

# IA-HEV

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### Aust Unit Irela Finla Aust Unite Irela Finla Aust Unit Swit Neth Fran Kino

## Task Overview

- Currently 4 confirmed countries: Germany,
  France, South Korea, US
- Duration: 3 years
- Joining the new task is free

Vehicle Energy Consumption



Component & Vehicle Cost + LCOD



Market Penetration



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# Proposed Objectives

#### Vehicle Energy Consumption

- Compare full-function HEVs, PHEVs, ER-Evs, BEV, BEVx to advanced conventional powertrains (clean diesel, TDI petrol, CNG...).
- Evaluate impact of regulations on vehicle design
- Run all current and future standard driving cycles and RWDC
- Provide inputs required for cost & market penetration

#### Component Cost, Vehicle Cost & TCO

- Compare methodologies -> provide recommendation for common approach
- Compare powertrain technology potential (TCO) for different geographic areas

#### Market Penetration

- Compare methodologies -> provide recommendation for common approach
- Evaluate potential causes of increases in market(s) size, such as rising oil prices, lower battery pack costs, economical infrastructure adaptation, changes of consumer perception.
- Track, evaluate, and/or study methods to desirably alter charging behavior.
- Evaluate Policy Alternatives to Increase Market(s) Size
- Taxes at initial purchase, annual fees, fuel/electricity tax
- Subsidy structures and quantities



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## **Current Status**

- Vehicle Energy Consumption
  - Large number of vehicles for multiple vehicle classes simulated for multiple standards (EU, US, Japan, Worldwide)
  - List of parameters required for cost & market penetration developed
  - First database delivered (~4,000 vehicles including conv, HEV, PHEV, FCEV & BEV from current to 2045 on 5 classes with 3 uncertainties and 5 fuels). Outputs include vehicle energy consumption, component cost, technical specifications...
- Component Cost, Vehicle Cost & TCO
  - Common methodology developed for Relevant Cost of Ownership (RCO) calculations
- Market Penetration
  - Introduction of different tools completed
- Paper presented at EVS28 "Comparison of Energy Consumption and Costs of Different Plug-in Electric Vehicles in European and American Context"



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# Next Meeting Date

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- Thursday May 07, JW Marriott, Seoul
- Hope to see you there.
- Please contact me if you are interested to attend

arousseau@anl.gov

