



**Jefferson County  
Public Utility District**

**March 2025**

# Local Generation and Our Grid

**Across the county solar panels are used to generate power back to the grid. But how does it all work?**

There are 689 net metered solar-electric services out of approx 21,000 meters countywide. That's a staggering number compared to neighboring Mason 3 PUD with 200 net meters for 35,000 electric services, or Grays Harbor PUD with 337 net meters for 45,000 services.

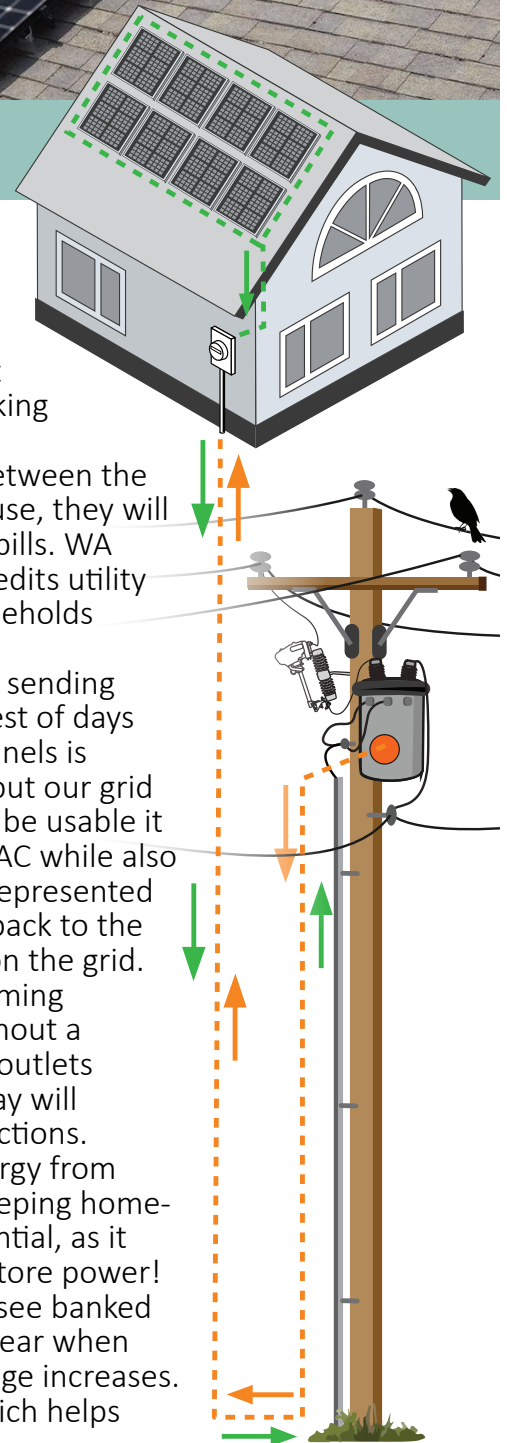
So, what is a net meter and what does it look like for a homeowner? A net meter looks identical to other meters, but inside it's a two-way street, tracking power used from the grid or sent back to it.

When the PUD reads the meter, the customer is charged the difference between the two readings. In a given month if the customer generates more than they use, they will receive a credit. Credits are "banked" and applied to the current or future bills. WA State requires banked credits be reset yearly in April. Remaining banked credits utility wide are donated to the PUD's Rainy Day fund to support low-income households struggling with energy bills.

Contrary to popular solar legend, net meters do not spin backwards when sending power to the grid. In fact, metering is rather uneventful even on the sunniest of days despite the unique process taking place. Direct sunlight collected by the panels is converted into DC (Direct Current) power. DC power is great for batteries, but our grid and homes operate on AC power (Alternating Current). For solar energy to be usable it must first pass through an inverter. The inverter converts the DC power to AC while also helping it match the energy flowing from the grid. The converted energy (represented as green arrows on the right) travels through the net meter on the home, back to the nearby transformer. Here, voltage is boosted to distribution levels for use on the grid.

But what happens when the power goes out? Solar arrays are tied to incoming power, unless a battery backup is installed. Without a battery backup—which can be set to power key outlets or systems like a fridge in the home—a solar array will not function due to built-in anti-islanding protections. This is a safety component that keeps solar energy from backfeeding onto the grid during an outage. Keeping home-produced energy from entering the grid is essential, as it could potentially harm line crew working to restore power!

Depending on the size of the solar, customers see banked credits on billing each month until later in the year when the sun's energy begins to wane and energy usage increases. All electric services pay a monthly base rate which helps cover general infrastructure needs.



**JPUD's AMI meters provide the highest degree of accuracy. Net metering energy usage, generation, and banked credits are available on monthly utility billing.**



The joint-use trench for the Madrona Ridge subdivision includes conduit for electric and telecom services.

# In the Trenches

## Expanding service to meet new demand

Nearly 2" of rain fell in the night turning the Madrona Ridge subdivision project north of the Rainier Street roundabout in Port Townsend into a mucky mess. But that didn't slow progress. Generator-driven sump pumps in open trenches belched water into nearby sewer drains. In the bottom of each trench, rows of conduit extended in all directions.

In the middle of the trench maze PUD Staking Engineer, Russell Miller squished his way toward what resembled a large green Lego. "This vault will have a transformer set right on top of it and feed 6 homes across the street," Miller said, gesturing to a run of conduit disappearing beneath the freshly paved street. Across the street sits a smaller green vault—the destination for power to future homes. In total, the first phase of the project will have 65 vaults of various sizes, and an estimated 11 pad mounted transformers.



Staking Engineer, Russell Miller (left) discussing joint-use trench layout with PUD Safety Manager, Jeff Dodd.

The project stands as the largest single residential development since the PUD began electric service in 2013. 90 homes are planned for this first phase, followed by 50 more.

Miller, and PUD Engineering Manager, Jimmy Scarborough review progress at each stage of construction, ensuring underground services meet PUD standards. This unseen work must stand up to decades of use (and future demand), so no detail is too small.

Adding a combined total of 140 single-family homes extends beyond the subdivision itself. The project could potentially add 1.1MW of demand on the PUD system, so all infrastructure down the line must all be evaluated. Aging switch cabinets, three-phase distribution line extensions, even the substation that can best support the new load are carefully evaluated.

Housing is a leading topic between regional agencies and ensuring utility infrastructure is in place for urban growth areas is a priority for JPUD as part of its 4-year workplan.

## JPUD Studies Electric Rate Increases

Projected electric capital improvements totaling an estimated \$73M over the next 4 years and rising wholesale energy prices has led the rate study discussion. Infrastructure projects help address aging equipment to improve capacity and reliability while reducing liability.

JPUD hired the Redmond-based FCS Group to provide an updated cost of service study.

During Board discussions, FCS determined existing rates can cover existing utility operations

and maintenance, but not long-term capacity improvements.

FCS provided multiple scenarios balancing rate increases and borrowing options. PUD Commissioners provided feedback for further discussions.

Further rate discussions and voting on proposed increases by the Board will occur in spring of 2025. Expected electric rate increases are planned for June of 2025.

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