Wilmington City Council - Environment Committee on October 22nd 2025.

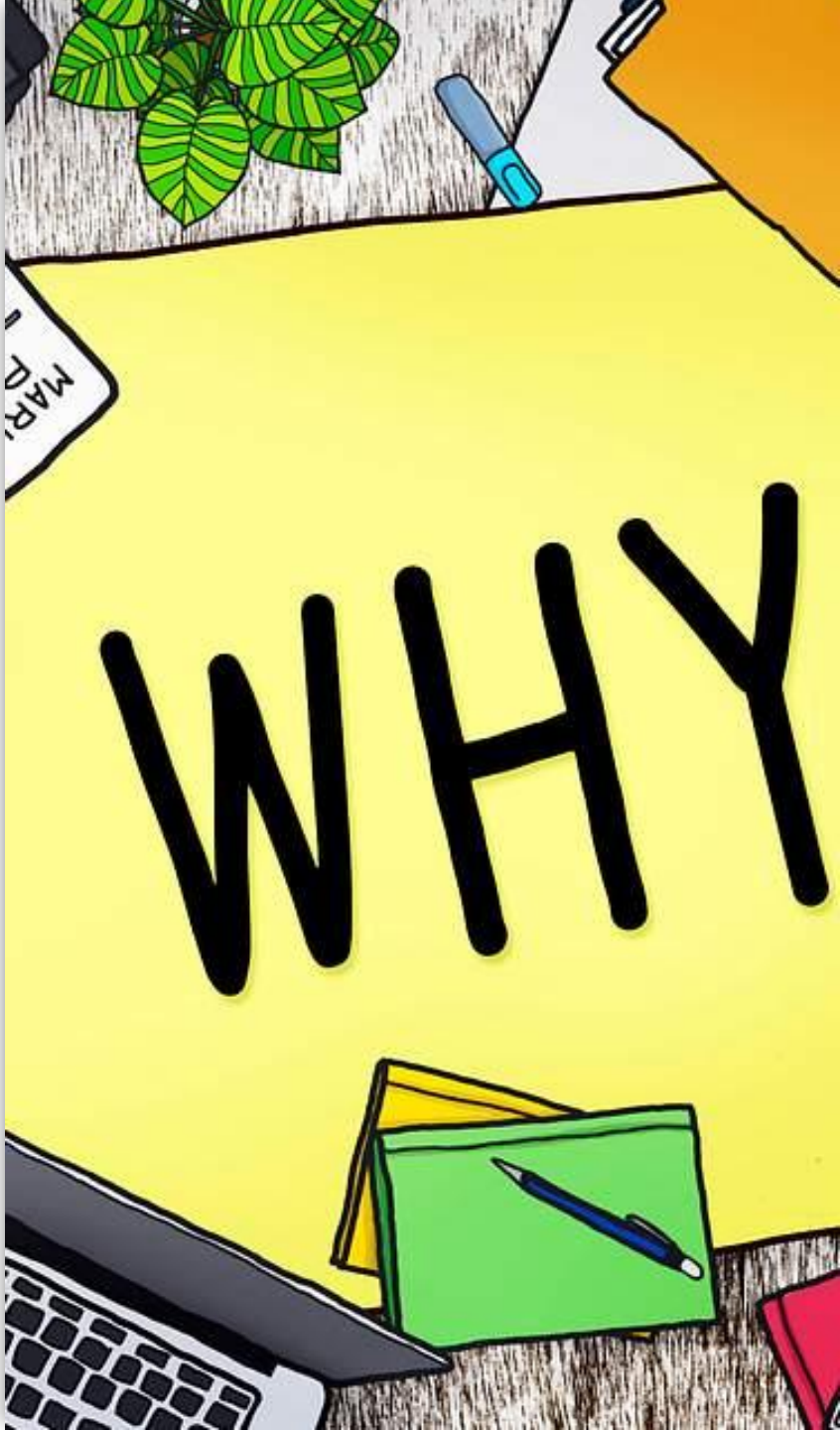
Wilmington's Energy Future: State & Local Updates

What's Happening Across Delaware

- Delaware imports more power than it produces.
- Older power plants are retiring faster than replacements are added.
- Data centers and AI are driving a 2% annual rise in demand.
- Statewide efforts focus on expanding solar, wind, and battery storage.

Why Are We Here

- A hike in Delmarva power bills during the winter season.
- PJM warned of rising electricity demand and possible supply shortfalls in the next few years.
- Load growth, driven by data centers, EVs, and economic expansion, is outpacing new generation.
- Electricity prices and capacity costs are increasing, putting pressure on households and city budgets.
- Delaware must strengthen its local energy resilience, through rooftop solar, storage, and efficiency, to stay secure and affordable.
- Increased interest in energy diversification and the legislation to facilitate the process.

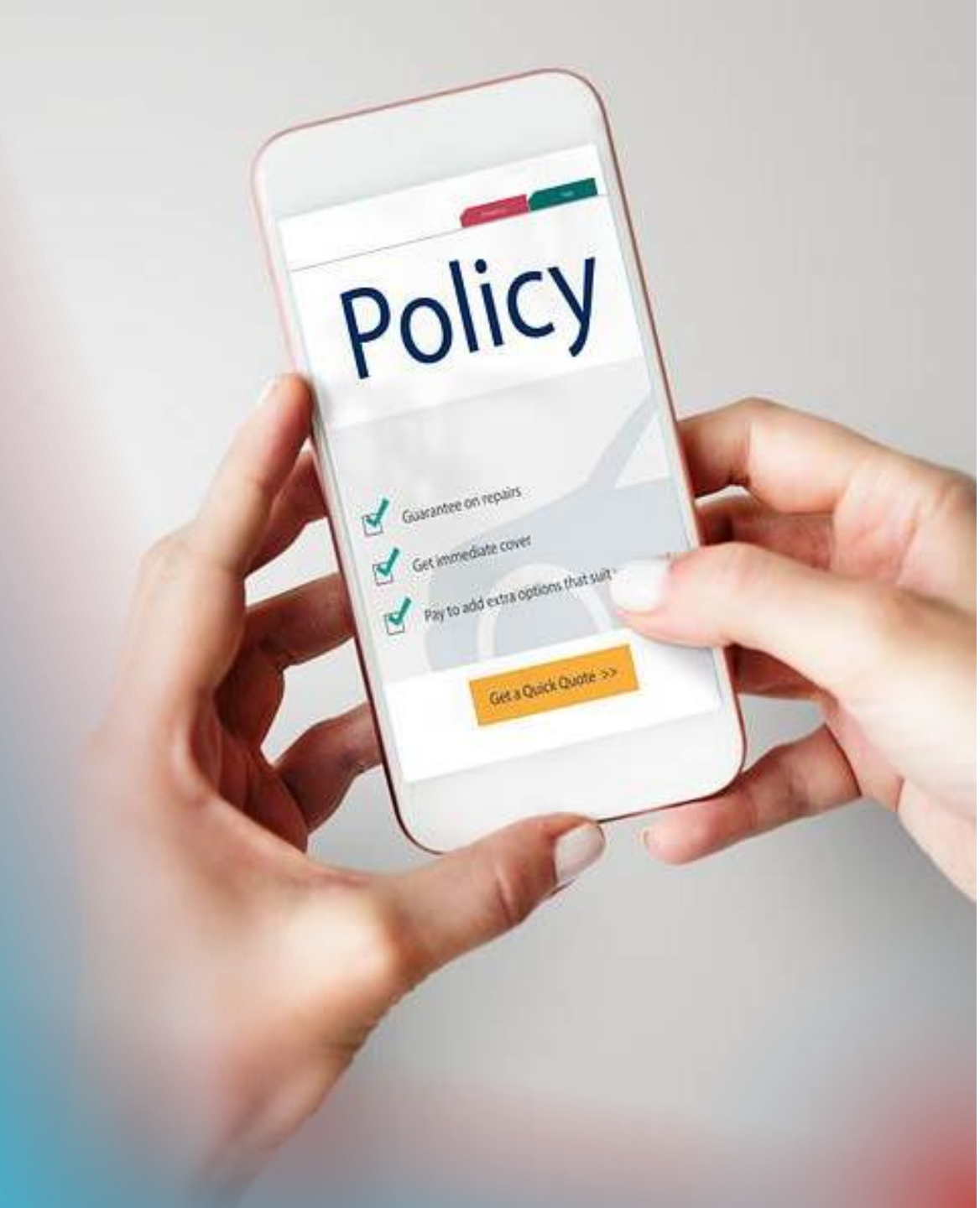


Legislations Relating to Energy In Delaware

- SB 59 : Utility Rate Oversight Reform - application of the prudence standard where cert ain expenses and costs, which can lead to less frequent and less impactful rate increases.
- SB 60 : Utility Cost Recovery Limits - preventing regulated utilities from passing the costs of non-utility-related activities on to their customers through rate increases
- SB 61 : PJM Transparency Act -Division of Public Advocate and DPL to submit details of every vote cast at PJM Interconnection meetings.

Legislations Relating to Energy In Delaware

- SB 175 : Net Metering Update - happens in the event the consumer generated more than the used.
- SB 159 : Substation Permitting Reform - requires the permitting of an electric substation as a conditional use in a heavy industrial zone, if it meets certain conditions.
- HB 50 : Delaware Energy Fund & Assistance – funds to assist households earning less than 350% of the federal poverty level



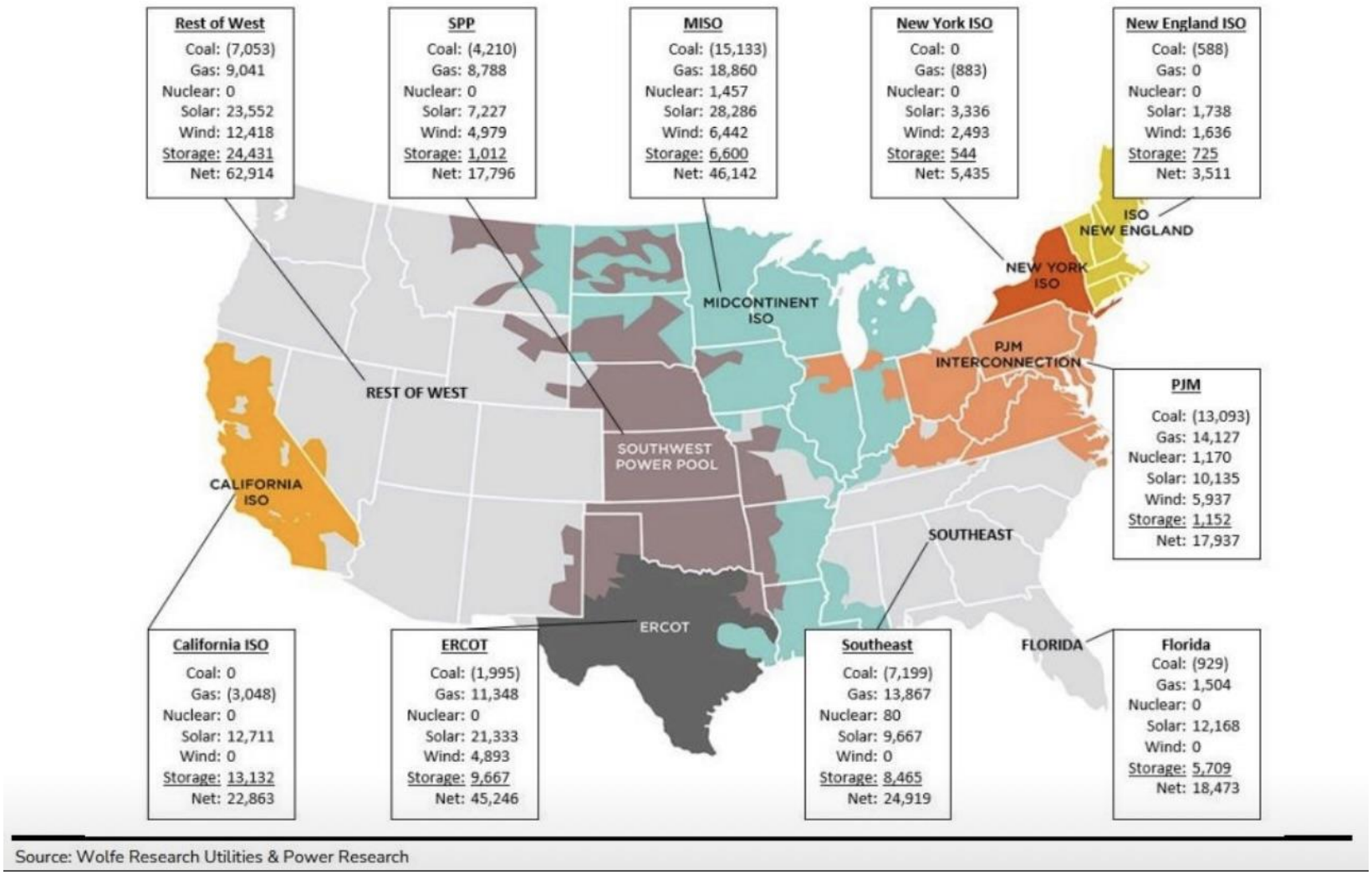
Big Picture Policy Shifts

- Development of a Climate Change Action Plan 2025:
  - Pending State Siting Commission proposal to speed renewable project approval.
  - Delaware State Energy Plan
- Net metering legislations on carrying forward credits to the following year for customers.
- Energy assistance for low-income households(Energy Fund)
- Legislation for data center oversight.

What is PJM?

- PJM stands for PJM Regional Interconnection, it's a regional power grid operator.
- It manages the flow of electricity across 13 states and Washington, D.C.
- PJM ensures that power plants and utilities work together to keep the lights on 24/7.
- It runs the largest electricity market in North America.
- The states it serves include:
- Delaware, Pennsylvania, Maryland, New Jersey, Ohio, Virginia, West Virginia, Indiana, Illinois, Kentucky, Michigan, North Carolina (part), and Tennessee (part).
- PJM coordinates how much energy is generated, transmitted, and used , like the "traffic controller" for electricity.

Exhibit 2: Map of Net Capacity Additions by ISO, MWs, 2025-2029



Source: Wolfe Research Utilities & Power Research

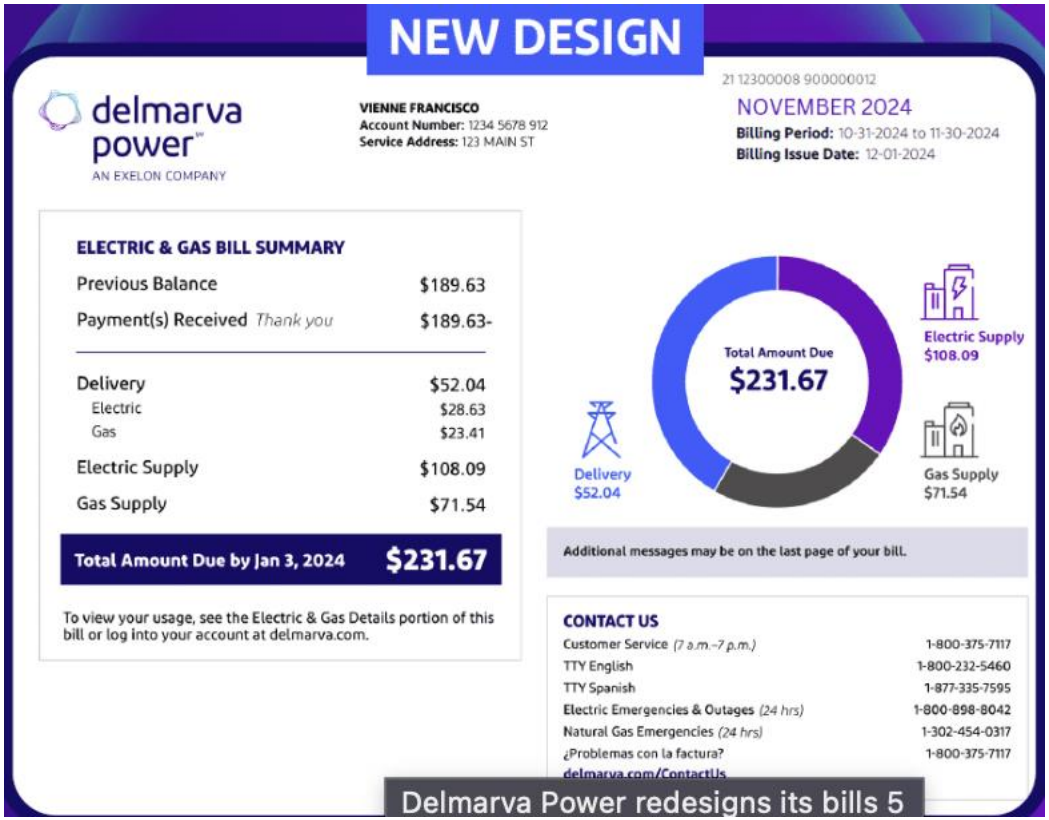
- Florida expected to bring on new capacity faster than PJM region.
- PJM forecasts approximately 30 - 32 GW of load growth by 2030 almost entirely from data centers.
- In PA, individual data centers could consume 900 -1,000 MW.

Data Centers & AI: The New Power Players

- Over 5,400 U.S. data centers; 54% of global share.
- Delaware’s data demand is smaller but growing.
- Lawmakers studying tariffs and 'Bring Your Own Energy' models.
- Goal: avoid passing costs to residential customers.

Why Does All this Matter?

- Rising capacity costs in PJM (already spiking).
- Supply shortage risks if generation doesn't keep pace.
- Pressure to require data centers to bring or finance their own generation.
- Possible rate impacts on residential users.



Solar Power: Delaware's Bright Spot

- 10,000 Delaware homes and businesses now have solar.
- New community and apartment programs (balcony solar) expand access.
- Permitting improvements underway.
- Wilmington can lead with public building rooftop projects.

Wilmington + NASA Partnership

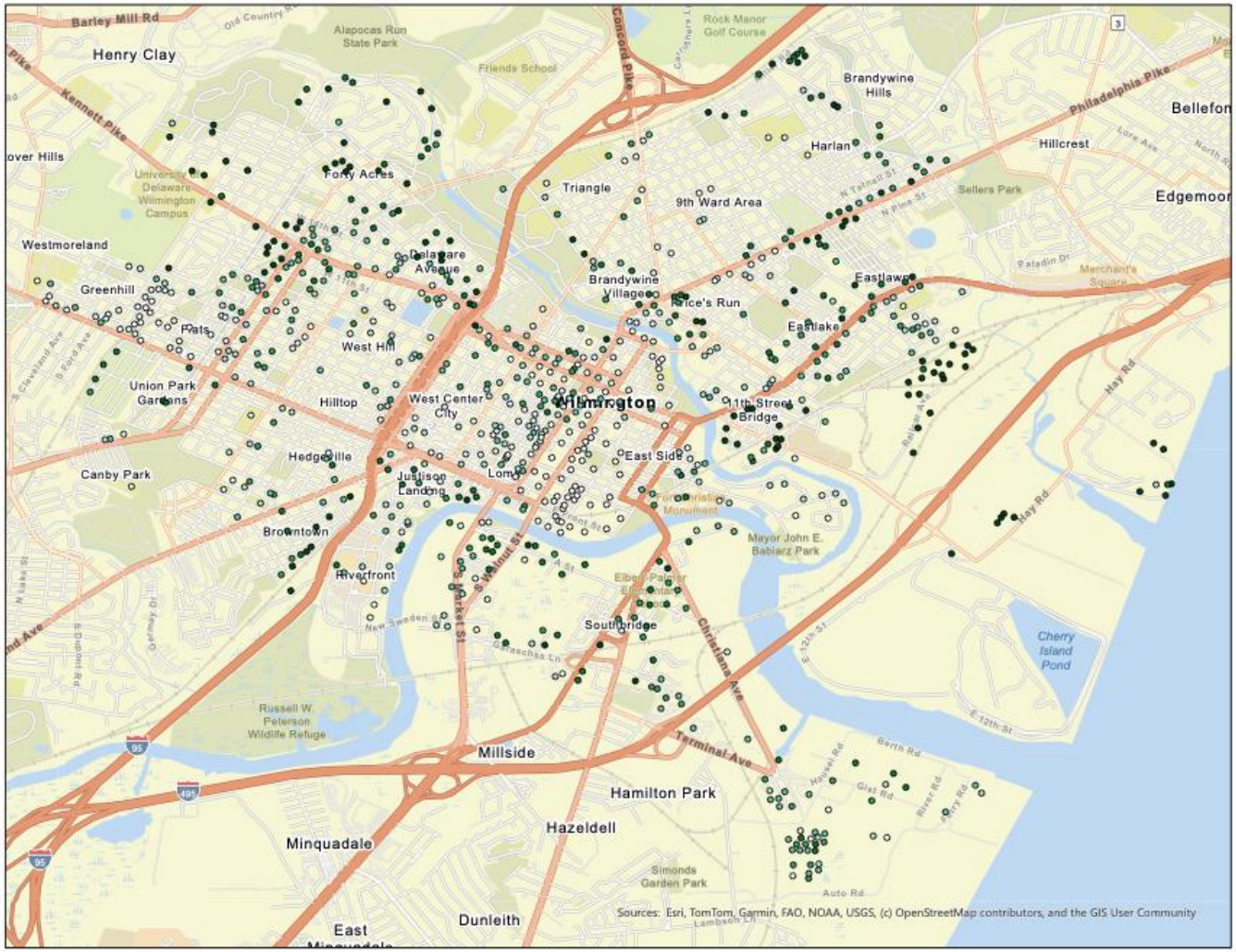
NASA and DNREC mapping rooftops for solar + battery potential.

Focus: schools, city facilities, and community hubs.

Builds resilience and energy independence for Wilmington.

Identified approximately 800 roof top hot spots for solar installations

City of Wilmington Address Matching(Solar RoofTop Hot Spots)



Ranked_List_of_Buildings_by_Coordinates_XYTableToPoint
Index Rank

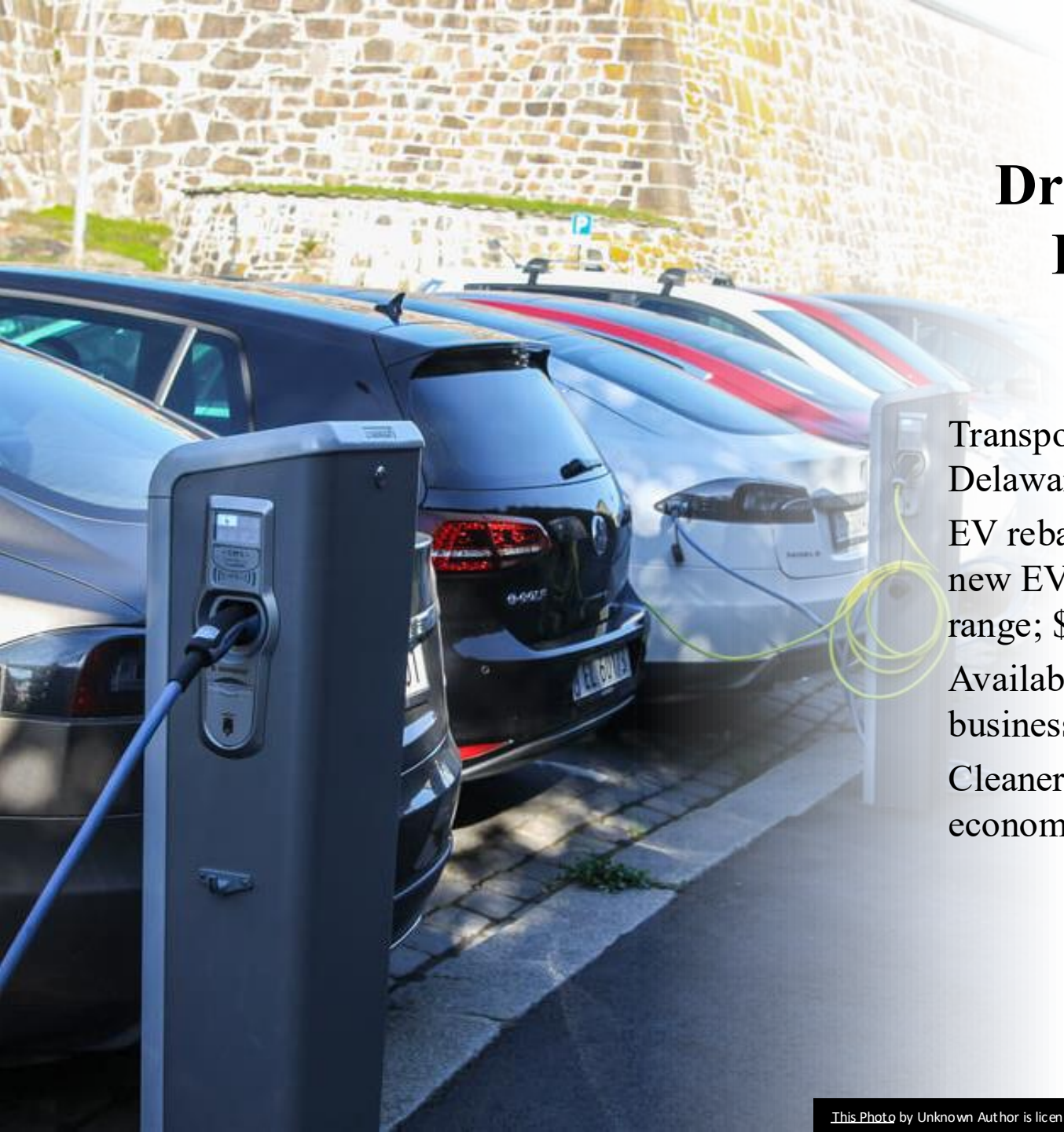
- 1 - 119 (Best Solar Potential)
- 120 - 239
- 240 - 359
- 360 - 478 (Moderate)
- 479 - 598
- 599 - 718
- 719 - 838 (Least Solar Potential)

N
W E
S

0 0.8 1.6 3.2 Miles

Top 20 Addresses

Index_Rar	REV_Address	REV_City	REV_Subregion	REV_Region	REV_Posta
1	3010 Edgemoor Ave	Wilmington	New Castle County	Delaware	19802
2	425 E 12Th St	Wilmington	New Castle County	Delaware	19801
3	200 Hay Rd	Wilmington	New Castle County	Delaware	19809
4	2216 Pennsylvania Ave	Wilmington	New Castle County	Delaware	19806
5	3400 Edgemoor Ave	Wilmington	New Castle County	Delaware	19802
6	1230 Railcar Ave	Wilmington	New Castle County	Delaware	19802
7	1200 Railcar Ave	Wilmington	New Castle County	Delaware	19802
8	3400 Edgemoor Ave	Wilmington	New Castle County	Delaware	19802
9	2005 N Grant Ave	Wilmington	New Castle County	Delaware	19806
10	2013 Gilpin Ave	Wilmington	New Castle County	Delaware	19806
11	1801 N Union St	Wilmington	New Castle County	Delaware	19806
12	3975 Vandever Ave	Wilmington	New Castle County	Delaware	19802
13	2111 W 11th St	Wilmington	New Castle County	Delaware	19805
14	2300 Railroad Ave	Wilmington	New Castle County	Delaware	19802
15	1501 E 35th St	Wilmington	New Castle County	Delaware	19802
16	3975 Vandever Ave	Wilmington	New Castle County	Delaware	19802
17	2300 Railroad Ave	Wilmington	New Castle County	Delaware	19802
18	2300 Railroad Ave	Wilmington	New Castle County	Delaware	19802
19	200 Hay Rd	Wilmington	New Castle County	Delaware	19809
20	475 Hay Rd	Wilmington	New Castle County	Delaware	19809



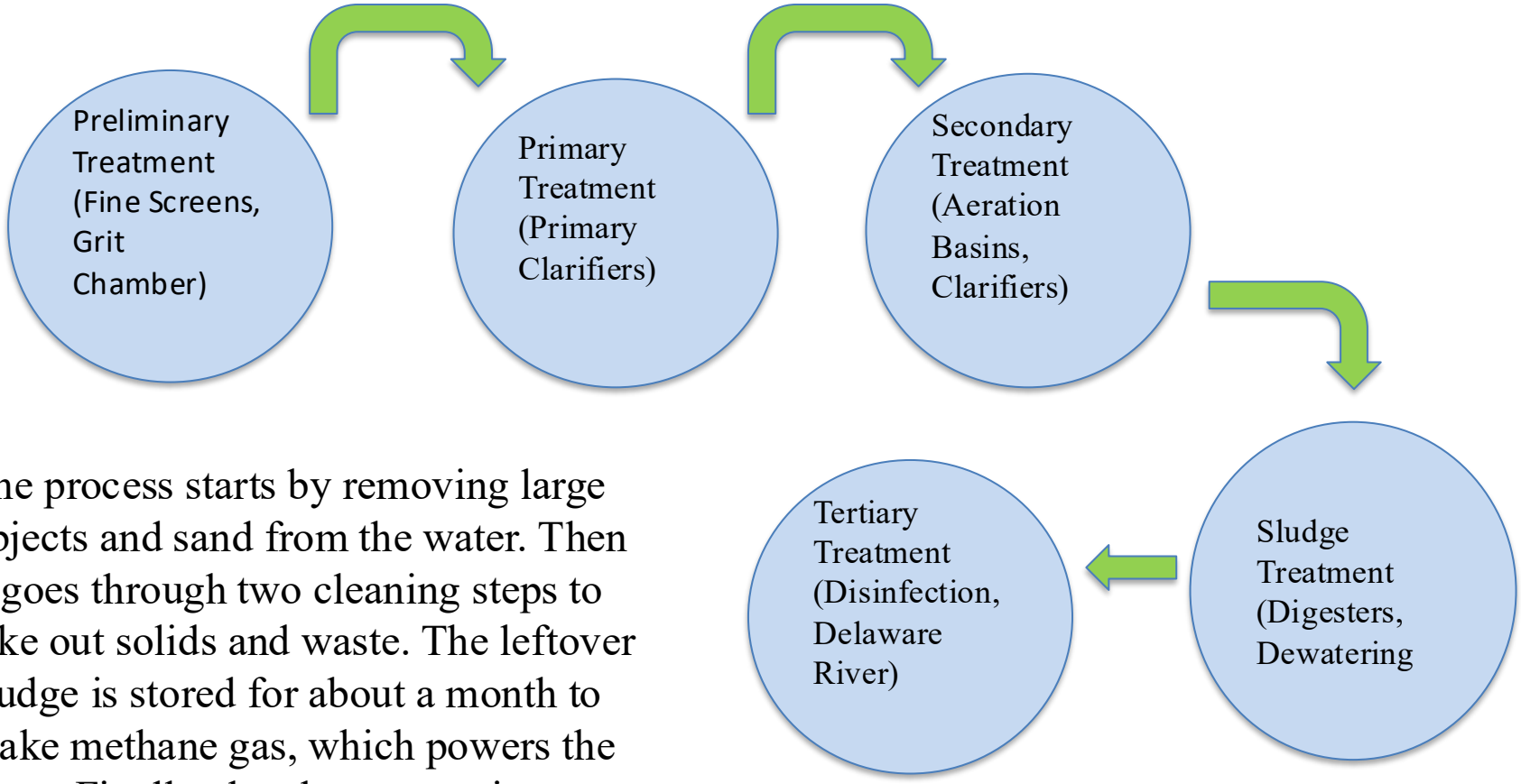
Drive Electric Delaware

- Transportation = 30% of Delaware's emissions.
- EV rebates up to $2,500 for new EVs; $1,500 for mid-range; $2,500 for used.
- Available to residents, businesses, and cities.
- Cleaner air, lower costs, and economic benefits.

Wilmington WasteWater Plant Visit

- Built in 1953, upgraded in 1973 under the Clean Water Act
- Serves over 500,000 customers, about 70,000 within Wilmington city limits
- Operated by Jacobs and built by Honeywell ($36 million project)
- Treats 60,000 - 70,000 gallons per day
- Water stays in digesters for 30 days before release
- Methane gas recovered and cleaned → powers the facility with 3.2 MW of energy
- Uses urea for air-quality cleaning; gas temperatures reach 1,000°F
- Waste solids turned into renewable energy in the Renewable energy Biofuels facility(REBF), a model for circular sustainability

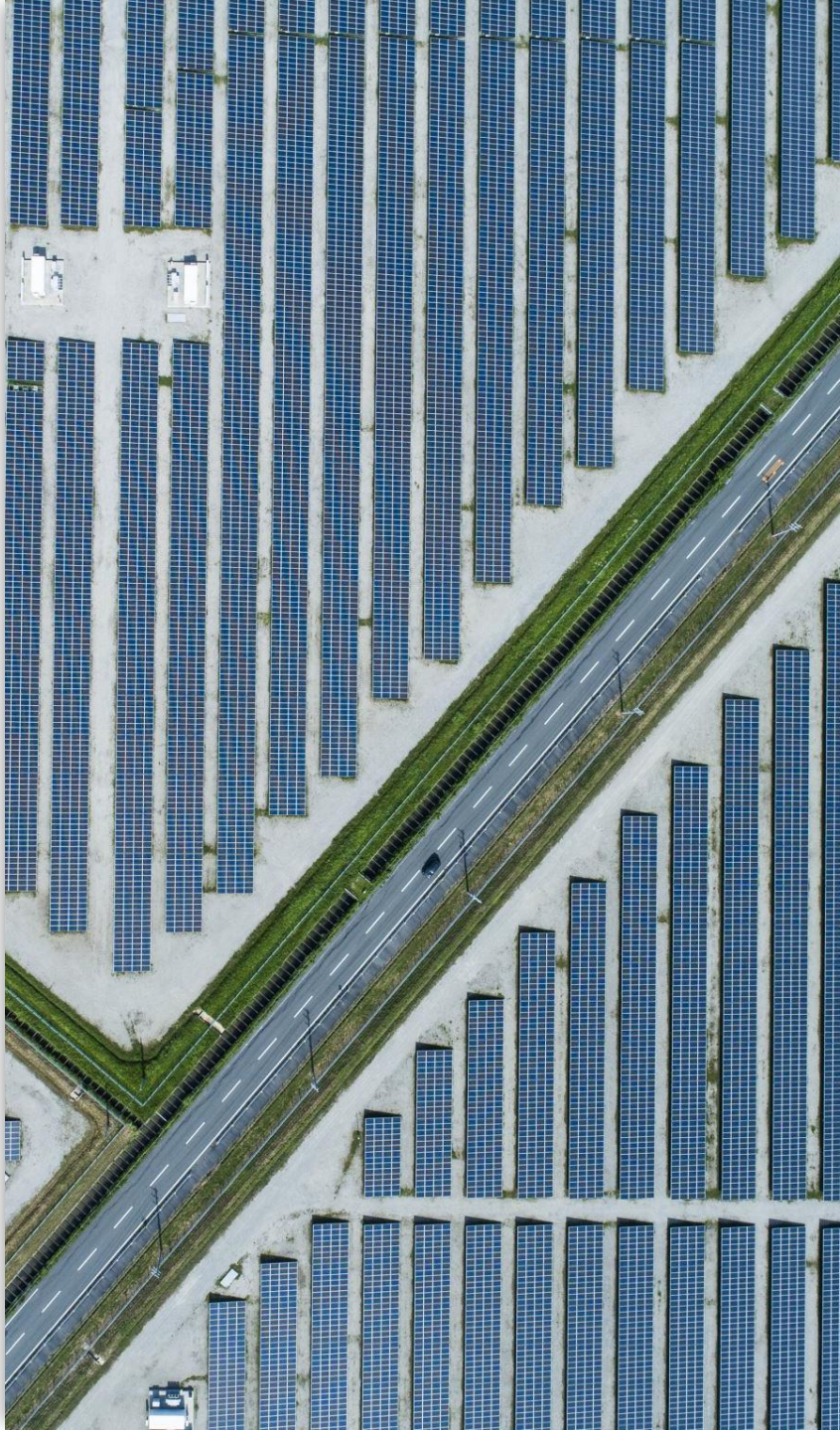
Wilmington WasteWater Plant Visit



The process starts by removing large objects and sand from the water. Then it goes through two cleaning steps to take out solids and waste. The leftover sludge is stored for about a month to make methane gas, which powers the plant. Finally, the clean water is disinfected and safely released into the Delaware River.

Wilmington's Energy Opportunity

- Identify strategies to implement the Solar Rooftop projects with the areas already identified
- Sensitization on the Electric vehicles Rebates to ensure community members learn about the cost savings
- Community Solar or MicroGrids
- Balcony Solar for the Downtown Area Residents



Next Steps: Energy Efficiency and Building Codes

- Solar-Ready Buildings
  - Adopt **2024 IECC** provisions for solar-ready design (roof load, electrical conduit, south-facing orientation).
  - Incentivize developers through Green Building tax credits or expedited permitting.
  - Coordinate with DNREC and Delaware Sustainable Energy Utility (DESEU) for technical support.
- Storage-Ready Buildings
  - Integrate Battery Energy Storage System (BESS) readiness standards (NFPA 855 compliant)
  - Include wiring, ventilation, and dedicated space for future energy storage installations.
  - Pilot test on city-owned facilities such as schools and public service buildings.
- Building Envelope & Insulation
  - Update insulation and window efficiency standards to match **IECC 2024** R-values(a measure of how a material resists heat flow) and U-factors(a measure of a building component's ability to transfer heat)
  - Use Inflation Reduction Act (IRA) funding to retrofit low-income housing.
  - Collaborate with DESEU to expand rebates for envelope retrofits and energy audits.

Case Studies - Energy-Ready & Efficient Buildings

- California : Title 24 Solar-Ready Standards
  - Mandates that **all new homes** be solar-ready or include PV systems.
  - Reduced installation costs by appr 25% and accelerated statewide adoption.
  - Supports grid reliability and aligns with state Net Zero goals.
- New York City : Local Law 97 (Energy Storage & Emissions)
  - Encourages **large buildings** to integrate battery energy storage readiness.
  - Helps meet carbon emission caps by allowing on-site energy management.
  - Incentivizes projects that combine rooftop solar with localized storage.
- Philadelphia : Municipal Building Energy Retrofits
  - City implemented comprehensive energy benchmarking and **retrofit programs**.
  - Over 400+ public buildings upgraded with envelope improvements and efficient HVAC.
  - Delivered an 8-10% reduction in city energy use, improving occupant comfort.
- Seattle : Building Tune-Up Ordinance
  - Requires **periodic assessment and upgrade of building systems and envelopes.**
  - Achieved citywide average energy savings of 10% annually.
  - Serves as a model for continuous energy performance compliance.

Resources

- Climate Change Action Plan: https://documents.dnrec.delaware.gov/energy/Documents/Climate/Plan/Delaware-Climate-Action-Plan-2021.pdf
- Delaware State Energy Plan: https://documents.dnrec.delaware.gov/energy/2024-DE-Energy-Plan.pdf
- California Building Code: https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/energy-code-support-center/solar
- Philadelphia: https://codelibrary.amlegal.com/codes/philadelphia/latest/philadelphia_pa/0-0-0-280004
- Newyork: https://www.nyc.gov/site/buildings/codes/ll97-greenhouse-gas-emissions-reductions.page#:~:text=Deductions:,or%20campus%20style%20electric%2Dsystem)
- Seattle: https://www.seattle.gov/environment/climate-change/buildings-and-energy/building-tune-ups/about-building-tune-ups