

Tariffs, degression and sample calculations pursuant to the new Renewable Energy Sources Act (*Erneuerbare-Energien-Gesetz - EEG*) of 4 August 2011 ('EEG 2012')

On 30 June 2011 the German Bundestag adopted the "Act on the amendment of the legal framework for the promotion of electricity generation from renewable energies" (Gesetz zur Neuregelung des Rechtsrahmens für die Förderung der Stromerzeugung aus erneuerbaren Energien), which completely revised the EEG. The revised version was promulgated in the Federal Law Gazette on 4 August 2011 (BGBl. I p.1634), and enters into force on 1 January 2012. The following tables outline the minimum tariffs, bonuses and annual degression rates for electricity generation from renewable energies and mine gas pursuant to the latest version of the EEG. They apply to installations commissioned from the 1 January 2012. Except for some transitional provisions, the current legal situation shall continue to apply to installations commissioned prior to 2012.

Calculating the capacity of an installation:

Where different tariffs are laid down depending on the share of rated average annual capacity (Sections 23-28) or the share of installed capacity (Section 33), they are each determined according to the share of an installation's capacity in relation to the relevant threshold values. This sliding tariff regulation is aimed at preventing leaps in tariff rates in cases where the relevant threshold values are exceeded (cf e.g. p.3 sample calculation B).

Duration of tariff payment:

The minimum tariffs are paid from the time of commissioning for a period of 20 years plus the year in which the installation was commissioned. Following the commissioning of an installation, degression of the tariffs does not come into effect for that installation. The tariff rate therefore remains unchanged for a period of 20 years once an installation is commissioned.

Degression rate:

The tariffs described below refer to installations commissioned on or after 1 January 2012. As a rule, for all installations newly commissioned from this date tariffs are lowered on 1 January of each following year by a fixed percentage (degression rate). Tariffs for electricity from solar radiation are an exception: this tariff can fall on 1 January, and, where there is a high level of new build, also on 1 July of each year, depending on the new build of the previous year (flexible cap). Figures are rounded to the second digit after the decimal point. The degression rate is calculated on the basis of the previous year's unrounded value. Examples of degression rates applying to different renewable energy installation types are given below.

NB:

These tables and examples are not exhaustive and are non-binding. The Federal Environment Ministry assumes no liability for incorrect or incomplete data. All information is for orientation purposes only. Each individual case is governed by the laws and regulations in force (EEG: Federal Law Gazette 2011, Part I, No. 42, pp. 1634-1678) as well as relevant court rulings.

1. Re section 23 EEG: tariffs for electricity from hydropower

1.1. Overview of tariff categories

Degression rate: 1.0 %, duration of tariff payment 20 years

Year of commissioning	up to 500 kW in ct/kWh	up to 2 MW in ct/kWh	up to 5 MW in ct/kWh	up to 10 MW in ct/kWh	up to 20 MW in ct/kWh	up to 50 MW in ct/kWh	over 50 MW in ct/kWh
2012	12.70	8.30	6.30	5.50	5.30	4.20	3.40
2013	12.57	8.22	6.24	5.45	5.25	4.16	3.37
2014	12.45	8.13	6.17	5.39	5.19	4.12	3.33
2015	12.32	8.05	6.11	5.34	5.14	4.08	3.30
2016	12.20	7.97	6.05	5.28	5.09	4.03	3.27
2017	12.08	7.89	5.99	5.23	5.04	3.99	3.23
2018	11.96	7.81	5.93	5.18	4.99	3.95	3.20
2019	11.84	7.74	5.87	5.13	4.94	3.91	3.17
2020	11.72	7.66	5.81	5.08	4.89	3.88	3.14
2021	11.60	7.58	5.76	5.02	4.84	3.84	3.11

Installations are only entitled to tariff payments if hydropower use meets the requirements of Sections 33 to 35 and Section 6(1) sentences 1 nos. 1 and 2 of the Federal Water Act. Existing installations which were commissioned before 1 January 2009 are eligible for the new tariffs if the rated average annual capacity or the installed capacity was increased after 31 December 2011, or the installation was retrofitted for the first time with a remote reduction of the feed-in capacity pursuant to Section 6(1). Entitlement to the tariff payment applies from completion of the measure for the duration of 20 years plus the remaining part of the year in which the measure was completed. Further details are regulated under Section 23(2) EEG. Due to the comprehensive changes in the hydropower sector transitional provisions apply pursuant to Section 66(5) and (14).

Storage power stations can receive tariff payments pursuant to Section 23(6) if these are constructed on existing storage facilities or are extensions to existing storage power stations. This only applies to storage facilities which are fed from natural tributaries. Electricity from pumped-storage plants is not entitled to the tariff payment, except in the case laid down in Section 16(2).

1.2. Average tariff rates for electricity generation from hydropower pursuant to EEG 2009 as compared to EEG 2012

Average tariff rates in ct/kWh for electricity generation from run-of-river power plants					
For comparability, year of commissioning 2012 is assumed in each case.					
Installation capacity (full load hours [h/a])	EEG 2009			EEG 2012	
	Duration of tariff payment - for installations ≤ 5 MW: 20 years plus year of commissioning - for installations > 5 MW: 15 years plus year of commissioning			Duration of tariff payment for all installations: - 20 years plus year of commissioning	
	up to and including 5 MW		over 5 MW	up to and including 5 MW	over 5 MW
	new build	modernisation	new build, extension	new build, modernisation	new build, extension
500 kW (4,500)	12.67	11.67	7.08	12.70	12.70
2 MW (4,800)	10.48	10.03	6.57	10.31	10.31
5 MW (5,000)	9.06	9.18	6.30	8.47	8.47
20 MW (5,500)			6.07		6.27
50 MW (5,500)			5.29		5.29

Sample calculation A

Run-of-river power plant with an installed capacity of 3.5 MW and expected achievable full-load hours of 5000. This results in a rated average annual capacity of 2 MW (5000h * 3.5 MW)/8784*); year of commissioning 2012.

Share of capacity up to 500 kW = 25 %

Share of capacity from 500 kW to 2 MW = 75 %

tariff	EEG 2012
basic tariff	
share of capacity up to 500 kW	0.25 x 12.70
share of capacity over 500 kW	+ 0.75 x 8.30
tariff	= 9.40 ct/ kWh **

* 2012 is a leap year with 8784 hours.

** rounded value

Sample calculation B

Expansion of a hydropower plant by a rated annual average capacity of 16 MW; year of commissioning 2012.

Share of capacity up to 500 kW = 3.125

Share of capacity 500 kW to 2 MW = 9.375

Share of capacity 2 MW to 5 MW = 18.75

Share of capacity 5 MW to 10 MW = 31.25

Share of capacity 10 MW to 20 MW = 37.5

tariffs	EEG 2012
basic tariff	
share of capacity up to 500 kW	0.03125 x 12.70
share of capacity up to 2 MW	+ 0.09375 x 8.30
share of capacity up to 5 MW	+ 0.1875 x 6.30
share of capacity up to 10 MW	+ 0.1875 x 5.50
share of capacity up to 16 MW	+ 0.1875 x 5.30
tariff	= 6.06 ct/ kWh *

(* rounded value)

2. Re Sections 24 - 26 EEG: tariffs for electricity from landfill, sewage and mine gas

2.1. Landfill gas (Section 24)

Degression rate: 1.5 %, duration of tariff payment 20 years

year of commissioning	up to 500 kW _{el} in ct/kWh	up to 5 MW _{el} in ct/kWh
2012	8.60	5.89
2013	8.47	5.80
2014	8.34	5.71
2015	8.22	5.63
2016	8.10	5.54
2017	7.97	5.46
2018	7.85	5.38
2019	7.74	5.30
2020	7.62	5.22
2021	7.51	5.14

2.2. Sewage gas (Section 25)

Degression rate: 1.5 %, duration of tariff payment 20 years

year of commissioning	up to 500 kW _{el} in ct/kWh	up to 5 MW _{el} in ct/kWh
2012	6.79	5.89
2013	6.69	5.80
2014	6.59	5.71
2015	6.49	5.63
2016	6.39	5.54
2017	6.30	5.46
2018	6.20	5.38
2019	6.11	5.30
2020	6.02	5.22
2021	5.93	5.14

2.3. Mine gas (Section 26)

Degression rate: 1.5 %, duration of tariff payment 20 years

year of commissioning	up to 1 MW _{el} in ct/kWh	up to 5 MW _{el} in ct/kWh	over 5 MW _{el} in ct/kWh
2012	6.84	4.93	3.98
2013	6.74	4.86	3.92
2014	6.64	4.78	3.86
2015	6.54	4.71	3.80
2016	6.44	4.64	3.75
2017	6.34	4.57	3.69
2018	6.25	4.50	3.63
2019	6.15	4.44	3.58
2020	6.06	4.37	3.53
2021	5.97	4.30	3.47

Installations generating electricity from landfill, sewage or mine gas are still entitled to tariff payments if gas is withdrawn from a natural gas network, if, at the end of a calendar year, the thermal equivalent of the withdrawn quantity of gas corresponds to the quantity of landfill, sewage or mine gas fed into the natural gas network elsewhere within the territorial application of the EEG. Mass balance systems must be used for the entire transportation and distribution of the gas, from its production or extraction, feed-in to the natural gas network, to transportation within the natural gas network and withdrawal from the natural gas network (Section 27c (1)).

Bonus for gas processing pursuant to EEG (Annex 1):

A gas processing bonus can increase tariffs for landfill and sewage gas by up to 3.0 ct/kWh if the conditions stipulated in EEG 2012 Annex 1 are met. The bonus applies to a rated average annual capacity of up to 5 MW and, in the case of landfill and sewage gas, is subject to a degression rate of 1.5 %:

gas processing bonus for landfill and sewage gas (Annex 1)	
max. rated output 700 Nm ³ /hour	3.0 ct/kWh
max. rated output 1000 Nm ³ /hour	2.0 ct/kWh
max. rated output 1400 Nm ³ /hour	1.0 ct/kWh

The processing rated output is based on the quantity of processed gas in each case.

Sample calculation C

Mine gas installation with a rated average annual capacity of 6 MW; year of commissioning 2012

Share of capacity up to 500 kW = 8.33 %

Share of capacity from 500 kW to 5 MW = 75 %

Share of capacity over 5 MW = 16.66 %

tariff	EEG 2012
basic tariff	
share of capacity up to 500 kW	0.0833 x 6.84
share of capacity up to 5 MW	+ 0.75 x 4.93
share of capacity over 5 MW	+ 0.166 x 3.98
tariff	= 4.93 ct/ kWh *

(* rounded value)

3. Re Sections 27, 27a and 27b EEG: tariffs for electricity from biomass

3.1. Tariff structure for electricity from biomass

rated average annual capacity	tariff for				biowaste fermentation installations ⁵⁾ (Section 27a)	Small manure installations (Section 27b)
	biogas (excl. biowaste fermentation and small manure installations and solid fuel installations)					
	basic tariff	substance tariff class I ²⁾	substance tariff class II ³⁾	gas processing bonus (Section 27c(2))		
[kW _{el}]	[ct/kWh]					
≤ 75 ⁴⁾						25 ⁶⁾
≤ 150	14.3			≤ 700 standard cubic metre (scm)/h: 3	16	
≤ 500	12.3	6	8	≤ 1,000 scm/h: 2		
≤ 750	11	5		≤ 1,400 scm/h: 1	14	
≤ 5,000	11	4	8 / 6 ⁴⁾			
≤ 20,000	6	-		-		

2) Over 500 kW and up to 5,000 kW only 2.5 ct/kWh for electricity from bark or forest waste wood.

3) Only for selected, ecologically desirable substances.

4) Over 500 kW and up to 5,000 kW only 6 ct/kWh for electricity from manure (only nos. 3, 9, 11 to 15 of Annex 3 of the Biomass Ordinance (BiomasseV)).

5) Applies exclusively to biogas installations which ferment certain types of biowaste (pursuant to Section 27a (1)) and which are directly connected to a facility for post-rotting the solid fermentation residues. The post-rotted fermentation residues must be recycled. The tariff may only be combined with the gas processing bonus.

6) Special category for biogas installations utilising manure of up to 75 kW installed capacity at the site of the biogas generation plant; may not be combined (i.e. no additional basic tariff, substance tariff or gas processing bonus).

3.2. Basic tariff for installations generating electricity from biomass*

Degression rate ⁷⁾: 2.0 %, duration of tariff payment 20 years

Excluding substance-based additional tariffs pursuant to substance tariff class I or II

year of commissioning	up to 150 kW _{el} in ct/kWh	150 - 500 kW _{el} in ct/kWh	500 kW _{el} - 5 MW _{el} in ct/kWh	5 MW _{el} - 20 MW _{el} in ct/kWh
2012	14.30	12.30	11.00	6.00
2013	14.01	12.05	10.78	5.88
2014	13.73	11.81	10.56	5.76
2015	13.46	11.58	10.35	5.65
2016	13.19	11.35	10.15	5.53
2017	12.93	11.12	9.94	5.42
2018	12.67	10.90	9.74	5.32
2019	12.41	10.68	9.55	5.21
2020	12.17	10.46	9.36	5.10
2021	11.92	10.26	9.17	5.00

* Within the meaning of the Ordinance on Generation of Electricity from Biomass (Biomasseverordnung -BiomasseV) in the version applicable as at 1 January 2012.

7) The basic tariff (Section 27(1)), the tariff for biowaste fermentation installations (Section 27a), small manure installations (Section 27b) and the gas processing bonus (Section 27c (2)) are subject to the degression rate of 2.0 % (Section 20(2) no. 5).

3.3. Tariff for biowaste installations and small manure biogas installations (Sections 27a and b)

Depreciation rate: 2.0 %, duration of tariff payment 20 years

year of commissioning	biowaste fermentation ⁵⁾		manure biogas installations up to 75 kW _{el} ⁶⁾
	up to 500 kW _{el} in ct/kWh	from 500 kW _{el} to 20,000 kW _{el} in ct/kWh	
2012	16.00	14.00	25.00
2013	15.68	13.72	24.50
2014	15.37	13.45	24.01
2015	15.06	13.18	23.53
2016	14.76	12.91	23.06
2017	14.46	12.65	22.60
2018	14.17	12.40	22.15
2019	13.89	12.15	21.70
2020	13.61	11.91	21.27
2021	13.34	11.67	20.84

Sample calculation D ⁸⁾

Biogas installation with a rated average annual capacity of 2.5 MW using only substances of tariff class I (e.g. corn-cob mix, fodder beet, cereal grain kernels, grain maize); year of commissioning 2012.

An installed capacity of 2,800 kW and 7,842 annual full load hours gives a rated average annual capacity of 2,500 kW.

share of capacity basic tariff	basic tariff [ct/kWh]	electricity receiving tariff* [kWh]	basic tariff	
			absolute [€]	proportional [ct/kWh]
up to 150 kW	14.3	1,317,600	188,417	0.86
150 kW to 500 kW	12.3	3,074,400	378,151	1.72
500 kW to 750 kW	11.0	2,196,000	241,560	1.10
500 kW to 2.5 MW	11.0	15,369,600	1,690,656	7.70
total		21,957,600	2,498,784	11.38

* 2012 is a leap year with **8784 hours**.

share of substance tariff class I	substance tariff [ct/kWh]	electricity receiving tariff [kWh]	substance tariff	
			absolute [€]	proportional [ct/kWh]
up to 500 kW	6.0	4,392,000	263,520	1.20
over 500 kW	5.0	2,196,000	109,800	0.50
over 750 kW	4.0	15,369,600	614,784	2.80
total		21,957,600	988,104	4.50

Payment claim in 2012 3,486,888 euro or **15.88 ct/kWh**.

8) Further non-binding information is also provided by the tariff calculator for electricity from biomass of the German biomass research centre Deutsches Biomasseforschungszentrum (DBFZ).

www.dbfz.de/web/aktuelles/details/article/verquetungsrechner-eeq-2012-verfuegbar.html

Sample calculation E

Biogas installation with a rated average annual capacity of 500 kW, using only substances of tariff class II (e.g. material from landscape management, cattle manure, pig manure); year of commissioning 2012

An installed capacity of 600 kW and 7,320 annual full load hours gives a rated average annual capacity of 500 kW.

share of capacity basic tariff	basic tariff [ct/kWh]	electricity receiving tariff * [kWh]	basic tariff	
			absolute [€]	proportional [ct/kWh]
up to 150 kW	14.3	1,317,600	188,417	4.29
150 kW to 500 kW	12.3	3,074,400	378,151	8.61
500 kW to 750 kW	11.0	-	-	-
500 kW to 2.5 MW	11.0	-	-	-
total		4,392,000	566,568	12.90

* 2012 is a leap year with 8784 hours

share of substance tariff class II	substance tariff [ct/kWh]	electricity receiving tariff [kWh]	substance tariff	
			absolute [€]	proportional [ct/kWh]
up to 500 kW	8.0	4,392,000	351,360	8.00
over 500 kW	6.0	-	-	-
total		4,392,000	351,360	8.00

Payment claim in 2012 917,928 euros or **20.90 ct/kWh**.

Sample calculation F

Biomass installation (only wood from short rotation plantations pursuant to substance tariff class I) with a rated average annual capacity of 1 MW; year of commissioning 2012.

An installed capacity of 1,200 kW and 7,320 annual full load hours gives a rated average annual capacity of 1,000 kW.

share of capacity basic tariff	basic tariff [ct/kWh]	electricity receiving tariff * [kWh]	basic tariff	
			absolute [€]	proportional [ct/kWh]
up to 150 kW	14.3	1,317,600	188,417	2.15
150 kW to 500 kW	12.3	3,074,400	378,151	4.31
500 kW to 750 kW	11.0	2,196,000	241,560	2.75
500 kW to 2.5 MW	11.0	2,196,000	241,560	2.75
total		8,784,000	1,049,688	11.95

* 2012 is a leap year with 8784 hours

share of substance tariff class II	substance tariff [ct/kWh]	electricity receiving tariff [kWh]	substance tariff	
			absolute [€]	proportional [ct/kWh]
up to 500 kW	6.0	4,392,000	263,520	3.00
up to 750 kW	5.0	2,196,000	109,800	1.25
up to 5,000 kW	4.0	2,196,000	87,840	1.00
total		8,784,000	461,160	5.25

Payment claim in 2012 1,510,848 euros or **17.2 ct/kWh**.

Sample calculation G

Biogas installation with a rated average annual capacity of 500 kW. Use of substances of tariff classes 0, I or II (e.g. reject potatoes, maize (whole plant silage), cereal (whole plant silage), grass from landscape management, horse manure, rapeseed cakes); year of commissioning 2012.

An installed capacity of 600 kW and 7,320 annual full load hours gives a rated average annual capacity of 500 kW.

share of capacity basic tariff	basic tariff [ct/kWh]	electricity receiving tariff * [kWh]	basic tariff	
			absolute [€]	proportional [ct/kWh]
up to 150 kW	14.3	1,317,600	188,417	4.29
150 kW to 500 kW	12.3	3,074,400	378,151	8.61
500 kW to 750 kW	11.0	-	-	-
500 kW to 2.5 MW	11.0	-	-	-
total		4,392,000	566,568	12.90

* 2012 is a leap year with 8784 hours.

share of substance tariff classes (STC)	substance tariff [ct/kWh]	electricity receiving tariff [kWh]	substance tariff	
			absolute [€]	proportional [ct/kWh]
share STC 0	0.0	1,110,690	-	0.0
share STC I				
up to 500 kW	6.0	2,872,060	172,324	3.92
over 500 kW	5.0	-	-	-
over 750 kW	4.0	-	-	-
total STC I		2,872,060	172,324	3.92
share STC II				
STC II excl. manure	8.0	402,695	32,216	0.73
STC II (manure) up to 500 kW	8.0	6,556	524	0.01
STC II (manure) over 500 kW	6.0	-	-	-
total STC II		409,251	32,740	0.75*
final total		4,392,000	205,064	4.67*

Payment claim in 2012 3,486,888 euros or **17.57 ct/kWh**.

(* rounded value)

Sample calculation H

Existing biogas installation with a rated average annual capacity of 40 kW (installed capacity 493 kW el and 8,000 annual full load hours), year of commissioning 2009. Substrates used 65 mass % maize silage, 35 mass % pig manure. The installation is eligible for the emissions reduction bonus and uses 40 % of the heat produced. Installation extended with a satellite block-type thermal power station with a rated average annual capacity of 150 kW (installed capacity 188 kW and 7,000 full load hours); year of commissioning 2013.

Tariff for existing installation in 2013 (EEG 2009)

share of capacity basic tariff	basic tariff [ct/kWh]	electricity receiving tariff * [kWh]	basic tariff	
			absolute [€]	prop. [ct/kWh]
up to 150 kW	11.67	1,314,000	153,344	3.89
150 kW to 500 kW	9.18	2,630,000	241,434	6.12
total		3,944,000	394,778	10.01

tariff	absolute €	prop. (ct/kWh)
basic tariff	394,778	10.01
bonus for electricity from energy crops	276,080	7
bonus for electricity from manure	157,760	4
emissions reduction bonus	39,440	1
CHP bonus	47,328	1.2
total	915,386	23.21

Tariff for satellite block-type thermal power station commissioned 1 January 2013 (EEG 2012)

Pursuant to Section 19(1) EEG 2012 a tariff is payable for electricity from several installations. The rated average annual capacity for the installation is thus 600 kW. The tariff is paid for 1,316,000 kWh from a total of 5,260,000 kWh.

share of capacity basic tariff	basic tariff [ct/kWh]	electricity receiving tariff [kWh]	basic tariff	
			absolute [€]	prop. [ct/kWh]
up to 150 kW	14.01	328,500	184,144	3.5
150 kW to 500 kW	12.05	766,500	369,576	7.03
500 kW to 750 kW	10.78	219,000	94,433	1.8
total		1,316,000	648,152	12.33

share of substance tariff classes (STC)	substance tariff [ct/kWh]	electricity receiving tariff* [kWh]	Substance tariff	
			absolute [€]	prop. [ct/kWh]
share STC I (94 %)				
up to 500 kW	6.0	1,032,086	61,925	4.71
over 500 kW	5.0	206,417	10,321	0.79
total ESK I		1,238,503	72,246	5.5
share STC II (6 %)				
STC II (manure) up to 500 kW	8.0	62,914	5,033	0.38
STC II (manure) over 500 kW	6.0	12,583	755	0.06
total STC II		75,497	5,788	0.44
total		1,316,000	78,034	5.96

The use of more than 60 mass % in the installation is possible pursuant to Section 66(4), as the gas production installation was commissioned prior to 1 January 2012.

The satellite block-type power plant must use 60 % of the generated heat. The fermenter heating may not be credited towards this.

4. Re Section 28 EEG: Tariffs for electricity from geothermal energy

In the geothermal sector the increased tariffs laid down in EEG 2012 apply to installations constructed after 1 January 2012.

4.1. Geothermal energy

Degression rate: 5.0 % from 2018, duration of tariff payment 20 years

year of commissioning	tariff in ct/kWh	increase in tariff due to utilisation of petrothermal technology
2012	25.00	5.00
2013	25.00	5.00
2014	25.00	5.00
2015	25.00	5.00
2016	25.00	5.00
2017	25.00	5.00
2018	23.75	4.75
2019	22.56	4.51
2020	21.43	4.29
2021	20.36	4.07

4.2. Bonuses for geothermal energy

Degression rate: 5.0 % from 2018, duration of tariff payment 20 years

<i>additional tariff</i>	EEG 2012 tariff ct/ kWh
for electricity which is also generated using petrothermal technology	5.00

5. Re Sections 29 - 31 EEG: tariffs for electricity from wind energy

5.1. Onshore wind energy

Degression rate: 1.5 %, duration of tariff payment: 20 years

year of commissioning	basic tariff in ct/kWh	initial tariff in ct/kWh ⁹⁾	system services bonus ¹⁰⁾	Repowering bonus ¹¹⁾	small-scale wind up to 50 kW in ct/kWh
2012	4.87	8.93	0.48	0.5	8.93
2013	4.80	8.80	0.47	0.49	8.80
2014	4.72	8.66	0.47	0.49	8.66
2015	4.65	8.53	0.46	0.48	8.53
2016	4.58	8.41	-	0.47	8.41
2017	4.52	8.28	-	0.46	8.28
2018	4.45	8.16	-	0.46	8.16
2019	4.38	8.03	-	0.45	8.03
2020	4.32	7.91	-	0.44	7.91
2021	4.25	7.79	-	0.44	7.79

⁹⁾ The higher initial tariff is paid for five years. This is extended pursuant to Section 29(2) by two months for each 0.75 percent of the reference yield by which the installation yield falls short of 150 percent of the reference yield. See also 6.2 below.

¹⁰⁾ Pursuant to Section 29(2), the system services bonus for new installations is paid for the same period as the higher initial tariff, provided these installations are commissioned prior to 31 December 2015. The requirements under Section 6(5) EEG must be verifiably met.

¹¹⁾ The repowering bonus pursuant to Section 30 for the replacement of existing wind energy installations on the same or on an adjacent site is paid for the same period as the higher initial tariff, provided the replaced installations were commissioned prior to 1 January 2002.

¹²⁾ Pursuant to Section 29(3), the reference yield calculation does not apply to small-scale wind installations of no more than 50 MW. For these installations a reference yield of 60 percent is assumed. This means that they are eligible for the initial tariff for the entire tariff payment period.

5.2. Extension of the higher initial tariff

reference yield in (%)	initial tariff pursuant to Section 29(2)(1) in years	extension of the initial tariff pursuant to Section 29(2) in years	total duration of the initial tariff payment in years
>= 150	5	-	5
125	5	5.56	10.56
120	5	6.67	11.67
100	5	11.1	16.1
90	5	13.34	18.34
82.5	5	15	20
small-scale wind installations of no more than 50 kW, irrespective of their reference yield	20	-	20

Sample calculation I for onshore wind energy

Wind energy installation near the coast which, pursuant to Section 29(2), produces 120 % of the reference yield within a period of five years from the date of commissioning (pursuant to Annex 3 EEG 2012). The installation meets the requirements of Section 6(5) EEG on the System Services Ordinance (Systemdienstleistungsverordnung); year of commissioning 2012.

Duration of payment of the higher initial tariff: **11 years 8 months**

Calculation: $(30 / 0.75) * 2 = 80$ (months)

80 months = 6 years and 8 months plus five years' initial tariff = **11 years 8 months**

tariff	2012	2013
higher initial tariff	8.93	8.80
system services bonus	+ 0.48	+ 0.47
tariff	= 9.41 ct/ kWh	= 9.27 ct/ kWh

Average tariff: $(11.67 / 20 * 8.93) + (11.67 / 20 * 0.48) + (8.33 / 20 * 4.87) = 7.52$ cent/kWh (rounded).

Sample calculation J for onshore wind energy

Wind energy installation at an inland site, which, pursuant to Section 29(2), produces 90 % of the reference yield within a period of five years from the date of commissioning (pursuant to Annex 3 EEG 2012). The installation meets the requirements of Section 6(5) EEG on the System Services Ordinance; year of commissioning 2012.

Duration of payment of the higher initial tariff: **18 years 3 months**

Calculation: $(60 / 0.75) * 2 = 160$ (months)

160 months = 13 years and 3 months plus five years' initial tariff = **18 years 3 months**

tariff	2012	2013
higher initial tariff	8.93	8.80
system services bonus	+ 0.48	+ 0.47
tariff	= 9.41 ct/ kWh	= 9.27 ct/ kWh

Average tariff: $(18.25 / 20 * 8.93) + (18.25 / 20 * 0.48) + (1.75 / 20 * 4.87) = 9.00$ cent/kWh (rounded).

Sample calculation K for onshore wind energy

Wind energy installation at an inland site, which, pursuant to Section 29(2), produces 82.5 % of the reference yield within a period of five years from the date of commissioning (pursuant to Annex 3 EEG 2012). The installation meets the requirements of Section 6(5) EEG on the System Services Ordinance; year of commissioning 2012.

Duration of payment of the higher initial tariff: **20 years**

Calculation: $(67.5 / 0.75) * 2 = 180$ (months)

180 months = 15 years plus five years' initial tariff

tariff	2012	2013
higher initial tariff	8.93	8.80
system services bonus	+ 0.48	+ 0.47
tariff	= 9.41 ct/ kWh	= 9.27 ct/ kWh

Average tariff: $8.93 + 0.48 = 9.41$ cent/kWh (rounded).

5.3. Offshore wind energy

Degression rate until 2017: 0.0 %, from 2018: 7 %

Duration of tariff payment 20 years (acceleration model: 12 years)

year of commissioning	basic tariff in ct/kWh ¹³⁾	higher initial tariff in ct/kWh	initial tariff in acceleration model
2012	3.5	15.0	19.0
2013	3.5	15.0	19.0
2014	3.5	15.0	19.0
2015	3.5	15.0	19.0
2016	3.5	15.0	19.0
2017	3.5	15.0	19.0
2018	3.26	13.95	-
2019	3.03	12.97	-
2020	2.82	12.07	-
2021	2.62	11.22	-

13) the higher initial tariff for offshore wind energy is paid for the first 12 years from the date of commissioning of an installation.

The period is extended by 5 months for each full nautical mile beyond 12 nautical miles that the installation is located from the shore and by 1.7 months for each full metre of water depth over 20 metres. In the case of the acceleration model the same tariff as for the "normal" tariff model shall be paid for the extension period calculated using distance from the coast and water depth (Section 31(3) sentence 2).

Sample calculation L for offshore wind energy

Offshore installations located within the 12 nautical mile zone; year of commissioning 2012

Duration of payment of the higher initial tariff: 12 years

tariff	2012	2013
higher initial tariff	15.00	15.00
tariff	= 15.00 ct/ kWh	= 15.00 ct/ kWh

Average tariff: $(12/20 * 15) + (8/20 * 3.5) = 10.4 \text{ cent/kWh}$ (rounded).

Sample calculation M for offshore wind energy using acceleration model

Offshore installation located within the 12 nautical mile zone; year of commissioning 2012 using acceleration model

Duration of payment of the higher initial tariff under the acceleration model: 8 years

tariff	2012	2013
higher initial tariff	19.00	19.00
tariff	= 19.00 ct/ kWh	= 19.00 ct/ kWh

Average tariff: $(8/20 * 19) + (12/20 * 3.5) = 9.7 \text{ cent/kWh}$ (rounded).

Sample calculation N for offshore wind energy

Offshore installation located outside the 12 nautical mile zone; year of commissioning 2012

Duration of payment of the higher initial tariff: 14 years

tariff	2012	2013
higher initial tariff	15.00	15.00
tariff	= 15.00 ct/ kWh	= 15.00 ct/ kWh

Average tariff: $(14/20 * 15) + (6/20 * 3.5) = 11.55 \text{ cent/kWh}$ (rounded).

Sample calculation O for offshore wind energy using acceleration model

Offshore installation located outside the 12 nautical mile zone; year of commissioning 2012 using acceleration model

Duration of payment of the higher initial tariff under the acceleration model: 8 years

Duration of payment of the higher initial tariff: 2 years

tariff	2012	2013
higher initial tariff	19.00	19.00
tariff	= 19.00 ct/ kWh	= 19.00 ct/ kWh

Average tariff: $(8/20 * 19) + (2/20 * 15) + (10/20 * 3.5) = 10.85 \text{ cent/kWh}$ (rounded).

6. Re Sections 32 and 33 EEG: tariffs for electricity from solar radiation

The degression rate for electricity from solar installations is adjusted on the basis of the new capacity installed each year (market volume) in Germany. The basic degression rate is 9 %. However, the degression can be higher or lower, depending on the capacity installed in the respective preceding year.

If the installed capacity of installations registered within the twelve months before 30 September of the previous year is between 2,500 and 3,500 megawatts, the degression rate of 9 % does not change at the end of the year. If within this period the registered installed capacity exceeded 3,500 MW, 4,500 MW, 5,500 MW, 6,500 MW or 7,500 the degression rate increase by 3, 6, 9, 12 or 15 percent points respectively. It decreases by 2.5, 5 or 7.5 percent points if installed capacity fell below 2,500 MW, 2,000 MW or 1,500 MW respectively. The degression rate is calculated from the tariff applicable on 1 January of the relevant year.

As of 2012, the tariffs can also be reduced on 1 July of a given year: tariff rates fall by 3, 6, 9, 12 or 15 percent points if the installed capacity of installations registered after 30 September of the previous year and before 1 May of the current year (multiplied by 12 and divided by 7) exceeds 3,500 MW, 4,500 MW, 5,500 MW, 6,500 MW or 7,500 respectively. This reduction is also calculated from the tariff applicable on 1 January of the relevant year.

By 31 October of each year, the Federal Network Agency (BNetzA), in agreement with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Federal Ministry of Economics and Technology, announces in the Federal Gazette the registered installed capacity, the resulting degression percentage rate for the following year and the tariffs. By 30 May, the Federal Network Agency announces the tariffs applicable from 1 July of each year.

The BNetzA announced that the installed capacity of installations registered within 1 October 2010 and 30 September 2011 was about 5,200 megawatts. Therefore the degression rate will be 15 % as at 1.1.2012.¹⁴

Use of electricity for own consumption

Under Section 33(2) EEG, there is still entitlement to a (lower) tariff if electricity from solar radiation is not fed into the grid but is used by the installation operator or a third party (tariffs for own consumption). To be eligible for the tariff, the installation operator or a third party must use the electricity in the immediate vicinity of the installation and the electricity must not be transmitted via a public supply grid.

The installation operator must furnish proof that the conditions are met. This requires a meter which measures both the electricity consumption and quantity fed into the grid. Own consumption is calculated on the basis of the difference with the solar electricity meter. The technical details are set out in the guidelines of the grid technology/grid operation forum (FNN). Own consumption does not apply if the electricity is transmitted via the public grid.

To be eligible to apply the provisions on own consumption under the new EEG 2012, the installation must also satisfy the following conditions:

1. It must be built between 1 January 2012 and 31 December 2013 and be attached to or on top of a building.
2. Its installed capacity must not exceed 500 kilowatts.
3. It must have a grid connection.

The tariff is determined by the installation's size and the share of own consumption. If the installation operator consumes less than 30% of the solar electricity generated, 16.38 ct/kWh will be deducted from the applicable feed-in tariff. If the installation operator consumes more

¹⁴ www.bundesnetzagentur.de/cln_1912/DE/Sachgebiete/ElektrizitaetGas/ErneuerbareEnergienGesetz/VerguetungssaetzePVAnlagen/VerguetungssaetzePhotovoltaik_Basepage.html?nn=135464 .

than 30%, only 12 ct/kWh is deducted for this share of the electricity. The deductions are specified from the date of commissioning, i.e. they remain fixed. A period of one year is taken as the basis for calculating the share of own consumption.

6.1. Solar radiation (Section 32) ¹⁴⁾

Tariff for free-standing installations:

added in 2011 (newly installed capacity)	degression for 2012	free-standing installations and structures which are not buildings in ct/kWh	installations on sealed or converted land in ct/kWh
~ 5.200 MW	15 %	17.94	18.76

14) These tariff rates apply not only to free-standing installations, but also to installations on physical structures that cannot be classified as buildings. For free-standing installations a condition for entitlement to the tariff payment is compliance with the land categories laid down in Section 32 EEG. Free-standing installations on arable land are no longer eligible for tariff payments.

6.2. Installations in, attached to, or on top of buildings (Section 33)

Depression rate: 9 % plus / minus flexible cap. Duration of tariff payment 20 years

Tariff for electricity fed into the public grid (feed-in tariff)

added in 2011 (newly installed capacity)	degression for 2012	up to 30 kW	over 30 kW	over 100 kW	over 1 MW
~ 5.200 MW	15 %	24.43	23.23	21.98	18.33

Tariff for electricity consumed by installation operator or third party (tariff for own consumption)

added in 2011 (newly installed capacity)	degression for 2012	tariff for own consumption in ct/kWh					
		up to 30 kW		over 30 kW		over 100 kW	
		<i>own use</i>		<i>own use</i>		<i>own use</i>	
		up to 30%	over 30%	up to 30%	over 30%	up to 30%	over 30%
~ 5.200 MW	15 %	8.05	12.43	6.85	11.23	5.60	9.98