

Renewable energy policy database and support – RES-LEGAL EUROPE

National profile: Germany

Client: DG Energy

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Germany Summary Text:

In Germany, electricity from renewable sources is supported through a feed-in tariff. The criteria for eligibility and the tariff levels are set out in the Act on Granting Priority to Renewable Energy Sources (EEG). According to this Act, operators of renewable energy plants are statutorily entitled against the grid operator to payments for electricity exported to the grid. The EEG also introduced the so-called market premium and the flexibility premium for plant operators who directly sell their electricity from renewable sources. Moreover, low interest loans for investments in new plants are provided for by different KfW-Programmes (Renewable Energy Programme –Standard, Programme offshore wind energy, Programme geothermal exploration risk).In Germany, the Guidelines for the support of RES-H set out the Market Incentive Programme (MAP), stipulating support schemes for the promotion of heat produced from renewable energy. BAFA is providing investment support and KfW offers low-interest loans.

The main support scheme for renewable energy sources used in transport is a quota system. Furthermore, biofuels are supported through fiscal regulation.

Plants for the generation of electricity from renewable sources shall be given priority connection to the grid. Furthermore, grid operators are obliged to give priority to electricity from renewable sources when purchasing and transmitting electricity. Moreover, those interested in feeding in electricity may demand that the grid operator expands his grid.

Germany provides policies for the promotion of renewable energy sources covering training, certification and research programmes, a self-commitment of public authorities, the support of district heating networks and the introduction of building obligations regarding the use of heat produced from renewable energy.

RES-E support schemes

Summary of support schemes

Overview	In Germany, electricity from renewable sources is supported through a feed-in tariff. The criteria for eligibility and the tariff levels are set out in the Act on Granting Priority to Renewable Energy Sources (EEG). According to this Act, operators of renewable energy plants are statutorily entitled against the grid operator to payments for electricity exported to the grid. The EEG also introduced the so-called market premium and the flexibility premium for plant operators who directly sell their electricity from renewable sources. Moreover, low interest loans for investments in new plants are provided for by different KfW-Programmes (Renewable Energy Programme –Standard, Programme offshore wind energy, Programme geothermal exploration risk).
Summary of support system	**The KfW Renewable Energy Programme –Standard** provides low-interest loans with a fixed interest period of 10 years including a repayment-free start-up period for investments in installations for electricity production. **The KfW Programme offshore wind energy** provides loans and financing packages to support companies wanting to invest in offshore wind farms in the German Exclusive Economic Zone or in 12 nautical-mile zone of the North and Baltic Sea. **The KfW Programme Geothermal Exploration Risk** covers investment costs connected to drilling activities including the required stimulation measures prescribed by KfW as part of project study. **Feed-in tariff.** The support system is based on a feed-in tariff, which the grid operator pays to the plant operators. The amount of tariff is set by law and is usually paid over a period of 20 years. **Market premium.** As an alternative, plant operators may claim a market premium for electricity they sell directly. The amount of the market premium shall be calculated each month. In general, plant operators are free to choose between the regular feed-in tariff and the market premium for direct selling. Operators of biogas plants who sell their electricity directly may claim a flexibility premium on top of the market premium. For a plant operator to be eligible for the flexibility premium, he shall provide additional installed capacity that may only be

	used on demand rather than on a regular basis.
Technologies	In general, the EEG promotes all technologies used to generate electricity from renewable energy. However, capacity, location or materials used may give reason for excluding certain types of plants from the support system. The flexibility premium is available for biogas plants only.
Statutory provisions	• EEG (Erneuerbare-Energien-Gesetz - Renewable Energy Sources) • BiomasseV (Biomasseverordnung - Biomass Ordinance) • AusglMechV (Ausgleichsmechanismusverordnung – Ordinance on the Further Development of the Nationwide Equalisation Scheme) • SDLWindV (Systemdienstleistungsverordnung – Ordinance on System Services by Wind Energy Plants) • StromNEV (Stromnetzentgeltverordnung – Ordinance on Electricity Grid Access Charges) • KfW Rules for investment loans (Allgemeine Bestimmungen für Investitionskredite – Vertragsverhältnis Hausbank – Endkreditnehmer – General rules for investment loans – contractual relationship between the bank and borrower) • KfW Renewable Energy Programme Standard (Merkblatt KfW-Programm Erneuerbare Energien - KfW Renewable Energy Programme Standard) • KfW Programme Offshore wind energy (Merkblatt Offshore - Windenergie - KfW Programme Offshore wind energy) • KfW Programme Geothermal Exploration Risk (Merkblatt KfW Programm Fündigkeitsrisiko Tiefengeothermie - KfW Programme Geothermal Exploration Risk) • MaPrV (Managementprämienverordnung - Management premium ordinance)

Basic information on legal sources

Name of legal source (original language)	Gesetz für den Vorrang Erneuerbarer Energien (Erneuerbare-Energien-Gesetz)	Verordnung über die Erzeugung von Strom aus Biomasse (Biomasseverordnung)	Verordnung zur Weiterentwicklung des bundesweiten Ausgleichsmechanismus
Full name			
Name (English)	Act on Granting Priority to Renewable Energy Sources (Renewable Energy Sources Act)	Ordinance on the Generation of Electricity from Biomass	Ordinance on the Further Development of the Nationwide Equalisation Scheme
Abbreviated form	EEG	BiomasseV	AusglMechV
Entry into force	01.01.2009	28.06.2001	17.07.2009
Last amended on	20.12.2012	24.02.2012	17.08.2012
Future amendments			
Purpose	In order to protect the climate, the act aims to increase the proportion of electricity from renewable energy sources in total energy supply from at least 35% in 2020 to at least 80% by 2050 and to integrate these quantities of electricity in the electricity supply system	The ordinance specifies the conditions for the promotion of electricity from biomass.	Furthering the development of the nationwide equalisation scheme.

	(§ 1 EEG).		
Relevance for renewable energy	This act promotes renewable energy only.	This ordinance applies to biomass only.	This ordinance amends the equalisation scheme with regard to the costs arising for the grid operators from the payment of the feed-in tariff as set out in the EEG.
Link to full text of legal source (original language)	*http://www.gesetze-im-internet.de/eeg_2009/*	*http://www.gesetze-im-internet.de/bundesrecht/biomassev/gesamt.pdf*	*http://www.gesetze-im-internet.de/ausglmechv/index.html*
Link to full text of legal source (English)	http://www.erneuerbare-energien.de/files/english/pdf/application/pdf/eeg_2012_en_bf.pdf This translation does not provide information on the latest amendment.	*http://www.erneuerbare-energien.de/files/english/pdf/application/pdf/biomasse_verordnung_en_bf.pdf* This translation does not provide information on the latest amendment of the ordinance.	http://www.erneuerbare-energien.de/fileadmin/ee-import/files/english/pdf/application/pdf/englisch_ausglmechv_091019.pdf This translation does not provide information on the latest amendment.

Name of legal source **(original language)**	Verordnung zu Systemdienstleistungen durch Windenergieanlagen	Verordnung über die Entgelte für den Zugang zu Elektrizitätsversorgungsnetzen (Stromnetzentgeltverordnung)	Allgemeine Bestimmungen für Investitionskredite
Full name			Allgemeine Bestimmungen für Investitionskredite – Vertragsverhältnis Hausbank – Endkreditnehmer
Name (English)	Ordinance on System Services by Wind Energy Plants	Ordinance on Electricity Grid Access Charges	General rules for investment loans – contractual relationship between the bank and borrower
Abbreviated form	SDLWindV	StromNEV	KfW Rules for investment loans
Entry into force	03.07.2009	29.07.2005	March 2009
Last amended on	28.07.2011	28.07.2011	March 2013
Future amendments			
Purpose	Regulating the requirements for wind energy plants as set out in § 6 par. 5 EEG, § 29 par. 2 sentence 4 EEG and § 66 par. 1 no. 8 EEG to improve grid integration and firing.	This ordinance defines the method for calculating the charges (grid charges) for access to the electricity transmission and distribution grids as well as the charges for de-centralised electricity imports.	Regulates the contractual relationship between the bank and borrower for taking up investment loans.
Relevance for renewable energy	This ordinance specifies the FIT eligibility requirements for wind energy and the	This ordinance grants a payment to system operators who export electricity	These rules apply to the KfW Renewable Energy Programme – Standard promoting

	eligibility requirements for the System Service Bonus.	to the grid. This payment may not be received on top of the feed-in tariff or the market premium.	the investment in renewable energy installations through low-interest loans.
Link to full text of legal source (original language)	*http://www.gesetze-im-internet.de/sdlwindv/index.html*	*http://www.gesetze-im-internet.de/stromnev/BJNR222500005.html*	*http://www.kfw.de/kfw_/kfw/de/I/II/Download_Center/Foerderprogramme/versteckter_Ordner_fuer_PDF/6000002388_AGB_Investitionskredite_EKN.pdf*
Link to full text of legal source (English)			

Name of legal source (original language)	Merkblatt KfW-Programm Erneuerbare Energien Standard	Merkblatt KfW Programm Offshore - Windenergie	Merkblatt KfW Programm Fündigkeitsrisiko Tiefengeothermie	Managementprämienverordnung
Full name	Merkblatt KfW-Programm Erneuerbare Energien (Programmnummern 270, 274) Investitionskredite für Maßnahmen zur Nutzung Erneuerbarer Energien	Merkblatt Offshore - Windenergie (Programmnummer 273)	Merkblatt KfW Programm Fündigkeitsrisiko Tiefengeothermie (Programmnummer 228)	Verordnung über die Höhe der Managementprämie für Strom aus Windenergie und solarer Strahlungsenergie (Managementprämienverordnung - MaPrV)
Name (English)	KfW Renewable Energy Programme Standard	KfW Programme Offshore wind energy	KfW Programme Geothermal Exploration Risk	Management premium ordinance
Abbreviated form	KfW Renewable Energy Programme Standard	KfW Programme Offshore wind energy	KfW Programme Geothermal Exploration Risk	MaPrV
Entry into force	01.01.2012	01.07.2012	01.02.2009	02.11.2012
Last amended on				
Future amendments				
Purpose	The purpose is to lay out the KfW Renewable Energy Programme promoting the investment in renewable energy installations through low-interest loans.	The programme supports the investment in offshore wind energy in Germany in form of direct loans or financing packages.	Partial coverage of exploration risks during geothermal drilling.	The ordinance adapts the amount of management premium granted to electricity produced from wind and solar energy.

Relevance for renewable energy	The programme promotes the investment into renewable energy installations.	The programme promotes the investment in offshore wind energy.	The programme promotes the investment in geothermal energy.	The ordinance specifies management premium granted for electricity form solar and wind.
Link to full text of legal source (original language)	*http://www.kfw.de/kfw/de/I/II/Download_Center/Foerderprogramme/versteckter_Ordner_fuer_PDF/6000000178_M_270_274.pdf*	http://www.kfw.de/kfw/de/I/II/Download_Center/Foerderprogramme/versteckter_Ordner_fuer_PDF/6000001940_M_273.pdf	http://www.kfw.de/kfw/de/I/II/Download_Center/Foerderprogramme/versteckter_Ordner_fuer_PDF/140761_M_Fuendigkeitsrisiko_Tiefengeothermie_228_2009_02.pdf	http://www.gesetze-im-internet.de/bundesrecht/maprv/gesamt.pdf
Link to full text of legal source (English)		http://www.kfw.de/kfw/de/I/II/Download_Center/Foerderprogramme/versteckter_Ordner_fuer_PDF/6000002171_M_273_Offshore-Windenergie_engl.pdf		

Further information

Institution (name)	Website	Name of contact person (optional)	Telephone number (head office)	E-mail (optional)
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)	http://www.bmu.de/		+49 301 830 50	service@bmu.bund.de
Federal Network Agency	http://www.bundesnetzagentur.de		+49 228 140	info@bnetza.de
Federal Antitrust Agency (Bundeskartellamt)	http://www.bundeskartellamt.de/		+49 228 949 90	info@bundeskartellamt.bund.de
German Energy Agency (dena)	http://www.dena.de		+49 307 261 656 00	info@dena.de
Bundesverband Erneuerbare Energie e.V. (BEE) – Renewable Energy Federation	http://www.bee-ev.de/		+49 302 758 170 0	info@bee-ev.de
KfW Förderbank	http://www.kfw.de/		+49 697 431 0	info@kfw.de
Clearingstelle EEG (clearing house)	http://www.clearingstelle-eeg.de/		+ 49 30 206 1416 79	http://www.clearingstelle-eeg.de/anfrageformular/web
Geiser & von Oppen – PartG (law firm)	http://www.gvo-anwaelte.de/	Margarete von Oppen	+49 30 31 01 92 0	office@gvo-anwaelte.de

Support schemes

Loan (KfW Renewable Energy Programme – Standard)

Abbreviated form of legal source(s)	• KfW Rules for investment loans • KfW Renewable Energy Programme Standard	
Contact Authority	• KfW	
Summary	The KfW Renewable Energy Programme –Standard gives low interest loans for investments in installations for electricity production in accordance with the EEG. Plants erected abroad are eligible for the loan if they are constructed close to the German border and thus, indirectly have an impact on the improvement of the environment in Germany, or if the investment is done abroad by a German company. It is a long-term and low-interest loan (effective interest rate of 1.31% per year) with a fixed interest period of 5 or 10 years including a repayment-free start-up period (KfW Renewable Energy Programme Standard). The plant operator or investor signs a contract with the bank (Hausbank) specifying the terms of contract. If not agreed differently between the contracting parties, the KfW Rules for investment loans apply.	
Eligible technologies	**General information**	In general, all technologies are promoted in accordance with the EEG.
	Wind energy	On-shore plants, repowering
	Solar energy	eligible
	Geothermal energy	eligible
	Biogas	eligible
	Hydro-power	eligible

	Biomass	eligible
Amount	Up to 100% of the investment costs eligible for financing (without VAT), however, not more than EUR 25 million per plant/project. It is a long-term and low-interest loan with a fixed interest period of 5 or 10 years including a repayment-free start-up period. A fixed interest period of up to 20 years is granted if technical and economic duration of co-financed investment is longer than 20 years.	
Addressees	Private individuals and not-for-profit organisations which feed the generated electricity/heat into the network, self-employed professionals, domestic and foreign enterprises majority-owned by private individuals, enterprises in which local authorities, churches or charities hold an interest, investment funds.	
Procedure	**Process flow**	Applications have to be submitted to a bank before starting the project. Planning services prior to the application are allowed. Relevant application forms can be downloaded from http://www.kfw.de/kfw/de/Inlandsfoerderung/Programmuebersicht/Erneuerbare_Energien_-_Standard/Antrag_und_Dokumente.jsp
	Competent authority	KfW loans are administered and disbursed by regular banks.
Flexibility mechanism		
Distribution of costs	**State**	KfW Bankengruppe bears the costs of offering low-interest loans.
	Consumers	
	Plant operator	The plant operator has to pay back the loan.
	Grid operator	
	European Union	
	Distribution mechanism	

Loan (KfW programme offshore wind energy)

Abbreviated form of legal source(s)	• KfW Programme offshore wind energy	
Contact Authority	• KfW	
Summary	The KfW Programme offshore wind energy provides loans and financing packages to support companies wanting to invest in offshore wind farms in the German Exclusive Economic Zone or in 12 nautical-mile zone of the North and Baltic Sea. Project financing is granted in different forms: a) direct loans under financing by bank syndicates b) financing package combining a KfW on-lent through a bank loan and a direct loan from KfW c) in addition to a) and b), a direct loan under bank syndicates is granted covering unforeseen costs during construction phase	
Eligible technologies	**General information**	Under the KfW programme only offshore wind power is eligible. Financial support is granted for the construction of up to 10 offshore wind farms.
	Wind energy	Offshore wind energy
	Solar energy	
	Geothermal energy	
	Biogas	
	Hydro-power	
	Biomass	
Amount	The proportion of co-financing the investment is the following for the different forms of finance: a) up to 50 percent of overall external capital requirements, max. € 400 mln per project b) up to 70 percent of overall external capital requirements, max. € 700 mln per project	

	c) up to 50 percent of overall external capital requirements for unforeseen cost increases, max. € 100 mln per project. It is a long-term and low-interest loan during a period of 20 years including a 3 year repayment-free start-up period. The fixed interest rate is renegotiated after 10 years. Moreover, a commitment fee of 0.25% per month is charged.	
Addressees	Project companies wanting to invest in offshore wind farms in the German Exclusive Economic Zone or in 12 nautical-mile zone of the North and Baltic Sea. Companies under restructuring or in difficult situation in the meaning of European Community Guidelines for State Aid for Rescue and Restructuring of Companies in Difficulty are excluded.	
Procedure	**Process flow**	Applications for projects to be implemented under financing package (b) are to be filed with a credit institution of borrower's choice. Applications for a direct loan are filed with KfW via any credit institution. Relevant application forms can be downloaded from http://www.kfw.de/kfw/de/Inlandsfoerderung/Programmuebersicht/KfW-Programm_Offshore-Windenergie/Antrag,_Formulare,_Merkblaetter.jsp
	Competent authority	KfW loans are administered and disbursed by regular banks.
Flexibility mechanism		
Distribution of costs	**State**	KfW Bankengruppe bears the costs of offering low-interest loans.
	Consumers	
	Plant operator	The plant operator has to pay back the loan.
	Grid operator	
	European Union	
	Distribution mechanism	

Loan (KfW Programme Geothermal Exploration Risk**)**

Abbreviated form of legal source(s)	• KfW Programme Geothermal Exploration Risk	
Contact Authority	• KfW	
Summary	The KfW Programme Geothermal Exploration Risk covers investment costs connected to drilling activities including the required stimulation measures prescribed by KfW as part of project study. The loan amounts to max. 80% of eligible investment costs with different interest rates accounting for the different exploration risks. Only geothermal projects with at least two deep drillings are eligible for support.	
Eligible technologies	**General information**	Under the KfW programme only exploration risks of geothermal drilling are eligible.
	Wind energy	
	Solar energy	
	Geothermal energy	Covers exploration risks of geothermal drilling
	Biogas	
	Hydro-power	
	Biomass	

Amount	The co-financing amounts to max. 80% of eligible investment costs including the planned investment costs for stimulation measures. In general, maximum support per drilling is €16 mln. Two different models for financial support exist: a) 100% liability free loan covering up to 80% of eligible investment costs if non-exploration, as defined in the terms of contract of the loan, is proven. b) Guarantee for partial debt release on executed stimulation measures in exchange for higher interest rate (risk) The duration of the loan is fixed to 10 years including a 2 year repayment-free start-up period. Moreover, a commitment fee of 0.25% per month is charged. The interest rate is set on the date of approval accounting for exploration risk.	
Addressees	Small and medium size private enterprises in line with EU Commission definition, big companies not qualifying as small and medium size enterprises, companies under private law and municipalities are eligible if the investment is undertaken in Germany. Moreover, these eligible entities need to produce heat, electricity or both for a period of at least 7 years.	
Procedure	**Process flow**	Applications for projects are to be filed with a credit institution of borrower's choice before project start. Relevant application forms can be downloaded from http://www.kfw.de/kfw/de/Inlandsfoerderung/Programmuebersicht/Fuendigkeitsrisiko_Tiefengeothermie/Antrag_und_Dokumente.jsp. When filing an application, the applicant has to pay an examination fee of € 65,000 per drilling project in order to cover the costs of evaluating the application. In case an application is denied, the applicant can file an edited application form within 6 months without paying the fee a second time. In case an application is approved, an approval fee of € 45,000 (gross) has to be paid accounting for the examination and monitoring costs.
	Competent authority	KfW loans are administered and disbursed by regular banks.
Flexibility mechanism		
Distribution of	**State**	KfW Bankengruppe bears the costs of offering low-interest loans.

costs	**Consumers**	
	Plant operator	The plant operator has to pay back the loan.
	Grid operator	
	European Union	
	Distribution mechanism	

Feed-in tariff (EEG feed-in tariff)

Abbreviated form of legal source(s)	• EEG • AusglMechV • SDLWindV • BiomasseV	
Contact Authority	• BMU	
Summary	In Germany, the most important means to promote electricity from renewable sources is the feed-in tariff as set out in the EEG.	
Eligible technologies	**General information**	In general, all technologies used to generate electricity from renewable sources are eligible for feed-in tariffs (§ 16 par. 1 EEG). Eligibility also applies to electricity that was temporarily stored prior to being exported to the grid (§ 16 par. 2 EEG). Plant operators shall meet the following requirements in order to receive the feed-in tariff (§ 17 EEG): • Plants whose installed capacity exceeds 100 kW shall be equipped with technical devices with which the grid operator can, at any time, reduce

		output by remote means (§ 6 par. 1 no. 1, par. 2 no. 1 EEG). The operators of solar energy installation with an installed capacity of up to 30 kW shall either meet the above-mentioned requirement or limit the effective power exported to the grid to 70% of the installed capacity (§ 6 par. 2 no. 2 EEG). In addition, plants whose installed capacity exceeds 100 kW shall be equipped with technical devices with which the grid operator can retrieve information about the amount of electricity currently fed in by each system (§ 6 par. 1 no. 2 EEG).The tariff level will be reduced to the actual market value of the specific energy source where ○ a plant operator has not registered his plant as required by law (§ 17 par. 2 no. 1, 2 EEG). At the moment, this rule applies to solar energy systems only. A general register of installations for other renewable energy technologies has not yet been established, and it is still unclear when it will be introduced. ○ a plant operator fails to meet the obligation to export all electricity generated by his plant or sold his electricity as balancing energy (§ 17 par. 2 no. 3 EEG in conjunction with § 16 par. 3 EEG). ○ A plant was installed to fulfil the function of a model public building pursuant to regional legislation, and the installation is not a CHP plant (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG, in conjunction with.§ 17 par. 2 no. 4 EEG). ○ a plant operator who used to sell his electricity directly has not notified the grid operator in time of his change to the feed-in tariff scheme (§ 17 par. 3 EEG).
	Wind energy	Both onshore and offshore generation are eligible with the following exceptions (§§ 29; 31 EEG): • **Fulfilment of technical requirements.** Plant operators shall make sure that the requirements stipulated in the Ordinance on System Services by Wind Energy Plants are met (§ 6 par. 5 EEG; SDLWindV). • **Offshore generation in protected areas.** Electricity is not eligible if generated by plants located in an area of environmental importance, such as plants constructed in a protected area or at a site of Community importance (§ 31 par. 5 EEG).
	Solar energy	In general, PV installations ≤ 10 MW are eligible for support under the following restrictions: • **Building-mounted systems (roofs, facades, noise barriers):** Installations in, attached to or on top of buildings or noise barriers are eligible (§ 32 par. 2 EEG in conjunction with § 32 par. 4 EEG). Buildings without residential purpose can qualify for feed-in tariffs in the sense of § 32 par. 2 EEG if the installation is built on a livestock building or is in connection with an agricultural farm (§ 32 par. 3 EEG). Those installations that do not qualify as building-mounted systems are treated similar to ground-mounted systems (§ 32 par. 1 EEG). • **Ground-mounted systems:** The installation has to be erected within the territorial application of a formal development plan (e.g. a local development plan) (§ 32 par. 1 no. 3 EEG). Installations erected within the territorial application of a local development plan drawn up after 1.9.2003 must be located on certain plots of land such as areas next to speedways, railroad tracks as well as on sealed and conversion areas (§ 32 par. 1 no. 3 c) EEG). The development plan shall have been formally adopted, i.e. adopted by the local council. This means that it is not necessary for the development plan to have come into force. Moreover, the federal government in participation of the Bundestag (national parliament) and Bundesrat (federal council) is empowered to determine further compensation schemes for conversion areas with an installed

		capacity > 10 MW (§ 64g EEG in conjunction with (§ 32 par. 1 EEG). • **Obligation to give notice.** The tariff level for electricity from a solar energy installation will be reduced to the average monthly market value where a system operator fails to notify the Federal Network Agency or another competent authority of the location and the installed capacity of his system (§ 17 par. 2 no. 1 EEG in conjunction with § 20a par. 5 EEG).
	Geothermal energy	Eligible (§ 28 EEG).
	Biogas	Electricity from both biogas and biomethane is eligible. There are special provisions for biogas generated from the anaerobic fermentation of biowaste and from the fermentation of manure (§§ 27, 27a, 27b, 27c EEG). The following restrictions apply: • **Definition of biomass.** The substances regarded as biomass are specified in a separate ordinance (BiomasseV). • **Capacity limits.** Electricity generated by a biomass plant put into operation after 31 December 2013 will be eligible only if the installed capacity does not exceed 750 kW (§§ 27 par. 3 EEG; 27a par. 2 EEG). For new plants generating electricity from biomass that was generated from anaerobic fermentation of manure, the maximum eligible capacity is 75 kW (§ 27b par. 1 no. 2 EEG). This rule has been applicable since 1 January 2012. • **Obligation to employ CHP technology or minimum percentage of manure.** Generators will receive the full tariff as specified in the EEG only if a certain percentage (usually 60% for biomethane plants and 100% for biowaste plants) is generated by CHP (§§ 27 par. 4 no. 1; 27 par. 5 no. 2, 27a par. 5 no. 2; Annex 2 EEG) or if the amount of manure used to produce the biogas is at least 60 mass percent (§ 27 par. 4 no. 2 EEG). Where a generator fails to meet these requirements, his tariff level will be reduced to the market price (§ 27 par. 7 EEG). • **Obligation to keep a record of substances.** Electricity will be eligible for the full tariff as specified in the EEG only if the plant operator can prove which type of biomass is used by presenting a copy of a record of the substances used and provides evidence that no other substances are used (§§ 27 par. 5, 27a par. 5, 27b par. 3 no. 1 EEG). Where a generator fails to meet this requirement, his tariff level will be reduced to the market price (§ 27 par. 7 EEG). • **Technical requirements.** The plant operator shall make sure that devices are used to avoid any escape of biogas (§ 6 par. 4 EEG). Where the biogas used is generated from the fermentation of biowaste, the plant for anaerobic fermentation of the biowaste shall be directly linked to a final composting facility for solid fermentation residues and the composted material shall be recovered (§ 27a par. 3 EEG). • **Electricity generation sites.** Where electricity is generated from biogas that was generated from anaerobic fermentation of manure, the

		electricity shall be produced at the site of the biogas generation plant (§ 27b par. 1 no. 1 EEG).
	Hydro-power	Both new plants and modernised existing plants are eligible (§ 23 par. 1, par. 2 EEG). The following conditions apply (§ 23 EEG): • **Requirements of the Federal Water Act.** Plants on surface waters are eligible only if the use of hydropower complies with the requirements of the Federal Water Act (§ 23 par. 4 EEG). • **Building requirements.** Electricity from newly constructed hydro-electric power plants is eligible only if the plant was erected in the spatial context of a barrage weir or dam which had already existed before or was newly built primarily for purposes other than the generation of electricity from hydropower, or without complete weir coverage (§ 23 par. 5 EEG).
	Biomass	Eligible under the following conditions (§ 27 EEG): • **Definition of biomass.** The substances regarded as biomass are specified in a separate ordinance (BiomasseV). • **Obligation to employ CHP technology.** Electricity is eligible for the full tariff as specified in the EEG only if a certain percentage of the electricity (usually 60%) was generated from CHP (§ 27 par. 4 no. 1, Annex 2 EEG). Where a generator fails to meet this requirement, his tariff level will be reduced to the market price (§ 27 par. 7 EEG). • **Obligation to keep a record of substances.** Electricity will be eligible for the full tariff as specified in the EEG only if the system operator can prove which type of biomass is used by presenting a copy of a record of the substances used and provides evidence that no other substances are used (§ 27 par. 5 EEG). Where a generator fails to meet this requirement, his tariff level will be reduced to the market price (§ 27 par. 7 EEG). • **Liquid biomass is ineligible for the tariff.** In general, electricity is ineligible for the feed-in tariff if generated by new plants using liquid biomass. Where generated by new plants, this type of electricity is eligible only if the biomass is required as start-up, priming and supporting fuel (e.g. in dual-fuel CHP units) (§ 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with § 27 par. 5 no. 3 EEG).
Amount	**General information**	The amount of tariff for a given plant is the tariff level as defined by law minus the degression rate, which depends on the year in which the plant was put into operation. The current version of the EEG sets out the tariffs for 2012. However, the tariff levels for electricity from solar energy installations are not specified in the EEG. These tariff levels have not yet been set because the degression depends on the newly installed capacity. The amount of tariff differs for every source of energy (§§ 23 – 33 EEG). For some technologies there are several tariffs depending on the plant capacity, the plant location and the technology and raw materials used.

		In cases where the tariff is based on system output (e.g. photovoltaic energy, biomass), several systems shall be classified as one installation, notwithstanding ownership, and solely for the purpose of determining the tariff to be paid. For this rule to apply, the plant must be located on the same plot of land or in direct spatial proximity (within a distance of 2 km), generate electricity from the same kind of renewable energy source and have been commissioned within a period of 24 consecutive calendar months (§ 19 EEG). This regulation aims to prevent plant operators from splitting their systems in order to avoid higher output categories. Whether several plants shall be regarded as one will be established on a case-by-case basis. Criteria for amount of tariff. The amount of tariff depends on the costs of constructing and operating a certain type of plant, i.e. investment costs, operational costs, the costs of measurement and the cost of capital. Costs and efficiency audits are carried out in exceptional cases only. The calculation of the tariff is based on the expected costs. This aims to guarantee the cost-effective operation of most systems.
	Wind energy	• **Onshore:** €ct 4.87 – 8.93 per kWh (according to duration of payment) + repowering bonus of €ct 0.5 per kWh and plant service bonus of €ct 0.48 per kWh (§ 29 par 1-2; § 30 EEG). • **Offshore:** €ct 3.5 – 19 per kWh (according to duration of payment and scheme chosen by plant operator)
	Solar energy	The amount of tariff depends on the site of production and the installed capacity. • Generally, the EEG differentiates between **building-mounted systems (roofs, facades, noise barriers)** (§ 32 par. 2 EEG in conjunction with § 32 par. 4 EEG) and ○ **ground-mounted systems** (§ 32 par. 1 EEG). • The current tariff levels can be retrieved from the site of the Federal Network Agency (Bundesnetzagentur) under http://www.bundesnetzagentur.de/cln_1911/DE/Sachgebiete/ElektrizitaetGas/ErneuerbareEnergienGesetz/VerguetungssaetzePVAnlagen/VerguetungssaetzePhotovoltaik_node.html: FiT from 1 January 2013 Systems in accordance with § 32 par. 1 and 2 EEG: ≤ 10 kW: 17,02 €ct/kWh ≤ 40 kW: 16,14 €ct/kWh ≤ 1 MW: 14,40 €ct/kWh Other systems ≤ 10 MW: 11,78 €ct/kWh

		FiT from 1 February 2013 Systems in accordance with § 32 par. 1 and 2 EEG: ≤ 10 kW: 16,64 €ct/kWh ≤ 40 kW: 15,79 €ct/kWh ≤ 1 MW: 14,08 €ct/kWh Other systems ≤ 10 MW: 11,52 €ct/kWh FiT from 1 March 2013 Systems in accordance with § 32 par. 1 and 2 EEG: ≤ 10 kW: 16,28 €ct/kWh ≤ 40 kW: 15,44 €ct/kWh ≤ 1 MW: 13,77 €ct/kWh Other systems ≤ 10 MW: 11,27 €ct/kWh FiT from 1 April 2013 Systems in accordance with § 32 par. 1 and 2 EEG: ≤ 10 kW: 15,92 €ct/kWh ≤ 40 kW: 15,10 €ct/kWh ≤ 1 MW: 13,47 €ct/kWh Other systems ≤ 10 MW: 11,02 €ct/kWh • **Market integration model**: Within one calendar year, only 90% of electricity produced by installations with an installed capacity of more than 10 kW and ≤ 1 MW are eligible for the compensation set out in § 32 par. 2 EEG. The remaining 10% can be either directly marketed, injected to the grid or consumed (§ 33 par. 1, 2 EEG). This market integration model is put into force by 1 January 2014 and only applies to installations erected after 31 March 2012 (§ 66 par. 19 EEG).
	Geothermal	• €ct 25 per kWh plus (if applicable)

	energy	• bonus for use of petrothermal technology of €ct 5 per kWh (§ 28 EEG)
	Biogas	• **Biogas from biomass:** €ct 6 – 25 per kWh (according to plant size and fuel) (§§ 27, 27a, 27b EEG); • **Landfill gas:** €ct 5.89 – 8.60 per kWh (§ 24 EEG); • **Sewage gas:** €ct 5.89 – 6.79 per kWh (§ 25 EEG). • **Mine gas:** €ct 3.98 – 6.84 per kWh (§ 26 EEG)
	Hydro-power	€ct 3.4 – 12.7 per kWh (depending on plant size and date of commissioning) (§ 23 par. 1-4 EEG).
	Biomass	• €ct 6 – 14.3 per kWh (according to plant size) plus (if applicable) • bonus of €ct 2.5 – 8 per kWh for use of special substances (§ 27 par. 1, 2 EEG in conjunction with BiomasseV)
Degression	**General information**	The tariff levels will decrease every year to provide an incentive to reduce costs through technological innovation. New plants will receive the tariff level applicable on the day they are put into operation. This tariff level will apply for the entire payment period, i.e. for 20 years (§§ 20; 21 par 2 EEG). Except for solar energy, the percentages by which the tariff levels will decrease every year are set by law and are not subject to change. If not otherwise stated, the first reduction will take effect in 2013.
	Wind energy	The degression is 7% for electricity from offshore plants from 2018 onwards (§ 20 par 2 no. 7a EEG) and 1.5% for other plants from 2013 onwards (§ 20 par. 2 no. 7b EEG).
	Solar energy	The total degression of the feed-in tariff contains a monthly basis degression rate of 1% and a flexible degression rate that is dependent on the amount of newly installed capacity. A yearly margin of 2,500 – 3,500 MW newly installed capacity is envisaged (§ 20 a par. 1 EEG).From 1 May 2012, the feed-in tariff is reduced by 1 % on the first day of each consecutive month (§ 20b par. 1 EEG). Depending on the sum of the newly installed capacity, the flexible degression rate can both increase and decrease the overall degression. The flexible degression rate is adapted every three months considering the amount of newly installed capacity in the past 12 months. For the first time the flexible degression rate is applied on 1 November 2012. If the sum of newly installed capacity exceeds the yearly set target by the following amount of MW, the total degression rate is the following (§ 20b

		par. 2, 4, 6, 8 EEG): • ≤ 1000 MW: x = 1.4% *(+ 0.4 %)* • > 1000 MW: x = 1.8% *(+ 0.8 %)* • ≥ 2000 MW: x = 2.2% *(+ 1.2 %)* • ≥ 3000 MW: x = 2.5% *(+ 1.5 %)* • ≥ 4000 MW: x = 2.8% *(+ 1.8 %)* If the sum of newly installed capacity is below the yearly set target by the following amount of MW, the total degression rate is the following (§ 20b par. 3, 5, 7, 9 EEG): • ≤ 500 MW: x = 0.75 % • ≤ 1000 MW: x = 0.5 % • ≤ 1500 MW: x = 0 % • ≥ 1500 MW: x = 0 % and feed-in tariff increases by 1.5% The tariffs applicable in the following three months shall be published in the Federal Gazette on 31 October 2012, 31 January 2013, 30 April 2013 and on 31 July 2013 (§ 20b par. 10 in conjunction with § 20a par. 4 EEG). The current degression rates can be retrieved from http://www.bundesnetzagentur.de/cln_1911/DE/Sachgebiete/ElektrizitaetGas/ErneuerbareEnergienGesetz/VerguetungssaetzePVAnlagen/VerguetungssaetzePhotovoltaik_Basepage.html?nn=135464 (only in German).
	Geothermal energy	The degression rate will be 5% from 2018 (§ 20 par. 2 no. 6 EEG).
	Biogas	The degression rate is 2% from 2013 onwards (§ 20 par. 2 no. 5 EEG). The degression rate for landfill, sewage and mine gas is 1.5% from 2013 onwards (§ 20 par. 2 no. 2 - 4 EEG).

	Hydro-power	The degression rate is 1% from 2013 onwards (§ 20 par. 2 no. 1 EEG).
	Biomass	The degression rate is 2% from 2013 onwards (§ 20 par. 2 no. 5 EEG).
Cap	For solar energy, an overall legal cap of 52,000 MW is introduced. When the cap is reached, the feed-in tariff is phased out on the first day of the consecutive month (§ 20 b par. 9a EEG). Moreover, a yearly margin of 2,500 – 3,500 MW newly installed capacity is envisaged, but is no legal cap as such (§ 20 a par. 1 EEG). On a regular basis, the Federal Network Agency (Bundesnetzagentur) is publishing the amount of newly installed capacity (§ 20a par. 1 EEG).	
Eligibility period	The tariff payment period is usually 20 years plus the year in which the system or plant was put into operation (§ 21 EEG).	
Addressees	A plant operator is entitled against the grid operator to the payment of a tariff (§ 16 par. 1 EEG). A plant operator is one who, irrespective of the issue of ownership, uses a plant to generate electricity from renewable energy sources or from mine gas (§ 3 no. 2 EEG). Grid operators are the operators of grid systems of all voltages for general electricity supply (§ 3 no. 8 EEG).	
Procedure	**Process flow**	Statutory law does not set out a formal application process. According to the EEG, the conclusion of a contract between the grid operator and the plant operator must not be made a condition for the payment of tariffs (§ 4 par. 1 EEG).
	Competent authority	The implementation of the EEG is not managed or monitored by a special authority, as the EEG is a framework for private individuals – plant operators and grid operators – rather than authorities. The Act is evaluated by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety on behalf of the Federal Government (§§ 65, 65a EEG).
Flexibility Mechanism	The feed-in tariffs will not be used to implement the Flexibility Mechanism.	

Distribution of costs	**State**	
	Consumers	The costs of the feed-in tariff scheme are borne by the final consumers.
	Plant operator	
	Grid operator	
	European Union	
	Distribution mechanism	• **Plant operator – grid operator.** The grid operator is obliged to purchase all electricity generated by a plant operator and pay the tariff set out by law (§§ 8 par. 1, § 16 par. 1 EEG). • **Grid operator – transmission system operator.** The grid operator is obliged to transfer the electricity received to the transmission system operator without undue delay (§ 34 EEG). The grid operator is entitled to the purchase of and payment for the quantity of electricity he has paid tariff for (§ 35 par. 1 EEG). • **Transmission system operator – transmission system operator.** The transmission system operators divide the costs resulting from the EEG equally among themselves (§ 36 par. 1-3 EEG). A transmission system operator is eligible for compensation from other transmission system operator in case he incurred higher costs due to feed-in tariff and premium payments than the average compensation costs of all transmission system operators (§ 36 par. 3 EEG). • **Transmission system operator – spot market.** The transmission system operators sell electricity from renewable sources on the day-ahead or intraday spot market at the stock exchange price (§ 37 par. 1 EEG in conjunction with § 2 AusglMechV). • **Transmission system operator – utility companies.** The utility companies are obliged to reimburse the transmission system operators for their costs (§ 37 par. 2 EEG in conjunction with § 3 AusglMechV). • **Utility companies – final consumers.** The costs incurred are included in the electricity price and thus, passed on to the final consumers via their electricity bills (§ 37 par. 2 EEG). Final consumers that are manufacturing companies or rail operators are exempted from this regulation.

		Their costs arising from the compensation payments as specified by the EEG may be reduced upon request (“special equalisation scheme”, §§ 40 ff. EEG).

Premium tariff I (market premium)

Abbreviated form of legal source(s)	• EEG • AusglMechV • SDLWindV • BiomasseV • StromNEV	
Contact Authority	• BMU	
Summary	Instead of receiving the feed-in tariff for electricity from renewable sources, a plant operator may choose to sell his electricity directly, i.e. to a third party by a supply agreement or at the stock market, and claim the so-called market premium from the grid operator. The amount of the market premium shall be calculated each month. In general, plant operators are free to choose between the feed-in tariff and the market premium for direct selling. Large biogas plants put into operation after 31 December 2013 will not be eligible for a feed-in tariff.	
Eligible technologies	**General information**	In general, the market premium applies to all renewable energy generation technologies (§§ 33a par. 1, 33c, 33g EEG). The following conditions apply (§ 33g EEG): • **Actual sale of electricity.** The market premium will be paid only for electricity that has actually been exported to the grid and purchased by a third party (§ 33g par. 1 EEG). • **Shared meter.** Electricity which is metered together with electricity generated by at least one other plant may only be sold directly if all electricity measured by this meter is sold directly (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 1 EEG). • **Obligation to register.** A plant shall be registered as required

		by law (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG in conjunction with § 17 par. 2 no. 1, 2 EEG). At the moment, this rule applies to solar energy systems only, as a general register of installations has not yet been established and it is still unclear when it will be introduced. • **Public buildings.** A plant is ineligible for the tariff if it was installed to fulfil the function of a model public building pursuant to regional legislation, and the plant is not a CHP plant (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG, in conjunction with § 17 par. 2 no. 4). • **Avoided grid use charges.** Plant operators who have avoided grid use charges in accordance with § 18 par. 1 sentence 1 of the Ordinance on Electricity Grid Access Charges are ineligible (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG). • **Technical requirements.** Energy plants shall be equipped with technical devices that enable the grid operator to reduce output by remote means at any time (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 2 EEG in conjunction with § 6 par. 1 no. 1 EEG) and to retrieve the amount of electricity fed in by each system (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 2 EEG in conjunction with § 6 par. 1 no. 2 EEG). • **Measurement at quarter-hourly intervals.** The entire electricity exports of a plant shall be measured and accounted for at quarter-hourly intervals (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 3 EEG). • **Accounting.** Electricity shall be accounted for in a balancing group or a sub-balancing group which only accounts for electricity that is directly sold and for which the market

		premium is received (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 4 EEG). • **Deadlines and obligation to report.** Plant operators may switch between different forms of direct selling or between direct selling and the feed-in tariff scheme only on the first calendar day of every month and shall inform the grid operator about this switch before the start of the previous calendar month (§ 33g par. 3 no. 2 EEG in conjunction with § 33d par. 1, par. 2 EEG).
	Wind energy	Both onshore and offshore generation are eligible with the following restrictions (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with §§ 29; 31 EEG): • **Offshore generation in protected areas.** Electricity is not eligible if generated by plants located in an area of environmental importance, such as plants constructed in a protected area or at a site of Community importance (§ 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with § 31 par. 5 EEG). • **Fulfilment of technical requirements.** Plant operators shall make sure that the requirements stipulated in the Ordinance on System Services are met (§ 33c par. 2 no. 1a EEG in conjunction with § 17 par. 1 EEG in conjunction with § 6 par. 5 EEG).
	Solar energy	Eligible under the following conditions (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with §§ 32; 33 EEG):

		• **Building-mounted systems (roofs, facades, noise barriers):** Installations in, attached to or on top of buildings or noise barriers are eligible (§ 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with § 32 par. 2 EEG in conjunction with § 32 par. 4 EEG). Buildings without residential purpose can qualify for feed-in tariffs in the sense of § 32 par. 2 EEG if the installation is built on a livestock building or is in connection with an agricultural farm (§ 32 par. 3 EEG). Those installations that do not qualify as building-mounted systems are treated similar to ground-mounted systems (§ 32 par. 1 EEG). • **Ground-mounted systems:** The installation has to be erected within the territorial application of a formal development plan (e.g. a local development plan) (§ 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with § 32 par. 1 no. 3 EEG). Installations erected within the territorial application of a local development plan drawn up after 1.9.2003 must be located on certain plots of land such as areas next to speedways, railroad tracks as well as on sealed and conversion areas (§ 32 par. 1 no. 3 c) EEG). The development plan shall have been formally adopted, i.e. adopted by the local council. This means that it is not necessary for the development plan to have come into force. Moreover, the federal government in participation of the Bundestag (national parliament) and Bundesrat (federal council) is empowered to determine further compensation schemes for conversion areas with an installed capacity > 10 MW (§ 64g EEG in conjunction with § 32 par. 1 EEG). • **Giving notice of a system's location.** An operator of a

		renewable energy system shall notify the Federal Network Agency or another competent authority of the location and the installed capacity of the installation (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG in conjunction with § 17 par. 2 no. 1 EEG).
	Geothermal energy	Eligible (§ 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with § 28 EEG).
	Biogas	Both biogas and biomethane are eligible (§ 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with §§ 27, 27a, 27b, 27c EEG). The following restrictions apply: • **Definition of biomass.** The substances regarded as biomass are specified in a separate ordinance (BiomasseV). • **CHP obligation for biogas installations.** Electricity from biomethane is eligible only if generated by CHP (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with § 27 par. 5 no. 2, Annex 2 EEG). • **Obligation to keep a record of substances.** The plant operator shall present a copy of a record of the substances used to provide proof of which type of biomass is used and that no other substances are used (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in connection with § 27 par. 5, 27a par. 5, 27b par. 3 no. 1 EEG). • **Technical requirements.** The plant operator shall make sure that devices are used to avoid any escape of biogas (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG

		in conjunction with § 17 par. 1 EEG in conjunction with § 6 par. 4 EEG). Where the biogas used is generated from the fermentation of biowaste, the plant for anaerobic fermentation of the biowaste shall be directly linked to a final composting facility for solid fermentation residues and the composted material shall be recovered (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with § 27a par. 3 EEG). • **No maximum capacity for large biogas plants.** Unlike the feed-in tariff, the market premium will still be available for large biogas plants (capacity > 750 kW) put into operation after 31 December 2013 (§ 33c par. 3 EEG).
	Hydro-power	Both new systems and modernised existing plants are eligible (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with § 23 par. 1, par. 2 EEG). The following restrictions apply (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with § 23 EEG): • **Requirements of the Federal Water Act.** Plants on surface waters are eligible only if the use of hydropower complies with the requirements of the Federal Water Act (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with § 23 par. 4 EEG). • **Building requirements.** Electricity from newly constructed hydro-electric power plants is eligible only if the plant was erected in the spatial context of a barrage weir or dam which

		had already existed before or was newly built primarily for purposes other than the generation of electricity from hydropower, or without complete weir coverage (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with § 23 par. 5 EEG).
	Biomass	Eligible with the following restrictions (§ 27 EEG): • **Definition of biomass.** The substances regarded as biomass are specified in a separate ordinance (BiomasseV). • **Obligation to keep a record of substances.** Electricity will be eligible for the full tariff as specified in the EEG only if the system operator can prove which type of biomass is used by presenting a copy of a record of the substances used and provides evidence that no other substances are used (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with § 27 par. 5 EEG). • **Liquid biomass is ineligible for the tariff.** In general, electricity is ineligible for the feed-in tariff if generated by new plants using liquid biomass. Electricity generated by new plants using liquid biomass is eligible only if it is required as start-up, priming and supporting fuel (e.g. in dual-fuel CHP units) (§ 33g par. 3 no. 1 EEG in conjunction with § 33c par. 2 no. 1a EEG in conjunction with § 16 par. 1 EEG in conjunction with § 27 par. 5 no. 3 EEG).
Amount	**General information**	The amount of the market premium is calculated every calendar

		month and includes the following elements: 1. The difference between the feed-in tariff for the specific technology as set out in the EEG and the average stock market price, which is calculated every month ex post and corrected by a factor reflecting the stock market value of the specific technology. 2. On top of the market premium, eligible plant operators receive a so-called management premium which covers the costs for variations of the actual grid exports compared to the forecast and for stock market participation (§ 33g par. 2 in conjunction with § 33h EEG, Annex 4 EEG). The management premium for electricity produced after 01.01.13 from solar and wind is stipulated in the management premium ordinance (§ 2 MaPrV).
	Wind energy	
	Solar energy	
	Geothermal energy	
	Biogas	
	Hydro-power	
	Biomass	
Degression	**General information**	Like the feed-in tariff, the market premium is subject to degression as set out in the EEG, as the feed-in tariff is an element of the market premium (§ 33h EEG). Moreover, the management premium, which is another element of the market premium, is reduced every year

		(Annex 4 EEG; § 2 MaPrV).
	Wind energy	
	Solar energy	
	Geothermal energy	
	Biogas	
	Hydro-power	
	Biomass	
Cap		
Eligibility period	Eligibility to the market premium terminates when the payment period of the feed-in tariff ends and eligibility to the feed-in tariff terminates (Annex 4 EEG). The eligibility period is usually 20 years plus the year in which the system or plant was put into operation (§ 21 EEG). The period in which electricity is sold directly and the market premium is received shall be credited against the tariff payment period in accordance with § 21 par. 2 EEG (§ 33e EEG). This means that the payment period expires regardless of whether the system operator receives the feed-in tariff or the market premium.	
Addressees	Plant operators are entitled by law to the payment of the market premium by the grid operator (§ 33g par. 1 EEG). A system operator is one who, irrespective of the issue of ownership, uses a system to generate electricity from renewable energy sources or from mine gas (§ 3 no. 2 EEG). Grid operators are the operators of grid systems of all voltages for general electricity supply (§ 3 no. 8 EEG).	
Procedure	**Process flow**	Statutory law does not set out a formal application process. However, for a plant operator to be eligible for the market premium, his

		electricity must have been exported to the grid, purchased by a third party and transmitted to the grid operator each month by the tenth working day of the following month (§ 33g par. 1 EEG).
	Competent authority	The implementation of the EEG is not managed or monitored by a special authority, as the EEG is a framework for private individuals – system operators and grid operators – rather than authorities. The act is evaluated by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety on behalf of the Federal Government (§§ 65, 65a EEG).
Flexibility Mechanism		
Distribution of costs	**State**	
	Consumers	The costs of the premium tariff scheme are borne by the final consumers.
	Plant operator	
	Grid operator	
	European Union	
	Distribution mechanism	• **Plant operator – grid operator.** The plant operator sells his electricity to a third party and receives the market premium from the grid operator (§ 33g par. 1 EEG). • **Grid operator – transmission system operator.** Upstream transmission system operators are obliged to pay the

		premiums paid by the grid operator (§ 35 par. 1a EEG). • **Transmission system operator – transmission system operator.** Transmission system operators shall share the costs equally (§ 36 EEG). A transmission system operator is eligible for compensation from other transmission system operator in case he incurred higher costs due to feed-in tariff and premium payments than the average compensation costs of all transmission system operators (§ 36 par. 3 EEG). • **Transmission system operator – utility companies.** The utility companies are obliged to reimburse the transmission system operators for their costs (§ 37 par. 2 EEG in conjunction with § 3 AusglMechV). • **Utility companies – final consumers.** The costs incurred are included in the electricity price and thus passed on to the final consumers via their electricity bills (§ 37 par. 2 EEG). Final consumers that are manufacturing companies or rail operators are exempted from this regulation. Their costs arising from the compensation payments as specified by the EEG may be reduced upon request ("special equalisation scheme", §§ 40 ff. EEG).

Premium tariff II (Flexibility premium)

Abbreviated form of legal source(s)	• EEG • AusglMechV • BiomasseV	
Contact Authority	• BMU	
Summary	The operators of biogas plants who sell their electricity directly, i.e. sell them to third parties by supply agreements or at the stock market, may claim a flexibility premium for providing additional installed capacity for on-demand use. For a plant operator to be eligible for the flexibility premium, he shall provide additional installed capacity that may only be used on demand rather than on a regular basis. This premium may be received on top of and separately from the market premium.	
Eligible technologies	**General information**	The flexibility premium only applies to electricity generation from biogas (§ 33i EEG).
	Wind energy	
	Solar energy	
	Geothermal energy	
	Biogas	Eligible. The following conditions apply: • **Definition of biomass.** The substances regarded as biomass are specified in a separate ordinance (BiomasseV). • **Direct selling.** All electricity generated by a plant shall be sold directly for the purpose of claiming the market premium or for other purposes (§ 33i par. 1 no. 1 EEG). • **Public buildings.** A biogas plant is ineligible for the tariff if it

		was installed to fulfil the function of a model public building pursuant to regional legislation, and the plant is not a CHP plant (§ 33i par. 1 no. 1 EEG, in conjunction with § 17 par. 2 no. 4). • **Obligation to register.** The plant shall be registered as required by law (§ 33i par. 1 no. 1 EEG in conjunction with § 17 par. 2 no. 1, 2 EEG). At the moment, this rule exists only in theory, as a general register of installations has not yet been established and it is still unclear when it will be introduced. • **Technical requirements.** Plants shall be equipped with technical devices that enable the grid operator to reduce output by remote means at any time (§ 33i par. 1 no. 1 EEG in conjunction with § 17 par.1 EEG in conjunction with § 6 par. 1 no. 1 EEG) and to retrieve the amount of electricity fed in by each plant (§ 33i par. 1 no. 1 EEG in conjunction with § 17 par.1 EEG in conjunction with § 6 par. 1 no. 2 EEG). The plant operator shall make sure that devices are used to avoid any escape of biogas (§ 33i par. 1 no. 1 EEG in conjunction with § 17 par. 1 EEG in conjunction with § 6 par. 4 EEG). Where the biogas used is generated from the fermentation of biowaste, the plant for anaerobic fermentation of the biowaste shall be directly linked to a final composting facility for solid fermentation residues and the composted material shall be recovered (§ 33i par. 1 no. 1 EEG in conjunction with § 16 par. 1 EEG in conjunction with § 27a par. 3 EEG). • **Rated annual capacity.** The rated annual capacity of a plant shall amount to at least 0.2 times the installed capacity of the plant (§ 33i par. 1 no. 2). The term “rated annual capacity” is legally defined as the ratio of the total kilowatt-hours generated in the calendar year in question to the total

		number of full hours for that calendar year (minus the number of full hours prior to the first generation of electricity from renewable sources by the plant and after final decommissioning of the plant) (Annex 5 EEG, § 3 no. 2a EEG). • **Obligation to give notice.** Plant operators shall notify the Federal Network Agency or another competent authority of the location and the installed capacity of their plants and of the fact that they are claiming the flexibility premium (§ 33i par. 1 no. 3a EEG). • **Certification by an environmental verifier.** An environmental verifier who is accredited in the field of renewable energy generation shall certify that a given plant is technically suitable to be operated on a demand basis as required for the flexibility premium (§ 33i par. 1 no. 4 EEG).
	Hydro-power	
	Biomass	
Amount	**General information**	The amount of the flexibility premium is calculated every calendar year. The formulas on which the calculation is based are defined by law (Annex 5 EEG).
	Wind energy	
	Solar energy	
	Geothermal energy	

	Biogas	
	Hydro-power	
	Biomass	
Degression	**General information**	According to law, the flexibility premium is not subject to degression.
	Wind energy	
	Solar energy	
	Geothermal energy	
	Biogas	
	Hydro-power	
	Biomass	
Cap		
Eligibility period	The flexibility premium shall be paid for a period of ten years (§ 33i par. 4 EEG).	
Addressees	Plant operators are entitled by law to the payment of the flexibility premium by the grid operator (§ 33i par. 1 EEG). A system operator is one who, irrespective of the issue of ownership, uses a system to generate electricity from renewable energy sources or from mine gas (§ 3 no. 2 EEG). Grid operators are the operators of grid systems of all voltages for general electricity supply (§ 3 no. 8 EEG).	

Procedure	**Process flow**	Statutory law does not set out a formal application process. However, plant operators shall inform the grid operator in advance of their first claim for the flexibility premium (§ 33i par. 3 EEG).
	Competent authority	The implementation of the EEG is not managed or monitored by a special authority, as the EEG is a framework for private individuals – plant operators and grid operators – rather than authorities. The act is evaluated by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety on behalf of the Federal Government (§§ 65, 65a EEG).
Flexibility Mechanism		
Distribution of costs	**State**	
	Consumers	The costs of the feed-in tariff scheme are borne by the final consumers.
	Plant operator	
	Grid operator	
	European Union	
	Distribution mechanism	• **Plant operator – grid operator.** A plant operator may claim the flexibility premium from the grid operator (§ 33i par. 1 EEG). • **Grid operator – transmission system operator.** Upstream transmission system operators are obliged to pay the

		premiums paid by the grid operator (§ 35 par. 1a EEG). • **Transmission system operator – transmission system operator.** Transmission system operators shall share the costs equally (§ 36 par. 1 no. 3 EEG). A transmission system operator is eligible for compensation from other transmission system operator in case he incurred higher costs due to feed-in tariff and premium payments than the average compensation costs of all transmission system operators (§ 36 par. 3 EEG). • **Transmission system operator – utility company.** The utility companies are obliged to reimburse the transmission system operators for their costs (§ 37 par. 2 EEG in conjunction with § 3 AusglMechV). • **Utility companies – final consumers.** The costs incurred are included in the electricity price and thus, passed on to the final consumers via their electricity bills (§ 37 par. 2 EEG). Final consumers that are manufacturing companies or rail operators are exempt from this regulation. Their costs arising from the compensation payments as specified by the EEG may be reduced upon request ("special equalisation scheme", §§ 40 ff. EEG).

RES-E grid issues

Overview

Overview of grid issues	In Germany, plants for the generation of electricity from renewable sources shall be given priority connection to the grid. Furthermore, grid operators are obliged to give priority to electricity from renewable sources when purchasing and transmitting electricity. Moreover, those interested in feeding in electricity may demand that the grid operator expands his grid. These special provisions are set out in the Act on Granting Priority to Renewable Energy Sources (EEG). Further general provisions on energy are stipulated in the Energy Industry Act (EnWG).
Connection to the grid	Plant operators are statutorily entitled to immediate priority connection of renewable energy plants by the grid operators.
Use of the grid	Plant operators are statutorily entitled against the grid operators to the purchase and transmission of all electricity from renewable energy sources supplied. Grid operators shall not charge the plant operators for the transmission of such electricity.
Grid development	Upon the request of those interested in feeding in electricity, the grid operator is obliged to immediately optimise, boost and expand his grid in accordance with the best available technology in order to guarantee the purchase, transmission and distribution of electricity from renewable sources (§ 9 par. 1 EEG). The grid operator is not obliged to optimise, boost or expand his grid if this is economically unreasonable.
Statutory provisions	• EEG (Renewable Energy Sources Act – general provisions on renewable energy) • EnWG (Energy Industry Act – general provisions on the energy industry) • KraftNAV (Ordinance on the Connection of Power Plants to the Grid)

Basic information on legal sources

Name of legal source **(original language)**	Gesetz für den Vorrang Erneuerbarer Energien (Erneuerbare-Energien-Gesetz)	Energiewirtschaftsgesetz – EnWG	Verordnung zur Regelung des Netzanschlusses von Anlagen zur Erzeugung von elektrischer Energie
Full name		Gesetz über die Elektrizitäts- und Gasversorgung	
Name (English)	Act on Granting Priority to Renewable Energy Sources (Renewable Energy Sources Act)	Energy Industry Act (EnWG)	Ordinance on the Connection of Power Plants to the Grid
Abbreviated form	EEG	EnWG	KraftNAV
Entry into force	01.01.2009	13.07.2005	26.06.2007
Last amended on	20.12.2012	21.02.2013	
Future amendments			
Purpose	In order to protect the climate, the act aims to increase the proportion of electricity from renewable energy sources in total energy supply from at least 35% in 2020 to at least 80% by 2050 and to integrate these quantities of electricity in the electricity supply system (§ 1 EEG).	Ensuring the safe, cost-.efficient and consumer-friendly supply of the population with electricity and gas (§ 1 EnWG).	Regulating the procedure for the connection of power plants with a capacity of at least 100 MW to high-voltage grids with a voltage of at least 110 kV.

Relevance for renewable energy	This act promotes renewable energy only.	This act stipulates supplementary provisions for the access of electricity from renewable sources to the grid.	This ordinance regulates the connection of renewable energy plants to the grid as laid down in the EEG.
Link to full text of legal source (original language)	http://www.gesetze-im-internet.de/eeg_2009/	*http://www.gesetze-im-internet.de/bundesrecht/enwg_2005/gesamt.pdf*	*http://www.gesetze-im-internet.de/bundesrecht/kraftnav/gesamt.pdf*
Link to full text of legal source (English)			

Further information

Institution (name)	Website	Name of contact person (optional)	Telephone number (head office)	E-mail (optional)
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)	http://www.bmu.de/english/aktuell/4152.php		+49 301 830 50	service@bmu.bund.de
Federal Network Agency	http://www.bundesnetzagentur.de/cln_1931/sid_929F6771952BA373F464674E3D24B4B8/EN/Home/home_node.html		+49 228 140	info@bnetza.de
Federal Antitrust Agency (Bundeskartellamt)	http://www.bundeskartellamt.de/wEnglisch/index.php		+49 228 949 90	info@bundeskartellamt.bund.de
Geiser & von Oppen – PartG (law firm)	http://www.gvo-anwaelte.de/en/index.html	Margarete von Oppen	+49 30 31 01 92 00	office@gvo-anwaelte.de

Grid issues

Connection to the grid

Abbreviated form of legal sources	• EEG • KraftNAV	
Contact Authority	• **Federal Network Agency, BMU**	
Overview	Plant operators are statutorily entitled against the grid operator to the connection of renewable energy plants to the grid (§ 5 par. 1 EEG). The grid operator shall not make the conclusion of a contract a condition for the fulfilment of his obligation to connect plants to the grid (§ 4 par. 1 EEG). A plant operator is one who uses a plant or installation for the purpose of power generation from renewable energy sources. Whether or not he owns the plant is irrelevant (§ 3 no. 2 EEG). The person obligated is the grid operator who is most closely located to the plant site and whose grid is technically suitable to receive electricity (§ 5 par. 1 EEG). Where connecting the plant to a grid other than the most closely located one is technically and economically more favourable, another grid operator may be obliged to connect the plant (§ 5 par. 1 EEG). Grid operators are entitled to assign a plant a different grid connection point. Likewise, a plant operator may choose another grid connection point. In cases where plants with a capacity of up to 30 kW are located on a plot of land which already has a connection to the grid, the grid connection point of this plot will be deemed to be the most suitable connection point (§ 5 par. 1 EEG). A grid is deemed to be technically suitable even if the grid operator has to expand his grid at an economically reasonable expense to import electricity (§ 5 par. 4 EEG).	
Procedure	**Process flow**	**Low-voltage and medium-voltage grids:** Only certain elements of the process of connecting plants to low-voltage and high-voltage grids are set out by law. Each grid operator may determine an individual connection process. The procedure and the required application forms are usually published on the grid operator's website. For technical reasons, the grid connection process involves the following steps:

		• Those interested in feeding in electricity apply for connection to the grid ("grid system connection request") (§ 5 par. 5 EEG). • The grid operator shall, without delay, provide those interested in feeding in electricity with a precise timetable including the procedural steps for processing their connection requests and a list describing all information required by the grid operator to determine the grid connection points or to plan the expansion of the grid (§ 5 par. 5 EEG). • Everyone interested in feeding in electricity shall submit the required information to the grid operator. • The grid operator shall, without delay and within eight weeks after receipt of the information, submit to those interested in feeding in electricity a timetable for establishing grid connection, all information required by those interested in feeding in electricity to test the grid connection point and, upon request, a comprehensible and detailed estimate of the costs the plant operators will incur for the establishment of grid connection and the grid system data required to test grid compatibility (§ 5 par. 6 EEG). • The grid operator assigns a connection point. • The grid operator makes a connection offer. • The grid operator and the plant operator conclude a connection agreement (optional). • The plant is connected and electricity is exported to the grid. **High-voltage grids:** Plants with a capacity of at least 100 MW that are connected to an electricity supply grid with a voltage of at least 110 kV are subject to the following procedure (§ 1 no. 1 KraftNAV) unless it violates the provisions of the EEG (§ 1 par. 2 KraftNAV): • The operator to be connected applies for connection (§ 3 par. 2 KraftNAV). • The grid operator shall inform the plant operator on the required audits and the expected costs after a period of two weeks and request additional information

		within one week (§ 3 par. 2 KraftNAV). • The operator to be connected shall pay 25% of the expected costs (§ 3 par. 3 KraftNAV). • The grid operator shall announce the results of the grid stability test and grant connection within three months after the plant operator has made the advance payment (§§ 3 par. 3; 4 par. 1 KraftNAV). • The grid operator and the plant operator conclude a connection agreement (optional) (§ 4 par. 2 and 4 KraftNAV in conjunction with § 4 par. 1 EEG). • The grid operator and the plant operator agree on an implementation roadmap (§ 4 par. 5 KraftNAV). • The plant is connected and put into operation.
	Deadlines	**General information:** Plants shall be connected to the grid immediately, i.e. without undue delay (§ 5 par. 1 EEG in conjunction with § 121 par. 1 BGB). Furthermore, after receipt of a connection request, the grid operator is obliged to submit, without delay, a detailed timetable for processing the grid connection request to the applicant (§ 5 par. 5 EEG). Moreover, the grid operator shall, after receipt of the necessary information and without delay, submit to the plant operator a timetable for the immediate establishment of grid connection, the information required to test the grid connection point and, upon request, the grid system data required to test grid compatibility and a cost estimate within eight weeks. The EEG does not specify any deadlines by which the grid operator shall carry out the grid stability test. This test may take three weeks to three months, depending on the number of the grid operator's staff. **High-voltage grids:** Plants with a capacity of at least 100 MW are subject to the deadlines stipulated by KraftNAV (see procedure) unless they violate the provisions of the EEG (§§ 1 par. 2; 3; 4 KraftNAV).

	Obligation to inform	**General information:**
		The grid operator shall provide the following information to the plant operator:
		• After receipt of the connection request: a precise timetable including the procedural steps for processing connection requests and a list describing all information required by the grid operator to determine the grid connection point or plan the expansion of the grid (§ 5 par. 5 EEG).
		• After the grid operator's receipt of the required information:
		  ○ a timetable for establishing grid connection,
		  ○ all information the applicant needs to test the connection point and, upon request, the grid system data required to test grid compatibility,
		  ○ a comprehensible and detailed estimate of the costs the plant operator will incur for the establishment of grid connection (§ 5 par. 6 EEG).
		
		A plant operator shall submit to the grid operator all information required to determine the grid connection point or to plan the expansion of the grid (§ 5 par. 5 EEG).
		
		High-voltage grids:
		• Prior to the connection procedure, the grid operator is obliged to publish the following information on his website (§ 3 par. 1 KraftNAV):
		  ○ information required to assess the application for connection and to estimate the available grid capacity;
		  ○ standardised requirements for the conclusion of a connection agreement;
		  ○ a diagram of the grid network and a load diagram for the entire network;
		• After receiving a plant operator's connection request, the grid operator is obliged to inform the plant operator about the required tests and the expected costs (§ 3 par. 2 KraftNAV).
		• During the tests, the grid operator is obliged to provide, upon request, the plant

		operator with the grid system data necessary to independently assess the future grid load (§ 5 par. 1 KraftNAV). • After the tests have been carried out, the grid operator is obliged to inform the plant operator about the test procedure and the test results (§ 3 par. 3 KraftNAV).
Priority to renewable energy **(qualitative criteria)**	(x) Priority to renewable energy ( ) Non-discrimination	Plants for the generation of electricity from renewable sources shall be connected to the grid as a priority, i.e. prior to plants that generate electricity from traditional sources ("principle of priority", § 5 par. 1 EEG).
Capacity limits **(quantitative criteria)**	The grid operator is obliged to connect plants even where the purchase of electricity is only possible by optimising, boosting or expanding the grid (§ 5 par. 4 EEG). However, this obligation does not apply when optimising, boosting or expanding the grid is economically unreasonable (§ 9 par. 3 EEG). Whether the expansion of the grid is economically reasonable in a given case will be determined by weighing the plant operator's interests against the grid operator's interests.	
Distribution of costs		
	State	
	Consumers	Since 01.01.2013 consumers have to bear part of the costs incurred by delayed grid access for offshore wind farms caused by transmission grid operators via electricity prices. According to § 17 f par. 5 EnWG, the cost equalisation scheme foresees the following surcharges for final consumers: • Consumption ≤ 1,000,000 kWh per delivery point: 0.250 ct/kWh • Consumption > 1,000,000 kWh per delivery point: additional 0.050 ct/kWh • Consumption > 1,000,000 kWh per delivery point: 0.025 ct/kWh if the annual electricity bill of a company exceeds 4% of the profit generated during the preceding calendar year.
	Grid operator	If the grid operator assigns to a plant a grid connection point other than the most closely located or technically and economically most suitable one, he shall bear the resulting incremental costs (§ 13 par. 2 EEG).

		Since 01.01.2013, transmission grid operators can be held liable for the cost incurred from delayed grid access for offshore wind plants caused by gross negligence (§ 17 f par. 2 EnWG). The transmission grid operator has to make up for a certain share of overall costs incurred: • 20 % for incurred costs ≤ € 200 mln per calendar year • 15 % for incurred costs between € 200 and € 400 mln per calendar year • 10 % for incurred costs between € 400 and € 600 mln per calendar year • 5 % for incurred costs between € 600 and € 1,000 mln per calendar year In case of least negligence, the maximum damage compensation is max. € 17.5 mln.
	Plant operator	The plant operator bears the costs of connecting the plant to the most closely located or technically and economically most suitable grid connection point as well as the costs of the measuring devices necessary to record the electricity transmitted and received (§ 13 par. 1 EEG).
	European Union	
	Distribution mechanism	

Use of the grid

Abbreviated form of legal sources	• EEG • EnWG	
Contact Authority	• **Federal Network Agency, BMU**	
Overview	Plant operators are statutorily entitled against the grid operator to the purchase and transmission of all electricity from renewable sources offered (§ 8 par. 1 EEG). The grid operator shall not make the conclusion of a contract a condition for fulfilling his obligation to purchase and transmit electricity (§ 4 par. 1 EEG). The claim for purchase and transmission arises when the plant is connected to the grid. Upon request, a court may decide whether a given plant operator is entitled to connection to the grid before his plant is completed. Such a decision may be necessary to secure bank funding for the construction of the renewable energy plant. For this reason, the grid operators provide guarantees that they will purchase the electricity offered.	
Procedure	**Process flow**	• Grid connection • The claim for purchase and transmission arises when the plant is connected to the grid. • The grid operator then purchases and transmits the electricity.
	Deadlines	In general, the priority purchase obligation is unconditional and has to be fulfilled without undue delay (§ 8 par. 1 EEG).
	Obligation to inform	
Priority to renewable energy **(qualitative criteria)**	(x) Priority to renewable energy ( ) Non-discrimination	When purchasing and transmitting electricity, the grid operator shall give electricity generated from renewable sources priority over electricity from energy sources other than renewable ones ("principle of priority", § 8 par. 1 EEG). Electricity generated by CHP

		shall have the same priority (§ 8 par. 1 sentence 2 EEG).
Curtailment	The grid operator may deny the purchase and transmission of electricity generated from renewable energy sources in the following cases: • **Feed-in management.** Grid operators shall be entitled to take technical control over renewable energy plants that are equipped with a remote control device to avoid grid capacity shortage in the respective grid area including the upstream grid. The procedure is the following: ○ The grid operator shall make sure that priority is given to electricity generated from renewable sources or by CHP unless other installations for the generation of electricity must remain connected to the grid in order to guarantee the safety and reliability of the electricity supply system. Moreover, solar energy plants with a capacity of up to 100 kW shall be curtailed only after the other installations have been curtailed (§ 11 par. 1 sentence 2 EEG). He shall also ensure that he has called up the data on the current feed-in situation in the relevant region of the grid (§ 11 par. 1 EEG). Furthermore, grid operators shall make sure that the largest possible quantity of electricity from renewable sources and by CHP is purchased (§ 11 par. 1 EEG). ○ Prior to taking control over a plant whose capacity exceeds 100 kW, the grid operator shall notify the operator no later than the day before, but otherwise without delay, of the expected date, the extent and the duration of the assumption of technical control, provided that it is predictable that the measure will be taken (§ 11 par. 2 EEG). ○ After the control measures, the grid operator shall inform the plant operator about the actual dates, the respective extent, the duration and the reasons for the assumption of technical control and, upon request, provide evidence that the measure was necessary (§ 11 par. 3 sentence 1 EEG). The grid operator may inform the operators of solar energy plants with a capacity of no more than 100 kW only once a year about all control measures as long as the total duration of these measures did not exceed 15 hours per plant (§ 11 par. 3 sentence 3 EEG). Plant operators that were not able to feed in electricity to the extent agreed upon are entitled to compensation from the grid operator (§ 12 par. 1 EEG). They may demand 95% of the lost tariffs and revenues less the expenses saved (e.g. fuel costs) (§ 12 par. 1 sentence 1 EEG). If, in one year, a plant operator's lost income exceeds 1% of his income for that year, he shall receive compensation for 100% of his lost income from that date. In the event that the grid operator violates his obligations regarding feed-in management, plant operators may demand compensation for the damage incurred (§ 12 par. 3 EEG).	

	• **Agreement.** The obligation to purchase and transmit renewable energy as a priority may be limited by a voluntary contractual agreement. Such an agreement may only be concluded if a plant can thus be better integrated into the grid network (§ 8 par. 3 EEG). This would, for example, apply if the plant operator and the grid operator agreed to reduce the plant operator's electricity exports on a few days per year and could thus avoid a grid expansion. • **Grid safety.** After all, the principle of priority shall not apply if the safety and functionality of the grid can no longer be guaranteed, e.g. if the grid is on the brink of collapse (§§ 13 par. 2, par. 2a, 14 par. 1 EnWG).	
Distribution of costs		
	State	
	Consumers	
	Grid operator	The costs arising from the purchase and transmission of electricity generated from renewable energy sources are borne by the grid operator.
	Plant operator	
	European Union	
	Distribution mechanism	The grid operator shall not claim grid use charges for the purchase and transmission of electricity from the operators of renewable energy plants. According to the EEG, the grid operator is the buyer of electricity, as he does not only import electricity from the operators of renewable energy plants but also pays for it. For this reason, the grid operator has sole responsibility for the effects of this electricity on his grid as soon as he agrees to import it.

Grid development

Abbreviated form of legal source	• EEG	
Contact Authority	• **Federal Network Agency, BMU**	
Overview	Upon request of those interested in feeding in electricity, the grid operator is obliged to immediately optimise, boost and expand his grid in accordance with the best available technology in order to guarantee the purchase, transmission and distribution of electricity from renewable sources (§ 9 par. 1 sentence 1 EEG). This obligation shall not only exist for grid operators whose grid the plants are immediately connected to, but also for upstream grids with a maximum voltage of 110 kV, provided that the expansion measures are necessary to guarantee the purchase, transmission and distribution of electricity (§ 9 par. 1 sentence 2 EEG). Plant operators are entitled to the expansion of the grid only if it is economically reasonable (§ 9 par. 3 EEG). Whether the expansion of the grid is economically reasonable in a given case will be determined by weighing the plant operator's interests against the grid operator's interests. The grid operator shall not make the conclusion of a contract a condition for the fulfilment of his obligation to expand the grid (§ 4 par. 1 EEG).	
Procedure	**Procedure**	There is no formal procedure for expanding the grid in order to connect plants.
	Enforcement of claims	**Claim for expansion:** A given plant operator may take legal action against the grid operator to claim the expansion of the grid if the connection of a plant or the export of electricity would otherwise be at risk. **Damages:** If the grid operator does not boost and expand his grid even though he is obliged to do so, those interested in feeding in electricity may demand compensation for the damage incurred. The grid operator is not liable to pay compensation if he can prove that the violation of his obligation was neither deliberate nor negligent (§ 10 par. 1 EEG).
	Deadlines	The grid operator has to fulfil his obligation to expand the grid immediately, i.e. without undue delay. He may require additional time for licensing procedures. In certain cases, time-consuming

		administrative procedures may be necessary (e.g. for ground-mounted plants). The late delivery of parts required for the grid expansion may also cause considerable delay.
	Obligation to inform	The grid operator is obliged to inform the plant operators whether and to what extent he met his obligation to optimise, boost and expand the grid. However, he only has to do so if there is evidence to substantiate the assumption that he did not fulfil his obligation and if this information is necessary to establish whether a plant operator is entitled to compensation against him (§ 10 par. 2 EEG).
Regulatory incentives for grid expansion and innovation		
Distribution of costs		
	State	
	Consumers	The costs for optimising, boosting and expanding the grid are borne by the consumers.
	Grid operator	
	Plant operator	
	European Union	
	Distribution mechanism	• **Grid operator – utility companies.** The costs for optimising, boosting and expanding the grid are first borne by the grid operator (§ 14 EEG). He may include the costs of grid expansion works in the grid use charges. Thus, he may pass on these costs to the utility companies. • **Utility companies – final consumers.** Utility companies can pass on the costs of the expansion of the grid, which they pay through the grid use charges, to the consumers by

		adjusting the electricity price accordingly.
Grid studies	**dena Grid Study:** • German version: http://www.dena.de/fileadmin/user_upload/Projekte/Erneuerbare/Dokumente/dena-Netzstudie_I.pdf • English Summary: http://www.dena.de/fileadmin/user_upload/Publikationen/Energiedienstleistungen/Dokumente/dena-grid_study_summary.pdf **dena Grid Study II:** • German version: http://www.dena.de/fileadmin/user_upload/Publikationen/Erneuerbare/Dokumente/Endbericht_dena-Netzstudie_II.PDF • English version: http://www.dena.de/fileadmin/user_upload/Projekte/Erneuerbare/Dokumente/dena_Grid_Study_II_-_final_report.pdf	

RES-H&C support schemes

Summary of support schemes

Overview	In Germany, the Guidelines for the support of RES-H set out the Market Incentive Programme (MAP), stipulating support schemes for the promotion of heat produced from renewable energy. BAFA is providing investment support and KfW offers low-interest loans (Renewable Energy Programme –Premium, Programme Geothermal Exploration Risk).
Summary of support schemes	**Subsidy:** BAFA investment support is given for heat produced in existing buildings. Installations in new buildings are only eligible if process heat is used. **Loan:** KfW provides low-interest loans with grant payback support for the development and expansion of heat installations/plants.
Technologies	Biogas, biomass, geothermal energy, solar thermal
Statutory provisions	Guidelines for the support of RES-H (Richtlinien zur Förderung von Maßnahmen zur Nutzung erneuerbarer Energien im Wärmemarkt - Guidelines for the support of measures to use renewable energies in the heating market) KfW Renewable Energy Programme Premium (Merkblatt KfW-Programm Erneuerbare Energien Premium – KfW Renewable Energy Programme Premium) KfW Programme Geothermal Exploration Risk (Merkblatt KfW Programm Fündigkeitsrisiko Tiefengeothermie - KfW Programme Geothermal Exploration Risk)

Basic information on legal sources

Name of legal source **(original language)**	Richtlinien zur Förderung von Maßnahmen zur Nutzung erneuerbarer Energien im Wärmemarkt Vom 20. Juli 2012	Merkblatt KfW-Programm Erneuerbare Energien Premium	Merkblatt KfW Programm Fündigkeitsrisiko Tiefengeothermie
Full name		Merkblatt KfW-Programm Erneuerbare Energien (Programmnummern 271, 281, 272, 282) Investitionskredite für Maßnahmen zur Nutzung Erneuerbarer Energien	Merkblatt KfW Programm Fündigkeitsrisiko Tiefengeothermie (Programmnummer 228)
Name (English)	Guidelines for the support of measures to use renewable energies in the heating market	KfW Renewable Energy Programme Premium	KfW Programme Geothermal Exploration Risk
Abbreviated form	Guidelines for the support of RES-H	KfW Renewable Energy Programme Premium	KfW Programme Geothermal Exploration Risk
Entry into force	15.08.2012	01.01.2013	01.02.2009
Last amended on			
Future amendments			
Purpose	These guidelines aim to contribute to the realisation of 14% share of renewable energy sources in the heating market.	The purpose it to lay out the KfW Renewable Energy Programme promoting the investment in renewable energy installations through low-interest loans.	Partial coverage of exploration risks during geothermal drilling.

Relevance for renewable energy	These guidelines aim to stimulate the usage of heat from renewable energy by stipulating support schemes.	The programme promotes the investment into renewable energy installations.	The programme promotes the investment into geothermal energy.
Link to full text of legal source (original language)	*http://www.bafa.de/bafa/de/energie/erneuerbare_energien/vorschriften/energie_ee_richtlinie_20_07_2012.pdf*	*http://www.kfw.de/kfw/de/I/II/Download_Center/Foerderprogramme/versteckter_Ordner_fuer_PDF/6000002410_M_271_281_272_282.pdf*	http://www.kfw.de/kfw/de/I/II/Download_Center/Foerderprogramme/versteckter_Ordner_fuer_PDF/140761_M_Fuendigkeitsrisiko_Tiefengeothermie_228_2009_02.pdf
Link to full text of legal source (English)			

Further information

Institution (name)	Website	Name of contact person (optional)	Telephone number (head office)	E-mail (optional)
Federal Office of Economics and Export Control (BAFA)	http://www.bafa.de		+49 619 690 80	solar@bafa.bund.de
KfW Förderbank	http://www.kfw.de		+49 697 431 0	info@kfw.de
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)	http://www.bmu.de		+49 301 830 50	service@bmu.bund.de

Support schemes

Subsidy (Investment Support)

Abbreviated form of legal source(s)	• Guidelines for the support of RES-H	
Contact Authority	• BAFA	
Summary	In the framework of the *Market Incentive Programme* (MAP) BAFA provides investment support for heat produced in existing buildings.	
Eligible technologies	**General information**	Investment support (BAFA) is given for heat produced in existing buildings. Installations in new buildings are only eligible if process heat is used. The investment support is divided into basic support, bonus support and innovation support. Installations need to be erected in Germany and have to be operating for at least 7 years (Guidelines for the support of RES-H Art. 6.4). A combination with other support schemes is possible if not otherwise stated (Guidelines for the support of RES-H Art. 7.1).
	Aerothermal	
	Hydrothermal	
	Biogas	
	Biomass	The following technologies are supported: • Plants with automatic feeding for the burning of solid biomass for thermal usage ≤ 100 kW nominal heat output (Guidelines for the support of RES-H Art. 3.1 c) • Low emission logwood boilers ≤ 100 kW nominal heat output (*Scheitholzvergaserkessel*) (Guidelines for the support of RES-

		H Art. 3.1 d) • Secondary measures for emission reduction and efficiency of plants with ≤ 100 kW nominal heat output (Guidelines for the support of RES-H Art. 3.1 f) More detailed technical requirements and standards are laid down in Art. 9 (Guidelines for the support of RES-H).
	Geothermal energy	• Efficient heat pumps ≤ 100 kW nominal heat output (Guidelines for the support of RES-H Art. 3.1 e) More detailed technical requirements and standards are laid down in Art. 10 Guidelines for the support of RES-H)
	Solar Thermal	The following technologies are supported: • solar collectors with a gross collector area ≤ 40 m^2 except for installations only providing hot water (Guidelines for the support of RES-H Art. 3.1 a) • solar collectors with a gross collector area > 40 m^2 on single or two family house with high storage capacity (Guidelines for the support of RES-H Art. 3.1 b) • solar collectors with a gross collector area between 20 m^2 – 100 m^2 (Guidelines for the support of RES-H Art. 3.1 f) More detailed technical requirements and standards are laid down in Art. 8 (Guidelines for the support of RES-H).
Amount	**Solar thermal:** • Basic support (Guidelines for the support of RES-H Art. 12.1.1): ○ solar collectors with a gross collector area ≤ 40 m^2 = € 90 per m^2 (minimum support € 1,500)	

- Expansion of existing solar collectors = € 45 per m^2
- Bonus support (Guidelines for the support of RES-H Art. 12.1.2):
  - If solar collector installation is combined with the exchange of boilers or collector is connected to heating grid = € 500 depending on installation combination (cannot be cumulated)
  - Efficiency bonus: 0.5 times the basic support
  - Bonus for efficient PV collector pump: € 50 per pump
- Innovation support (Guidelines for the support of RES-H Art. 12.1.3)
  - solar collector installation with a gross collector area between 20 m^2 – 100 m^2: € 180 per m^2 (for installations producing only hot water the support is € 90 per m^2).
  - solar collector installation for solar process heat supply: 50% of net investment costs
- Taking all options into account, the support that can be granted ranges for:
  - solar collectors with a gross collector area ≤ 40 m^2 between € 1,500 - € 3,600
  - solar collector installation with a gross collector area between 20 m^2 – 100 m^2 between € 3,600 - € 18,000

The support cannot be cumulated with KfW support for big PV collectors stipulated under Guidelines for the support of RES-H Art. 14.1.3.

Biomass:

- Basic support (Guidelines for the support of RES-H Art. 12.2.1):
  - Plants with a capacity between 5kW – 100kW using wood pallets: € 36 per kW installed capacity at least:
    - € 1,400 pellet boilers with water bag
    - € 2,400 pellet boiler
    - € 2,900 pellet boiler with new buffer storage volume of at least 30 l / kW
  - Plants with a capacity between 5kW – 100kW (with buffer storage volume of at least 30 l / kW) using wood chips: € 1,400 per plant
  - Low emission logwood boilers with a capacity between 5kW – 100kW: € 1,400 per installation
- Bonus support (Guidelines for the support of RES-H Art. 12.2.2):
  - Efficiency bonus: 0.5 times the basic support but only for Installations with a capacity between 5kW –

100kW using wood pallets. In case of simultaneous installation of solar collectors the bonus support of € 500 is granted (Guidelines for the support of RES-H Art. 12.1.2.1 a).

- Innovation support (Guidelines for the support of RES-H Art. 12.2.3)
  - Installation or retrofitting for the purpose of emission reduction and efficiency for installations firing solid biomass with < 100 kW nominal heat output: € 750 and for newly erected installations € 850 (the application has to include information on the installation as well as the offer for the secondary component (Guidelines for the support of RES-H Art. 12.2.3 a-b))
- Taking all options into account, the support that can be granted ranges for:
  - pellet boilers with water bag between € 1,400 – € 3,600
  - pellet boiler between € 2,400 – € 3,600
  - pellet boiler with new buffer storage (30 l / kW) between € 2,900 - € 3,600
-

Heat pumps:

- Basic support (Guidelines for the support of RES-H Art. 12.3.1):
  - € 2,800 per installation, and € 3,300 for installations with newly erected installation with buffer storage volume of at least 30 l / kW
  - Moreover, additional support is granted to installations if rated thermal input is
    - 10 -20 kW = € 120 per kW rated thermal input
    - 20 – 100 kW = € 100 per kW rated thermal input (at least € 1,200)
  - basic support for electricity operated soil/air/waterheat pumps is € 1,300 per plant (for installations with 20 – 100 kW rated thermal input, support is € 1,600 per plant). For plants with buffer storage volume of at least 30 l / kW, support increases by € 500 per plant.

- Bonus support (Guidelines for the support of RES-H Art. 12.3.2):
  - Efficiency bonus of 50% of basic support is granted, if plant was erected in line with efficiency regulations for building envelopes (Guidelines for the support of RES-H Art. 12.3.2 a))
  - Bonus of € 500 is granted only in connection with the installation of solar collectors (Guidelines for the

	support of RES-H Art. 12.1.2.1 a)) • Taking all options into account, the support that can be granted ranges for: ○ Soil/water and water/water heat pump between € 2,800 - € 11,800 ○ Soil/water and water/water heat pump with buffer storage between € 3,300 - € 12,300 ○ Air/water and water/water heat pump between € 1,300 - € 1,600 ○ Air/water and water/water heat pump with buffer storage between € 1,800 - € 2,100 •	
Addressees	Private persons, freelancer, small and medium size companies, municipalities/local authorities, non-profit organisations, companies of which the public authority has a share of > 25 % with a turnover less than SME threshold (Guidelines for the support of RES-H Art. 4.1).	
Procedure	**Process flow**	a) Basic and bonus support (Guidelines for the support of RES-H Art. 13.1 a)) • Applications shall be sent at the latest 6 months after the plant started operating (the date of receipt at BAFA matters) • Applications shall include the proof of operation of the installation or plant (day/month/year), the detailed and complete invoices, the proof of installed collector area or installed rated thermal input and other specific proofs depending on the technology (specified in the guidelines cf. Section on supported technologies) • Application forms can be retrieved from BAFA and need to be signed • The support is paid after the examination of the documents and can be postponed to the next budgetary year

		b) Innovation support (Guidelines for the support of RES-H Art. 13.1 b)) • Applications need be filed before starting the project. The project begin is defined as the signing of a contract on the delivery of the plant or measure (Guidelines for the support of RES-H Art. 5.1.1 & 5.1.3). As a proof of operation, documents required for basic support need to be sent to BAFA at the latest before the expiration of official note of approval.
	Competent authority	BAFA, BMU
Flexibility mechanism		
Distribution of costs	**State**	The state via BAFA bears the costs.
	Consumers	
	Plant operator	
	Grid operator	
	European Union	
	Distribution mechanism	

Loan (KfW Low-interest loan)

Abbreviated form of legal source(s)	Guidelines for the support of RES-H	
Contact Authority	KfW	
Summary	In the framework of the *Market Incentive Programme* (MAP), KfW provides low-interest loans and grant repayment support (*Tilgungszuschuss*).	
Eligible technologies	**General information**	In the framework of the KfW Programme Renewable Energy – Premium, KfW provides low-interest loans with grant payback support for the development and expansion of heat installations/plants. The installations need to be erected in Germany and have to be operating for at least 7 years (Guidelines for the support of RES-H Art. 6.4). A combination with other support schemes is possible, if not otherwise stated (Guidelines for the support of RES-H Art. 7.6).
	Aerothermal	
	Hydrothermal	
	Biogas	• Plants for the purification of biogas to natural gas quality and biogas pipelines for non-purified biogas (Guidelines for the support of RES-H Art. 3.2 f)
	Biomass	The following technologies are supported: • Plants with automatic feeding for the burning of solid

		biomass for thermal use >100 kW nominal heat output including hot water storage (Guidelines for the support of RES-H Art. 3.2 a) • CHP using solid biomass including buffer storage (Guidelines for the support of RES-H Art. 3.2 b) More detailed technical requirements and standards are laid down in Art. 9 (Guidelines for the support of RES-H).
	Geothermal energy	The following technologies are supported: • Plants with a drilling depth > 400 m (Guidelines for the support of RES-H Art. 3.2 c) • Efficient heat pumps > 100 kW nominal heat output (Guidelines for the support of RES-H Art. 3.2 d)
	Solar Thermal	• solar collectors with a gross collector area > 40 m^2 (Guidelines for the support of RES-H Art. 3.2 f) More detailed technical requirements and standards are laid down in Art. 8 (Guidelines for the support of RES-H).
Amount	Solar thermal (PV ≥ 40 m²): • Grant repayment amounts up to 30% eligible net investment costs. If the plant produces heat that is injected into a heating grid with at least 4 customers, the grant repayment amounts up to 40%. If produced heat is used for process heat or solar cooling, the amount is up to 50% (Guidelines for the support of RES-H Art. 14.1.3) Biomass:	

	• Plants with automatic feeding for the burning of solid biomass for thermal usage and CHP with >100 kW nominal heat output (Guidelines for the support of RES-H Art. 14.1.1)
	  ○ Grant repayment (*Tilgungszuschuss*) of € 20 per kW installed nominal heat output, max. € 50,000 per plant.
	  ○ Innovation support can be granted in case of additional hot water storage capacity (€ 30 per kW installed nominal heat output if minimum memory volume is 30 l/kW) or extra low emission (€ 40 per kW installed nominal heat output if emission is max. 15mg/m³). Both support schemes can be cumulated; however, the maximum support is € 100,000 per plant. CHP with a maximum nominal heat output ≤ 2000 kW receive € 40 per kW if electrical efficiency is > 10% and overall efficiency is > 70%
	
	Geothermal:
	
	• Exploration and usage of geothermal energy (for thermal use only) are supported in form of 4 independent support schemes (Guidelines for the support of RES-H Art. 14.1.2)
	  ○ Geothermal plants
	  ▪ Grant repayment: € 200 per kW per installed nominal heat output, maximum € 2,000,000 per plant
	  ○ Deep hole drilling
	  ▪ Grant repayment: € 375 per meter vertical depth (400-1000m drilling depth), € 500 per meter vertical depth (1000 – 2500 m drilling depth), € 750 per meter vertical depth (>2500 drilling depth). Maximum support is € 2,500,000 per drilling and € 5,000,000 per project
	  ○ Additional expenses due to drilling ≥ 400 m
	  ▪ Grant repayment is based on a proof of additional expenses and can cover up to 50 % of additional expenses and 50% of originally planned costs. The maximum support is € 1,250,000.
	  ○ Risk insurance
	  ▪ KfW can cover a share of discovery risk. The amount is based on profound evaluations and risk assessments. A clear amount of support is not defined in the law.
	  ○ The support schemes can be cumulated up to a maximum of 80% of eligible costs. The remaining 20 %

	may not be covered by public money. Heat pumps: • Grant repayment € 80 per kW heat output, at least € 10,000 and max. € 50,000 (Guidelines for the support of RES-H Art. 14.1.4) Innovation support • Heat storage >10 m³ water volume (Guidelines for the support of RES-H Art. 14.1.6 (a)): grant repayment amounts to € 250 per m³ storage volume. The support is limited to 30% of eligible net investment costs and is max. € 1,000,000. • Biogas pipelines for biogas that has not been purified to biomethane with a length of 300m including gas compressors etc. are supported for up to 30% of eligible net investment costs.	
Addressees	Private persons, freelancer, small and medium size companies, municipalities/local authorities, non-profit organisations, companies of which the public authority has a share of > 25 % with a turnover less than SME threshold (Guidelines for the support of RES-H Art. 4.1).	
Procedure	**Process flow**	• **<u>Repayment:</u>** Precondition for the complete grant repayment support is the proof of the proper-use of subsidy after investment is done and has to be submitted to a local bank which is transferring the file to KfW (Guidelines for the support of RES-H Art. 15.1). • **<u>Additional approval:</u>** For grant repayment support higher than € 250,000, an approval by BMU (Ministry of the Environment) is required prior to granting the support (Guidelines for the support of RES-H Art. 15.3). • **Application:** The application has to be filed before the

		project is started. The project begin is defined as the signing of a contract on the delivery of the installation or measure (Guidelines for the support of RES-H Art. 5.2).
	Competent authority	KfW, BMU
Flexibility mechanism		
Distribution of costs	**State**	KfW Bankengruppe bears the costs of offering low-interest loans and grant repayment support.
	Consumers	
	Plant operator	
	Grid operator	
	European Union	
	Distribution mechanism	

Loan (KfW Programme Geothermal Exploration Risk**)**

Abbreviated form of legal source(s)	KfW Programme Geothermal Exploration Risk	
Contact Authority	KfW	
Summary	The KfW Programme Geothermal Exploration Risk covers investment costs connected to drilling activities including the required stimulation measures prescribed by KfW as part of project study. The loan amounts to max. 80% of eligible investment costs with different interest rates accounting for the different exploration risks. Only geothermal projects with at least two deep drillings are eligible for support.	
Eligible technologies	**General information**	Under the KfW programme only exploration risks of geothermal drilling are eligible.
	Aerothermal	
	Hydrothermal	
	Biogas	
	Biomass	
	Geothermal energy	x
	Solar Thermal	

Amount	The co-financing amounts to max. 80% of eligible investment costs including the planned investment costs for stimulation measures. In general, maximum support per drilling is €16 mln. Two different models for financial support exist: • 100% liability free loan covering up to 80% of eligible investment costs if non-exploration, as defined in the terms of contract of the loan, is proven. • Guarantee for partial debt release on executed stimulation measures in exchange for higher interest rate (risk) • The duration of the loan is fixed to 10 years including a 2 year repayment-free start-up period. Moreover, a commitment fee of 0.25% per month is charged. The interest rate is set on the date of approval accounting for exploration risk.	
Addressees	Small and medium size private enterprises in line with EU Commission definition, big companies not qualifying as small and medium size enterprises, companies under private law and municipalities are eligible if the investment is undertaken in Germany. Moreover, these eligible entities need to produce heat, electricity or both for a period of at least 7 years.	
Procedure	**Process flow**	Applications for projects are to be filed with a credit institution of borrower's choice before project start. Relevant application forms can be downloaded from http://www.kfw.de/kfw/de/Inlandsfoerderung/Programmuebersicht/Fuendigkeitsrisiko_Tiefengeothermie/Antrag_und_Dokumente.jsp. • When filing an application, the applicant has to pay an examination fee of € 65,000 per drilling project in order to cover the costs of evaluating the application. In case an application is denied, the applicant can file an edited application form within 6 months without paying the fee a second time. In case an application is approved, an approval fee of € 45,000 (gross) has to be paid accounting for the examination and monitoring costs. **Additional approval:** For grant repayment support higher than € 250,000 an approval by BMU (Ministry of the Environment) is required prior to granting the support (Guidelines for the support of RES-H Art. 15.3). • **Application:** The application has to be filed before the project is started. The project begin is defined as the signing of a contract on the delivery of the installation or measure (Guidelines for the support of RES-H Art. 5.2).
	Competent authority	KfW loans are administered and disbursed by regular banks.

Flexibility mechanism		
Distribution of costs	**State**	KfW Bankengruppe bears the costs of offering low-interest loans and grant repayment support.
	Consumers	
	Plant operator	
	Grid operator	
	European Union	
	Distribution mechanism	

RES-T support schemes

Summary of support schemes

Overview	The main support scheme for renewable energy sources used in transport (fuel for road transport) is a quota system. This scheme obliges companies importing or producing petrol, gas or diesel fuels to ensure that biofuels make up a defined percentage of the company's total annual sale of fuel. Furthermore, biofuels are supported through fiscal regulation.
Summary of support schemes	**Tax regulation mechanism.** The Energy Tax Act on mineral oil products obliges companies producing, processing, holding, receiving or dispatching energy products to pay a defined amount of tax. The tax relief for biofuels varies depending on the type of biofuel. The tax relief is only granted if the produced amount of biofuel is pure and not used to fulfil the biofuels quota. **Biofuels quota.** The main means of support for renewable energy sources used in transport is a quota obligation. The mechanism obliges companies importing or producing petrol, gas or diesel fuels to ensure that biofuels make up a defined percentage of the company's total annual sale of fuel as set out in the Biofuel Quota Act. Obliged fuel suppliers may assign this obligation to other companies. From 2015, a greenhouse gas reduction quota will replace the biofuels quota.
Technologies	The tax regulation mechanism and the biofuels quota apply to biofuels only.
Statutory provisions	• EnergieStG • BioKraftQuG • Amendment Act • BiomasseV • Biokraft-NachV • BimSchG

Basic information on legal sources

Name of legal source **(original language)**	Energiesteuergesetz	Biokraftstoffquotengesetz	Gesetz zur Änderung der Förderung von Biokraftstoffen
Full name		Gesetz zur Einführung einer Biokraftstoffquote durch Änderung des Bundes-Immissionsschutzgesetzes und zur Änderung energie- und stromsteuerrechtlicher Vorschriften	
Name (English)	Energy Tax Act	Biofuel Quota Act	Amendment Act to the Promotion of Biofuels
Abbreviated form	EnergieStG	BioKraftQuG	Amendment Act
Entry into force	20.07.2006	01.01.2007	15.07.2009
Last amended on	5.12.2012		
Future amendments			
Purpose	The Energy Tax Act regulates the amount of taxes on energy consumption (Verbrauchersteuer) on German territory excluding the area of Büsingen and Helgoland (§ 1 EnergieStG).	The Biofuel Quota Act sets a quota for biofuels to be used in the transport sector.	This Act amends parts of the Biofuel Quota Act and the Immission Control. Act.

Relevance for renewable energy	The Energy Tax Act includes also tax incentives for the production of biofuels.	The Biofuel Quota Act determines a minimum blending of biofuels with gasoline engines and diesel fuel.	The act amends the quota set on the minimum blending of biofuels and stipulates a climate protection quota for the reduction of greenhouse gas in the transport sector to be put in place in 2015.
Link to full text of legal source (original language)	*http://www.gesetze-im-internet.de/energiestg/index.html*	*http://www.bgbl.de/Xaver/start.xav?startbk=Bundesanzeiger_BGBl&bk=Bundesanzeiger_BGBl&start=//*[@attr_id='bgbl106s3180.pdf']*	*http://www.buzer.de/gesetz/8864/l.htm*
Link to full text of legal source (English)			

Name of legal source **(original language)**	Biomasseverordnung	Biokraftstoff-Nachhaltigkeitsverordnung	Bundes-Immissionsschutzgesetz
Full name	Verordnung über die Erzeugung von Strom aus Biomasse	Verordnung über Anforderungen an eine nachhaltige Herstellung von Biokraftstoffen	Gesetz zur Schutz vor schädlichen Umwelteinwirkungen durch Luftverunreinigungen, Geräusche, Erschütterungen und ähnliche Vorgänge
Name (English)	Biomass Regulation	Biofuel-Sustainability Regulation	Immission Control Act
Abbreviated form	BiomasseV	Biokraft-NachV	BImSchG
Entry into force	21.06.2001	30.09.2009	15.03.1974
Last amended on	24.02.2012	26.11.2012	27.06.2012
Future amendments			
Purpose	The Biomass Regulation determines which substances are considered as biomass and stipulates the respective energetic reference values.	The Biofuel-Sustainability Regulation aims to stimulate the fulfilment of the Immission Control Act, setting out a minimum share of biofuels in the transport sector.	The purpose of the Immission Control Act is to protect humans, animals and plants, soil, water and atmosphere, cultural and other goods from environmental hazards and prevent further environmental hazards (§ 1 BImSchG)
Relevance for renewable energy	The Biomass Regulation defines which substances are considered as biomass	The Biofuel-Sustainability Regulation stipulates the sustainability requirements	The Immission Control Act determines a minimum share of biofuels in transport

	and thus, also applies to substances used for the production of biofuel.	for biofuel.	sector, requirements for biofuels and employs energetic reference values.
Link to full text of legal source (original language)	*http://www.gesetze-im-internet.de/biomassev/*	*http://www.gesetze-im-internet.de/biokraft-nachv/*	http://www.gesetze-im-internet.de/bimschg/
Link to full text of legal source (English)	*http://www.erneuerbare-energien.de/files/english/pdf/application/pdf/biomasse_verordnung_en_bf.pdf* This translation does not provide information on the latest amendment of the ordinance.		

Further information

Institution (name)	Website	Name of contact person (optional)	Telephone number (head office)	E-mail (optional)
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)	http://www.bmu.de/english/aktuell/4152.php		+49 301 830 50	service@bmu.bund.de
German Energy Agency (dena)	http://www.dena.de		+49 307 261 656 00	
Biofuel Quota Authority	http://www.zoll.de/DE/Home/home_node.html		+49 355 876 90	poststelle@hzacb.bfinv.de
Federal Ministry of Finance **(Referat I B3, III B 6)**	http://www.bundesfinanzministerium.de/DE/BMF Startseite/node.html? nnn=true		+49 301 868 20	Poststelle@bmf.bund.de

Support schemes

Tax regulation mechanism (Reduced tax rate for biofuels)

Abbreviated form of legal source(s)	• EnergieStG • BImSchG	
Contact Authority	• Ministry of Finance; Biofuel Quota Authority	
Summary	The Energy Tax Act on mineral oil products obliges companies producing, processing, holding, receiving or dispatching energy products to pay a defined amount of tax (§ 8 EnergieStG). The tax relief for biofuels varies depending on the type of biofuel. The tax deduction is only granted if the produced amount of biofuel is pure and not used to fulfil the biofuel quota (§50 EnergieStG in connection with §37a (1); (3) and (3a) BImSchG). Biofuel produced in line with §50 (4) 1.-2. EnergieStG is exempted from this rule.	
Eligible technologies	**General information**	The tax relief for biofuels varies depending on the type of biofuel: • Conventional biofuels (biodiesel, vegetable oil fuel) are eligible for proportional tax redemption until end of 2012 (§ 50 (3) EnergieStG). • Second generation biofuels, biogas, bioethanol fuel (E85) are tax deductible until 2015 (§ 50 (2) EnergieStG). Tax relief is only granted if the produced biofuel does not fall under the biofuel quota obligation set out in §37a (1); (3) and (3a) BImSchG (§50 EnergieStG). Biofuels produced in line with §50 (4) 1.-2. EnergieStG are exempted from this rule, namely : • Synthetic hydrocarbons or synthetic hydrocarbon mixtures

		which are obtained by thermochemical conversion of biomass. • Alcohols, that have been produced through biotechnological processes to reveal cellulose The tax relief requests have to be submitted to the competent authority.
	Biofuels	Eligible
	Electricity	
	Hydrogen	
Amount	The amount of taxes for the year 2012 per 1000 l: - Gas or dieseloil: € 470.40 (§ 2 (1) 4.b) EnergieStG) - Petrol/Ethanol: € 654.50 (§ 2 (1) 1.b) EnergieStG) - Biomethan: € 13.90/MWh (gaseous) (§ 2 (2) 1.) EnergieStG) Amount of tax relief for 2012: According to the Biofuel Quota Authority, the tax relief is calculated as the difference between the amount of tax set out in §2 EnergieStG and the eligible relief (§50 (3) EnergieStG). Tax relief is granted only in case of pure biofuels containing the following substances: - fatty acid methyl ester (1000 l): € 21.40 (§50 (3) 1. EnergieStG) - vegetable oil (1000 l): € 21.40 (§50 (3) 2. EnergieStG)	

Addressees	Companies producing, processing, holding, receiving or dispatching energy products are obliged to pay the tax (§ 2 and § 8 EnergieStG) and can voluntarily apply for tax relief as set out in (§ 50 (3) EnergieStG).	
Procedure	**Process flow**	The tax relief request has to be submitted to the competent authority. Monthly, companies must inform the amount of energy products that have to be taxed and can claim tax relief (§ 8 Abs. 3 EnergieStG)
	Competent authority	Ministry of Finance; Biofuel Quota Authority at the main customs office in Frankfurt/Oder and its subordinate offices.
Flexibility Mechanism		
Distribution of costs	**State**	The costs of tax relief are borne by the state.
	Consumers	
	Plant operator	
	Grid operator	
	European Union	
	Distribution mechanism	

Biofuel quota

Abbreviated form of legal source(s)	• BioKraftQuG • Amendment Act • Biokraft-NachV • BImSchG • EnergieStG • BiomasseV	
Contact Authority	• Biofuel Quota Authority	
Summary	The main means of support for renewable energy sources used in transport is a quota obligation. The mechanism obliges companies importing or producing petrol, gas or diesel fuels to ensure that biofuels make up a defined percentage of the company's total annual sale of fuel as set out in the Biofuel Quota Act. Obliged fuel suppliers may assign this obligation to other companies (§ 37a (4) BImSchG). From 2015, a greenhouse gas reduction quota will replace the biofuel quota (§ 37a (3a) BImSchG).	
Eligible technologies	**General information**	Subject to the obligation are only biofuels.
	Biofuels	Biofuels exclusively produced from biomass (defined in §2 BiomasseV), energy products that pro rata have been produced from biomass, biodiesel, bioethanol, biomethane (§ 37b BImSchG).
	Electricity	
	Hydrogen	
Amount	**Amount of quota and period of application**	The providers of petrol or diesel fuels have to ensure that biofuels make up at least a certain share of the company's total annual sale of

		fuel. The minimum share of biofuel can be fulfilled by: • blending biofuel with diesel fuel (share of 4,4% until 31.12.2014) or gasoline/*Ottokraftstoff* (share of 2,8% until 2014) (§ 37a (3) BImSchG) • circulating pure biofuel (§ 37a (4) BImSchG) • adding biomethane to natural gas fuel ((§ 37a (4) BImSchG) The minimum share of biofuels as part of the total volume of diesel and gasoline (overall quota) shall be 6,25% until 2014 (§ 37a (3) BImSchG). From 2015, a greenhouse gas reduction quota is introduced. Accordingly, the allowed share of greenhouse gases discharged from diesel and gasoline is being reduced in form of a quota, meaning that the usage of biofuel is only indirectly stimulated (§ 37a (3a) BImSchG). By 2015, emissions have to be reduced by 3%, by 4,5% from 2017 on and by 7% from 2020 onwards. The obligation must be fulfilled by the end of each calendar year (§ 37 a BImSchG, § 8 EnergieStG).
	Adjustment of quotas	The Federal Ministry of Finance and subordinate Biofuel Quota Authority control the compliance with the quota obligation (§37d (1) BImSchG). The federal government may without the consent of the Bundesrat adjust the quota (§ 37d (2) 4. BImSchG).
	Fees and penalty charges	If a provider fails to fulfil the quota, the competent authority charges a penalty based on the amount of biofuel that has been missed (section 37c (2) sentence 1 BImSchG). The amount of the penalty varies, depending on whether the provider was supposed to replace

		diesel-fuel or petrol-fuel (section 37c (2) sentence 2 and 3 BImSchG). For the gasoline quota, the fine is € 43 per gigajoule, for diesel and the overall quota the fine is €19 per gigajoule.
Addressees	The quota obligation applies to companies which trade with petrol- or diesel fuels and have to be taxed according to the Energy Tax Law (§ 37a (1) sentence 1; (2) sentence 1; (3) sentence 1 BImSchG).	
Procedure	**Process flow**	• **Submission of data on traded fuel.** By 15 April of each year the obliged companies shall present to the responsible authority (regional biofuel Quota Authority) the amount of traded petrol- diesel- und biofuel of the previous year (section 37c (1) BImSchG). • **Estimation of amount of the traded fuel.** If a company fails to present data on traded fuels the responsible authority can estimate the amount (section 37c (3) BImSchG). • **Penalty charge.** If a company fails to fulfil the quota, the responsible authority charges a penalty (section 37c (2) BImSchG).
	Competent authority	Biofuel Quota Authority at the main customs office in Frankfurt/Oder and its subordinate offices.
Flexibility Mechanism		
Distribution of costs	**State**	
	Consumers	The costs are borne by the consumers.

	European Union	
	Others	
	Distribution mechanism	According to the Biofuel Quota Authority, it can be assumed that the obliged companies pass on the costs arising from the quota obligation to the consumers by adding a surcharge to their fuels.

Policies

Summary of policies

Overview	Germany provides policies for the promotion of renewable energy sources covering training, certification and research programmes, a self-commitment of public authorities, the support of district heating networks and the introduction of building obligations regarding the use of heat produced from renewable energy.
Summary of policies	**Training programmes for Installers:** Installers are trained to install renewable energy technologies in the framework of the craftsman training. **Certification Programmes for RES installations:** Plants have to comply with the technical requirements (certificates) depending on the particular technology in order to be connected to the grid. **Exemplary role of public authorities**: Public authorities shall take an exemplary role in the promotion of renewable energy. **RD&D Policies:** For the period 2011-2014, the 6th Energy Research Programme provides € 3.5 billion to projects and research institutes to enhance the share of renewable energy and their competitiveness. **RES-H building obligations:** Owners of new buildings and buildings under renovation are obliged in form of a quota to use a particular share of heat and cooling produced from renewable energy (§3 (1) EEWärmeG). Currently, no regulations exist for the mandatory use of renewable energy in existing buildings on the federal level. **Support of RES-H infrastructure:** Under the KWKG, the development and construction of heating networks is supported in form of compensation payments. The KfW Programme – Renewable Energy (Premium) gives funding for district heating networks supplied with heat from renewable energy.
Statutory provisions	• EEWärmeG (Erneuerbare-Energien- Wärmegesetz - Renewable Energies Heat Act) • HwO (Handwerksordnung - Crafts Code)

	• InstallateurHeizungsbauerMstrV (Installateur- und Heizungsbauer-Handwerk -Installer and Heating Fitter Craft) • SHKAnlMechAusbV (Verordnung über die Berufsausbildung zum Anlagenmechaniker für Sanitär-, Heizungs- und Klimatechnik - Regulation on vocational training for installation mechanics for sanitation, heating and air conditioning systems) • EnWG (Energiewirtschaftsgesetz - Energy Industry Act) • EEG (Erneuerbare-Energien-Gesetz - Renewable Energy Sources Act) • BImSchG (Bundes-Immissionsschutzgesetz - Immission Control Act) • KWKG (Kraft-Wärme-Kopplungsgesetz - Combined Heat and Power Act) • Guidelines for the support of RES-H (Richtlinie zur Förderung von Maßnahmen zur Nutzung erneuerbare Energien im Wärmemarkt - Directive to Promote Measures for the usage of renewable energy in the heat market)

Basic information on legal sources

Name of legal source **(original language)**	Erneuerbare-Energien-Wärmegesetz –EEWärmeG	Richtlinie zur Förderung von Maßnahmen zur Nutzung erneuerbare Energien im Wärmemarkt vom 27. Juli 2012	Handwerksordnung	Gesetz über die Elektrizitäts- und Gasversorgung (Energiewirtschaftsgesetz – EnWG)
Full name	Gesetz zur Förderung Erneuerbarer Energien im Wärmebereich (Erneuerbare-Energien- Wärmegesetz – EEWärmeG)	Richtlinie zur Förderung von Maßnahmen zur Nutzung erneuerbare Energien im Wärmemarkt vom 27. Juli 2012		
Name (English)	Act to Promote Renewable Energy for Heating Purposes (Renewable Energies Heat Act- EEWärmeG)	Directive to Promote Measures for the usage of renewable energy in the heat market of 27 July 2012	Crafts Code	Energy Industry Act (EnWG)
Abbreviated form	EEWärmeG	Guidelines for the support of RES-H	HwO	EnWG
Entry into force	01.01.2009	20.07.2012	17.09.1953 (redefined on 24.09.1998)	13.07.2005
Last amended on	22.12.2011		5.12.2012	21.2.2013
Future amendments				
Purpose	In the light of climate protection, conservation of fossil resources	The directive aims to stimulate the use of renewable energy in	This law defines the licensing of	Ensuring the safe, cost-.efficient and consumer-friendly supply of

	and reduction of energy import dependence, this act aims to stimulate sustainable energy supply and technology development to enhance the production of heat and cooling from renewable energy	the heat market through investment incentives for better marketing, cost reduction and economic efficiency improvements.	craftsmanship.	the population with electricity and gas (§ 1 EnWG).
Relevance for renewable energy	The act aims to enlarge the share of heat and cooling produced from renewable energy to 14% in 2020 by setting the regulatory framework (§1 (2) EEWärmeG). The act stipulates an exemplary role for public buildings (§1a EEWärmeG)	The directive sets out the investment support schemes for heat produced from renewable energy .	The Crafts Code certifies installers and ensures the quality of renewable energy installations.	This act stipulates supplementary provisions for the access of electricity from renewable sources to the grid.
Link to full text of legal source (original language)	*http://www.gesetze-im-internet.de/eew_rmeg/index.html*	*http://www.erneuerbare-energien.de/files/pdfs/allgemein/application/pdf/map_waerme_2012_bf.pdf*	*http://www.gesetze-im-internet.de/hwo/*	*http://www.gesetze-im-internet.de/bundesrecht/enwg_2005/gesamt.pdf*
Link to full text of legal source (English)				

Name of legal source **(original language)**	Verordnung über die Berufsausbildung zum Anlagenmechaniker für Sanitär-, Heizungs- und Klimatechnik	Installateur- und Heizungsbauer-Handwerk	Bundes-Immissionsschutzgesetz	Erneuerbare-Energien-Gesetz	Kraft-Wärme-Kopplungsgesetz
Full name		Verordnung über das Meisterprüfungsberufsbild und über die Prüfungsanforderungen in den Teilen I und II der Meisterprüfung im Installateur und Heizungsbauer-Handwerk	Gesetz zum Schutz vor schädlichen Umwelteinwirkungen durch Luftverunreinigungen, Geräusche, Erschütterungen und ähnliche Vorgänge	Gesetz für den Vorrang Erneuerbarer Energien	Gesetz für die Erhaltung, die Modernisierung und den Ausbau der Kraft-Wärme-Kopplung
Name (English)	Regulation on vocational training for installation mechanics for sanitation, heating and air conditioning systems	Installer and Heating Fitter Craft	Immission Control Act	Act on Granting Priority to Renewable Energy Sources (Renewable Energy Sources Act)	Combined Heat and Power Act
Abbreviated form	SHKAnlMechAusbV	InstallateurHeizungsbauerMstrV	BlmSchG	EEG	KWKG
Entry into force	24.06.2003	01.01.2003	15.03.1974	01.01.2009	19.03.2003
Last amended on	29.07.2003	17.11.2011	27.06.2012	01.01.2012	12.07.2012
Future amendments					

Purpose	SHKAnlMechAusbV regulates the vocational training for installation mechanics for sanitation, heating and air conditioning systems	InstallateurHeizungsbauerMstrV sets out the requirements for obtaining a master's degree.	The purpose of the Immission Control Act is to protect humans, animals and plants, soil, water and atmosphere, cultural and other goods from environmental hazards and prevent further environmental hazards (§ 1 BImSchG)	In order to protect the climate, the act aims to increase the proportion of electricity from renewable energy sources in total energy supply from at least 35% in 2020 to at least 80% by 2050 and to integrate these quantities of electricity in the electricity supply system (§ 1 EEG).	The purpose of the act is to raise the electricity production from CHP to 25% by supporting the modernisation and construction of CHP plants, the market introduction of fuel cells as well as the modernisation and expansion of a heating infrastructure (§ 1 KWKG).
Relevance for renewable energy	The training qualifications entail the installation of renewable energy installations.	The training qualifications entail the installation of renewable energy technologies.	The Immission Control Act determines a minimum share of biofuels in transport sector, requirements for biofuels and employs energetic reference values.	This act promotes renewable energy only.	KWKG does not entail exclusive obligations on the use of renewable energy in CHP.
Link to full text of legal source (original language)	*http://www.gesetze-im-internet.de/bundesrecht/shkanlmechausbv/gesamt.pdf*	*http://www.gesetze-im-internet.de/bundesrecht/installateurheizungsbauermstrv/gesamt.pdf*	http://www.gesetze-im-internet.de/bimschg/	*http://www.gesetze-im-internet.de/eeg_2009/*	*http://www.gesetze-im-internet.de/kwkg_2002/index.html*
Link to full text of legal source (English)				*http://www.erneuerbare-energien.de/files/english/pdf/application/pdf/eeg_2012_en_bf.pdf*	

Further information

Institution (name)	Website	Name of contact person (optional)	Telephone number (head office)	E-mail (optional)
Chamber of Trades and Crafts	http://www.handwerkskammer.de/		+49 30 259 03 01	info@hwk-berlin.de
Federal Ministry of Economics and Technology	www.bmwi.de		+49 30 186 150	https://www.bmwi.de/BMWi/Navigation/Service/kontakt.html
Federal Office of Economics and Export Control (BAFA)	www.bafa.de		+49 6196 908-0	http://www.bafa.de/bafa/de/kontakt/showForm.do
KfW Förderbank	http://www.kfw.de		+49 697 431 0	info@kfw.de
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)	http://www.bmu.de		+49 301 830 50	service@bmu.bund.de
Federal Ministry for Transport, Building and Urban Development (BMVBS)	www.bmvbs.de			buergerinfo@bmvbs.bund.de

Policy categories

Training programmes for installers (Training of Craftsman)

Abbreviated form of legal source(s)	• EEWärmeG • HwO • InstallateurHeizungsbauerMstrV • SHKAnlMechAusbV
Sector	• Electricity, Heating & Cooling,
Contact Authority	• **Chamber of Trades and Crafts**
Description	The profession of installers of RES installations is embedded in the craft training of installation mechanics for sanitation, heating and air conditioning systems. The training is divided into different phases. The first phase is an apprenticeship as laid out in SHKAnlMechAusbV. In order to be admitted to the Master's examination, the installer has to pass the journeyman's examination in front of the board of examination from the Chamber of Trades and Crafts (§§ 31 (1); 33 (1) HvO). Finally, the Master's examination, defined in InstallateurHeizungsbauerMstrV, contains a theoretical and a practical part and is approved by the Master's examination board also at the Chamber of Trades and Crafts. The recognition of the master's degree is licensed according to §1(2) and Annex A(24) Crafts Code. In order to offer services as self-employed, the business has to be listed in the register of craftsmen and obtains a trade card (§10 (2) HwO). On a regional level, the Chamber of Trades and Crafts offer special examinations (*Fortbildungsprüfung*) for example for solar and PV installers for which a fee is charged. The particular offers and requirements are published online.
Addressees	People who are interested in becoming a craftsman and qualify for the apprenticeship. Special examinations are addressed to craftsmen.
Competent authority	The training of installers is coordinated by the Chamber of Trades and Crafts (§ 42 a Crafts Code; § 41a (1) HwO in connection with § 16 a EEWärmeG).The Federal Ministry of Economics and Technology is in charge of adopting training

	regulations (§42 HwO).	
Further information		
Distribution of costs	**State**	The federal states provide financial support to the companies. However, there is no federal support scheme for the apprenticeship. The State provides low interest loans and premiums in case of a successful master's examination.
	Private Financing	The company, in which the apprenticeship is done, covers the costs. The master's degree is financed by the installer.
	European Union	In some cases the EU supports the training via the European Social Fund.
	Others	

Certification Programmes for RES installations (Technical Requirements/Certification)

Abbreviated form of legal source(s)	• EnWG • EEWärmeG • BImSchG	
Sector	• Electricity, Heating & Cooling,	
Contact Authority	• BMU, BMWi	
Description	When connecting a plant to the grid, the grid operators are required to comply with the technical requirements for the particular technology defined in the respective guidelines (§19 (1) EnWG). All technologies have to comply with the pollution guidelines set out in the BImSchG. Moreover, the support schemes for renewable energy sources lay out detailed technical requirements. The following certificates are required for the respective technology: • PV plants require Solar Keymark certificate (§ 14 (2) 1.; Anlage I. EEWärmeG) • Biomass plants are regulated depending on the substance (§ 14 (2) 2.; Anlage II. EEWärmeG) and must fulfill different DIN standards. • Heat pumps require one of the following labels: “Euroblume”, “Blauer Engel”, “European Quality Label for Heat Pumps” (§ 14 (2) 3. EEWärmeG)	
Addressees	Plant operators need to comply with the technical requirements.	
Competent authority	The grid operator has to ensure that the plant complies with the standards before connecting the plant to the grid (§19 (1) EnWG).	
Further information		
Distribution of costs	**State**	
	Industry	

	System Producers	
	European Union	
	Others	The costs are passed on to the buyer in form of higher prices.

Exemplary role of public authorities in accordance with Art. 13 par. 5 RES Directive (KfW- Low interest loan)

Abbreviated form of legal source(s)	• EEWärmeG
Sector	• Electricity, Heating & Cooling,
Contact Authority	• BMVBS
Description	As stipulated by the Act to Promote Renewable Energy for Heating Purposes, public authorities shall take an exemplary role in the promotion of renewable energy (§ 1a EEWärmeG). The exemplary role is foremost taken in the field of energy efficiency. Between 2006 and 2009, the government ran a programme on energy-saving refurbishment of federal buildings in the immediate federal administration with an annual volume of € 120 million. Currently, the government is setting up a refurbishment schedule for buildings owned by the federal state. This schedule shall be compiled by end of 2012. According to information from the Ministry of Transport, Building and Urban Development, it is unclear in how far a new programme with a focus on the installation of renewable energy is set-up for the federal level. So far, no specific programme is run on the federal level besides the mere self-commitment (§ 1a EEWärmeG).
Addressees	Public authorities.
Competent authority	• Ministry of Transport,Building and Urban Development
Further information	http://www.bundesregierung.de/Webs/Breg/DE/Themen/Energiekonzept/Energiesparen/Sanieren-oeffentliche-gebaeude/_node.html

RD&D Policies (6th Energy Research Programme)

Abbreviated form of legal source(s)	
Sector	Electricity, Heating & Cooling,Transport
Contact Authority	*BMU*
Description	On 3 August 2011, the federal government passed the energy concept including the 6th Energy Research Programme for an environmentally friendly, reliable and affordable energy supply. For the period 2011-2014, the budget is € 3.5 billion. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) aims to increase the share of renewable energy, reduce their costs, enhance their competitiveness and to improve the technology's environmental sustainability and natural compatibility. Besides the strategic goal-setting, the support for projects follows the criteria of professional excellence and legal support requirements. Main focus is on wind energy including ecological impact research, photovoltaic, renewable energy systems, integration of renewable energies, geothermal and solar thermal power plants as well as low-temperature solar thermal energy installations. A large share of the budget is allocated to projects and € 200 Mio to research institutes. The money is allocated on a call-for-project basis.
Addressees	Research Institutes, companies
Competent authority	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
Further information	http://www.erneuerbare-energien.de/files/pdfs/allgemein/application/pdf/broschuere_innovation_forschung_2011_bf.pdf www.forschungsjahrbuch.de

RES-H building obligations (Quota)

Abbreviated form of legal source(s)	• EEWärmeG
Sector	• Heating & Cooling,
Contact Authority	• BMU
Description	Owners of new buildings and buildings under renovation are obliged to use a particular share of heat and cooling produced from renewable energy (§3 (1) EEWärmeG). Public buildings are bound by this obligation as well and moreover, are required in terms of profound renovation (§2 (2) 3. EEWärmeG) to fulfil the quota (also buildings of the public hand constructed and run abroad) (§3 (1 -3) EEWärmeG). The quota applies to buildings with a floor space > 50m² that is heated or cooled (§4 EEWärmeG) with the exceptions of e.g. buildings for animal breeding, underground buildings, religious buildings etc. (§4 par. 1.-11. EEWärmeG). The quota for heat and cooling produced from renewable energy varies according to renewable energy source and whether it is a new building or a renovation of an existing building (§5 and §5a EEWärmeG). Moreover, the quota can be fulfilled if more buildings belong together by ownership meeting the obligation in sum (§6 (1) EEWärmeG) or certain compensation measures apply (§6 (1) EEWärmeG). The obligations for new buildings and renovation (§3 (1-2) EEWärmeG) are fulfilled if the heat and cooling demand is covered by 50% from installations using waste heat (Abwärme) or CHP as well as via energy savings or district heating/cooling (§7 (1) EEWärmeG). Currently, no regulations exist for the mandatory use of renewable energy in existing buildings on the federal level, but federal states can adopt such regulations, e.g. Baden-Württemberg. Exemption from the obligation is granted on grounds of technical barriers, contradiction with other tasks and obligations, indebtedness or preservation order (§9 EEWärmeG). In the following an overview is given on the conditions the quota is met per renewable energy source:

	Biogas: *New buildings:* The quota (§3 (1) EEWärmeG) is fulfilled if the share is at least 30% (§5 (2) EEWärmeG) and produced in CHP installations (Annex II. 1. A) EEWärmeG). *Renovation*: The quota (§3 (1) EEWärmeG) is fulfilled if the RES share is at least 25% (§5a (1) EEWärmeG) and produced in CHP installations or boilers of best available technique (Annex II. 1. B) EEWärmeG). For biomethane extra regulations apply (Annex II. 1. C) EEWärmeG) **Biomass:** *New buildings:* The quota (§3 (1) EEWärmeG) is fulfilled if the share is at least 50% (§5 (3) EEWärmeG). <u>Liquid biomass:</u> The quota (§3 (1-2) EEWärmeG) for new buildings and renovation is fulfilled if heat or cooling is produced in boilers of best available technique (Annex II. 2. A) EEWärmeG). Moreover, extra regulations apply regarding the nature of the biomass used (Annex II. 2. B) EEWärmeG). <u>Solid biomass:</u> The quota (§3 (1-2) EEWärmeG) for new buildings and renovation is fulfilled if transformation efficiency is not below a certain threshold (86% for installations for the production of heat or hot water with a capacity ≤ 50 kW; 88% for installations with a capacity >50 kW; 70% for installations not serving the production of heat or hot water) (Annex II. 3. A) EEWärmeG). Furthermore, the quota is fulfilled if solid biomass is used in biomass boilers or automatic biomass ovens with water as heat-transfer (Annex II. 3. B) EEWärmeG). Renovation: The quota (§3 (2) EEWärmeG) is fulfilled if the RES share is at least 15% (§5a (2) EEWärmeG).

	Geothermal: *New buildings:* The quota (§3 (1) EEWärmeG) is fulfilled if the share is at least 50% (§5 (4) EEWärmeG) The quota (§3 (1-2) EEWärmeG) for new buildings and renovation is fulfilled if the following requirements are met: • heat is produced with a operating factor of at least 3.5 for air/water and air/air heat pumps (for all others the factor is at least 4.0) (Annex III. 1. B) EEWärmeG). In case the hot water production of the building is produced by heat pumps or other technologies using renewable energy sources, different operating factors apply: air/water and air/air heat pumps 3.3 (for all others the factor is at least 3.8) (Annex III. 1. B) EEWärmeG). • Heat pumps must be equipped with heat and electricity meters (Annex III. 1. C) EEWärmeG). • If the heat pump is powered by fossil fuels, the quota is only fulfilled if the operating factor is at least 1.2 (Annex III. 2. EEWärmeG). • Heat pumps must be certified either with label "Euroblume", "Blauer Engel" or "European Quality Label for Heat Pumps" (Version1.3) or be in accordance with general European norms and regulations comparable to the aforementioned labels (Annex III. 3. EEWärmeG). Renovation: The quota (§3 (2) EEWärmeG) is fulfilled if the share of renewable energy is at least 15% (§5a (2) EEWärmeG). **Solar thermal:** New buildings: The quota (§3 (1) EEWärmeG) is fulfilled if the share is at least 15% (§5 (1) EEWärmeG). In case of buildings with 2 flats, PV installations should have 0.04 m² collector surface per m² floor space. For buildings with more than 2 flats the ratio is 0.03 m² collector surface per m² floor space (Annex I. 1. A) EEWärmeG). Renovation: The quota (§3 (2) EEWärmeG) is fulfilled if the share of renewable energy is at least 15% (§5a (2) EEWärmeG). Compensating measures: The ratio is 0.06 m² collector surface per m² floor space (Annex I. 1. B) EEWärmeG).
Obligated entities	Owners of new buildings or buildings under renovation. Public buildings are stimulated to take an exemplary role.

Competent authority	Competent authority depends on the legislation of each federal state.
Further information	www.bmu.de
Obligation on regional level	EEWärmeG is a federal law. At *Länder* level, stricter rules can apply.

Support of RES-H infrastructure

KWKG

Abbreviated form of legal source(s)	• KWKG
Sector	• Heating & Cooling
contact Authority	• BAFA, BMWi
Description	The Combined Heat and Power Act (KWKG) promotes the construction and development of heating networks and storage, however, not exclusively using renewable energy sources. As laid out in § 7a (1-3) (KWKG), newly constructed or modernised plants are eligible for compensation payments if the share of heat produced is at least 60% (§ 5a (1) 2. KWKG). The compensation payment is € 100 per meter of a newly installed heating pipe (§ 7a (1) KWKG). This compensation is maximum 40% of identifiable investments costs, but not higher than € 10 million per project (§7a (1) KWKG). The sum of premium payments may not exceed € 150 million per calendar year (§7a (5) KWKG). The heating grid operator is entitled to receive compensation payments from the electricity grid operator (§ 5a (1) KWKG). Regarding heat storage, compensation payment is € 250 per cubic meter water equivalent of the installed storage volume (§ 7b (1) KWKG). For storage of more than 50 cubic meters this compensation is maximum 30% of the identifiable investments costs (max. € 5 million) (§ 7b (1) KWKG).
Addressees	Heating grid operators
Competent authority	Federal Office of Economics and Export Control (BAFA)
Further information	www.bmwi.de

KfW Programme – Renewable Energy (Premium)

Abbreviated form of legal source(s)	• Guidelines for the support of RES-H
Sector	• Electricity, Heating & Cooling,
Contact Authority	• KfW
Description	The Market Incentive Programme (MAP) via the KfW Programme – Renewable Energy (Premium) gives funding for district heating networks supplied with heat from renewable energy. The development and modernisation of heat grid are eligible for support if: • Grid is supplied at least by 20% solar radiation energy provided that otherwise heat is used almost exclusively from high efficiency CHP or heat pumps or industrial or commercial waste heat (Art. 14.1.5.1.a) Guidelines for the support of RES-H), or • Grid is supplied at least by 50% heat produced by renewable energy (Art. 14.1.5.1.b) Guidelines for the support of RES-H), or • Grid is supplied at least by 50% heat produced by heat pumps (Art. 14.1.5.1.c) Guidelines for the support of RES-H), or • Grid is supplied at least by 50% heat produced by plants using waste heat (Art. 14.1.5.1.d) Guidelines for the support of RES-H), or • Grid is supplied at least by 50% heat produced by a mix of the aforementioned. Heating networks are only supported if the minimum heating value is 500 kWh per year and per pipeline meter (excluding supply pipes) (Art. 14.1.5.1.) Guidelines for the support of RES-H). Moreover, the construction of building transfer stations in heating networks is supported too. Under this regulation, the biogenic portion of municipal waste is considered as renewable energy. The injection of heat produced by heat pumps is only supported if the heat pumps fulfill the requirements set out in Art. 10 (Guidelines for the support of RES-H) (More

	information on the technical requirements can be retrieved from the part RES H&C) The amount of support: • redemption grant for first development: € 60 per newly built meter of pipeline, max. € 1,000,000 (the subsidy can be increased up to € 1,500,000, if heat is produced by geothermal plants) (Art. 14.1.5.2 Guidelines for the support of RES-H) • construction of building transfer stations: € 1,800 per station (Art. 14.1.5.3 Guidelines for the support of RES-H)
Addressees	Private persons, freelancer, small and medium size companies, municipalities/local authorities, non-profit organisations, companies of which the public authority has a share of > 25 % with a turnover less than SME threshold (Guidelines for the support of RES-H Art. 4.1).
Competent authority	KfW
Further information	www.kfw.de