



# Mack

# Road Transport Hybrid

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**VP- Strategic Product Programs**



## Dover Air Force Base



- A major transportation Hub for the Military Services
- A large International Airport
- Cargo flowing in and out of the base on a regular base for their customers



# Open wide and Swallow!



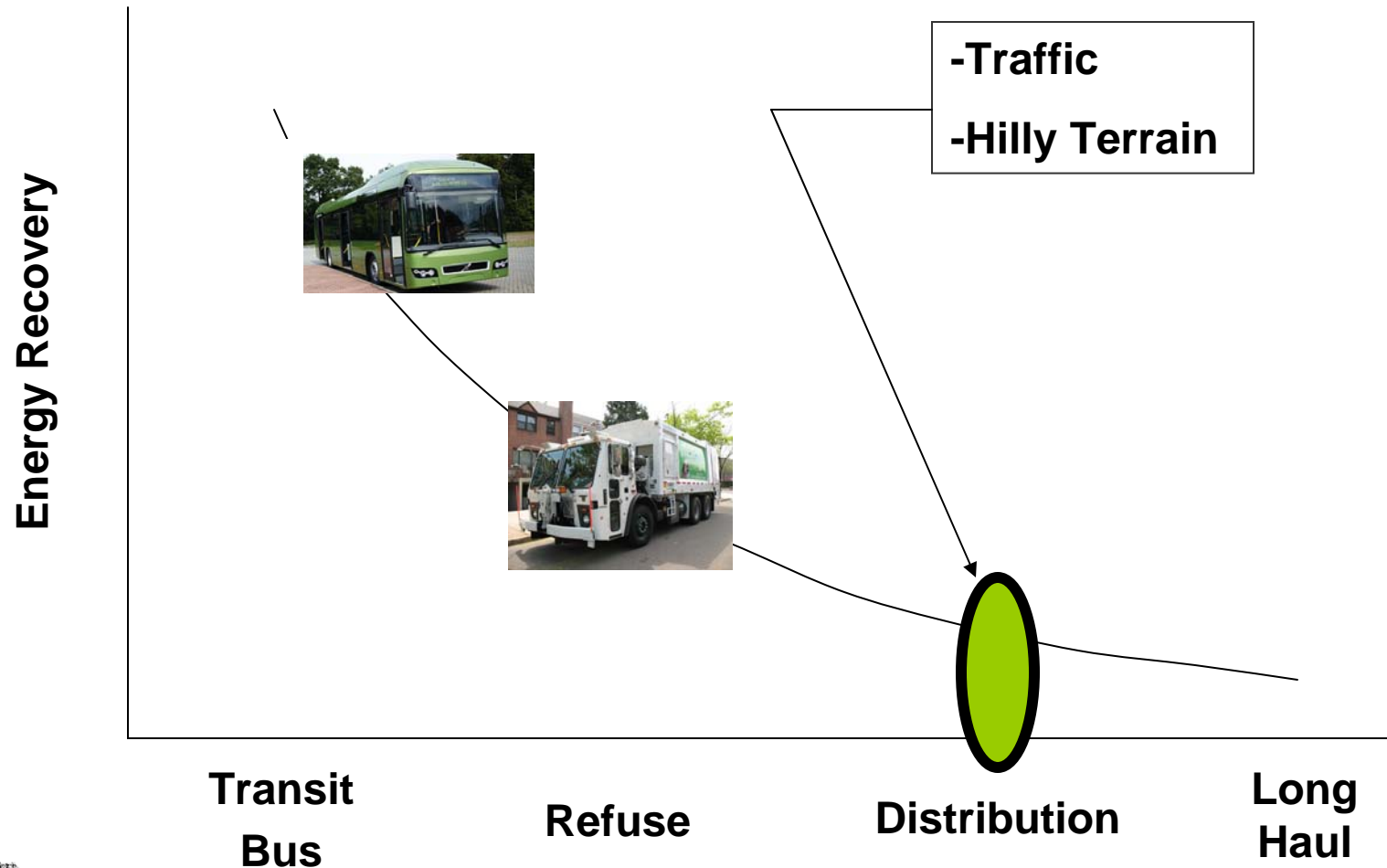
# Hybrid Transit Bus Deliveries have now started...



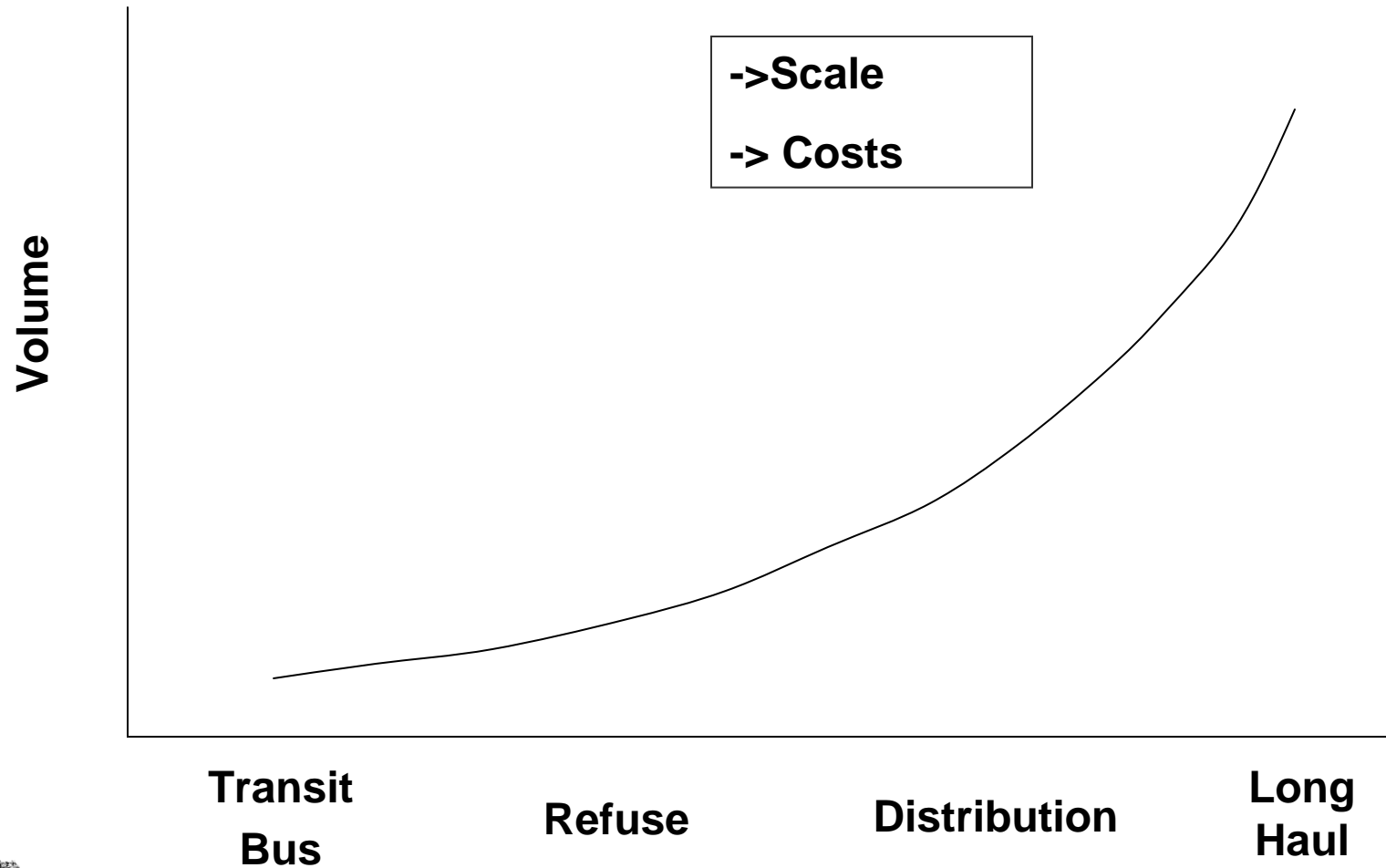
**35% lower fuel  
consumption than Diesel**



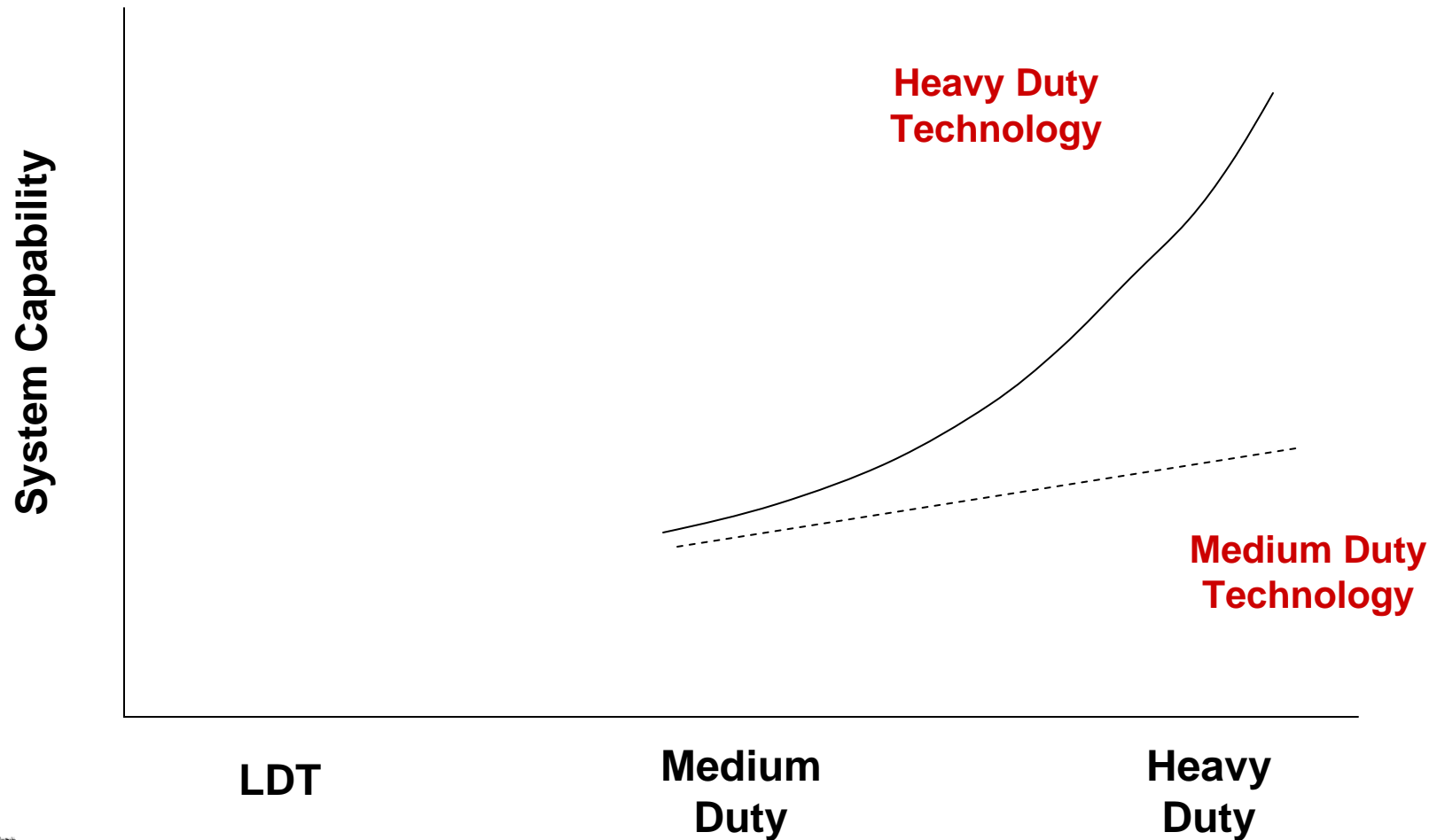
# Energy Recovery



# Truck Volume



# Hybrid Technology



# Hybrid Highway trucks is not the Conventional Wisdom

- Hybrids have the best payback when the truck is involved in a lot of start and stop.
- The best payback is for:
  - Transit busses
  - Refuse collection.
- Hybrid Day Cab tractors are possible
  - Some applications are “Hybrid Friendly”
  - Hybrids are an “enabling technology” for future fuel economy and Green House Gas reduction regulations
- We want to perform the application analysis now so that we can scale our system to that application.



# Why is the USAF demonstrating this truck?

- The Dept. of Defense is very interested in Hybrids for (2) important reasons:
  - Reduced fuel consumption
  - Silent operation in hostile territory
- They believe that Hybrids will become an important factor for military ground vehicles in the coming years.



# Dover Application

- Regional Road Transport
- On Base
- Off Base
- Flatbeds and Heavy Equipment trailers

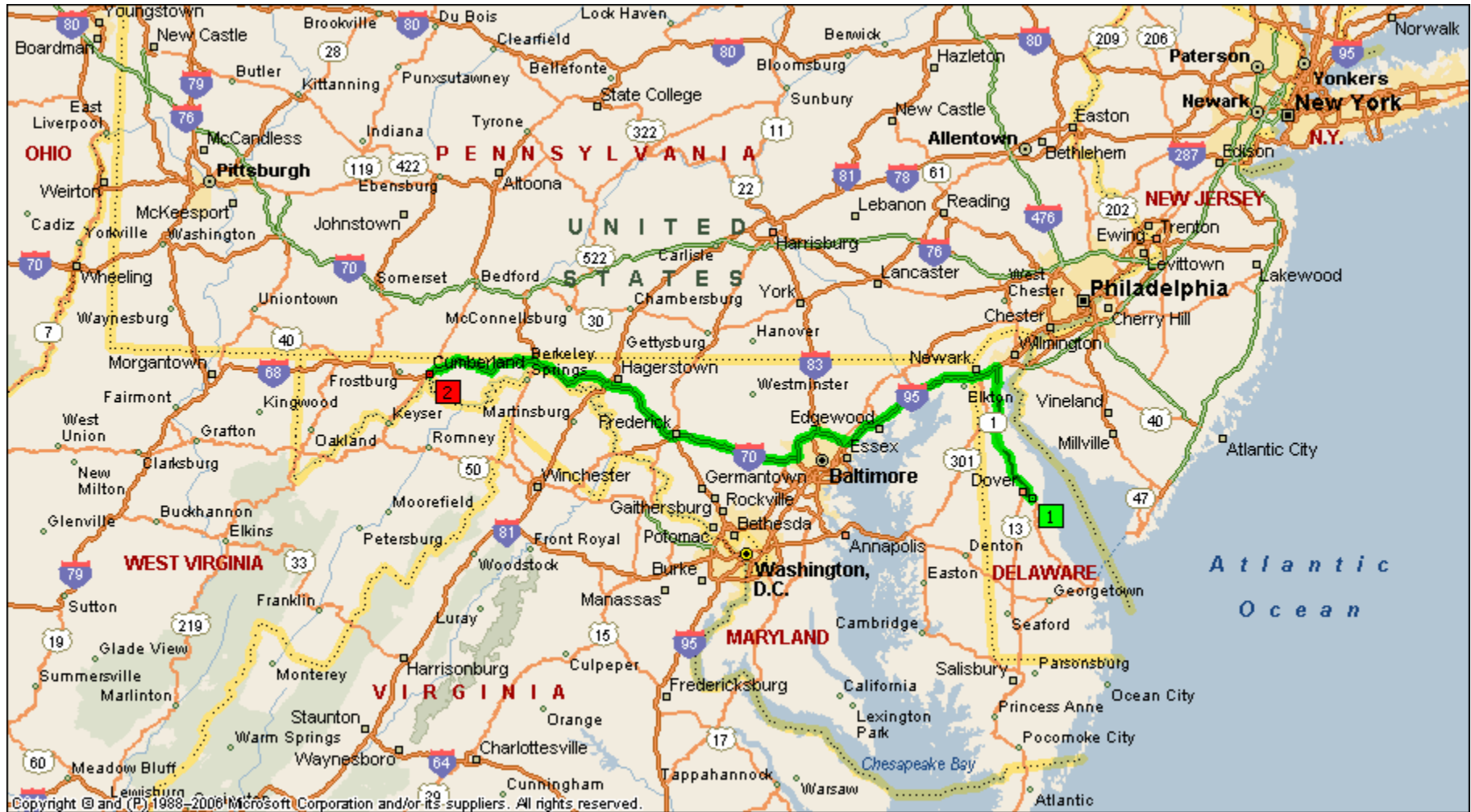


# Hybrid Powertrain

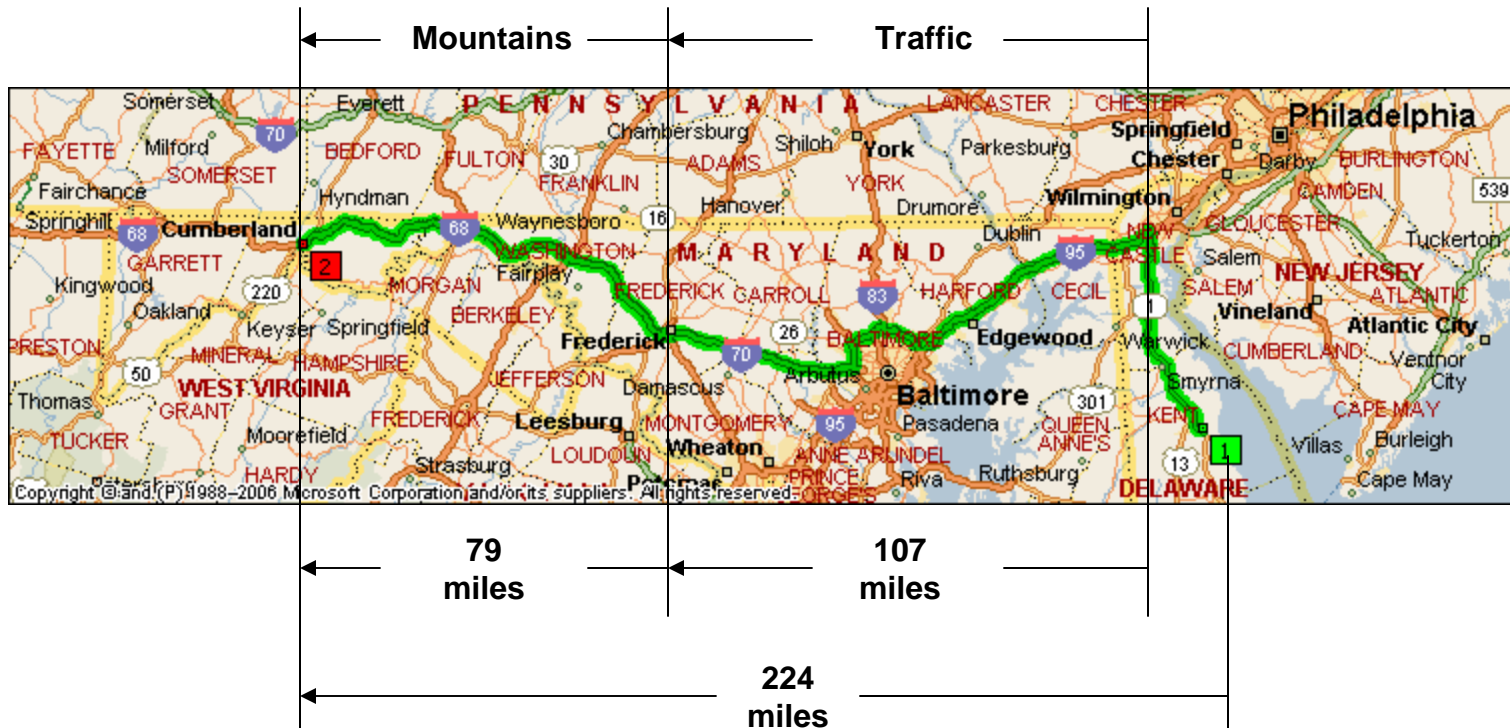
- Granite Axle Forward
- Mack MP7 engine
- 12 speed AMT
- 20,000 lb Mack Front Axle
- Meritor RT40-145 Bogie
- 201 inch wheelbase
- On Board Power Generation
  - 110V
  - 220V
  - 3 phase



# Typical Route



# Road Transport



**83% of the route is Hybrid friendly!**



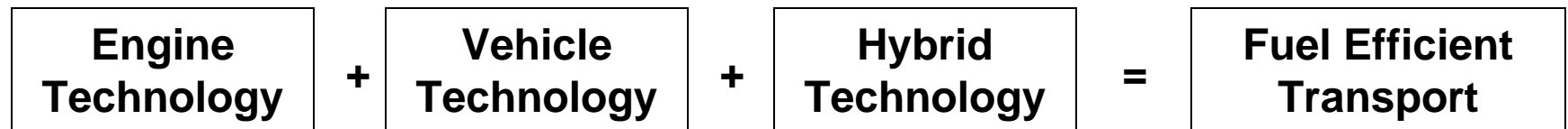
# Why is the system mounted behind the cab?

- We built this truck as an evaluation vehicle to test the road transport application.
- As such, we were not as concerned about the packaging, but more about how the truck performs.
- We have learned a lot already and have focused our next vehicle builds on sorting out the packaging.
- As a result, all of the Hybrid Components are now located on the frame rail with no increase in wheelbase required.



# Future Hybrid Reqmts

- Lower Operating Costs
- Fuel Economy regulations
- Green House Gas regulations



Thank You

