ELECTRIFYING OUR FARMS

ELECTRIC TRACTORS AT WORK WITH BLACK FOOD SOVEREIGNTY COALITION

In 2020, four Oregon non-profits–Sustainable Northwest, Forth, Wy'East RC&D, and Bonneville Environmental Foundation–launched the Electrifying Our Farms program (E-Farms). This effort brought the state's first electric tractors to farms to evaluate the new technology.

This project is an important test case to explore electric tractor's best uses, share learnings, and analyze growth opportunities. It also increases access and adoption of electric farm equipment to help farmers save money and reduce on-farm emissions.

In January 2022 the E-Farms team partnered with Black Food Sovereignty Coalition (BFSC) to bring one of the first electric tractors in Oregon to their farm on Sauvie Island. BFSC serves as a collaboration hub for black and brown communities to confront the systemic barriers that make food, place, and economic opportunities inaccessible to them. BFSC is focused on meeting these barriers with creative, innovative, and sustainable solutions.

The E-Farms team is lending e-tractors to farmers to evaluate benefits and limitations, comparability to non-electric equipment, and consumer preferences.

> ***"Piloting the E-tractor offers a practical way for our BIPOC farm communities to engage on the leading edge of agricultural electrification and green energy technologies. The learning and exposure to new partners and opportunities as part of the pilot project has been a benefit to all."***
>
> *- Charles Smith, Director, Health & Wellness*
> *Black Food Sovereignty Coalition (BFSC)*

WHY GO ELECTRIC?

- No exhaust or harmful diesel fumes that can cause respiratory illnesses.
- No carbon emissions. E-tractors reduce greenhouse gas emissions by 85% compared to diesel.
- Electric motors are more efficient than internal combustion vehicles, providing energy savings while tractors idle.
- Quiet engines improve working conditions for the operator and others nearby.
- On-farm cost savings with reduced fuel and maintenance.
- Reduce the need for on-site diesel fuel storage.

CONTACT:

Bridget Callahan
bcallahan@sustainablenorthwest.org

David Skakel
davids@forthmobility.org

bef

FORTH
Empowering Mobility

WY'EAST

SUSTAINABLE NORTHWEST

WHAT ARE ELECTRIC TRACTORS?

Like diesel or ICE tractors, electric tractors provide the power needed to perform tasks in the agricultural field and other sectors. They are powered by electricity and perform tasks such as farm and field crop cultivating, hauling, mowing, and tilling, among other tasks.

HOW ARE THEY DIFFERENT FROM TRADITIONAL TRACTORS?

Electric tractors can perform the same duties as comparable horsepower diesel tractors. The major difference is that electric tractors are powered by electricity stored in a battery rather than combusted diesel, and can be charged from a home, barn, or shop. In fact, most electric tractors offer two-way charging, which means they can provide a charge to buildings, vehicles, tools or appliances from their battery power source.

WHERE ARE ELECTRIC TRACTORS A GOOD FIT?

Today's electric tractors have shown promise on a variety of farms. Vineyards, orchards, and similar locations that currently use smaller tractors are a great fit for electric tractors. "The e-tractor helped me get my work done faster. Moving big piles of leaves, weeds, and compost took way less time and energy," said Keoni Young with Black Food Sovereignty Coalition (BFSC). In the next few years, electric tractors with higher horsepower motors and larger batteries will be available for locations that need more power and even longer run times.

HOW DOES IT CHARGE? HOW LONG DOES THAT TAKE?

The tractors plug into a 220-240 volt outlet which is frequently already built into barns as welding plugs. Tractors are typically stored in the same location every day, which is convenient for charging them after a workday. The charge time is approximately 4 hours based on current technology. New users are always surprised at how easy it is to charge an electric tractor.

HOW LONG DO THEY LAST IN THE FIELD?

Electric tractors can last up to 3-7 hours in the field. Some models provide an option to swap batteries to extend the same-day time of use. According to farmers with BFSC, they used the e-tractor for an average of 3-4 hours with battery remaining after use.

DOES OPERATING AN ELECTRIC TRACTOR SAVE MONEY?

Electric tractor fuel (electricity) is not only cheaper than diesel but more predictable and less susceptible to national and international market conditions. Electric fuel is readily available at your home or shop and doesn't require deliveries or storage like diesel fuel. Additionally, the more you operate your electric tractor, the greater the savings. Learn more and compare the total cost of ownership for an electric tractor through this Oregon State University study.

ARE ELECTRIC TRACTORS MORE SUSTAINABLE?

According to BFSC, the environmental benefits were the primary reason they were interested in an electric tractor. "We are working to become 80-100% energy efficient," said Keoni Young with BFSC. Electric tractors use far less energy than combustion engine tractors. Transitioning from an internal combustion (IC) diesel tractor to an electric one can reduce greenhouse gas emissions by 80%-90%. When powered by 100% carbon-free electricity, e-tractors will have no operational phase emissions.