

**Subsidies for renewables**

Sources: Nasdaq OMX, Danish National Bank, Swedish National Bank, Danish Energy Agency, SKM, EuroStat, Nord Pool Spot.

Lin. regression <sup>2B)</sup>

Constant Slope  
-1296,753 0,659

Year	Spot price	Green certificates		Inflation factor <sup>8)</sup>
	DK1 <sup>1) 2B) 3) 4)</sup>	Prices <sup>5) 6) 7)</sup> Nominal terms	Fixed prices <sup>8)</sup> EUR/MWh	
2013	38,98	21,90	22,29	1,018
2014	30,67	21,01	21,09	1,004
2015	29,00	15,30	15,24	1,004
2016	30,39	15,52	15,18	1,022
2017	29,95	15,63	15,02	1,040
2018	29,88	15,84	14,95	1,059
2019	29,88	16,05	14,89	1,078
2020	31,27	16,21	14,77	1,098
2021	34,54	16,40	14,67	1,117
2022	36,50	16,58	14,57	1,138
2023	36,90	16,76	14,47	1,158
2024	36,96	16,94	14,37	1,179
2025	37,61	17,12	14,27	1,200
2026	38,48	17,31	14,17	1,222
2027	39,14	17,49	14,06	1,244
2028	39,80	17,67	13,96	1,266
2029	40,46	17,85	13,85	1,289
2030	41,11	18,03	13,74	1,312
2031	41,77	18,22	13,64	1,336
2032	42,43	18,40	13,53	1,360
2033	43,09	18,58	13,42	1,384

**Anholt off-shore wind farm:**

Estimated subsidized wind farm production <sup>10)</sup>	Actual subsidy.		Subsidy green certificate prices.	
	Nominal terms <sup>11)</sup>	Fixed prices <sup>8) 11)</sup>	Nominal terms	Fixed prices <sup>8)</sup>
GWh	1000 EUR	1000 EUR	1000 EUR	1000 EUR
533	54.402	55.384	11.678	11.889
1.600	176.503	177.209	33.614	33.748
1.600	179.173	178.459	24.487	24.389
1.600	176.951	173.129	24.829	24.293
1.600	177.655	170.745	25.000	24.028
1.600	177.767	167.831	25.343	23.926
1.600	177.759	164.857	25.685	23.821
1.600	175.544	159.924	25.942	23.634
1.600	170.306	152.409	26.233	23.476
1.600	167.179	146.965	26.524	23.317
1.600	166.533	143.808	26.815	23.156
1.600	166.446	141.192	27.106	22.994
1.600	165.400	137.824	27.398	22.830
267	27.335	22.375	4.615	3.777
<b>Sum 1000 EUR</b>				
	2.158.953	1.992.112	335.269	309.278
<b>SUM mill. DKK:</b>				
	16.094	14.851	2.499	2.306

**Glossary**

Currency rate EUR/DKK average during 2014: 7,454741

Delivery year: for the green certificates, this is the year where the buyers must buy a certain volume of certificates. Example for Norway for the year 2015:

Those who have quota obligations must buy a volume of certificates corresponding to 8.8% of their purchase (or consumption) of electricity.

DK1: Western Denmark

Fixed prices: all fixed prices are as of the end of December 2014 <sup>8)</sup>

Reference Day: 9 April 2015

Subsidy: in the calculation of the subsidy, the average annual spot price is used. On one hand, the spot prices tend to be low, when the wind production is high. On the other hand, the wind production tend to be highest during the winter term, where the spot prices normally are higher than the annual average.

- 1) For the years 2013-2014: average price during the year.
- 2A) Nasdaq OMX' Daily Fix from the Reference Day.
- 2B) The years 2026-2033: The prices are estimated by means of linear regression. (Using the prices from the years 2021-2025 for the linear extrapolation.)
- 3) For the year 2015, this is the weighted average below. The weights  $W_i$  are according to the number of days in each quarter.  
 $W_1 * (\text{spot price Q1-2015}) + W_2 * (\text{forward price for Q2-2015 as quoted 31 March 2015}) + W_3 * (\text{forward price Q3-2015}) + W_4 * (\text{forward price Q4-2015}).$   
 The forward prices for Q3-2015 and Q4-2015 are Nasdaq OMX' Daily Fix from the Reference Day.
- 4) For the years 2016-2018, this is Nasdaq OMX' Daily Fix from the Reference Day.  
 For the years 2019-2025, the historical average of the difference between the System Price and the DK1 spot price is used (2.21 EUR/MWh).  
 (Averaging over the 10 years 2005-2014. Inflation is ignored in the calculation of the average.) The average is adjusted with the inflation rates <sup>8)</sup>
- 5) For each of the delivery years 2013-2014, this is the unweighted average of SKM's spot closing prices at the end of the 11 months April-February.  
 For example, for the year 2013, this is the average of SKM's 11 spot closing prices from 30 April 2012 to 28 February 2013.
- 6) For each of the delivery years 2015-2019, this is the forward closing price as quoted by SKM at the Reference Day.
- 7) For each of the delivery years 2020-2029, this is an estimate: a linear extrapolation based on the forward prices for the delivery years 2015-2019.  
 Linear regression is used to make the linear extrapolation.
- 8) For the years 2013 and 2014, the euro area inflation of respectively 1.4% and 0.4% from EuroStat is used. For 2015, an inflation of 0.4% is estimated.  
 For the years 2016-2025, an inflation of 1.8% is estimated (as ECB aims to maintain inflation rates below, but close to, 2%).
- 9) Horns Rev 3 off-shore wind farm: the estimated, annual production from 1 MW wind turbine capacity is 4500 MWh.  
 For simplicity, a linear increase in the capacity during the years 2017-2020 is assumed. The subsidies stop, when the total production reaches 20 TWh.
- 10) Anholt off-shore wind farm: the estimated, annual production from 1 MW wind turbine capacity is 4000 MWh.  
 For simplicity, the production before 1 September 2013 is ignored in the calculation.
- 11) Anholt off-shore wind farm: the guaranteed price is 1051 DKK/MWh. This is converted to EUR/MWh using the average currency rate for 2014.  
 The wind farm will receive the guaranteed price of 1051 DKK/MWh for the first 20 TWh of production. The subsidy in EUR/MWh: 141,0
- 12) Horns Rev off-shore wind farm: the guaranteed price is 770 DKK/MWh. This is converted to EUR/MWh using the average currency rate for 2014.  
 The wind farm will receive the guaranteed price of 770 DKK/MWh for the first 20 TWh of production. The subsidy in EUR/MWh: 103,3
- 13) For solar celles in Denmark, the subsidies vary. However, at the outset, for solar cells established after 11 June 2013, the subsidy is 600 DKK/MWh during the first 10 years, and 400 DKK/MWh during the next 10 years.

Year	Spot price DK1 EUR/MWh	System Price EUR/MWh	Difference EUR/MWh
2005	37,23	29,33	7,90
2006	44,18	48,59	-4,41
2007	32,40	27,93	4,47
2008	56,43	44,73	11,70
2009	36,05	35,02	1,03

2010	46,49	53,06	-6,57
2011	47,96	47,05	0,91
2012	36,33	31,20	5,13
2013	38,98	38,10	0,88
2014	30,67	29,61	1,06
<i>Average</i>	<i>40,67</i>	<i>38,46</i>	<i>2,21</i>

**SKM monthly spot closing price**

Month	Date	SEK/MWh	EUR/MWh	Currency rate EUR/SEK at the date of the closing price
2012 April	30 April	146,0	16,40	8,9004
2012 May	31 May	147,0	16,38	8,9738
2012 June	29 June	166,0	18,94	8,7660
2012 July	31 July	168,0	20,13	8,3460
2012 Aug	31 Aug	173,0	20,71	8,3515
2012 Sep	28 Sept	194,0	22,99	8,4384
2012 Oct	31 Oct	193,5	22,45	8,6192
2012 Nov	30 Nov	211,0	24,38	8,6551
2012 Dec	28 Dec	209,0	24,26	8,6166
2013 Jan	31 Jan	239,0	27,72	8,6220
2013 Feb	28 Feb	224,0	26,49	8,4554
2013 April	30 April	193,0	22,51	8,5753
2013 May	31 May	162,0	18,88	8,5792
2013 June	28 June	181,0	20,67	8,7577
2013 July	31 July	177,0	20,32	8,7106
2013 Aug	30 Aug	192,0	22,00	8,7278
2013 Sept	30 Sept	204,0	23,51	8,6757
2013 Oct	31 Oct	190,0	21,58	8,8025
2013 Nov	29 Nov	186,0	20,81	8,9375
2013 Dec	30 Dec	171,0	19,12	8,9430
2014 Jan	31 Jan	171,0	19,33	8,8466
2014 Feb	28 Feb	199,0	22,36	8,9010
2014 April	30 April	171,0	18,86	9,0674
2014 May	30 May	178,0	19,64	9,0616
2014 June	30 June	174,0	18,92	9,1965
2014 July	31 July	177,0	19,18	9,2284
2014 Aug	29 Aug	182,0	19,82	9,1829
2014 Sep	30 Sept	185,0	20,15	9,1815

2014 Oct	31 Oct	177,0	19,16	9,2364
2014 Nov	28 Nov	178,0	19,20	9,2693
2014 Dec	30 Dec	168,0	17,66	9,5155
2015 Jan	30 Jan	163,0	17,38	9,3773
2015 Feb	27 Feb	138,5	14,85	9,3283

<b>Prices DK1 2015</b>	EUR/MWh
Average spot price Q1	27,10
Forward price Q2	29,13
Forward price Q3	29,70
Forward price Q4	30,03
<b>Spot price DK1 2015<sup>3)</sup></b>	29,00

#### Nasdaq OMX Daily Fix

Product	Daily Fix
	EUR/MWh
ENOQ2-15	24,90 Nasdaq OMX Daily Fix 31 March 2015
ENOQ3-15	23,95 Nasdaq OMX Daily Fix on the Reference Day
ENOQ4-15	29,15 Nasdaq OMX Daily Fix on the Reference Day
SYARHQ2-15	4,23 Nasdaq OMX Daily Fix 31 March 2015
SYARHQ3-15	5,75 Nasdaq OMX Daily Fix on the Reference Day
SYARHQ4-15	0,88 Nasdaq OMX Daily Fix on the Reference Day

Horns Rev 3 off-shore wind farm:					System Price <sup>2A)</sup> EUR/MWh	(Price <sub>DK1</sub> - Sys. Price) <sup>4)</sup> EUR/MWh	Annual subsidized production from 1 GWh/year established mid-2013	Actual subsidy for 1 GWh/year of solar cells established mid-2013 <sup>13)</sup>		Subsidy for 1 GWh/year of renewables. Green certificates	
Estimated subsidized wind farm production <sup>9)</sup> GWh	Nominal terms <sup>12)</sup> 1000 EUR	Actual subsidy. Fixed prices <sup>8) 12)</sup> 1000 EUR	Subsidy green certificates prices. Nominal terms Fixed prices <sup>8)</sup> 1000 EUR 1000 EUR				mid-2013 GWh	Nominal terms 1000 EUR	Fixed prices 1000 EUR	nominal terms 1000 EUR	Fixed prices 1000 EUR
0	0	0	0	0			0,5	21	21	11	11
0	0	0	0	0			1,0	50	50	21	21
0	0	0	0	0			1,0	51	51	15	15
0	0	0	0	0	27,80	2,59	1,0	50	49	16	15
450	33.003	31.719	7.031	6.758	27,45	2,50	1,0	51	49	16	15
900	66.069	62.376	14.255	13.459	27,15	2,73	1,0	51	48	16	15
1.350	99.097	91.904	21.672	20.099	27,65	2,23	1,0	51	47	16	15
1.800	129.638	118.103	29.185	26.588	29,03	2,24	1,0	49	45	16	15
1.800	123.745	110.740	29.512	26.411	32,30	2,24	1,0	46	41	16	15
1.800	120.227	105.690	29.840	26.232	34,25	2,25	1,0	44	39	17	15
1.800	119.500	103.194	30.167	26.051	34,65	2,25	1,0	30	26	17	14
1.800	119.403	101.286	30.495	25.868	34,70	2,26	1,0	17	14	17	14
1.800	118.226	98.514	30.822	25.683	35,35	2,26	1,0	16	13	17	14
1.800	116.661	95.492	31.150	25.497			1,0	15	12	17	14
1.800	115.475	92.850	31.477	25.310			1,0	15	12	17	14
1.800	114.289	90.271	31.805	25.121			1,0	14	11	18	14
1.100	69.118	53.628	19.636	15.236			1,0	13	10	18	14
							1,0	13	10	18	14
							1,0	12	9	18	14
							1,0	11	8	18	14
							0,5	5	4	9	7
20.000	1.344.451	1.155.768	337.048	288.312	Sum			624	569	345	298
	10.023	8.616	2.513	2.149	SUM mill. DKK			4,65	4,24	2,57	2,22







Currency rate EUR/SEK on Reference Day 9,3439

### SKM closing prices Reference Day

Forward product	SEK/MWh	EUR/MWh	Delivery year	Lin. regression	
				Slope	Constant
March-16	143	15,30	2015	0,1819369	-351,2987
March-17	145	15,52	2016		
March-18	146	15,63	2017		
March-19	148	15,84	2018		
March-20	150	16,05	2019		
		16,21	2020		
		16,40	2021		
		16,58	2022		
		16,76	2023		
		16,94	2024		
		17,12	2025		
		17,31	2026		
		17,49	2027		
		17,67	2028		
		17,85	2029		
		18,03	2030		
		18,22	2031		
		18,40	2032		
		18,58	2033		

The delivery years 2020-2033: blue colour indicates an estimate made by means of linear regression.  
(Based on the values from the forwards for the delivery years 2015-2019.)