

## FIRE FIGHTERS GUIDANCE NOTE #6-19

### ISSUE:    HYBRID/ELECTRIC and ELECTRIC VEHICLE SAFETY

Hybrid/Electric vehicles are automobiles powered by a combination of internal combustion and electric motors. The electric motors are powered by high voltage battery packs. Certain Hybrid/Electric or Electric models are powered by an internal combustion generator when the battery voltage is down.

Although manufacturers build into their vehicles a number of safety features and devices to prevent accidental shock to the driving public, the Hybrid/Electric vehicle's high voltage system can pose a hazard to the safety of firefighters in an emergency situation.

Common firefighting procedures will extinguish Hybrid/Electric and Electric vehicle fires.

Employers have duties under the *Occupational Health and Safety Act (OHS)* including, but not limited to: acquainting a worker or a person in authority over a worker with any hazard in the work; providing information, instruction and supervision to workers; and taking every precaution reasonable in the circumstances for the protection of a worker.

The following are important safety considerations for Hybrid/Electric and Electric vehicles:

- Extrication procedures may vary depending upon the manufacturer's vehicle type and design.
- Do not cut, disconnect or handle the high voltage cable that is colour-coded orange.
- Be aware that high voltage cable commonly runs under the vehicle chassis. Firefighters need to be aware of the hazard when cutting into, lifting or stabilizing Hybrid/Electric and Electric vehicles.
- High voltage systems need to be shut down by any of the several means provided by manufacturers before firefighters enter damaged Hybrid/Electric or Electric vehicles, or before starting extrication procedures. This also prevents accidental movement of the vehicle because there may be no engine noise even though a Hybrid/Electric or Electric vehicle is powered on.

- Markings to indicate Hybrid/Electric or Electric vehicles vary from manufacturer to manufacturer.

As part of the Electric Vehicle Safety Training project, the National Fire Protection Association (NFPA) is working with vehicle manufacturers to help inform the fire services and other first responders about hazards associated with electric vehicles. This information may be found in Electric Vehicle Safety Training and Emergency Response Guides for specific vehicle types.

References:

NFPA Electric Vehicle Safety Training and Emergency Response Guides:  
[www.evsafetytraining.org/resources.aspx](http://www.evsafetytraining.org/resources.aspx)

*Occupational Health and Safety Act, Clauses 25(2)(a), (d), and (h)*

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