

SOUTHERN PERSPECTIVES on the RURAL ENERGY CRISIS



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UNITS OF ENERGY

The two units of energy used in this paper are the kcal (one thousand calories; one calorie is the amount of energy required to raise the temperature of one cubic centimetre of pure water at standard temperature and pressure by one degree Centigrade) and the MJ (one million joules; a joule is the work of one newton-meter, also equal to 0.239 calories). One barrel of oil has about 6 billion joules. One kilogram of wood dryweight might have about 13 MJ, although this figure varies across the woods. One kilowatt-thermal [kW(t)] is a measure of power—one thousand joules/second. A conversion efficiency (ratio of electrical output to primary energy input) is required to measure the conversion of thermal energy to electrical energy [kW(e)]. A crude rule of thumb would be 30 to 40 percent. A power of one kw(e) applied for one hour produces energy of one kwh(e)—one kilowatt-hour (electrical). Similarly for thermal units.

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