

## RENEWABLE ENERGY IN THAILAND

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In Thailand, renewable energy supplies 28% of all energy for the manufacturing sector and as such is the largest single energy source in manufacturing. The second largest fuel for manufacturing is petroleum products (25%). The renewable energy consists of biomass fuel, i.e. mainly bagasse (64%), fuelwood (22%) and paddy husk (14%). In the period 1988-1997 renewable energy consumption for manufacturing increased from 2,304 ktoe to 4,654 ktoe per year. The food and beverages industry is the main user.

In the residential sector the role of renewable energy is even larger, i.e. 7,459 ktoe which represents 2/3 of all residential energy use in 1997. Here as well the renewable energy source is biomass (of which 61% charcoal and 39% wood).

Biomass has remained the largest primary energy source produced in Thailand, i.e. 20,503 ktoe in 1997, which represents 44.2% of total primary domestic energy production. Fuelwood takes the lion share with 35.6% of total domestic primary energy sources in 1997. The production of fuelwood has increased from 10,872 to 16,501 ktoe in the period 1988-1997. This reflects an average annual increase of about 5%. (Source: DEDP Thailand Energy Situation 1997).

The value of woodfuel consumption in Thailand can be estimated by applying a value per GJ, as reported by the FAO Regional Wood Energy Development Programme in Asia. The values applied are 2.67 US\$/GJ for fuelwood and 8.62 US\$/GJ for charcoal. This leads to a total of 2.08 billion US\$ in 1997 (RWEDP FD No.50).

The importance of fuelwood is also reflected in the forestry sector. Amongst the products originating from forestry in Thailand, fuelwood and charcoal are reported to be the largest products in terms of value added (see table). However, most fuelwood in Thailand originates from non-forest land, and only a small fraction of the national fuelwood value is reported to originate from the forestry sector, i.e. 170 million US\$ (4.2 billion Baht) as compared to 2 billion US\$.

*Table: Gross domestic product originating from forestry in Thailand at 1988 prices in million Baht (Source: NESDB website)*

	1991	1992	1993	1994	1995	1996 <sup>p</sup>
Total value added	5,893	5,671	5,186	4,644	4,292	4,210
Charcoal & firewood	4,306	3,917	3,670	3,470	3,189	3,187
Percentage	73.1	69.1	70.8	74.7	74.3	75.7