



The Fluid Power & Motion Control Experts

SUCCESS STORY

JEM Technical Helps Subarctic Tour Company Go Electric

Converting diesel fleet to electric provides a quieter, more sustainable experience.

Family-owned Frontiers North Adventures is the leader in polar bear tourism experiences in the subarctic Canadian community of Churchill, Manitoba. The company prides itself on benefitting its guests as well as the ecosystems and communities in which it operates. Keeping in line with its values, Frontiers desired to convert its fleet of noisy, carbon-emitting, diesel-driven Tundra Buggys® to electric vehicles for a quieter, more pleasant guest experience while helping to mitigate the effects of climate change, which have impacted polar bear habitats in recent years. They just needed to find the right partners to help them realize their vision.



Challenge

Frontiers worked with local technical colleges and a vehicle technology center to determine the battery size required to power the Buggy’s electric motors, but encountered difficulty with developing a vehicle operating system with the communications necessary to control the battery and motors. Not having the systems integration capabilities internally, they contacted JEM Technical’s Winnipeg division for help.

Solution

JEM’s talented team of engineers developed custom display and controller software that integrated the ground drive propel and steering systems with the vehicle’s battery management system. The CrossControl CCpilot VA touchscreen display was utilized to create an intuitive, user-friendly operator interface. While the HydraForce ECU-2415A controller was used as the primary control device responsible for interfacing, controlling and monitoring all aspects of the vehicles control system.

Result

Frontiers’ new electric Buggy allows guides and guests to talk at comfortable level for a more enjoyable experience, while reducing carbon dioxide emissions by 3.3 tons each season. The company plans to convert its entire fleet of Buggys through the next decade, avoiding an estimated 3,600 tons of carbon dioxide emissions over the next 25 years.

“We had a lot of plans and ideas over the course of several years concerning how going electric could shake out in real life. To get our first EV Tundra Buggy out roaming among polar bears was quite something for all of us involved.”

-Frontiers North Adventures President and CEO John Gunter

Client

Frontiers North Adventures

Location

Manitoba, Canada

Products and Services

- CrossControl AB display
- HydraForce Controller
- Operator interface
- Component integration

