Decision

RIIO-2 System Operator: Transmission Owner Optimisation output delivery incentive

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This document sets out our decision to retain the System Operator Transmission Owner Optimisation output delivery incentive ("SO:TO incentive") for the remainder of the RIIO-2 electricity transmission price control.

The SO:TO incentive was trialled in the first two years of the RIIO-2 price control. We published a consultation on our assessment of SO:TO incentive trial on 15 February 2023, which closed on 15 March 2023. Our minded-to position in the consultation was to modify some aspects of the SO:TO incentive and to retain it for years 3 to 5 of RIIO-2.

This document summarises the issues raised by stakeholders who responded to the consultation, our views on these and our final decision on the SO:TO incentive.

We are consulting on a draft licence modification to the RIIO-2 electricity transmission licence, set out in Appendix 1 of this document, to give effect to our decision. The closing date for responding to the consultation on the draft licence modification is 26 July 2023.

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Executive Summary

This document sets out the Gas and Electricity Markets Authority's[1] decision on the System Operator: Transmission Owner Optimisation output delivery incentive ("SO:TO incentive") that operates in the electricity transmission RIIO-2 price control ("RIIO-2"). The SO:TO incentive was introduced into RIIO-2 in April 2021 on a trial basis for two years. At the close of the trial, the SO:TO incentive would end unless we decided to retain the incentive in RIIO-2.

Following receipt of the annual reports from the ETOs and the ESO about the results of the SO:TO incentive trial, we assessed that it had delivered significant consumer benefit, and that changing some aspects of the incentive design would further increase the benefits for consumers in future.

In February 2023 we consulted on our preferred proposals relating to the SO:TO incentive. These were:

- to retain the SO:TO incentive for the remainder of the electricity transmission price control,
- to amend the calculation of the incentive reward paid to an ETO for delivering an enhanced service so that is based on both the forecast and outturn constraint costs savings estimated by the ESO; and
- to remove the annual financial cap on the amount of reward that an ETO can earn for years 3 to 5 of the RIIO-2 price control.

We received six responses to the consultation. In this document we have summarised the consultation responses and our views on them; any changes to our position since the consultation; our decisions in relation to the SO:TO incentive; and next steps.

In summary, after the consultation process, we have decided to:

- keep operating the SO:TO incentive for the remaining three years in RIIO-2;
- move annual reporting requirements to the Regulatory Reporting Pack cycle;
- adopt a blended approach to calculating constraint cost savings with a 50:50 weighting on the ESO's forecast and outturn constraint cost savings estimates;
- calculate the reward as 10% of blended constraint cost savings, with a backup mechanism to guard against windfall gains; and
- remove the annual financial cap on incentive rewards for years 3 to 5 in RIIO-2.

[1] The terms "the Authority", "we" and "us" are used interchangeably in this document.

We are seeking stakeholders views on how best to manage the transition of enhanced services delivered under SO:TO incentive to business-as-usual transmission capabilities for the ESO to access and instruct in future.

We are also consulting on the proposed licence modification text to implement the decisions outlined in this document into special condition 4.7 of the electricity transmission licence - System Operator Transmission Owner optimisation output delivery incentive. The closing date for responding to this consultation is 26 July 2023.

We will consult in later this year on modifications to the SO:TO Optimisation Governance document for the decisions set out in this document.

1. Introduction

Context

1.1 National Grid Electricity Transmission (NGET), Scottish Hydro Electric Transmission (SHET) and Scottish Power Transmission (SPT) are licensed onshore Electricity Transmission Owners (ETOs) in Great Britain. They are required to develop and maintain an economic, efficient and coordinated transmission network, compliant with relevant applicable standards, including the Security and Quality of Supply Standard (SQSS).[2]

1.2 The activity and costs incurred by the ETOs to meet these licence requirements are covered by the RIIO-2 electricity transmission price control (RIIO-2), which runs from 1 April 2021 until 31 March 2026. The price control includes a package of output delivery incentives (ODI) to encourage the ETOs to deliver a range of outputs that improve service and the efficient operation of the transmission network.[3]

1.3 The System Operator: Transmission Owner (SO:TO) Optimisation output delivery incentive ("SO:TO incentive") has operated in the electricity transmission RIIO-2 price control since April 2021 on a trial basis for two years.[4]

1.4 The purpose of the SO:TO incentive is to encourage the ETOs to proactively identify and provide enhanced services to the Electricity System Operator (ESO) to help reduce the cost of operating the transmission system. The ETOs and ESO use an existing industry procedure, STCP11-4, to identify opportunities where enhanced services can help the ESO to reduce constraint costs efficiently.[5]

1.5 When operating the transmission system, the ESO must work within the physical limits of the network to safely transfer power from generation sites to where it is

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[2] Security and Quality of Supply Standard: https://www.nationalgrideso.com/industry-information/codes/security-and-quality-supply-standards
[3] RIIO-2 Final Determinations ET Annex
[4] The SO:TO Optimisation ODI is specified in Special Condition 4.7 of the Electricity Transmission Licence. A copy of the licence is available on: https://epr.ofgem.gov.uk/ and a copy of the associated guidance document can be found here: https://www.ofgem.gov.uk/publications/soto-optimisation-governance-document
[5] The System Operator Transmission Owner Code (STC) is a suite of code documents which define the relationship between the ETOs and the ESO. The STCP11-4 procedure is one of the STC documents and was designed to enable the ESO to buy a service from the ETOs that help to reduce the costs of operating the GB Transmission network. A copy of the STCP11-4 procedure is available on the ESO's website: https://www.nationalgrideso.com/document/133421/download

being used by consumers. If part of the network is reaching the limit of its safe capacity, the ESO has to manage power flows on the network. One way it does this is by paying generators in the congested region to reduce their output and paying generators in another region to increase their output. The costs incurred to balance the location of generation according to the physical limits of the network are generally termed constraint costs.

1.6 We reviewed the outcomes of the SO:TO incentive after the first trial year to assess whether it was delivering a net benefit for consumers and if it should be retained for the remainder of RIIO-2.

Our decision-making process

1.7 On 15 February 2023, we published a consultation document (the consultation) on our assessment of the outcomes from the SO:TO incentive trial in year 1 of RIIO-2. On the basis of the £33 million net benefit delivered for consumers in the first year we consulted on our proposal to retain the SO:TO incentive for years 3 to 5 of the price control. We also consulted on some options to amend the incentive parameters to further increase the benefits for consumers from the SO:TO incentive.

Purpose of this document

1.8 This document summarises the issues raised by stakeholders in the responses to the consultation, our view on these issues and our final decision on the SO:TO incentive.

1.9 Alongside this document, we are consulting on a draft licence modification to implement our final decision on the changes to the SO:TO incentive.

Related publications

Consultation on the RIIO-2 System Operator Transmission Owner Output Delivery Incentive (15 February 2023) [Consultation on the RIIO-2 System Operator Transmission Owner Output Delivery Incentive | Ofgem]

SO:TO Optimisation Governance Document (29 March 2021) [SO:TO Optimisation Governance Document | Ofgem]

General feedback

We believe that consultation is at the heart of good policy development. We are keen to receive your comments about this report. We'd also like to get your answers to these questions:

1. Do you have any comments about the overall quality of this document?
2. Do you have any comments about its tone and content?
3. Was it easy to read and understand? Or could it have been better written?
4. Are its conclusions balanced?
5. Did it make reasoned recommendations?
6. Any further comments

Please send any general feedback comments to stakeholders@ofgem.gov.uk

2. Consultation recap and stakeholder responses

Recap of our consultation

2.1 The SO:TO incentive is designed to encourage the ETOs to proactively identify and provide solutions to the ESO to help reduce constraint costs using the existing STCP11-4 procedures. It was introduced on a trial basis for the regulatory years 2021/2022 and 2022/2023.

2.2 In the SO:TO incentive governance document we said that after the two year trial, the Authority might decide to roll out the incentive for the remainder of the RIIO-2 Price Control. Before doing so it would review the reports provided by the ESO and ETOs on SO:TO incentive performance over the trial to ensure it is delivering net benefits and value for money for consumers, taking into account the uncertainty of the assessment of constraint costs savings.

2.3 We also said that we would decide whether changes are needed to the design of the incentive and the governance document.

2.4 In the consultation, we set out our assessment of year 1 trial outcomes and proposals for the SO:TO incentive as follows.

SO:TO incentive outcomes in year 1 of the trial

2.5 In our review of the first year of the trial (see section 3 in the consultation), we found that the ETOs had delivered 11 enhanced services for the ESO to reduce the costs of operating the transmission system that delivered nearly £33 million (2018/19 prices) net benefit for consumers.

2.6 We considered that the SO:TO incentive has been successful in driving the ETOs to identify solutions in 2021/22, through the STCP11-4 process, compared to previous three years when no incentive was in operation.

2.7 We also noted that we had not seen any evidence of unintended consequences as a result of introducing the SO:TO incentive, such as:

- adverse behaviours in relation to ETOs’ outage planning in the medium and long term because, for example, they want to use the SO:TO incentive in the short term. This was originally seen as a possible risk at the time of the price control review.
- adverse impacts on competition in the provision of constraint management services from third parties.

2.8 Overall, we considered that the SO:TO incentive had energised the STCP11-4 process and had given the ESO an additional tool for managing constraints at various places on the transmission system and over different time horizons. Given that transmission system constraint costs are forecast to increase significantly in the coming years, we said that the SO:TO incentive would likely be beneficial for consumers in future.

Retaining the SO:TO incentive for remainder of RIIO-2

2.9 Based on our assessment of the outcomes from the first trial year in RIIO-2, we considered that there was a strong case for it to continue in RIIO-2 as it gives the ESO an additional means to operate the transmission system efficiently. Therefore, we proposed to retain the ODI for the remainder of RIIO-2 but with the some changes to the design of the incentive, that are summarised the the following sections.

Options for calculating the SO:TO incentive reward

2.10 In our review of the SO:TO incentive trial, we also considered if the current reward rate, which is calculated as 10% of the forecast constraint cost savings that an enhanced service is expected to achieve, is value for money for consumers.

2.11 For the first year of the trial, we found that the ESO's forecasts tended to over-estimate the constraint cost savings compared to the outturn estimate. We noted that if the difference is caused by a systematic upward bias in forecasts, then the SO:TO incentive rewards for the ETOs will continue to exceed the 10% sharing factor that was envisaged when the SO:TO incentive was introduced.

2.12 We also considered whether the 10% sharing factor was appropriate or if there was a case for increasing or decreasing the rate. We proposed that there isn't a case for increasing the rate because it could make the SO:TO incentive too highly powered relative to the other ODIs in the RIIO-2 price control, which might lead to unintended consequences, for example, a reduction in network reliability.

2.13 Conversely, we looked at the whether we should reduce the rate of reward, as this would mean that consumers would benefit from a larger proportion of the constraint cost savings. However, we thought that there was a risk, given the relative newness of the SO:TO incentive, that it might subdue the ETOs' innovation into new enhanced services and curtail the size of potential constraint cost savings for consumers. We proposed, on balance, that it was not appropriate to reduce the rate of reward at this time and that the 10% rate of reward remains good value for consumers - ie for every £1 reward paid to ETOs, consumers will benefit from a £9 reduction in transmission constraint costs.

2.14 We highlighted that one issue of calulating the reward solely on the forecast constraint cost saving is that the ETOs are fully insulated from differences between the forecast and outturn constraint cost savings. We considered that consumers could benefit more if the ODI rewards are linked to the outturn constraint cost saving as this would align the ETOs' and consumers' interests in the outcome of the delivered enhanced service and reduce the risk of a forecast error affecting how the outturn constraint saving is shared between an ETO and consumers.

2.15 In the consultation, we outlined two options for setting the SO:TO incentive reward in years 3 to 5 of the RIIO-2 price control (see section 4 of the consultation for more detail). These were:

- Do nothing and retain the status quo, which would give certainty to the ETOs about the reward it will receive for an enhanced service it delivers for the ESO. However, we noted that consumers hold all the risk that the forecast constraint cost savings are not realised.
- Link the reward to the outturn constraint cost savings by using the latter in the calculation. Under this option, the outturn constraint cost could be the sole factor in the reward calculation or it could be combined with the forecast constraint costs (a blended calculation). The benefit of linking the reward to the outturn constraint cost saving (in whole or part) is that it would remove/reduce the impact of a forecast error on the share of realised cost savings that go to consumers and ETOs. It would also align consumers' and the ETOs' interests in the outcome. However, there is a risk that replacing forecast constraint costs outright with the outturn might adversely impact the ETOs engagement in the STCP11-4 process given they would be fully exposed to forecast risk.

2.16 In the consultation, we said our preferred option is to move to a blended reward calculation from year 3 of RIIO-2. We considered this would improve the SO:TO incentive by giving the ETOs a stake in the outturn and protecting consumers from ETOs being rewarded disproportionately relative to the outturn constraint cost saving.

2.17 We proposed a blended calculation with 95:5 weighting on the outturn constraint cost saving and the forecast constraint cost saving. We considered a blended calculation would consolidate the 90:10 sharing factor on constraint cost savings for consumers and at the same time mitigate the exposure to unfunded costs held by ETOs if the outturn is lower than the forecast.

Options for the annual financial cap

2.18 An annual financial cap on the SO:TO incentive reward was put in place to mitigate the risk of unintended consequences during the trial period. In our assessment of the SO:TO incentive, we highlighted that NGET had achieved the maximum reward available under its financial cap in 2021/22. We also noted that NGET had delivered enhanced services in the first five months of 2022/23 that were forecast to save over £86 million in constraint costs, exceeding the annual financial cap set for NGET in the trial. NGET requested that we remove the financial cap for 2022/23 (as well as in years 3 to 5 of RIIO-2), so that it is incentivised to support the ESO to reduce costs for the benefit of consumers.

2.19 In the consultation, we said that the annual financial cap on the SO:TO incentive rewards could unduly limit the potential consumer benefits in future, and that it was not desirable to limit ETOs' efforts to support the ESO in managing transmission system costs.

2.20 In the consultation, we discussed four options for the annual financial cap. These were:

- Do nothing and retain to retain the ODI reward annual financial cap so that the maximum annual reward is: £1.2m for SHET; £2.5m for SPT; and £5.0m for NGET (2018/19 prices). However, we noted that in the trial the annual financial cap is low relative to the potential constraint cost savings that the ETOs' enhanced services could deliver. Therefore, we consider retaining the existing level of the annual financial cap going forward would unduly limit constraint costs savings that can be achieved through the SO:TO incentive and would not be in consumers' interests.

- Increasing the annual financial cap to a larger maximum for years 3 to 5 in of RIIO-2. Setting a new annual financial cap is challenging because constraint costs are expected to rise significantly and are affected by other factors, which can be volatile, such as the wholesale gas price. Therefore, we think there is a high degree of uncertainty about the level of the financial cap that would be appropriate. If it is set too low, it would restrict the benefits of the

SO:TO incentive for consumers. If set at a much higher level, it would have limited practical significance in terms of mitigating the risk of unintended consequences and inefficient behaviours. Moreover, as we didn't find any evidence that such issues have arisen, there is a question about whether an annual financial cap is relevant for the SO:TO incentive.

- Remove the annual financial cap in years 3 to 5 of RIIO-2. Given the outlook for higher transmission constraint costs, the advantage of this option is that it incentivises the ETOs strive to unlock the maximum consumer value by delivering enhanced services to help the ESO reduce operating costs of the transmission network in future. Consumers will be protected, even with the removal of the annual financial cap, as SO:TO incentive rewards will also be linked to the outturn constraint cost saving. Furthermore, the rewards achieved by the ETOs will be associated with a consumer benefit of nine times the value of that reward given the 10% sharing factor.
- Remove the financial cap in years 2 to 5 of RIIO-2. This option differs from the previous option in that it would involve a retrospective removal of the financial cap in year 2 of the SO:TO incentive trial. This means that the ETOs, such as NGET, that delivered enhanced services in the 2022/23 that were forecast to achieve constraint cost savings in excess of their annual financial cap, would receive a high annual reward. However, as this would be a retrospective change, it would not achieve any additional consumer benefit to what has already been achieved in the 2022/23 year.

2.21 In the consultation, we said our preferred option is to remove the annual financial cap in future years 3 to 5 of RIIO-2. Option 3 will drive the ETOs to proactively identify enhanced services and deliver additional consumer benefits in future. In our view Option 3 best achieves our Primary Objective to protect the interests of existing and future consumers.

Consultation responses

2.22 We received six non-confidential responses to the consultation, which can be viewed on our website.

2.23 A summary of the main points raised by stakeholders in response to the six consultation questions, and some other additional issues follow.

Q1: Do you agree that the SO:TO Optimisation ODI has delivered positively for consumers in year 1 of the trial?

2.24 All responses agreed that the SO:TO incentive had delivered positively for consumers.

2.25 Centrica said that one year's data might not be enough to conclude that the SO:TO incentive is not having a negative impact on the delivery of other outputs.

Q2: Do you agree that it is in consumers' best interests for the SO:TO Optimisation ODI to continue to operate for the remainder of RIIO-2?

2.26 All respondents agreed with the proposal to retain the SO:TO incentive for the remainder of RIIO-2 on the basis that it will help reduce transmission constraint costs and deliver significant benefit for consumers.

Q3: Do you agree with our assessment that there are some aspects of the ODI that could be improved to increase the benefits for existing and future consumers?

2.27 All respondents agreed in principle with taking the opportunity at this time to amend aspects of the SO:TO incentive to increase the benefits for existing and future consumers.

2.28 Centrica suggested that the efficiency of the enhanced services delivered by the TOs should be subject to regulatory cost assessment. They also wanted the ESO and the ETOs to publish their annual SO:TO incentive performance reports so that wider stakeholders could independently verify the consumer benefits/value that has been delivered.

2.29 The ESO said that that forecasting constraint costs is complex (ie prone to error because of many moving parts). The ESO considers that weighting the reward towards outturn constraint savings estimate rather than forecast would provide a closer link between the actual constraint cost savings realised and the incentive return for ETOs. The ESO also considers that a review of the annual financial cap will help ensure that the benefits realised in year 1 and year 2 can continue to be realised and increased further in the remaining period.

2.30 NGET said that two important changes are:

- Removal of the financial cap to allow consumers to benefit more fully, but not just for future years but also for year 2 of the trial period.

- Simplifying the regulatory governance and reporting requirements. They asked that the SO:TO Governance document is updated with a simplified reporting process, aligned with the existing annual Regulatory Reporting Pack (RRP) process, to reduce the administrative bruder on ETOs.

2.31 SHET said that there should be open access to information the ESO has on constraints eligible for delivery under scheme STCP 11-4. SHET say that the ETOs currently receive limited information and that it is likely limiting the potential of scheme.

2.32 SHET and SPT, similar to NGET, asked about what reporting requirements would be necessary in years 3 to 5 of RIIO-2. They are also both in favour of moving annual reporting on the SO:TO incentive to the annual RRP process.

Q4: Do you agree with our preferred option to use both the forecast and outturn constraint cost savings in the ODI reward calculation from year 3 of RIIO-2?

2.33 Two respondents agreed outright with our preferred option to calculate the SO:TO incentive reward using both the forecast and outturn constraint costs.

2.34 Two other respondents agreed with qualifiers. Transmission Investment (TI) agreed as long as a capping mechanism was retained so to avoid windfall gains (ie when the outturn constraint cost savings are higher than the forecast). SPT agree with applying a proportion of outturn constraint cost savings to ensure that ETO are not overly rewarded for solutions that are not ultimately required or delivered. But they consider a blended approach strongly in favour of the outturn constraint cost saving may cause unintended consequences (which they covered in more detail in response to question 5).

2.35 SHET stated they understand the rationale behind moving to a blended approach. However, they have concerns that the outturn constraint cost saving is vulnerable to external factors, which the ETO does not have control over ie whether the wind is blowing or not. They are in favour of a larger portion of the reward calculation based on the forecast constraint cost saving as these made on the basis of the best information available when the ETOs agree to deliver enhanced services.

2.36 NGET did not agree with our preferred option for the following reasons:

- The forecast constraint cost savings is the most appropriate approach to calculating the reward as it is the value that can be used by NGET to decide the amount of ‘effort’ to expend and level of risk to take on the system. With less certain information about the reward based on the outturn constraint cost saving estimate, NGET would find it difficult to assess these factors.

- The calculation of the constraint cost savings after the delivery of the enhanced service is still a forecast – ie the outturn constraint cost saving provided by the ESO is a calculated estimate, and not an actual cost, based on several assumptions made by the ESO. NGET consider that the reward for delivering enhanced services should not be affected by the input assumptions underlying the ESO's process for estimating outturn constraint costs that ETOs have no visibility of or influence over.
- The market information used by the ESO in estimating the outturn constraint cost saving will itself be influenced by the enhanced service that is incentivised by the ODI. Essentially, the provision of the enhanced service has an impact on the market, resulting in the service being under-valued in the ex-post assessment.
- NGET notes that some enhanced services, ie outage flexibility, is highly weather dependent. As a result the accuracy of the forecast is largely down to the accuracy of the weather forecast available days, if not potentially weeks ahead.
- Lastly, NGET say that if there are concerns about the difference between the forecast and outturn constraint cost savings, it would be better addressed by improving the ESO assessment methodology to ensure a robust forecast mechanism.

Q5: Do you agree with our preferred option to use a 95% weighting on the outturn constraint cost saving in the ODI reward calculation from year 3 of RIIO-2?

2.37 Only five respondents provided an answer to this question. All three ETOs did not agree with our preferred option to use a 95% weighting on the outturn constraint cost saving in the reward calculation. Broadly, they all considered that the proposed weighting introduces too much uncertainty on the level of the reward that will be received. They say this will have unintended consequences. First, it might discourage ETOs from proposing enhanced services because of difficulties in working out if it is worthwhile expending time and effort, sometimes at the expense of other projects. Second, ETOs will focus on opportunities where it is more likely that the ESO will use/need the enhanced services (ie non-weather related constraints) which could mean that consumers miss out on some potentially highly beneficial enhanced services.

2.38 Both SPT and SHET said that a reward calculation comprising a 50:50 forecast and outturn constraint costs savings with a 90:10 sharing factor is probably sufficient to provide adequate incentive/enough certainty to the ETOs on the reward, thereby avoiding the unintended consequences outlined in the preceding paragraph.

2.39 The ESO agrees that a greater weighting on outturn constraint costs would provide better protection for consumers by ensuring that the incentive reward directly aligns with outturn savings. The ESO highlighted that the weighting ratio needs to balance the interests of consumers with a provision of certainty for the ETOs to ensure that the consumer benefits realised over the two-year trial of the SO:TO incentive can continue to be accessed and increased in the years 3 to 5 of RIIO-T2.

2.40 TI said that the proportion of forecast constraint savings sets the 'floor' reward, to avoid the ETO incurring unfunded costs. TI consider this is a generous provision, relative to the ETO's incurred costs, but it will be reasonable trade off if the cap on returns is retained.

Q6: Do you agree with our preferred option to remove the annual financial cap on the ODI reward from year 3 of RIIO-2?

2.41 Centrica did not agree with removing the annual financial cap. Instead, they recommend that the SO:TO incentive should aim to reduce the distortive effect of wholesale electricity prices on the value of constraint costs (and the potential savings and rewards achieved by the ETO).[6] To reduce the impact of high wholesale energy costs, Centrica suggests that constraint costs savings in a relevant year are scaled according to the relationship between a measure of average wholesale electricity prices in 2018-19 and that in the relevant year.

2.42 Centrica also has concerns that a risk of the unintended consequences remains if the SO:TO incenvtive is too highly powered relative to rewards that the ETOs can achieve from other ODIs in the RIIO-T2 price control.

[6] The sharp rise in wholesale energy prices in autumn 2021 have contributed to a big increase in constraint costs through the replacement energy component.

2.43 TI did not agree with removing the annual financial cap because of the risk of windfall gains if the outturn is higher than the forecast constraint costs savings. TI also noted that in the current environment, where oil and gas companies are criticised for earning excessive profits from high market prices, allowing an unlimited reward is at odds with public sentiment.

2.44 TI suggested retaining a capping mechanism using a cap and floor style approach. To avoid limiting the incentive, TI suggested updating and setting the cap as a proportion of the sum of forecast constraint costs savings across all the accepted enhancements.

2.45 The ESO said that the annual financial cap should be set in a way that balances the interests of consumers with a level of certainty for ETOs. Removing cap would not limit opportunities for ETOs to deliver cost saving enhanced services.

2.46 NGET supports removing the annual financial cap for the remaining years of the RIIO-T2 price control period because this will encourage ETOs to consider broader and more innovative solutions to help the ESO reduce the cost of operating the transmission network in future.

2.47 However, NGET disagreed with the fact that our minded-to position did not also remove the incentive cap for year 2 (Option 4 in the consultation). They note that in autumn 2022 they advised Ofgem that were on track to deliver enhanced services forecast to save over £86 million in constraint costs in year 2 of the trial. They highlight that following correspondence with Ofgem on this issue, they believed that the incentive cap would be removed in year 2, and that they undertook extra risk and effort to deliver additional consumer benefits. They consider that Ofgem should remove the financial cap in year 2 and duly reward NGET for additional consumer benefits delivered in 'good faith', when it was most valuable to consumers. NGET say they understand that Ofgem is generally reluctant to change the parameters of a live incentive, except under exceptional circumstances. They argue that the situation in Europe presented exceptional circumstances that could not be foreseen at the time of calibration of the annual financial cap and therefore warrants a change, also noting that the cap was based on 2018/19 data, reasonable at the time, but largely irrelevant given the global situation in 2022/23.

2.48 Both SHET and SPT agree with removing the financial cap for years 3 to 5 of RIIO-2 as this will allow the SO:TO incentive to deliver even more consumer benefits. They also support removing the cap for year 2 of the trial. In particular, SPT notes that enhanced services have been developed and delivered under year

2 of the trial that exceed the initial cap on incentive rewards in order to maximise consumer benefit. SPT believe it is fair that this benefit should be shared between consumers and the TOs, aligned with the principles of the RIIO framework, but under the strongly consumer-weighted 90:10 sharing factor.

Additional issues raised

2.49 TI said that Ofgem should apply the SO:TO incentive policy consistently across all service capability enhancements, including those that the Offshore Transmission Owners (OFTOs) might be able to deliver. TI noted that OFTO do not have the same opportunity as the ETOs to share in the consumer benefits of avoided constraint costs.

2.50 The ESO highlighted that for an enhanced service crossing multiple years, consideration should be given to the SO:TO incentive reward in subsequent years for the provision of the same service to ensure the return is proportional to the ongoing cost or risk of the service in those years.

3. Our decision and views on stakeholders' responses

SO:TO incentive trial and retaining the SO:TO incentive in RIIO-2

3.1 We welcome respondents' consensus view that the SO:TO incentive trial in year 1 had delivered positively for consumers. We also welcome the broad agreement that retaining the SO:TO incentive in RIIO-2 is appropriate as it will help to reduce future constraint costs and benefit consumers.

3.2 We acknowledge Centrica's point that the trial review in the consultation was based only on information from year 1. We have now reviewed the ESO's and the ETOs' reports on the SO:TO incentive for the end of year 2.[7] The latest reports show that the TOs delivered 38 enhanced services for the ESO under STCP 11-4 in 2022/23 that were forecast to reduce constraint costs by £287.5 million. The following table summarises the key results of the enhanced services delivered by each ETO in 2022/23.

Table 1 SO:TO Optimisation ODI results for 2022/23 (year 2 of the trial)[8]

ETO	Number of enhanced schemes	Forecast constraint cost saving	Outturn constraint cost saving	Delivery costs	Incentive rewards	Net consumer benefit
NGET	34	£176.7m	£113.2m	£0.77m	£5.8m	£106.7m
SPT	2	£20.8m	£3.0m	£0.15m	£2.4m	£0.4m
SHET	2	£90.0m	£162.4m	£0.11m	£1.4m	£160.9m
Total	**38**	**£287.5m**	**£278.6m**	**£1.03m**	**£8.5m**	**£268.0m**

All £ values are in 2022/23 prices

3.3 We consider that the year 2 trial results show that the ESO has been able to access options that have previously not been available and this has resulted in significant constraint cost savings.

3.4 For the 2-year trial as a whole, the outturn constraint cost saving from the enhanced services delivered by the ETOs was circa £320 million. The net

[7] These are available on the respective licencees websites:
Our business plan- National Grid Electricity Transmission
What happens when there's a request for an outage? | ESO (nationalgrideso.com)
Our RIIO-T2 Business Plan - SP Energy Networks
Transmission Price Control Review - SSEN Transmission (ssen-transmission.co.uk)
[8] The results in Table 1 are based on the information provided by the ESO.

consumer benefit, which is calculated as the outturn constraint cost saving less the ETOs' delivery costs and ODI rewards, was circa £304 million.

3.5 We also consider that the results from the trial overall make a compelling case that the SO:TO incentive is delivering significant benefits for consumers and that it should be retained for the remainder of RIIO-2.

3.6 Having considered consultation responses we have decided to retain the SO:TO incentive for the remainder of RIIO-2.

Improving other aspects of the SO:TO incentive

3.7 Most respondents have views on improving some aspects of the SO:TO incentive. In this section, we cover the suggestions made by respondents that are additional to the consultation proposals and not in scope of main consultation questions.

Cost assessment of ETOs' costs for enhanced services

3.8 Centrica suggests that Ofgem should assess the cost efficiency of the enhanced services that the ETOs offer to the ESO. We note that a provision for assessing the costs of enhanced services is already in place; if the cost of an enhanced service is more than £1.6 million, it must first be approved by Ofgem before the ESO can accept it.

3.9 We consider a threshold of £1.6 million for undertaking an efficiency assessment is proportionate as it introduces a direct regulatory stage in the STCP 11-4 process only when the potential benefit to consumers is sufficiently material.

Providing information about where STCP 11-4 enhanced services could be needed

3.10 SHET suggests that the ESO should provide more information about future constraints to help the ETOs identify where enhanced services under STCP 11-4 could be beneficial.

3.11 We have raised this with the ESO who advised that it has commitments in its business plan to provide the following in 2023/24:

- A report of high cost outages coming up in the next 3-12 months
- To report every quarter on STCP 11-4 enhanced services with forecast cost saving and outturn saving where applicable, and
- To supply constraint limits for more boundaries than is currently publish.

3.12 The ESO has also committed to giving data on high-cost outages in year ahead and two-year ahead timescales, although this is dependent on the outage information supplied from the ETOs.

3.13 We consider that it is appropriate that the ESO and the ETOs work together under the Network Access Policy process to enhance and improve the STCP 11-4 process, including the availability of relevant information, and the SO:TO incentive.[9]

Future reporting requirements on the SO:TO incentive

3.14 We agree with the ETOs that the existing reporting requirements for the SO:TO incentive, set out the SO:TO Optimisation Governance document, will need to be updated. We are in favour of incorporating information on enhanced service delivery into the annual Regulatory Reporting Pack.[10] We consider this will reduce the administrative burden and allow a review of the SO:TO incentive alongside the other price control ODIs.

3.15 We will work with the licensees to update the SO:TO Optimisation Governance document and the Regulatory Reporting Pack for the annual reporting requirements on the SO:TO incentive.

Using the forecast and outturn constraint cost savings in the incentive reward calculation

3.16 Most respondents have given qualified support for moving to a blended approach for calculating the incentive reward, except for NGET, who disagrees with the proposal outright. In this section, we first consider NGET's objections and then give our views on the points raised by other stakeholders.

NGET's objections

3.17 NGET's main concern is that a blended approach will introduce uncertainty about the level of reward, and that the latter is key factor for the ETOs in deciding how

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[9] The Network Access Policy is designed to facilitate collaboration between National Grid Electricity System Operator (NGESO) and the Transmission Owners in Great Britain to deliver value for consumers in relation to the planning, management and operation of the electricity transmission systems in England, Wales and Scotland. For more information see: transmission-network-access-policy-2023.pdf (ssen-transmission.co.uk)

[10] Each year, transmission and distribution network owners must report to us on their performance against the price control using an agreed data templates and reporting guidelines: https://www.ofgem.gov.uk/publications/direction-modify-regulatory-reporting-pack-version-23-and-regulatory-instructions-and-guidance-version-17-may-2023

much effort to expend and risk to take on the system. However, we consider that the ETOs can tolerate some uncertainty (noting that a blended approach will provide a degree of certainty as well) and still be proactive in coming forward with enhanced solutions. Therefore, we consider that a blended approach has merit for providing the ETOs with some certainty as well as protecting the interests of consumers by providing a strong link between actual savings and ETO incentive reward.

3.18 NGET is also concerned that a blended reward could be affected by external factors it has no control over eg input assumptions to estimating the outturn constraint cost savings, and inaccurate weather forecasts. We consider these arguments are equally relevant from the consumer perspective, and by moving to a blended approach this will mean that consumers do not bear 100% of the exogenous risk either.

3.19 NGET believe that the delivery of an enhanced service also influences the market, and contributes to an under-valuation of the outturn constraint cost saving estimate. However, the ESO advised us that they use typical bid/offer prices rather than actual market information for estimating the forecast and outturn constraint costs savings.

3.20 NGET also said it would be better to address differences between the forecast and outturn constrain cost saving estimates, by improving the ESO assessment methodology to ensure a robust forecast mechanism. We have discussed with the ESO the reasons for the differences and it considers that the majority of the difference between forecast and outturn is due to the weather conditions that occur while the enhancement is operational (high or low wind), changes in the direction of flow on the interconnections and improvements in the constraint limit as the planning team optimise the system close to real time. The ESO will report back to Ofgem later this year after further analysing the differences between forecast and outturn constraint cost savings.

Other points raised by respondents

3.21 TI agrees with the proposal for a blended approach, but only with a mechanism to avoid windfall gains in case the outturn savings are higher than forecast. Over the SO:TO incentive trial, we have found that outturn savings estimates have, more often than not, been less than the forecast. However, we agree in principle with removing the possibility of windfall gains, for example, by ensuring a blended reward for an enhanced service did not exceed 10% of the forecast saving. We consider this is appropriate given that the ETO has taken decisions and delivered the enhanced service and no further inducement is needed.

3.22 We welcome responses from the ESO, SPT and SHET that agree there is a reasonable rationale for moving to a blended approach. We also agree with the three licensees' view that the key issue is getting the balance right between the forecast and outturn saving estimates in the reward calculation so that it does not introduce unintended consequences for the SO:TO incentive. The latter are covered in the next section.

3.23 Having considered consultation responses we have decided to move to a blended approach to calculating the SO:TO incentive reward for the remainder of RIIO-2.

Weightings used in a blended approach to calculating rewards

3.24 As summarised in paragraphs 2.37 to 2.40, respondents have a range of views on the weightings that are put on the forecast and outturn constraint cost saving estimates in the reward calculation.

3.25 We have considered the responses and appreciate that the ETOs need sufficient certainty in future on the minimum reward that will be available to decide on the level of effort and risk to take on the system in delivering the enhanced service. We also think that it is important that the ETOs are not inadvertently encouraged to only focus on delivering enhanced services that have a strong likelihood of being effective, for example, because their impact on constraint costs is not highly weather dependent. Consumers could potentially miss out on significantly beneficial enhancements that are less predictable, because, for example, the amount of constraints avoided when the enhancement is operational will depend on whether it is a high or low wind day.

3.26 After considering the responses to the consultation, we have reconsidered our proposed option of a weighting of 95:5, and that a stronger weighting on the forecast constraint costs savings would reduce the risk that issues discussed in the previous paragraph arise. We have decided that a reward calculation comprising 50:50 weighting on forecast savings and outturn savings with a 90:10 sharing factor in favour of consumers, is the appropriate balance to incentivise the ETOs and protect the interests of consumers. We also intend to include an additional mechanism to guard against unnecessary windfall gains as discussed in paragraph 3.21.

Removal of the annual financial cap on the SO:TO incentive reward

3.27 Respondents also have a range of views on the consultation proposal to remove the annual financial cap from year 3 of RIIO-2. We discuss these below and then discuss the ETOs responses on removing the annual cap in year 2 of the trial.

3.28 We consider that the alternative put forward by Centrica to adjust estimates of constraint cost savings (that are used in the reward calculation) for the impact of higher wholesale gas and electricity prices is unnecessary. As explained in the consultation, the SO:TO incentive is related to the economic value of the outcome in order to deliver those benefits for consumers. At times when the constraint costs are increasing, it is important that the incentive the ETOs face is also aligned so that they are focused on developing new enhanced services to help the ESO to reduce the higher constraint costs for the benefit of consumers.

3.29 There are factors that help to ensure the SO:TO incentive is not too highly powered, even during period of high constraint costs. First, the ETOs have other price control incentives such as the network reliability incentive, Energy Not Supplied (ENS). Under the ENS, the ETOs can earn both rewards, as well as significant penalties of up to 1.5 per cent of annual base revenue in the event of a significant loss of supply. Consequently, any enhanced service delivery that could potentially trigger a loss of supply event has to stack up against the potential financial loss as well as the reputational impact should anything go wrong during the provision of the enhanced service.

3.30 We think that TI's suggestion of a cap and floor style approach and setting the annual financial cap not at a specific value but as a proportion of the sum of the forecast constraint cost savings across all the accepted enhancements is equivalent to the consultation proposal. We agree that this proportional approach ensures that the ETOs would not be unduly limited from delivering cost saving enhanced services.

3.31 We strongly disagree with TI's submission that allowing the ETOs to earn incentive rewards for all the enhanced services it delivers is similar to oil/gas producers windfall profits at times of high energy prices. Their submission does not consider that consumers get the majority of benefit from the delivery of enhanced services by avoiding significant constraint costs through the 90:10 sharing factor.

3.32 We welcome the ESO, and all three ETOs support for removing the financial cap on SO:TO incentive rewards for year 3 to 5 of RIIO-2 in order to encourage ETOs to consider broader and more innovative solutions to help reduce the ESO's cost of operating the transmission network in future.

Removal of the financial cap in year 2 of the trial

3.33 All three ETOs also support option 4 in the consultation that looked at whether the financial cap should be removed from year 2 of the trial. As summarised in the consultation recap at the start of this chapter (see paragraph 2.20), we included option 4 in the consultation following NGET's request but considered it was not in consumers' interests. This is because this change would be retrospectively applied (as the 2022/23 year is complete) and would therefore not achieve any additional consumer benefit to what has already been achieved during that year. It would also result in the ETOs that had delivered enhanced services with forecast constraint cost savings in excess of their annual financial cap, receiving a higher annual reward.

3.34 We remain of the view that the removal of the cap in year 2 is not in consumers' interests as it cannot affect outcomes in year 2 as that year has now ended. Removing the cap retrospectively would only result in a windfall return to the ETOs, who all delivered enhanced services with forecast constraint cost savings in excess of their annual financial cap in year 2 of the trial.

3.35 We requested NGET to continue to proactively offer enhanced solutions in 2022 to reduce constraint costs because it was clearly in the interests of consumers and in line with our primary duty at a time when household finances were under intense pressure due to cost of living crisis.

3.36 However, we consider that our request for NGET "to do the right thing" does not give rise to an expectation that we would remove the annual financial cap in year 2 because our representations were made with explicit reference to the fact that before any changes to the annual financial cap can be made, we must consult on the options, and we also did not suggest at the time of our request that the consultation will look to make changes with retrospective effect.

3.37 Furthermore, as the parameters of the SO:TO incentive trial are set out in the Electricity Transmission RIIO-2 Final Determinations and implemented under the special licence condition 4.7 of the electricity transmission licence, we consider that NGET is clearly aware of the regulatory procedure involved in amending the licence conditions, including the need to consult and consider any responses before modifying the licence.[11]

3.38 Having considered all consultation responses on removing the annual financial cap in the SO:TO incentive, we have decided to proceed with our preferred option of removing the annual financial cap for years 3 to 5 in RIIO-2.

Additional issues

3.39 On TI's suggestion (see paragraph 2.49) that Ofgem should apply the SO:TO incentive across all capability enhancements, including those that OFTOs could deliver, we highlight that a related issue is currently the subject of a STC code modification process, CM085.[12]

3.40 We recently published a letter asking the Code Panel to further look at the concerns raised by OFTOs regarding the regular utilisation of their equipment for providing voltage management services to the ESO.[13] We are awaiting the revised Final Modification Report from the Code Panel before taking a decision (either to approve or reject).

3.41 Lastly, we turn to the ESO's suggestion to consider what reward is given to an ETO for an enhanced service that was delivered and initially utilised in a given year, that is used again in subsequent years to reduce constraint costs. We call these "off-the-shelf enhancements" for the purpose of the following discussion.

3.42 Generally, we expect that the delivery of an off-the-shelf enhancement in subsequent years will not include any new innovation, and will involve minimal development work by the ETOs.

3.43 Nonetheless, we acknowledge that not all off-the-shelf enhancements are the same. There is likely a category for which an ETO might not incur any additional costs or risks in subsequent years (having installed specialised equipment in the initial delivery year with the costs paid by the ESO). There is also another category of off-the-shelf enhancements that require infrastructure to be operated outside of extant technical guidelines which could affect maintenance/asset life and/or introduce additional risks when utilised in subsequent years. But even for

[11] The SO:TO Optimisation ODI is specified in Special Condition 4.7 of the Electricity Transmission Licence. A copy of the licence is available on: https://epr.ofgem.gov.uk/
[12] CM085: To clarify OFTO reactive power requirements at (nationalgrideso.com)
[13] Authority decision to send back the Final Modification Report for System Operator ("SO") – Transmission Owner ("TO") Code ("STC") CM085 – To clarify OFTO reactive power requirements at <20% output (nationalgrideso.com)

this latter category, their initial and subsequent use provides valuable information about performance of the service on the live network that could help to reduce risks and even lead to technical guidelines being revised.

3.44 We think these considerations raise interesting questions that are important for increasing the benefits of the SO:TO incentive for consumers in future. These include:

- should an ETO be rewarded for an off-the-shelf enhancement in subsequent years under the SO:TO incentive in the same manner as when the enhanced service was initially developed and delivered?
- would it be more appropriate for the ESO to procure an off-the-shelf enhancement and directly remunerate the ETO for the cost and/or risk (and a reasonable margin) of delivering the service?
- when should an off-the-shelf enhancement become a business-as-usual transmission capability that the ESO has access to and can instruct operation?

3.45 To help answer these questions, further thinking is needed on how new enhanced services move into business as usual, whether this is a staged transition over a price control and what changes to industry policies, codes and technical guidelines might be needed to underpin the evolution.

3.46 We do not have a preferred option at this time but we are interested in stakeholders' views and are keen to work with interested stakeholders to look at how off-the-shelf enhancements are treated in future.

3.47 If we decide to make changes on this issue in future, we expect to be able to implement these through amending the SO:TO Governance Document, which would first involve consultation on a proposed version of the document before it is being finalised and comes into affect.

Next steps

3.48 To implement our decisions on the SO:TO incentive set out in this document we will have to modify special condition 4.7 of the electricity transmission licence. We are consulting informally on the draft changes which are set out in appendix 1 of this document. The closing date for responding to the consultation on the draft licence modification is 26 July 2023.

3.49 We will also consult in later this year on modifications to the SO:TO Optimisation Governance document for the decisions set out in this document.

3.50 We are also interested in stakeholders' views on how enhanced services that are delivered over RIIO-2 might transition to business as usual transmission capabilities in future. Please email anna.kulhavy@ofgem.gov.uk to contribute a point of view on this issue.

Appendices

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Appendix 1 – Draft licence modification text

Special Condition 4.7 SO-TO optimisation output delivery incentive ($SOTO_t$)

Introduction

1.1.1 The purpose of this condition is to calculate the term $SOTO_t$ (the SO-TO optimisation output delivery incentive term). This contributes to the calculation of the term ODI_t (the output delivery incentives term), which in turn feeds into Calculated Revenue in Special Condition 2.1 (Revenue restriction).

1.1.2 The effect of this incentive is to reward the licensee where it has delivered SO-TO Optimisation Solutions under the STCP11.4 Enhanced Service Provision.

Part A: Formula for calculating the SO-TO optimisation output delivery incentive term ($SOTO_t$)

1.1.3 For Regulatory Years commencing on 1 April ~~2021~~ 2023, 1 April 2024 and 1 April ~~2022~~2025[14], the value of the term $SOTO_t$ is derived in accordance with the following formula[15]:

$$SOTO_t = \min\left(SOTOSFt.\mathbf{0.5}.(SOTOSt + \boldsymbol{SOTOOt}), \boldsymbol{SOTOSFt}.SOTO\boldsymbol{S}\cancel{CAP}t\right)$$

where:

$SOTOSF_t$	means the SO-TO optimisation sharing factor which has the value of 0.1;
$SOTOS_t$	means the total constraint savings forecasted by NGESO for the solutions delivered by the licensee in accordance with the SO-TO Optimisation Governance Document; and
$SOTOO_t$	means the total outturn constraint savings estimated by NGESO after the solutions delivered by the licensee in accordance with the SO-TO Optimisation Governance Document.[16]
~~$SOTOCAP_t$~~	~~means the cap of rewards for the SO-TO optimisation output delivery incentive and has the value of £5m.~~[17]

[14] The strikethrough and double underlined amendments in paragraph 1.1.3 makes the incentive formula apply for the final three years of RIIO-2.

[15] The bold amendments in the formula introduce i) the blended constraint cost saving with an equal weighting on the forecast and outturn constraint cost savings estimates, and ii) a mechanism to ensure there can be no windfall gain in the event that the outturn saving exceeds the forecast constraint cost saving. The min formula means that the reward will always be the minimum of the two calculated numbers.

[16] The double underlined amendment defines the outturn constraint cost savings variable introduced and used in the formula.

[17] The strikethrough amendment removes the financial cap based on a specific value because it is no longer needed.

~~1.1.4 For Regulatory Years commencing on or after 1 April 2023, the value of the $SOTO_t$ term will be zero, unless the Authority directs that the value is to continue being derived in accordance with the formula in paragraph 4.7.3.~~[18]

Part B: SO-TO Optimisation Governance Document

~~1.1.5~~1.1.4 The licensee must comply with the SO-TO Optimisation Governance Document.

~~1.1.6~~1.1.5 The Authority will issue and amend the SO-TO Optimisation Governance Document by direction.

~~1.1.7~~1.1.6 The Authority will publish the SO-TO Optimisation Governance Document on the Authority's Website.

~~1.1.8~~1.1.7 The SO-TO Optimisation Governance Document will make provision about the governance and administration of the SO-TO Optimisation output delivery incentive, including:

(a) the definition of 'SOTO Optimisation Solutions'; and

(b) the reporting obligations in respect of the SO-TO optimisation output delivery incentive.

~~1.1.9~~1.1.8 Before issuing the SO-TO Optimisation Governance Document the Authority will publish on the Authority's Website:

(a) the text of the proposed SO-TO Optimisation Governance Document;

(b) the date on which the Authority intends the SO-TO Optimisation Governance Document to come into effect;

(c) a period during which representations may be made on the content of the SO-TO Optimisation Governance Document, which will not be less than 28 days.

~~1.1.10~~1.1.9 Before amending the SO-TO Optimisation Governance Document, the Authority will publish on the Authority's Website:

(a) the text of the amended SO-TO Optimisation Governance Document;

(b) the date on which the Authority intends the amended SO-TO Optimisation Governance Document to come into effect;

(c) the reasons for the amendments to the SO-TO Optimisation Governance Document; and

(d) a period during which representations may be made on the amendments to the SO-TO Optimisation Governance Document, which will not be less than 28 days.

~~**Part C: SO-TO Optimisation Report**~~

[18] The strikethrough amendment of paragraph 1.1.4 removes the text as it is no longer needed because we have decided to retain the ODI for the remainder of RIIO-2.

~~1.1.11 The licensee must prepare a SO-TO Optimisation Report in accordance with the SO-TO Optimisation Governance Document.~~ [19]

[19] The strikethrough amendment to all of Part C removes the text because we have decided that in future, the ETOs will report on the SO:TO incentive through the annual regulatory reporting process.