

GERMANYCHP Law (Kraft-Wärme-Kopplungsgesetz vom 19. März 2002)

The Co-generation Act guarantees temporary bonus-payments from the operators of the public grid for CHP-electricity transferred to the public grid. The amounts of bonus-payments vary according to the type of CHP-installation, and are declining. An accreditation from the Federal Office of Economics and Export Control (BAFA) for the installation is requested. The amount of the bonus-payments varies from 1.53 Cent/kWh in 2002 reduced annually to 0.97 Cent and phasing out in 2006 for existing CHP-plants, to 5.11 Cent/kWh for new small installations up to 50 kilowatt if continuous operation is taken up until end of 2005 as well as for fuel cell plants for ten years.

Effective date: April 2002

Funding: approximately €700 million in 2003

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Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz EEG)

The Act replaces the Electricity Feed-In Law of 1991. It targets a 12% share for electricity produced from renewable energy by 2010. The obligation to give grid access to renewable energy plants and purchase the electricity at premium prices is shifted from the utilities to the grid operators. The tariffs are set for each individual technology, at the following rates:

- Biomass: €0.115/kWh for a plant up to 150kW, €0.099/kWh for up to 500kW and €0.089/kWh for up to 5MW capacity.
- Geothermal: Plants up to 5MW get €0.15/kWh, up to 10MW get €0.14/kWh, and up to 20MW get €0.0895/kWh. Beyond 20MW, generation is paid €0.0716/kWh.
- Hydro: plants up to 500kW get €0.0967/kWh, and plants up to 5MW get €0.665/kWh, assuming certain environmental conditions are fulfilled. Electricity from larger hydro stations benefits only if the plant is modernized before the end of 2012 to increase capacity by at least 15%.
- Wind power production follows a different formula that comes out to an average of €0.084/kWh over a twenty-year lifetime.
- The solar law that took effect at the start of 2004 has been folded into the new renewable energy law. The basic rate of payment for solar generated electricity is €0.457/kWh. For 2006, the following incentives are available:

Year of connection	2006			
	System size [kWp]	1 - 20	20 - 50	50 - 1000
Feed-In-Tariff [€/kWh]	0,445	0,460	0,490	
Additional Energy [MWh]	< 500	500 – 1000	1000 – 2000	
value as function of production	0,095 €	0,080 €	0,070 €	

From 2002 on, the remuneration paid for newly commissioned plants has been reduced annually to provide stronger incentives for cost reductions. This factor is 5% for photovoltaic installations, 1.5% for wind power plants and 1% for biomass-fuelled plants. All electricity suppliers using the public electricity grid are obliged to purchase an equal share of EEG electricity at a price equal to the average remuneration paid for all EEG electricity. Every two years, the parliament re-evaluates the Act on the basis of a report that is prepared by the Ministries of Economics and Technology, in close consultation with the Ministry of Environment and the Ministry of Agriculture.

Effective Date: August 2004

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More information:

www.spider.iea.org/pubs/studies/files/renenp2/ren/20-ren.htm
www.bmu.de/en/1024/js/news/pressrelease231/
www.erneuerbare-energien.de

Several German incentives are administered at the state level.

Bavarian Programme for the increased use of RES of April 1995

In Bavaria, subsidies are available for hydro power plants smaller than 1,000 kW with a maximal support of €4,000/kW. Subsidies go to refurbishment, maintenance and upgrading. Solar collectors are also supported, up to a maximum amount of €12,626. The general rate is €126-176 per m² installed collector space, and €202 per kW installed capacity for heat pumps, to a maximum of 30% of investments costs.

Effective date: April 1995

In Brandenburg, the government supports renewable technologies at the following rates: biomass power plants, up to 35% of the total plant cost, to a maximum of €1,176/kW, hydro power plants, up to 20% of the total plant cost, maximum of €920/kW or €306,775, and photovoltaics, up to 50% of the total plant cost, maximum of €7,669/kW. Subsidies are only given if no national subsidy can be taken into consideration.

Bremen supports wind power plants with up to 30% of their investment and operational costs. Refinancing within 12 years.

Hamburg: Guidelines for the Granting of Financial Support of Projects for Energy-Saving and Use of RES of October 1990

The Programme supports RES projects with grants of up to 80% of costs. There is an additional programme for supporting solar heating plants: The installation of solar collector

systems in buildings is supported by €252/m² for a 4–10 m² installed collector space and up to €28/m² per 3–7 m² installed collector space.

Effective date: October 1990

Hesse Energy Law of May 1990 (State of Hesse)

- Solar water heaters: grants of up to 20% of investment costs, to a max. of €1,010
- Wind power systems with an electrical capacity of up to 1 MW. These are eligible for grants of up to 20% of investment costs, with a top amount of €50,505 per plant.
- Solar PV: grants of up to 30% of investment costs, to a max. of €8,586
- Biomass installations (which are not supported by the Agriculture Investment Programme): grants of up to 50% of investment costs.

Effective date: May 1990

Mecklenburg-West Pomerania: guidelines for the Granting of Support for the Increased Use of RES of April 1997

The Programme supports:

- Biomass (up to 30%)
- Wind energy (up to 10%)
- Hydro (up to 20%)
- Solar heating systems (up to 20%, max. €1,515)
- Photovoltaic systems (up to 40%)
- Heat Pumps (up to 25%, max. €1,515)
- Geothermal systems (up to 40%)
- Hydrogen technology (up to 40%).

Measures with investment costs of less than €2,525 are excluded.

Effective date: April 1997

The state of Nordrhein-Westfalen provides subsidies for photovoltaic plants from 2 kW (1000 €/kW_p in building integration cases, €750/kW_p without building integration), biomass power plants (25% of the investment costs) and hydro power plants up to 1,000 kW (30% of the investment costs with a maximum rate of €5,000/kW).

Large companies are specifically excluded from this subsidy.

Effective date: January 1997

Rheinland-Pfalz: subsidies for river hydro power plants up to 20% of the investment costs with a maximum of €100,000 per plant.

In Saarland, subsidies are available for wind power plants (> 500 kW) up to 30% of the investment costs with a maximum of 77000 €per plant. Biomass power plants are also supported (between 100 kW and 1 MW) with subsidies up to 30% of the investment costs with a maximum of 130 €/kW.

The state of Sachsen has created subsidies at the following rates.

- Biomass: up to 80 €/kW for power plants smaller than 30kW, and up to 40 €/kW for power plants greater than 30 kW.
- Biomass-photovoltaic combined power plants: up to 100 €/kW for power plants smaller than 30kW and up to 50 €/kW for power plants greater than 30 kW.
- Hydro: up to 30% of the investment costs for new power plants and up to 70% of the investments costs for other kind of power plants with a maximum of €102,260 per plant.
- Solar Collectors: €152/m² collector space, for collectors smaller than 20 m²; €76/m² collector space for larger units, to a maximum of €25,253.
- Biomass Systems (150 DM (€76)/kW for plants >15 kW; in supported areas up to 70 % of the investment costs);
- Biogas plants: up to 20%
- Wind Power: 150 DM (€76)/kW for plants >250 kW
- Heat Pumps for the use of geothermal energy: up to 20 % for plants > 20 kW

Effective date: January 1997

Saxony-Anhalt Regional Ministry of Economics, Technology and Traffic Guidelines for the Granting of Support for: Solar Heating Systems, Wind Power and Small Hydro Power of September 1991

Four separate state level-programmes support renewable energy.

- Solar Heating Systems: up to 30%. In buildings the maximum amount is DM 6,000 (€ 3,030)/plant, for other plants max. DM 60,000 (€30,300).
- Wind Power: Installation and operation of wind power plants as demonstration projects (60 kW - 1 MW): up to 30 %, with a maximum of DM 3,000 (€1,515)/kW.
- Small hydro: re-activation, maintenance, installation and extension of plants > 300 kW. Up to 30 %, max. DM 6,000 (€330)/kW.
- Bio- and Deposit Gas: plant systems for the production of energetic useful bio- and deposit gas (up to 30%).

Funding: about €5 million in 1995

Effective date: September 1991

Schleswig-Holstein: Programme RES - Decrees of the Ministry for Finance and Energy of August 1996 and May 1993

Two state-level programmes support renewables.

- Photovoltaic systems in buildings (1 kWp - 5 kWp) can be supported with a fixed rate of DM 4,000 (€2,020)/ kWp.

- Wind Power: The programme offers support of wind power plants, wind parks and demonstration projects. Support depends on investment costs, economic efficiency, energy output and the sound intensity of the plants. The maximum amount is limited at 17%, with the exception that plants < 301 kW can get an additional support of 3%.

Funding: DM 8 million in 1995 (€4 million).

Effective date: PV, August 1996; Wind, May 1993

Thuringia Ministry of Economics and Infrastructure: Guidelines for the Granting of Rational Energy Use and the Use of RES of February 1996

These guidelines set out specific levels of support for a number of different renewable power sources, as follows:

- Wind: DM 400 (€202)/kW, to a maximum of DM 200,000 (€101,010). For wind parks the maximum is DM 300,000 (€151,515)
- Hydro: < 50 kW, DM 900 (€455)/kW; >50 kW, DM 700 (€354)/kW
- Photovoltaic systems: < 2 kW, 8,500 DM (= €4,293)/kW; >2 kW, 7,500 DM (€3,788)/kW; max. 150,000 DM (= €75,758)
- Solar Collectors: < 10 m², DM 400 (€202)/m², >10 m², DM 300 (€152)/m², max. DM 50,000 (€25,253)
- Biomass systems: 15-50 kW, DM 150 (€76)/kW; >50 kW, DM 100 (€51)/kW; max. DM 200,000 (€101,010)
- CHP from renewable sources: <100 kW, DM 500 (€253)/kW; >100 kW, DM 400 (€202)/kW; max. DM 200,000 (€101,010). CHP from fossil fuels: <100 kW, DM 300 (€152)/kW; >100 kW, DM 200 (€101)/kW; max. DM 200,000 (€101,010)

Furthermore there is a programme to decrease emissions, which awards grants of up to 20% of the investment costs, to a ceiling of DM 50,000 (€25,253). Specifically, it supports:

- change of energetic processes on the basis of fossil fuels to RES
- Installation of emissions decreasing technology
- Installation of biofuel filling stations for the running of low-emission vehicles
- Production of sources of energy out of renewable raw materials (for example biofuel) or application of technologies for the use of biomass.

Funding: DM 5.2 million (€2.5 million) in 1995

Effective Date: February 1996.

Contact: Thuringia Ministry of Economics and Infrastructure

Thüringen: subsidies for photovoltaics (€3,000/kW_p with a maximum of €30,000) take place only if the project does not qualify for any national subsidies. Smaller subsidies are also available for wind power plants (€100/kW with a maximum of €75,000 per plant).