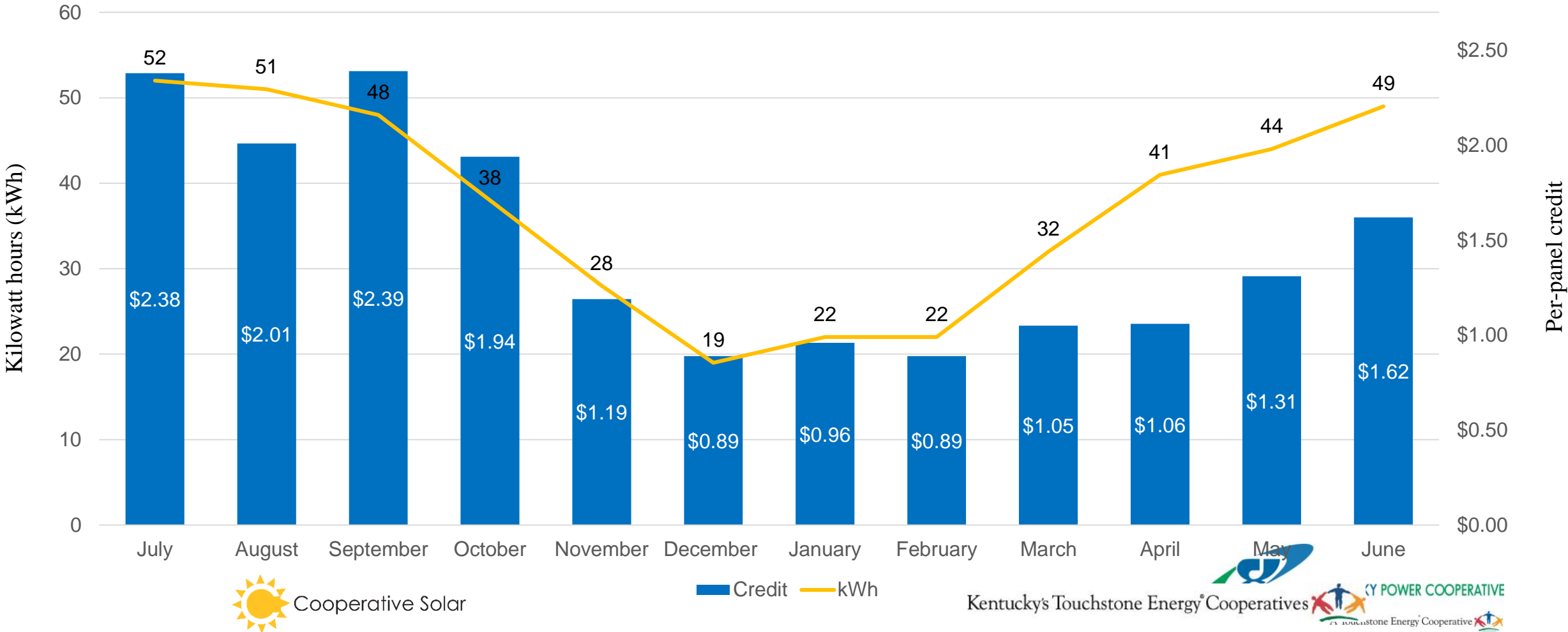


Sources of value for participants

- Energy – Licensees credit for receive real-time market value of energy
- Capacity – Licensees receive credit for market value set by annual auctions
- Renewable Energy Credits (RECs) – Licensees receive credit for market value established by auctions



Production & Credits, last 12 months



Cooperative Solar Program



Benefits for participants

- Not-for-profit
- No worries about maintenance or hassles from bolting panels to their roof.
- Available to renters or areas with deed restrictions
- Available to members whose roof is shaded by trees or doesn't get good exposure to the sun
- Can transfer, gift or sell your license



Cooperative Solar Program



www.cooperativesolar.com



Government Oversight of Power Generation & Transmission

Kentucky Public Service Commission

- Rates and service in Kentucky
- New generating facilities and large transmission line projects require Certificates of Public Convenience and Necessity (CPCN)
- Service facilities are exempt from local zoning (KRS 100.324)

Federal Energy Regulatory Commission

- Interstate wholesale sales of electricity
- Reliability of high-voltage transmission
- Monitors regional markets like PJM
- Prevents discrimination in access to electric grid
- Promotes regional planning and cost allocation

Utilities Must Provide Access to the Transmission Grid

Open Access Transmission Tariff (OATT)

- Helps ensure fair, open access
- Establishes rights and responsibilities
- Allows for transmission planning (efficiency)
- Sets cost recovery and allocation mechanisms
- PJM Interconnection maintains and administers OATT on behalf of members, including EKPC

PJM's Interconnection Process

1) Feasibility study

- Project practicality, developer cost to interconnect
- Preliminary estimates of upgrade type, scope, cost and construction lead time

2) System impact study

- Identifies potential system constraints, attachment facilities, local and network upgrades
- Comprehensive cost responsibilities, construction lead time estimates

3) Facility study

- Engineering design of expansion plan to accommodate interconnection request
- Good-faith estimate of costs, time for attachment facilities and upgrades

Process can take 2+ years; small system (20 MW or less) may be expedited

Contact me ...

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Questions and Discussion