

# FAQ's

## PHEV

### **Does the unit HAVE to be plugged in?**

NO! The engine has the capability to recharge the batteries at anytime during the operation of the vehicle. This feature permits use of the unit in remote locations where access to external power may not be available. When not recharged through the grid, the unit operates as a traditional hybrid. During longer operation, the engine has the capability to recharge the batteries so there would be no downtime.

### **Is a special sales agreement required to purchase a PHEV system from Dueco?**

A special sales agreement (i.e. a contract similar to the Eaton contract) is not required by UELC, DUECO, or Odyne prior to the purchase of a PHEV system.

### **Does the PHEV system include a GPS system to track data and location?**

DUECO has partnered with MobileNet to provide GPS tracking and data acquisition. The MobileNet system provides real time updates via the website to collect needed information to ensure the vehicle is working properly and meeting efficiency goals.

### **On what type of chassis can the PHEV system be mounted?**

The PHEV system is a modular design that can be upfitted onto any type of chassis that has a standard PTO opening. Our PHEV system is a parallel hybrid system that does not require the standard chassis to be modified, The original chassis driveline remains intact.



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### **What type of Equipment can be mounted on the PHEV system?**

Any hydraulically mounted equipment with PTO time can be used on the existing PHEV system. This extends from aerial devices ranging from 29' to 60' working heights as well as digger derricks.

### **What type of emission savings are available from the PHEV system?**

While the engine is running, the hybrid assist system reduces the amount of engine acceleration required which in turn reduces, the amount of emissions produced. While the unit is in PTO mode and the equipment is running in the all electric mode (EPTO), the chassis emits no pollution.

### **What is the warranty on the batteries and hybrid system?**

The battery has an eighteen month warranty from the manufacture and the entire hybrid system has a one year warranty.

### **How often do you have to replace the batteries?**

The batteries will last from three to five years, dependent upon use. DUECO expects that the batteries will have to be replaced once within the life of the vehicle. A new battery module can be purchased through DUECO and the old battery module will be recycled.

### **What is the estimated fuel savings?**

A standard chassis uses approximately one gallon per hour while idling. While the truck is in all electric PTO mode at the job site you will save one gallon per hour.



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### **Will the hybrid installation allow the customer to achieve front and rear axle payloads?**

The hybrid system for medium duty chassis adds approximately 3,000 lbs to the chassis. By working directly with DUECO we will make every effort to configure a unit that meets your payload requirements, while still remaining in a similar size chassis.

### **What happens if I do not bring the truck back the garage and can not plug the unit in overnight?**

The PHEV system has three types of charging methods. The first method is to plug the unit in and use the grid power. The second method occurs if the battery is running low while the equipment is operating or the vehicle is being driven: the diesel engine will recharge the batteries to sustain a minimum level of charge. The final method occurs while the vehicle is braking: the batteries will be recharged via regenerative braking. Regenerative braking is not intended to fully restore the charge in the batteries.

### **How long will I have to plug the unit in to recharge?**

The approximate charge time for the batteries is less than eight hours.

### **What electric service is needed to recharge the batteries?**

Service required is 240 Volt, 30 amp.

### **Can I retrofit an existing unit to have a PHEV system?**

Yes. The PHEV can be added to existing units in the field, depending on the factors listed in the retrofit section.

