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Energy Supply Chain Overviews

- Jan 22 Natural Gas: Midstream Supply Chain
- Feb 5 Hydrogen Supply Chain Report
- Feb 19 Chemicals Supply Chain Report
- March 5 Circular Plastics Supply Chain Report

Coming Soon: Electric Grid Components, Energy Efficient Products

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NATURAL GAS: UPSTREAM

INDUSTRY
OVERVIEW
SEGMENTS



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Rapid Fire: 2026 Outlook for Natural Gas, Solar, Data Centers, & Nuclear



SOLAR: SUPPLY CHAIN REPORT

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AI DATA CENTERS: OVERVIEW

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SOLAR: SUPPLY CHAIN REPORT



Different Scales of Solar



10 kW home system



500 kW commercial system



.5-3 MW Merchant Generator/Community Solar



20 MW grid-scale system

Residential & Commercial

- For on-site energy use
- Rooftop or mounted adjacent to structure
- Measured in kW
- Mature market – available guidance

Merchant Generator/Community Solar

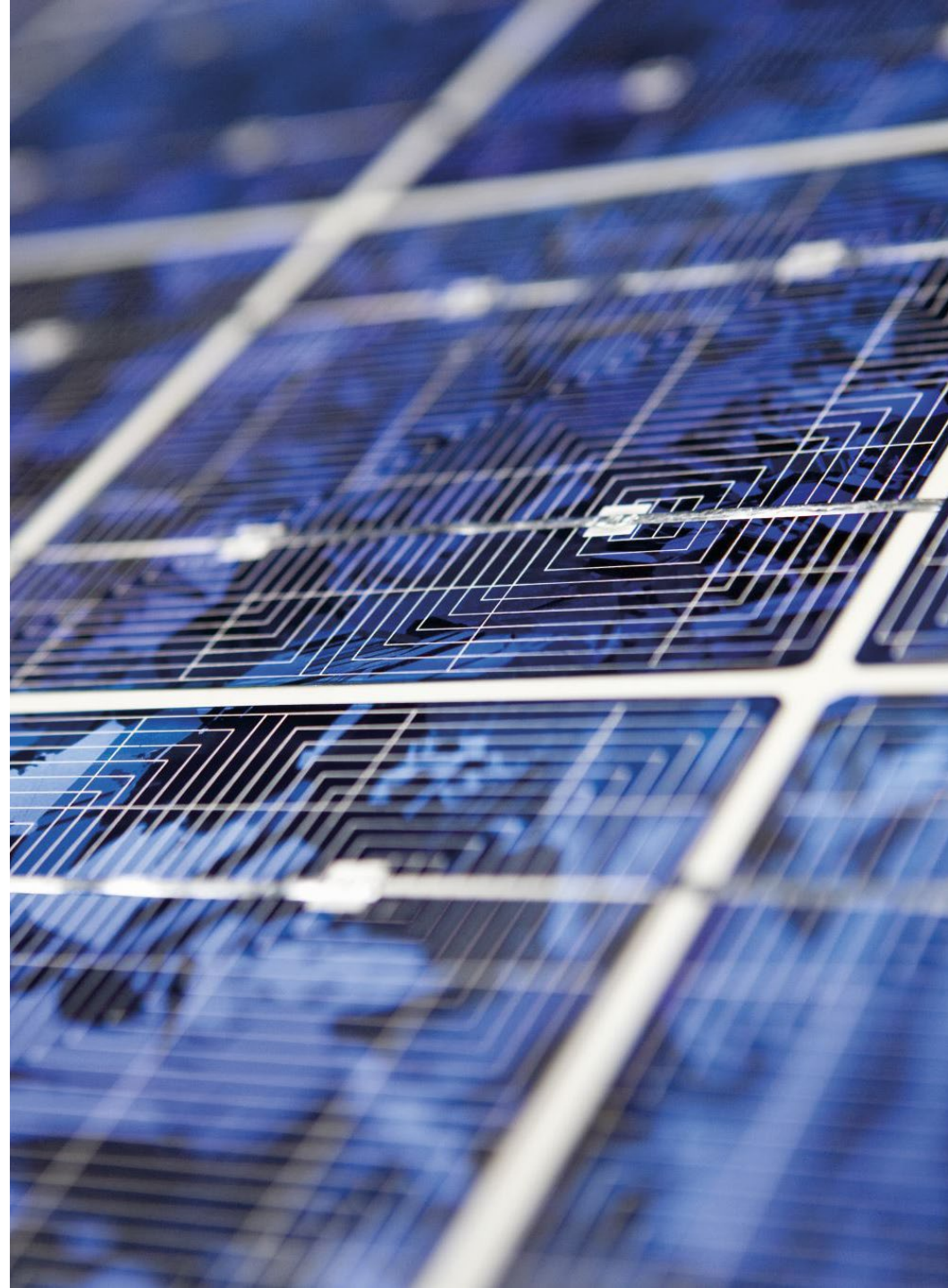
- For off-site energy use within distribution grid
- Usually ground mounted requiring multiple acres but potential for rooftop or parking lot installations
- Up to 3 MW
- PA Community Solar guidelines unclear – pending legislation

Grid-Scale Solar

- For off-site energy use distributed through transmission grid
- Ground mounted requiring significant acres to reach economies of scale
- Measured in MW
- Emerging market – guidance in development

Solar Opportunities

- Without incentives, what is left?
 - New Energy Demand – rates?
 - Peak Shaving
 - Data Centers may have excess space with an existing connection/infrastructure
 - Less restriction and cost? (that came with incentives)
 - Retail rates?
 - Solar for Schools (PA, OH, WV)
 - RISE PA
 - Offsetting costs (behind the meter for large energy users)
 - Energy Storage





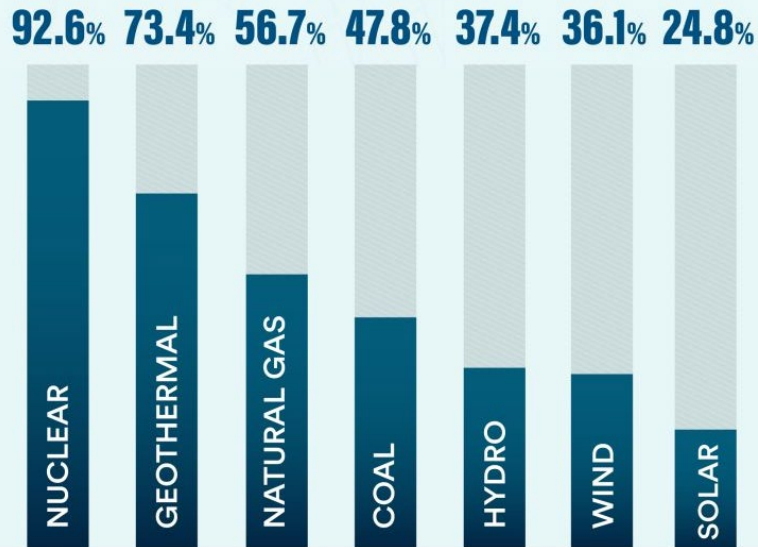
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Capacity factor measures a power plant's actual generation compared to the maximum amount it could generate in a given period without any interruption.



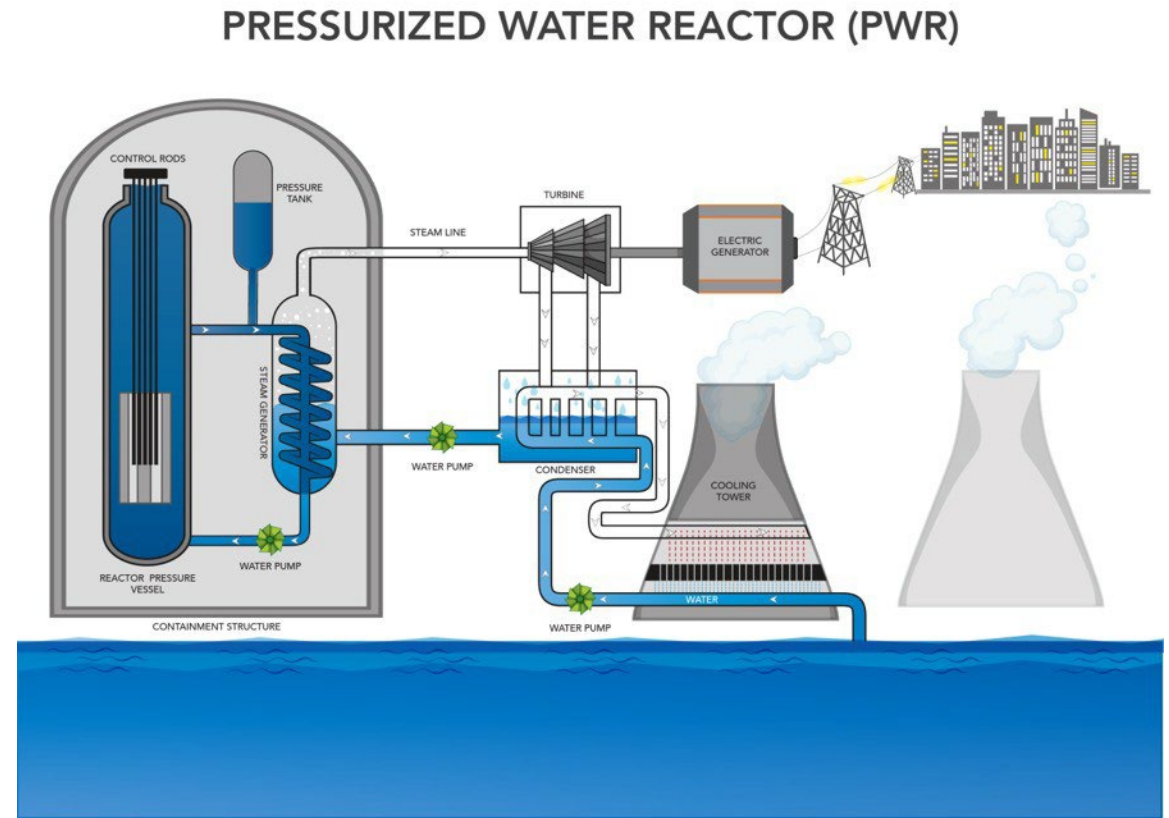
Nuclear Opportunities

- More power is needed
- AI Data Center customers may be willing to pay more
 - This means that maintenance and upgrade/replacement of components may be a viable market opportunities for years to come
 - Maintaining nuclear plants
- DOE and DOD are interested in SMRs
 - 25 SMRs are in the proposed stage in the US



Core Components of a Nuclear Reactor

- **Control Rods:** Regulate fission via neutron absorption
- **Steam Generator:** Converts heat to steam for turbines
- **Containment Structure:** Prevents radioactive release
- **Turbine & Generator:** Produce electricity from steam



NATURAL GAS



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Where are we now?

- ▶ Rig Count - 18 current as of 12/2025
 - ▶ Generally steady in count, however more efficient
 - ▶ Basin 37
- ▶ Natural Gas Production
 - ▶ PA - through 10/2025 approx. 21.25 BCF/d - extrapolates to 7.75 TCF in 2025
 - ▶ OH - 2.2 TCF in 2024
 - ▶ WV - 3.3 TCF in 2024
 - ▶ Approx 90% is exported, 50/50 initiative to keep in state
- ▶ Permitting
 - ▶ PA - January - July average 35. November 103 - 2025 total - 605 2024 Total - 292

2026 Opportunities

- ▶ **Exports - LNG**
 - ▶ Over 20 BCF/D increased production in announced projects
- ▶ **Data Centers**
 - ▶ Over 30 GW announced projects - if all gas approx. 5 BCF/D
- ▶ **Power Generation**
 - ▶ PJM alone anticipates 40 GW retirements - 6 BCF/D
- ▶ Emissions reduction, capture, and measurement still relevant
- ▶ Deep Utica wells outperforming Marcellus (in some areas)





AI DATA CENTERS: OVERVIEW



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PA Announced Projects (\$120B / 15GW?)

- **Amazon's Pennsylvania AI Innovation Campuses** – \$20B multi-site AWS program in Salem Township (nuclear-adjacent Susquehanna) and Falls Township (Keystone Trade Center), ultimately targeting ~1.9 GW via long-term nuclear PPA with Talen.
- **Pennsylvania Digital I (PAX)** – \$15B, 1.35 GW hyperscale campus (scalable to 1.8 GW) on 700 acres in Carlisle with three 450 MW phases tied into a new PPL 500 kV–138 kV switching station.
- **CoreWeave Lancaster County Data Center** – \$6B+ hyperscale AI facility on former R.R. Donnelley site in Lancaster County, starting at 100 MW and expandable to 300 MW, with first phase targeted for Q1 2027.
- **Homer City Energy Campus** – \$10B+ redevelopment of the former Homer City coal plant into a 4.5 GW natural gas–fired generation and data center campus designed to support roughly 4.4 GW of computing load.
- **Blackstone/QTS Pennsylvania Program** – \$25B statewide initiative to build multiple QTS hyperscale campuses in northeastern Pennsylvania, backed by new Blackstone–PPL gas generation dedicated to data center loads.
- **Energy Capital Partners / Calpine York County Data Center** – \$5B co-location project at the 828 MW York 2 Energy Center in Peach Bottom Township to add a large data center complex powered by on-site combined-cycle gas.
- **Project Gravity (Archbald)** – 1.62M sq ft multi-building data center campus on 186 acres in Archbald, with at least six two-story buildings and two on-site substations, currently in planning.

PA Announced Projects (cont'd)

- **Project Hazelnut (Hazle Township)** – 15-building NorthPoint data center campus on ~1,280 acres in Humboldt North Industrial Park, projected hundreds of MW but unanimously rejected by Hazle Township supervisors in Nov. 2025.
- **Wildcat Ridge AI Data Center Campus** – Proposed \$2.1B, 17.2M sq ft project in Archbald with fourteen three-story data centers on 400 acres and a dedicated substation tied to a nearby PPL node.
- **Fort Cherry Development District** – Liberty/Imperial Land/Range alliance to pair a new natural gas plant with future AI/data center builds on a large master-planned industrial district in Robinson Township, Washington County.
- **Zediker Station (CNX/JLL)** – 1,500-acre industrial site in South Strabane Township marketed for a 500–700 MW data center campus powered by a natural-gas microgrid using Remediated Mine Gas for near-net-zero operations.
- **Iron Mountain WPA-1** – 330,000 sq ft, 15.5 MW underground data center in Boyers on a 315-acre campus using geothermal cooling and matched with 100% renewable power (existing/operational, but a key PA reference asset).

PA Announced Projects (cont'd)

- **Google/Brookfield Hydropower for PA Data Centers** – \$3B deal securing 670 MW from Holtwood and Safe Harbor hydro plants on the Susquehanna to power Google's PJM-region data centers, including Pennsylvania facilities.
- **Crane Clean Energy Center (Three Mile Island Unit 1 Restart for Microsoft)** – 835 MW nuclear restart in Londonderry Township under a 20-year contract to supply Microsoft's AI data centers with carbon-free baseload power starting ~2027.
- **Tioga County – Tioga/Lawrenceville** – proposed 1 -2 GW facility with onsite power generation from natural gas. Next Generation Land Development is looking to acquire properties for undisclosed developer. Approximately \$8 billion investment for powergen and data center.
- **Montour County** – Talen Energy has submitted a rezoning petition for an 870-acre site in Anthony Township. Property sits adjacent to the Montour Steam Electric Station, a 1,757 megawatt natural gas power plant owned by Talen Energy.

Data Centers

- Projects across region
- Obstacles for development
 - Supply chain
 - Public sentiment
- Grid vs. data centers
 - Power needs
 - Turbines?



Questions?

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