

BACKGROUND - Energy Facts

Current world energy consumption:

- 80% generated from fossil fuels
- 87% from non-renewable sources
- 10.9% from renewables (excluding hydro)

Renewable energy sources

	Power supply	Production process	Distributed/onsite
Wind	variable	mechanical	distributed & on site
Solar	variable	chemical reaction	on site
Ethanol fuel cells	constant	chemical reaction	on site
Biogas generators	constant	mechanical combustion	on site

CO2 Emissions of Fuels

(assuming 100% conversion efficiency) (kilograms per megajoule)

Coal	112 kg/MJ
Methane	55 kg/MJ
Propane	65 kg/MJ
Ethanol (renewable source)	71 kg/MJ
Gasoline/Diesel	70 kg/MJ

World fuel-ethanol production (billion litres per year)

	2002	2006 forecast
South America	11.2	12.3
North America	8.1	13.3
India/Asia	0.2	3.0
Europe	0.4	1.2
Canada	0.1	0.3
Australia	0.0	0.3

Productivity Facts on Biofuels

Raw Material	Productivity		
	Litre/tonne	Tonne/Ha	Litre/Ha
Sugar cane	80	65	5,200
Sorghum (incl bagasse)	120	50	6,000
Corn	370	8	3,000
Wood	300	12	3,500
Rapeseed	370	3.0	1,100
Soya	180	3.2	1,600
Sunflower	320	3.8	1,200

Source: Presentation by Prof G. Sarlos, Swiss Federal Institute of Technology, delivered to EPA Japan Conference, Dec 2003.

Note: Ethanol (alcohol) is not to be confused with methanol.