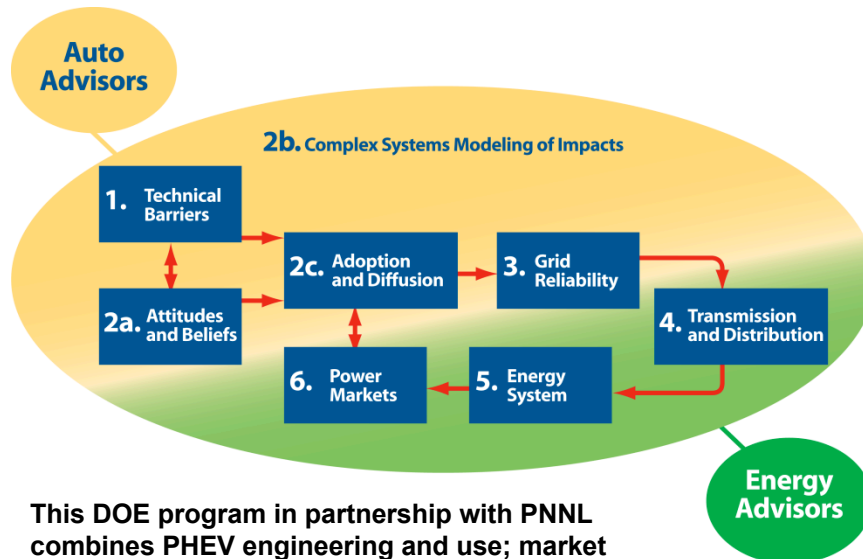


Who will buy a PHEV? Why does this matter?

Technical challenges of plug-in hybrid electric vehicles and impacts to the U.S. power system



This DOE program in partnership with PNNL combines PHEV engineering and use; market behavior; grid capacity and reliability

Objective:

Develop scenarios for the deployment and use of PHEVs through a better appreciation of technological factors and consumer attitudes

Determine the impact of PHEV deployment scenarios on the national electricity grid

Approach:

- Simulation of PHEVs of different configurations, using naturalistically based trips
- Optimization of PHEV performance characteristics
- Survey of consumer attitudes
- Complex systems and economic modeling of the PHEV automotive marketplace
- Prediction of PHEV charging demand and grid loading
- Modeling of reliability of grid distribution components

Impact:

- Consumer demand for PHEVs – what are the key cost, performance and convenience factors?
- Where and when will PHEVs be charged?
- What new relationship will be needed between automakers, utility companies and customers?
- What are the barriers to deployment? What incentives could apply?
- Will there be a need for new capacity in generating electricity? Will grid reliability be affected?

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Facilities and infrastructure:

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