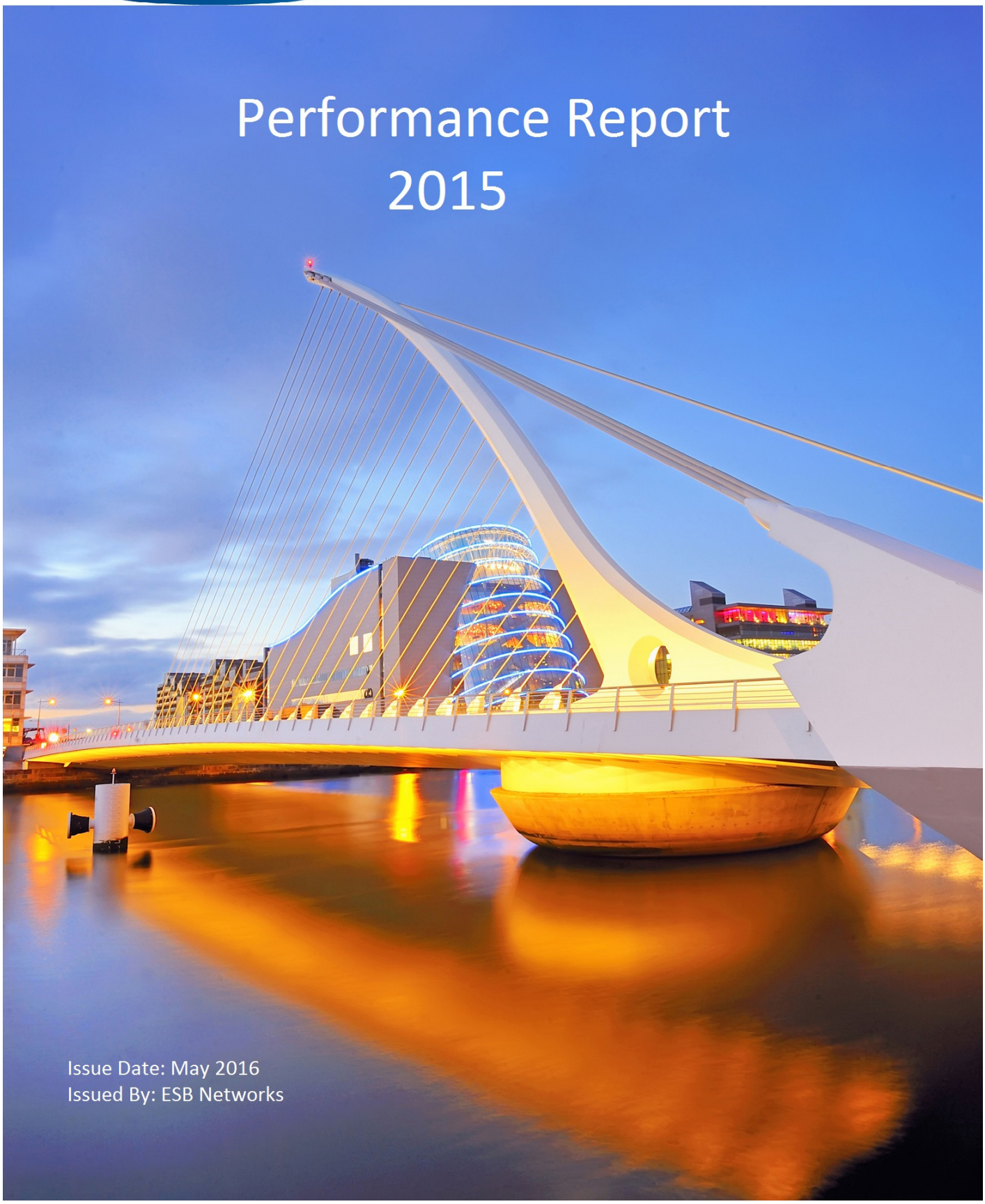
ESB NETWORKS

Performance Report 2015



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1. Executive Summary

As part of an overall investment programme worth €4 billion, ESB Networks invested €453.57m in 2015 on national energy infrastructure. Our investment activities focused on renewing and extending the distribution and transmission systems to provide Ireland with an improved electricity network.

Following its launch in 2014, the ESB Networks strategy for 2027 was progressed. The document was named 'ESB Networks 2027 - Lighting the way to a better energy future'.

Our continued involvement in numerous innovative R&D projects continued within the Smart Networks function in the form of FINESCE, PlanGridEV and evolvDSO – all of which were part funded by the European Commission under the FP7 framework. ESB Networks is part of the Irish led consortium which obtained €12m in grant funding under the Horizon 2020 funding framework.

Our customer service satisfaction surveys undertaken in 2015 returned an average satisfaction figure of 80.14%[1].

In 2015, the number of Gate 3 distribution applicants accepting their offers stood at 116. This translates to 1,784 MW of acceptances and proposed connections. By the end of 2015, there were only two Gate 3 distribution offers remaining to be accepted.

In 2015, a total of 81 MW of generation was added to the distribution system. Wind equated to 75.5 MW of this figure. This brings the total generation added to the distribution system to 1,657 MW, at the end of 2015, where 1,382 MW accounted for Wind.

In addition to completing the Gate 3 offer programme, there were 78 modification and non-GPA type distribution connection offers issued by ESB Networks to generator customers during 2015. This is an increase in productivity of 50% when compared to 2014 figures.

Approximately 66% of Gate 3 developers have opted to build their shallow connections contestably.

1 Based on a PR3 target of 74.0%

2. Introduction

ESB Networks complies with the requirements contained in the Distribution System Operator (DSO) Licence and the Transmission System Owner (TAO) Licence. Condition 13 of the DSO Licence requires the DSO to report annually on its performance and Condition 11 of the TAO Licence requires the TAO to report annually on its performance. This report has been prepared by ESB Networks on behalf of the DSO and TAO for the year ending December 2015 in order to fulfil these licence obligations.

The criteria reported upon in this report have been approved by the CER (Commission for Energy Regulation) in accordance with Condition 13 of the DSO Licence and Condition 11 of the TAO Licence. A copy of each of these licences and the approved performance criteria can be found at the following link:
http://www.esb.ie/esbnetworks/en/download_documents/reports_codes.jsp

Performance is reported under the following headings:

- Customer Service
- Cost Performance
- Capital Programme
- Supply Quality & Reliability
- Safety
- Sustainability
- Service Level Agreements Performance
- Compliance with licence requirements

2.1 Publication of Report on ESB Networks Website

In compliance with conditions 13 & 17 of the DSO Licence and Condition 11 of the TAO Licence, this performance report will be published on the ESB Networks website at the following link:
http://www.esb.ie/esbnetworks/en/download_documents/reports_codes.jsp

3. Customer Service

Key indicators of customer service performance include service delivery by the Customer Contact Centre and the treatment of complaints by ESB Networks staff. The percentage of calls answered within 20 seconds and the percentage of calls dropped are key performance criteria used to measure the quality of service provided to customers. Table 1 summarises the call answering performance of the contact centre. Graphs 1 and 2 show the trends in call handling response since 2009.

Table 1 – Customer Service Key Indicators

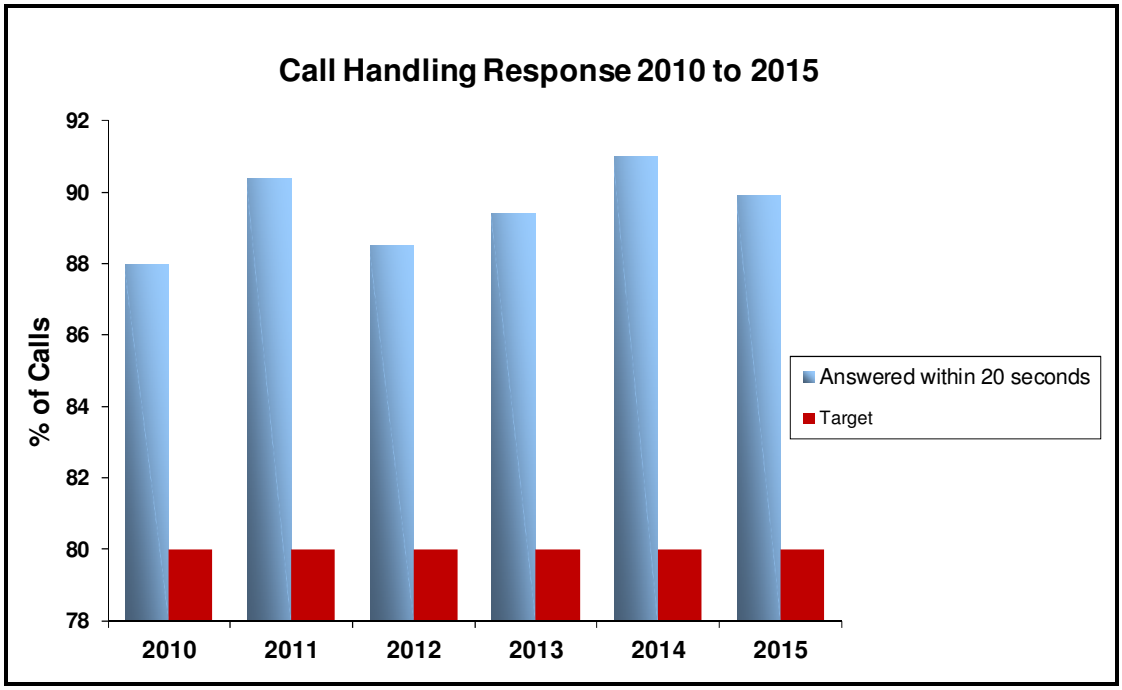
Description of Criteria	2014	2015	Target
Call Handling Response[2]			
Percentage of calls answered within 20 seconds	90.1%	89.9%	80%
Percentage of calls dropped[3]	5.1%	2.6%	5%
Networks customer calls to the call centre[4]	558,198	504,935	

In 2014 our 'Percentage of calls dropped' performance was only 0.1 of a percentage point outside the target of 5.0%. The main reason was the severe negative impact on our figures of Storm Darwin early in 2014. We managed to improve the service level and compensate for this during the remainder of 2014 but unfortunately we still ended up marginally above the target for the abandoned rate. In 2015 both call handling response measures were well within target -- our abandoned rate was down to 2.6%. Due to the use of PowerCheck App, social media and web channels, we also managed to reduce our call volume by c.10% in 2015 compared to 2014.

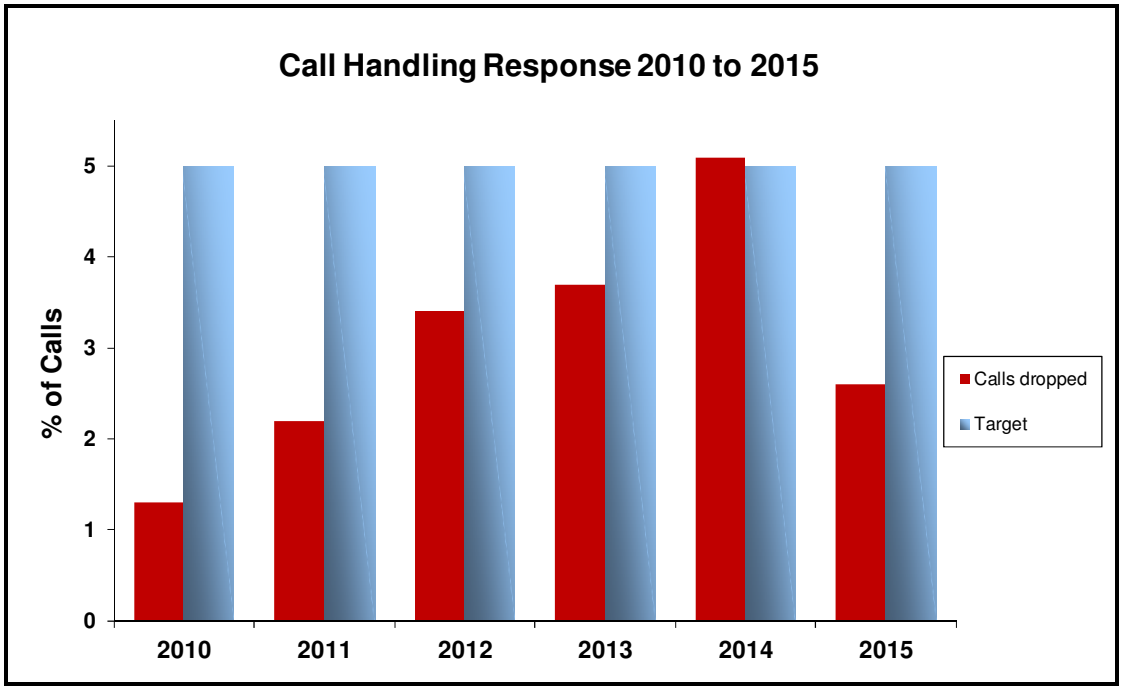
2 Note both sets of figures are inclusive of storms, which has the effect of reducing the percentage of calls handled and increasing the percentage of calls dropped.

3 Where the customer has terminated the call without waiting for a response.

4 The exact number of calls relating to ESB Networks issues are identified.



Graph 1



Graph 2

The impact of Storm Darwin in 2014 can been seen on the % calls dropped with a significant improvement in 2015 as outlined above.

3.1 Customer Service

The distribution system Customer Service Code, Complaints Handling Procedure and

Disconnection Code of Practice have been submitted to and approved by the CER. These procedures are published by ESB Networks on our website as follows:

- Distribution System Customer Service Code
  http://www.esb.ie/esbnetworks/en/about-us/customer_charter/customer_charter.jsp
- Complaints Handling Procedure
  http://www.esb.ie/esbnetworks/en/about-us/complaints.jsp
- Disconnection Code of Practice
  http://www.esb.ie/esbnetworks/en/commercial-downloads/Denergisation-Code-of-Practice.pdf

3.2 Customer Service Code

ESB Networks strives to provide services to a high level of quality and in a timely fashion to meet customer requirements and is committed to making service excellence a priority in all customer dealings, in particular in the areas of telephone response, restoration of supply outages and meeting the 12 service performance guarantees in our *Customer Charter*[5]. The volume of Customer Charter payments in 2015 was 2,143an increase of 988 from the 1,155 in 2014. The primary driver of the increase was the increased level of construction related economic activity around the country, with new house /apartment connection design and construction activity (NG5 & NG6) accounting for half of the increase. The other half of the increase was due to shortfalls in providing planned outage notifications in a timely fashion (NG2), again largely driven by the higher volume of construction activity.

Our commitment to protect the interests of vulnerable customers, in particular those on life support equipment, is on-going and these customers have the facility to avail of priority telephone access to ESB Networks provided they register with their suppliers.

3.3 Complaints Handling Procedure

ESB Networks employs a simple and effective complaints handling procedure to support quick and efficient resolution of problems.

The complaints procedure encourages initial complaints to be submitted via three channels:

a) A dedicated phone line in our Customer Contact Centre
b) By email to a dedicated email address
c) In writing through the local ESB Networks office

[5] https://www.esbnetworks.ie/who-we-are/customer-service/customer-charter

Staff in our Customer Contact Centre, and local management, are empowered to resolve complaints promptly and our target is to respond to 92% of all complaints received through these channels within 5 working days. The ESB Networks complaints facilitator produces a monthly management report to monitor both the volume of complaints received and our response performance in relation to these complaints.

Table 2 gives a breakdown of the complaints received during 2015.

Table 2 – Number of Complaints[6] Received

Description of Criteria	2014	2015
Complaints received	**Number**	**Number**
Concerning low voltage	49	51
For frequent outages	1,223	890
Time to connect customers	14	23
Operation delays and overruns	37	77
From suppliers	0	0
On connection costs and budget quotations	30	35
On meter reading and estimated reads	242	235
Damage to Property	253	212
Staff/Contractor Performance	186	277
Communications – Customer Service Issues	142	165
Others	212	236
Total complaints received	**2,388**	**2,201**

As shown above a total of 2,201 complaints were received in 2015 compared to 2,388 in 2014, a reduction of 7.8%. ESB Networks achieved a performance of 96% response rate to complaints within 5 working days, against target of 92%. This was an improvement on 2014 performance of 94% response rate to complaints within 5 working days.

Complaints relating to low voltage have decreased significantly in recent years due to the network improvement programmes carried out. The 2015 level is almost identical to 2014. In many cases, when complaints are investigated the LV supply is found to be within the EN standard 207 V – 244V

6 Please note, complaints specifically relate to queries which cannot be resolved in the area in which they have arisen, but instead have to be referred to another party – either within ESB Networks, or an outside party.

Increases for 2015 in 'time to connect customers', 'connection costs & quotations' and 'operation delays /overruns' are all associated with the increasing volume of new connections, line diversions and general construction in the economy. The main feature in 'others' is the 2015 decrease in the number of complaints relating to 'damage to property' from 253 to 212 while there has been an increase in customer complaints relating to customer communications (up to 268 from 240) and 'staff /contractor performance' (up to 277 from 186), consistent with the increased number of charter payments made to customers as outlined above driven by the increased level of construction related activity.

Table 3 – Number of Terminations and De-energisations

Description of Criteria	2014	2015
Connection points terminated[7]	17,739	13,682
Connection points de-energised[8]	8,859	8,066

The general improvement in the economic climate and environment has resulted in more out-of-use connection points being re-activated within the two year period after the connection point has been de-energised. The reduction in 'connection points de-energised (for non-payment)' results from the success of installing keypad meters to replace existing meters in circumstances where payment difficulties are encountered.

7 This includes connection points in vacant premises that have been terminated following previous de-energisation and de-registration, it also includes MPRN's associated with housing scheme quotations that have not progressed.

8 De-energisation for non-payment ONLY.

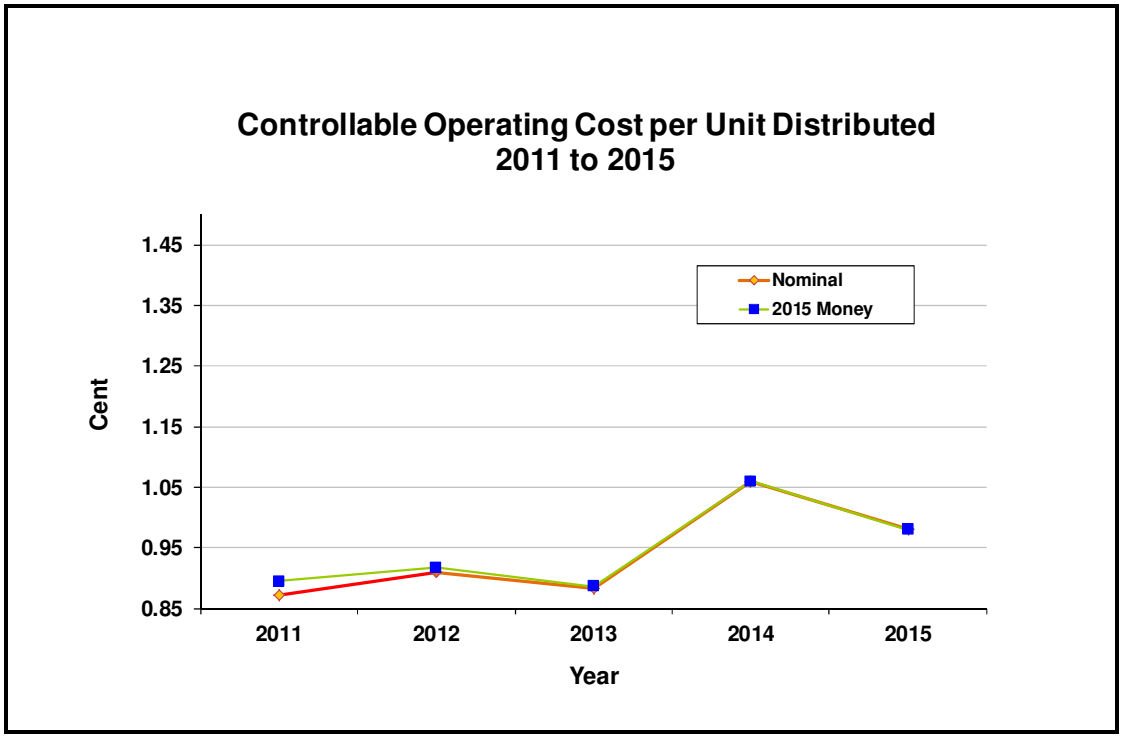
4. Cost Performance

The CER have set targets for operating expenditure and the DSO will aim to achieve these and where possible improve on them. Table 4 summarises the DSO's performance in 2015 in relation to two key cost criteria.

Table 4 – Cost Performance

Description of criteria	2014	2015
Controllable Costs		
Controllable Operating Cost per Unit Distributed	1.06c / kWh	0.98c / kWh
Controllable Operating Cost per Customer	€104.51 / Customer	€98.61 / Customer

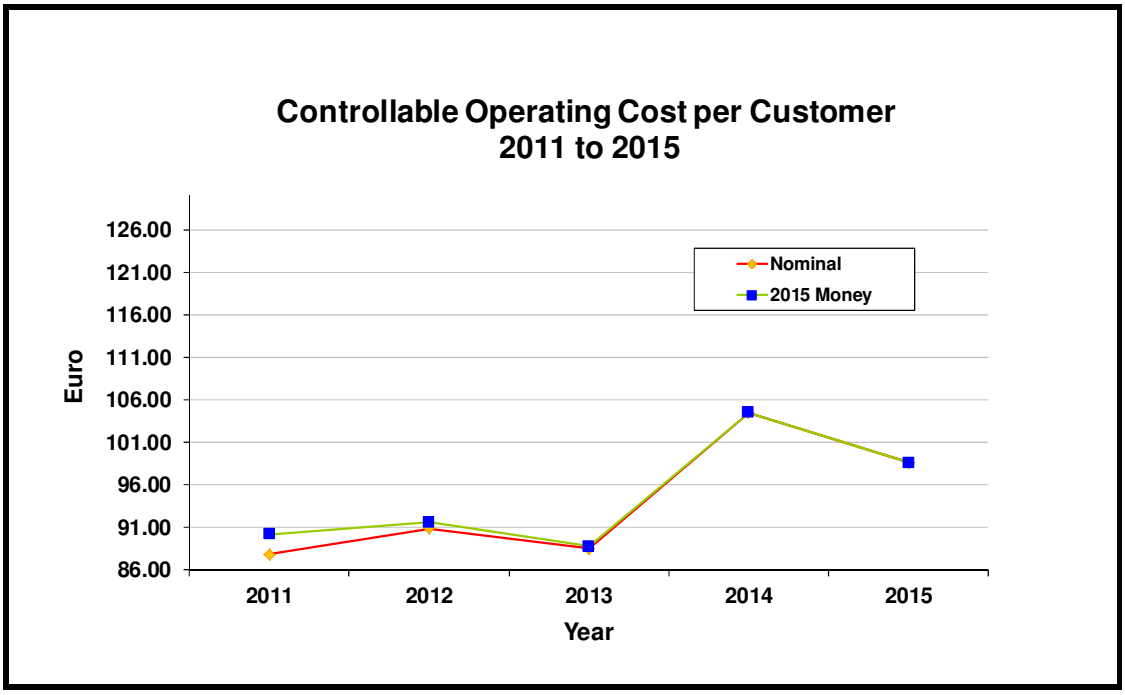
The aim is to keep these controllable costs as low as possible whilst maintaining the operational integrity and efficiency of the networks. Graphs 3 and 4 below show the real and nominal values of Controllable Operating Costs per Unit Distributed and per Customer.



Graph 3

As can be seen from Graph 3, the Controllable Operating Cost per Unit Distributed decreased in both real terms and nominal terms in 2015, when compared to 2014. Fault maintenance was unusually high in 2014. This was mainly due to the exceptional impact of storm Darwin,

at a cost of approximately €31m.



Graph 4

Graph 4 shows that in 2015 the Controllable Operating Cost per Customer decreased in both nominal and real terms. Similar to Graph 3, fault maintenance was unusually high in 2014 due to the exceptional impact of storm Darwin. Operating cost per customer reduced in 2015 when compared to 2014 but did not return to 2012 or 2013 levels. The level of storm days, increased level of timber cutting and more stringent safety requirements (e.g. Designated Work Area requirements) all contribute to this increase on 2012 and 2013 levels.

Transmission OPEX

Transmission operating costs totalled €54.94m against an allowance of €47.83m in 2015. These extra costs were due to level of storm days, increased level of timber cutting and more stringent safety requirements (e.g. Designated Work Area requirements). The introduction of PR4 allowance owners with responsibility for monitoring allowance spends on a monthly basis will ensure the spend versus allowance is tightly controlled.

5. Achievement of Capital Programme

ESB Networks has agreed an extensive capital programme with the CER for completion over the 5 year PR3 period 2011-2015. Our investment activities in 2015 focused on renewing and extending the distribution and transmission systems to provide Ireland with an improved electricity network. The major programmes of work undertaken over the past year include:

- The continuation of both the urban and rural low voltage refurbishment programmes.
- The continuation of the nine-year refurbishment programme for the Medium Voltage (MV) networks.
- MV substation replacement – this programme focused on those subs which contained obsolete components.
- Continued extensive load reinforcement programme to reinforce existing networks and improve the capacity of the distribution system.
- Continued conversion of the 10kV network to 20kV operation.
- Extensive uprating and refurbishment of transmission lines on 110kV and 220kV conductor.
- New generation connections continued to progress to energisation
- Further progress was made on Ballyvouskill 220kV station.
- The Kilpaddoge – Moneypoint 220kV cable progressed nearer to completion.
- Significant progress has been made on several other projects such as Cauteen – Tipperary and Clashavoon – Tarbert.
- A large volume of refurbishment and uprating works on transmission assets has been completed in existing stations including busbar uprates, bay uprates and asset replacement.

In 2015, the number of Gate 3 distribution applicants accepting their offers stood at 116. These numbers translate to 1,784 MWs of contract acceptances. By the end of 2015, there were only two Gate 3 distribution offers pending acceptance by customers, amounting to a total capacity 131 MW.

In addition to the above, the table below reports on ESB Networks' delivery of the transmission and distribution capital programmes.

Table 5 – Progress of Capital Programmes

Description of Criteria	Value	Progress Comment
Total Planned Capital Investment Programme[9][10]		
Distribution Capital Investment Programme achieved to date (%) (i.e. percentage of allowed capital spent)	46.7	Distribution CapEx completed in 2015 was 11.1%, the allowed target was 26.4%
Transmission Capital Investment Programme achieved to date (%)	68.2	Transmission CapEx completed in 2015 was 13.6%, the allowed target was 23%
LV Rural Refurbishment Programme		
LV Groups completed (no.)	9,453	
LV Urban Refurbishment Programme		
Spans completed (no.)	779	
HV Cable Replacement Programme		
38kV pre-1945 paper insulated cable (km)	0	
Distribution Capacity added		
Increase in 110kV/38kV capacity (MVA) Increase in 110kV/MV capacity (MVA) Increase in 38kV/MV capacity (MVA)	31.5 80 10	The capacity added includes load reinforcement only and excludes any additional temporary capacity and Wind Farm capacity

9 Based on HICP (Harmonised Indices of Consumer Prices)

10 Please note that comparisons are against the original allowance of €4 bn. The overall programme was revised downwards from €4bn to €2.4bn for PR3, as agreed with the CER

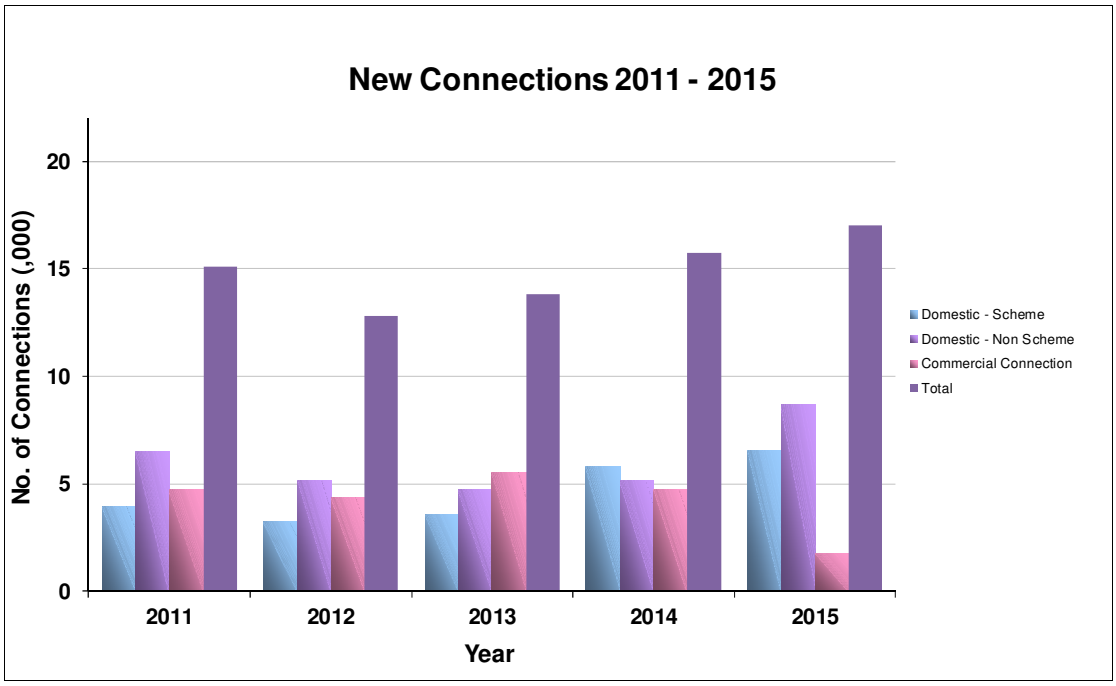
Description of Criteria	Value	Progress Comment
Transmission New Build		
110kV Stations (no.)	1	
Busbar Uprates		
Full Bus-Bar Uprates (no.)	4	
220kV Overhead Line Uprates/Refurbishment		
Line Uprates/Refurbishment (km)	173	
110kV Overhead Line Uprates/Refurbishment		
Line Uprates/Refurbishment (km)	129	

Description of Criteria	Value	Progress Comment
38kV Overhead Line Refurbishment		
Overhead Line Refurbishment (km)	241	
MV Substations Asset Replacement		
1. Oil-filled Switchgear Subs (no.) 2. Cast Resin Kiosks (RGB12 and Magnefix) (no.) 3. Open Cubicle Switchgear (no.)	6 65 17	
20kV Conversion		
20kV Conversion (km)	1,198	Continued conversion of the 10kV network to 20kV operation up from 562km in 2014

Description of Criteria	Value	Progress Comment
Embedded Wind Generation Connected to the Distribution System in 2015		
Wind Farms Connected	6	6 Windfarms comprise of a total MEC of 75.4MW. In 2014 141.2MW of wind generation connected to the distribution system. This comprised of 3 large wind farms which is the reason for the higher MEC.
Total MW Connected	88.4	The Total Capacity of all Wind Farms that are Connected to the Distribution System is 1,382 MW

New Connections

In 2015, a total of 17,012 new connections to the distribution system were completed by ESB Networks. This equates to an overall increase of 8.3% in the volume of new connections when compared with the total of 15,713 in 2014. This reflects an upturn in the economy in the past two years.



Graph 5

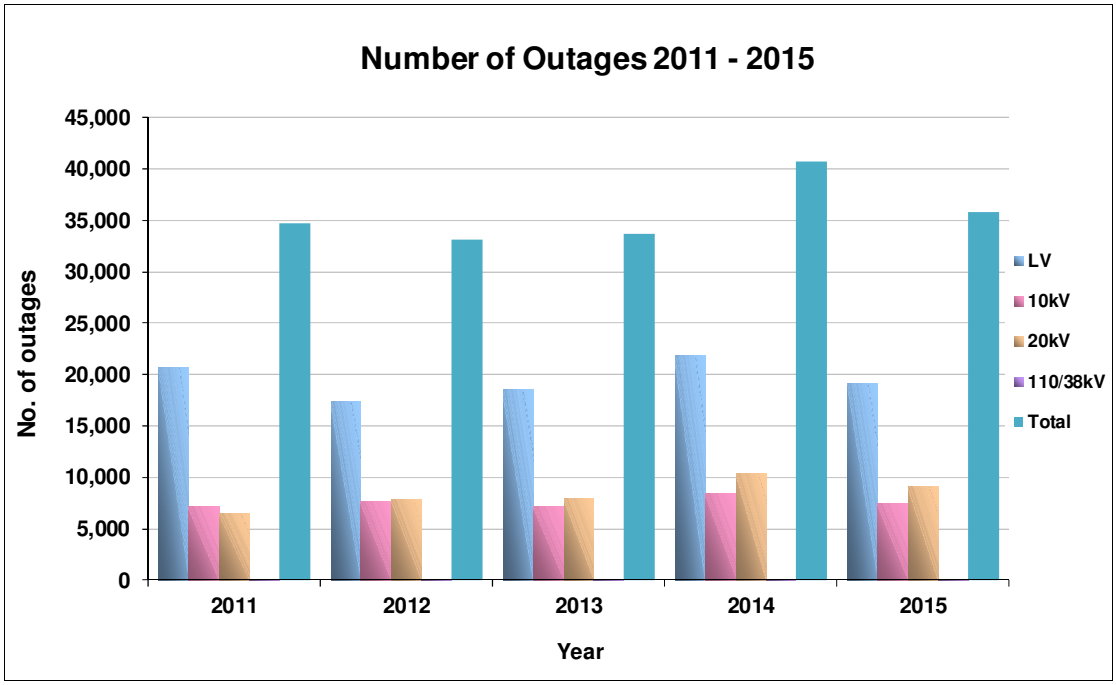
6. Supply Quality and Reliability

Supply reliability is an essential aspect of distribution system performance. The number of interruptions of supply is given in Table 6. Graph 6 shows the trend over the past 5 years.

Table 6 – Number of Outages[11] by Connection Voltage

Description of criteria	Value		
Voltage	**Unplanned**	**Planned**	**Total**
LV	18,050	1,148	19,198
10kV	4,211	3,202	7,413
20kV	6,511	2,643	9,154
110kV/38kV	82	3	85
Unknown	1	8	9
Total (excl. Storm Days and Major Renewable Programmes)	**28,855**	**7,004**	**35,859**

11 Short interruptions lasting less than three minutes are not included. In some fault situations, there can be a number of temporary supply restorations followed by an interruption before supply is permanently restored. One interruption per customer affected is recorded in these situations. The figures do not include customer outages which resulted from problems on the transmission system, e.g. operation of under-frequency relays.



Graph 6

The impact of outages on customers across the entire distribution system is measured by two parameters; average number of interruptions per customer connected in the year (CI) and the average number of minutes without supply per customer connected in the year (CML). The CER has set targets for Customer Interruptions (CI) and Customer Minutes Lost (CML) for the period 2011-2015. As the effects of severe weather can cause wide variations in these measures and are outside ESB Networks control, there is an adjustment for storms days.

Table 6a – Continuity Targets and Performance

Target	**2011**	**2012**	**2013**	**2014**	**2015**
CML	141.10	136.40	132.10	128.00	123.80
CI	143.1	139.5	135.9	132.2	128.7
Performance	**2011**	**2012**	**2013**	**2014**	**2015**
CML	116.17	105.08	128.85	147.45	156.05
CI	112.7	101.4	130.8	142.4	127.8

In 2015 the number of customer interruptions per 100 customers was within target. The duration of these outages, average customer minutes lost, exceeded the original PR3 target. The introduction of more stringent safety procedures has impacted on average outage durations and weather related faults has impacted on the length of outage durations in 2015.

Table 7 – Customer Minutes Lost (CML) and Customer Interruptions (CI)

Description of criteria	Value					
Customer Minutes Lost						
	Unplanned Target	**Unplanned Actual**	**Planned Target**	**Planned Actual**	**Total Target**	**Total Actual**
Total (including Major Renewal Programmes)	**68.0**	**82.99**	**55.8**	**73.06**	**123.8**	**156.05**
Major Renewal Programmes				31.81		31.81
Total (excluding Major Renewal Programmes)		82.99		41.25		124.24
Customer Interruptions						
	Unplanned Target	**Unplanned Actual**	**Planned Target**	**Planned Actual**	**Total Target**	**Total Actual**
Total (including Major Renewal Programmes)	**1.060**	**1.027**	**0.227**	**0.251**	**1.287**	**1.278**
Major Renewal Programmes				0.101		0.101
Total (excluding Major Renewal Programmes)		1.027		0.150		1.180

Table 7 shows CML and CI for 2015 broken down between unplanned and planned. Major Renewal Programmes are programmes such as the LV overhead network refurbishment programme where planned outages are required to carry out the work. The planned CI and CML arising from these programmes in a given year depends on the nature and volumes of renewal works carried out in that year. While the CI and CML incurred on these programmes is reckonable in the incentive / penalty scheme, it is useful to show the performance excluding Major Renewal Programmes as that reflects the underlying trend in continuity performance.

Table 8 shows the number of storm days in 2015 and details of the weather on those days.

Table 8 – Storm Days

Description of criteria
Storms and exceptional events
Number of storm days: 14
Description of storm days
30/12/2015
This event was part of Storm Frank, which was a wind and rain storm that lasted two days. There was extensive flooding over the two days and winds exceeded 130km/h
17/11/2015
Storm Barney – Orange Wind alert for Mid-West and Dublin/Wicklow. Up to 45k customers without supply on the afternoon of the 17th Nov and 25k customers without electricity overnight. All customers were restored by 11pm on the 18th Nov.
12/09/2015
There were two 38kV faults in South Dublin resulting in the disconnection of Brewery Rd, Mount Merrion and Belfield 38kV substations.
23/02/2015
Met Éireann issued three weather warnings and warned of South-Westerly winds of 65 to 80km/h and gusts of over 110km/h for counties Donegal, Galway, Leitrim, Mayo, Sligo, Clare, Cork, Kerry and Limerick, where an orange weather warning was in place.
29/01/2015
Met Éireann issued three national weather warnings for counties across Ireland, with huge winds forecast as Storm Gertrude hit Irish shores. A Status Orange wind warning was issued for counties Cavan, Monaghan, Donegal, Dublin, Longford, Louth, Wexford, Wicklow, Meath, Galway, Leitrim, Mayo, Sligo, Clare, Cork, Kerry and Waterford, with winds between 65 to 80km/h overnight with gusts of between 110 to 130km/h recorded. A Status Yellow wind warning was issued for Carlow, Kildare, Kilkenny, Laois, Offaly, Westmeath, Roscommon, Limerick and Tipperary with wind speeds of up to 65km/h overnight and gusts of up to 110km/h at times.

15/01/2015	
Storm Rachel – A Status Red weather warning was issued for counties Donegal, Leitrim Sligo, Mayo, Galway, Clare, Limerick, Cork and Kerry with wind gusts of up to 150km/h. A Status Orange wind warning has been issued for the rest of country, with winds reaching speeds of up to 130km/h.	
14/01/2015	
Storm Rachel – A Status Red weather warning was issued for counties Donegal, Leitrim Sligo, Mayo, Galway, Clare, Limerick, Cork and Kerry with wind gusts of up to 150km/h. A Status Orange wind warning has been issued for the rest of country, with winds reaching speeds of up to 130km/h.	
Total number of customers affected by storm days in 2015:	**405,573**

Table 9 – Faults Exceeding 4 Hours Duration and Voltage Quality Problems

Description of criteria	2014	2015
Additional items		
Percentage of faults exceeding 4 hours restoration time	39%	27%
Customer reports of problems relating to Voltage Quality	1,326	1,285
Verified problems relating to Voltage Quality	333	397

The percentage of faults exceeding 4 hours restoration time was 27% in 2015.

The number of customers that reported problems relating to voltage quality was 1,285. These requests are not categorised as service complaints but are essentially requests for a technical investigation of possible voltage problems.

The number of verified problems relating to supply quality was 397. These are situations where the voltage at the customer's location was verified to be outside the standard levels. There are approximately 2.3 million electricity customers and a figure of 397 represents ~ 0.017% of customers with reported and verified voltage problems. This figure is up from ~ 0.014% in 2014. The level of increase in percentage terms in negligible statistically doesn't represent a deterioration in quality of supply.

Operations

During 2015, SCADA (Supervisory Control and Data Acquisition) installation was completed in four 220kV stations ,and eleven110kV stations, along with a further ten 38kV stations and three Windfarms across the country. Also eighty-four Distribution Automation devices were built on the SCADA system in 2015. This quantity incorporates Nulec Reclosers, Soules, Voltage Regulators, IFT's and 38kV switching devices.

There were 103 Operational Incidents while operating the network,, compared to 85 in 2014. The relative increase is a partly due to the introduction of an enhanced management and recording structure support by a new system called SHIELD. Continuing progress was made also on the prototype testing of alternative methods of treating the neutral on the 20kV system. Gurranbane and Creagh are complete regarding station work and will be made live upon completion of line re-insulation scheduled for 2016.

Design is currently underway to complete two of the remaining four MV Arc Suppression Coil Schemes, with long lead-in time materials ordered for Baltinglass and Kilmacthomas upgrades.

7. Safety

Fatalities and Serious Injuries

There was one electrical fatality due to contact with ESB Networks electricity infrastructure during 2015. There was no fatality from contact with electricity on the customers' side of the meter during 2015. The total number of electrical fatalities for the 10 year period from 2006-2015 was 20, with 50% of these occurring on the ESB Networks side of the meter. This overall figure is a reduction of 4 when compared with the preceding 10 year period from 2005-2014 and is a continuation of the improving downward trend.

Public Safety Programme 2015

Throughout 2015, ESB Networks continued to meet its obligations and responsibilities for public safety by implementing the ESB Networks' Public Safety Plan (2013-2015) with initiatives aimed at the "at-risk" groups, including farming, construction, leisure and children.

Public safety education programmes for children included both school visits and working with Agriaware in the development of a new farm safety DVD for all primary schools, in partnership with FBD and IFA..

A series of lectures was delivered in each of the Teagasc colleges, UCD and WIT, incorporating a launch of a Farm Safety Competition, requiring students to submit an essay on 'farming safely with electricity'.

Public safety information was also provided through the National Contact Centre, with literature and safety leaflets distributed in response to specific requests. Information is also provided via our Twitter feed.

Public Safety Information Campaigns 2015

- Development of new public safety advertising and roll-out of a new media campaign on TV, press, online and radio to promote awareness of the dangers from contact with ESB Networks electricity wires. This followed detailed research and input from stakeholders.
- 6-month sponsorship of RTE radio 1 weather, and local radio which targeted the farming and construction sections, and the general public.
- Major campaign with Crimestoppers to raise public awareness of the serious risks posed by metal theft of overhead lines and high voltage station equipment.
- Specific campaigns with national organisations such as G.A.A. and Fleadh organisers to highlight the dangers associated with placing flags and bunting on electricity poles.

- Specific media campaign during storms to inform the public of important safety precautions, including extensive use of Twitter.
- TV advertising in the national agricultural livestock marts aimed at the farming community.
- High profile presence at the National Ploughing Championships in September 2015 to raise awareness of electrical safety with over 30,000 customers visiting our marquee.
- Engagement with the farm community through participation in Teagasc and IHFA open days and AGM's.
- Launch of a 12 month partnership with the Irish Farmers journal for a weekly Safe Family Farms page, featuring safety advice.

Network Refurbishment Programme (PR3)

Delivery of the network refurbishment programmes continued to have a significant and beneficial impact on public safety.

Advanced Driver Training

Delivery of the "Advanced Driver Training" programme, which is a risk-based response to the potential risk associated with driving for work, continued to be rolled out to staff during 2015 with 590 staff successfully completing the training.

PowerCheck Application

There were 540k visits to our PowerCheck app, which as well as giving information on supply interruptions, also provides important safety reminders to the public.

Involvement with the HSA

ESB Networks continued their support of the KEEP SAFE programme for 5th and 6th class primary school children in association with the Health and Safety Authority and other national bodies, coordinated by Junior Achievement Ireland.

Involvement with RSA

The 'Stay Safe, Stay Clear' campaign is our new safety initiative for primary schools which we launched as part of our sponsorship of the RSA's high visibility jacket campaign for primary schools. The sponsorship sees 100,000 branded hi-vis vests distributed to children starting primary school in September 2015. Education resources on electricity and electricity safety (to fit in with the curriculum with SPHE and SESE and in particular the Electricity Strand in Science) were provided for teachers including lesson plans and a poster completion which led to the production of a safety calendar which was distributed to all schools.

Dangerous Occurrences

Table 10 reports on the number of dangerous occurrences associated with ESB Networks' infrastructure during 2015. These figures are broken down as third party damages[12] and non-third party notifiable fault incidents[13] and are similar to previous years.

Table 10. Dangerous Occurrences

Description of criteria	2014	2015
Number of safety incidents		
3rd Party plant damages (excluding underground cable dig-ins)	1,085	1,037
3rd Party plant damages caused by underground cable dig-ins	1,043	1,003
Non 3rd party – MV and 38kV notifiable fault incidents (line drops & reduced clearances)	273	232
Non 3rd party – LV notifiable fault incidents (line drops & reduced clearances)	1,909	1,510

Theft and Break-Ins to Substations

The issue of metal theft including unauthorised break-ins to ESB Networks' substations poses a significant safety risk to the individuals involved. This mirrors the overall national trend of increased metal theft over the last number of years. In addition to the public safety risks associated with this activity there are also significant additional negative impacts and costs arising from increased security measures, damage to equipment, environmental damage and clean-up costs due to oil spillages and disruption to work programmes. ESB Networks continues to monitor closely the level of security incidents to assess the level of risk pertaining to various substation sites. This also assists in deciding on required mitigation measures for same, such as mobile monitoring systems, fixed CCTV and/or power fences in the more strategically important sites.

12 Third party damages are incidents where third parties cause damage to the networks infrastructure. These are broken down into incidents that involve damage to underground electricity cables termed 'dig-ins' and incidents that cause damage to other plant such as overhead lines, minipillars and substations.

13 Non-third party notifiable fault incidents are principally incidents on the overhead lines networks where an overhead line conductor / wire falls e.g. in stormy conditions or due to corrosion or other plant item failure.

8. Sustainability

ESB Networks Strategy and Responding to Change

As set out in the ESB Networks strategy document 'ESB Networks 2027 - Lighting the way to a better energy future', which was published and launched in 2014, the vision for ESB Networks is to become a world class sustainable networks business. This will be achieved by the delivery of infrastructure and services that support national economic growth and sustainability targets and business and value growth underpinned by excellence in safety, service, asset management and people development.

ESB Networks are at the forefront in defining the Smart Networks of the future and this is being achieved through research initiatives and participation in national and international collaborative alignments. Every year, ESB Networks continues its effort to deliver the sustainable network of the future and some of the highlights are as follows:

R&D Projects

In 2015, ESB Networks continued to progress its wide range of R&D projects within the Smart Networks function. These projects included FINESCE, PlanGridEV and evolvDSO – all of which were part funded by the European Commission under the FP7 framework. Most of these projects are now in final stages of completion and all have scored extremely well at an EU level. ESB Networks is part of the Irish led consortium which obtained €12m in grant funding under the Horizon 2020 funding framework. The 'RealValue' project is in the process of implementing an end-to-end domestic Demand Response solution and ESB Networks will assess the impact of Demand Response on the low and medium voltage networks and utilise a software tool to minimise any detrimental impact on our networks.

In addition to these activities and in line with the 2027 strategy document, ESB Networks has developed a Smart grid roadmap outlining a strategic R&D program which will allow us to ready our decisions to deliver the long term vision set out in the 2027 document.

ESB Networks continues to engage in beneficial collaborative R&D projects to further our understanding of the communications and IT requirements for the future grid. ESB Networks is also currently inputting into the development of a strategy for the future role of a Distribution System Operator (DSO) in the European context.

Carbon Reduction

In comparison to 2014, the year 2015 saw an increase of 6% in energy usage in buildings and vehicle fleet fuel consumption increased by 16%. The preliminary Met Éireann annual summary report for 2015 notes that the year was unusually windy, with two-thirds of stations reporting their highest annual mean wind speeds in at least 6 to 25 years. In addition, all bar one of the 20 Met Éireann synoptic weather stations recorded rainfall in excess of the long-term average. ESB Networks was on the frontline in dealing with a series of storms during 2015, which led to increased use of depot facilities such as drying rooms, and an increase in fleet utilisation associated with storm response works. There was also an increase in Vehicle Fleet numbers during the year due to the recruitment of additional Network Technicians.

An ESB Network's Energy Audit, which includes Vehicle Fleet and a number of representative Depots and Substations nationwide, commenced in early 2016 as part of ESB Group's compliance with the S.I.426 Energy Efficiency Directive Regulations. Audit findings and recommendations will assist in associated future energy efficiency programmes.

At the end of 2015, a 24.9% reduction in our carbon footprint had been achieved against the 2006 baseline. This is a further 7% reduction on last year's achievement.

Environment

ESB Networks is committed to operating to the highest environmental standards as part of its strategy *"ESB Networks 2027 Lighting the way to a better energy future"*. During 2015, ESB Networks successfully retained its external accreditation to the International Standard for Environment Management Systems - ISO14001:2004.

Renewable Generation

In 2015, the number of Gate 3 distribution applicants accepting their offers stood at 116. This translates into 1,784 MW of acceptances and proposed customer connections to the distribution system. This is a reduction on 2014 MW figures due to customers reducing their Maximum Export Capacity (MEC). By the end of 2015, there were only two Gate 3 distribution offers remaining to be accepted, amounting to a total capacity 131 MW. Two Gate 3 offers have lapsed since being issued in 2015, comprising 41.3 MW. In 2015, four Gate 3 applicants (68 MW) were added to the distribution system.

Approximately 66% of Gate 3 developers have opted to build their shallow connections contestably.

Offers Issued Update

- **Modifications**
  In addition to completing the Gate 3 offer programme, there were 48 distribution offers issued by ESB Networks to generator customers during 2015. This is an increase in productivity of 66% when compared to 2014 figures.

- **Non-GPA**
  Furthermore to above, under the 2009 CER direction CER/09/099, 30 distribution offers issued to generator customers outside the Group Processing Approach (GPA) during 2015. This is an increase in productivity of 30% when compared to 2014 figures.

The total amount of distribution connection offers issued during 2015 was 78, a total increase in productivity of 50%.

Energised and Connected Projects

In 2015, a total of 93 MW of generation was added to the distribution system. Wind equated to over 88 MW of this figure. This brings the total generation added to the distribution system to 1,675 MW, at the end of 2015, where 1,386 MW accounted for Wind.

9. Service Level Agreements

There are three market roles that ESB Networks performs that are central to supporting a fully open market; these roles are the Meter Registration System Operator (MRSO), Data Collector and Meter Operator. These functions involve daily processes to support the market. The processes are detailed in a suite of documents referred to as the Market Process Documents (MPDs).

Service Level Agreements (SLA) set out the target service levels that ESB Networks will operate to in providing market roles to all market participants. The format of the SLA's, in general terms, outline the time frames within which suppliers can expect the required transactions to have been completed in response to the supplier message. These market messages and related SLA's are based on the agreed processes approved by CER. They set out performance standards which ESB Networks must strive to achieve and report on, as laid down in condition 13 of the DSO Licence. As provided in that condition, the standards and/or targets of performance may be determined by the CER from time to time.

SLA Report

The Service Level Agreement (SLA) Report in the following tables contain the complete set of results for 2015. The report provides a description of each SLA and the measure against which its level of performance is reported. It is inevitable that a small number of exceptional transactions will require special manual handling for a number of reasons. To accommodate such cases the performance targets are set below 100%, in most cases it is 95%. The target timeline for those transactions that do exceed the SLA timeline is set at twice the SLA timeline.

The actual performance is measured as the percentage of transactions that were completed within the agreed SLA timeline and the percentage completed within twice the SLA timeline during 2015. The target for the number of transactions to be completed within the SLA timeline for all SLA's with the exception of 14A and 14B (these SLA's relate to NQH Meter Reading) is set at 95%. The target levels for 14A and 14B are stated in the comments column of Table 13. The comments column is used to provide an explanation of the reason why the actual performance has not reached the set performance target within the SLA timeline.

Performance against SLA's

There are a total of 44 SLA's in place. The performance of each SLA is shown in Table 11, 12, 13, 14, 15 and 16 below.

Table 11 – Change of Supplier

Market Processes		Standard Approval Timelines (SLA)	Actual Performance		Comments
Description	No.		Within SLA Timeline	Within Twice Timeline	
Change of Supplier (NQH)	1A	Validate within 5 days	100.00%	100.00%	
	1B	Using customer read – Complete within 3 days	99.89%	99.91%	System error resulted in workflow stall or move-in / move out failure
	1B	Using special read – Complete within 10 days	96.36%	100.00%	Special read delayed due to no-access or inadequate contact details.
	1B	Using scheduled read – Complete within 3 days	96.31%	97.38%	System error with NQH MD sites not billing in Q1 2015, the associated messages had to be manually populated resulting in the delay.
Change of Supplier (QH)	2A	Validate within 5 days	100.00%	100.00%	
	2B	Complete within 3 days	99.64%	99.64%	Since SLA report is based on month-end data, this results in some COS requests received late in the month falling outside SLA.
Change of Supplier Cancellation	3A	Validate cancellation within 5 days	99.97%	99.97%	System error resulted in workflow stall
	3B	Complete cancellation within 5 days	99.90%	99.90%	System error resulted in workflow stall

Table 12 – New Connections and Connection Agreements

Market Processes		Standard Approval Timelines (SLA)	Actual Performance		Comments
Description	No.		Within SLA Timeline	Within Twice Timeline	
New Connection and registration with supplier (NQH)	5A	Prepare Quote – Within 7 working days where no site visit required. Within 15 working days where site visit required	95.19%	100.00%	100% within twice SLA but failure to meet SLA standard was due to increased volume of construction activity linked to the economic upturn.
	5B	Complete connection – Within 10 working days of receipt of ETCI certificate.	98.53%	100.00%	100% within twice SLA but failure to meet SLA standard was due to increased volume of construction activity linked to the economic upturn.
	5C	Data Processing – Issue details to Supplier within 10 Days	99.20%	99.78%	0.2% outside target - delays with paper service orders not reached office in time & some refer to conflicting devices which will require another call to confirm meter details
New Connection and registration with supplier (QH)	6A	Prepare Quote – Within 7 working days where no site visit required. Within 15 working days where site visit required	95.19%	100.00%	The SLA target for 'within twice timeframe' was met. Again, increased volume of construction activity impacted negatively on service delivery, particularly in the Design phase, resulting in failure to quite meet the 100% target and this is also reflected in increased customer charter payments.
	6B	Complete Connection – Within 10 working days of receipt of ETCI certificate.	98.53%	100.00%	The SLA target for 'within twice timeframe' was met. Again, increased volume of construction activity impacted negatively on service delivery, particularly in the Design phase, resulting in failure to quite meet the 100% target and this is also reflected in increased customer charter payments.
	6C	Data Processing – Issue details to Supplier within 10 Days	92.31%	92.31%	7.7% outside target - During year a lot of orders for QH sites received with incorrect configurations leading to delays in processing. New training being developed for Engineering Officers which will address this problem.

Change to meter point characteristics	**8A**	Prepare quote – Within 7 working days where no site visit required. Within 15 working days where site visit required	95.19%	100.00%	The SLA target for 'within twice timeframe' was met. Again, increased volume of construction activity impacted negatively on service delivery, particularly in the Design phase, resulting in failure to quite meet the 100% target and this is also reflected in increased customer charter payments.
	8B	Complete change – Within 10 working days of receipt of ETCI certificate.	98.53%	100.00%	The SLA target for 'within twice timeframe' was met. Again, increased volume of construction activity impacted negatively on service delivery, particularly in the Design phase, resulting in failure to quite meet the 100% target and this is also reflected in increased customer charter payments.
	8C	Process Change – Issue details to Supplier within 10 Days	97.90%	99.37%	0.6% outside target - delays with paper service orders not reached office in time & some refer to conflicting devices which will require another call to confirm meter details

Table 13 – Meter Works

Market Processes		Standard Approval timelines (SLA)	Actual Performance		Comments
Description	**No.**		**Within SLA timeline**	**Within twice timeline**	
De-energisation of Meter Point	**9A**	De-energise within 5 days	85.69%	91.43%	Not within SLA, due to volume /resourcing issues influenced by increased storm activity.
	9B	Issue Meter details to Supplier within 10 Days	98.68%	99.89%	0.1% outside target - delays with paper service orders not reached office in time & some refer to conflicting devices which will require another call to confirm meter details
Re-energisation of Meter Point	**10A**	Re-energise within 5 days	98.63%	99.40%	Both figures reflect very satisfactory performance ahead of target, as the SLA target for both is 95%.
	10B	Issue Meter details to Supplier within 10 Days	99.18%	99.88%	0.1% outside target - delays with paper service

					orders not reached office in time & some refer to conflicting devices which will require another call to confirm meter details
Change of Meter Configuration	**11A**	Reconfigure within 5 days after the receipt and validation of Supplier request	93.52%	97.46%	The target for both measures is 95% and was not achieved for 'Within SLA timeline' due to the high overall volume of work leading to some delays and resulting in the work order being received by the Network Technicians within the appropriate timescale. Target was achieved for 'Within twice timeline'.
	11B	Process data within 10 days	99.58%	99.92%	0.1% outside target - delays with paper service orders not reached office in time & some refer to conflicting devices which will require another call to confirm meter details
Meter Problems and Reports of damage	**12A**	Repair or replace faulty meter within 5 days	77.49%	87.51%	Failure to achieve the 95% ta are due partly to high ESBN work volumes and partly due to incorrect logging of requests by Suppliers.
	12B	When a faulty meter is Repaired or Replaced – Process Meter Data within 5 days	98.60%	99.29%	0.7% outside target - delays with paper service orders not reached office in time & some refer to conflicting devices which will require another call to confirm meter details

Table 14 – Meter Data

Market Processes		Standard Approval timelines (SLA)	Actual Performance		Comments
Description	**No.**		**Within SLA timeline**	**Within twice timeline**	
NQH Meter Reading	**14A**	Scheduled Read – Distribution of Reads to Suppliers within 7 workdays	99.89%	99.93%	The 97.84% achieved is just below the actual performance target of 98% and within the specified allowable margin (i.e. 97.8-% - 98.0%) within which a penalty does not accrue.
	14A	2 Scheduled reading visits per annum	100.00%	N/A	target is 100%

	14A	4 Scheduled reading visits per annum	99.02%	N/A	target is 97%
	14A	Actual reads for scheduled meter reading visits	83.82%	N/A	target is 80%
	14A	Actual reads for scheduled MD meter reads	87.00%	N/A	target not achieved due to continuing manual reading of some MDs and comms failures for others
	14A	One actual read per annum	97.84%	N/A	No but above penalty target of 97.80%. Increase in LTNA is mainly due to large increase in PAYG/Prepay meters and change in Meter Reader contract.
	14B	No Consecutive Block Estimations	99.65%	N/A	
	14B	No Consecutive MD Block Estimations	100.00%	N/A	
	14C	Out of Cycle Customer Read – Readings processed within 3 workdays	97.03%	98.64%	The figure of '97.03% within SLA' is largely due to the failure to get meter readings in many Pay as You Go /PrePay meter locations. Customers are refusing entry to meter readers.
QH Data Collection	**15A**	D+4 QH data- Send to SEM-O / Suppliers in 1 workday	100.00%	100.00%	
	15B	QH Actual Data	On D+4	Within 10 days	
		Send to suppliers within 4 and 10 days**	98.30%	98.70%	**SEM Timeline
Request for Special Read	**18A**	Site visit by 7 days	80.26%	87.98%	Suppliers are not providing accurate contact details for many customers
	18B	Issue of Meter details within 3 Days	78.54%	84.09%	Suppliers are not providing accurate contact details for many customers

Table 15 – Miscellaneous MRSO Processes

Market Processes		Standard Approval timelines (SLA)	Actual Performance		Comments
Description	**No.**		**Within SLA timeline**	**Within twice timeline**	
Data Aggregation	**16**	Issue of aggregated data to SEM-O/TSO/Suppliers and Generators within 5 workdays	100.00%	100.00%	
Change of SSAC	**20**	Complete process in 3	100.00%	100.00%	

		workdays			
De-registration	**21**	Auto Completion within 5 workdays	99.98%	100.00%	System error resulted in workflow stall
		Manual Completion within 10 workdays	100.00%	100.00%	

Table 16 – Change of Customer

Market Processes		Standard Approval timelines (SLA)	Actual Performance		Comments
Description	**No.**		**Within SLA timeline**	**Within twice timeline**	
Change Customer Details	**24**	Complete within 5 days	99.50%	100.00%	A further marginal improvement to 99.5% Within SLA Timeline on the previous year when the figure was 99.0% (2014).
Change of Legal Entity	**25**	Complete within 5 days	99.97%	100.00%	99.97% Within SLA Timeline (similar to 2014 when 99.92% was achieved). Delays occur very occasionally and are due either to delays in receiving the Connection Agreement for a Max. Demand account or, in cases where an estimated reading has been provided, an actual meter reading has to be carried out.

10. Compliance with licence requirements

Annual Compliance Report

The Compliance Officer for ESB Networks submits a report on compliance to the CER each year and the Compliance Report was submitted to CER in March 2015.

Records and Reporting

The following tables serve to illustrate the sections of this report that meet the reporting requirements contained in the DSO and TAO Licences.

Table 17 – DSO Licence Compliance Matrix

Clause in DSO Licence		Requirement	Performance Report Reference
Title	No.		Section
Relevant Assets	5.1	Submit a register of all relevant assets to CER annually	10
Performance of DSO's Business	13.4	Report annually on performance	Entire report
	13.5	Publication of criteria	2
Records and Reporting	17.1	Maintain a record of its general operation under Conditions 7, 8, 9, 13, 14 and 15: 7. Theft of Electricity 8. Meter Point Registration Service 9. Provision of Metering and Data Services 13. Performance Reporting 14. Access to Land or Premises 15. Customer Service Code and Complaints Handling Procedure	 10 10 10 Entire Report 10 3.2 3.3
	17.3	Report annually on performance	Entire report
	17.4	Publication of report	2.1
	17.5	Presented in a standard form to be approved by the CER	Entire Report

Table 18 – TAO Licence Compliance Matrix

Clause in TAO Licence		Requirement	Performance Report Reference
Title	No.		Section
Performance of TAO's Business	11	Report annually on performance	Entire report

Market Services

Condition 17 of the DSO Licence states that the Licensee shall keep a record of its general operation of the arrangements mentioned in Conditions 7, 8, 9, 13, 14 and 15 and, if the CER so directs in writing, of its operation of any particular cases specified, or of classes specified, by the CER. Condition 7, 8 and 9 relate to Market Services and the records of their general operation that are kept by ESB Networks are as follows:

Condition 7: Detection and Prevention of Theft of Electricity

In compliance with licence Condition 7 records were kept in respect of incidents where theft of electricity was suspected or where there was interference with metering equipment and that these incidents were reported to the supplier.

Condition 8: Meter Point Registration Service

In compliance with licence Condition 8 records were kept in respect of the Meter Point Registration Service i.e. of MPRN, identity of the supplier, meter class, premises address and other information required for change of supplier.

Condition 9: Provision of Metering and Data Services

Salient business and transaction data were maintained on the services provided under Condition 9 of DSO Licence Provision of Metering and Data Services. These services include, provision of metering equipment, installation, commissioning, testing, repair and maintenance of metering equipment and data collection.

Access to Land and/or Premises

Pursuant to Condition 14 of the DSO Licence and as required in Condition 17, the following are the general principles and procedures that ESB Networks will follow in respect of any person acting on its behalf who requires access to land and/or premises for the purposes set out in this licence:

- All such employees or representatives acting on behalf of ESB Networks will possess the skills necessary to perform the duties for which access is required and will be appropriate persons to visit and enter the land and/or premises;
- Both employees and representatives of ESB Networks will be in possession of identity cards that clearly identify them as such. These identifications will be available to the persons occupying the land and/or premises. All vehicles arriving on these sites will either carry the full ESB Networks livery or be clearly identified as working on behalf of ESB Networks;
- ESB Networks will ensure that any person visiting land and/or premises on its behalf will be able to inform final customers connected to the Electricity System, on request, of a contact point for help and advice they may require in relation to the distribution of electricity.

Records are maintained of individual training, levels of approval to carry out work and the issue of ID cards. The contact number of the customer contact centre is available via briefing material to all team members and is printed on ESB Networks vehicles.

Register of Assets

Table 19. Register of Distribution System Assets at end of 2015

Asset	Units	Volume
220kV		
220kV Substations	Sub	3
220/110kV Transformer Capacity	MVA	2,250
110kV[14]		
110kV Overhead Lines	km	340
110kV Underground Cable	km	169
110/38kV Substations	Sub	84
110kV/MV Substations	Sub	31
110/38kV Transformer Capacity	MVA	6,387
110kV/MV Transformer Capacity	MVA	1,405
38kV		
38kV Overhead Lines	km	5,730
38kV Underground Cable	km	986
38kV Substations	Sub	432
38kV Transformer Capacity	MVA	5,190
MV		
20kV 3-ph Overhead Lines	km	15,220
20kV 1-ph Overhead Lines	km	30,434
10kV 3-ph Overhead Lines	km	12,456
10kV 1-ph Overhead Lines	km	24,907
20kV Underground Cable	km	800
10kV Underground Cable	km	8,802
3-ph Pole mounted Transformers	Trafo	20,325
1-ph Pole mounted Transformers	Trafo	215,441
MV Ground Mounted Substations	Sub	19,969
LV		
LV 3-ph Overhead Lines	km	4,136
LV 1-ph Overhead Lines	km	54,425
LV Underground Cable	km	12,472
Mini-Pillars[15]	MP	164,288

Table 20. Register of Transmission System Assets at end of 2015

[14] Internal System Data Review has determined that some 110kV figures, previously reported, included Transmission assets – Transmission figures have now been removed from the Distribution Asset Register information

[15] Internal system data review has determined that previously reported figures included non-ESB owned pillars – these figures have been removed

Asset	Units	Volume
Overhead lines		
400kV		
single circuit	km	437.60
double circuit	km	0
275kV		
single circuit	km	0
double circuit	km	21.46
220kV		
single circuit	km	1,802
double circuit	km	
110kV		
single circuit	km	3,953.54
double circuit	km	71.12
Underground Cables		
400kV		
underground cables	km	2.28
275kV		
underground cables	km	0.19
220kV		
underground cables	km	124.81
110kV		
underground cables	km	144.99
Submarine Cables		
400kV		
Submarine Cables	km	0
275kV		
Submarine Cables	km	0
220kV		
Submarine Cables	km	10.95
110kV		
Submarine Cables	km	0
Switchgear		

400kV		
400kV substation bays	sub	26
275kV		
275kV substation bays	sub	3
220kV		
220kV substation bays	sub	247
110kV		
110kV CB (GIS)	CB	38
110kV CB - other	CB	714
110kV Isolators	Isolator	2,765
Transformers - incl. tap changers & reactors		
400kV		
400/220kV transformers	Trafo	9
400/275kV transformers	Trafo	0
400/110kV transformers	Trafo	0
275kV		
275/220kV transformers	Trafo	3
220kV		
220/110kV transformers	Trafo	52
15MVAr Reactors	Reactor	63