



Commission for Energy Regulation

An Coimisiún um Rialáil Fuinnimh

2015 Standard Transmission, Distribution and Operation and Maintenance Charges

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Abstract:

The CER has decided to publish the Distribution Standard Charges, Operation and Maintenance Charges and the Transmission Standard Charges in a consolidated paper. The charges have previously been published separately by ESBN and CER respectively.

Standard Charges

The aim of the standard charges is to provide a reasonable degree of financial certainty for parties, particularly Gate 3 renewable generators, seeking to connect to the Irish network.

In May 2009 the CER published a decision paper on Standard Transmission Charges and Timelines (CER/09/077). This document set out the standard transmission charges and timelines to be used by EirGrid when issuing offers for connection to the Irish distribution (where shallow transmission assets are built) and transmission networks.

Likewise, ESBN has previously published standard charges approved by CER on the ESB Networks website [here](#).

Operation and Maintenance

Generators connected to the Distribution system are required to pay an annual charge to ESB Networks for the operation and maintenance of the substations, overhead lines, and cables built to connect their facility to the Distribution system. The annual charges are based on a standard amount per km line or cable and per item of substation equipment and, for transparency, are itemised in the same manner as the generator standard charges. These standard amounts are referred to as Operation and Maintenance unit charges.

The charges outlined above have been reviewed by CER. The CER now approves these charges updated to reflect indicative 2015 prices.

Target Audience:

Electricity generators and demand customers connecting to the electricity network.

Related Documents:

- [2014 Standard Transmission Charges – Decision Paper CER/13/303](#)
- [2013 Standard Transmission Charges – Decision Paper CER/13/005.](#)
- [2012 Standard Transmission Charges – Decision Paper CER/11/216.](#)
- [2011 Standard Transmission Charges – Decision paper CER/10/235](#)
- Standard Transmission Charges & Timelines – Decision Paper, CER/09/077

- <http://www.cer.ie/en/electricity-transmission-network-current-consultations.aspx?article=7ab5d769-38ba-450c-b772-74751011d83e>
- Standard Transmission Charges & Timelines – A Consultation Paper, CER/08/167.
- <http://www.cer.ie/en/electricity-transmission-network-current-consultations.aspx>
- Standard Prices for Generators 2011, CER/10/224(i)
- <http://www.cer.ie/en/electricity-distribution-network-current-consultations.aspx?article=d93208f7-9839-4a8f-b3b7-f8efc2b1a9fe>
- Decision on TSO and TAO Transmission Revenue for 2011 to 2015, CER/10/206
- <http://www.cer.ie/en/electricity-transmission-network-decision-documents.aspx?article=163210c1-f11f-4713-bfc9-d3b1c2fb4df3>
- CER Proposed Decision on Electricity Network Connection Policy CER/09/072 – 16 April 2009
- <http://www.cer.ie/en/electricity-distribution-network-current-consultations.aspx?article=2c22a3a8-a3d1-4f3a-8c22-2d891f1d3a71&mode=author>
- Standard distribution charges 2014
- <http://www.esb.ie/esbnetworks/en/commercial-downloads/standard-prices-for-generator-connections-for-2014-english.pdf>
- Operation and maintenance charges 2014
- <http://www.esb.ie/esbnetworks/en/commercial-downloads/schedule-of-approved-om-charges-2014.pdf>

Section 1

1.1 The Commission for Energy Regulation

The Commission for Energy Regulation ('the CER') is the independent body responsible for overseeing the regulation of Ireland's electricity and gas sector's. The CER was initially established and granted regulatory powers over the electricity market under the Electricity Regulation Act, 1999. The enactment of the Gas (Interim) (Regulation) Act, 2002 expanded the CER's jurisdiction to include regulation of the natural gas market, while the Energy (Miscellaneous Provisions) Act 2006 granted the CER additional powers in relation to gas and electricity safety.

The Electricity Regulation Amendment (SEM) Act 2007 outlined the CER's functions in relation to the Single Electricity Market (SEM) for the island of Ireland. This market is regulated by the CER and the Northern Ireland Authority for Utility Regulation (NIAUR). The CER is working to ensure that consumers benefit from regulation and the introduction of competition in the energy sector.

1.2 Purpose of this paper

The purpose of this decision paper is to update the Standard Charges for the Transmission and Distribution Networks, as well as the Operation and Maintenance charges being applied by ESB Networks. All charges have been reviewed and updated to indicative 2015 prices.

1.3 Background Information

Standard charges mean that parties connecting to the Electricity Network will not see (in their connection offer) the actual location-specific cost and timeline for their shallow connection, but rather the CER approved standard charges and timelines which are based on the average connection for the asset class in question. This standard applies irrespective of the location-specific connection terrain, conditions, etc.

The intent of these standard connection charges is to provide a reasonable degree of certainty for parties seeking to connect to the distribution and transmission systems in Ireland. In particular, they provide the basis for connection charges for Gate 3 distribution and transmission related renewable Generator connection offers.

The standard transmission charges and timelines in CER/09/077 apply from May 2009 to the end of the roll-out of Gate 3 connection offers. CER/09/077 stated that the standard charges would not change in real terms during this time, i.e. they would be updated annually only to reflect changes in the CPI.

With the move to the application of the Irish Harmonised Index of Consumer Prices (HICP) from CPI as outlined in the PR3 decision paper (CER/10/206)¹, the CER now publish updated standard transmission and distribution charges to reflect 2014 indicative prices as per the following:

- 2010 actual CPI of -1.0% (CPI still applicable in the PR2 period);
- 2011 actual Irish HICP of +1.1% (move to HICP in PR3)²;
- 2012 actual Irish HICP of +2%³;
- 2013 actual Irish HICP of +1.7%⁴;
- 2014 updated forecast Irish HICP of +1.9%⁵; and

¹ Please refer to Section 13.2.2 of CER/10/206.

² Please refer to the Q1 2013 Central Bank Quarterly Bulletin which can be found [here](#)

³ Please refer to the ESRI Quarterly Economic Commentary, Spring 2013.

⁴ Central Bank Quarterly Bulletin Q4 2014 available [here](#)

⁵ IBID

- 2015 forecast HICP of +0.6%⁶.

The CER had previously used the ESRI's Quarterly Economic Commentary publications as the reference for forecast HICP figures. Given that these figures were not always publically available. The CER has decided that the most recent Central Bank Quarterly Bulletin will be the basis for forecast HICP figures in future publications.

1.4 Structure of this paper

This paper is structured in the following manner:

- **Section 1** provides an introduction to this paper. It also provides information on where background information can be sourced;
- **Appendix A** details the standard transmission charges approved in CER/09/077 updated to reflect 2015 indicative prices;
- **Appendix B** details the standard distribution charges reflecting 2015 indicative prices;
- **Appendix C** details the operation and maintenance charges reflecting 2015 indicative prices.

1.5 Queries to this paper

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⁶ IBID

Appendix A - CER approved Standard Transmission Charges 2015

Asset	2014 indicative prices	2015 indicative prices	Diff in €'s	Diff in %
New Looped Outdoor 110kV Station (Single strung busbar, AIS switchgear, SCS Control)	€2,780,000	€2,740,000	€-40,000	3%
New 110kV Line bay in existing outdoor station	€770,000	€760,000	€-10,000	3%
New tailfed (Single Supply) Outdoor 110kV Station - Industrial Customer	€1,380,000	€1,360,000	€-20,000	3%
New Looped Outdoor 220kV Station (Single 220kV Busbar) - Generation (1 No.)	€3,850,000	€3,800,000	€-50,000	3%
New 220kV line bay in existing 220kV outdoor station, single busbar	€1,110,000	€1,100,000	€0	3%
New 220kV line bay in existing 220kV outdoor station, double busbar	€1,310,000	€1,290,000	€-20,000	3%
New 110kV Line bay in existing 220kV outdoor station, double busbar	€820,000	€810,000	€-10,000	2%
110kV SC Woodpole 200mm²/300mm² ACSR 80°C with earthwire (<10km)	€250,000	€250,000	€0	4%
110kV SC Woodpole 200mm²/300mm² ACSR 80°C with earthwire (>10km)	€250,000	€250,000	€0	4%
110kV SC Woodpole 430mm² ACSR 80°C with earthwire (<10km)	€370,000	€370,000	€0	3%
110kV SC Woodpole 430mm² ACSR 80°C with earthwire (>10km)	€320,000	€320,000	€0	3%
220kV SC Tower 600mm² ACSR 80°C with earthwire (<10km)	€780,000	€770,000	€-10,000	3%
220kV SC Tower 600mm² ACSR 80°C with earthwire (>10km)	€750,000	€740,000	€-10,000	3%
110kV 120MVA - 1000mm² Al Single Circuit: Cable & Civils (Roadway day)	€910,000	€900,000	€-10,000	3%
110kV 120MVA - 1000mm² Al Single Circuit: Cable & Civils (Roadway night)	€1,380,000	€1,360,000	€-20,000	3%
110kV 250MVA - 1600mm² Cu Single Circuit: Cable & Civils (Roadway day)	€1,980,000	€1,950,000	€-30,000	3%
110kV 250MVA - 1600mm² Cu Single Circuit: Cable & Civils (Roadway night)	€2,850,000	€2,810,000	€-40,000	3%
220kV 500MVA - Single Circuit: Cable & Civils (Roadway day)	€2,110,000	€2,080,000	€-30,000	3%
220kV 500MVA - Single Circuit: Cable & Civils (Roadway night)	€2,270,000	€2,240,000	€-30,000	3%
250MVA (per end)	€110,000	€110,000	€0	0%
120MVA (per end)	€100,000	€100,000	€0	0%
Lines cables interface mast (Per End)	€260,000	€260,000	€0	4%
500MVA (per end)	€270,000	€270,000	€0	4%

Appendix B - CER approved Standard Distribution Charges 2015

	Item	Description	Total €
Line work			
1.	Standard 110kV line (300ACSR)	<ul style="list-style-type: none"> • Max design voltage = 120kV • BIL = 550kV • Power frequency withstand voltage = 315kV • Conductor type – 300ACSR • Load rating – 1 720A-860A⁷ • Fault current rating – 23kA for 1 sec • Design wind speed – 45m/s on bare conductor; 26m/s on conductor with 2.5cm radial ice; 4cm radial ice, no wind • 4/5 Poleset /km assumed • Up to 1 mast/km • Not inclusive of shield wire • Not inclusive of high security lines 	209,020
2.	110kV line (430mm ²) - new build only (<10km)	<ul style="list-style-type: none"> • Max design voltage = 123kV • BIL = 550kV • Power frequency withstand voltage = 230kV • Conductor type – 400mm sq ACSR BISON • Load rating – 981A (25C) -1170A (5C)⁸ • Fault current rating – 40kA for 1 sec • Design wind speed – 45m/s on bare conductor; 26m/s on conductor with 2.5cm radial ice; 4cm radial ice, no wind • 4/5 Poleset /km assumed • Up to 1 mast/km • Not inclusive of shield wire • Not inclusive of high security lines 	370,000

⁷ Higher rating assumes ambient temperature of 5C; lower rating assumes ambient temperature of 25C

⁸ Higher rating assumes ambient temperature of 5C; lower rating assumes ambient temperature of 25C

3.	110kV line (430mm ²) - new build only (>10km)	<ul style="list-style-type: none"> • Max design voltage = 123kV • BIL = 550kV • Power frequency withstand voltage = 230kV • Conductor type – 400mm sq ACSR BISON • Load rating – 981A (25C) -1170A (5C)⁹ • Fault current rating – 40kA for 1 sec • Design wind speed – 45m/s on bare conductor; 26m/s on conductor with 2.5cm radial ice; 4cm radial ice, no wind • 4/5 Poleset /km assumed • Not inclusive of shield wire • Not inclusive of high security lines 	320,000
4.	38kV Line (300ACSR)	<ul style="list-style-type: none"> • Max design voltage = 41.5kV • BIL = 250kV • Power frequency withstand voltage = 95kV¹⁰ • Max phase-Earth voltage = 44kV¹¹ • Load rating – 775A-920A • Fault current rating – 19kA for 1 sec • Design wind speed – 36m/s on bare conductor; 20m/s on conductor with 2.5cm radial ice; • 6/7 Poleset /km assumed • Design temperature – 80C • Minimum creepage – 900mm • Up to 1 mast/km • Not inclusive of high security lines 	110,310

⁹ Higher rating assumes ambient temperature of 5C; lower rating assumes ambient temperature of 25C

¹⁰ 250kV BIL and Power Withstand of 95kV correspond to the 52kV IEC Voltage class

¹¹ The system neutral is connected to earth through Petersen coils located at 110kV/38kV stations. On the occasion of a fault to earth on one phase of the system, the voltage to earth on the healthy phases may exceed line voltage and this condition may be sustained for a considerable time (over 3 hours)

5.	38kV 150AAAC	<ul style="list-style-type: none"> • Max design voltage = 41.5kV • BIL = 250kV • Power frequency withstand voltage = 95kV • Load rating – 511A-604A • Fault current rating – 12kA for 1 sec • Design wind speed – 36m/s on bare conductor; 16m/s on conductor with 2.5cm radial ice; • 8 poles /km assumed • Design temperature – 80C • Minimum creepage – 960mm on glass insulators; 1280mm on polymeric insulators • One mast per 5km • Not inclusive of high security lines 	88,070
6.	38kV 100ACSR	<ul style="list-style-type: none"> • Max design voltage = 41.5kV • BIL = 250kV • Power frequency withstand voltage = 250kV • Max phase-Earth voltage = 44kV • Load rating – 385A-450A • Fault current rating – 6kA for 1 sec • Design wind speed – 36m/s on bare conductor; 23m/s on conductor with 2.5cm radial ice; • 6/7 poles /km assumed • Design temperature – 80C • Minimum creepage – 900mm • Terminal masts in high security areas only • Not inclusive of high security lines 	69,670
7.	MV 150AAAC/92 SCA	<ul style="list-style-type: none"> • Max design voltage = 21.5kV • BIL = 125kV • Power frequency withstand voltage = 50kV • Load rating – 412A-516A • Fault current rating – 11.5kA for 1 sec • Design wind speed – 45m/s on bare conductor; 16m/s on conductor with 2.5cm radial ice; • 12poles /km assumed • Design temperature – 65C 	52,260

Cable Costs (EXCLUDES ALL CIVIL WORKS AND DUCTING)

8.	110kV cable 630XLPE ¹² (Aluminium)	<ul style="list-style-type: none"> • Max design voltage = 123kV • BIL = 550kV • Power frequency withstand voltage = 230kV • Load rating – 600A • Fault current rating – 26kA for 1 sec 	354,180
9.	38kV cable 630XLPE (Aluminium)	<ul style="list-style-type: none"> • Max design voltage = 52kV • BIL = 250kV • Power frequency withstand voltage = 95kV • Load rating – 660A • Fault current rating – 20kA for 1 sec • Includes cost of fibre optic cable • Per unit cost of arc suppression coil included 	127,740
10.	MV Cable(400XLPE) (Aluminium)	<ul style="list-style-type: none"> • Max design voltage = 22kV • BIL = 125kV • Power frequency withstand voltage = 50kV • Load rating – 500A • Fault current rating – 20kA for 1 sec 	58,060
11.	38kV cable end mast		46,450
12.	110kV cable end mast		162,570
13.	110kV and 38kV cable civils	<ul style="list-style-type: none"> • Costs assumed for refund or estimate purposes only 	150,640
14.	MV cable civils	<ul style="list-style-type: none"> • Costs assumed for refund or estimate purposes only 	52,310

¹² Price applies for first km only. In the event that a job requires more than one km then the price will be based on actual tenders and passed through.

110 kV Stations			
15.	New looped Outdoor 110kV station	<ul style="list-style-type: none"> • 4 110kV bays • Single strung 110kV busbar • AIS Switchgear • SCS control • Civil works excluded • Site purchase excluded • No transformers incl • No lower voltage B/B 	2,740,000
16	New Tail-fed (Single Supply) Outdoor 110kV Station Industrial Customer	<ul style="list-style-type: none"> • AIS Switchgear • SCS Control • Civil works included • Site purchase excluded 	1,360,000
17	New 110kV/MV station (excluding site purchase and civil works)	<ul style="list-style-type: none"> • Tailed 110kV station with 110kV B/B¹³ • 2*20MVA transformers • Remote end works to be charged separately • Civil works not included. To be charged as pass through • Site purchase not included. To be charged as pass through 	3,019,200
18.	110kV/38kV 63MVA green field transformer package	<ul style="list-style-type: none"> • Installation of 110kV/38kV 63MVA transformer into a new station. • 38kV transformer cubicle to be equipped • Half 38kV busbar to be constructed. • Outdoor station assumed • Civil Works excluded¹⁴ • 110kV transformer cubicle excluded 	1,569,180

¹³ Assumes the 110kV B/B is owned and operated by DSO

¹⁴ Charge includes civil works associated with transformer plinth

19	110kV/38kV 31.5 MVA green field transformer package	<ul style="list-style-type: none"> • Installation of 110kV/38kV 31.5MVA transformer into a new station. • 38kV transformer cubicle to be equipped • Half 38kV busbar to be constructed. • Outdoor station assumed • Civil Works excluded¹⁵ • 110kV transformer cubicle excluded 	1,213,100
20.	110kV/MV 20 MVA green field transformer package	<ul style="list-style-type: none"> • Installation of 110kV/MV 20MVA transformer into a new station. • MV transformer cubicle to be equipped • Half MV busbar to be constructed. • MV busbar assumed to be indoor • Civil Works excluded¹⁶ • 110kV transformer cubicle excluded 	1,051,600
21.	110kV/MV 31.5 MVA green field transformer package	<ul style="list-style-type: none"> • Installation of 110kV/MV 31.5MVA transformer into a new station. • MV transformer cubicle to be equipped • Half MV busbar to be constructed. • MV Busbar assumed to be indoor • Civil Works excluded¹⁷ • 110kV transformer Cubicle excluded 	1,286,050
22.	Uprate 1*31.5MVA to 2*31.5MVA	<ul style="list-style-type: none"> • New 110kV B/B to be installed • 3*110kV bays to be installed • Additional Control and protection required • Extensive civil works included 	2,642,950
23.	Uprate 2*31.5MVA to 2*63MVA	<ul style="list-style-type: none"> • 38kV B/B uprating required • Civil works included • No allowance for retiring 2*31,5MVA trafos included 	2,903,070
24	Civil works for a typical outdoor 110kV station	<ul style="list-style-type: none"> • Costs assumed for refund or estimate purposes only 	1,081,500

¹⁵ Charge includes civil works associated with transformer plinth

¹⁶ Charge includes civil works associated with transformer plinth

¹⁷ Charge includes civil works associated with transformer plinth

38kV stations			
25.	New 2*5MVA station	<ul style="list-style-type: none"> • 38kV B/B required • MV B/B required • 2*5MVA transformers 	1,219,290
26.	5MVA 38kV/MV green field transformer package	<ul style="list-style-type: none"> • • Install 5MVA 38kV/MV transformer into a new 110kV or 38kV station • MV transformer cubicle to be equipped • Half MV busbar to be constructed. • MV Busbar assumed to be indoor • Civil Works excluded¹⁸ • 38kV transformer Cubicle excluded – the charge for this is listed separately 	507,260
27.	10MVA 38kV/MV green field transformer package	<ul style="list-style-type: none"> • Install 10MVA 38kV/MV transformer into a new 110kV or 38kV station • MV transformer cubicle to be equipped • Half MV busbar to be constructed. • MV Busbar assumed to be indoor • Civil Works excluded¹⁹ • 38kV transformer Cubicle excluded– the charge for this is listed separately 	552,240
28.	15MVA 38kV/MV green field Transformer Package	<ul style="list-style-type: none"> • Install 15MVA 38kV/MV Transformer into a new 110kV or 38kV station • MV transformer cubicle to be equipped • MV busbar to be constructed. • MV Busbar assumed to be indoor • Civil Works excluded²⁰ • 38kV transformer Cubicle excluded– the charge for this is listed separately 	581,710

¹⁸ Charge includes civil works associated with transformer plinth

¹⁹ Charge includes civil works associated with transformer plinth

²⁰ Charge includes civil works associated with transformer plinth

29.	Install 5MVA 38kV/MV transformer into existing station + 38kV busbar extension	<ul style="list-style-type: none"> • 38kV busbar extension required • Includes equipping of 38kV transformer bay • 5MVA transformer to be installed • MV Transformer Bay included • Civil Works included 	520,610
30.	Install 10MVA 38kV/MV transformer into existing station + 38kV busbar extension	<ul style="list-style-type: none"> • 38kV busbar extension required • Includes equipping of 38kV transformer bay • 10MVA transformer to be installed • MV transformer Bay included • Civil Works Included 	565,050
31	Install 5MVA 38kV/MV transformer into existing station – no 38kV busbar extension	<ul style="list-style-type: none"> • Assumes Spare 38kV bay available • Includes equipping of 38kV transformer bay • Short 38kV cable run to transformer position • 5MVA transformer to be installed • MV transformer bay included • Civil Works Included 	411,940
32.	Install 10MVA 38kV/MV transformer into existing station – no 38kV busbar extension	<ul style="list-style-type: none"> • Assumes Spare 38kV bay available • Includes equipping of 38kV transformer bay • Short 38kV cable run to transformer position • 10MVA transformer to be installed • MV transformer Bay included • Civil Works Included 	455,910
33.	Uprate 2*5MVA station to 2*10MVA	<ul style="list-style-type: none"> • 38kV B/B uprating required • MV B/B uprating required • Protection upgrade incl new control room • Substantial civil works • No allowance for retiring 2*5MVA transformer included 	1,741,850
34	Civil works for a typical outdoor 38kV station	<ul style="list-style-type: none"> • Costs assumed for refund or estimate purposes only 	432,600

Miscellaneous Station Items

35.	New 110kV line bay in existing Outdoor 110kV Station	<ul style="list-style-type: none"> • AIS Switchgear • SCS control • Civil Works included • Station extension excluded 	760,000
36.	38kV cubicle in 38kV station	<ul style="list-style-type: none"> • Max design voltage = 52kV • BIL = 250kV • Power frequency withstand voltage = 95kV • B/B Load rating – 1000A-1250A • B/B Fault rating – 20kA for 1 sec • Cubicle to include CB's CT's, VT's, Disconnects, Protection Relays²¹ • Civil works included 	156,770
37.	38kV cubicle in 110kV station ²²	<ul style="list-style-type: none"> • Max design voltage = 52kV • BIL = 250kV • Power frequency withstand voltage = 95kV • B/B Load rating – 2000A • B/B Fault rating – 20kA for 1 sec • Cubicle to include CB's CT's, VT's, Disconnects, Protection Relays²³ • Civil works included 	179,990
38.	MV Cubicle in 110kV or 38kV station ²⁴	<ul style="list-style-type: none"> • Max design voltage = 24kV • BIL = 125kV • Power frequency withstand voltage = 50kV • B/B Load rating – 2000A • B/B Fault rating – 20kA for 1 sec • Cubicle to include CB's CT's, VT's, Protection Relays²⁵ • Civil works included • MV B/B assumed available 	58,060

²¹ Protection to include impedance, directional earth fault and cable differential (where appropriate)

²² Costs based on spare 38kV bay available

²³ Protection to include impedance, directional earth fault and cable differential (where appropriate)

39.	MV cubicle with interface transformer ²⁶	<ul style="list-style-type: none"> • Max design voltage = 24kV • BIL = 125kV • Power frequency withstand voltage = 50kV • B/B Load rating – 2000A • B/B Fault rating – 20kA for 1 sec • Cubicle to include CB's CT's, VT's, Protection Relays²⁷ • Civil works included • 5MVA interface transformer included • MV B/B assumed available • Additional civil works (for interface trafo) included 	209,020
40	Half MV busbar	<ul style="list-style-type: none"> • Construction of half an indoor MV busbar required with associated switchroom and control room. • No circuit breakers are to be equipped 	230,140
Metering²⁸			
41.	38kV meter and Power Quality	<ul style="list-style-type: none"> • Includes CT/VT cabinet • Main and check meter included • Power quality meter and transducer included 	58,060
42.	MV metering and Power Quality <10MVA	<ul style="list-style-type: none"> • Includes CT/VT's • Main meter included • Power quality meter and transducer included • KKK unit included • EGIP not installed or Charge Number 43 applied for EGIP 	29,030
43.	MV metering and Power Quality <10MVA (where MV CB is being charged as part of EGI installation, no need for KKK. See note 5)	<ul style="list-style-type: none"> • Includes CT/VT's • Main meter included • Power quality meter and transducer included • EGIP Charge Number 44 applies. See Note 5 	11,060

²⁴ Costs based on spare bay – with all required protection functionality - available

²⁵ Protection to include Earth fault, Overcurrent and Directional Sensitive Earth Fault

²⁶ Costs based on spare 38kV bay available

²⁷ Protection to include impedance, directional earth fault and cable differential (where appropriate)

²⁸ Metering costs assume only one set of meters installed (in the case of >10MVA the set also includes check meters). In the event that additional meter sets are required (for reasons of supplier contracts for example) then additional charges will apply.

44.	MV metering and Power Quality $\geq 10\text{MVA}$	<ul style="list-style-type: none"> • Includes CT/VT's • Main and check meter included • Power quality meter and transducer included • KKK unit included • EGIP not installed or Charge Number 43 applied for EGIP 	36,300
45.	MV metering and Power Quality $\geq 10\text{MVA}$ (where MV CB is being charged as part of EGIP installation, no need for KKK See Note 5)	<ul style="list-style-type: none"> • Includes CT/VT's • Main and check meter included • Power quality meter and transducer included • EGIP Charge Number 44 applies. See Note 5 	18,330
Communications/Protection			
46.	Protection Implementation for MV connections with MEC $< 2\text{MW}$	<ul style="list-style-type: none"> • Nulec recloser to be installed • Recloser to be installed between the metering CT/VT and the customer MV tail cables 	15,590
47.	SCADA and Protection Implementation for MV connections with MEC $\geq 2\text{MW}$	<ul style="list-style-type: none"> • Nulec recloser to be installed • Remote control facilities for NULEC recloser required • Recloser to be installed between the metering CT/VT and the customer MV tail cables 	17,050
48.	SCADA Implementation for 38kV connections between 2MW and 5MW (and MV connections $\geq 2\text{MW}$ and $< 5\text{MW}$ where there is no GPRS coverage) ²⁹	<ul style="list-style-type: none"> • Installation of SCADA RTU • DC power required • Satellite unit to be installed 	56,520
49.	Embedded Generation Interface Protection (EGIP) for an MV connection.	<ul style="list-style-type: none"> • Charge assumes NULEC option is LCTA. 	68,160

²⁹ Installations $> 5\text{MW}$ require a TSO RTU to be installed.

50.	Embedded Generation Interface Protection (EGIP) for an MV connection.	<ul style="list-style-type: none"> Charge assumes NULEC option is not a technically acceptable option. See Note 5. 	121,200
51.	Embedded Generation Interface Protection (EGIP) for 38kV connection.		44,870
52.	Embedded Generation Interface Protection (EGIP) for 110KV connection.		60,740
38kV Customer Compound [at windfarm site]			
53.	ESB Networks compound with over the fence connection to developer – overhead connection	<ul style="list-style-type: none"> Compound required to be fenced and stoned.³⁰ Earth Grid included Incomer is overhead Outgoer to customer may be overhead or cable Control room to be equipped with appropriate control, protection and SCADA systems. 38kV cubicle to be equipped with Circuit breaker, protection CTs and VTs and Metering CTs and VTs Civil Works excluded 	319,620

³⁰ This will be undertaken as part of the civil works to be completed by the developer

54.	ESB Networks compound with over the fence connection to developer – underground connection	<ul style="list-style-type: none"> • Compound required to be fenced and stoned³¹. • Earth Grid included • Incomer is cabled • Outgoer to customer may be overhead or cable • Control room to be equipped with appropriate control, protection and SCADA systems. • 38kV cubicle to be equipped with Circuit breaker, protection CTs and VTs and Metering CTs and VTs • Civil Works excluded 	323,430
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Notes

1. As per other charges these charges will be reviewed and revised on an annual basis
2. Unless otherwise stated costs on new stations do not include any civil works.
3. Unless otherwise stated costs do not include any site purchase
4. Costs do not include any ducting, trenching or re-instatement for cable work
5. Adjustments to MV Metering and MV EGIP Charge to cater for KKK Cost of € 18,200 are in 2013 monies.

³¹ This will be undertaken as part of the civil works to be completed by the developer

Appendix C - CER approved Operation and Maintenance Charges 2015

	Network Asset Type	Unit of Charge	Amount excl rates	Rates	Total Amount due (€)
Line Work					
1.	Standard 110kV line (300ACSR)	Per km	1,115	1,243	2,358
2.	38kV 300ACSR	Per km	1,104	657	1,761
3.	38kV150AAAC (Mulberry) Line	Per km	446	529	975
4.	38kV 100ACSR	Per km	446	415	861
5.	MV 150ACSR/92 SCA	Per km	280	310	590
Cable Costs (excludes all civil works and ducting)					
6.	110kV cable	Per km	217	2,807	3,024
7.	38kV cable	Per km	186	1,013	1,199
8.	MV cable	Per km	135	416	551
9.	38kV cable end mast	Per mast	-	333	333
10.	110kV cable end mast	Per mast	-	1,163	1,163
Station Work					
110kV stations					
11.	110kV/MV station incl. equipment (2*20MVA)	Per station	23,615	23,932	47,547
12.	110kV/38kV 63MVA green field transformer package	Per station	13,977	12,886	26,863
13.	110kV/38kV 31.5MVA green field transformer package	Per station	13,833	9,706	23,539

14.	110kV/MV 20MVA green field transformer package	Per station	13,593	8,413	22,006
	Network Asset Type	Unit of Charge	Amount excl rates	Rates	Total Amount due (€)
15.	110kV/MV 31.5MVA green field transformer package	Per station	13,833	10,288	24,121
16.	1*31.5MVA to 2*31.5MVA		3,406	7,061	10,467
17.	2*31.5MVA to 2*63MVA		291	7,684	7,975
38kV stations					
18.	38kV/MV Station incl. equipment (2*5MVA)	Per station	11,734	9,665	21,399
19.	38kV/MV 5MVA Green field transformer package	Per station	9,212	4,058	13,270
20.	38kV/MV 10MVA Green field transformer package	Per station	9,304	4,417	13,721
21.	38kV/MV 15MVA Green field transformer package	Per station	9,336	4,653	13,989
22.	38kV/MV - install 5MVA transformer into existing station – B/B extension	Per station	1,773	4,164	5,937
23.	38kV/MV - install 10MVA transformer into existing station – B/B extension	Per station	1,866	4,521	6,387
24.	38kV/MV – install 5MVA transformer into existing station no B/B extension	Per station	1,735	3,295	5,030
25.	38kV/MV – install 10MVA transformer into existing station	Per station	1,827	3,647	5,474

	no B/B extension				
26.	Uprate 2*5MVA to 2*10MVA		186	706	892

Miscellaneous Station items

	Network Asset Type	Unit of Charge	Amount excl rates	Rates	Total Amount due (€)
27.	38kV cubicle in 38kV station	Per cubicle	271	1,243	1,514
28.	38kV cubicle in 110kV station	Per cubicle	333	1,428	1,761
29.	MV cubicle in 110kV station	Per cubicle	249	459	708
30.	MV cubicle in 38KV outdoor station	Per cubicle	249	260	509
31.	MV cubicle with interface transformer	Per cubicle	695	1,651	2,346
32.	MV terminal station without NULEC recloser (pre Gate 2 connections)	Per station	177	231	408

Metering and SCADA

33.	Metering and SCADA for 2MW-5MW site	Per site	690	-	690
34.	Metering and SCADA for 5MW-10MW site	Per site	806	-	806
35.	Metering and SCADA for >10MW site	Per site	1,326	-	1,326
36.	Metering for <2MW site	Per site	458	-	458
37.	Protection for MV<2MW		197	125	322
38.	Protection for MV>2MW, <5MW with SCADA via GPRS		321	136	457

Metering and SCADA

	Network Asset Type	Unit of Charge	Amount excl rates	Rates	Total Amount due (€)
39	SCADA for 38kV connections >2MW, <5MW and MV where no GPRS available		5,192	451	5,643
38kV customer compound [at windfarm site]					
40	38kV compound at developers site – overhead line incomer	Per station	1,672	2,556	4,228
41	38kV compound at developers site – cable incomer	Per station	1,672	2,588	4,260

Notes

1. Above Charges are exclusive of VAT
2. Where generators share elements of plant, the operation and maintenance charge will be divided pro-rata on the basis of their MEC. The charge will be based on the network as built except as outlined in 3. below.
3. Where the system operator decides to build other than the LCTA for system development reasons, the operation and maintenance charge will be based on the LCTA rather than the actual build
4. Operation and Maintenance Charges include a component for rates payable by ESB Networks to Local Authorities. These rates apply to transmission and distributions networks.