

Technologies for Affordable, Profitable Conversion of Combustion Engines

Safe, affordable, warranted internal combustion to plug-in hybrid conversion companies emerging

State of Conversion Technologies


- All necessary tech is available, cost effective and decreasing in price
- ICE to EV: remove drivetrain, replace with all-electric (e.g. REV Technologies)
- ICE to PHEV: add components to drivetrain (e.g. HEVT)
- ICE to PHEV: downsize engine, add components for series PHEV (e.g. ALTe)

Target Vehicles for this Technology

- Fleet Vehicles, SUVs, Light Trucks, and many vehicles with high daily drive cycles
- Businesses and communities with fleets may drive higher profits via energy savings
- Consumer vehicles make up majority of the 900+ million ICE vehicles available

Beyond New Plug-Ins

hevti Hybrid Electric Vehicle Technologies, Inc.



- Uniquely converting America's most popular pickup truck, the Ford F-150, to a plug-in hybrid; more than 15 months of testing.
- Up to 30 miles all-electric range; up to 40% MPG improvement as a hybrid (beyond all-electric range).
- Up to 90 tons of CO2 savings in 12 years; V2G capability; increased low-speed torque for better towing.
- ESTIMATED COST IN VOLUME PRODUCTION: \$15,000 OR LESS.
- Seeking investment funding.

World's First Plug-in Hybrid Electric Pickup Truck, hevti.com Chicago IL

- Founder: IIT Prof. Ali Emadi, leading power electronics expert.
- 40 million trucks/buses in U.S.; 2 million added annually.
- F-150 prototype design scales to F-250, 350, school and transit buses.
- Simple payback: 2-5 years.

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PHEV Add-on

Beyond New Plug-Ins

Rapid Electric Vehicle Technologies, Inc.



REV 300ACX
Pure Electric

Max Speed: 100mph / 160 kmh
Range: 28 to 300 miles
Acceleration: 0-100 in 7 seconds
Charge time: 3.5 hrs at 240V

- Developing partnerships with Canadian dealers.
- All-electric and PHEVs starting with Ford trucks and SUVs.
- Contracts pending with public and private fleets.
- Seeking investment funding.

rapidelectricvehicles.com
Vancouver British Columbia

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BEV Replacement

Beyond New Plug-Ins

Bright Automotive



Bright Inside

A PHEV conversion of an existing vehicle for improved fuel economy in your fleet operations

- Power station
- Plug in hybrid electric vehicle
- 22 mile all-electric (EV) range
- 87 mpg based on 80 mile daily cycle
- Drop into chassis & passenger versions
- Fuel integration Q2 2010

Interim demonstration of technologies in future Bright "IDEA,"

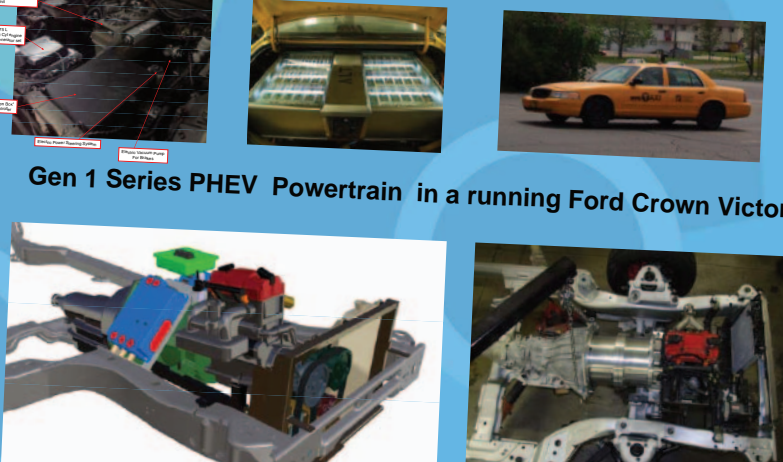
- Platform is VW Transporter (world vehicle, not in U.S.)
- Company beginning first prototype.
- Future partnership with VW possible.
- Rocky Mountain. Inst. spinoff

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EREV/PHEV Replacement

Beyond New Plug-Ins

ALTe, LLC



- Staffed by auto industry and Tesla alumni
- Modular approach for vehicles from 2,000 lb to 16,000 lb
- Delivers 80% - 200% fuel economy improvement
- Customers/contracts/100 dealer nationwide network
- Aim: 90,000 powertrains annually starting Q1 2011
- Applied for DoE ATM Loan & seeking \$5 M equity investment

Gen 1 Series PHEV Powertrain in a running Ford Crown Victoria


Gen 2 Series PHEV Powertrain in a running rolling chassis

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EREV/PHEV Replacement

Beyond New Plug-Ins

raser Technologies



Rasertech.com.com
Provo, Utah

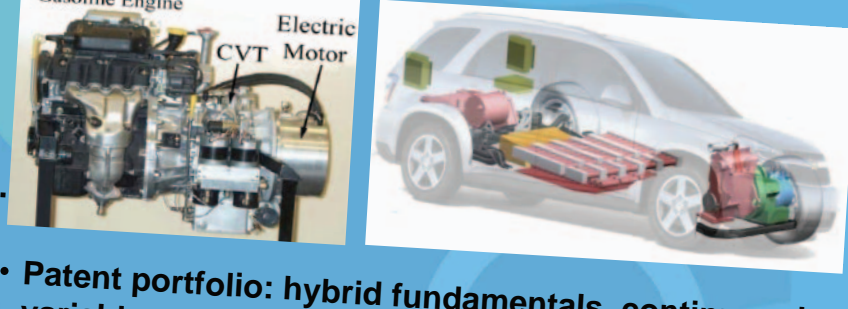
- Retrofit Hummer H2
- Precedent: General Motors provided technical support/contact with engineers.
- 40-mile range series PHEV developed with FEV
- Promotion for Raser's Traction Drive System; commercial plans unclear

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PHEV Replacement

Beyond New Plug-Ins

Efficient Drivetrains Inc.



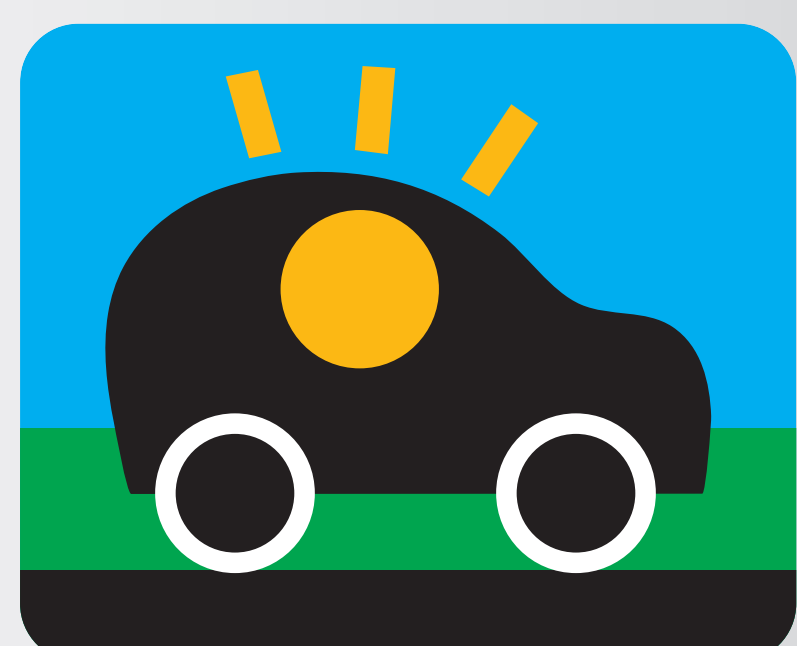
efficientdrivetrains.com
San Francisco-Sacramento region

- CoFounder & CTO Prof. Andy Frank, UC Davis, inventor of modern PHEV.
- Working with car/truck OEMs, conversions, first-tier suppliers to embed innovative drivetrain system designs, components → parallel, series, and retrofit technologies.
- Patent portfolio: hybrid fundamentals, continuously variable transmissions, energy management systems.
- Projects in U.S., Europe, and Asia : two-wheeler, V2.0 parallel PHEV drivetrain for light and medium duty, inline CVT, CVT integration, and controllers.
- 2008/2009 operations funded from customer revenues.
- Seeking \$2-3M in expansion funding now.

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PHEV Replacement

For further information on conversions visit www.calcars.org/ice-conversions.html



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