



Our Business

We transmit, distribute and connect electricity to and from homes and businesses over our network.





SP Energy Networks, which is part of the Iberdrola Group, owns three regulated electricity network businesses in the UK: SP Transmission plc (SPT), SP Distribution plc (SPD) and SP Manweb plc (SPM). This report relates to the performance of our transmission company, SPT during2016/17.

We are the licensed Transmission Owner (TO) for the Central Belt and South of Scotland. Our transmission network comprises just over 4,000 kilometres of circuits and 147 substations operating at 400kV, 275kV and 132kV. We take electricity generated from power stations, wind farms and other facilitates and transport it through our vast transmission network providing transmission services to National Grid, who as the GB System Operator (GBSO) coordinate the electricity flows by balancing generation supply and user demand.

Our vision as a business is to be a customerfocused company trusted by our communities and stakeholders; an engineering company with strong stewardship of assets and worldclass safety credentials, and a company that attracts and develops skills for the future from the communities that we serve.

We are a regulated utility with a licence to operate awarded by Ofgem, the GB energy regulator. Our regulation is set to create incentives for us to meet the outputs that our stakeholders value at efficient cost. The core mechanism for this is our price control. It defines outputs and revenue allowances for an eight year period, based on a business plan that we produce in consultation with our stakeholders.

Our business plan for 2013 to 2021 was recognised by Ofgem as high-quality, and was "fast tracked". The plan embodies a range of outputs relating to reliability, how we modernise our network, how we contribute to environmental objectives, and how effectively we engage with our stakeholders. These outputs are linked to financial incentives.

We have a key, strategic role in facilitating the connection of renewable generation in Scotland, which is critical to meeting GB environmental targets. To this end, some of our revenues are linked directly to specific, large-scale investment schemes – so called 'wider works'. One of the key uncertainties we need to manage is the timing, volume and location of new generation – particularly in the context of large changes to how generators are remunerated, and subsidised through Government policy.

Welcome

We are now half way through the RIIO-T1 period and I am very pleased to be able to report that we continue to make strong progress in the delivery of our plan. The work we are doing on our network is fundamental to enabling the UK's transition to a low carbon economy and is also highly important in ensuring that electricity generators and consumers continue to benefit from the excellent levels of reliability to which they are accustomed.

Over the last 4 years, we have invested over £1bn in our transmission network, a rate of investment that has been unprecedented since privatisation. The majority of this investment has been focussed on upgrading and extending the network to accommodate changing needs, such as increased renewable generation and the closure of large thermal power stations. Given the abundance of renewable energy in and around Scotland, our network is strategically important in allowing this energy to be harnessed and transported to meet demand in England. Increasingly, the network must also be capable of allowing electricity to be imported into Scotland during periods of low renewable generation. Since 2013, we have connected 872MW of new generation directly to our system. We are also well advanced in delivering an increase in Scotland-England transfer capacity from 2,900MW at the start of RIIO-T1 to 6,600MW, a major component of which is the world leading Western Link HVDC project which we are building in joint venture with National Grid.

I'm also very proud of our industry leading innovation programme, which goes from strength to strength, our progress in the areas of sustainability and stakeholder engagement and our continued strong safety performance in line with our commitment to cause zero harm to everyone in proximity to, or working on our network.

I hope that you find this year's report informative and as ever, we would be delighted to receive feedback on it so that we can continue to develop it for future years.



model

Frank Mitchell CEO of SP Energy Networks

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SP Transmission Annual Performance Report 2016/17

Our performance in summary

Executive summary

312km Ahead of schedule

We are almost 60% through our overhead line replacement programme of 800km, 312km ahead of our plans at this stage

This report shows how our business has performed during 2016/17 as we pass the halfway point in our plan, we are pleased that our strong start has been maintained.

We remain on track to complete our ambitious programme of network renewal. We used the early certainty provided by our plans receiving "fast-track" approval by Ofgem to get ahead of the game, and the benefit of this opportunity is now in evidence. We are almost 60% through our overhead line replacement programme of 870km, 312km ahead of our plans at this stage. Our total spend in 2016/17 was £337.6m, £157m ahead of our original plans, taking our cumulative investment in the RIIO-T1 price control period to over £1Bn. In particular, the growth in investment in load related projects is such that over the last 2 years, we have delivered the same expenditure on load related projects as in the previous 6 years. This scale of investment will ensure we deliver the outputs we committed to in our RIIO T1 submission.

To facilitate these levels of investment SPT's shareholders, on the 24 October 2016, further demonstrated their commitment to the business by increasing the share capital of SPT by £185m to further support our demanding investment programme. The 2016/17 Regulated accounts presented a "Net decrease in cash and cash equivalents" 2017: £121.6m; 2016: £188m following the "Cash outflows from investing activity" of 2017: £340m; 2016 £360m. This is even after the £185m increase in SPT's share capital in 2017 mentioned above. In addition financial support is provided to the company, from the shareholders, by £1.2bn of intercompany loans.

We continue to respond efficiently and with agility to new information and new challenges. This is evident in how we manage the changes in the wider energy policy context to continually assess our forecast level of connections and the expenditure to support them to ensure that. This ensures we continue to design and build the most cost-efficient and economic solutions to meet customer needs. There has been a change in forecast from last year and we now project that the total level of generation connections over the T1 period will be 1,634MW, down from last year's projection of 2,090MW.

A new sustainability team was formed to manage environmental compliance and deliver the policy, strategy and plan for the business to become increasingly sustainable. The team is responsible for creating and embedding focussed processes within the wider business and to raise the profile and importance of sustainability within the organisation. The results this year were reflective of this work as our Environmentally Discretionary Reward score rose in year from 32% to 88% and achieved Leadership status. This is the highest score ever achieved by any TO in the EDR scheme to date.

We are working more effectively with our stakeholders, and this is driving a wide range of benefits as reflected in our stakeholder engagement performance, achieving our best ever stakeholder satisfaction performance to date with our annual survey score of 7.9 up from 6.9 in the prior year, along with a 51% increase in survey participation from our stakeholders.

We have improved our ability to monitor and control the loading on our network to reflect the large changes in prevailing power flows, and we are supporting the updating of contingency plans for getting the power system back up and running in the event of a large scale disruption, a process known as "Black Start". This year we completed our first phase of site works to install additional generators and diesel tanks at critical network locations to increase our network resilience and to ensure that joint restoration plans remain effective and robust.

The key indicators of our performance are also looking healthy. Undelivered energy as a result of faults on our networks was 10.3MWh (equivalent to 0.00006% of the

total, or the average annual consumption of around three houses) - and well below the benchmark level of 225MWh. Important, and long-planned, increases to transmission capability were also delivered this year with the completion of Transmission Investment Renewable Generation (TIRG) works in South West Scotland, with the energisation of the new 275kV WA Route overhead line from Coylton to New Cumnock and the New Cumnock substation as part of a total of 691 MVA of extra network capacity commissioned in the year. Working jointly with National Grid, the construction on the innovative West Coast HVDC project was also substantially completed. We are now in the commissioning phase, as we progress towards commercial operation in the second half of 2017 providing an increase in transfer capacity of over 2.1GW between Scotland and England.

Our world-class standards of safety continue to be in evidence, with zero incidents and significant initiatives to promote public safety and continue our collaboration to build the right culture of safety among our contractors.

Our pipeline of innovation projects and deployment continues to expand, with the aim of addressing key future challenges for UK transmission and delivering our services ever more efficiently and effectively. Following the successful energisation of our innovative conductor projects, funded under the Innovation Roll-Out Mechanism, we remain the only Transmission company to be successful under all innovation mechanisms in RIIO T1.

We are committed to transparency in how we report our performance, and welcome the positive feedback this format of reporting has received to date from our stakeholders. We hope you find this year's edition to be informative, and easy to read.

Outputs at a glance

Output	Metric/Target	Actual (In Year)	Comment
Stakeholder KPIs	69% (Ofgem break even level)	77%	Exceeding target in first year of Ofgem's revised weighting applied to various KPIs for example Connection offer (TOCO) quality.
Stakeholder survey	7.4 (Ofgem break even level)	7.9	Excellent Improvement from 6.9 achieved in the previous year.
Stakeholder engagement Ofgem panel score	Ofgem – Target out of 10	6.25	Maintained our position of 6.25 from the previous year however fell short of our internal target for improvement.
Timely connections	100% (74 calendar days to submit final offer)	100%	63 in year connection offers made on time maintaining our high standard of achieving 100% last year.
Network capacity	1,073MVA (RIIO T1 baseline forecast)	691 MVA	Cumulative total for the price control is now 931MVA with 66% delivered in year. Our new forecast position for the end of T1 is to deliver 3,332MVA.
Connections to the network	2,503MW (RIIO T1 baseline forecast)	403MW	Cumulative total for the period is now 872MW with 46% delivered in year. Our new forecast position for the end of T1 is to deliver 1,634MW.
Modernisation outputs	32.2% (T1 business plan target)	48.8%	We continue to stay ahead of our planned outputs for T1, keeping us track to deliver our network renewal outputs in full.
Energy not supplied	225 MWh (Based on 10 year average pre T1)	10.3MWh	Reduction from 13.9MWh recorded last year and represents 0.00006% of energy not supplied across the year maintaining our outstanding network reliability.
Contractor safety	Total Recordable Injury Rate (TRIR)	0.18	TRIR is a widely used indicator and expresses injury levels as a factor of hours worked (injuries per 100,000 hours), our continuous drive for zero harm as our aim has resulted in a drop from last year's 0.47 and is the third year on year reduction.
Public safety	0	0	We can report again this year that there were zero injuries to the general public and staff resulting from our assets or operations.
Environmental discretionary reward	50% to 69% (Targeted score in 'Proactive' range)	88%	Achieved Leadership status achieving the highest ever score by a TO in the EDR and an increase from last year's 32%.
Carbon footprint – SF6 leakage	707.4kg (2017 Licence term)	388kg	45% below 2017 target and a reduction from 441kg recorded last year.
Carbon footprint – Network losses	No individual target. This is included within the Total BCF target.	263,712 tCO2	This is an increase on last year's emissions of 194,120 tCO2e, final number still to be confirmed with National Grid.
Carbon footprint – Building losses	6,743 tCO2e	487 tCO2e	This is an increase on last year's emissions of 264 tCO2e, mainly due to the reapportionment of staff but well below our target.



Year on year trend

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Substantially Below target

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Financial performance Summary

Our expenditure

This year:

Our total expenditure this year was £337.6m. This was £157m above our revenue allowance. The breakdown was as follows:

	Allowance	Actual	Difference
Capital expenditure	£m	£m	£m
(i) Load-related	39.7	219.2	179.4
(ii) Non-load related	114.7	83.8	-30.9
Controllable operating costs	26.3	34.7	8.4
Total	180.7	337.6	156.9

Forecast to 2021:

We have updated our forecast expenditure for the duration of the business plan to reflect the response from generation project developers to changes to funding support for renewables. Our best estimate is now:

	Allowance	Forecast	Difference
Capital expenditure	£m	£m	£m
(i) Load-related	1,169.4	1,090.8	-78.6
(ii) Non-load related	814.3	728.2	-86.1
Controllable operating costs	193.0	258.9	65.9
Total	2,176.7	2,077.9	-98.8

The most significant factor affecting the revised forecast has been our review on the likely scale and timing of renewable generation connections.

Our revenues

This year our allowed revenues totalled £315.8m, of which £4.8m related to past incentive performance and adjustments for under or over recovery.

Our performance this year earned incentive payments of £4.9m, which will be reflected in our allowed revenues next year. The breakdown of incentive was as follows:

Incentives	£ thousand
Reliability	2,590
Stakeholder engagement	680
SF6 emissions	310
Stakeholder satisfaction	1,320

Our Return on Regulated Equity (RoRE)

Our closing Regulatory Asset Value (RAV) this year was \pounds 2,133m (up from \pounds 2,025m last year). Our performance related projected average real return over the 8-year price control period is based on totex out-performance of \pounds 74.1m (2016/17 prices):

7.00%	Base Return The benchmark set by Ofgem
+0.59%	Information Quality Incentive (IQI) A bonus for our high-quality, fast-tracked business plan
+1.11%	Totex Efficiency Savings Our 50% share of projected cost savings
+0.38%	Incentive mechanisms Performance-related awards against key outputs
+0.57%	TIRG Incentive Reflected the legacy return under the funding mechanism
+0.05%	Other-retained tax
9.7%	Return on Regulatory Equity (including TRIG) Estimate average real return over 8-year price control
8.92%	RoRE based on weighted average basis

SP Transmission Annual Performance Report 2016/17

Our performance by theme

SEN

Serving our stakeholders and communities

The focus of our stakeholder engagement strategy is to clearly understand what our stakeholders need and deliver in a way we can sustain.

Our aim to continually improve on how we engage with stakeholders and communities is a priority which is evidenced by the broad and innovative approaches we use to develop positive long term relationships. Some of the recent internal changes, made to focus our attention on this area, are now receiving very encouraging feedback.

Listening to all stakeholders is crucial to the smooth delivery of our work. From the supply chain to the elderly person who is living alongside where we are working, their views are important to us. To ensure we are getting it right, stakeholder surveys across each category are carried out independently each year providing valuable feedback at all levels which leads to changes as we work hard to improve further.

This level and depth of commitment has been reflected in a marked improvement in how our engagement is measured. The assessment of our stakeholder engagement by Ofgem's independent panel of experts gave us a score of 6.25, which has not improved from last year. Our score against our Key Performance Indicators increased from 73% to 77%. We were delighted that our score of 7.9 in our stakeholder survey was up on last year – and we are working hard to address the identified areas for improvement.



Each project individually assessed

We understand that some of our major investment projects can impact on the surrounding community. Our Community Relations Team at Major Projects makes every effort to minimise adverse impacts by assessing each of our projects individually with this aim in mind. Informing local residents and groups in advance of how the work might affect them is vital. During the entire process from development to delivery, the project teams consider the potential impact of every activity.

Drawing on local knowledge

Our planning and development teams value the views of stakeholders and often hold public consultation events in the community to draw on local knowledge residents have, asking for comments on proposals. This is a key planning aspect around many of our projects allowing them to be shaped by considering the views offered by the local community.



Supply Chain

Our supply chain helps us to deliver our investment and play a key part in our projects. Previously we have consulted with the supply chain at length and implemented a number of positive changes such as introducing individual SPEN contact points for all contractors. These are complemented with face to face meetings with our biggest suppliers. A quarterly supplier newsletter has also been introduced providing valuable up to date information.



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we come to mis equition of our supply chain newsietter. Features in mis issue include, what we can achieve when we work together with a focus on our Health & Safety performance. A reminder of our Grantors Charter and what it means for all of us, and an apdated view of the forward tender programme.

attifaction survey. Our overall satisfaction score increased to 7.9 out of 10, with you our Supply Chain scoring us 7.6. A great improvement on previous years. I have been eviewing your feedback with the team and one item you told us that you would like to see more dealih of was the successful tender swards; this information will now be upblished and made available to you via this newsletter.

In the last edition of our newsletter I asked you if you would like us to hold a Transmission Supplier Fixent - you and you so. At the event Wull epdate you on items that I know are of importance to you and I will share further details on the changes we are maining based on your survey feedback. Watch out for details of this event common soon. If you would like further information on any of the items featured please don't hesitate to we in twoch.

Cathie Hill Stakeholder Engagement & Programme Development Manag

Facilitating renewable generation Delivering the network capacity

This year has demonstrated our ability to respond to changing circumstances – specifically the impact of reduced financial support for renewables.

This year, we reached some significant landmarks in our strategic reinforcement programme. The overhead line circuits from Kilmarnock South to Coylton and Coylton to Markhill (XY and YY routes respectively) were energised following the installation of high temperature low sag conductors, highly innovative projects for which we won funding under the Innovation Rollout Mechanism (IRM) in 2015/16.

Of particular success was the energisaton of YY route whilst accelerating the original 20 week planned outage to 13 weeks realising benefits of the NI interconnector and the wider UK network.

This was part of 691 MVA of extra network capacity commissioned in the year, which included the completion of Transmission Investment Renewable Generation (TIRG) works in South West Scotland, with the energisation of the new 275kV WA Route overhead line from Coylton to New Cumnock and the New Cumnock substation. The completion of New Cumnock substation is a key node within the South West Scotland area and will play a major role in enabling multiple renewable connections in the future, having delivered substantial increased capacity to this part of the network.

Over the price control period, we expect to deliver a significant increase in additional network capacity over and above the baseline target of 1,073MVA delivering an overall increase in network capacity of 3,332MVA. This additional capacity will support the connection of renewable generation for the benefit of customers and facilitate the achievement of UK and Scottish Government climate change targets as we continue to design the most cost-efficient and economic solutions to meet customer needs.



Coylton to New Cumnock – WA route



New Cumnock Substation



Facilitating renewable generation Delivering the network capacity

This year has demonstrated our ability to respond to changing circumstances – specifically the impact of reduced financial support for renewables.

We continue to react and respond to continuing uncertainty in the renewable sector, demonstrated through the Dumfries and Galloway Reinforcement now being taken forward as the Kendoon to Tongland Reinforcement Project (KTR). We are now modernising and improving the existing 132kV network whilst working with the System Operator (SO) to develop innovative, technical and commercial solutions to facilitate the connection of renewable generation in the area, ensuring we build the most efficient solution for our customers.

During the year, construction on the West Coast HVDC project was also substantially completed. We are now in the commissioning phase, as we progress towards commercial operation in the second half of 2017. This project, which is a joint venture with NGET, uses advanced technology, including subsea cable, to improve the network transfer capacity by 2,150MW between Scotland and England/Wales.

We also invested significant effort into developing solutions and undertaking work to facilitate embedded generation connections within the Distribution network in our area. Subsea HDVC Cable landing Ardniel Bay



HVDC Converter Station Hunterston





Connecting new generation Helping individual projects connect

We have had a very successful year in facilitating access to the transmission network for renewable generation with the connection of six major on-shore wind farms.

We successfully connected 403MW of directly connected generation within the year, bringing our total volume of new renewable connections in the RIIO-T1 price control period to 872MW. Dersalloch wind farm was a major milestone being this year, the first wind farm to be connected to our extensive South West Scotland renewable connection scheme.

The volume of connection offers we make, as we forecast, is decreasing - 63 issued this year, compared to 116 last year. The offers are continuing to being made to a diverse range of projects, including solar, hydro and CHP. The changes in the wider energy policy context are continually being assessed and reflected in our forecast level of connections. The expenditure to support them has resulted in a change of our forecast for the total level of generation connections over the RIIO-T1 period to be 1,634MW, down from last year's projection of 2,090MW, while the contracted position has potential connections and associated reinforcements of up to 6.9GW. As part of our forecasting process, we classify connections into high, medium and low probability bands and our revised forecast for T1 is based on progressing only the high probability connections. The decrease from last year is mainly attributable to the ongoing uncertainty around offshore wind, given its continued planning and legal challenges. This is matched by a reduction in forecast expenditure and in forecast allowance.

We also engineer connections for our demand customers and this year we provided network capacity for the high profile Glasgow to Edinburgh electrification project via a new feeder substation at Greenhill with a new cable back into an extension of Bonnybridge substation.



Connected generation in the RIIO T1 price control to March 2017

Project Name	Location	Connection Date	MWs
Fallago Windfarm Connection	Fallago	2013/14	180
Moffat 400 (TORI 15) – 132 kV (TORI 16) SS & Harestanes Connection	Moffat	2013/14	220
Blacklaw Windfarm Extension	Linmill	2015/16	69
SWS Ph 1 – Dersalloch Windfarm Connection & OHL	New Cumnock	2016/17	69
Galawhistle Windfarm	Coalburn	2016/17	55
Kilgallioch Windfarm – Connection	Mark Hill	2016/17	183
Glen App	Arecleoch	2016/17	32
Ewe Hill Windfarm & Gretna Ewe Hill (TORI 017/189)	Gretna	2016/17	39
Minnygap Windfarm	Moffat	2016/17	25
		Total	872

Modernising our network

We maintained the strong start to our non-load related programme, delivering efficiently against our accelerated plans for network renewal – a set of investments which are key to providing long-term, reliable electricity supplies to customers.

Our RIIO-T1 Business Plan described how we intended to target investment to manage the risk of asset deterioration on our network. Following the fast track decision, we refined this aspect of our plan further to make best use of developments in resource and outage availability. We brought forward our replacement of overhead lines, and smoothed out our delivery profile for replacement transformers and switchgear.

Whilst Asset Replacement & Other Capex was £32m below allowance in the year, with spend of £326.8m to date on modernising assets, we are broadly in line with expenditure, whilst delivering significantly greater outputs than planned. The network performance benefits are already being seen, and we remain on track to deliver all of our target Network Outputs for 2021.

Our cumulative expenditure to date for Asset Replacement demonstrates our excellent progress on our major refurbishment programmes. Following the successful completion of YH route, Smeaton to Portobello, further securing supplies to Edinburgh city centre, only three major overhead line modernisation projects have works remaining. Of these three projects YX/YW route, Cruachan to Dalmally to Windyhill is progressing well on site, with two more years of expenditure remaining. The XP route, Currie to Kaimes, will complete the 275kV programme with contracts awarded in 2017/18. The final overhead line project is the modernisation of V Route, Galashiels to Harker, where we have commissioned some specialist assessments to finalise the required scope.

Our transformer modernisation programme is progressing steadily. We have had some significant issues with our projects at Erskine (extensive asbestos contamination) and Johnstone (issues with transformer manufacturer). These issues are being resolved and the remainder of the programme is progressing.

This has been the most significant year for our switchgear modernisation programme, our 132kV programme is on track, with Windyhill nearing completion and significant progress at Chapelcross despite some restrictions with network outages. Our 275kV programme has been re-profiled in conjunction with the System Operator to minimise risk to the network and to manage network access issues. We are making excellent progress with Dalmally already complete, Lambhill partially complete and Currie now mobilsed on site.



Galashiels Transformer Replacement



Modernising our network

We maintained our strong start to our non-load related programme delivering efficiently against our accelerated plans for network renewal – a set of investments which are key to providing long-term, reliable electricity supplies to customers.

Performance this year was all about delivering against our accelerated plan. We are performing well, and managing costs efficiently. The additional 61km of overhead line we have replaced takes the 4-year total to 508km. This is 312km more the amount we originally planned of 196km. When combined with our continuing investment in transformers and switchgear, it means that we have met 48.8% of the output targets for the period to 2021. Under our original plan, we projected to have completed around 32.2% of the total by now. We are therefore well on track to deliver our target Network Outputs by 2021.

Further, the flexibility of our delivery capability, through our partnership with lberdrola Engineering & Construction and reduced reliance on large, "turn-key" contractors, has delivered these outputs while using just 40.6% of the total investment allowances. We continue to review our delivery strategy and If we continue this trend, as we expect we will have delivered significant cost savings by the end of the period – which will reduce costs to customers.

While these investments are for the long term, it is already delivering stronger network performance. In 2015/16 we recorded a 72% drop in the number of faults in lead assets and in 2016/17 we have generally maintained this excellent performance, with a slight increase in faults directly attributable to an increase in weather related events.



A reliable and resilient network

This year we continued our excellent level of network reliability, with faults on our network resulting in only 10.3MWh of Energy Not Supplied (ENS) to customers. This represents 0.00006% of the total.

Our network is critical to delivering reliable supplies to customers. While transmission faults are rare, when they do occur they can have large impacts. Our network has delivered excellent levels of reliability this year, continuing a trend of strong performance. Our network was responsible for only 10.3MWh of unserved energy this year. This represents 0.00006% of the total, or the annual electricity consumption of around 3 houses – and well under the benchmark level of 225MWh which was derived from the 10 year average prior to RIIO-T1 review period.

The retirement of all large thermal plants in Scotland has implications for contingency planning, and in particular the ability to "restart" the network quickly after a system-wide failure (a process known as "Black Start"). Over the last year we have continued to expand on our engagement in this important area with the key influential stakeholders in UK, Scottish Government and Local Resilience forums. This year we have worked closely with the Department for Business, Energy & Industrial Strategy (BEIS) to understand the cause, learnings and restoration from the 2016 South Australian Black Start event which bears striking resemblance to Scotland in its energy profile. Along with this continued engagement and learning, this year we have also completed our first phase of site works to install additional generators and diesel tanks at critical network locations, to increase our network resilience and ensure that joint restoration plans remain effective and robust.

We have also started the development and design phase to build greater resilience at Longannet and Kincardine substations against the risk of flooding.





A safe network

We have a key responsibility to ensure that our infrastructure is safe. The health and safety of the public and of the people who work on our network is paramount. We pride ourselves on our excellent track record and our rigour and leadership in retaining a world class level of performance.

In conjunction with our sister SP Energy Networks Licenced Network Operators (SP Distribution and SP Manweb), we take considerable pride in our reputation as an industry leader in public safety gained through our behaviours, investments in operational integrity and comprehensive public safety education programmes.

We can report again this year that there were zero injuries to the general public and staff resulting from our assets or operations. We have also observed fewer incidents of metal theft (down from 4 last year to 1 this year) - a criminal activity and public safety risk that we have targeted over recent years, working in partnership with law enforcement agencies.



strengthen public safety awareness. Our active presence at many agricultural shows, and our continuing initiatives with local schools, are good examples of ongoing activities.

We continue to commit significant resources to

Another focus this year has been on continuing to embed the highest standards of safety among our growing number of contractors, where we have hosted and facilitated a number of key collaboration initiatives. Along with continuing our Working at Height forum we started a new Vehicle and Plant Movement initiative, this is leading the way within the industry and is being monitored by ENA and National Grid as they look to adopt. We monitor performance using Total Recordable Injury

Rate (TRIR). TRIR is a widely used indicator and expresses injury levels as a factor of hours worked (injuries per 100,000 hours). With 5 recorded incidents this year, our contractor TRIR improved from 0.47 last year to 0.18. This is the third consecutive year-on-year fall, reflecting the results from our collaborative initiatives.

We comply with relevant health and safety legislation, including The Health and Safety at Work Act 1974, The Electricity, Safety, Quality and Continuity Regulations 2002 and the Electricity at Work Regulations 1989. Our safety management systems are independently assessed against relevant international standards.

Situations like the one in the photo highlight the risk to public safety when undertaking ground works, as well as the integrity of our network. In this instance a house builder was going to lower the ground level by 2.5m by constructing a piled retaining wall, to create a car park for a development. Upon realisation of the transmission assets in the ground and contact with SPT, we worked closely with the project team to ensure that the work could be carried out, by implementing several safety measures, without the need to divert the cables via a simple change to the piling design of the car park.





Injuries to the public due to our network or operations







Sustainability & environment

Our 7 Sustainability Drivers enable us to focus on the key areas where we can contribute to a more sustainable future, including how we can help deliver the UK's carbon reduction targets as well as reducing our own environmental impacts.

The 7 Sustainability Drivers allow SPEN to lead technical innovation and collaboration to identify solutions to these priority issues. As a result, innovative projects are already using cheaper, safer alternatives and reduced quantities of materials to mitigate future waste disposal and accidental releases to the environment.



In order to drive us to an industry leading position our sustainability team manage environmental compliance and deliver the policy, strategy and plan to become a sustainable networks business. The team are responsible for creating and embedding the focused processes within the wider business and to raise the profile and importance of sustainability within the organisation. This activity saw our score in the Environmental Discretionary Award (EDR) rise in year from 32% to 88% and achieve Leadership status. This is the highest score ever achieved by any TO in the EDR scheme to date.

We have continued in our collaboration with experts and interest groups to identify effective ways of increasing visual amenity in Loch Lomond and the Trossachs National Park through our VIEW project. The VIEW project has been built on an unprecedented level of collaboration and stakeholder engagement which has enabled us to develop a series of innovative proposals to address specific landscape or visual impacts throughout Loch Lomond and the Trossachs National Park. Excellent progress has been made in developing the specific detail around each of these schemes and securing the agreement of landowners, the park authority, along with a range of other stakeholders.

SPT will continue to engage in developing the precise detail around these schemes to ensure that they deliver innovative and efficient solutions to identified impacts on landscape or visual amenity. It is intended that submissions will be made to OFGEM to progress the schemes towards the end of 2017 and in parallel, applications for any necessary consents will commence in line with a programme for the physical works to be completed prior to the end of the price control period in 2021.

Overhead line at Loch Katrine





Business carbon footprint

As part of SP Energy Networks and the wider Iberdrola Group, SP Transmission is committed to reducing its impact on the environment. We have a long standing target (2010) to reduce our carbon emissions by 20% from our 2010 levels by 2020.

We address this commitment through a strategy which focuses on measurable reductions in key areas: losses, emissions of Sulphur Hexofluoride, our buildings, and our means of transport.

Losses

We calculate the carbon associated with energy transmission using our published Losses Report and an Ofgem agreed carbon conversion factor. We have reported the carbon associated with losses for the year April 2016 to March 2017 at 263,712 tCO2. This compares to a reported figure of 194,120 tCO2e last year. We remain focused on reducing losses as a percentage of energy transmitted, and have built this objective into our investment planning and procurement systems. The final figure is still to be confirmed.

Sulphur Hexafluoride (SF6) emissions

We continue to outperform the historic SF6 leakage rate of 3% and over RIIO-T1 we aim to reduce this rate even further. Transmission assets traditionally used oil as an insulator for equipment. Technology advances have identified Sulphur Hexafluoride as a safer more effective electrical insulator. However SF6 is a potent greenhouse gas, and accidental leaks contribute to the business carbon footprint. With more SF6 filled equipment being fitted as upgrading across our network proceeds, we are working to minimise the likelihood of leakages and to develop alternatives to SF6 by working closely with suppliers. Our SF6 losses for the period April 2016 to March 2017 equate to 8,849 tCO2e a decrease on last year's figure of 10,050 tCO2e.

Buildings Energy Use

In the reporting period April 2016 to March 2017, our buildings energy use equates to 487 tCO2e. This is an increase on last year's emissions of 264 tCO2e, however this is due to amendments made in the apportionment of SPT staff numbers in shared sites. As a business SP Energy Networks energy usage has decreased by 1,808 tCO2e in 2016/2017.

Our facilities management team are working with us to reduce our energy consumption, installing new technology lighting and Passive Infrared Sensor (PIR) motion sensors along with improved insulation at our sites.



Transport

We have installed an electronic vehicle management system to optimise our vehicle utilisation and plan to keep vehicle numbers broadly similar throughout RIIO T1.

Electric vehicle technology continues to advance and we are starting to see practical options for electric commercial vehicles. There are still some concerns about range and how this can be limited depending on load weight and ambient temperature. We will continue to trial new technologies as part of the new leasing contract and encourage uptake where it would be appropriate.

We have launched the ScottishPower Electric Vehicle Programme to encourage our staff towards the purchase of an Ultra Low Emission vehicle by providing two types of funding, an interest free loan or an advertising grant offering a payment towards the purchase of a car, motorcycle or moped that is branded with ScottishPower livery.

We also continue to make incremental improvements by emphasising and supporting the use of lower carbon forms of travel (e.g. rail). To encourage a reduction in travel we have rolled out video conferencing capability on all laptops.

Innovation

Innovation is at the core of SP Energy Networks. We continue to hold a leadership position in innovation and remain the only TO with projects under all three of the RIIO-T1 innovation funding mechanisms.

We have continued to develop our Transmission innovation programme whilst delivering key outputs. The construction work on the Innovation Roll-Out Mechanism (IRM) schemes has been substantively completed realising cost savings against the approved funding level. For the Network Innovation Competition (NIC) schemes, we have commenced the PHOENIX project whilst progressing to programme and budget on our VISOR and FITNESS initiatives.

Through the Innovation Rollout Mechanism we have invested in Aluminium Conductor Composite Reinforced (ACCR) High Temperature Low Sag conductors on 65km of our network around Mark Hill and Coylton in South-West Scotland. This was successfully energised this year. This innovative new technology allows existing routes to be operated more intensively - and in the right circumstances represents a quicker, as with XY and YY routes, a more cost-effective way of increasing capacity because it can be done using the existing transmission towers. This project is aiming to save over £50m investment for the GB electricity customers, in addition to the significant environmental benefits.

We have successfully delivered the original scope of the VISOR project having completed the installation of a GB Wide Area Monitoring System (WAMS) architecture and all the planned WAMS applications. Following approval from OFGEM the project will now be extended until December 2017 to generate additional learning and demonstration of WAMS-EMS interface.

Good progress continues to be made on the FITNESS project aiming to utilise digital technologies to reduce the cost and timescales associated with the construction and modification of substations. We have finalised a functional design specification document and interoperability testing plan detailing the proposed substation system architecture





Hybrid Synchronous Compensator (H-SC) 3D model



which has been reviewed by an external technical expert, along with the completion of the civil layouts and site designs.

We are delighted to have commenced work on the PHOENIX project, looking at an innovative potential solution to issues linked to fluctuating energy supplies as we transition to a low carbon future, by developing a unique Hybrid Synchronous Compensator (H-SC) which could be used to mitigate system issues linked to the closure of traditional energy generation plants, enhancing system stability while reducing operating costs. We will be making progress over the coming year through engagement with a wide range of stakeholders and industry experts.

Finally, we are also continuing to make active use of the Network Innovation Allowance (NIA) to support smaller innovation projects. This year we have been working on twenty-one projects funded through this mechanism. Experience has demonstrated that this is an effective pipeline for future larger innovation projects, and for eventual business-as-usual deployment on our network. **SP Transmission** Annual Performance Report 2016/17

Financial performance: Expenditure and revenues

"RIIO" is Ofgem's framework for setting price controls for network companies. RIIO stands for Revenue = Incentives + Innovation + Outputs. Effectively this means that we are only rewarded for delivering exceptional performance in our incentive, outputs and innovation.

Our Costs Performance this year

Load-Related Programme 2016/17 position: £179.4m above allowance consistent with last year's forecast

We had previously revised our plan due to uncertainty on timing of renewable generation and delays on some Baseline Wider Works projects. We have recovered the majority of the expenditure that had been forecast in the first two years.

We continue to build momentum in our load related portfolio, and although we are reporting 7% decrease for year on year expenditure this still reflects a very active construction and commissioning period for SPT as more new renewable generation is made available. During the year, construction on the West Coast HVDC project was also substantially completed. We are now in the commissioning phase, as we progress towards commercial operation in the second half of 2017.

Opex

Our indirect costs during 2016/17 exceeded allowances by £11m. The main driver for this was an increase in our Business Support costs which were impacted following a change to accounting measurement made after the RIIO-T1 bid.

We repaired a larger than expected volume of minor plant and cable defects (classified under faults), to maintain the integrity of our network. These defects are identified through our regular routine inspection and maintenance regimes.

There are two key areas of expenditure: load related i.e. projects to cater for significant increases in customer demand and renewable generation, and asset replacement to renew our existing network. The load related programme is by far the more volatile and uncertain as we and our customers/developers are subject to many external factors outwith our control.

Totex comparison	(2016/17 real £m)	Allowance	Actual	Variance
Capex		£m	£m	£m
Baseline – Wider Works (BW	W)	16.2	81.8	65.6
Baseline – Other LR Capex		23.5	137.4	113.9
Sub-Total Load Related Ca	ipex	39.7	219.2	179.4
Asset Replacement Capex		69.5	61.6	-7.9
Other Capex		44.1	20.0	-24.1
Non Operational capex		1.1	2.2	1.1
Total Capex		154.5	303.0	148.5

	Allowance	Actual	Variance
Opex	£m	£m	£m
Faults	1.1	1.9	0.8
Inspections & Maintenance and Other direct costs	11.4	6.5	-4.9
Indirect Costs	13.8	24.8	11.0
Adjustment for IAS 19 pension accrual	0.0	1.5	1.5
Total Controllable Opex	26.3	34.7	8.4

Totex

£32m below allowance

accordance with plan.

Asset Replacement & Other Capex:

Our RIIO-T1 Business Plan described how we

intended to target investment to manage the

investment accordingly in the first four years.

Whilst investment in the year is below plan,

the cumulative Asset Replacement and Other

Capex position to date shows £326.8m spent modernising assets, which is broadly in

risk of asset deterioration on our network.

We have prioritised activity and profiled

The associated outputs are in line or ahead of submission with 508km of overhead line conductor replaced to date against the RIIO-T1 plan of 196km. Our transformer modernisation programme is progressing steadily following significant issues with our projects at Erskine and Johnstone. This has been the most significant year for our switchgear modernisation programme with both 132kV and 275kV progressing to last year's forecast.

337.6

156.9

180.7

Our Costs Forecast for RIIO-T1

Highlights of future performance

Our current forecast total expenditure (totex) over the eight years of RIIO-T1 is over £2.1bn. It is approximately 4.5% below allowance due to cost efficiencies and innovative solutions in major projects and programmes of work. The 2016/17 RIGs and RRP derive an overall totex out-performance of £98.8m (£80.5m in 2009/10 prices), however, this figure includes £24.8m of IRM allowance (HTLS Project). Removing this allowance (as costs reported elsewhere) provides a representative overall totex out-performance figure of £74.1m.

The forecast is our current best estimate of the scale and timing of renewable generation connections, local network reinforcement, the wider works and modernisation projects that are likely to be needed to strengthen and renew the network to support customers needs as we move towards a low carbon future.

We anticipate that our forecasts will change over time as new information becomes available. After the UK Government's announcement (Summer 2015) on changes to subsidy arrangements for renewable generation, we undertook an extensive exercise to gain a better understanding of likely levels of generation that will ultimately connect to our network. The current forecast reflects the outcome of our review; we will continue to monitor the situation and reflect changes in future forecasts. It is recognised that such uncertainty exists, and our regulatory contract includes mechanisms that enable cost allowances and revenues to accommodate such circumstances through movement above or below agreed baselines.

In the remaining period of RIIO-T1, it is now our expectation that we will utilise only one capex uncertainty mechanism – associated with generation connections – which will adjust allowances up and down. The mechanism is expected to be triggered; to add approximately £117m to the current baseline allowance. This figure is significantly below previous predictions.

The forecast for generation connections requiring sole-use infrastructure, at 1,634MW,

There are two key areas of expenditure: load related i.e. projects to cater for significant increases in customer demand and renewable generation; and asset replacement to renew our existing network. The load related programme is by far the more volatile and uncertain as we and our customers/developers are subject to many external factors outwith our control.

Totex comparison	(2016/17 real £m)	Allowance	Forecast	Variance
Capex		£m	£m	£m
Baseline – Wider Works (BW)	N)	676.0	553.8	-122.2
Baseline – Other LR Capex		136.1	112.6	-23.5
Uncertainty Mechanism – Ge Connections Sole-Use Infras	eneration stucture	39.8	82.5	42.7
Uncertainty Mechanism – Ge Connections Shared-Use Inf	eneration rastucture	317.5	341.9	24.5
Uncertainty Mechanism – Strategic Wider Works (SWW)	_	_	_
Sub-Total Load Related Ca	pex	1,169.4	1,090.8	-78.6
Asset Replacement Capex		560.0	470.9	-89.1
Other Capex		245.4	243.6	-1.8
Non Operational capex		8.8	13.7	4.8
Total Capex		1,983.7	1,819.0	-164.7

	Allowance	Actual	Variance
Opex	£m	£m	£m
Faults	8.4	12.7	4.2
Inspections & Maintenance and Other direct costs	76.3	69.5	-6.8
Indirect Costs	108.3	170.0	61.7
Adjustment for IAS 19 pension accrual	-	6.8	6.8
Total Controllable Opex	193.0	258.9	65.9
Totex	2,176.7	2,077.9	-98.8

falls below the 2,503MW baseline. This results in a reduction to our baseline allowance of around £53m, which will be returned to consumers. There is still a significant requirement for additional shared-use infrastructure capacity for other generation connections, including smaller embedded generators. We expect to deliver some 3,332MVA of additional network capacity in RIIO-T1 – above our 1,073MVA target. We continue to develop and deliver a range of cost-efficient and economic technical solutions that best meets our customers' needs. SPT continues to connect new customers to support Scottish and UK government targets for renewable generation it is now anticipated that we will incur investment, in this area, in excess of allowance by c£67m in RIIO-T1.

In our totex forecast we have assumed that as a result of the revised methodology for allocating indirect costs described in the previous section (Performance this year), approximately £60m of indirect costs will be allocated to opex instead of capex.

Our Costs Change in Forecast for RIIO-T1

Update on Forecast from 2015/16

Our latest totex forecast of £2.1bn is £181m lower than the view presented last year, this maintains an overall efficiency which has been achieved. Whilst It represents an improvement in overall performance it has been achieved through delivery efficiency on several key projects as they mature. There continues to be cost and delivery challenges in several areas including generation connections and switchgear replacement. The main changes are highlighted in the sections below.

Load-Related RIIO T1 Forecast: £159m below 2015/16 Forecast

In our Strategic Wider Works (SWW) project portfolio the Dumfries and Galloway Strategic Reinforcement (DGSR) project has been significantly scaled back to deliver a lower cost alternative technical solution project, following a cost benefit analysis, for delivery in RIIO-T1/T2.

The investment for generation connections has been updated in accordance with the current forecast of new generation expected to connect (c1.6GW) and the associated new network capacity (c3.3GMVA) that will be required.

Non-Load RIIO T1Forecast: £28m below 2015/16 Forecast

The primary difference has been a reduction in forecast activity for non-load related works, which are triggered by certain load-related projects. This has been partially offset by increased forecast investment associated with diversions of existing overhead line infrastructure. We have also forecast some further efficiency associated with delivery of our core modernisation investment in RIIO-T1 as more projects move through the construction phase.

Totex comparison (2016/17 real £m)	RIIO-T1 Forecast (2016/17 view)	RIIO-T1 Forecast (2015/16 view)	Plan-on-Plan
Capex	£III	£111	£111
Baseline – Wider Works (BWW)	553.8	574.7	20.9
Baseline – Other LR Capex	112.6	449.5	337.0
Uncertainty Mechanism – Generation Connections Sole-Use Infrastucture	82.5	20.3	-62.2
Uncertainty Mechanism – Generation Connections Shared-Use Infrastucture	341.9	162.9	-179.1
Uncertainty Mechanism – Strategic Wider Works (SWW)	_	42.2	42.2
Sub-Total Load Related Capex	1,090.8	1,249.7	158.9
Asset Replacement Capex	470.9	475.6	4.7
Other Capex	243.6	267.9	24.3
Non Operational capex	13.7	12.6	-1.1
Total Capex	1,819.0	2,005.8	186.8

	RIIO-T1 Forecast (2016/17 view)	RIIO-T1 Forecast (2015/16 view)	Plan-on-Plan
Opex	£m	£m	£m
Faults	12.7	12.8	0.1
Inspections & Maintenance and Other direct costs	69.5	67.2	-2.3
Indirect Costs	170.0	175.0	5.0
Adjustment for IAS 19 pension accrual	6.8	-1.9	-8.6
Total Controllable Opex	258.9	253.1	-5.8
		· · · · · · · · · · · · · · · · · · ·	
Total Capex	2,077.9	2,258.9	181.0

Opex

Overall, our Faults, Inspections & Maintenance and Other direct costs forecasts remain broadly in line with the 2015/16 Forecast. We are forecasting a reduction in our overall indirect costs from the prior year, which is offset by an increase in our IAS 19 pension accrural.

Our Revenues

In 2016/17 we recovered £315.8m. Our revenues are set through regulation by Ofgem. They comprise an element which is fixed, an element which is linked to specified variables (such as the amount of connected generation), and an element to capture incentives and adjustments from previous years.

We recover our revenues through charges to the system operator, National Grid – who, in turn, levies charges on users of the transmission system across GB. Based on our forecast performance the Return on Regulatory Equity over the full RIIO-T1 period is estimated at 9.05%.

Our revenue allowance – the basics:

An allowance is set by Ofgem

This is calculated using a formula

There are various components to the formula

Some components are fixed, and some depend on variables (such as MW of generation connected)

Some components relate to individual investment schemes, e.g. those listed under Strategic Wider Works

Performance under the various incentive schemes will affect revenue allowance with a lag of two years

Differences between what we recover and what we are allowed to recover are adjusted for in subsequent years.

From our charges to customer bills:

Our charges form part of the total revenues recovered by National Grid through transmission charges

The cost of running the Transmission network in Great Britain is spread out over consumers and generators across the country. For non-half hourly metered customers (representing domestic and small business customers), the average cost of running SP Transmission amounts to approximately £4 per customer per year. Note: Average over the 8-year RIIO ET1 price control, in 2016/17 prices. Calculations prepared by National Grid).

Our base revenues in 2016/17		
Allowed Revenues		(£m)
Past incentives & adjustments		Fixed
4.8		311.0
Incentive awards earned in 2016/17 (revenue rec d in 2018/19)		
Smaller incentives earned in 2016/17		(£ thousands)
Stakeholder engagement	680	
SF6 emissions 310		
Larger incentives earned in 2016/17		(£ thousands)
Stakeholder satisfaction 1,320		
Reliability	2,5	90

Our RoRE (Return on Regulatory Equity)

Investment into the electricity transmission network is a long-term project, the costs of which are spread out over the lives of assets.

RAV (Regulatory Asset Value) For every pound that we spend, we collect:

10% of the costs in the same year

90% of the costs over the life of the asset, which gets added to the 'Regulated Asset Value' (RAV) balance

Ofgem assume that we fund this RAV by:

55% borrowing – on which we receive interest payments of 2.38% (for 2016/17)

45% equity – on which we receive a return of 7.0%, as set by Ofgem for the 8-year price control

The weighted average cost of **funding the RAV is therefore 4.46%** for 2016/17

At 31st March 2017 **our RAV was £2,133m (16/17 prices)**, an increase of 5% from £2,025m (16/17 prices) in the prior year, as we continue to invest in the network

Consistent with the RIIO price control framework Ofgem attached a financial reward/penalty to a number of the incentives. This has the effect of changing our Return on Regulated Equity (RoRE) Below:

RoRE is calculated based on values in 09/10 prices and therefore represents an average real equity return over the 8-year price control. Numbers may not sum due to rounding.

We have followed the methodology used by Ofgem in their Electricity Annual Report to ensure consistency. This is an evolving area of reporting, but we are voluntarily presenting these numbers to aid stakeholders. We believe the RoRE needs to be based on a weight average rather than a simple arithmetic which is Ofgem methodology, to be relevant and accurately presented to stakeholders. These two approaches give rise to a difference in RoRE of ca 78 bps.

The main movement in RoRE from prior year is an increase in the WACC differential we expect to achieve on the TIRG projects across the 8-year period.

For detailed information about our financial performance, please see the SP Transmission Regulatory Accounts which are published annually, available from <u>scottishpower.com/pages/accounts_information.asp.</u>

8-year average 2016/17	Return on Regulatory Equity (RoRE). All number reflecting Ofgem's methodology, totex out-performance of £74.1m (2016/17 prices):
7.00%	Base Return – Set by Ofgem for the 8-year period.
0.59%	IQI Additional Income – Agreed by Ofgem as part of the price control, and is a reward for the quality of our business plan and recognition of our fast-tracking.
1.11%	Totex Efficiency Savings – Any savings we make on our investment plan are shared 50:50 with the consumer, and we are currently forecasting some savings over the 8-year period. This results in a benefit to both consumers and our shareholders, and is in addition to meeting all of our specified outputs.
0.21%	Reliability Incentive
0.01%	SF6 Emissions Incentive
0.08%	Stakeholder Satisfaction
0.08%	Environmental Discretionary Reward & SF6 Emissions incentive
0.57%	TIRG Incentive – Differential in allowed WACC reflecting higher risk TIRG projects
0.05%	Other – Retained Tax
9.7%	Return on Regulatory Equity (including TIRG)
8.92%	RoRE based on a weighted average basis

SP Transmission Annual Performance Report 2016/17

Looking forward

Meeting uncertain needs for transmission capacity

The key uncertainty facing our network – and how we develop it economically and efficiently – is the changing generation landscape, both the scale, timing and location of new generation and the timing of generation closures.



Wind turbine



Although we have just passed the half way point in the current price control period, we are already preparing our plans for the RIIO2 period starting in 2021. We have established a dedicated project team with experts from all aspects of our business to take this planning forward. In the near future, we will commence a comprehensive stakeholder engagement process to ensure that our plan is fully informed by the views of our stakeholders.

In addition to planning for the future beyond RIIO-T1, there are still a number of nearer term issues that we are managing and these are described below.

Renewable Generation Volumes

Our forecast of maximum demand in our area remains relatively stable, at around 3.4GW. But large uncertainty remains around the scale, timing and location of new, renewable generation. Not responding quickly enough risks delaying the connection of new generation and the transition to a low carbon energy sector. But building too much or too far ahead of time leads to higher customer bills. We have an ongoing role to help to strike the right balance. And this means active scenario planning, and taking decisive action to modify our investment plans, where necessary. The range of uncertainty is illustrated clearly in the 2016 UK Future Energy Scenarios, published by National Grid with input from ourselves

and SHE Transmission. While all scenarios show continued growth in low carbon generation, the scale, timing and location varies significantly across the scenarios. The changes to forms of financial support provided to different renewable technologies adds another layer of uncertainty, most acutely for onshore wind where levels of financial support have been scaled back. These uncertainties are important for us because of our strategic investment challenges related to transferring power from renewable generators to centres of demand, and to ensuring that there is sufficient transfer capacity to import electricity when demand is high but output from renewable generation is low, e.g. on cold, still days.

Many of the projects to connect new generation before 2021 will already have a connection offer. Therefore the total pool of projects with connection offers provides a good platform for forecasting possible investment requirements. There are currently around 6.9GW of onshore and offshore generation with connection offers, and our best view is that 1.6GW will connect by 2021. The network capacity requirements will depend on which combination of projects (and any new projects that come forward) actually proceed, and when. This is inherently uncertain and the costs to consumers of getting it wrong can be sizable, either by investing too far ahead of time or too late.



Meeting uncertain needs for transmission capacity

The key uncertainty facing our network – and how we develop it economically and efficiently – is the changing generation landscape, both the scale, timing and location of new generation and the timing of generation closures.



Black Start



Changes in the UK Generation & Transmission Systems

Across the UK, significant levels of thermal generation have closed. In Scotland the picture is particularly stark, where 4.7GW of generation capacity has closed or is outside of the market, equivalent to 85% of peak Scottish demand. In light of the closure of Longannet in the Central Belt of Scotland and given the new dependency for Scottish Customers upon electricity generation in England & Wales, a revised Local Joint Restoration Plan (LJRP) has had to be put in place to deal with the risk of a requirement for a "Black Start". Transmission systems have a key role to play should such an event take place and the revised plan (which is still being developed) will inform our views on how much resilience we need to plan for within our network. We will look to engage further with key stakeholders on this area going forward.

Brexit

Although we are now over a year on from the referendum, there is still considerable uncertainty in what the business impacts will be from Brexit, but given that we source equipment and materials from around the globe in a competitive market, a lower valuation for sterling will have an impact on our cost base. Brexit also brings with it uncertainties in other key areas such as interest rates, taxation and labour rates. At this point we have not reflected any impact of Brexit into our forward forecasts for T1, but we continue to monitor developments closely.



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