Petersburg's Electrical Resilience and System Health

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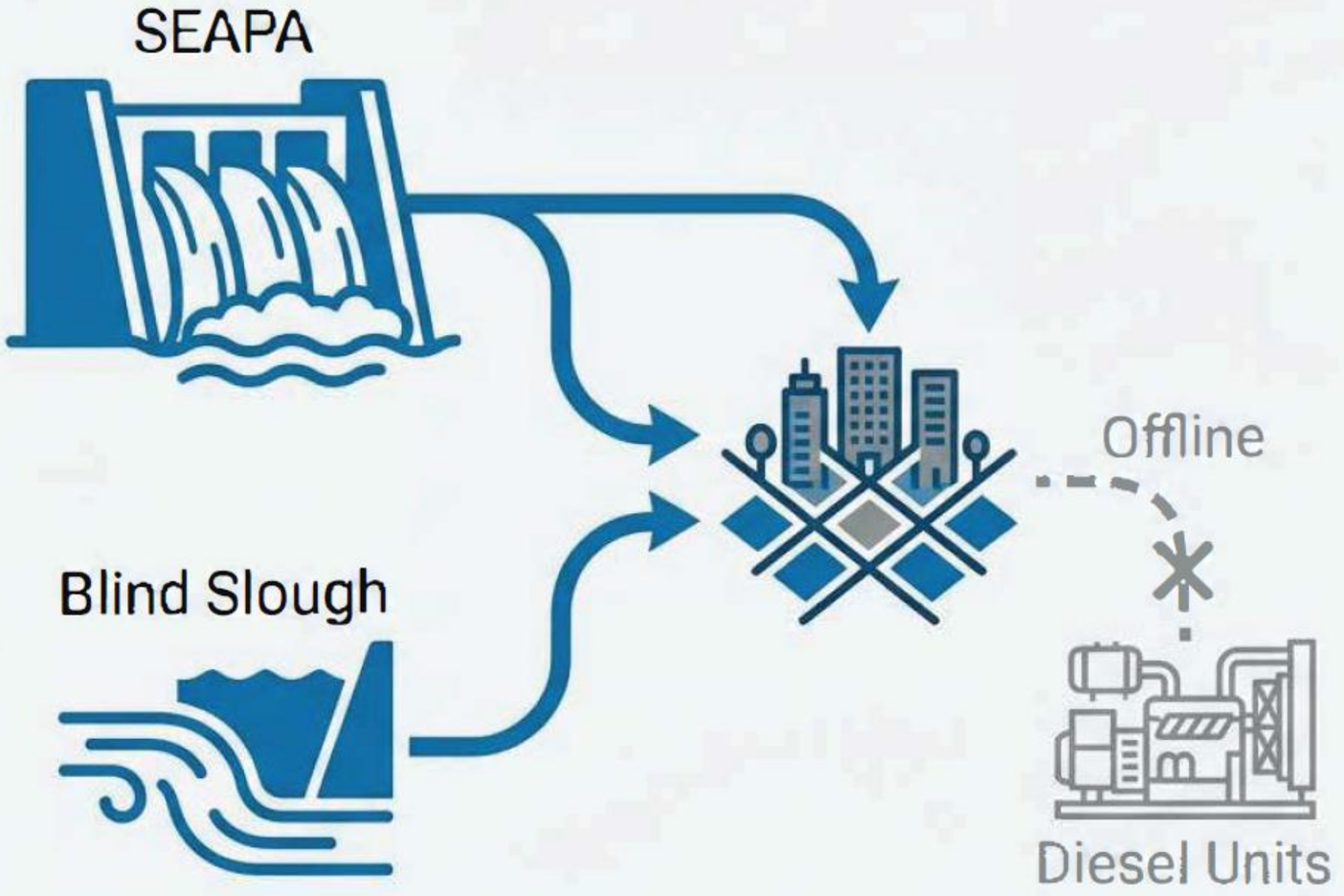
Petersburg operates on a Hydro-First foundation



- The system is fundamentally hydro-based during everyday, normal operating conditions.
- Primary Supply: SEAPA hydroelectric generation.
- Supplemental Supply: Blind Slough hydroelectric generation (local).
- Diesel units remain entirely offline under normal operating conditions.

SEAPA Hydro System Overview

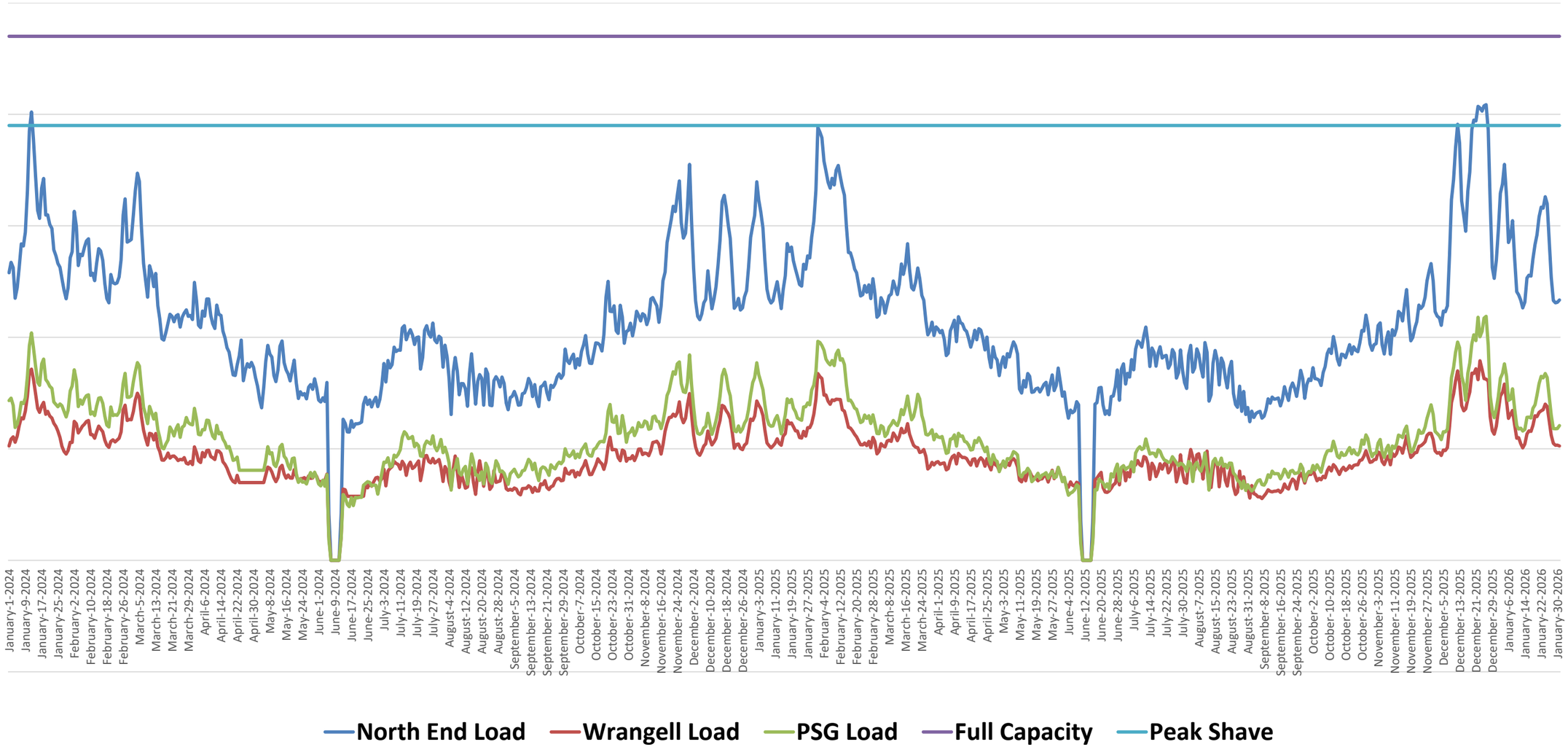
Swan Lake Hydro ★

2 Generators
24 MW Installed Capacity
~70,000 MWh Annual Generation
Dedicated output: Ketchikan

Tyee Lake Hydro ☆

2 Generators
24 MW Installed Capacity
~130,000 MWh Annual Generation
Dedicated output: Petersburg & Wrangell

2024 – 2025 Tyee Daily Loads

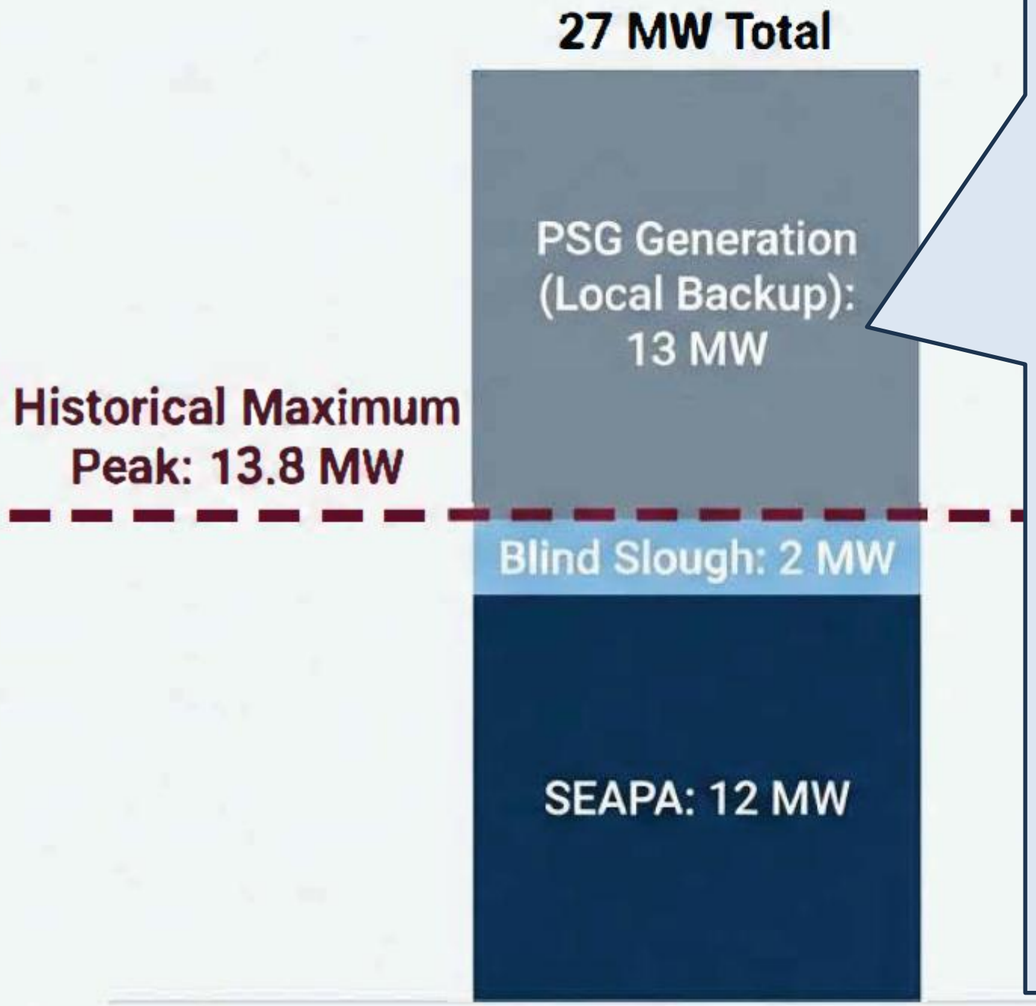


In the past 2 years we have needed to peak shave a few hours on 6 different days. Power Conservation by Customers Has Helped To Limit Diesel Burn While Peak Shaving

Current capacity significantly outpaces historical peak demand

- The current reserve margin demonstrates exceptional system health.
- PMPL operates well below total available capacity, even during peak winter events (historical maximum system peak reached 13.8 MW in late 2022).

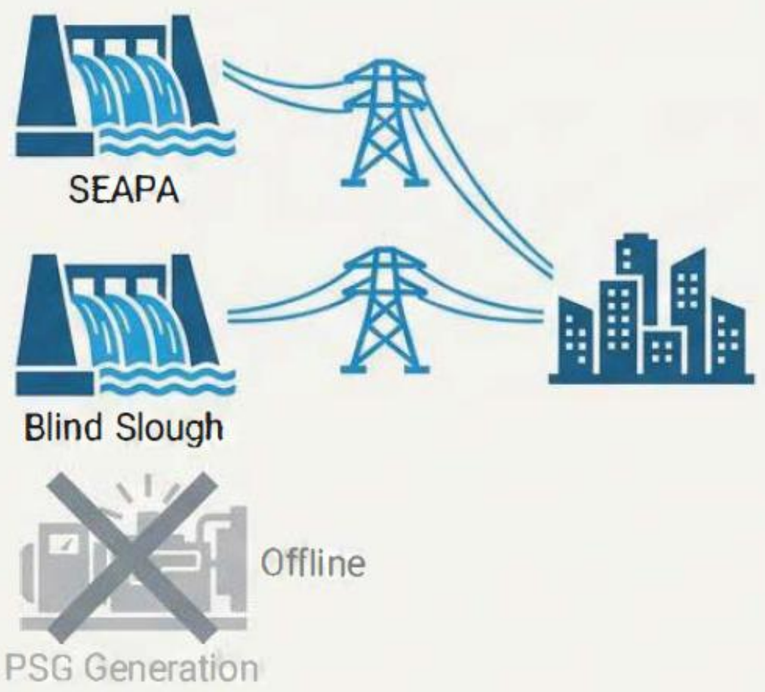
Note: Typically, peak shaving would begin at a capacity lower than the maximum to ensure reliability during demand swings.



Why we need the new Scow Bay Generator:
If a **SEAPA outage** occurred during one of these 13MW peaks, we would not have enough local generation. This level occurred for a day or two in **2020, 2021, 2022, and 2026**, and close in other years. If it happens during a **SEAPA outage**, we will have to implement **rolling outages**.

Contingency planning ensures minimal interruptions to local service

Normal Operations

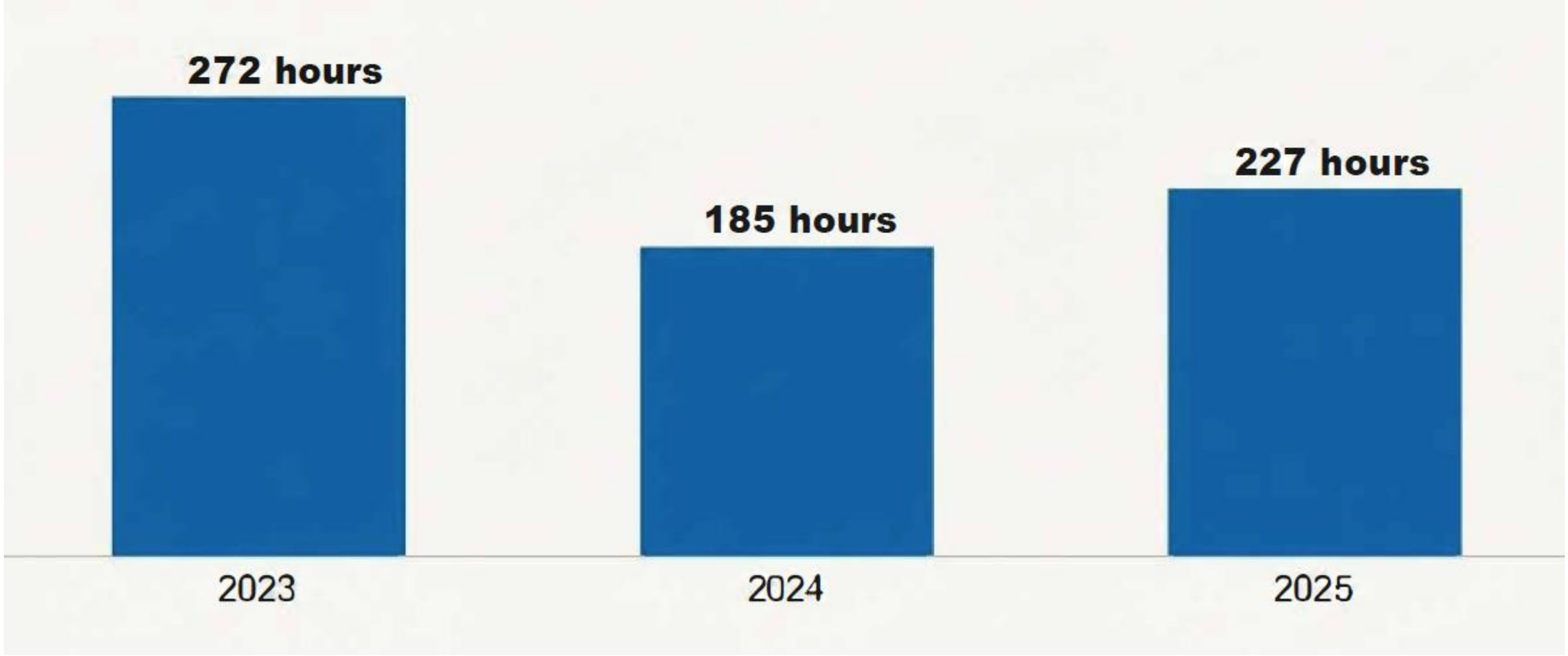


Islanded Operations

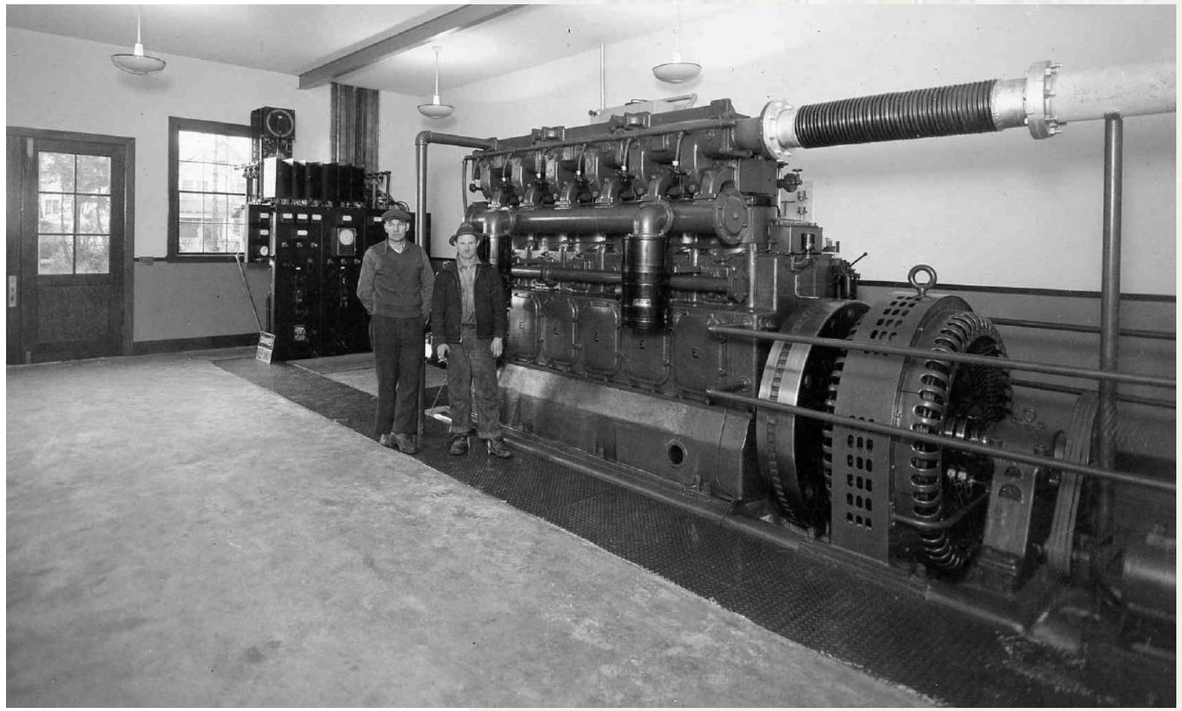
- When SEAPA transmission is unavailable or requires a shutdown, the system is designed to have only minimal interruptions to service.
- Blind Slough remains online to provide local baseload power.
- PSG Generation (diesel backup) steps in to reliably supply the remaining load with minimal interruption.
- Diesel provides full, robust backup capability for the entire system.

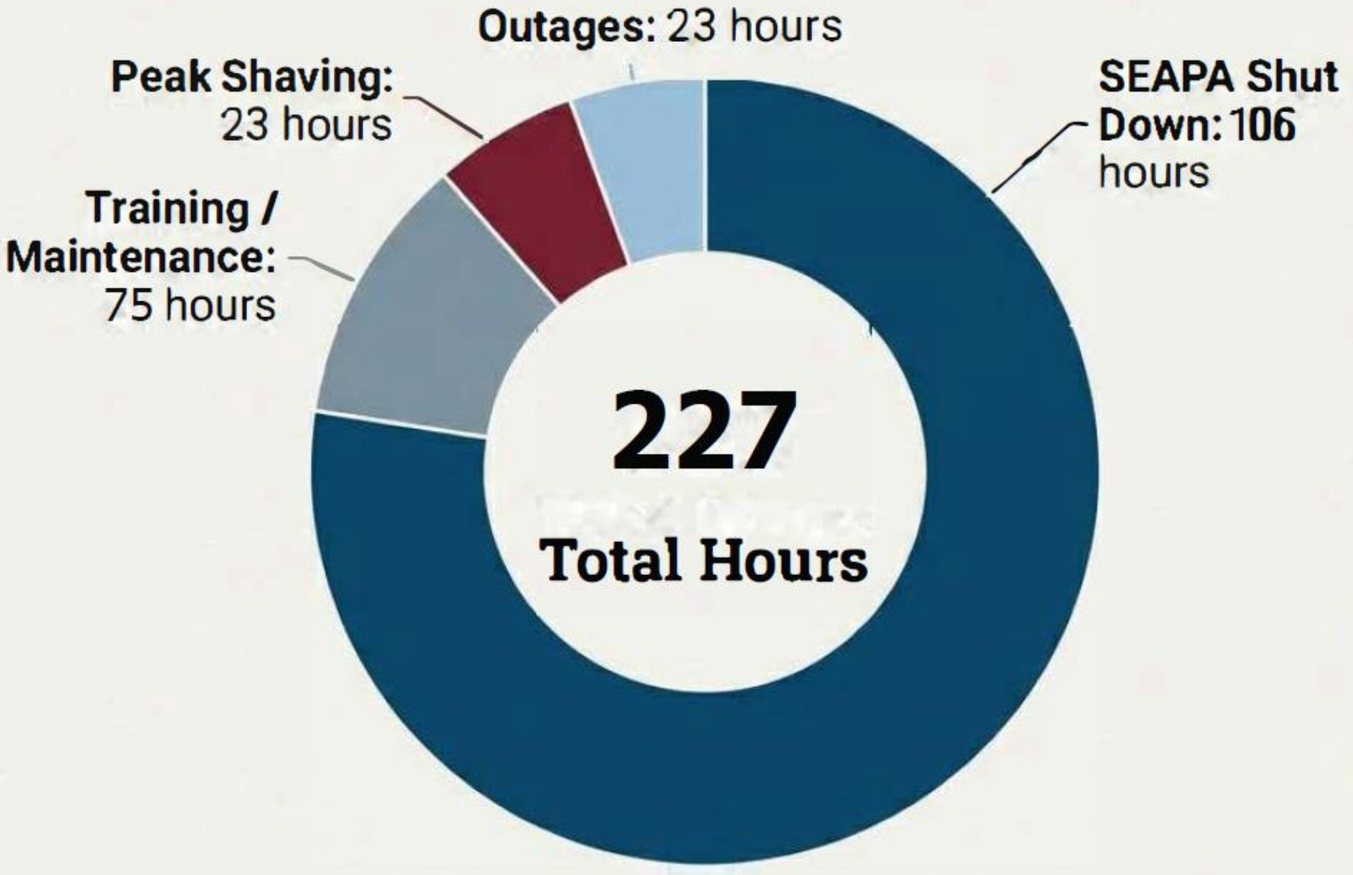
Diesel acts as a safety net, accounting for only minimal use each year.

- Diesel is contingency infrastructure, deployed primarily to support SEAPA outage events, maintenance coverage, and testing readiness



The vast majority of diesel operations support scheduled regional maintenance





2025 Diesel Operations

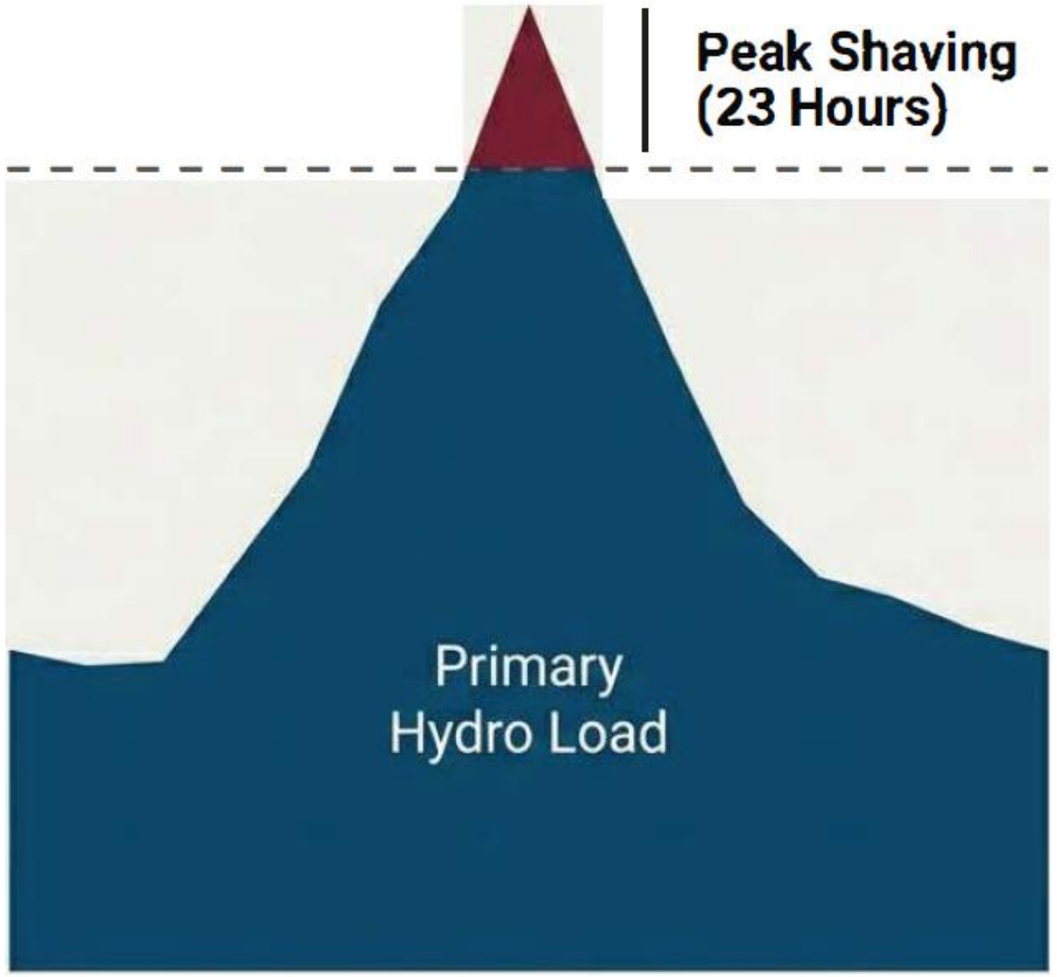
Peak shaving is a minimal, strategic tool to reduce system stress

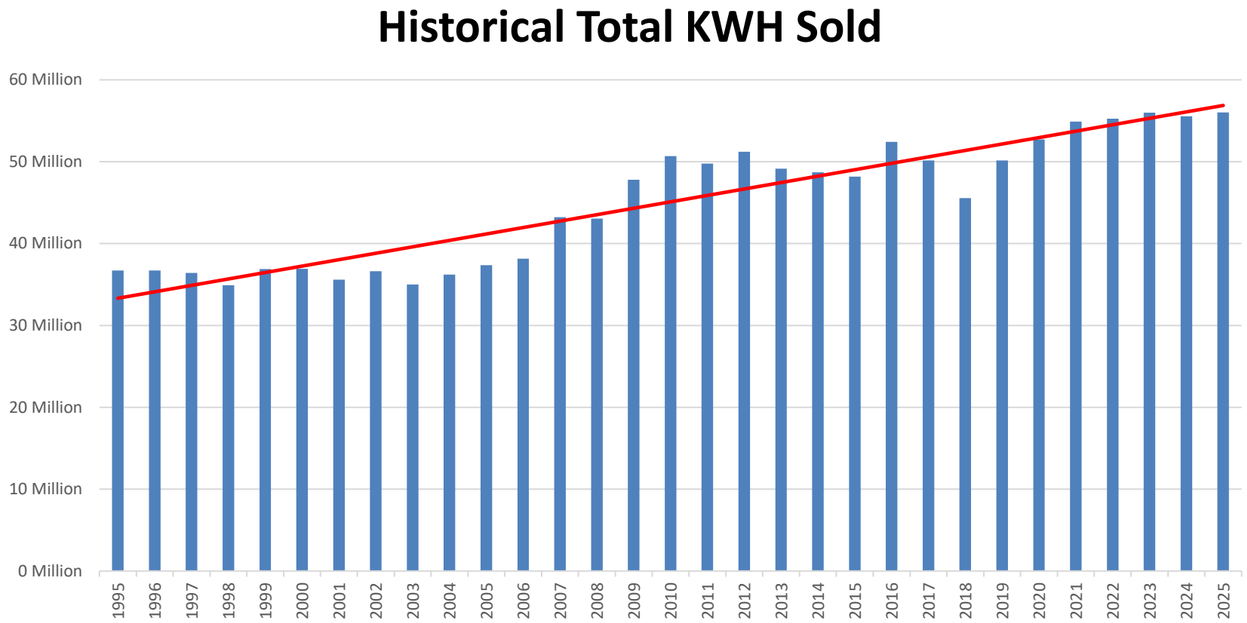
In 2025 Peak Shaving Accounts For 23 Hours Of Diesel Operation.

- This strategy smooths out short-duration demand spikes.

- It reduces stress on system components during short, intense peaks.

- Most importantly, total system capacity remains well above both shaved and unshaved peaks.





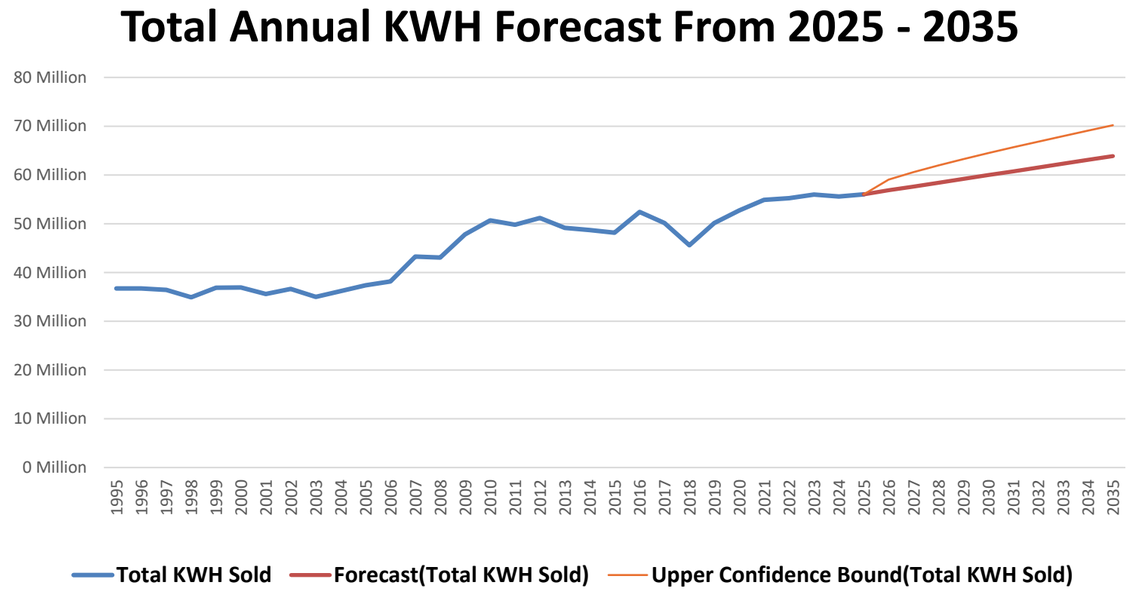
Annual Growth In KWH Used From 1995-2025

- 1995 --- 36,708,123 KWH
- 2025 --- 56,015,887 KWH

A 52% Increase From 1995

A Year Over Year Increase Average of 1.54%

CAGR of 1.42%

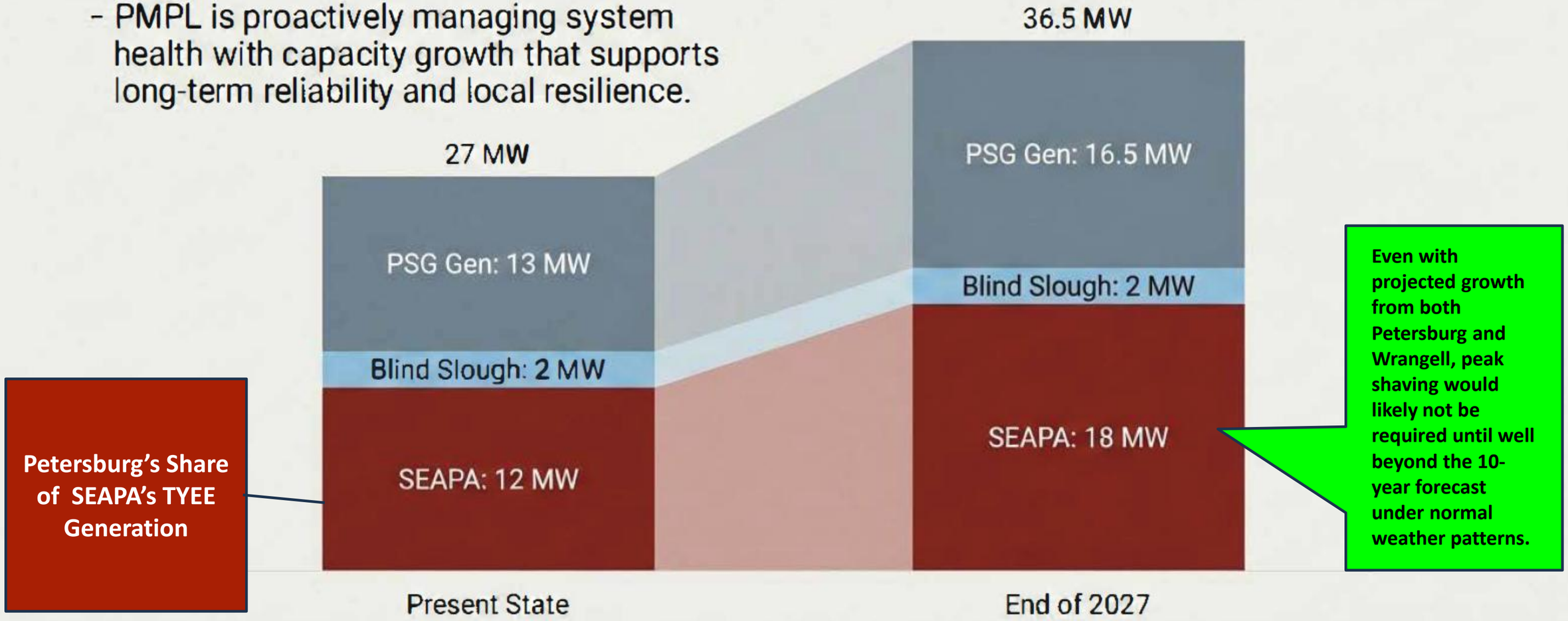


Forecasted Growth Next 10 Years

- Safe Forecast
  - **23 % 63,862,493 KWH**
- High Confidence
  - **31% 70,191,489 KWH**

Strategic investments by both SEAPA and PMPL will push system capacity to 36.5 MW by end of 2027

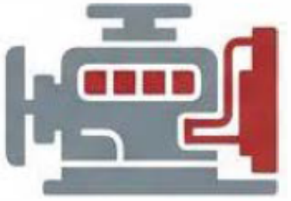
- PMPL is proactively managing system health with capacity growth that supports long-term reliability and local resilience.



Two primary projects drive our 2027 resilience and growth

Regional Hydro Expansion

- The SEAPA Tyee 3rd Turbine Addition provides a massive boost to our primary, clean power supply (adding 6 MW of capacity to Petersburg's share of Tyee).



Local Resilience Strengthening

- The SB2 Generator Project increases local backup capacity (adding 3.5 MW of capacity).

- Crucially, the SB2 Project significantly increases our islanded operating margin, ensuring robust backup power during upstream disruptions.

Petersburg's grid is highly stable and proactively managed

- **Hydroelectric power** is our foundation; normal operations rely on clean, reliable hydro.
- **Diesel** serves as essential contingency infrastructure, not daily generation.
- Current reserve margins remain **incredibly strong, easily handling historical peaks.**
- The 2027 capacity increases will further strengthen both our **primary hydro supply** and our **local islanded resilience.**

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