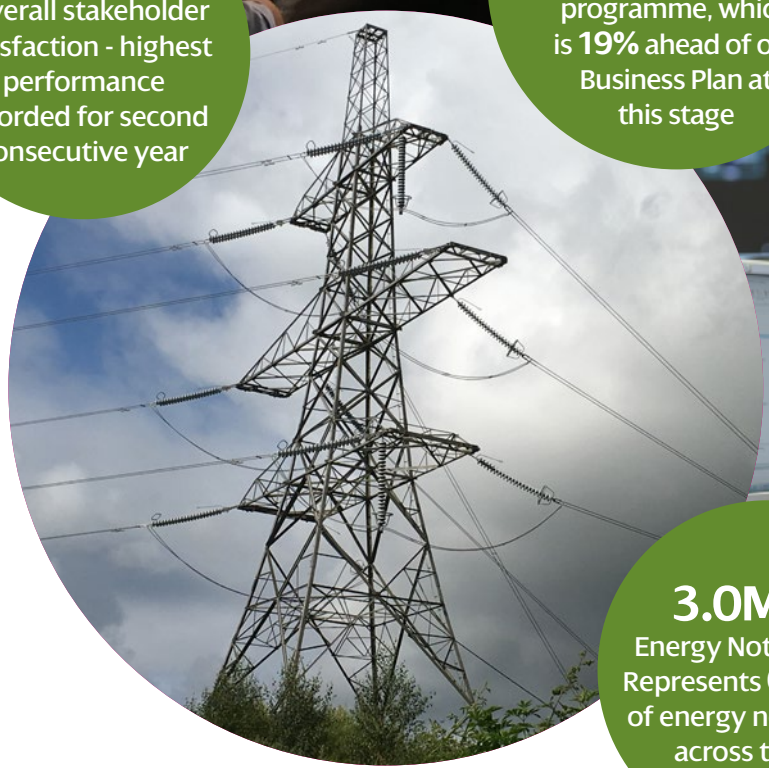
SP Transmission

Annual Performance Report 2017/18

SP ENERGY NETWORKS



8.3/10
- overall stakeholder satisfaction - highest performance recorded for second consecutive year

19% ahead of schedule. We are nearly **60%** through our asset replacement programme, which is **19%** ahead of our Business Plan at this stage

Environmental Discretionary Reward - **82%** - Leadership status by being the only Transmission Operator to obtain **70%**+ score

3.0MWh
Energy Not Supplied - Represents **0.00002%** of energy not supplied across the year

Welcome

As we support the move to a low carbon economy we have maintained excellent progress, passing the half way mark of our delivery plan. We have a critical role to play in decarbonisation of the electricity generation system and the work we are doing on our network supports this. Furthermore, we are a vital service provider for 80% of Scotland's population and it is crucial that we ensure that electricity generators and consumers continue to benefit from the outstanding levels of reliability to which they are accustomed.

Over the last 5 years we have invested over £1.5bn in our transmission network as part of a demanding investment programme. Since 2013, we have connected 1361MW of new generation directly to our system while approximately a further 900MW of generation has been connected to the distribution system that shares our geography. We have also had to adapt to the challenge of factors such as the closure of large thermal power stations. Equally, we have invested heavily to maintain and upgrade our network to ensure long-term, reliable electricity supplies to our customers.

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 and Wales. Increasingly, the network must also be capable of allowing electricity to be imported into Scotland during periods of low renewable generation. To meet these needs, we have also delivered an increase in Scotland-England transfer capacity from 2,900MW at the start of RIIO-T1 to 4,400MW and expect to soon raise this further to 6,600MW, on completion of the world leading Western Link HVDC project which we have built in a joint venture with National Grid.

Our stakeholder engagement is embedded throughout our business and strengthens each year. I'm also very proud of our industry leading innovation programme, our progress in the areas of sustainability 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.

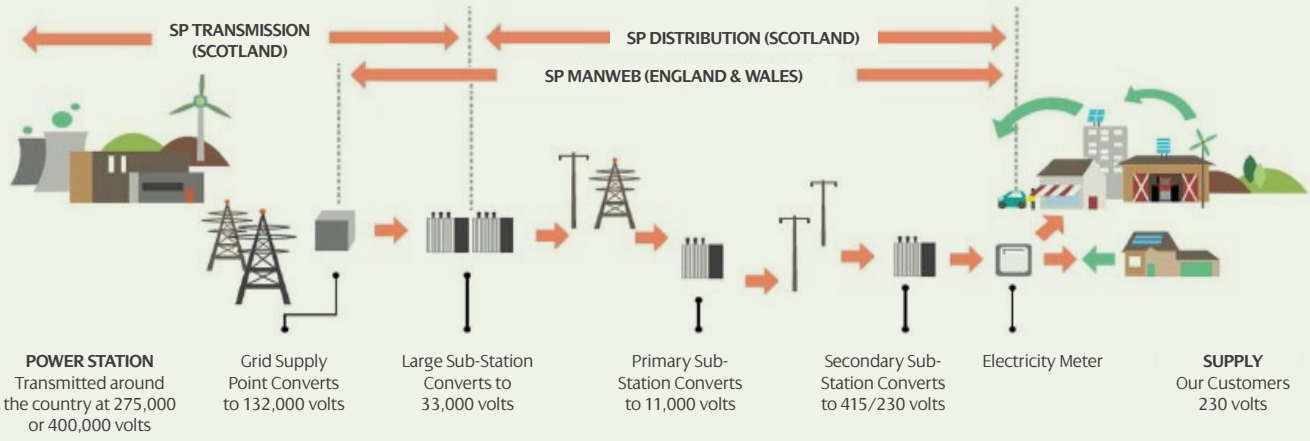
I hope that you find this year's report informative and as ever, we would be delighted to receive feedback on it so that we can continue to develop it for future years.

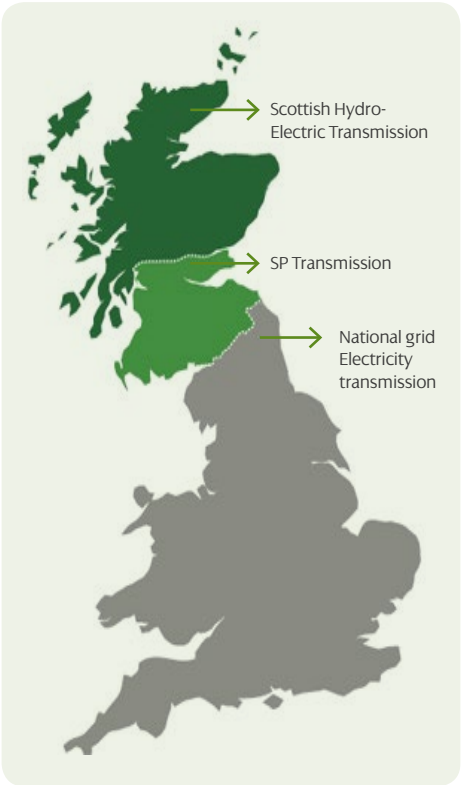
Frank Mitchell
CEO of SP Energy Networks

Content

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 during 2017/18. We are the licensed Transmission Owner (TO) for the Central Belt and South of Scotland. Our transmission network comprises over 4,300 kilometres of circuits and 154 substations operating at 400kV, 275kV and 132kV. We take electricity generated from power stations, wind farms and other sites and transport it through our vast transmission network to centres of demand, providing transmission services to National Grid, who as the GB System Operator (GBSO), coordinates the electricity flows by balancing generation supply and user demand.

Our vision as a business is to be a customer-focused company trusted by our communities and stakeholders; an engineering company with strong stewardship of assets and world-class 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.

SP Transmission
Annual Performance Report 2017/18

Our performance in summary

Executive summary

We are nearly 60% through our asset replacement programme, which is 19% ahead of our Business Plan at this stage.

This report shows how our business has performed during 2017/18. As we have passed the half-way point in the current price control period, we are pleased that our strong start has been maintained. We remain on course to complete our ambitious programme of network renewal. Delivery of key projects has resulted from meticulous long term planning as we continue to provide what we stated we would do at the outset of the price control period.

Our asset replacement related programme is continuing very well with delivery of a broad range of outputs. This is evident from the extent to which we are ahead of plan – on a cumulative basis; we have delivered 59.0% of our total asset renewal outputs, well ahead of our original RIIO-T1 plan of 40.5% for the first five years. Indeed, we are almost 75% through our overhead line replacement programme of 800km, 240km ahead of our plan at this stage. Our total spend in 2017/18 was £238.8m, £33.6m below our original plans, taking our cumulative investment in the RIIO-T1 price control period to over £1.5bn. Overall for the RIIO-T1 period, the position relative to allowance will vary, reflecting changes in project delivery profiles since the RIIO-T1 Business Plan was submitted and also the evolving picture of generation connections. We currently forecast that by the end of the RIIO-T1 period, we will have spent £66m less than allowance, through efficient project delivery and changes to forecast allowance and expenditure for generation connections.

Connections to our network increased with eight new windfarms being connected in the year, the majority of which was to our major network extension in South West Scotland, delivering some 490MW of new generation capacity. This, along with capacity already delivered since the start of RIIO-T1, brings the total to 1361 MW or some 54% of output target of 2503MW for the price control period. Stiff challenges in terms of securing necessary planning consents coupled with uncertainties regarding energy subsidies mean that we now forecast that a lower level of generation will connect over the price control period, with outputs delivered to date equating to 84% of our latest forecast.

The new connections have been accompanied by a range of reinforcement projects to strengthen the network and facilitate future connections. These reinforcements have added over 860MVA of additional capacity in the reporting year, all of this in South West Scotland. As previously forecast, the cumulative impact has seen our RIIO-T1 target of 1073MVA of additional capacity significantly surpassed by 720 MVA in 2017/18. As we continue to respond efficiently and with agility to new information, and new challenges, we are now forecasting 3,482 MVA for the full period, over three times the original target.

We continue to work effectively with our stakeholders, and this is driving a wide range of benefits as reflected in our stakeholder engagement performance. This is measured through our stakeholder satisfaction survey which shows a continual improvement, with an average satisfaction score of 8.3/10, a year on year improvement of 0.4 and significantly better than our benchmark which was set at 7.4.

The key indicators of our performance are also looking healthy. Undelivered energy as a result of faults on our networks was only 3.0MWh, well below the benchmark level of 225MWh. Our world-class standards of safety continue to be in evidence, with zero public safety incidents and significant initiatives to promote public safety and continue our collaboration in building the right culture of safety amongst our contractors.

The Western Link HVDC project, a joint venture with National Grid to increase the interconnection capacity between Scotland and England is nearing completion. This project supports the transition to a low carbon economy by providing further capacity for renewable energy schemes in Scotland whilst also enhancing the ability to import power into Scotland during periods of low renewable generation. The link operated reliably at partial capacity over the winter of 2017/18. Commissioning to full capacity over summer and autumn 2018 has been affected by a number of cable faults. When Western HVDC is fully operational, the total power transfer capability between Scotland and England will be increased to 6600MW, more than doubling the capacity at the start of RIIO-T1.

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 efficiently and effectively. We continue to lead amongst Transmission Operators (TOs) in respect of innovation and maintain our successful innovation programme whilst simultaneously delivering key outputs.

We have also completed a successful integration of our related party company, Iberdrola Engineering and Construction UK (IEC) into SP Transmission. This initiative will ensure that we maintain our internal capabilities to continue driving outperformance via our efficient disaggregated investment delivery model, which we introduced in 2010, to the benefit of our customers.

Outputs at a glance

Output	Metric/Target	Actual (In Year)	Status	Year on Year Trend	Comment
Stakeholder KPIs	**69** (Ofgem break even level)	**78**			The score of 78 reflects the consistency in our performance on connection offers, engagement with connected customers and broad interest customers.
Stakeholder survey	**7.4** (Ofgem break even level)	**8.3**			For the second consecutive year we have recorded our highest ever performance in the annual survey, with the rating for overall satisfaction increasing to 8.3 from 7.9 in 2016/17.
Stakeholder engagement Ofgem panel score	Ofgem – Target out of 10	**6.4**			We were awarded our highest ever score and moved to 1st place overall in the incentive.
Timely connections	**100%** (74 calendar days to submit final offer)	**100%**			60 connection offers made in year. One offer was not issued within the licenced timescale. There was, however, no impact on the customer as their offer was received on time. Offer process reviewed and new controls implemented to ensure future compliance.
Network capacity	**1,073MVA** (RIIO-T1 baseline forecast)	**860MVA**			Cumulative total for the price control is now 1,793MVA. Our new forecast position for the end of RIIO-T1 is to deliver 3,482MVA.
Connections to the network	**2,503MW** (RIIO-T1 baseline forecast)	**489MW**			Cumulative total for the period is now 1,361MW equating to 54% of output target. Our new forecast position for the end of RIIO-T1 is to deliver 1,620MW.
Modernisation outputs	**40.5%** (RIIO-T1 business plan target)	**59.0%**			We continue to stay ahead of our planned outputs for RIIO-T1, keeping us on track to deliver our network renewal outputs in full.
Energy not supplied	**225 MWh** (Based on 10 year average pre RIIO-T1)	**3.0MWh**			Reduction from 13.9MWh recorded last year and represents 0.00002% of energy not supplied across the year maintaining our outstanding network reliability.
Contractor safety	Total Recordable Injury Rate (TRIR)	**0.68**			TRIR is a widely used indicator and expresses injury levels as a factor of hours worked (injuries per 100,000 hours).A continuous drive for zero harm is our aim but we have seen an increase from last year's 0.18.
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)	**82%**			Achieved leadership status by being the only Transmission Operator to obtain 70%+ score. This year's 82% represents a fall from 88% last year.
Carbon footprint – SF6 leakage	**782kg** (2018 Licence term)	**460kg**			41% below 2018 target but an increase from 388kg recorded last year.
Carbon footprint – Network losses	No individual target. This is included within the Total BCF target.	**186,326 tCO_2**			This is a decrease on last year's emissions of 263,712 tCO_2.
Carbon footprint – Building losses	**6,743 tCO_2e**	**455 tCO_2e**			This is a decrease on last year's emissions of 487 tCO_2e.

Status

Ahead of target | On target | Below target

Year on year trend

Ahead of target | On target | Partially Below target | Substantially Below target

Financial performance
Summary

Our expenditure

This year:
Our total expenditure this year was £238.8m. This was £33.6m below our totex allowance. The breakdown was as follows:

Totex comparison (2017/18 real £m)	Allowance £m	Actual £m	Variance £m
Load Capex	127.5	131.9	4.4
Non-Load Capex	118.4	78.2	*-40.2*
Controllable Opex	26.6	28.7	2.1
Totex	**272.4**	**238.8**	***-33.6***

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:

Totex comparison (2017/18 real £m)	Allowance £m	Actual £m	Variance £m
Load Capex	1,213.3	1,158.8	*-54.6*
Non-Load Capex	844.7	763.1	*-81.6*
Controllable Opex	200.3	270.4	70.1
Totex	**2,258.3**	**2,192.3**	***-66.0***

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 £333.9m, of which £11.9m related to past incentive performance and adjustments for under recovery.

Our performance this year earned incentive payments of £5.8m, which will be reflected in our allowed revenues next year. The breakdown of incentive was as follows:

Incentives	£ thousand
Reliability	2,786
Stakeholder engagement	1,971
SF6 emissions	327
Stakeholder satisfaction	781

Our Return on Regulated Equity (RoRE)

Our closing Regulatory Asset Value (RAV) this year was £2,296m (up from £2,204m last year). Our performance related projected average real return over the 8-year price control period is based on totex out-performance of £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
+1.01%	**Totex Efficiency Savings** Our 50% share of projected cost savings
+0.49%	**Incentive mechanisms** Performance-related awards against key outputs
+0.57%	**TIRG Incentive** Reflected the legacy return under the funding mechanism
+0.03%	Other-retained tax
9.7%	**Return on Regulatory Equity (including TIRG)** Estimate average real return over 8-year price control
8.89%	**RoRE based on weighted average basis**

Key performance areas

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 stakeholder engagement strategy is embedded in all our activities ensuring we have a clear understanding of the requirements of the wide range of stakeholders we interact with. Indeed, our strategy enables us to identify and understand important issues as they emerge and develop. This consequently influences national and international policy for the benefit of our stakeholders, and we also work together with other network operators to provide a seamless service. To shape our strategy and policies we actively engage with various stakeholder groups ranging from UK Government, Scottish Government, Transmission Operators, and consumers.

Stakeholder views are a formal part of board discussions ensuring that the broad range of stakeholders have a major impact on what we do, driving forward change. The energy system is changing at pace and we are working with users of the system, customers and stakeholders to shape the future. We are engaging to understand their priorities for the transmission network of the future – building their feedback into our strategies, plans and policies.

In the past year, our strategy has enabled us to be more responsive than ever, including the alignment with our parent company's industry leading sustainability credentials, using continued insights from stakeholders, customers and supply chain to find innovative and collaborative solutions. In addition, we have reacted to stakeholder feedback concerning, for example, electric vehicle impact, strengthening the consumer voice and network resilience. The outcome of this feedback is our main topic of focus to directly drive executive level decision making and also to influence national policy for the benefit of our stakeholders.

Moreover, we continually review how we engage with stakeholders and communities. This is evidenced by the broad and innovative approaches we utilise, aimed at establishing and growing constructive long term relationships, and delivering this in a sustainable manner. Listening to all stakeholders is crucial to the smooth delivery of our work. From the supply chain to the elderly person living alongside where we are working, all 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.

Stakeholder Satisfaction

Each year a stakeholder survey is performed by an independent company which provides feedback and scoring from the broad range of stakeholders we interact with.

For the second year in a row we have seen a substantial increase in the satisfaction of our stakeholders recorded in this survey achieving an overall satisfaction rating of 8.3 (with an Ofgem break-even level of 7.4).

To ensure we are driving on the matters that stakeholders value we measure the indicators which underpin these. To this end, we also improved our score against our Key Performance Indicators from 77 to 78.

Stakeholder Engagement

Following Ofgem's independent panel's assessment of our regulatory submission and subsequent Q&A session we successfully increased our score and ranking. We achieved 1st place with a score of 6.4 with a considerable gap to the second placed electricity transmission operator.

Community Liaison Plans and involvement in the wider community

We develop tailored community plans for each area we impact and our Community Liaison team carries out an individual assessment on each of our projects. The aim of this is to minimise any inconvenience or disruption for surrounding communities. We understand that some of our investment projects can at times have an impact on the local area. The team informs residents and groups in advance of how the work might affect them and listens carefully to feedback which often influences how we deliver on the ground.

In addition to working with residents and groups directly affected by our works we also make efforts to positively engage with the wider local community supporting events and working with schools. Our teams are often invited to local events and fairs, attending with the SP Energy Networks mobile exhibition trailer. We take part in a wide variety of careers related events at secondary schools throughout central and southern Scotland.

The steps we have taken

We acknowledge that successful stakeholder and community liaison can only be achieved by everyone sharing a common goal. Regular dialogue between internal areas of the business allows us to plan our programmes and timescales effectively to reduce our impact on communities.

We have implemented a relentless focus on analysing the feedback we receive and making the necessary improvements in the way we run our business, a drive which is transforming our reputation with our stakeholders.

Facilitating renewable generation

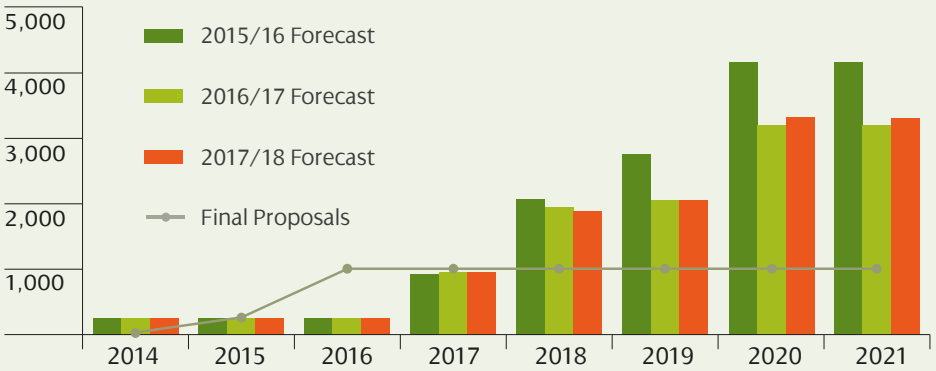
Going low carbon

Key to enabling decarbonisation is to facilitate connection of renewable energy to the grid. We have found new innovative ways to connect more renewables to the system quicker.

We need to realise the low-carbon transition in a way that represents the best value for money. Building too many assets would require too much investment from customers, however building too few assets would risk costing customers more money, as the cost of constraining low-carbon generators would continue to rise. Recent years have been affected by the impact of policy changes and uncertainty affecting our customers in the Renewables sector. Following announcements 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.

When the Transmission network is already operating at capacity, it means new renewable developments cannot connect. As such, we are using new innovative technology which allows connection to the network immediately, on the agreement that they can be switched back off if the system reaches capacity. To this end, an extensive programme of load management schemes is reaching completion. This, coupled with an accelerated design process will ultimately reduce the need for reinforcement, significantly speeding up connections and reduces costs.

Shared-Use Infrastructure capacity (MVA)



SWS forum video (click to play)

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 3,482MVA. 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.

Following dialogue with Ofgem, we agreed to provide £15m (in 2009/10 prices) through the introduction of a Green Economy Fund initiative to enable further uptake of low carbon technology. This is in addition to existing committed expenditure to fund initiatives that will support Scotland's ambitious green energy plans and local economic growth.

Our online version of the Annual Report includes embedded videos, to view the online version please go to www.spenergynetworks.co.uk/Trans_Report_2017_18

Facilitating renewable generation

Delivering the network capacity

This year has demonstrated our ability to facilitate additional network capacity allowing new sources of renewable energy to connect to the electricity system.

The unprecedented challenge facing the UK is to deliver energy security and diversity while reducing carbon emissions. With the existing transmission overhead line links between Scotland and England operating at their capacity an additional link was necessary.

Construction on the Western Link HVDC was completed in late summer 2017 utilising subsea cables to provide the link. Due to an incident during commissioning, full operation was delayed. However, the Link was successfully commissioned in 'monopole' configuration allowing operation up to half full capacity (1125MW).

HVDC Converter Station Hunterston

The link subsequently operated reliably between winter 2017 and March 2018, making a significant contribution to power flows between Scotland and England. During this period, with imports from Scottish and Southern Energy and NI Electricity in addition to native SPT generation, a new record transfer from Scotland to England & Wales of 4,400MW was reached. This transfer level was considerably greater than had previously been achieved.

The link was then taken back out of service following completion of repairs at Hunterston to progress full 'bipole' commissioning. During this process, three HVDC cable faults have been experienced which are currently under investigation and repair. Once repaired, the link will be available for full capacity transfer north to south from September 2018 and will operate in this manner over the winter of 2018/19.

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 eight major on-shore wind farms.

A total of eight windfarms were connected in 2017/18, requiring a significant level of activity in the area during the year. Moreover, these windfarm connections were delivered ahead of UK Government's Renewables Obligations scheme deadline, ensuring that all of the compliant connections to our network were delivered. Building this new network has been a major achievement, requiring 970 hectares of commercial forestry to be felled, 1.1 million tonnes of stone for tower foundations and road construction including the opening and operation of 3 quarries, 86km of access roads and 3.8 million man hours of effort to build the 80km of new network.

The volume of connection offers we make, as we forecast, is decreasing – 60 issued this year, compared to 63 last year. The offers are continuing to be made to a diverse range of projects, including solar, hydro and Combined Heat and Power (CHP). Changes in the wider energy policy context are continually being assessed and reflected in our forecast level of connections and the expenditure to support them.

There has been a very minor change in forecast from last year and we now forecast the total level of generation connections over the T1 period to be 1,620MW (last year's projection was 1,634MW). The contracted position, however, has potential connections and associated reinforcements of up to 6.2GW. As part of our forecasting process, we classify connections into high, medium and low probability bands and our revised forecast for RIIO-T1 continues to be based on progressing only the high probability connections.

The transmission system in south west Scotland will in the future be operating beyond its transmission capacity and solutions will need to be developed to manage the system and facilitate future generation connections. In collaboration with National Grid Electricity System Operator (NGESO) we have been discussing with developers the best way forward to manage the system and facilitate their connections due to this lack of transmission capacity. A new innovative £5m Generation Export Management System is being designed. It will facilitate the connection of new users on the Distribution and Transmission systems through Active Network Management agreements, without incurring additional reinforcement cost for the end consumer.

Markhill 275kV Substation and Kilgallioch Windfarm

Connected generation in the RIIO-T1 price control to March 2018

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
SWS Ph 2 – Afton Windfarm	Blackhill	2017/18	68
Aikengall II Windfarm	Crystal Rig	2017/18	140
SWS Ph 2 – Brockloch Rig Windfarm	New Cumnock	2017/18	75
SWS Ph 3 – Whiteside Hill – Connection (SW_Reinforcement)	Glenglass	2017/18	27
SWS Ph 3 – Sanquhar Windfarm – Connection	Glenglass	2017/18	30
SWS Ph 4 – Blackcraig Windfarm – Connection (New Cumnock)	New Cumnock	2017/18	58
Kilgallioch Windfarm – Connection	Mark Hill	2017/18	91
		Total	**1361**

Modernising our network

We maintained the strong start to our asset replacement 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. As previously reported, we have refined our approach to make best use of developments in resource and outage availability. Indeed, we brought forward our replacement of overhead lines, and re-profiled replacement of transformers and switchgear.

Our non-load related programme has continued largely as forecast last year. We remain on track to deliver all the outputs (or materially equivalent outputs) that were committed to at the time of our RIIO-T1 Business Plan submission. We are doing so in an efficient manner. Whilst asset replacement and other investment was £42m below allowance in the year, with spend of almost £410m to date on modernising assets, we are broadly in line with our plan whilst delivering significantly greater outputs than planned. The network performance benefits are already being seen, and we remain on track to deliver our entire target Network Replacement Outputs for 2021. We are maintaining significant momentum in our 275kV switchgear modernisation programme. Notably, Lambhill 275kV Switchgear was commissioned on time despite site difficulties and considerable challenges in respect of coordination with other related works on the network. Similarly, site mobilisation has commenced at Strathaven 275kV substation, construction is underway at Wishaw 275kV and Currie 275/132kV substations. Significant efforts have been expended at Currie to integrate the reinforcement and asset replacement works to ensure the most efficient outcome.

The cumulative expenditure to date for Asset Replacement Capex highlights the excellent progress on major refurbishment programmes.

Only three major overhead line modernisation projects have works remaining – YW/YX, the Dalmally to Windyhill and Cruachan to Dalmally lines, are progressing well on site, with completion expected during 2018/19. The other remaining 275kV programme planned in RIIO-T1 – XP route, Currie to Kaimes is progressing well with contracts awarded 2017/18. The final overhead line project is the modernisation of V route, Harker to Galashiels (132kV), where specialist assessments have been utilised to finalise the required scope.

Whilst we have had some technical issues with our projects at Erskine and Johnstone, our transformer modernisation programme is progressing steadily. One transformer unit at Strathleven was successfully commissioned in line with our RIIO-T1 plan and the remainder of the programme remains on schedule.

We have enjoyed another successful year with our switchgear modernisation programme. Our 132kV programme is on track, with Windyhill completed, work beginning at Currie, and continued progress at Chapelcross despite some restrictions with network outages. As previously reported, 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 have had some key achievements with our 275kV programme.

Lambhill 275kV substation

Modernising our network

We maintained the strong start to our asset replacement 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.

We are performing well; managing costs efficiently and continuing to perform well against our accelerated plan. Our overall asset replacement programme shows that we've achieved just below 60% of the total output targets for the period up to 2021. Under our original plan, we projected to have completed around 40.5% of the total by this point. Our switchgear and transformer programmes remain on target whilst our overhead line programme is performing considerably well ahead of schedule. It has delivered 242km more than the amount we originally planned of 342km. We are therefore well on track to deliver our target Network Replacement Outputs by 2021.

Further, the flexibility of our delivery capability, through reduced reliance on large, "turn-key" contractors, has delivered these outputs while using 95% of the cumulative investment allowances. We continue to review our delivery strategy and as we expect to continue in this manner we will have delivered valuable cost savings by the end of the period – which will reduce costs to consumers.

While these investments are for the long term, they are already delivering stronger network performance. In 2015/16 we recorded a 72% drop in the number of faults in lead assets and we have generally maintained this excellent performance since. We have also seen a slight decrease in faults from 2016/17.

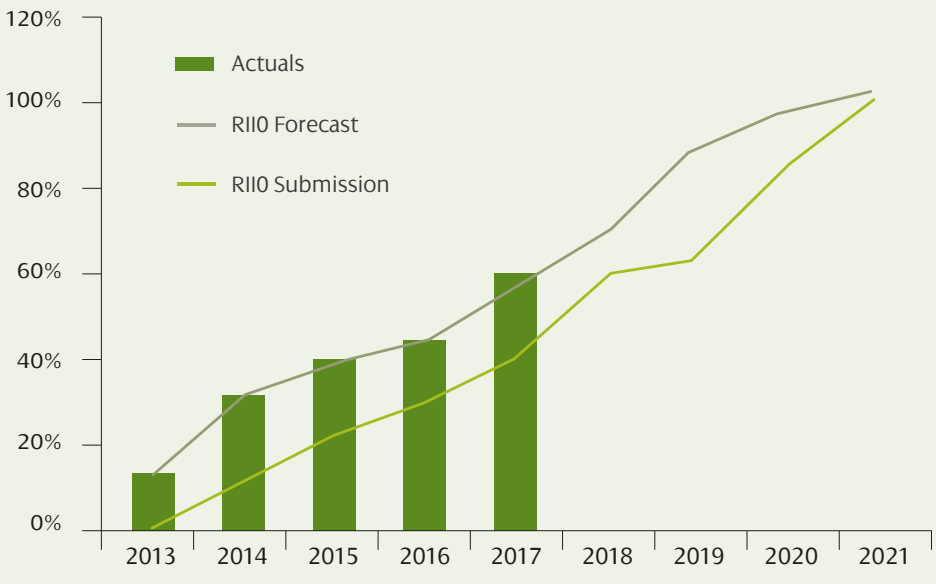
Keeping within budget (March 2018)

Funding used	49.0%
Progress towards network output targets	59.0%

Replacing overhead lines earlier (March 2018)

Original plan	342KM
Actual	584KM

RIIO-T1 Progress and forecast of modernisation programme (% age of submission)



A reliable and resilient network

This year we continued our excellent level of network reliability, with faults on our network resulting in only 3MWh of Energy Not Supplied (ENS) to customers. This represents 0.00002% of the total.

Our network is critical to delivering reliable supplies to customers and has delivered excellent levels of reliability this year, continuing a trend of strong performance. While transmission faults are rare, when they do occur they can have large impacts. Our network was responsible for only 3MWh of unserved energy this year. This represents the annual electricity consumption of a single house and Overall Reliability of Supply of 99.999984%. This is considerably below the benchmark level of 225MWh which was derived from the 10 year average prior to the RIIO-T1 review period.

The retirement of all large thermal plants in Central Scotland has implications for contingency planning. We are a critical service provider for 80% of Scotland's population. As such, it's important we prepare for every scenario and have a robust plan in place. One of the worst possible scenarios we plan for is a 'Black Start' - where the power goes out across the GB network and there is a race against time to get it back on. We have continued to expand on our engagement in this important area with the key influential stakeholders in UK. We have worked closely with the Department for Business, Energy & Industrial Strategy (BEIS) to mitigate the risks resulting from widespread power outage. Furthermore, we have discovered new ways to restore power quickly in the event of widespread power loss. For example, we have procured nine temporary overhead line tower masts that can be erected quickly to allow circuit restoration after a failure.

Additionally, having completed our first phase of site works to install additional generators and diesel tanks at critical network locations, we are making good progress with our second and third phase. Ultimately, this will increase our network resilience and ensure that joint restoration plans remain effective and robust.

Analysis of voltage control undertaken ahead of closure of thermal power capacity identified the need for 420MVAr of additional capacity on our network. This will support the effective management of system voltage.

Black Start

Black Start Forum

A safe network

We have a key responsibility to ensure that our infrastructure is safe. The health and safety of the public and 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.

Health and safety is at the heart of our business. It is considered in everything we do. Our reputation is built by committing to the highest standards of safety thus ensuring protection of our employees, our contractors, our customers and members of the public. The Utility Industry is characteristically hazardous and without compliance with health and safety legislation and the application of the highest standards of safety and protection, serious incidents can occur.

To achieve the highest standards of safety within our contractors this year we have sustained our theme of contractor collaboration initiatives. Our key collaborative initiative, the Vehicle and Plant initiative evolved into a forum that has enabled us to drive real improvements throughout our contractor base and construction sites.

We pride ourselves by constantly challenging to improve performance; we learn, we share, and we continually raise the standard of our performance.

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). Despite significant focus on safety our contractors experienced 19 recordable incidents during 2017/18. After having three successful years results of our TRIR continually improving this has seen the indicator deteriorate slightly to 0.68. We are renewing our focus on active leadership and will continue to collaborate with our contractors to improve safety performance in areas where our TRIR has dictated our focus must be.

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 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.

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 continued to observe fewer incidents of metal theft – a criminal activity and public safety risk that we have targeted over recent years, working in partnership with law enforcement agencies.

During the year there has been a continued focus on employee involvement in health and safety with corporate memory safety stand-downs being held covering topical issues and specifically targeting root cause and learning from incidents. Stand-downs provide a forum for raising awareness and allow employees to openly debate and improve areas by focusing on changing behaviours. In addition, public safety engagement and education promotion has continued, with particular focus and engagement with the agricultural community. Our presence at many agricultural shows, and our continuing initiatives with local schools, are good examples of ongoing activities.

This photo shows where a proposed haul road is to be constructed below a 275kV overhead line and highlights the work involved to ensure public safety. The haul road is to be used by the Forestry Commission meaning that its construction would have to withstand heavy loads from timber Lorries. This, coupled with the existing ground conditions meant that overhead line safety clearances could be infringed resulting from a possible higher finished road level. Following a survey, a ground profile was produced, and safe working height and distances were established. This information was clearly specified and the customer advised accordingly.

Sustainability & environment

Our vision is to be a sustainable networks business – efficiently managing and developing our network in support of the low carbon transition and achieving neutral or positive environmental and social impacts.

We provide a reliable, adaptive service to support long-term decarbonisation goals, opening up renewable energy to the rest of the UK and closely managing the network and its environmental impacts.

Strategy update

In 2017/18, we have strengthened our strategy in line with national and international policy developments, and through engaging with and acting upon the suggestions of our stakeholder community.

Drawing on these external influences, we have published several key documents on our approach to decarbonisation and environmental impact, including:

- April 2017 SP Energy Networks Sustainability Policy.
- September 2017 SP Energy Networks Sustainable Business Strategy.
- October 2017 SP Energy Networks Environmental Management System (EMS) to ISO14001:2015.
- March 2018 SP Energy Networks Approval for Internal Sustainability Fund and External Collaboration Fund.

Our Strategy lays out our vision and approach to becoming the sustainable networks business of the future, setting ambitious targets and clarifying our responsibilities.

The Strategy and the detailed plan underpinning it reflects the breadth of activity already undertaken across our business to enable decarbonisation and closely manage environmental impact – activity which has seen our score in the Environmental Discretionary Award (EDR) rise from 32% to 82% between 2015 and 2017, cementing our leadership position.

Our Sustainable Business Strategy, underpinned by seven Sustainability Drivers enables us to focus on the key areas where we can contribute to a more sustainable future.

In the coming year, key areas of focus will include:

- Detailed mapping of our activities against United Nations Sustainable Development Goals.
- Influencing post-Brexit environmental, energy and sustainability policy.
- Influencing regulatory policy for the RIIO-T2 price control, due to commence in 2021.
- Influencing the output of the industry-wide Open Networks project as it seeks to redesign energy networks and markets for the smart energy future.

Please see our Transmission Annual Sustainability Statement for more information on our Sustainable Business Strategy, performance and initiatives.

Sustainability & environment

We are committed to reducing the impact on the environment. In 2016/17, we re-baselined our emissions reduction trajectory (incl losses) to reach a stretching target of 80% reduction by 2030, in line with our target of carbon neutrality by 2050. This is now our primary focus.

Initiatives

We deploy a wide range of technological, commercial and process innovations to analyse and solve issues relating to the low carbon transition and environmental and social impact.

We have developed new technology and skills to stabilise the network and support the low carbon transition:

- Shunt Reactors – used to stabilise voltage during load variations.
- Series Compensation – reducing the effective electrical length of the overhead line, allowing the full capacity to be used.
- Long-distance interconnectors – such as HVDC Western Link subsea cable project.
- High temperature low sag conductor.

We have amended our processes and policies to support and accelerate the transition:

- Transmission Economic Connections Assessment (TECA).
- Active Network Management.
- Queue Management.
- Streamlined Statement of Works.

We have identified and are taking forward new globally leading innovative solutions to support the low carbon transition:

- Project Phoenix – Hybrid-Synchronous Compensator (H-SC).
- Load Management Schemes (LMS).
- Generation Export Management System (GEMS).
- Green Economy Fund.

We have developed and implemented innovative solutions to reduce the environmental impact of our operations:

- Project FITNESS – Digital Substations.
- Life Cycle Assessment
- Natural Capital Assessment
- Emissions Reduction.
- Network Loss Reduction.

Performance

Business Carbon Footprint

We have achieved a 32% overall reduction in Business Carbon Footprint (excluding losses) since 2013. By 2015, we had reached our 2023 target of 15% reduction, and we are currently 13% ahead of our incremental target of 6% annual reduction to 2030.

We address our commitment through a strategy focused on measurable reductions in key areas: losses, emissions of Sulphur Hexafluoride (SF6), our buildings, and our means of transport. In 2016/17, we re-baselined our emissions reduction trajectory* to reach a stretching target of 80% reduction by 2030, in line with our target of carbon neutrality by 2050. This is now our primary focus.

Although we are already within our 2023 target, we have made the decision not to reduce our 2030 target. The main reason for this is that the installation of new, lower loss Sulphur Hexafluoride (SF6) insulated equipment may negatively impact the overall leakage rate until the widespread introduction of equipment using alternative insulating medium becomes economically and operationally viable.

As SP Transmission staff are co-located with the rest of SPEN's workforce and use some of the same facilities, Business Travel, Fleet Transport and Buildings Energy use are apportioned based on staff numbers. In October 2017, our Transmission licence incorporated staff from Iberdrola Engineering and Construction, increasing Transmission staff numbers by 185%. This new apportionment accounts for the raised footprint in these categories in 2017/18, when in real terms the carbon intensity of these activities decreased in the period.

Losses

The main factors which influence transmission losses are the increasing power flows across our network, the impact of embedded generation, and changing flow characteristics. 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 2017 to March 2018 at 186,326 tCO2, compared to a reported figure of 263,712 tCO2e in 2016-17. We remain focused on reducing losses as a percentage of energy transmitted, and have built this objective into our investment planning and procurement systems.

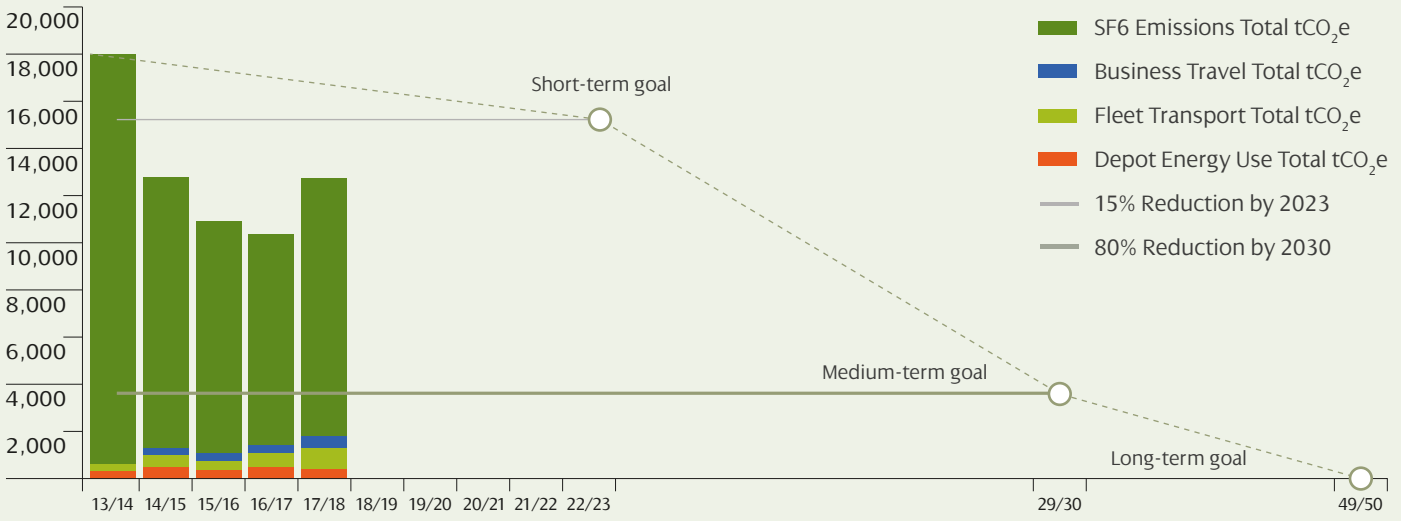
Buildings Energy Use

In the reporting period April 2017 to March 2018, our buildings energy use equates to 455 tCO2e. This is a decrease on last year's emissions of 487 tCO2e. We are working to steadily reduce our energy consumption by installing new lighting systems and Passive Infrared Sensor (PIR) motion sensors along with improved insulation at our sites.

Sustainability & environment

We have achieved a 32% overall reduction in Business Carbon Footprint since 2013. By 2015, we had reached our 2023 target of 15% reduction, and we are currently 13% ahead of our incremental target of 6% annual reduction to 2030.

Business Carbon Footprint CO_2 Reduction



*excluding losses.

Sulphur Hexafluoride (SF6) emissions

We continue to outperform the historic SF6 leakage rate of 3% and over RIIO-T1 aim to reduce this rate even further.

Transmission assets traditionally used oil as an insulator for equipment, but Sulphur Hexafluoride has been identified 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 we upgrade our network, we are working to minimise the likelihood of leakages and to develop alternatives to SF6 by working closely with suppliers. SF6 emissions dominate the overall non-losses business carbon footprint.

Our approach to reducing these emissions is to:

- Reduce leakage on existing equipment, targeting the leakiest where it is economically reasonable to do so;
- Collaborate with manufacturers of new SF6 equipment and share best practice industry-wide to minimise leakage; and
- Work with manufacturers, innovators and industry peers to develop economically viable alternatives to SF6.

SP Energy Networks is leading the introduction of viable alternatives to SF6, resulting this year in the successful installation of a Green Gas for Grid (g3) insulated asset on our network.

Measures to address existing plant leakage and the deployment of alternatives currently cost more and will continue to cost more in the medium term. Our ability to meet our challenging business carbon footprint targets will therefore be dependent on securing funding from Ofgem in the forthcoming RIIO-T2 price control and beyond.

The market by which these technologies may become cost-competitive, will, to a large extent, be influenced by legislative and regulatory developments. We are fully involved in influencing legislation and regulatory policy to provide the market stimulation and funding required to address this industry-wide issue.

In 2017/18, an overall increase in SF6 emissions from 8,849 to 10,488 tCO2e was caused by one specific asset on our network, whose annual leakage rate, although still well within its design rating, increased from 1.06% to 1.74% in the period. Overall, our SF6 emissions are well within forecast, at 10,488 tCO2e against a forecast of 17,829 tCO2e.

Transport

Our new fleet vehicle management system identifies speed, mileage and idling and encourages more efficient driving, leading to reductions in fleet CO2 emissions.

As described previously, the in-sourcing of a large number of personnel in the past year means that the carbon footprint of these activities appears raised, when in fact, carbon intensity reduced in real terms.

In December 2017 SPEN launched a six-month trial of five electric fleet vehicles across several sites. Initial feedback has been positive, and we eagerly await full results of the trial. Electric Vehicle charging points were installed at three of our depots with plans in place to install points at a further five sites in the coming year. In 2017/18 our domestic air travel across SPEN reduced by 26% and staff business miles claimed reduced by 10%. These reductions are a combined result of travelling less, greater access to videoconferencing facilities, competitive rail pricing and increased staff awareness of travel carbon emissions.

In March 2018 we reopened the hugely successful ScottishPower Electric Vehicle Programme which encourages our staff to purchase Ultra-Low Emission vehicles.

Innovation

Innovation is at the core of SP Energy Networks. We continue to hold a leadership position in innovation and remain the only Transmission Operator 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 progressed the PHOENIX project and the FITNESS project to programme and budget and have completed our VISOR project.

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 last 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, and more cost-effective way of increasing capacity as it can be carried out 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.

Following successful completion, our NIC project, VISOR was eligible to apply for a Successful Delivery Reward (SDR). They have both received 100% successful delivery funding, representing the high standard of our innovation project delivery at national level. Both projects provide strategic foundation for further innovation opportunities not only for SPEN, but also for other electricity licensees.

The FITNESS project aims to utilise digital technologies to reduce the cost and timescales associated with the construction and modification of substations. The project has continued to make excellent progress over the last year. The protection and control architecture was thoroughly tested off site before being housed in the portable relay room and delivered to Wishaw 275kV substation. The non-conventional instrument transformers also successfully passed the required Factory Acceptance Tests and were approved for use on the network. The benefits of off-site testing

were demonstrated. Site installation and commissioning works were successful with minimal time required on-site. The FITNESS project continues to attract interest and has been presented at several conferences. The project also won the Scottish Green Energy Sustainable Development Award in 2017.

As we transition to a low carbon future, the Phoenix Project is designing and developing a unique Hybrid Synchronous Compensator (H-SC) which will be used to prove the technology required to mitigate system issues linked to the closure of traditional energy generation plants, enhancing system stability while reducing operating costs. Phoenix has made excellent progress over the past year. Highlights include the first Stakeholder Engagement event, involving both Technical and Commercial presentations by all project partners. The design is progressing in line with the schedule where the innovative control system has been modelled and demonstrated at Technical breakout sessions to respond to different operating parameters. Site work is in the preliminary planning stages with civil works being planned for in January 2019, with energisation scheduled for November 2019 where the twelve month live trial will commence. Further dissemination events, both commercial and technical, will be planned through the remainder of 2018 and 2019 to share knowledge and learnings.

We continue to make active use of the Network Innovation Allowance (NIA) to support smaller innovation projects. This year we have been working on twenty 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.

Innovation

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

Examples of NIA projects include:

Our Reducing Energy Losses from Transmission Substations project. We have carried out extensive environmental monitoring and modelling of five of our transmission substations. The results of this project will allow us to characterise substations and define potential interventions to reduce the energy losses from these substations. This project will be completed this year, with lessons for all areas of the business.

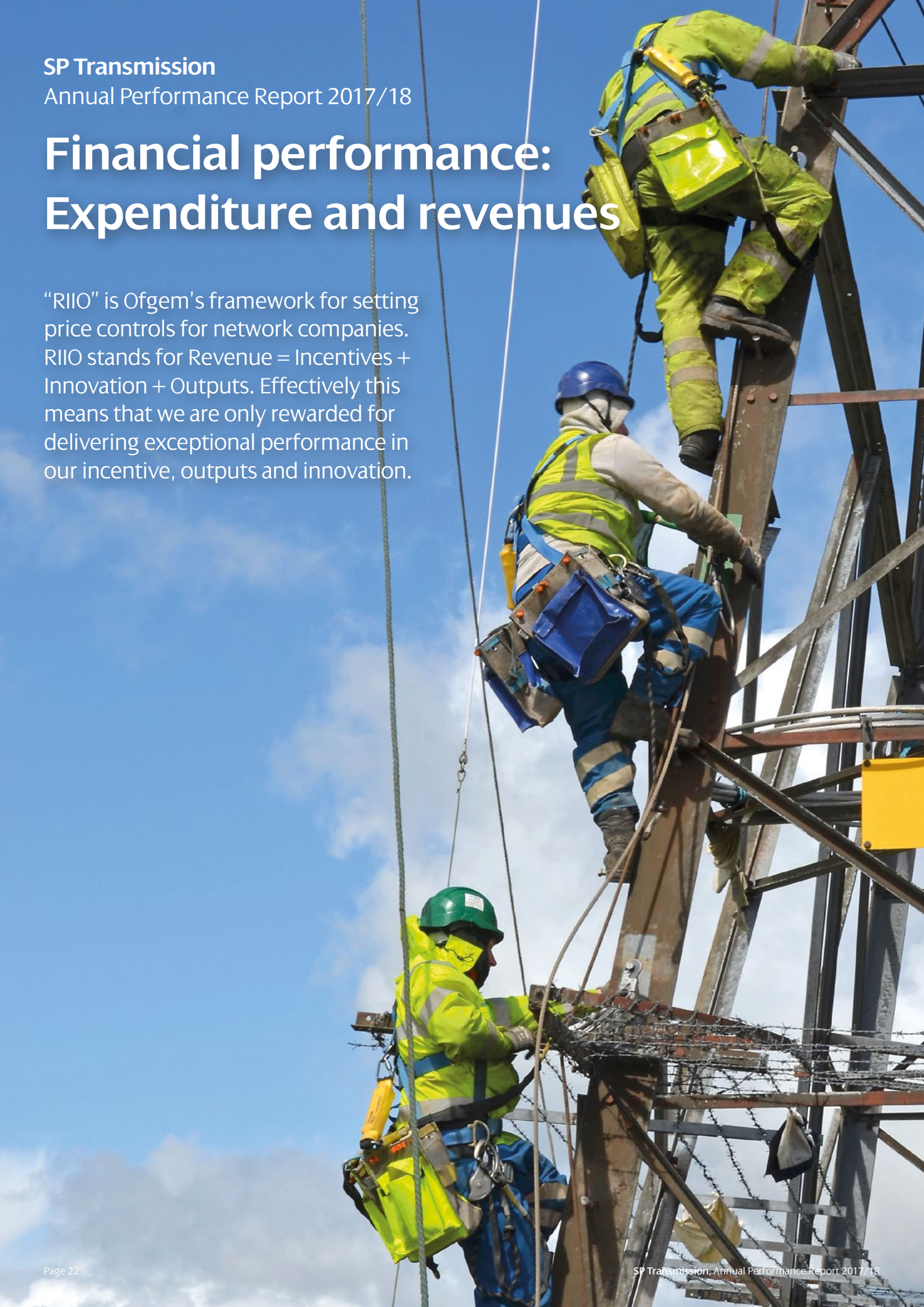
Our System Integrity and Restorative Actions (SIARA) project aims to extend the principles of the digital substation to include protection requirements between transmission substations.

Open Innovation

The Open Innovation model is being developed to bring together the Company's challenges and innovators. It has been shown that the most innovative and game-changing ideas can come from outside the sector. In addition, it can be time and resource challenging to develop and deliver suitable projects within the business. For more information please see https://www.spenergynetworks.co.uk/pages/innovation_funding_incentive_annual_report.aspx

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

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.

Load-Related Programme 2017/18 position: £4.4m above allowance

We had previously revised our plan due to uncertainty on timing of renewable generation and delays on some Baseline Wider Works projects. As we near completion of the wider works projects portfolio of projects they are expected to yield good cost efficiencies that will be shared with consumers.

We delivered additional network capacity in excess of our RIIO-T1 target to support renewable generation and the West Coast HVDC project is now, the last of our wider works projects in RIIO-T1 left to be fully commissioned. During commissioning tests, the failure of a conventional 400kV AC cable sealing end at Hunterston caused damage to part of the facility. Whilst this was being repaired, the link was successfully commissioned in 'monopole' configuration allowing operation up to half full-capacity. The link subsequently operated reliably between Winter 2017 and March 2018, making a significant contribution to power flows across the Scotland - England boundary.

Opex

Our indirect costs during 2017/18 exceeded allowances by nearly £6m. 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. Other direct costs are lower than allowance due to timing of West Coast HVDC project.

Totex comparison (2017/18 real £m) **Capex**	Allowance £m	Actual £m	Variance £m
Baseline – Wider Works (BWW)	2.1	36.4	34.3
Baseline – Other LR Capex	125.3	95.4	*-29.9*
Sub-Total Load Related Capex	**127.5**	**131.9**	**4.4**
Asset Replacement Capex	82.0	58.6	*-23.4*
Other Capex	35.2	16.9	*-18.3*
Non Operational capex	1.1	2.7	1.6
Total Capex	**245.8**	**210.1**	***-35.8***

Opex	Allowance £m	Actual £m	Variance £m
Faults	1.1	1.9	0.8
Inspections & Maintenance and Other direct costs	11.0	5.6	*-5.5*
Indirect Costs	14.4	20.1	5.6
Adjustment for IAS 19 pension accrual	0.0	1.2	1.2
Total Controllable Opex	**26.6**	**28.7**	**2.1**
Totex	**272.4**	**238.8**	***-33.6***

Asset Replacement & Other Capex: £42m below allowance

Our RIIO-T1 Business Plan described how we intended to target investment to manage the risk of asset deterioration on our network. We have prioritised activity and profiled investment accordingly in the first five years, whilst delivering cost efficiency within our overhead line modernisation programme.

Whilst investment in the year is below plan, the cumulative Asset Replacement and Other Capex position to date shows almost £410m spent modernising assets, which is broadly in accordance with plan when cost efficiency is taken into account. The associated outputs are in line or ahead of our RIIO-T1 Business Plan submission with 584km of overhead line conductor replaced to date against the RIIO-T1 plan of 342km. Our transformer modernisation programme is progressing steadily following significant issues with our projects at Erskine and Johnstone. This continues to be a busy year for our switchgear modernisation programme with both 132kV and 275kV schemes progressing.

Our Costs
Forecast for RIIO-T1

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.

Highlights of future performance

Our current forecast total expenditure (totex) over the eight years of RIIO-T1 is just under £2.2bn. It is approximately 3% below allowance due to cost efficiencies and innovative solutions in major projects and programmes of work. The 2017/18 Electricity Transmission Regulatory Instructions and Guidance (RIGSs) and RRP derive an overall totex out-performance of £66m (£51.8m in 2009/10 prices), once voluntary contributions are taken into account. During the course of the year, following dialogue with Ofgem, we agreed to provide £15m (2009/10 prices) through the introduction of a Green Economy Fund initiative to enable further uptake of low carbon technology.

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 £121m to the current baseline allowance – similar to last year's forecast.

Totex comparison (2017/18 real £m) **Capex**	Allowance £m	Forecast £m	Variance £m
Baseline – Wider Works (BWW)	673.3	548.7	*-124.6*
Baseline – Other LR Capex	146.9	119.7	*-27.3*
Uncertainty Mechanism – Generation Connections Sole-Use Infrastucture	37.3	81.7	44.4
Uncertainty Mechanism – Generation Connections Shared-Use Infrastucture	355.8	408.8	53.0
Uncertainty Mechanism – Strategic Wider Works (SWW)	–	–	–
Sub-Total Load Related Capex	**1,213.3**	**1,158.8**	*-54.6*
Asset Replacement Capex	581.0	509.0	*-72.0*
Other Capex	254.5	236.3	*-18.2*
Non Operational Capex	9.2	17.8	8.6
Total Capex	**2,058.1**	**1,921.9**	*-136.1*

Opex	Allowance £m	Actual £m	Variance £m
Faults	8.7	14.2	5.4
Inspections & Maintenance and Other direct costs	79.1	75.1	*-4.1*
Indirect Costs	112.4	179.1	66.8
Adjustment for IAS 19 pension accrual	–	2.0	2.0
Total Controllable Opex	**200.3**	**270.4**	**70.1**
TOTEX	**2,258.3**	**2,192.3**	***-66.0***

The forecast for generation connections requiring sole-use infrastructure, at 1,620MW, falls below the 2,503MW baseline. This results in a reduction to our baseline allowance of around £56m, 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 3,482MVA 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£94m in RIIO-T1, significantly worse than previous forecasts.

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 2016/17

Our latest totex forecast of £2.2bn is £19m higher than the view presented last year, mainly attributable to the Green Economy Fund. Overall, whilst totex performance has reduced 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: £10m below 2016/17 Forecast

The forecast is fairly stable (less than 1% change) following last year's changes to Dumfries and Galloway Strategic Reinforcement scheme and the maturity of other wider works projects. 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 (c3.5GMVA) that will be required.

Non-Load RIIO-T1 Forecast: £8m below 2016/17 Forecast

The primary differences have been an increase in in forecast development activity for non-load related works, which are likely to be required in RIIO-T2 and expected expenditure on non-operational projects to support business management.

Opex

Overall, our Faults, Inspections & Maintenance and Other direct costs forecasts are £4m higher than the 2016/17 Forecast. This is mainly attributable to the profile of expenditure for West Coast HVDC, which was revised in light of project delays. We are forecasting an increase in our overall indirect costs from the prior year, which is offset by a reduction in our IAS 19 pension accrual.

Totex comparison (2017/18 real £m) Capex	RIIO-T1 Forecast (2017/18 view) £m	RIIO-T1 Forecast (2016/17 view) £m	Plan-on-Plan £m
Baseline – Wider Works (BWW)	548.7	554.6	5.9
Baseline – Other LR Capex	119.7	153.8	34.1
Uncertainty Mechanism – Generation Connections Sole-Use Infrastucture	81.7	85.0	3.3
Uncertainty Mechanism – Generation Connections Shared-Use Infrastucture	408.8	355.7	*-53.0*
Uncertainty Mechanism – Strategic Wider Works (SWW)	–	–	–
Sub-Total Load Related Capex	**1,158.8**	**1,149.1**	*-9.7*
Asset Replacement Capex	509.0	488.5	*-20.5*
Other Capex	236.3	252.7	16.4
Non Operational Capex	17.8	14.2	*-3.6*
Total Capex	**1,921.9**	**1,904.5**	***-17.5***

Opex	RIIO-T1 Forecast (2017/18 view) £m	RIIO-T1 Forecast (2016/17 view) £m	Plan-on-Plan £m
Faults	14.2	13.1	*-1.0*
Inspections & Maintenance and Other direct costs	75.1	72.1	*-3.0*
Indirect Costs	179.1	176.4	*-2.8*
Adjustment for IAS 19 pension accrual	2.0	7.0	5.0
Total Controllable Opex	**270.4**	**268.6**	***-1.8***
TOTEX	**2,192.3**	**2,173.1**	***-19.2***

Our Revenues

In 2017/18 we recovered £345m. 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 9.7%.

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.

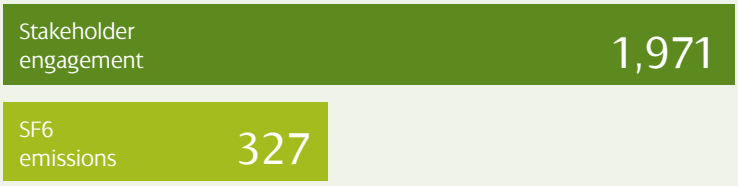
From our charges to customer bills:

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

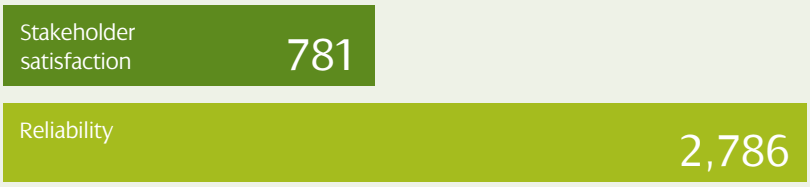
The cost of running the Transmission network in Great Britain is spread out over consumers and generators across the country. For non-half hourly metered customers (representing domestic and small business customers), the average cost of running SP Transmission amounts to approximately £4 per customer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

Incentive awards earned in 2017/18 (revenue rec'd in 2019/20)

Smaller incentives earned in 2017/18 (£ thousands)



Larger incentives earned in 2017/18 (£ thousands)



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 2.22% (for 2017/18)
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 4.37%** for 2017/18
At 31st March 2018 **our RAV was £2,296m (17/18 prices)**, an increase of 4% from £2,204m (17/18 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.

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 circa 81 bps.

The main movement in RoRE from prior year relates to the profile of expenditure and allowances subject to the totex incentive mechanism.

For detailed information about our financial performance, please see the SP Transmission Regulatory Accounts which are published annually, available from www.spenergynetworks.co.uk/pages/accounts_information.aspx

8-year average 2017/18	**Return on Regulatory Equity** (RoRE). All number reflecting Ofgem's methodology.
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.
1.01%	**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.
0.22%	**Reliability Incentive**
0.01%	**SF6 Emissions Incentive**
0.11%	**Stakeholder Satisfaction**
0.15%	**Environmental Discretionary Reward**
0.57%	**TIRG Incentive** – Differential in allowed WACC reflecting higher risk TIRG projects
0.03%	**Other** – Retained Tax
9.7%	**Return on Regulatory Equity** (including TIRG)
8.89%	**RoRE based on a weighted average basis**

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; the scale, timing and location of new generation and the timing of generation closures.

As we continue to perform strongly on the delivery of our RIIO-T1 outputs, we are also looking beyond the current price control to RIIO T2. It is clear from the pace of change and the uncertainty the energy sector faces over this period that the RIIO-T2 price review will be the most challenging to date and it is essential that we are fully prepared for it. Therefore, a dedicated RIIO-T2 project team has been established, to meet the challenge of formulating this plan. As we look to deliver the wider energy transition across Great Britain, the strategic importance of the transmission network will increase. We have already engaged extensively with Ofgem and our stakeholders through the framework consultation process and will continue to do so as we assess current and future network needs, co-creating an efficient and innovative business plan alongside our stakeholders that will help deliver the ambitious decarbonisation of the British economy.

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 overleaf.

Transmission tower line and turbines

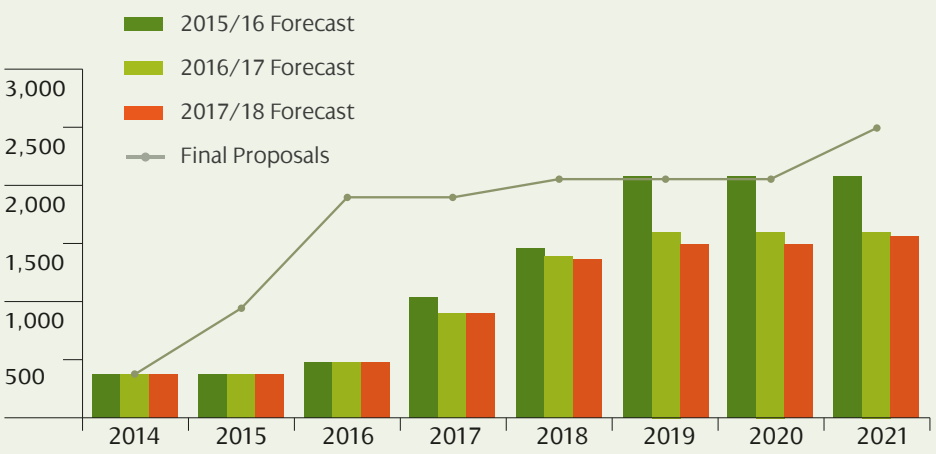
Meeting uncertain needs for transmission capacity

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

Renewable Generation Volumes

Our forecast of maximum demand in our area remains relatively stable, at around 3.4GW. However, uncertainty remains around the scale, timing and location of new, renewable generation. Not responding quickly enough risks delaying the connection of new generation and therefore 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. To this end, we have established a dedicated team to ensure the views of users, stakeholders and consumers on future energy scenarios directly influence our next business plan. Analysing projections of the likely uptake of various low carbon technologies and building a plan which maps out the most efficient and effective way to realise the ambitions of our stakeholders.The range of uncertainty is illustrated clearly in the 2017 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 add 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.

Sole-Use Infrastructure capacity (MW)



Underground cabling

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 6.2GW 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

Providing a resilient network and facing economic uncertainties present key challenges as we progress through our Business Plan and beyond.

Clydesmill to Denny overhead line

Black Start back-up generator

Changes in the UK Generation & Transmission Systems

Across the UK, significant levels of thermal generation have closed and been displaced by alternative renewable sources of energy. 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. Whilst the traditional thermal stations have been replaced by renewable energy sources they provide quite a different contribution following a Black Start situation given their technical characteristics and intermittency. In light of the closure of Longannet in the "central belt" of Scotland this required a revised Black Start Restoration Plan to be created reliant on connections from National Grid Electricity Transmission (NGET) and Scottish and Southern Energy (SSE) to assist with the network and customer restoration. Transmission systems have a key role to play should such an event take place and the revised plan will inform our views on how much resilience we need to plan for within our network. We have continued to engage with key stakeholders in the refinement of plans to support restoration of the Scottish Electricity System following a Black Start Event. We are also playing a key role in a GB wide working group focussed on testing, assurance and standards required to ensure the recovery timescales are within stakeholders expectations. Recent work has focused on the detailed consideration of the options to recover the SPT area from the South and from the Scottish Hydro Electric Transmission plc (SHET) area via a Scottish zonal restoration strategy. This would follow immediately on from execution of the SHET and SPT local joint restoration plans (LJRP). We will look to engage further with Ofgem among other key stakeholders on this area going forward across Transmission and Distribution.

Brexit

Although we are over two years on from the Brexit vote, there is still considerable uncertainty on what the Business impacts will be from Brexit. However, given that we source our materials from around the globe in a competitive market, a lower valuation for Sterling is likely to have an impact. Clearly such "market" uncertainty will also have implications for interest rates, taxation and competitive labour rates. At this point we have not reflected any impact of Brexit into our forward forecasts for RIIO-T1 but as a Business this is something we continue to monitor in detail and will engage with Ofgem to discuss going forward.

SP ENERGY NETWORKS

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