

An Evaluation of Energy Use in the Southeast Region of the United States

As the world continuously faces challenges with increasing energy prices, constraints in energy supply and transmission, and energy reliability concerns, the electricity market is turning to energy efficient practices that are proving to be the cleanest, most secure, and most reliable energy resources. Energy conservation is considered one of the most reliable, cost-effective, and quickest resources to deploy for meeting the challenge of increased energy demand and limited energy-producing resources. As increased pressure is placed on electric utility companies, as well as states, to find clean energy resources, states are looking at aggressive energy efficiency policies, increasing investments in efficiency programs, and improving efficiency in their own facilities.

Energy efficiency involves using less energy to supply an equivalent level of energy service. Implementing energy efficient methods will aid in achieving the nation's goal of reducing greenhouse gas emissions. It reduces our reliance on foreign imported fossil fuels, reduces climate change and ecosystem disturbance and allows us to diversify the energy resource portfolio for energy production. Energy use is dependent on population growth, growth in industries and businesses, climate, age of local buildings, and access to innovative technologies. Energy efficiency is the best way to extend our nation's energy supplies. Energy-saving efforts have the potential to return economic, environmental, and quality-of-life benefits.

The Southeast region recorded a 20% population growth during the past decade making it the country's most populous and fastest-growing region today. In 2001, 511,161 privately-owned housing permits were issued in the Southeast, accounting for 31% of the national total for that year.

Rapid increases in population growth have resulted in an exponential increase in energy demand. The southeast region has the highest per capita electricity consumption in the nation, totaling 23.17% above the national average. It is imperative for these states to find ways to promote energy efficiency and find alternative systems for energy use.

Many states are leading the nation in advancing energy efficiency policies and programs, therefore making it imperative to recognize and document best practices within states, to encourage other states to follow their lead, ultimately reaching the overall goal of improving our environment and reducing alterations in climate and the ecosystem. By shrinking our nation's reliance on energy supply, efficiency allows new, clean energy resources (i.e., wind and solar technologies) to make up for the growing demand of state energy portfolios. Additionally, the discovery of more efficient methods to design our buildings and residential structures to use energy more efficiently will limit our reliance on energy, when location and climate provide the necessary resources.

This research project focuses on implementing green roofs to reduce and reverse urban heat island effects and will define the factors that are significantly contributing to the increased energy use in this region.

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