Spokane South Landing Eco-District
Partnerships

- Avista
- McKinstry
- Katerra
- Eastern Washington University
- Department of Commerce
  - Research, Development and Demonstration Program
  - Grid Modernization Program
- nbi new buildings institute
- Pacific Northwest National Laboratory
Budget: Deliver a commercially viable building


Optimize the entire energy system by reaching through the Utility Meter and the Lease agreement
Selecting a Solution

All Possibilities

- 1 Green line = 1 parametric run
- Axis = inputs/outputs
Implementing the Theory
Seasonal Equipment Utilization

Annual Heating and Cooling

Load (btuh)

Millions

January
February
March
April
May
June
July
August
September
October
November
December

Electric Boiler
Air-to-water Heat pump
Heat Recovery Chiller
Thermal Storage
Water Cooled Chiller

Mckinstry
Feeder Peak Demand - Winter

3rd & Hatch 12F7
Winter Peak Duration ~8.5hrs
Peak demand reduction - Winter

Winter peak week – utilizing thermal storage

Customer peak
1116kW
1142kW @ Tues 8:30PM
54 → 55 Amps @ 13.2kV
Not coincident with utility peak.

Feeder peak contribution
4116kW
652kW @ Wed 01:30PM
54 → 32 Amps @ 13.2kV

DISTRICT DEMAND INC. PV (Kw)

Thermal storage power (kW)

Unoptimized utility demand ABCD (kW)

Optimized utility demand ABCD (kW)

Thermal Storage energy (kWh)
Feeder peak demand - Summer

3rd & Hatch
12F7
Summer peak
Duration
~2-3hrs
Peak demand reduction - Summer

Customer peak
756kW
580kW
505kW @ Mon 11:30AM
37 → 25 Amps @ 13.2kV
Not coincident with utility peak.

Feeder peak contribution
737kW
580kW
482kW @ Mon 03:30PM
36 → 23 Amps @ 13.2kV
What’s Next?

Achieving Grid Optimal / Plant Optimization

• Clean Energy Fund Grants
• Utilize Predictive Energy Management Partner
• Encourage Ongoing Aggressive Energy Management Through Technical Services Group