

Thrust Area 5: Carbon Capture & Nuclear

Reducing Residential Carbon Emission in Florida: Optional Scenarios Based on Energy Consumption, Transportation, and Land Use

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Description: In 2007 the Governor of Florida established targets for greenhouse gas (GHG) emissions, which mandate that the State of Florida aims to reduce emissions to 2000 levels by 2017 and to 1990 levels by 2025. To fulfill these goals, not only is the development of renewable sources of energy and fuel needed, but it is also necessary to achieve more sustainable energy/fuel consumption patterns. This project is dedicated to the latter objective, i.e., exploring the effectiveness of optional scenarios for households' consumption of energy and transportation fuels with respect to CO₂ mitigation. Human land use is another major concentration of this research, as changes in the built environment and vegetation cover may create sources or sinks of CO₂ and hence affect the intensity and origins of carbon emissions.

Budget: \$21,707

University: FSU

Executive Summary

The initial proposal of this project consisted of three major steps: 1) calculating the Florida baseline CO₂ emissions from residential energy and fuel consumption as well as human land uses; 2) developing models of household behavior regarding various energy/fuel conservation and incentive options based on a residential survey; and 3) forecasting energy/fuel demand and CO₂ emission levels in 2017 and 2025 throughout the state of Florida based on the scenarios created in step two.

This project was planned to be completed within two years. The PIs concentrated mainly on 1) journal publications on carbon inventory analysis at the state level; 2) finalizing the household energy consumption survey (including sampling design), which is composed of over 30 questions dedicated to household energy practice and responses to energy-saving incentives; and 3) preparation for the external grant application to the NSF Geography and Spatial Sciences (GSS) program. Data collection from the survey is complete and data analysis is underway.

This project has been completed.