The Future Utility

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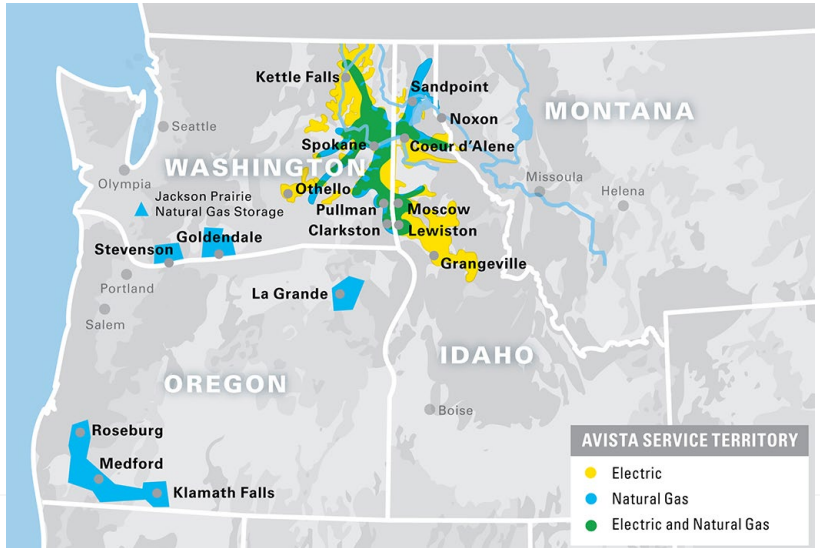
Agenda

- About Avista
- Changes Impacting Energy Utilities
- Eco-District Example
- Q&A

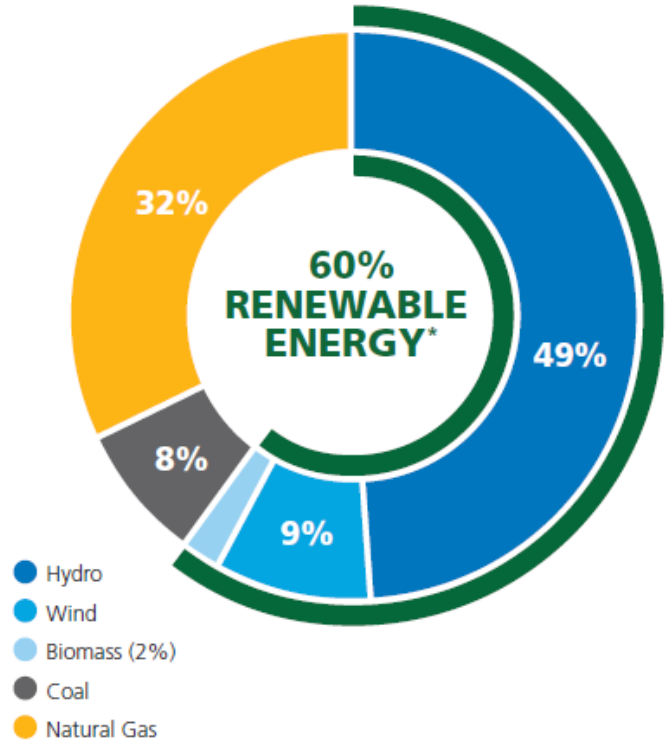
About Avista

- Incorporated in 1889
- Investor-Owned Utility with headquarters in Spokane, Washington
  - 414K electric customers
  - 378K natural gas customers
  - Peak Retail Load 1809 MW (2023)

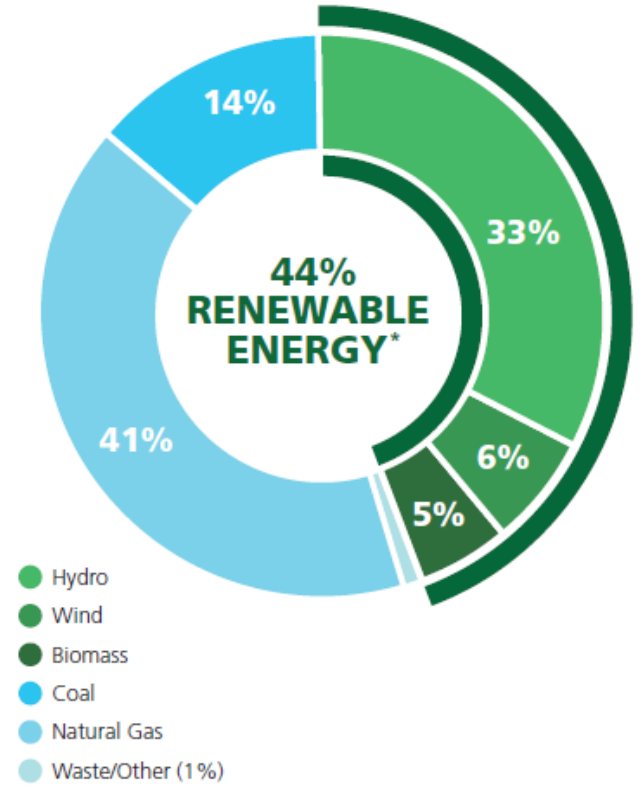


Current Fuel Mix

Electricity Generation Resource Mix



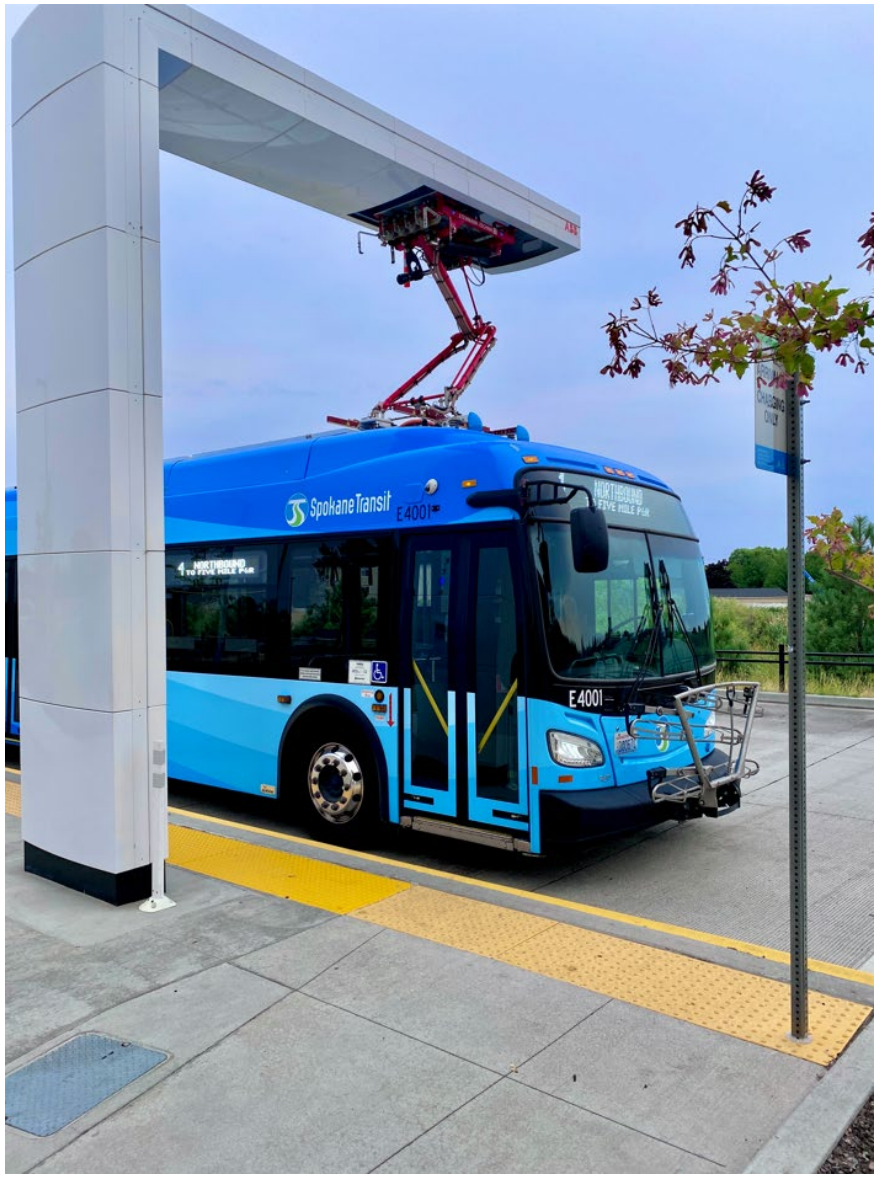
Utility Fuel Mix



Avista uses different kinds of fuel to produce the electricity that powers the lives and businesses of our customers.

Changes

- Resource Mix
  - More variable resources (wind and solar)
  - Inverter-Based Resources
- Load growth
  - Step changes vs. organic growth
- Reliability and Affordability



Resource Mix

2025 Cluster Applications: 2,941 MW of generation

- Majority Wind and Solar (IBR)
- Storage showing up
- Energy vs. Capacity
- Infrastructure to Interconnect and share resources

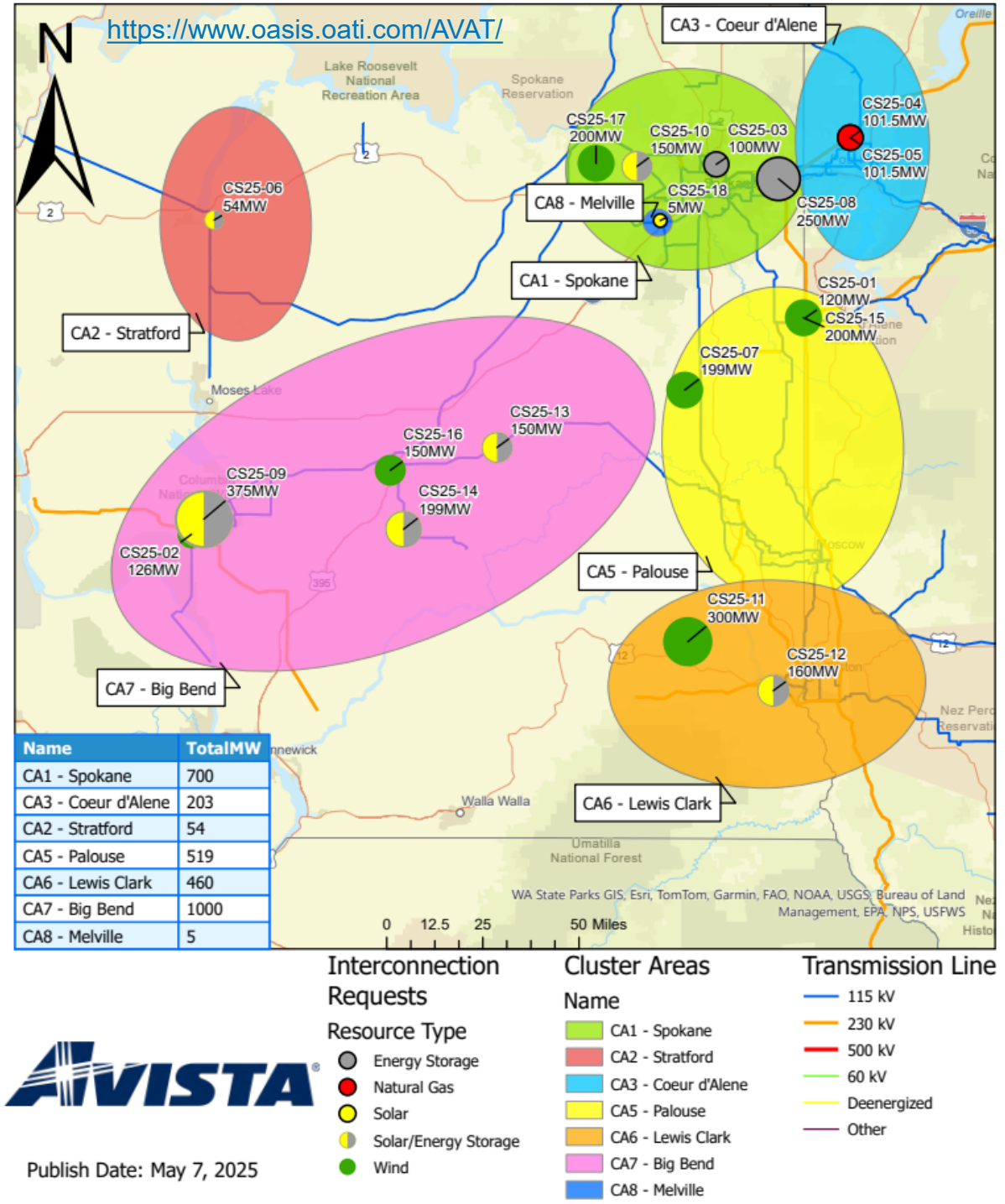
Eliminate all coal-fired electricity by the end of 2025

Use a carbon-neutral supply of electricity by 2030

Source 100 percent of electricity from renewable or non-carbon-emitting sources by 2045

Clean Energy Implementation Plan:

https://www.myavista.com/about-us/washingtons-clean-energy-future/clean-energy-implementation-plan



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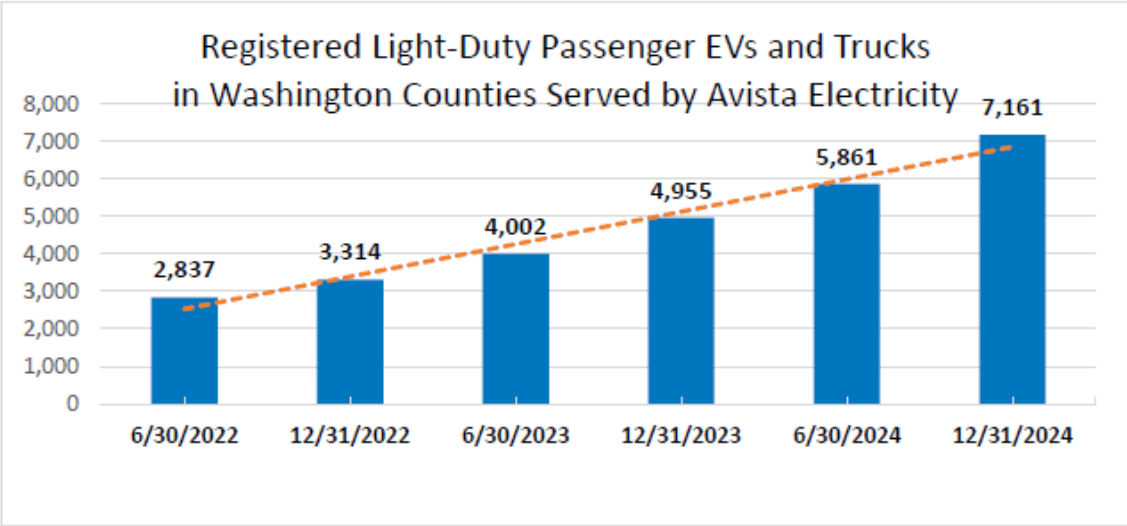
Load Growth

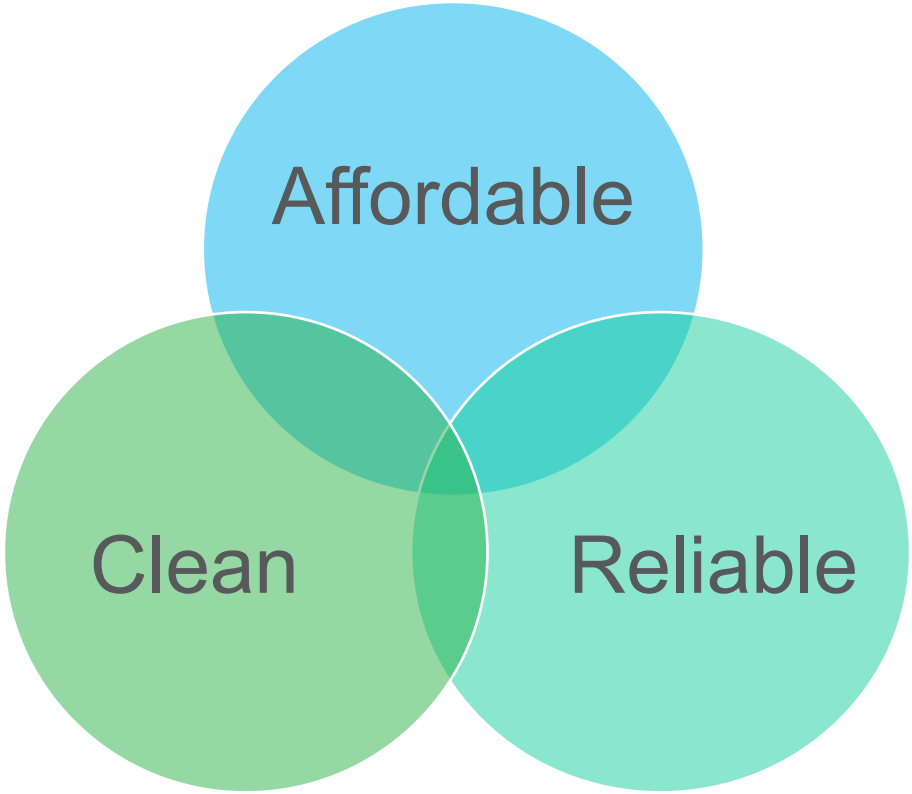
Transportation Electrification
- Fleets
- Light Duty Vehicles

Data Centers
- Can be very large

Other electrification
- Clean Buildings Act



Finding the Balance



Grid Optimization Perspectives

Energy Resources

- Generation
- Market Participation (EIM, day-ahead)
- Resource Adequacy

Transmission and Distribution (T&D)

- Bulk Grid
- Delivery Infrastructure (substations, distribution lines, transformers)

Customer

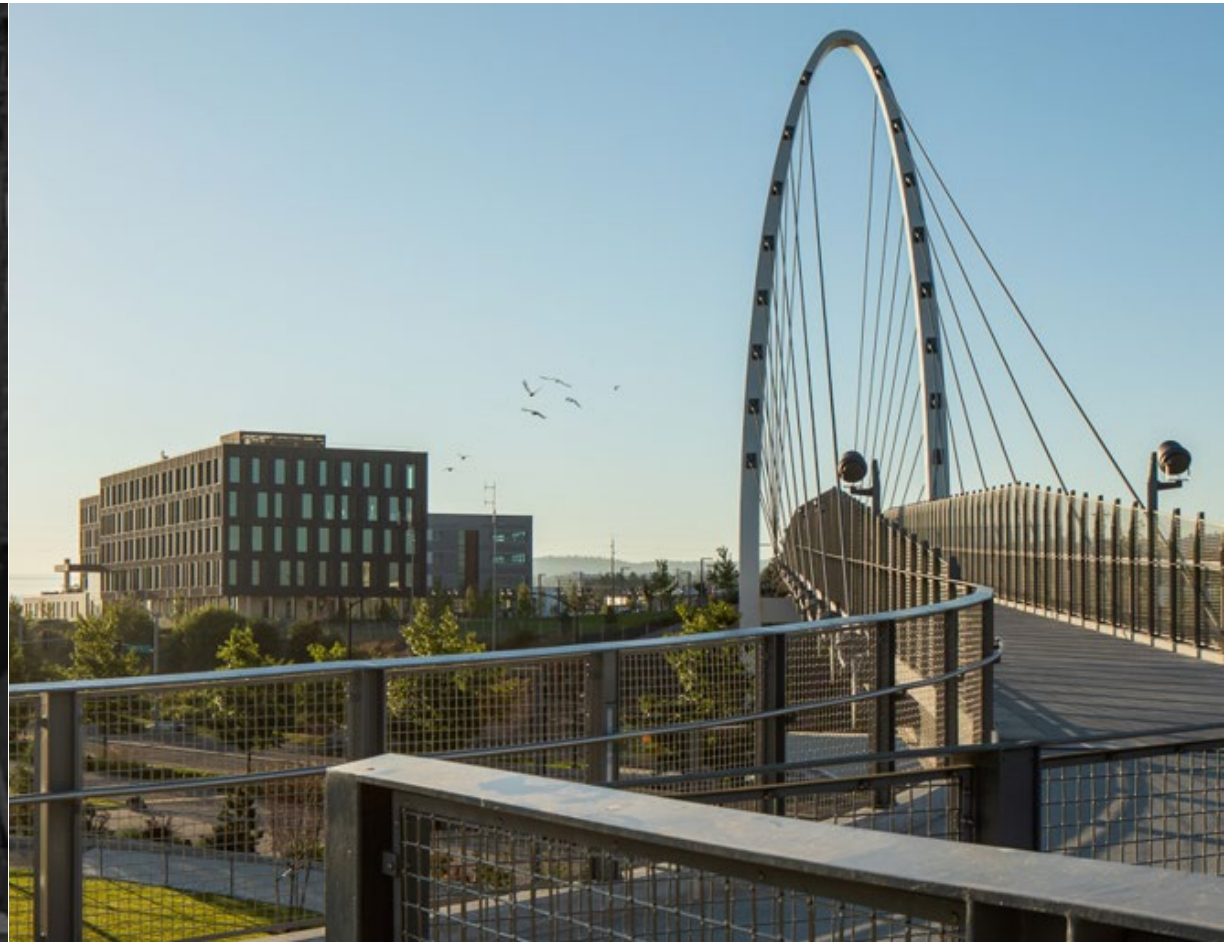
- Energy and Demand Charges (rate structures)
- On-site generation and storage, load flexibility (DERs)
  - ➢ Customer programs

Integrated Approach:

- Optimize across all levels
- Maximize Utilization of infrastructure and resources
- Partner with customers in new ways to create value

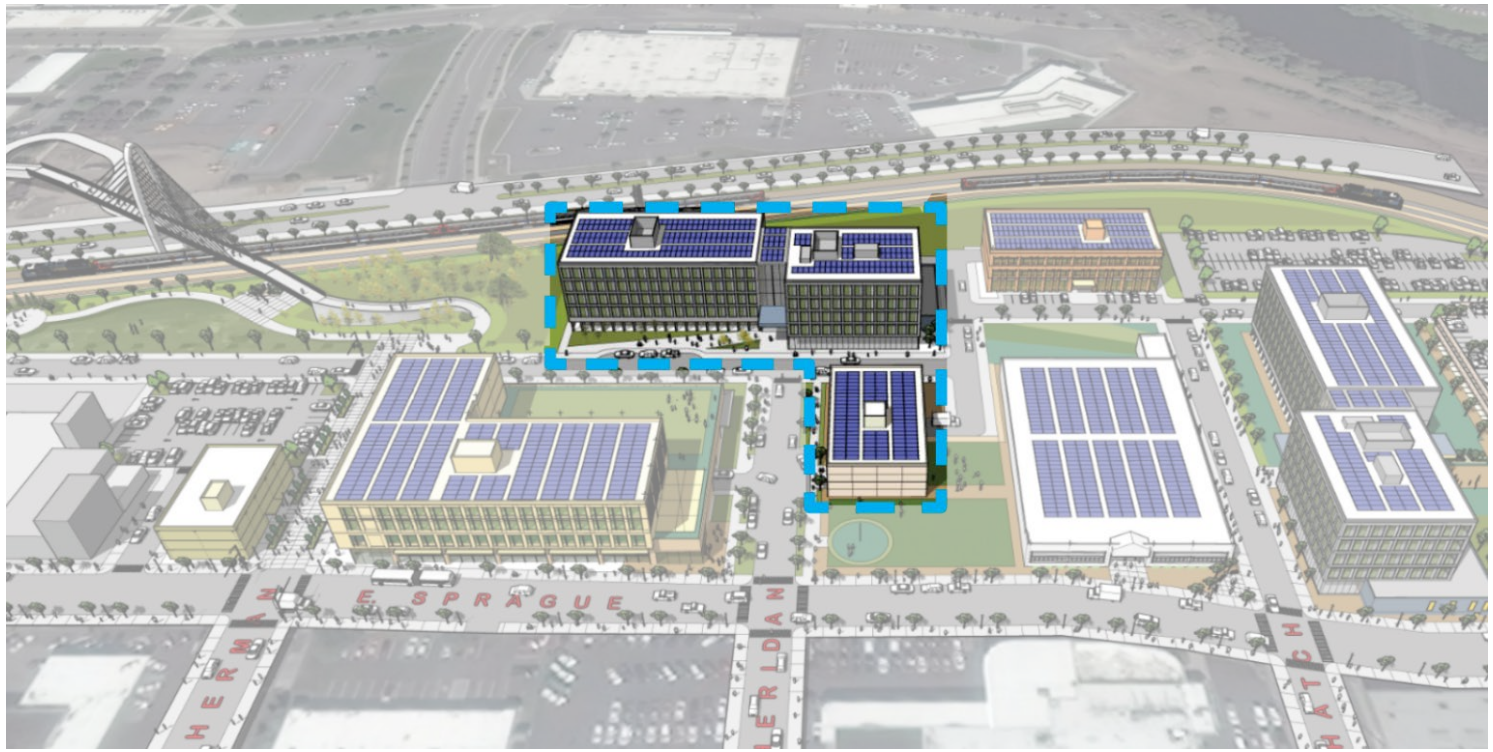
Example: Spokane Eco-District

Context – Spokane's University District

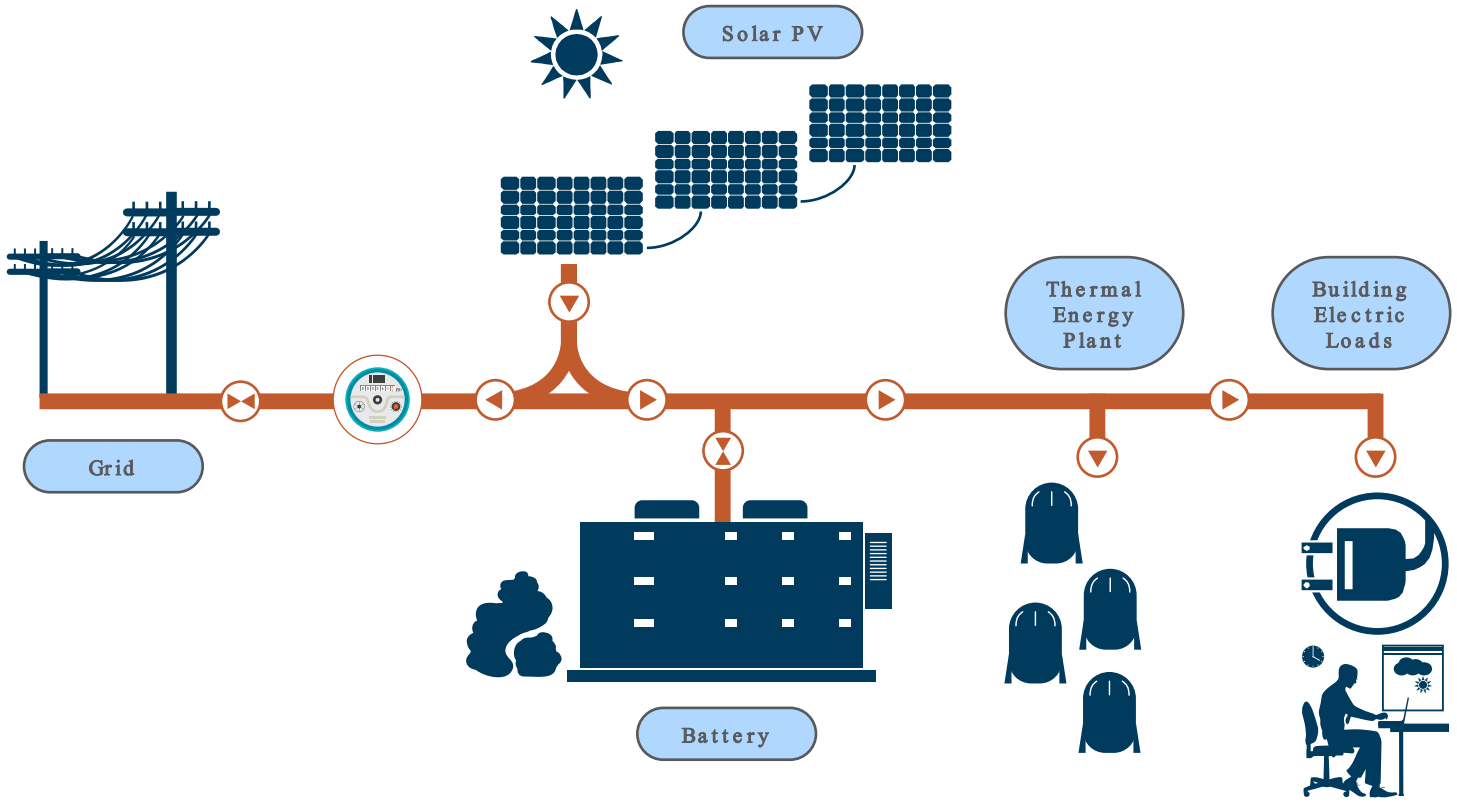


Site Context: South Landing Development

- Property was owned by Avista for a future substation
- Avista's former CEO had a vision to re-shape the neighborhood and collaborate to demonstrate innovative ideas ("5 smartest blocks")
- Developer idea/brand: Zero-Energy Certified Building (all-electric)
- Utility idea: Grid Interactive buildings to reduce infrastructure cost



Eco-District Central Plant



Electric Flexibility

- Start with getting the most out of thermal flexibility
- Predict/monitor solar PV generation
- Maximize impact using BESS

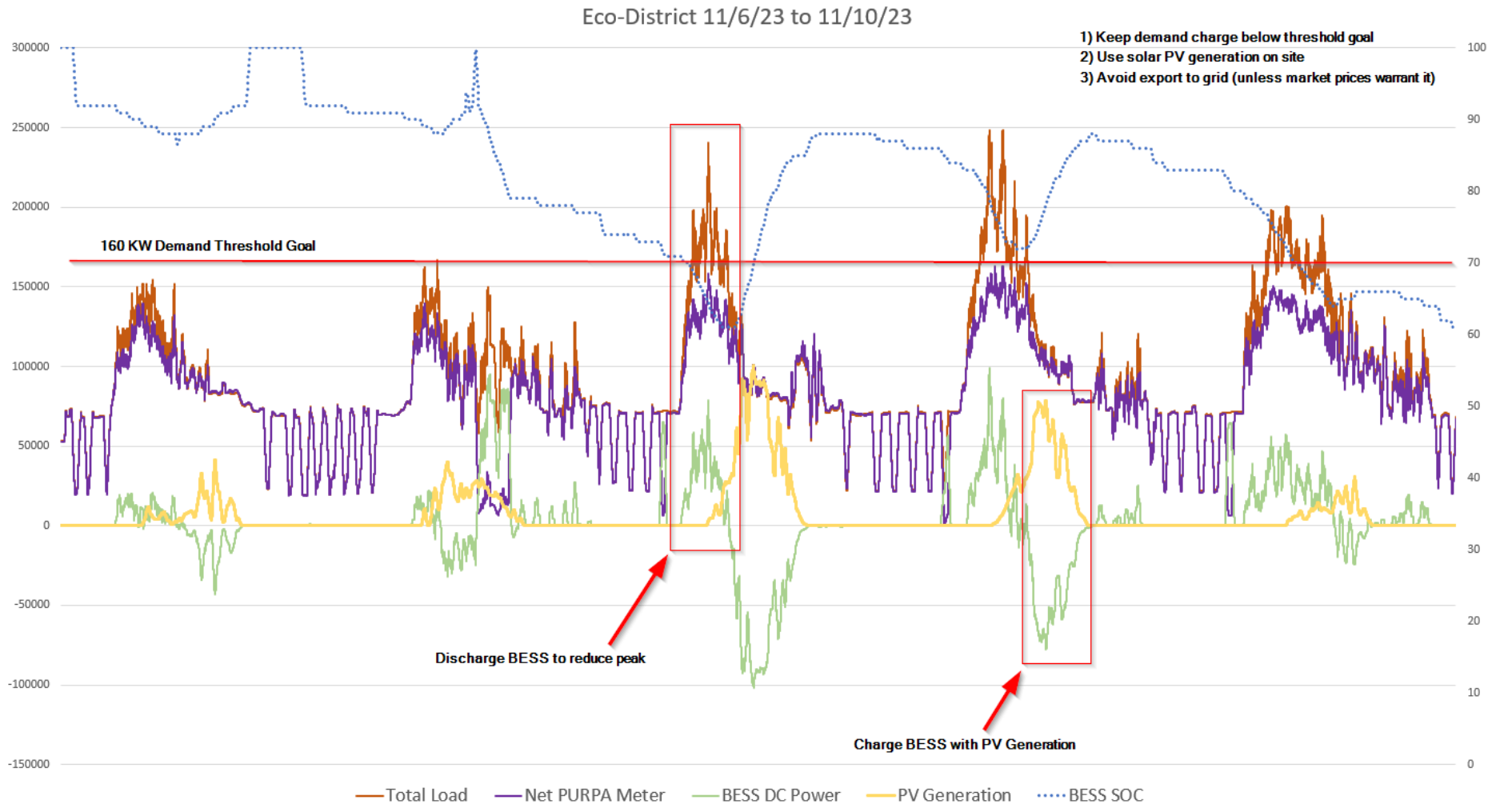
Operational Data

Demand Charge Threshold

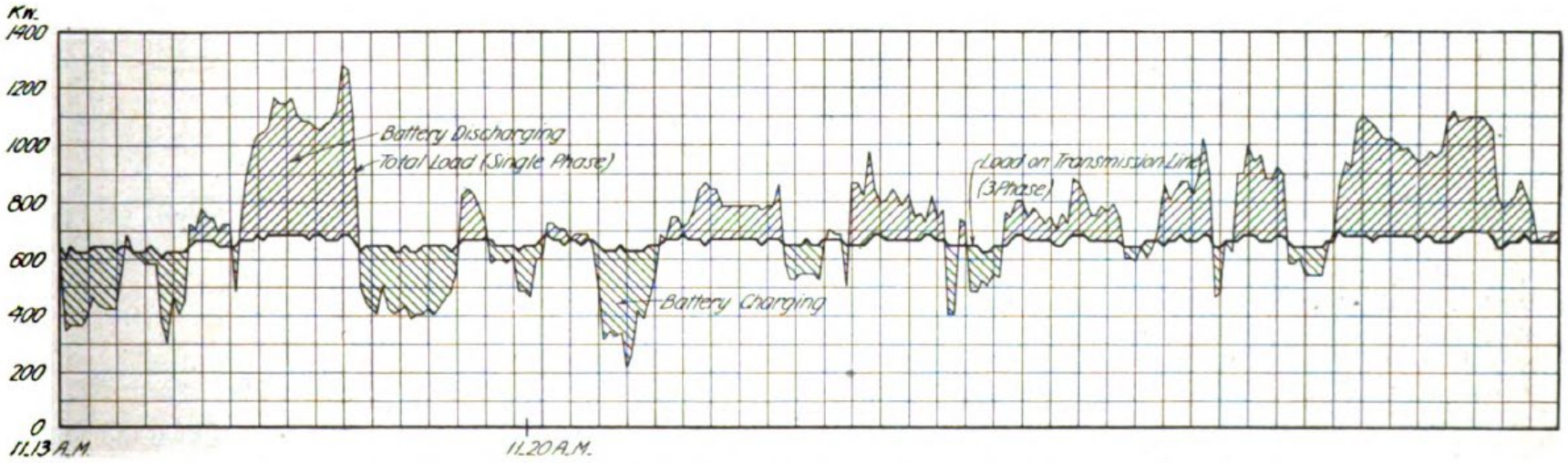
Solar Following

Grid Export as Market Prices Warrant

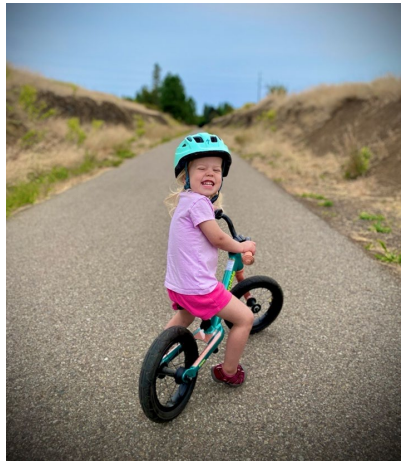
Available for Distribution Capacity Relief



118 Years Earlier… 0.7 Miles Away



Spokane & Inland Power—Power Curves, Showing Smoothing Effect of Storage Battery.



Electric Railway Review, October 1907:

"Since opening the system has operated with power purchased from the **Washington Water Power Company.** The output of this company's plant is 60-cycle, three-phase, 4,000 volt current. In the purchase of this current for the Inland Empire System the charges are based on the maximum demand during each month, and for this reason **it became very desirable to employ some means to flatten the railway load curve**"

 Sources: Electric Railway Review, Wikipedia, Waymarking.com

Q&A

Thank you!