

Topic 3: Barriers to the Electrification of the Automobile

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Peter Savagian has worked on electric vehicles and systems since 1990. He now serves as General Director of GM's Electrification Systems and Electric Drive Engineering organization. For the past 16 years he has managed product and technology development for GM's hybrid and electric vehicles, including architecture development, electronics and motor design and development, systems engineering, systems analysis, and control algorithms development. Prior to his current assignment, Pete was Chief Engineer for GM's EV1 Electric Vehicle Electric Drive at General Motors and at Delco Electronics. He has also worked at Hughes Aircraft Company and Sundstrand Aviation in various engineering roles.

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Abstract

Electrification of personal transportation (displacing petroleum with electricity from the grid) will deliver environmental benefits and serve national economic interests in the major automotive markets worldwide. However, barriers to do so on a widespread basis are a function of technical feasibility of driving and refueling a vehicle electrically, as well as the overall value proposition of the vehicle, eg. the total cost of ownership cost and the overall utility of an electrified vehicle. In this presentation I will explore a few of the major elements of technical feasibility, cost of ownership, and utility. I also examine how these may differ in different regions of the world.