

Public and private R&D expenditures on renewables

Dimension - Environment

Associated Key Factor:

Contribution of technology to solving environmental problems

Data Source:

Publication

COMMISSION STAFF WORKING PAPER(2002): Inventory of public aid granted to different energy sources (see further information for document)

Refer to publisher details at indicator level

<http://library.iea.org/rdd/eng/TableView/er/Wdsview/disviewp.asp?ReportId=1>

The indicator:

Measures public and private R&D expenditures on renewables.

Description

Renewables include the following categories:

Combustible Renewables and Waste* (CRW):

Solid Biomass and Animal Products: Biomass is defined as any plant matter used directly as fuel or converted into other forms before combustion. Included are wood, vegetal waste (including wood waste and crops used for energy production), animal materials/wastes, sulphite lyes, also known as "black liquor", and other solid biomass. It also includes charcoal produced from solid biomass.

Gas/Liquids from Biomass: Biogas is derived principally from the anaerobic fermentation of biomass and solid wastes and combusted to produce heat and/or power.

Municipal Waste:* Municipal waste consists of products that are combusted directly to produce heat and/or power and comprises wastes produced by the residential, commercial and public services sectors that are collected by local authorities for disposal in a central location. Hospital waste is included in this category.

Industrial Waste:* Industrial waste consists of solid and liquid products (e.g. tyres) combusted directly, usually in specialised plants, to produce heat and/or power and that are not reported in the category solid biomass.

Hydro Power: potential and kinetic energy of water converted into electricity in hydroelectric plants. It includes large as well as small hydro, regardless of the size of the plants.

Geothermal Energy: Energy available as heat emitted from within the earth's crust, usually in the form of hot water or steam. It is exploited at suitable sites for electricity generation after transformation or directly as heat for district heating, agriculture, etc.

Solar Energy: Solar radiation exploited for hot water production and electricity generation.

Wind Energy: Kinetic energy of wind exploited for electricity generation in wind turbines.

Tide/Wave/Ocean Energy: Mechanical energy derived from tidal movement or wave motion and exploited for electricity generation.

* Some of the waste (the non-biodegradable part of the waste) is not considered renewables as such.

However, proper breakdown between renewables and non-renewables is often not available.

(IEA 2002: RENEWABLES IN GLOBAL ENERGY SUPPLY: An IEA Fact Sheet)

How is it measured?

Data is received reported to national statistical bureaus.

What are the disadvantages of the Indicator?

The indicator should differentiate in which renewables the investment has been realized. Moreover, the indicator should be set into relation with the current participation of renewables in energy production.

What is the policy relevance of the indicator?

The indicator is relevant for energy production policies and in the estimation of total emissions by transport modes, which depend as well on the type of energy production (esp. Rail transport)

The Indicator is relevant for the following pathways of the FORESIGHT FOR TRANSPORT exercise:

	Transport Impact	External Determining Variable	Intermediate Variable	Contextual Information
Environmental concerns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Trends regarding renewable energy source (RES) and rational use of energy (RUE)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>