**Title:** Hawaii's Transition to Electric Vehicles: Impact on Fuel Use and Emissions

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As one of the Institute's engineering faculty, Katherine leads the Electrification of Transportation project, focused on assessing the integration of EVs into the power grid to maximize clean energy performance and reduce emissions. Previously, she managed the Electric Vehicle Transportation Center, an applied research initiative in collaboration with the Florida Solar Energy Center, University of Hawaii's College of Engineering, and Department of Urban & Regional Planning. Katherine has a bachelor's and a master's degree in materials engineering, and supports the Institute's extensive array of renewable energy, efficiency, and systems integration efforts, including, alternative fuels, renewable power generation, electrical grid integration and modeling, and battery and fuel cell systems.

**Abstract:** In Hawaii, are vehicles powered by electricity cleaner than those powered by gasoline? The answer is a resounding YES if you charge your car on Maui, Hawaii Island or Kauai. But what about Oahu, where more electricity is generated from oil and coal? To answer this question, an assessment was conducted to assess ground transportation fuel use and CO2 emissions during the transition to EVs on Oahu. As Hawaii's utilities continue to add more clean power generation to achieve the mandated Renewable Portfolio Standards, EVs powered on the islands will generate less and less CO2 emissions and consume less fossil fuels into the future, (unlike gasoline vehicles.) Key factors relevant to the importance of this transition in Hawaii will also be briefly discussed.