
Scottish Hydro Electric Transmission Limited

Keeping the lights on and supporting growth

Our Business Plan for the next decade:

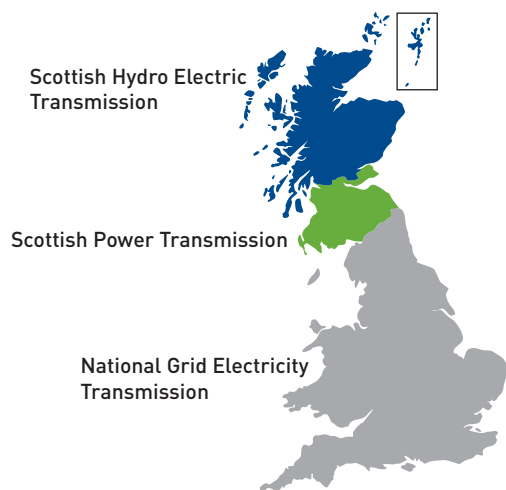
January 2012 update

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1. About this document

Figure 1.1: GB transmission licensees



Scottish Hydro Electric Transmission Limited (SHETL) is the owner of the high voltage electricity transmission system in the north of Scotland (Figure 1.1). As the regional monopoly in this activity, SHETL is regulated by the Office of Gas and Electricity Markets (Ofgem) through a 'price control'. Amongst other things, this determines the amount of revenue SHETL is able to earn from users of the network to cover the efficient cost of maintaining and developing the transmission system.

The next price control period will run from 1 April 2013 to 31 March 2021. In July 2011 we published our proposed Business Plan for that period:

www.ssep.co.uk/Projects/TransmissionPriceControlReview

This document is an update to our July Business Plan. In this document we describe further work that we have carried out since July, in particular to address issues raised by Ofgem in October in its initial assessment of our Business Plan:

www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=129&refer=Networks/Trans/PriceControls/RIIO-T1/ConRes

Ofgem's initial assessment identified five areas where we needed to do further work:

- "Provide evidence of cost efficiency throughout the plan and deliverability."
This is considered in section 3 and section 5.
- "Considering the impact of existing infrastructure on visual amenity."
This is considered in section 6.
- "Further information on a number of areas of their financial proposals including scenario analysis to show financing proposals are optimal from a consumer perspective, evidence that their bespoke cost of debt index is more appropriate than the Ofgem index and demonstrate achievement of credit metrics with selected financing parameters and the alternative options considered."
This is considered in section 7.
- "Providing further information on a number of outputs including their proposals for an alternative approach to reliability and the deliverables associated with baseline load related investment for wider works."
This is considered in section 3 and section 5.
- "Providing further information and reviewing and revising elements of their financial proposals."
This is considered in section 7.

We continue to welcome comments and discussion on any aspect of our Business Plan; our contact details can be found on page 33. The next update to our plan will be published in spring 2012.

2. What you have told us

Any investment in our network or change to the way in which it is operated is designed to ensure that we meet the changing needs of our current and future customers. To be able to do this, we rely on customers informing us of their plans and requirements and telling us where we have got things right or wrong in the past and how things might change in the future.

Our July Business Plan

SHETL is the only provider of transmission services in the north of Scotland. As such, it is important that we understand what service our customers and stakeholders expect from us. We must therefore endeavour to meet our customers' expectations or, where we cannot do so, explain why not.

In developing our July Business Plan we adopted a six-stage approach to engaging with our customers and stakeholders, the primary aim of which was to help stakeholders understand how to engage in the development of our Business Plan in a way that best suited their interests. The six stages were:

- Stakeholder mapping and consultation planning;
- Pre-consultation engagement;
- Refinement of consultation plan and stakeholder map;
- 'Green Paper' consultation;
- Using responses to 'Green Paper' consultation to inform our 'White Paper' consultation, and
- Using consultation feedback to inform our July Business Plan.

Our process used two main methods of engagement: one-to-one meetings and public documents. More information about our engagement activities can be found on our website:

www.ssepd.co.uk/Projects/TransmissionPriceControlReview

We found this engagement with customers and stakeholders to be an essential input to the development of our Business Plan, and we sought to reflect stakeholders' views throughout our July Business Plan.

Stage six of our process included a contribution to ongoing future consultation planning. Throughout our July Business Plan we highlighted areas where we would seek further views from customers or report on our performance. This was underpinned by a commitment to ongoing engagement.

Key proposals in our July Business Plan

- Commitment to ongoing customer and stakeholder engagement
- Funding of future stakeholder engagement through an incentive mechanism – ineffective engagement = no funding
- Regular customer-oriented reporting of performance including network reliability, major projects and environmental impact

“It is clear that SHETL’s plan is very much targeted at stakeholders.”

Ofgem’s Initial Assessment, paragraph 7.9.

Ofgem’s Initial Assessment

Ofgem’s views on the effectiveness of our stakeholder engagement in informing our July Business Plan are set out in paragraphs 7.9 and 7.12-7.14 of the Initial Assessment document.

Ofgem notes a number of positive aspects to our approach to stakeholder engagement. Ofgem highlights the ease of understanding and accessibility of our plan. We also received positive comments on the iterative approach and how direct quotes have been used to inform and support our July Business Plan.

However, Ofgem also notes a number of areas that could be better, specifically:

- The stakeholder base could have been wider and included consultation with local communities and the voluntary sector.
- We could have undertaken research with end-users.
- In some parts of the plan, Ofgem did not observe a clear link between stakeholder messages and outcomes. In others, Ofgem believes that we could have done more to challenge stakeholders’ views and come to a different view.

As we describe below, we have sought to take on board these comments as we have continued to develop our approach to customer engagement.

Further work since July

Our July Business Plan made a commitment to ongoing customer and stakeholder engagement and, hence, since July we have continued that process. In particular, we have:

- Published November updates on the price control review and major projects;
- Consulted on possible incentive mechanisms for system reliability (see [section 3](#)); and
- Had further meetings with customers and stakeholders

We have also acted to improve our engagement process in light of comments from Ofgem and other stakeholders. As a result, we have reviewed our list of key stakeholders and increased our focus on parties with views on our demand-side customer performance. We are also considering how we might make better use of joint engagement (for example, with electricity distribution, other transmission companies and system users) in the future.

Funding future stakeholder engagement

While SHETL has a long history of seeking affected parties' views on our plans, this has typically been on an issue- or project-specific basis. The development of our July Business Plan was the first time we had adopted a 'whole business' approach to our engagement with customers and stakeholders.

Our July Business Plan made a clear commitment to ongoing customer and stakeholder engagement. This commitment was based on a desire to continue to improve and implement best practice in our approach.

Clearly there is a cost associated with such ongoing engagement. This would be a new cost on our business and, for this to be acceptable to us, we would need to be confident that it resulted in value for money for our customers.

To ensure this, we proposed in our July Business Plan that future stakeholder engagement activities would be largely funded through a customer service incentive mechanism. Quite simply: if we did a good job of engagement we would be allowed funding, if we did a poor job then we would not. We argued that this approach protects customers from poor service.

Since July we have had a number of meetings with Ofgem and the other transmission companies about the customer service incentive mechanism. Some concerns have been expressed about our approach including the applicability across all transmission companies and how good performance can be measured. Unfortunately, these issues have not been resolved.

We have published with this update a document which sets out the current status of our proposed customer survey-based incentive mechanism. Given our discussions above, we have excluded from this the stakeholder engagement element that was part of our July Business Plan.

This revision to our plan means that we require ex-ante funding for stakeholder engagement. We forecast expenditure of £0.2 million each year. This will fund a regular programme of engagement and customer-oriented reports on our performance.

Proposed outputs and expenditure

OBJECTIVE	Effective engagement and reflection of stakeholders' views							
PRIMARY OUTPUTS	None							
SECONDARY DELIVERABLES	None							
FUNDING & INCENTIVES	Ex-ante totex allowance Discretionary reward scheme for exceptional performance Reputational incentive							
HOW CUSTOMERS CAN ASSESS PERFORMANCE	<ul style="list-style-type: none"> • Ongoing customer and stakeholder engagement • Regular customer-oriented reporting of performance including customer satisfaction, major projects and environmental impact 							
TOTAL FORECAST EXPENDITURE	£1.6 million (2009/10 prices)							
£m, 09-10 prices	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Expenditure	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

For further information:

www.ssepd.co.uk/Projects/TransmissionPriceControlReview/SupportingInformation

3. Maintaining a safe, reliable supply of electricity

We have an excellent record in providing a safe, reliable supply of electricity to the north of Scotland, and we aim to maintain that record over the coming decade. While we consider this to be 'business as usual', we continually strive to improve the way we work.

Our July Business Plan

For our business, avoiding a loss of electricity supply is one of our highest priorities. We do everything we possibly can to avoid interrupting customers' electricity supplies, but, when it does happen, we are committed to restoring supplies as quickly as we can. We aim to do this safely, effectively and at lowest cost to our customers.

In our July Business Plan, we set out our safety and reliability objectives for the period 1 April 2013 to 31 March 2021. These are:

- Our safety target is zero incidents.
- Our reliability target is to at least maintain current performance, measured by the number of customer interruptions and the amount of energy not supplied.

These targets are both lagging indicators; that is, they measure things that have already gone wrong. Our plan recognised that in order to stop things going wrong we need to have in place the right underlying business processes. We also need to monitor leading indicators that give us warning of the potential for failure so we can act before it occurs.

To achieve our targets we need to look after our assets so that they stay safe and continue to provide a good service. Our asset management policy seeks to balance three main factors: cost; risk; and performance. The aim is to achieve satisfactory network performance at an acceptable risk and within the constraints of efficient cost. In addition, in managing our assets, safety issues are given priority.

We forecast total expenditure of £546 million (in 2009/10 prices) on 'business as usual' activities. This is a significant increase when compared to our allowance of £215 million (in 2009/10 prices) for the five year period to March 2012.

Making improvements in safety and reliability are two of our innovation objectives, as set out in 'Our strategy for a smarter network' published with this document.

Key proposals in our July Business Plan

- Continued business focus on staff, contractor and public safety to achieve our target of zero incidents
- At least maintain current levels of system reliability and continue to contribute to National Grid's annual system performance report
- Undertake further consultation on possible incentive mechanisms for system reliability
- Increase investment in workforce skills

“The proposals appear to be consistent with meeting the required safety obligations.”

Ofgem’s Initial Assessment, paragraph 7.17.

Ofgem’s Initial Assessment

Ofgem’s views on the proposals for safety and reliability in our July Business Plan are set out in paragraphs 7.16-7.17 of the Initial Assessment document. Ofgem also comments on the efficiency of our proposed expenditure in paragraphs 7.33-7.43.

Ofgem expresses its satisfaction with our safety proposals. On reliability, Ofgem notes that we identified a programme for developing this output and further work and justification is required.

The Initial Assessment document highlights evidence of cost efficiency as one of the key areas where further work was required on our plan, specifically:

- To provide evidence of cost efficiency such as market testing, benchmarking and third party delivery and detail on ongoing efficiency targets.
- Justification for chosen delivery strategy.
- Clearer linkage between the plan and outputs, with further information on scenarios and customer benefits.
- The basis for the risk sharing allocation.

Further work since July

Over the past five months we have focused our effort in two areas:

- Given the potential materiality of Ofgem’s concerns around cost efficiency and risk sharing, which have also been expressed by other stakeholders, we have worked closely with Ofgem to provide additional information to support our plan.
- Progressing our work on possible incentive mechanisms for system reliability, and finalising our proposals.

In addition, we have updated some of the cost and programme forecasts in our July Business Plan based on new information. This includes the impact of the settlement of the TPCR4 Rollover price control for 2012/13. Furthermore, we have updated our Innovation Strategy in light of helpful comments from Ofgem and other stakeholders.

A summary of our conclusions on cost efficiency and the reliability incentive is presented below. Further information, including our revised Innovation Strategy, can be found on our website:

www.ssepd.co.uk/Projects/TransmissionPriceControlReview

Cost efficiency and risk sharing

SHETL, along with our sister electricity distribution companies Hydro and Southern, has a strong track record in demonstrating cost efficiency. Over the past decade, we have consistently delivered performance at the efficiency frontier for both capital expenditure and operating costs.

However, we recognise that we cannot rest on our laurels and we need to be able to demonstrate to our customers a continual vigilance on cost control. This is particularly important as SHETL goes through a period of significant and sustained growth.

All of our colleagues have a role to play in maintaining cost efficiency, and we strongly believe that this can only be achieved by making efficiency part of the culture of our business. Consequently, a focus on efficiency permeates our management and governance arrangements, and all of our business processes.

We accepted the challenge from Ofgem that we did not adequately demonstrate our commitment to cost efficiency in our July Business Plan, and have published an addendum to our plan that does this. This document can be found on our website.

We also accepted the challenge from Ofgem that we did not demonstrate a balanced approach to the sharing of risk in our July Business Plan. Again we have published an addendum to our plan that does this, which can be found on our website. In this addendum we conclude that, for the proposed risk profile, and with a totex capitalisation rate of 90%, an appropriate sharing of risk would be 50%.

Reliability incentive

In our July Business Plan we questioned whether the reliability incentive mechanism might be more closely targeted at compensating customers who are off supply for an extended period of time, and committed to undertake further consultation on this.

We have now completed that work and are proposing an incentive mechanism with two elements:

- A payment to customers if a fault on the transmission system results in a loss of supply of more than six hours' duration; and
- An automatic adjustment to our revenue reflecting our annual energy not supplied performance relative to an agreed baseline.

More information on our proposal, including a summary of consultation responses, is on our website.

Proposed outputs and expenditure

OBJECTIVE	Safe, reliable supply of electricity							
PRIMARY OUTPUTS	Comply with legal safety obligations Reliability measured by energy not supplied							
SECONDARY DELIVERABLES	Leading indicators of asset health, criticality and replacement priorities (risk), system unavailability and average circuit unreliability (ACU), faults and failures							
FUNDING & INCENTIVES	Ex-ante totex allowance at 90% capitalisation Totex incentive with 50% sharing factor Reliability incentive incorporating customer payment, with a baseline of 120MWh per annum and payments directly to customers off supply for 6 hours or more of £54 and £108 (domestic and commercial customers respectively)							
HOW CUSTOMERS CAN ASSESS PERFORMANCE	<ul style="list-style-type: none"> • Relative to the agreed energy not supplied baseline • Regular customer-oriented reporting of performance including network reliability, major projects and environmental impact 							
TOTAL FORECAST EXPENDITURE	£702 million (2009/10 prices)							
£m, 09-10 prices	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Non-load	22	20	23	27	27	27	29	26
Load	42	50	72	34	14	14	13	12
Pre-construction	12	16	18	13	9	9	8	8
Operating costs	13	15	18	20	21	23	23	24
Total	89	101	131	94	71	73	73	70

For further information:

www.ssepd.co.uk/Projects/TransmissionPriceControlReview/SupportingInformation

4. Someone to talk to

We are committed to offering our customers the very best standards of service. You can be sure that whenever you get in touch with us, you will be greeted in a friendly manner.

Our July Business Plan

Although we only have a small number of electricity generators and users directly connected to our network, a wide range of energy customers and stakeholders can be affected by our activities – for example, a landowner with some of our equipment situated on his land or a community located in the vicinity of our reinforcement or refurbishment works.

In our July Business Plan we recognised that everyone who is, or could be, affected by our activities is our customer. We put forward a number of proposals for improving our customer service.

Our objective is to ensure that everyone who is affected by our activities is aware of what we are doing and we have explained why we are doing it as clearly and concisely as possible. We aim to do this in a timely way that best meets the needs of the affected customer.

To achieve our objective, in our July Business Plan we stated our intention to publish our customer service standards – a Customer Charter – by 1 April 2013. This document will set out what our customers should expect from us. We committed to reviewing this document annually and publishing our performance against the standards on our website.

Our Customer Charter will continue to be supported by our Grantors Charter. This is our code of practice that confirms the procedures that we will follow when requiring access to private property to install and maintain our assets.

We also recognised the concerns expressed by parties seeking direct connection or indirect connection (through the low voltage distribution system) about the connections process. There is also a valid concern from existing connected parties about the effect of new connections on their connection.

Our service standards for connection will be included in our Customer Charter, but we also propose to adopt a milestone-based approach to connections. At each milestone we would conduct a customer satisfaction survey to monitor our performance.

Key proposals in our July Business Plan

- To publish a Customer Charter that clearly sets out the standards our customers should expect from us
- To maintain our Grantors Charter from landowners
- Improvements to our connections processes including a customer satisfaction survey
- Ongoing customer and stakeholder engagement (see [section 2](#))

“Connections – This is a strong aspect of SHETL’s plan demonstrating a good understanding of the historical context. SHETL not only commit to the output set out in our strategy decision but go further proposing standards of service for its customers in this area. We welcome this approach.”

Ofgem’s Initial Assessment, paragraph 7.27.

Ofgem’s Initial Assessment

Ofgem’s views on the proposals for customer satisfaction and connections in our July Business Plan are set out in paragraphs 7.27-7.30 of the Initial Assessment document. Ofgem’s comments on customer and stakeholder engagement (see [section 2](#) of this update) are also relevant.

Ofgem states that our coverage of the customer satisfaction and connections outputs is one of the key positives of our plan. Accordingly, Ofgem notes that these areas will be subject to a proportionate level of scrutiny.

On connections, Ofgem concludes that it does not intend significant work on our plans in this area. However, it does ask for more detail on our proposed standards of service.

Further work since July

Although Ofgem has expressed broad support for the proposals in our July Business Plan, further discussions with Ofgem and the other transmission licensees since July have resulted in some changes.

Our July Business Plan proposed to introduce a customer satisfaction survey at milestones in the connections process. The results of this survey would be used together with our performance against our customer service standards to automatically adjust our revenue in line with our quality of service.

As with our proposed stakeholder engagement incentive mechanism ([section 2](#)), Ofgem and the other transmission licensees have expressed concerns with our proposal. At this time we understand that there is a preference for implementing a wider customer survey, the results of which would automatically adjust revenue. This would not include performance against service standards.

We are continuing to work with Ofgem and the licensees on such a wider survey. In this we remain mindful of the need to address customers’ concerns over the connections process.

Importantly, we remain committed to our proposed Customer Charter. Although we do not intend to implement our Charter until 2013, we have begun work on the possible areas that the Charter might cover and the business processes we will need to support delivery. We expect to be able to publish a draft Charter for consultation in summer 2012.

Proposed outputs and expenditure

OBJECTIVE	Good standards of customer service, including the timely provision of connections
PRIMARY OUTPUTS	Customer satisfaction as measured through a survey Compliance with prevailing obligations for connections
SECONDARY DELIVERABLES	Customer service standards (SHETL only)
FUNDING & INCENTIVES	No specific incremental funding allowance for customer service activities or the customer survey Customer survey incentive (+/- 0.5% base revenue) Penalty for not meeting connections obligations (up to 0.5% base revenue)
HOW CUSTOMERS CAN ASSESS PERFORMANCE	<ul style="list-style-type: none"> • Our Customer Charter that clearly sets out the standards our customers should expect from us • Our Grantors Charter for landowners • To work with Ofgem and the other transmission licensees to develop a customer survey • Annual report on performance against customer service standards, including reporting on improvements to our connections processes

For further information:

www.ssepd.co.uk/Projects/TransmissionPriceControlReview/SupportingInformation

5. Supporting the growth of the low carbon economy

Over the coming decade we expect to significantly expand our network to facilitate the growth of renewable generation in the north of Scotland in order to meet national renewable energy targets. The potential scale and timing of this investment is not fixed as it depends on new generation projects proceeding. Nevertheless, our forecasts indicate that we could invest some £3-5 billion in our network compared to the value of the existing business of around £450 million.

Our July Business Plan

During the development of our July Business Plan, the issue that gained most comment from stakeholders was our plans to reinforce the transmission network to accommodate new renewable generation. The comments made were wide-ranging including detailed environmental considerations, the role of innovation, timeliness of delivery, and concerns over cost.

The proposals we set out in our July Business Plan sought to balance these many, and in some cases contradictory, views. Overall we realised that there is an overwhelming desire for more information and more engagement over the development of our large capital projects; hence enhanced engagement is at the heart of our plan.

Uncertainty over the timing and location of new generation means it is not possible to set out an accurate timetable for network development. Thus, our July Business Plan proposed two mechanisms for funding investment that would only be triggered when the needs case was known. Both of these mechanisms incorporated incentives to ensure timely, cost efficient delivery.

For reinforcements to the main interconnected transmission system (“wider works”), we proposed a mechanism that built upon the existing (and successful) TIRG and TII approaches. Projects would be considered on a case-by-case basis with funding allowed only after detailed scrutiny. We identified up to 15 specific projects in our July Business Plan, noting that over the next decade we expected some of these, all of these or even others not identified to proceed. Pre-construction expenditure to facilitate the timely development of these projects would be allowed as part of the ex-ante baseline (section 3).

For the local infrastructure to connect new generation a different mechanism was proposed that automatically released funding based on a pre-determined unit cost (e.g. £ per MW connected). Two unit costs were proposed depending on whether the infrastructure could accommodate one or multiple new generation connections.

For the central case in our plan, we forecast total expenditure of up to £3,220 million on large transmission projects, and of up to £404 million on connections infrastructure (in 2009/10 prices).

Key proposals in our July Business Plan

- Uncertainty mechanisms for large transmission projects and local connections infrastructure
- Published our Network Availability Policy

Ofgem's Initial Assessment

Ofgem's views on the proposals for wider works and connections in our July Business Plan are set out in paragraphs 7.18-7.23 and 7.27-7.28 of the Initial Assessment document. Ofgem also comments on the efficiency of our proposed expenditure in paragraphs 7.33-7.43, and on our approach to risk and uncertainty in paragraphs 7.58-7.63.

Ofgem acknowledges the greater proportion of forecast expenditure in our July Business Plan that is subject to uncertainty mechanisms, when compared with other transmission licensees. However, it is also recognised that portfolio effects and the potential growth of SHETL are likely to be key factors behind this difference.

As we describe in section 3, Ofgem's Initial Assessment document highlights evidence of cost efficiency as one of the key areas where further work was required on our plan. This encompasses providing further information on deliverability and the basis for the proposed sharing of risk.

Ofgem noted the volume of material in our Network Availability Plan about how we plan and prioritise work, including the description of potential enhanced services. However, Ofgem also highlights the need for the transmission licensees to work together to establish a clear baseline approach to network availability from which deviations can be assessed.

Further work since July

Over the past five months we have focused our effort in two areas:

- Given the potential materiality of Ofgem's concerns around cost efficiency and risk sharing, which have also been expressed by other stakeholders, we have worked closely with Ofgem to provide additional information to support our plan. This is discussed further in [section 3](#). We have also provided further information to Ofgem on the work we have done to ensure timely delivery of large transmission projects.
- Incorporating more detail into our proposed uncertainty mechanisms for large transmission projects and connections infrastructure.

In addition, we have updated some of the cost and programme forecasts in our July Business Plan based on new information. This includes the impact of the settlement of the TPCR4 Rollover price control for 2012/13. Furthermore, we have updated our Network Availability Policy.

Funding large transmission projects

In our July Business Plan we identified a small number of major system reinforcements that, subject to confirmation of need, would progress during the next decade (Figure 5.1). These projects would accommodate further onshore wind, new offshore wind and emerging marine generation. They include potential links to the main island groups.

We estimate that we could spend £1-3.4 billion (in 2009/10 prices) on these projects. Our goal is to get these projects right and deliver them at the appropriate time and for the lowest possible cost.

Given the scale of these projects, we proposed in our July Business Plan that each would be subject to an Ofgem-led assessment before the decision was made to proceed. Since July we have done further work on this assessment process and identified four key stages:

Notification stage, before assessment begins

We notify Ofgem that a project is nearing the assessment stage, and work with Ofgem to determine an indicative timetable for the assessment. We then publish a stakeholder update on the project including the assessment timetable.

Assessment stage

Ofgem undertakes a two-part assessment of the project. The needs case examines whether the investment is required and, if so, whether the proposed timing of delivery represents value for money for customers. The technical case examines the project costs and outputs including the scope, execution plan and basis for forecast costs.

Ofgem will consult on its work. If it determines that the project is justified, then a cost allowance will be made and project outputs defined.

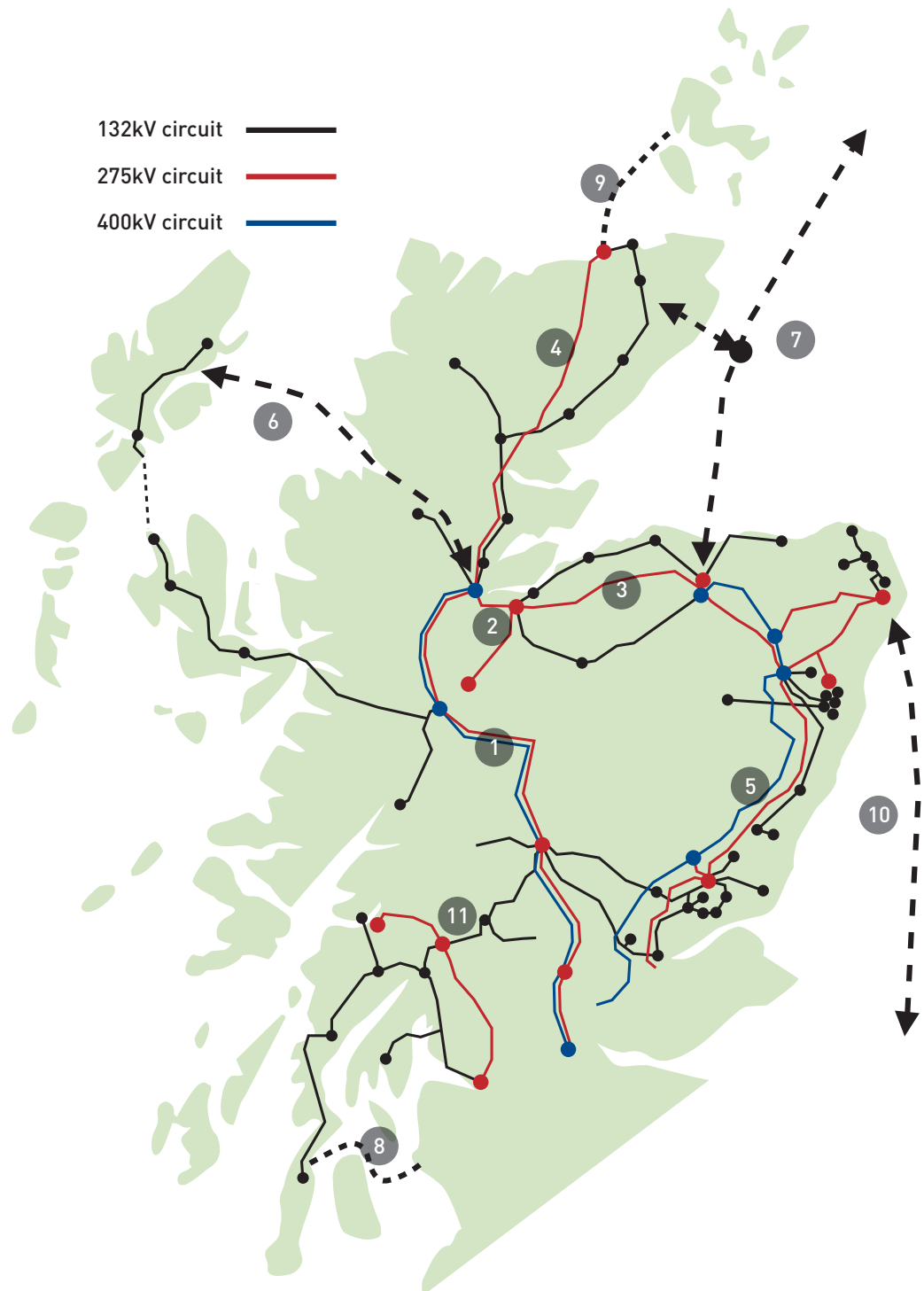
Construction stage

We will make regular reports on our progress to Ofgem and stakeholders. If we are over or under spending the allowed costs, then we will share half of that difference with customers. If a pre-defined significant event occurs – such as unusually bad weather – and we forecast that this will increase costs by more than 10%/20% (subject to scale of investments) then we can apply to Ofgem for the cost allowance to be reassessed.

After construction

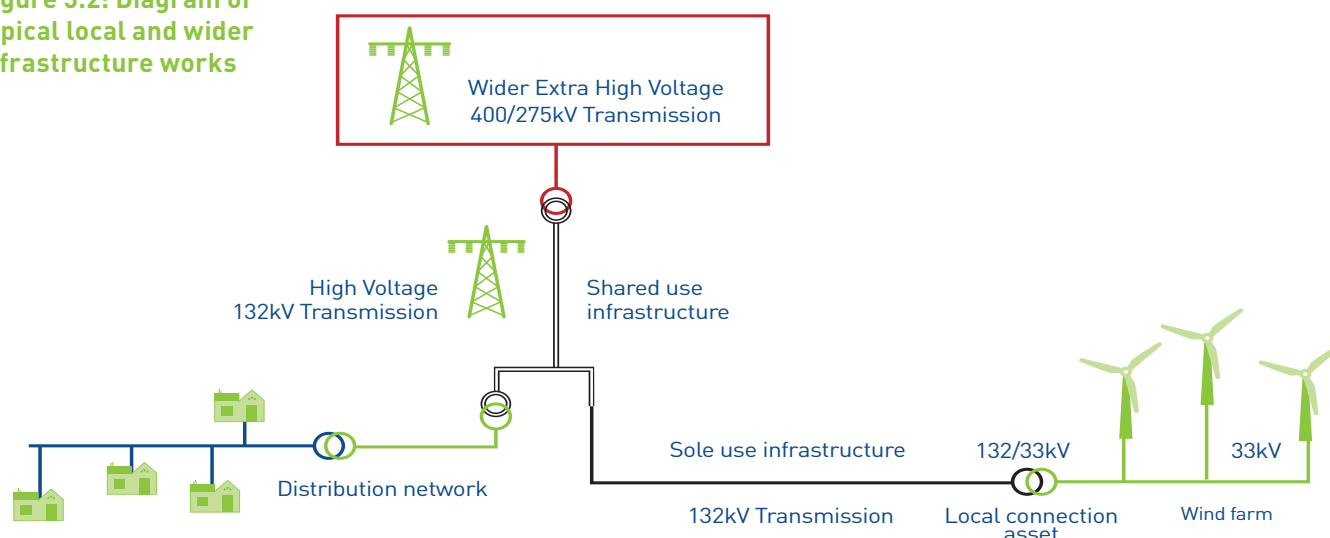
We will notify Ofgem and stakeholders of completion. If the project output has not been delivered, Ofgem will undertake an assessment of the customer impact and apply a proportionate penalty.

Figure 5.1: Overview of planned large transmission projects



- | | |
|---|---|
| 1. Beaulay–Denny rebuild | 6. Western Isles Link (HVDC) |
| 2. Knocknagael substation | 7. Caithness–Moray–Shetland with hub option |
| 3. Beaulay to Kintore 275kV re-conductor | 8. Kintyre–Hunterston subsea link |
| 4. Beaulay–Dunrobin second circuit on existing towers | 9. Orkney reinforcement |
| 5. East Coast re-insulation and re-conductor | 10. East Coast HVDC link |
| | 11. Inverarnan |
- (Plus other local, radial reinforcements not shown)

Figure 5.2: Diagram of typical local and wider infrastructure works



Funding local connections infrastructure

When we receive an application for connection to our transmission system we undertake detailed studies of the impact that prospective generator has on the network. In addition to contributing to the needs case for large transmission projects (described above), that generation connection might require two types of network investment (Figure 5.2):

- Connection sole-use assets, which are paid for by the user; and
- Infrastructure sole-use and/or shared-use assets, which are fully underwritten by the user during construction but paid for through use of system charges after connection.

It typically takes between 2 and 5 years to build a transmission connection. Hence we have good idea of our likely activities in this area for the next few years and have included for this in our 'business as usual' forecasts (section 3).

However, looking further into the future, we do not know what connections work we will be doing. Perhaps future generators have not yet applied to us, or the planning process will change the size and timing of proposed generation developments.

Given this uncertainty, if we were to try and forecast our future connections workload we would get it wrong – and, taking into account the very different views of stakeholders on this issue, potentially very wrong.

To address this, in our July Business Plan we proposed an automatic mechanism – a revenue driver – that released an allowance to fund connections work as and when new schemes came forward. Two types of revenue driver were described:

For **sole-use connections infrastructure**, one-fifth of the amount of money allowed would be based on a pre-determined unit cost per MW of new generation connected.

For **shared-use connections infrastructure**, one-fifth of the amount of money allowed would be based on a pre-determined unit cost per MVA of new system capacity established.

Both revenue drivers would include sharing of half of any over or under spend relative to the unit cost with customers.

More information about this approach, and our proposed approach to assessing large capital projects described above, can be found on our website:

www.ssepd.co.uk/Projects/TransmissionPriceControlReview

Proposed outputs and expenditure

OBJECTIVE	Timely, cost effective growth of the network to accommodate renewable generation
PRIMARY OUTPUTS	n/a
SECONDARY DELIVERABLES	Project-specific outputs (including, where possible, boundary capability) Volumes of new connections Network Availability Policy
FUNDING & INCENTIVES	Within period determination mechanism for large transmission projects Revenue driver mechanism for sole-use and shared-use connections infrastructure Both mechanisms include totex incentive with 50% sharing factor plus financial incentives for outputs delivery Pre-construction expenditure for large transmission projects and more certain expenditure on connections infrastructure is included in 'business as usual' activities (section 3)
HOW CUSTOMERS CAN ASSESS PERFORMANCE	<ul style="list-style-type: none"> Engagement and consultation on large transmission projects, and regular reporting of performance If we meet the standards set out in our Customer Charter (section 4)
TOTAL FORECAST EXPENDITURE	For central case, £3,624 million (2009/10 prices)

FOR THE CENTRAL CASE IN OUR BUSINESS PLAN

£m, 09-10 prices	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Subject to the within period determination mechanism:								
Large transmission projects*	588	665	474	340	277	258	244	306
Additional operating costs	1	1	1	10	11	14	18	19
Local connections infrastructure subject to revenue driver:								
Sole-use and Shared-use	48	52	92	77	32	22	22	22
Total	637	718	567	427	320	294	284	347

* includes Approved TIRG & TII projects

For further information:

www.ssep.co.uk/Projects/TransmissionPriceControlReview/SupportingInformation

6. Doing our best to look after the environment

As an organisation, one of our core values is to operate responsibly, taking the long-term view to achieve growth while safeguarding the environment. Our plans for the next decade are underpinned by our objective to apply best practice in environmental stewardship in all our activities.

Our July Business Plan

As a business that operates in an environmentally sensitive landscape, we are particularly conscious of the need to adopt environmentally-friendly working practices.

There are clearly difficult trade-offs to be made. On one hand, our activities are essential to growth of renewable electricity generation which many see as an environmental benefit. On the other hand, our activities involve installing new assets and there is an associated environmental cost.

In our July Business Plan we set out our view that many of the environmental considerations of growing our network are best determined on a project-by-project basis. This includes preplanning engagement and consultation with affected parties; full and detailed environmental assessment during the planning stage; and ongoing engagement and management during construction. We forecast expenditure of almost £100 million (in 2009/10 prices) on design and pre-construction works for large transmission projects (section 3).

There is also an environmental impact when we operate our assets. The three largest impacts are:

- electrical losses (electricity lost as heat during transmission);
- leakage of oil used as an insulant in older underground cables and transformers; and
- leakage of the greenhouse gas sulphur hexafluoride (SF₆) which is used as an insulant in switchgear.

Of lesser impact, but equal importance, we recognise the environmental impact of our day-to-day activities – our Business Carbon Footprint. This includes transport, buildings and water consumption.

In our July Business Plan, we proposed to publish an annual environmental report from 2013/14. This would cover the three main asset-related environmental impacts and our Business Carbon Footprint. The report would describe both actual performance and the measures (including through innovation projects) that have been taken to reduce future impacts.

Key proposals in our July Business Plan

- Through timely and effective engagement prior to construction, minimise the environmental impact of projects to maintain or upgrade our network
- An annual environmental performance report
- For revenue to be adjusted relative to performance against target SF₆ leakage rates

Ofgem's Initial Assessment

Ofgem's views on the proposals for the environment in our July Business Plan are set out in paragraphs 7.24–7.26 of the Initial Assessment document.

Ofgem highlights a number of areas where clarification of our proposals is required:

- On visual amenity and the impact of existing infrastructure.
- Our target for SF₆ leakage and the basis for setting this target.
- The impact of the Carbon Reduction Commitment (CRC) on our plans.
- The role of environmental drivers in our Innovation Strategy.

Further work since July

In our July Business Plan we did not include any specific projects to improve the visual amenity around our existing infrastructure. The main reason for this is that, in our experience, the planning authorities are best placed to make decisions on acceptable visual amenity. In this regard we note that, given the significant capital programme over the next decade, much of our network will be subject (either directly or indirectly) to a planning assessment.

We recognised the limited detail around some of the environmental proposals in our plan. Since July we have given further consideration to the information that might be in our annual environmental report. We expect to publish a draft report for consultation later this year.

Our key concern about setting a target volume for SF₆ leakage was how to forecast for the new assets that will be installed as part of large transmission projects. However, our further work on the within-period determination mechanism ([section 5](#)) includes provision to reset the SF₆ target. On this basis, we propose that the target is a multiple of manufacturers' published leakage rates per asset installed.

As we have described in previous sections, we have reviewed our Innovation Strategy since July. In the revised strategy, we have set out our Innovation Objectives. These are based on feedback from stakeholders and include "Accelerate network development and connections including the integration of increasing amounts of renewable generation," in response to views expressed by many.

Proposed outputs and expenditure

OBJECTIVE	Responsible approach to the environmental impacts of energy networks
PRIMARY OUTPUTS	Broad environmental output Visual amenity Electricity transmission losses
SECONDARY DELIVERABLES	Business carbon footprint SF ₆ leakage
FUNDING & INCENTIVES	SF ₆ leakage Innovation allowance / competition Reputational incentive
HOW CUSTOMERS CAN ASSESS PERFORMANCE	<ul style="list-style-type: none"> • Our Customer Charter that clearly sets out the standards our customers should expect from us • Statement on visual amenity • Performance relative to the SF₆ leakage target • Annual environmental performance report

For further information:

www.ssepd.co.uk/Projects/TransmissionPriceControlReview/SupportingInformation

7. What will our plans cost you?

For the central scenario of our proposed Business Plan, we estimate that our charge to the average domestic customer will increase by around eight times over the next decade from 38p in 2010/11 to £2.45 in 2020/21.

In our July Business Plan we estimated that, for the central case, our charge to the average domestic customer would increase from 38p in 2010/11 to £3.05 in 2020/21 (ignoring the effects of inflation).

This estimate used a calculation of our allowed revenue based upon:

- Our 'business as usual' expenditure forecast;
- Our forecast expenditure to accommodate the growth in renewable generation; and
- Our proposed approach to financing our business.

We have described changes to our 'business as usual' expenditure forecast and growth expenditure forecast in, respectively, [section 3](#) and [section 5](#) of this Update.

We have also made changes to the regulatory assumptions¹ about how we will finance our business. In large part, these changes reflect changes in our overall view of the retained risk in the business, taking into account our risk management strategy, as we have established a more detailed understanding of the risk sharing mechanisms.

Of the assumptions around managing risk in our July supporting document Determining our Allowed Revenue, we have focused our work on three key uncertainty mechanisms: the sharing factor for efficient under or over spend, the Strategic Wider Works (SWW) arrangements and the revenue driver for local connections infrastructure. Our detailed proposals on each of these are set out in this Update.

Based on the further work on our Business Plan as set out in this Update, we have made the following key assumptions about how we will finance our business:

Credit rating

Our analysis is based on an assumption that SHETL needs to retain an investment grade credit rating of A- / A3 in order to support its ability to raise substantial amounts of new debt and equity in volatile capital markets whilst facing an increased risk profile.

Scenario analysis around the capital expenditure scenarios presented in our Business Plan with credible scenarios for efficient over-spend illustrate that SHETL should retain this rating. This does not necessarily mean that we will exceed the target credit metrics in all years, particularly in downside scenarios. However, overall the package proposed meets the minimum standards for financeability.

Over the long term, investors typically view energy networks as income stocks. Accordingly our modelling incorporates 5% equity yield.

¹Note that these are regulatory assumptions made for the purpose of setting a price control. These differ from statutory requirements and the actual financing of the business.

Cost of equity

We have assumed that the cost of equity is 7.0%, i.e. does not change from the current TPCR4 assumption.

Our Business Plan does not underplay the substantial challenges associated with delivering the major project programme, and in attracting the equity funding necessary to support this. However, with the enhanced definition in a number of key areas of our proposed package, supported by discussion with Ofgem, we conclude that an appropriate cost of equity should lie in the range from 7.0% to 7.5% (post tax real).

Cost of debt

In a significant change to the current regulatory framework, Ofgem proposes to base the cost of debt assumption on a 10-year trailing average index of Non-Financials bonds from 1 April 2013. While we understand Ofgem's rationale for this change, we have previously expressed concerns about the applicability of this approach for SHETL given the large amount of new debt we expect to take on as the business grows.

Thus, we propose to use the index but for it to be weighted by SHETL's actual capital spend in each of the ten years. This approach will result in an index closer to our actual cost of debt, and significantly reduce the risk from the spot rate being highly variant from the longer-term average.

Notional gearing

In order to maintain the necessary strong credit rating, we have assumed notional gearing of 55%. This is a reduction from the current level of 60%.

The gearing level is clearly a significant driver of financeability, with the notional gearing level impacting the allowed return component of revenues, and the actual gearing driving the costs of servicing the business's debt – both through actual level of debt and through the credit metrics, which then drive the ability to access capital markets efficiently. We have sought to use the gearing level as the final component in our financeability assessment to achieve what we consider to be a reasonable and workable position.

Depreciation (asset lives)

Currently a regulatory asset life of 20 years (with straight line depreciation) applies to new SHETL assets. In March 2011, Ofgem made a decision to change this to 45 years. We have assumed that this change happens over two price control periods (16 years) starting in 2013/14, i.e. the regulatory asset life for new assets increases by 1.6 years each year. Straight line depreciation would be retained.

Capitalisation rate

We have assumed that each year 90% of our total expenditure will be capitalised and allowed into the RAV.

Our assumption reflects Ofgem's preferred approach that a uniform capitalisation rate is applied throughout the price control period. For the central case in our July Business Plan, we forecast actual capital expenditure to be 98% in 2013/14 falling to 89% by 2020/21; we estimate 90% capitalisation to be close to our long run average rate.

Allowance for issuance of notional equity issuance

Historically Ofgem has set the cost of issuing equity at 5% of the notional equity requirement. We have maintained this approach.

The financial assumptions we propose equate to a vanilla WACC of 4.9% (assuming a cost of debt of 3.2% and 28% tax rate), or a post-tax real WACC of 4.4%. This is broadly consistent with current returns although the detail reflects a rebalancing of the package with some risks increasing (longer duration price control, large capital programme) and some risks decreasing (cost of debt index, clearer funding mechanism for large capital projects).

Allowing for potential incentive mechanisms, we estimate that the return on regulatory equity (RORE) will be within the range 4.0-9.0%

Taking all of the changes to our plan together we have redone our estimate of the cost of the central case in our plan to customers using the same methodology as described in our July Business Plan. We estimate that our charge to the average domestic customer would increase from 38p in 2010/11 to £2.45 in 2020/21 (ignoring the effects of inflation).

Appendix A

£ million, 09/10 prices	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	Total
CAPITAL EXPENDITURE									
(i) Our base capital expenditure programme									
Load – Related and Transmission Connections	51	72	105	57	34	36	38	50	443
Generation – Driven Infrastructure	48	52	92	77	32	22	22	22	367
Non-Load Related	22	20	23	27	29	29	31	28	209
Pre-construction	12	16	18	13	9	9	8	8	94
Other capital costs	1	3	3	0	0	0	0	0	7
Total	133	163	241	175	104	97	100	107	1120
(ii) Our growth capital expenditure programme									
Wider Works – TIRG Approved	111	76	28	0	0	0	0	0	215
Wider Works – TII Approved	34	19	0	0	0	0	0	0	52
Wider works – to be approved	425	555	423	340	277	258	244	306	2,829
Total	569	650	451	340	277	258	244	306	3,096
TOTAL CAPITAL EXPENDITURE									
	703	813	692	516	381	354	344	414	4,216
OPERATING COSTS									
Direct	3	4	5	4	5	5	5	5	35
Anticipated SWW Opex Costs*	1	1	1	10	11	14	18	19	74
Indirect	10	12	14	16	17	18	19	19	125
Other Opex	9	9	13	14	14	15	16	17	109
Total	23	26	32	43	48	51	58	60	341
FINANCIAL IMPACT									
RAV	1,214	1,824	2,341	2,711	2,946	3,148	3,335	3,576	--
Revenue	225	302	346	360	370	386	403	431	2,823

Note: numbers may not add up due to rounding

*calculated as 1% of GAV of SWW projects

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For more information on our RII0-T1 Transmission Price Control process and our full Business Plan submission including all supporting documentation please use the link below:

www.ssepd.co.uk/Projects/TransmissionPriceControlReview

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