

## Anthony Umek

The Project has a number of benefits that support a Record of Decision preferred alternative result. An extremely important benefit is that The Project will provide a source of electrical energy for up to 20 hours @ 100%, using existing wind or solar to pump water uphill. 100% available electricity is needed to power critical facilities including hospitals, fire stations, police and emergency centers. Solar and wind power are intermittent at best. 20 hours of power provides a cushion to accommodate a range of outages. Wind turbines do not generate 100% name plate output until wind speed reaches ~ 35 mph and shutdown at 55 mph, so they are ~ 33% efficient. Solar panels require ~ 1000 wattts per square meter to generate at 100%. There are approx 191 sunny days in Goldendale and there are on average 12 daylight hours per day. So, at best, solar panels will generate at 100% for ~ 96 days. There are economic benefits: construction will add \$2 billion to the area and employ ~ 3000 people. Operation will provide ~ 50 permanent jobs and generate tax dollars for local use. The 1200 MWe Project footprint of 600 acres compares to 7300 acres for an equivalent windmill farm; or 54,000 acres of solar panels. The water will benefit wildlife, whereas windmill farms adversely impact wildlife habitat and kill birds and insect eating bats. 54,000 acres (84 sq miles) of solar panels are required.to generate 1200 MWe. Data reports that ~ 1 million birds and nearly a million bats are killed in the USA annually by windmills. An Iowa State U study shows that the downdrafts of windmills draws carbon dioxide from the soil. The Project's ponds will create vegetation that absorbs C02. Unlike wind turbine blades, the Project will not need to dispose of end of life blades. There are acres of defunct windmill blades in Wyoming, with no approved disposal path. Solar panels limit the type of vegetation that can grow around them, the Project ponds will not. Solar panels contain a variety of hazardous materials including: cadmium telluride," lead, polyvinyl fluoride, gallium arsenide and crystalline silicon. All things considered, the Goldendale Energy Storage Project should be the preferred alternative of the EIS.