

Hybrid-Electric Vehicles



ELECTRONICS & INTEGRATED SOLUTIONS

BAE SYSTEMS

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HYBRID-ELECTRIC VEHICLE (HEV)

A Hybrid-Electric Vehicle use a combination of an internal combustion engine and electric motor, powered by a large rechargeable battery, to move and/or to power other functions in the vehicle. The battery in a hybrid is recharged either from the engine or from energy captured while braking. Hybrids use a combination of mechanical and electrical power to move a vehicle. These two systems work together to deliver energy to the wheels. Our system is a series type of hybrid where the engine turns a generator and the generator can either charge the batteries or power an electric motor that drives the transmission. The engine never powers the vehicle directly.

Our HEV solutions consist of an inverter control system, modular traction system (AC traction motor, generator, and gear box), energy storage system, electric accessories and a system controller unit.

The following are the most common features of hybrids:

- Idle Stop
- Regenerative Braking
- Motor Assist
- Engine-Off Drive - EV Mode

Idle Stop

Turns off the engine when the vehicle is stopped. Once the accelerator is pressed the engine immediately turns back on. This ensures that the vehicle is not using fuel when the engine is not required to propel the vehicle.

Regenerative Braking

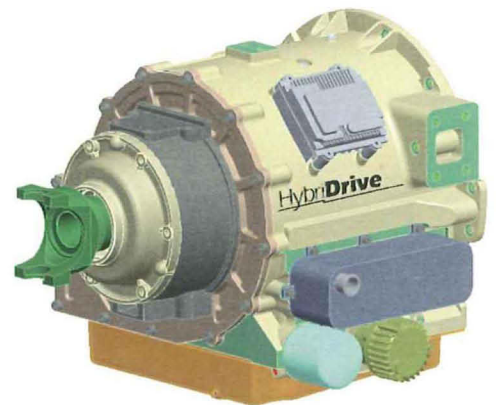
When decelerating, the brakes capture the energy and store it in the battery for later use. Regenerative braking helps keep the battery packs charged without having to plug in the vehicle.

Motor Assist

The electric motor will provide extra power drawn from the battery when the internal combustion engine is performing a more energy intensive activity (e.g. accelerating). The Motor Assist enables the vehicle to use a smaller more fuel-efficient engine without giving up vehicle performance.

Engine-Off Drive - EV Mode

The electric motor propels the vehicle at lower speeds. Since the engine is not being used during acceleration no fuel is being used and no emissions are being released. When the hybrid is in this mode, it is essentially an electric vehicle.



Modular Traction System



Energy Storage System

Want to be part of it?

Defence Avionics Careers

If you think you are ready for a demanding challenge, and have the skills and competencies that match the role, please get in touch.

FOR MORE INFORMATION

For details of current vacancies

- visit www.baesystems.com/defenceavionics
- email your cv and/or details of areas of interest to: opportunitiesatrochester@baesystems.com
- Call 01634 203450.

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