Incentivising efficient expenditure
Questions regarding totex, IRIS and innovation
For use by external stakeholders

This document provides questions to guide feedback on our 7 November 2022 workshop *"Forecasting and incentivising efficient expenditure for EDBs"*. These questions focus on totex, IRIS, and innovation and are intended to inform our review of the Part 4 input methodologies (IM Review).

Along with these questions we have published:

1. a model that demonstrates the broad financial equivalence of the treatment of opex and capex in the respective IRIS incentive mechanisms; and
2. a brief companion staff paper.

The workshop slides and staff working paper (*Electricity distributors' expenditure incentives under the current Part 4 approach and under a totex approach*) we published before the workshop are available here along with the recording of the workshop.

It would be useful if you could take these into account when answering the questions that follow.

Completed forms should be sent to im.review@comcom.govt.nz, with 'INCENTIVES SUBMISSION – [your submitter name]' in the subject line of the email. Please provide us with your feedback by 5pm Tuesday 6 December 2022.

If you have supporting documents that you consider would improve our understanding of the issues, please attach them with your response and reference them in your feedback below.

All completed forms and supporting documents provided to us in this context will form part of the record for the IM Review. We intend to publish completed forms and supporting documents provided to us to enable other stakeholders to engage with them throughout the IM Review. Any request that we not publish content in a completed form or supporting document provided to us must be clear and explicit with reasons supporting why that content is confidential or commercially sensitive. We will consider any such requests on their merits.

A. Questions relating to the problem of capex bias

In paragraph 12 of our staff working paper,[1] we define 'capex bias' as arising where the regulatory approach to setting price-quality paths financially incentivises investment in assets (capex) over alternatives such as demand response (opex), where those alternatives are more efficient. We do not use the term 'capex bias' to refer to situations where favouring a traditional network solution over a non-network alternative results in greater net benefits to consumers.

Scott Scrimgeour

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Please contact Scott Scrimgeour for further clarification or if you have any further questions.

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A1. Do you consider that we have accurately described the general problem of capex bias? If not, please provide further description.

Answer: No – while the general problem of capex bias has been accurately described, the real issue only a narrower aspect of capex bias:

- Networks do not have the ability to substitute opex for capex – an important capability networks will need as they develop alterative non-wire solutions.
- Alternatively, networks do not have opex allowances to purchase non-wire solutions (avoiding the need to substitute opex for capex).

The wider issue of capex bias captures issues which we believe are secondary or aren't an issue.

A2. Do you consider we have accurately described the potential issue with regulatory financial incentives resulting in or reinforcing capex bias? If not, please provide further description.

Answer:

Capex bias caused by opex/capex substitution being limited to within a regulatory period

An important additional issue discussed in the workshop (but not covered in the workshop presentation) was the bias caused by limiting IRIS opex/capex substitution

[1] https://comcom.govt.nz/__data/assets/pdf_file/0025/296233/Staff-paper-for-Workshop-Forecasting-and-incentivising-efficient-expenditure-for-EDBs-1-November-2022.pdf

to a single regulatory period – i.e. the regulatory model (specifically the IRIS) does not allow offsetting opex/capex expenditure substitution across regulatory periods.

From our Process and Issues Paper submission (page 14): … the IRIS does not allow a network to be rewarded for capex cost savings that may occur in future regulatory periods. While the IRIS is designed to make investment decisions agnostic about whether expenditure was made using opex or capex, the offsetting incentives and penalties only apply within the same regulatory period. For example, an EDB purchases flexibility services using operating expenditure (a cost that the current allowance calculation does not provide), which delays the need to make a capital investment for five years. The capital investment was planned in the next regulatory period – flexibility services will be purchased well before an investment is needed to provide EDBs time to plan and build the new capacity before its needed. The IRIS will penalise the EDB for overspending their opex allowance but will not be rewarded for delaying capex expenditure because the capex forecast for future regulatory periods will include the expected impact of the flexibility service (the expenditure forecasts provided in asset management plans must be based on management's best forecast of future demand, capacity and investment requirements).

This will bias traditional capex wire solutions over non-wire solutions funded by opex.

Capex bias caused by backwards looking opex forecast

Closely related to the capex bias identified as '*Asymmetry in regulatory expenditure scrutiny and incentives'* is the capex bias caused by the strict criteria applied to a step change in opex costs. The backwards looking model for forecasting opex costs and the strict criteria for approving allowances for new opex costs, means that networks often do not have the allowances to consider opex alternatives to capex. Combined with the previous issues (inability to substitute opex/capex across regulatory periods), networks will favor capex solutions because they are more likely to have the allowances to purchase those services and they can avoid IRIS penalties.

A3. If relevant, we would welcome examples of capex bias from your business. Please explain the source(s) of the capex bias.

Answer: Examples include:

As highlighted in the workshop documents, the key example is the development and purchase of flexibility services. While these services are in the early stages of their development and there are few actual examples of capex bias impacting investment decisions, they will be essential for delivering New Zealand's Emissions Reduction Plan and will soon be an important tool for networks to meet the related demand increase.

Our focus on developing flexibility services is currently on services that can be provided by a tariff price signal, and not on flexibility services that need opex or innovation allowances to purchase – for the reasons provided in question A2.

Unless we are provided with additional opex allowances in the future or the IRIS is changes to allow capex/opex substitution across regulatory periods, we will not consider purchasing flexibility services as a wire alternative.

As highlighted in case study 2 of our submission to the Process and Issues Paper submission, our early modeling shows that flexibility services could avoid $200-300m

A4. In your view, do regulatory financial incentives under Part 4 DPP/CPP regulation (RAB-based building blocks approach with WACC uplift, with opex and capex IRIS) contribute to capex bias (if any) in your business?

Answer: Yes, the IRIS does - as outlined in question A2.

We do not believe that the RAB based building blocks approach creates capex bias because the regulatory WACC is approximately in line (if anything actual cost of debt has been slightly higher) with our actual WACC and therefore we aren't incentivised to invest in capex over opex. We expect that the opposite maybe true as network investment requirements increase and networks approach their lending limits. As lending approaches bank covenant limits, debt and a networks ability to spend capex could become limited, and if debt covenants are exceeded, the cost of debt could increase as new lending terms are applied.

A5. How important are regulatory financial considerations to your business when choosing between different solutions? We would welcome specific examples (reflecting information from actual business decisions) that illustrate how regulatory financial considerations have been considered.

Answer: Regulatory financial considerations are very important for Wellington Electricity's investment decision making. We model the availability of allowances and the impact of IRIS, capital contributions etc.

To date, decisions impacted by capex bias are limited to the development of flexibility services – until flexibility services exist in the form and scale to provide a viable alternative to traditional wire solutions, capex bias will not be a significant influence on investment decisions.

A6. To help us understand the overall size of the problem of capex bias, we would appreciate your assessment of *current* opportunities where opex solutions would be more efficient – for example, from your most recent asset management plan. We are also interested in your expectation of how (quantitatively or directionally) the opportunities might change over the *next decade*, for example, due to emerging technologies.

Could you please advise or estimate:

- **the aggregate size of the pool of expenditure (capex and opex) where interchangeable capex and opex solutions are currently available**
- **of that overall pool of expenditure, the total value of opex solutions chosen.**

If you expect this to change in the future, please estimate the future values.

Answer: None of our investment decisions provided in our AMP include a non-wire solution. This is because we don't have allowances to both (1) develop flexibility to the point is can be considered as a via solution, and (2) purchase flexibility services if it was a better alternative. We have not included non-wire solutions because they aren't a viable alternative yet.

We are currently developing trials that will test the ability of flexibility services to defer capex. These trials will help answer the Commission questions about the potential size of the allowances needed. Until we know the ability of flexibility to shift peak demand and the size of scale of participation, we will not be able to provide a meaningful assessment of the size of the expenditure pool needed.

As highlighted in Case Study 2 of our Process and Issues Paper submission, our early modelling indicates that flexibility could save $200-300m from deferring capex expenditure. The exact amount will depend on the customer price point for participating in flexibility services and participation rates.

This also highlights the need for innovation allowances to understand the potential of flexibility and to develop flexibility services.

B. Questions relating to a potential solution to capex bias: totex approach

B1. Should we consider introducing a totex approach for EDBs as a solution to capex bias and/or simplification of financial incentive mechanisms? Should we introduce a totex approach for other regulated services? Please provide your reasons.

Answer: As discussed in the workshop, and specifically highlighted by Richard Shape from Vector, the key issues to address are (rather than the general issue of capex bias):

- Substituting capex and opex across regulatory periods, and/or
- Ensuring networks have allowances to develop new services (innovation allowances) and to purchase services as an alternative to traditional capex assets.

We do not believe the issue of capex bias in general is the material issue. The totex approach outlined in the workshop is a complex solution that is well suited for ensuring there is no capex bias – an issue we do not believe is a problem. We believe refining the IRIS mechanisms and ensuring allowances are available for new costs, is a better approach.

We also believe that introducing this totex approach would add significant complexity into the regulatory environment at a time when networks need to focus on developing their emission reduction related investment programmes.

We think the workshop totex approach is too complex to introduce in the limited timeframe before the IMs are used to set the DPP4 price/quality path. It could be worth looking for a similar totex regime to solve the secondary capex bias issues.

B2. If you consider we should adopt a totex approach, do you agree with the approach described in the staff working paper? If not, please explain why not and what you would change.

Answer: We think the workshop totex approach is too complex to introduce in the limited timeframe before the IMs are used to set the DPP4 price/quality path.

B3. If you consider we should adopt a totex approach, please provide your views on:

- **expected benefits for your business (relative to the current RAB-based building blocks approach with WACC uplift, opex and capex IRIS)**
- **expected implementation costs and timelines for your business**
- **any other considerations**

Answer: n/a

C. Questions relating to current expenditure incentive mechanisms[2]

C1. The model and paper published with these questions are intended to demonstrate the effects of the capex and opex IRIS incentives on investment choices. With this information now available, do you consider that there is broadly financial equivalence between the incentives on opex and capex?

Answer: Our own modelling shows that the IRIS incentives are broadly equivalent between opex and capex for expenditure within a regulatory period. As outlined in our answers to question A2, we do not believe that IRIS incentives are equivalent when there is savings in future periods.

It is also important to note that while the IRIS does allow the substitution of capex and opex, doing so creates cashflow volatility. As outlined in our Process and Issues paper submission, owners of utilities often invest for the stable returns that a regulated infrastructure business provides - there is an expectation of stable year on year dividends and profits. The IRIS mechanism makes it difficult to invest in efficiencies savings because the resulting incentives can create volatile cashflow fluctuations and returns.

- IRIS adjustments often continue for years after allowances were under or overspent. The revenue volatility can cause EDBs to avoid an efficient investment decision because of the impact on financial stability
- Often a long wait to receive the benefits of an investment – for example, a network may have to wait seven years to see Capex IRIS benefits (the time difference between the firsts year of a determination and to when the capex IRIS is calculated).

[2] See "IRIS equivalence staff paper"

- The IRIS adjustments for opex/capex substitutions are years apart - EDBs have to balance the decision to substitute expenditure with whether they can also find ways of offsetting short terms reductions in revenue and return.

The volatility means that while its economic to substitute capex and opex, an EDB may not choose to do so due to the cashflow volatility it introduces.

C2. Some suppliers submitted to us that expenditure allowances are not currently substitutable between capex and opex (i.e., the incentives are not financially neutral).[3] However, with equalised incentive rates, the effect (over the relevant period of the saving or overspend) should make suppliers financially indifferent to substituting between opex and capex solutions.

If you consider capex and opex are not substitutable under the current IRIS settings, please provide some examples from your business demonstrating why you were not financially indifferent in choosing between opex and capex solutions.

Answer: As above – while a network maybe economically neutral, an EDB may still be bias towards not substituting capex/opex because of the cashflow impact and the impact on the ability to provide stable returns, and in an extreme case, remain solvent if an EDB exceeds their lending limits.

The availability of opex (because the incentive rates are not equivalent when there are future savings or opex allowances aren't available under the current framework) is the main reason we are likely to not be indifferent to types of expenditure. As highlighted in our answer the following questions, flexibility services haven't been developed to the point they provide a viable non-wire solution, so we don't have examples of this yet. However, unless opex does become available to purchase flexibility services, we are likely to favor traditional capex solutions.

C3. How important is the fact that IRIS does not capture the impact of savings that extend beyond the IRIS horizon (i.e., the carry-forward term of five years)? Can you provide us with examples of projects where future savings are not included within the IRIS horizon? Could you propose potential solutions to this problem (including through the IRIS mechanisms)?

Answer: This is very important. As highlighted in Case Study 2 and 4 of our Process and Issues Paper submission, the key need for flexibility will be the deferral of capex, rather than avoiding capex spend. This is because:

- Network constraints will come from the high voltage network (11kV and sub transmission networks). Even with flexibility, the peak demand increase on these networks is expected to exceed capacity within the next 20 years. This is

[3] We set a revenue cap for each non-exempt EDB within which they may choose opex and capex as they see fit. We have separate incentive mechanisms for opex and capex, so the EDBs choice affects the incentive amount they receive. If incentive amounts for opex and capex are equivalent, then these EDBs should be financially indifferent between opex and capex.

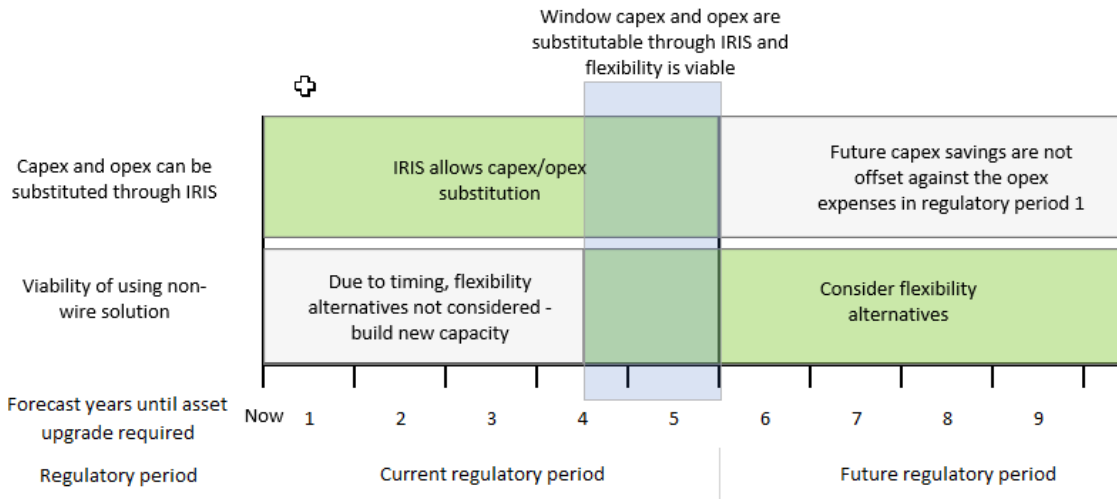
because new demand includes demand that can't be sensibly shifted to off peak periods (like demand from public transport and population growth).

- Majority of decarbonation related expenditure will be from reinforcement of the existing network. 53% of WELL's forecast investment is expected to come from reinforcement of the existing network, replacing existing assets with assets with more capacity.

- Most of the sub-transmission assets (underground cables and power transformers) are also approaching the end of their asset lives during the next 15 years. The value of flexibility is deferring this replacement for as long as possible.

Flexibility services will only be a viable alternative to traditional wire solutions that are at least 3-4 years away. This is because we are only deferring the assets from being replaced and the size and complexity of the sub-transmission assets means we need 3-4 years to plan and build. The figure below illustrates the limited ability an EDB has to substitute opex and capex using the IRIS. The figure shows that 3-4 years before an upgrade an EDB will be planning and building an asset and flexibility services won't be considered (the grey shaded area showing the viability of flexibility services). The diagram shows when capex and opex can be substituted (shown in green) – which is only in the current regulatory year. The IRIS does not capture capex savings in future regulatory periods. There is a 1–2-year window when flexibility services would be a viable option **and** the IRIS would allow additional opex costs to be substituted against the capex savings. This 1–2-year window is show by the blue shaded area. The IRIS in its current form provides little opportunity to fund flexibility services from capex savings.

Viability of flexibility services under the current IRIS mechanism



C4.	**Do you consider IRIS in your business decision-making processes? If so, which stage(s) of your decision-making processes consider IRIS when contemplating substitutable solutions (whether opex or capex)?**

Answer: Our regulatory model we use for making investment decisions includes the IRIS impact. We use the model primarily when we budget (including setting the AMP forecasts) and forecast for changing business inputs, including updates to the work programme.

Note, non-wire alternatives have not been developed to the point that they can be used as a viable alternative to traditional wire solutions. This is partly due to EDBs not have innovation allowances needed to develop these services or regulatory allowances to purchase them.

Our early thinking is that when non-wire services are available, we will consider their viability as part of our medium-term planning. As highlighted in our answer to question C3, the long lead time for building new traditional network capacity means that consideration of non-wire solutions must happen at least 4 years before new capacity is needed.

This will mean developing flexibility to the point that we can confidently rely on flexibility to defer capex as expected. Planning to used flexibility instead of building more capacity will require us to be confident that we can purchase flexibility at a price point that is less expensive than building early.

C5.	**Suppliers have noted that the complexity of the current incentive mechanisms is a problem in the regulatory regime. How could the incentive mechanisms be simplified while still achieving the desired outcomes?[4]**

Answer: Expert advice will be needed to develop solutions – the IRIS is complex and impacts many different aspects of the regulatory framework.

C6.	**Changing the current IRIS mechanisms to apply different incentive rates to different types of expenditure (such as connection capex) would likely increase the complexity of the incentive schemes. Would the benefits of this change outweigh the increased complexity?**

Answer: We agree that different rates would add complexity. We believe there are better solutions to solving issues like faster than expected connection growth:

- Treating connection capex as a pass-through cost
- Using reopeners for unforeseen connections and reinforcement growth.

C7.	**If we were to remove or make significant changes to IRIS, what would an appropriate alternative approach be that would better promote one or more of the overarching objectives of our IM Review?[5]**

[4] The desired outcomes are set out in Section 52A (1) (a)–(d) of Part 4 of the Commerce Act 1986.

[5] The three overarching objectives for the IM Review are set out at para X20 of the Part 4 Input Methodologies Review 2023 decision-making framework paper, which we published on 13 October 2022.

Answer: We do not know of a better alternative to the IRIS. The focus should be on simplifying the current mechanism and using reopeners and pass-through costs to capture unexpected expenditure requirements (assuming the IRIS baseline is also adjusted to capture new expenditure).

C8. If we were to move to a totex approach, we would need an amended incentive mechanism. What could an incentive mechanism look like? One example is Ofgem's totex incentive mechanism (TIM).[6]

Answer: n/a – We think the complex totex approach is unnecessary to solve the issue of not having opex available to purchase flexibility services.

We also think the workshop totex approach is too complex to introduce in the limited timeframe before the IMs are used to set the DPP4 price/quality path.

C9. For Transpower's IPP, we understand from stakeholders that the determination of the 'baseline adjustment term' has introduced significant complexity and uncertainty, potentially undermining incentives to achieve efficiency savings. If we were to remove this adjustment term, what other adjustments to the IPP IRIS mechanism do you consider would be necessary to achieve its purpose?

Answer: n/a

D. Questions relating to innovation and sandboxing[7]

D1. Currently, the implementation details of the innovation project allowance and the size of the allowance paid out following successful projects are determined as part of the DPP reset rather than in the IMs. Are there any changes to the IMs[8] we should consider to better enable innovation?

Answer: We would support IMs including a high-level description of the innovation mechanism. This would recognise the explicit need for EDBs to be funded for innovation.

The detailed design and operationalisation of the mechanism could then be left to the price path determinations.

D2. Are there innovative projects or initiatives in the supply of electricity distribution services that you consider the current IM and DPP settings prevent you from

6 See section 10 of Ofgems' Decision – RIIO-2 Final Determinations – Core Document https://www.ofgem.gov.uk/sites/default/files/docs/2020/12/final_determinations_-_core_document.pdf.

7 See "Forecasting and incentivising efficient expenditure for EDBs" slides 54-59: https://comcom.govt.nz/__data/assets/pdf_file/0029/298055/Forecasting-and-incentivising-efficient-expenditure-for-EDBs-Full-slide-deck-07-November-2022.pdf

8 See clause 3.1.3(1)(x) and the definitions of 'innovation project' and 'innovation project allowance' under clause 1.1.4(2) of the Electricity Distribution Services Input Methodologies Determination 2012: https://comcom.govt.nz/__data/assets/pdf_file/0017/60542/Electricity-distribution-services-input-methodologies-determination-2012-consolidated-20-May-2020-20-May-2020.pdf

doing? If so, it would be helpful if you could give examples of business cases you did not take forward or that you consider would not be possible under the current regime.

Answer: We are currently considering flexibility trials – testing different non-wire services that could be used to help defer future network reinforcement. The implementation of these trials will be limited by the lack of regulatory allowances to test, trial and productize flexibility services.

While we can afford a small-scale trial and services that respond to a tariff price signal, we will not be able to afford the cost of testing larger scale participation rates needed to establish the potential scale of a service. Case Study 3 of our Process and Issues submission provides a summary of the types of innovation projects that are needed to develop flexibility services.

D3. Innovative activities and projects can be riskier than business-as-usual activities and projects. Can you describe the downside risks associated with innovation under the current regulatory rules, and if possible, quantify those risks?

Answer: The downside risks for EDBs of investing are:

- The innovation applications are retrospectively approved by the Commission so a network could have to bear 100% of the costs if its not approved.
- Networks still have to fund 50% of an innovation project. An EDB will be worse off (and therefore may not proceed with the project) if the regulatory incentives do not provide benefits that are greater than the 50% share of the cost.
- As highlighted in our Process and Issues submission, our main focus for innovation projects will be on developing flexibility services. Depending on how much an EDB is comfortable paying for these services.
- Opex allowances are scarce, and we do not have the ability to find cost savings to spend of innovation. For example, we have had to find $0.5m per annum or 1.5% of our opex allowance to fund insurance cost increases not covered by our allowances. The timing of the transition from our CPP (one year after other networks) also means that we are not receiving an inflation adjustment to our revenue this year, so we are also having to find ways of covering 8% actual inflation we are experiencing. Networks do not have spare opex to spend on innovation.

D4. Given that innovation is risky, who do you consider is better suited to bear the downside risk under Part 4 regulation – suppliers or consumers? What is your rationale for this?

Answer: How the risk of innovation is shared will depend on the expected benefits and whether an EDB can recover the cost of the innovation via regulatory incentives.

For example, customers will be the primary benefiters of flexibility services (lower long-term prices, payments for participating in flexibility, ability to connect their new devises etc), we believe that they are better suited to bear more of the downside risk.

This is a complex topic which we think should be an IM emerging issue – we recommended that the Commission include this topic on the emerging issues work programme. As highlighted in our Process and Issues submission (page 9), appropriate innovation incentives will be essential for the development of flexibility services and delivering our decarbonation related investment.

In preparation for this topic, Wellington Electricity along with the other large networks have commissioned a detailed analysis of the current innovation project allowance and possible alternative mechanisms. We will provide this analysis to support our thinking about this topic.

D5. What should compensation look like for the downside risk retained by suppliers? What level of compensation is required to enable efficient innovation considering these downside risks?

Answer: This is a complex topic that needs more time to answer. As highlighted in the previous answer, we will provide further analysis to support this discussion.

D6. What are they key ingredients of an effective regulatory sandbox? What aspects of the regulatory sandboxes implemented by the AER[9], OEB[10] and Ofgem[11] do you consider should be implemented under Part 4 regulation and why are these elements important for your business?

Answer: n/a

D7. To what extent should a regulatory sandbox regime under Part 4 focus on each of the following: advice, rule exemptions, trial rule changes and financial incentives?

Answer: n/a

D8. What projects do you have planned that would benefit from the implementation of a regulatory sandbox? n/a

Answer:

[9] Regulatory Sandboxing – Energy Innovation Toolkit: https://www.aer.gov.au/networks-pipelines/regulatory-sandboxing-%E2%80%93-energy-innovation-toolkit#:~:text=Regulatory%20sandboxing%20aims%20to%20help,cheaper%20energy%20options%20for%20consumers

[10] OEB Innovation Sandbox: https://www.oeb.ca/_html/sandbox/index.php

[11] Ofgem – What is a regulatory sandbox?: https://www.ofgem.gov.uk/publications/what-regulatory-sandbox