



## Quantifying Potential of Integrated Energy Systems with Varying Levels of Nationwide Deployment

By -

Bibliogov, United States, 2012. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*.This study presents a parametric assessment of the energy-saving potential resulting from a nationwide deployment of DER/IES technologies for building applications. Three hypothetical IES scenarios are evaluated to demonstrate the sensitivity of the national energy consumption to the IES system configuration with respect to the buildings electrical and thermal equipment compositions. A variable for implementation level of DER is incorporated to examine the impact of incremental transformation of the existing centralized energy resources to a fully decentralized model on the national primary energy consumption. To accommodate the continuing advancement of prime movers, a wide range of fuel-to-electricity conversion efficiency is considered for both centralized and decentralized power generation systems. The fact that the demands for electricity and thermal energy in buildings are not always congruent, and implementation of thermal energy storage technology is uncertain is acknowledged by incorporating a variable waste heat utilization index.



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