

## Putting Electric Vehicles to the Test ... 8.25.2022



Electric vehicles (EVs) are [rapidly increasing in popularity](#). And for practical and economic reasons that go far beyond the absence of a tailpipe. For one, electric vehicles are proving to be less expensive to own than gas or diesel vehicles. Even before the recent increase in gas prices, in many parts of Oregon, [it cost less to charge them with electricity than to fill a gas tank](#). EVs are also proving to have lower [maintenance and repair costs over time](#). And now, the technology is expanding to more equipment that has been historically powered by gas. From leaf blowers and weed whackers to heavy equipment and EVs, there are more and more electric options available out there.

But how do they hold up to the rigorous demands of agricultural work? This past year we partnered with Oregon Environmental Council (OEC) and Pacific Power to find out.

The project initially emerged from our conversations with Karen Lewotsky, OEC's Director of Rural Partnerships, who was looking for ways to connect rural communities to practical, cost-effective, conservation opportunities. Having partnered in the past with irrigation districts, Karen knows how important districts like ours are to the rural and agricultural communities we serve. Putting EVs on the ground for district staff to use ensures that rural and agricultural folks will see them in action and be able to ask questions about them. Karen and OEC then applied for a grant from Pacific Power, which draws on funds made possible by Oregon's Clean Fuels Program (more on this below). The grant allowed us (and two other districts) to purchase a [Polaris Ranger EV UTV](#) (Utility Task Vehicle) to see how it could work within our operations.

We received our Ranger EV in the spring and quickly incorporated it into our regular operations and field workflows. The vehicle seems particularly well-suited for maintaining the many miles of irrigation pipes and canals that we operate. It's quicker and nimbler on the unimproved ditch roads than any of our full-sized pick-ups, which makes it a preferred alternative for our field crew. The EV also allows us to drive down into some of the larger canals, and onto slopes that would otherwise be too steep for larger trucks. They are perfect for conducting field inspections, plowing snow, grading roads, pulling mowers, running supplies up and down our construction sites, etc. etc. And, there's no noise pollution or gas bill. Though we don't have much user-data to report, we like the EV unit a lot, and our initial time with it has been fun and effective. Most importantly, it's saving time and money.

A side benefit of the EVs is that they can be recharged using hydroelectricity that we generate on-site. At Swalley, like a lot of irrigation districts in Oregon, we harness the kinetic energy of water as it flows through our irrigation system. It works like this -- water is diverted from the river and into irrigation canals via gravity to serve farms. The water travels downhill to farms and other irrigators, and when that water is piped, not only are evaporative and seepage losses ameliorated, but internal pressures within the pipelines are created as the pipeline drops in elevation. Pressurized water can be used by a farmer in place of an expensive and power-hungry pump, and or the pressurized water can be blown-off through a hydro turbine to create green hydroelectricity. Hydroelectricity can be used to charge an EV, for example, or sold back into the local or regional power grid for profit. As a local government, we re-invest and leverage those profits right back into other water and energy conservation projects to achieve further environmental return. For example, from our historical baseline from only 10 years ago, we are now saving over 10 billion gallons of water per year. Anything we can do to save water and power and help restore natural waterways is worth doing, so we're pleased that the OEC has been able to support us on this and other important conservation projects.

By Jer Camarata, Swalley Irrigation District

Afterword from OEC:

This kind of innovative thinking about resources is exactly what we hoped to tap into with the rural EV pilot project. Perhaps the most telling aspect of the project so far is that all three irrigation districts continue to explore more ways that they can use their new tools to deliver resilient and cost-effective solutions for the farmers that rely on them.

The transition to EVs in rural and urban areas alike has been greatly aided by funds created by the [Oregon Clean Fuels Program](#). In operation since 2016, the Clean Fuels Program creates a gradually declining limit on the amount of carbon in common fuels like gas and diesel and creates financial incentives for companies that outperform the program standards. One result of the program has been a steady stream of grant funding dedicated to transitioning Oregon to more sustainable energy. Other beneficiaries of this program include school districts and community nonprofits like Meals on Wheels People.