



North Unit Irrigation District Resiliency Project

NUID HELP

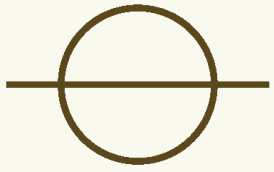


- Energy Trust of Oregon and FCA evaluated conditions for a hydro plant on the irrigation canal adjacent to the Redmond Airport
- We were granted permission by property owners on the circuit to study two years of interval energy data
- An estimated 600-800 kW peak load
- Water flows are enough, at times, to generate 1.4 MWs of power – enough to power operations at the Redmond Airport and other nearby facilities
- Partnered with Oregon National Guard and the Redmond Airport to apply for a CREP Grant – In the design state



Project Overview

- 8,000ft of open canal will be piped
- An in-conduit hydropower turbine will be installed, generating up to 1.4 MWs of power
- The generating station will be connected to Pacific Power's local grid
- NUID will own the asset and generate revenue by selling power to the utility – this should help offset rising energy costs on agricultural producers
- Co-locate with battery storage
- Microgrid would power services at the Airport and designated emergency preparedness buildings



Energy/Water/Resiliency Benefits

Local and affordable renewable energy

The hydro will produce revenue for NUID, offsetting rising energy costs which leads to an increase in costs for crop production

Improve energy resiliency at the Airport, powering operations during loss of energy events

The piping portion of the project will cool water temps in the canal and reduce seepage – which leads to water savings for the district and patrons

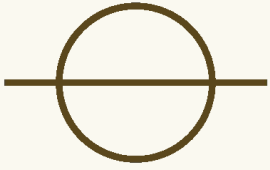
Agricultural providers will be able to reduce energy use by install systems that utilize the pressurized pipe for irrigation



NUID HELP

Community Benefits

- Redmond would have a powered location during large-scale power loss events
- Reduce emission through clean, local renewable energy
- Job creation through local investment – we are using only local firms to design and construct the project
- More resilient food system since the piping will save water and energy



Barriers

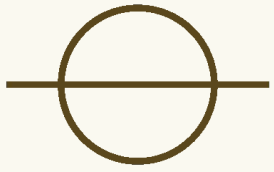
- FCA had to go to each entity for waiver signatures allowing access to
- It would be easier to design microgrids if we had access to interval circuit data – included in the DSP map
- Lots of time spending with stakeholders explaining concept and getting buy-in
- Cost is prohibitive without significant investment. How much is resiliency worth? It's different for each community
- The load is served on two circuits so that resiliency plan will have to either hard wire the facilities separate from the system or there needs to be additional infrastructure built into the utility system



NUID HELP

Timeline

- October 2023 – April 2024: Design and RFP development
- Spring 2024: Grant applications
- Winter 2025: Groundbreaking



Adjacent projects



- Co-location of batteries at pumps



- Creating microgrids at larger districts to keep operations running. Districts have the benefit of current hydro facilities.