



Renewable Energy Act (EEG)

Erneuerbare-Energien-Gesetz (EEG) in Germany

Overview :

- Concept and principle
- History and development
- General conditions
- Rates of remuneration
- Costs and benefits of the EEG
- Recent trends
- General assessment



Concept and Principles (I)

- rates of remuneration are guaranteed over a period of 15 to 20 years
- network operators are preferential bound/committed to take the electricity
- remuneration is lowered degressive for newly installed plants
- Differentiated/sophisticated rates of remuneration for different technologies and locations

Concept and Principles (II)

Promoted is the (renewable) electricity generated by:

- hydropower
- landfill gas (waste deposit), sewage gas, colliery gas
- biomass
- geothermic
- wind power
- photovoltaic

The compensation for this higher remuneration is financed through the so called EEG-apportionment (contribution), which is allocated to every final consumer. This means it is not financed by the public national budget.

History and development (I)

Act for “feeding-in” electricity (**1991**)

- The feed-in was privileged, because the generating of renewable energy was mainly executed by small companies and the big players on the energy market hampered and obstructed the access to the market.
- The electric power companies were forced to make the feed-in primary possible
- The rates of remuneration were explicitly lower than today (acceptable for wind power, but not enough for photovoltaic)



History and development (II)

Renewable Energy Act (2000)

- inclusion of geothermic electrical production
- promotion was limited to smaller plants
- general lowering of the rates of remuneration

Renewable Energy Act (2004)

- reduction of the promotion of wind power plants
- again lowering of the rates of remuneration
- legal position betterment of the producers vis a vis the network operators



History and development (III)

Renewable Energy Act (2009)

Aim of the new act:

- the amount of renewable energies out of the general energy production should be at least 30% by the year 2020
- involvement of the sector “heat production and refrigeration”
- Registration of all installation plants at the national grid agency (Bundesnetzagentur)
- splitting of big plants is not possible any more
- Introduction of a sliding degression for the next year regarding to the future rate of remuneration
- The more new plants are going to be build, the lower the rate of remuneration in the future

General Conditions

- Force of purchase/taking and connecting:
 - obligation of buying/taking electricity from renewable energy production (through big private power companies)
 - obligation of the network/grid operators to enlarge their energy grid
- Application by the final user
 - Despite the obligation for the network operators there is no directive how to use it. (Verwertungs Vorschrift)
- EEG-apportionment
 - Definition: additional costs for the purchasing network/grid operators are included in the general electricity bill of the final users
 - EEG-apportionment 2010: 2,047 cent per KWh
- Stability of the 20 year price guarantee:
 - Aim: security of investment for the investors and operators

Rates of remuneration (1)

Hydropower - plants up to 5 MW:

Amount of capacity	EEG 2009 new plants	EEG 2004 new plants	EEG 2009 updated plants	EEG 2004 updated plants
Up to 500 kW	12,67	9,67	11,67	9,67
500 kW to 2 MW	8,65	6,65	8,65	6,65
2 MW to 5 MW	7,65	6,65	8,65	6,65

Rates of remuneration (2)

Biomass - biomass basic remuneration

Amount of capacity	EEG 2009	EEG 2004
Up to 150 kWel	11,67 for older plants, too	10,67
150kWel to 500 kWel	9,18	9,18
500kWel to 5 MWel	8,25	8,25

Diverse **bonuses** are possible with the use of innovative technology, for the use of regenerative raw material and slurry, for the use of combined heat and power plants and for staying within limits of the emission of methanol (Formaldehyde).

Rates of remuneration (3)

Geothermic - geothermic basic remuneration

Amount of capacity	EEG 2009	EEG 2004
Up to 5 MWel	20	15
Up to 10 MWel	20	14
up to 20 MWel	14,50	8,95
over 20 MWel	14,50	7,16

Rates of remuneration (4)

Wind power

➤ wind power onshore

- 9,2 Cent / KWh for the first 5 years.
- After this period an prolongation depends on actual wind conditions at the location itself.

➤ wind power offshore

at least 3 nautical miles from the coast

- For 12 years: 15 cent/KWh (commissioning till Dec. 2015, after that 13 cent/KWh)
- Prolongation possible: depending how far away from the coast the plants are located (the farer away, the longer the duration); and the depth of the sea (the deeper, the longer the duration)

Rates of remuneration (5)

Photovoltaic - rates of remuneration depending on the performance

Type of plant	2004	2005	2006	2007	2008	2009	2010	from 1. Juli 2010 on
On a building or on a noise barrier wall								
<i>Up to 30 kW</i>	57,4	54,53	51,80	49,21	46,75	43,01	39,14	32,88
<i>30 kW to 100 kW</i>	54,6	51,87	49,28	46,82	44,48	40,91	37,23	31,27
<i>Over 100 kW</i>	54,0	51,30	48,74	46,30	43,99	39,58	35,23	29,59
<i>Over 1000 kW</i>	54,0	51,30	48,74	46,30	43,99	33,00	29,37	26,14
Installation Plants at open space								
<i>Biased surfaces</i>	45,7	43,4	40,6	37,96	35,49	31,94	28,43	25,30
<i>acre</i>	45,7	43,4	40,6	37,96	35,49	31,94	28,43	-
Remuneration for private consumption	-	-	-	-	-	25,01	22,76	20,88-17,59



Costs and benefits of the EEG

Costs:

- remuneration is paid by the network/grid operators and lead to an increase of the energy prices (2008 ca. 5%)

Benefits:

- climate protection in the long run
- For private consumption: avoiding cost for the networks
- positive effects on the employment sector
- today wind power is nearly competitive
- wind power has lowered the energy prices (by avoiding evenmore expensive power production)

Recent trends

Reduction for the largest promotion/cost form -
photovoltaic (planned for the 1st of July 2010)

Reasons:

Costs for the solar pannels are much lower now (also
due to the worldwide finance and bank crisis);

Thus the promotion (subsidy) is no longer at an
acceptable size, both in the apportionment as well as in
the returns of plant operators



General assessment

- EEG is considered worldwide as a successful instrument supporting renewable energy
(today about 40 countries worldwide introduced a similar system)