

# CATERPILLAR AND FLORY HELP FARMERS FIND BETTER SOLUTIONS



## **CUSTOMER:**

Flory Industries

## **CLIENT:**

Heinrich Farms

## **LOCATION:**

Salida, California

## **EQUIPMENT:**

Flory 4840E battery-electric elevator

## **POWER SOURCE:**

Cat® 600-volt battery-powered powertrain  
Energy Storage Cat XES60 Compact ESS

## **CAT® DEALER:**

Holt of California

## **FEATURED TOPICS:**

Cat 600-volt battery-powered powertrain  
Battery Energy Storage

Eighty percent of the world's almond supply comes from California. Flory Industries, a global leader in nut-harvesting equipment based in Salida, California, produces whatever farmers need to be successful. Flory wanted to manufacture an electric version of its harvest elevator for exploring renewable energy sources, reducing machine noise and improving value to customers. In 2023, Flory designed the Flory 4840E battery-electric elevator as a prototype for almond and pistachio harvesting.

## **FINDING THE RIGHT POWER SOURCE**

Harvesting elevators are a good application for electrification because, most of the day, between load drop-offs from shuttle trucks, the equipment is idle. To replace the standard diesel engine used in its elevators, Flory needed to find a solution that could meet their efficiency goals without sacrificing production. With experience in agriculture and electrification, Caterpillar engineers knew what it would take. "We had to be mindful of some specific challenges in the agriculture sector," says Caterpillar Customer Solutions Director, Andy Curtis. "We had to make sure the battery is suitable for working in dusty and arduous environments." Flory worked with its Cat® Dealer, Holt of California, and chose the Cat 600-volt battery-powered powertrain to use in the Flory 4840E elevator.

The Cat 600-volt battery uses lithium-ion technology and features a modular design to boost performance while minimizing packaging. Engineers have integrated the batteries with inverters, motors, electronic controls, digital services and other critical technologies to meet the challenges of tough agricultural conditions.

The electrified field elevator prototype worked an entire 10-hour day without needing a recharge. The Cat XES60 Compact ESS was used for recharging at the end of the day. This mobile battery energy storage system supplements traditional mobile power solutions and helps minimize fuel usage and greenhouse gas (GHG) emissions when compared to continuous generator set usage. Caterpillar was able to provide not only the battery and the powertrain but also the charging infrastructure to support an off-grid site working on long shifts.



## POWER PROFILE: FLORY INDUSTRIES

### SUCCESS IN THE FIELD

Heinrich Farms, a family-owned farm in California, used the Flory 4840E battery-electric elevator as a field test for harvesting nuts. The battery alternative proved to be a successful replacement to diesel power. “Now, we have a piece of equipment in the field that’s 100% electric and working just as well as some of our conventional equipment,” says Heinrich Orchard Manager, Jerad Heinrich. “I was a little skeptical at first, but it’ll hold a charge throughout the entire day of harvesting.”

### HOLT LENDS A HELPING HAND

Holt of California was instrumental in the design and production of the Flory 4840E elevator. Holt helped Flory iron out challenges in installation, testing and maintaining battery health. Holt’s usefulness goes beyond product development. The Cat dealer also offers a unique advantage in servicing the Flory 4840E elevator, due to expertise with generators and high-voltage systems. “Flory is known for quality and after-sales support,” says Flory Senior Sales Representative Stuart Layman. “That’s where Holt of California really steps in, helping with parts and service.”

The two industry leaders are a perfect match because each understands what the other brings to the table. “Flory Industries is the expert in the agricultural side of things,” says Curtis. “By using their expertise for their applications and our expertise in electrification, we can put the two together to come up with a really innovative and interesting product.” Flory has used Cat diesel engines for powered equipment throughout its fleet of agricultural equipment since 2002.

### EVOLVING AGRICULTURE ELECTRIFICATION

Farmers have limited time to harvest. They need reliable equipment to keep production flowing. The Cat electric powertrain can help deliver performance, reliability and durability while reducing maintenance and operating with zero tailpipe emissions. “I’ll use this electric

The battery-powered elevator is designed to be configured with Cat Connect, enabling equipment owners like Heinrich and Cat dealers to remotely monitor performance during operation and charging cycles. This intelligence can then be leveraged to improve productivity by optimizing in-use and on-charge processes.



elevator for our next harvest and the harvest after that,” says Heinrich. “As long as technology continues to progress, we’ll continue to put it into our operation.”

**“I’ll use this electric elevator for our next harvest and the harvest after that.”**

