

Lear Corporation
Global Electrical + Electronics

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Technical Challenges for New Hybrid Vehicles

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The New Vehicles that are coming



Ford Scape



Honda Insight



Nuevo Toyota Prius III



Honda FCV Clarity

From Current Hybrid Vehicles
 through Micro Hybrids and Plug-in
 Until to Electrical Vehicles .



Daimler Bluezero .
C.Car



Opel Ampera



Mitsubishi y (& PSA) i MiEV



Chevy VOLT.- E. Flex



Fisker Karma
Plug In Car



RSA EV .- C. Car



Nissan .- C. Car



Toyota EV .- C.Car



Seat Twin Drive Ecomotive

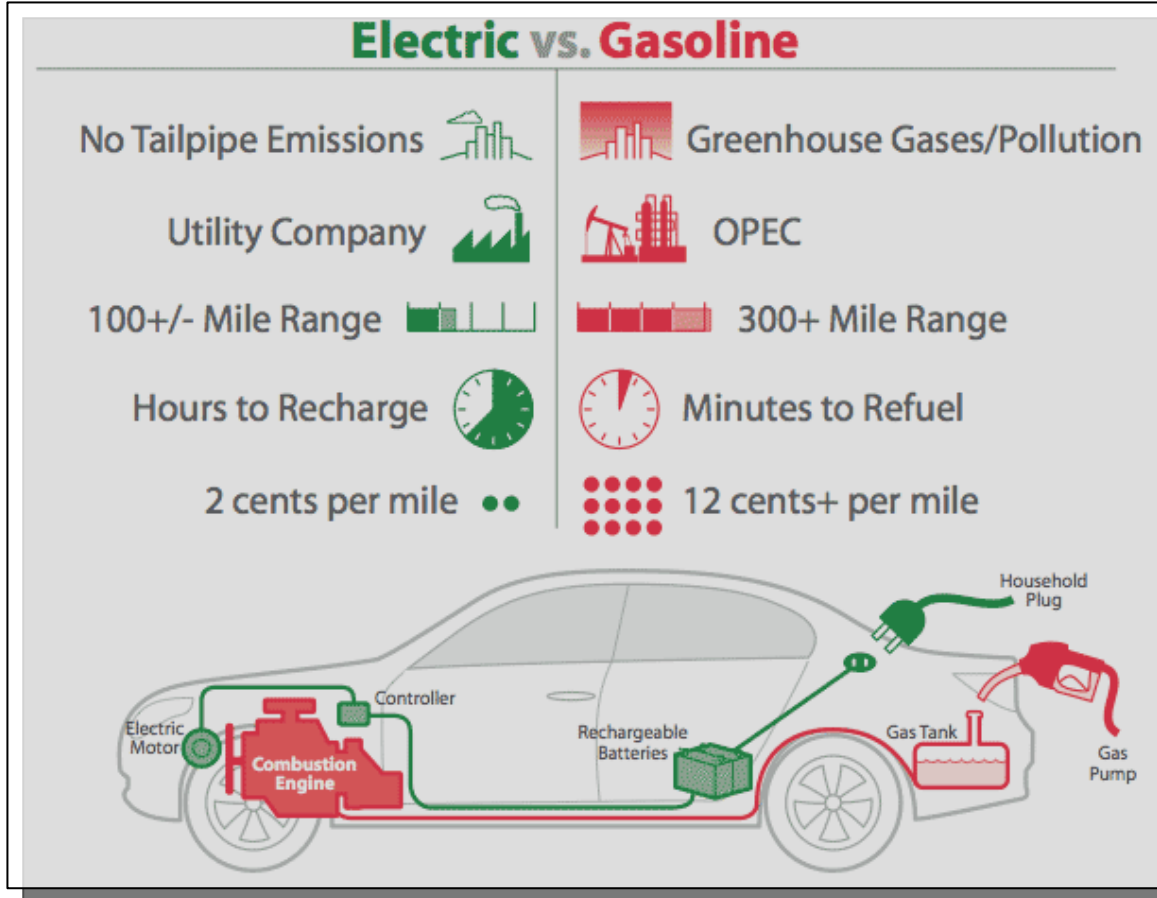


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Big Differences



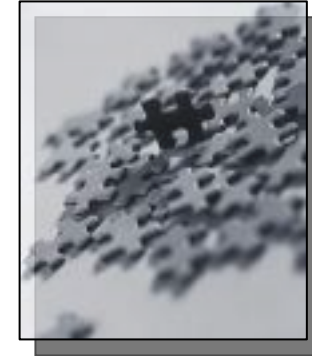
Source: www.HybridCars.com

but what about the price ?



Technical Challenges

- New Components for Power Electronics .
- Electrical Machines
- Better Efficient Systems through “Electrification” of mechanical ones.
- Real Time Management Systems.
- New Energy Sources.
- Energy Storage (Batteries , UC..)
- Battery Charging Systems (Normal & Fast)
- Efficient Energy Management Systems
- New Technologies to support this kind of new functionalities in the automotive field.



Needs

- Component Suppliers ready to support new automotive needs at first and second level
 - Knowledge acquisition and how to adapt
 - New Supplier incomers from other industries
 - Product Validation
 - New Specification from other sectors (CE , UL.....)
 -
- Energy Generation , Infrastructures and Services together with different administrations should work to find synergies and cover all the future needs.
- Efficient Energy Demand Management to cover all different possibilities and services.
- The Universities and Technology Centers , public and private ones, have the important task to give service for the new needs and technology challenges that we will have in the future society .



Summary.

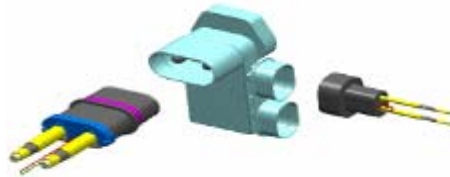


- The Automotive challenges and needs will cause important changes in the current sector.
- The new Hybrid Systems at any level of the vehicle will be a reality in the near future.
- New Knowledge & technologies will be needed and the society should be adapt to them.
- Common Objectives , at political , economical and environmental level should come together.
- Efficient Energy Management at global level should come from generation until its use.



- HV Power Distribution
- HV Wire harness
- HV Connectors
- DC-DC Converter
- DC-AC Inverter
- Battery Charger (EV & plug-in HEV)
- Battery Monitor

High Power Systems



HV Terminals & Connectors



Hybrid Harness With Integrated Fused connector & Conductive Plastic



Voltage Quality Module (VQM)



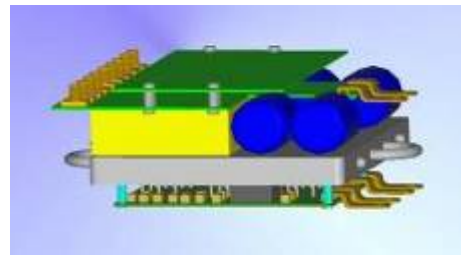
Battery Monitor (12V)



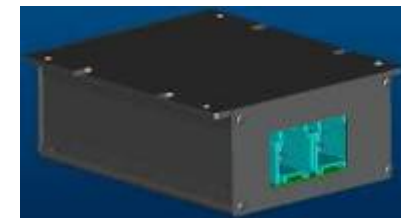
300V/14V DC/DC Converter



Battery Charger



TPIM



120/240VAC Inverter



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HIGH POWER



*Thank You for
your attention !*

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Valls (Tarragona)