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 Monday 5 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.

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

Answer: Yes, you have accurately described the general problem of capex bias.

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: Yes.

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

Answer: Capex bias can influence our decision making. The sources of capex bias that have the greatest effect on our decision making are, opex performance uncertainty, outperformance of the regulatory WACC, and that capex earns a return but opex doesn't.

In the long term, as opex solutions increase, EDBs will need to earn a return on opex. For example, in an extreme end-case, should everything turn to opex, without a return on opex, there would be no incentive for shareholder investment.

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. We think that the Part 4 regulatory framework impacts financial incentives in a way that contributes to capex bias (per A3), though it's not the sole contributor.

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.

[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

Answer: Really important – the allowances and costs and timing of projects along with all the uncertainties that affect them are complicated. Isolating a single specific example is something we can comment on in more detail when we can 'look back' at the process, transaction costs, and outcome from choosing an opex solution.

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:

We've so far committed to around [redacted] opex per year, offsetting around $4m of capex.

It is early days for estimating the long-term balance. Differentiating between a permanent vs temporary role of an opex alternative is key too. One way to approximate it is to assume around 10% of peak demand can be met using opex solutions. For Powerco that would translate to an opex figure of around $10 - $20m per year (based on 1GW peak demand) and offset around $400m of capex. For comparison, this opex is equivalent to 10%-20% of annual opex.

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: Yes, *consider* a totex approach as a solution to capex bias that arises from the regulatory framework as a potential long-term solution. Ideally the regulatory regime shouldn't create capex bias. In the nearer term, there are other options that could address specific areas of concern eg, market testing for major capex or removing customer-driven capex from the incentive regime.

Effectiveness of a totex approach as a solution to capex bias

Table 1: the sources of capex bias eliminated by adopting a totex approach

Source of capex bias	Is the source of bias eliminated by adopting a totex approach?	Comments
Ability to earn a return on capex but not on opex.	Yes	The use of a fixed opex-capex share removes this bias.
Preference for RAB growth	Yes	The use of a fixed opex-capex share removes this bias.
Asymmetry in regulatory expenditure scrutiny	No	Eliminating this bias depends on the Commission's approach to setting expenditure allowances.
Opex performance uncertainty	No	A totex approach does not eliminate the greater performance uncertainty of an opex solution.
The ability to leverage capital expenditure may lead to EDBs favouring capex over opex unless the economics of the opex offering outweigh the benefits of leverage	No	The accounting rules determine the classification of capex and opex in an EDBs financial accounts. So, EDBs with a conventional Debt/(Debt+Equity) capital structure will still have an incentive to leverage capex.
When faced with equity funding an opex solution or debt-and-equity funding a capex solution, EDB's may rationally prefer the capex solution as it lowers the overall WACC of the business	No	
Relative to opex allowances, capex allowances are more bespoke, which may provide an EDB more ability to justify capex	No	Eliminating this bias depends on the Commission's approach to setting expenditure allowances.

Because a change to a totex approach would require significant investment by the Commission and EDBs and would not eliminate some important sources of capex

bias, it is difficult to say if it would be an effective solution and whether the benefits outweigh the costs.

One way to get a better understanding of the effectiveness and costs of a totex approach would be to trial it on one or two EDBs.

The size of the problem - pool of expenditure subject to substitution

A range of 5-10% of capex is probably a useful near-term reference point for the size of the *potential* substitution pool. Over time we expect the pool to grow. [2]

Importantly, substitution could mean capex for capex solutions. For example, a non-lines solution could involve some form of generation (battery or otherwise), as we have and are implementing in the Coromandel where it is the preferred solution.

It is prudent to consider other solutions to capex bias

Given the small amount of viable non-network solutions (say 5-10% of total capex) and the uncertainty about the effectiveness of a totex approach (as shown in the table 1 above), it is also worthwhile considering whether other solutions to capex bias might be a useful solution or interim step.

More straightforward and lower cost changes that will increase transparency and provide confidence that EDBs are choosing the most efficient solution, whether they be opex or capex, include:

- **New ID requirements**. We support the suggestion in the staff working paper that if capex bias is an issue, the Commission could consider new ID requirements to provide transparency on the use of non-network/flexibility solutions.

- **Regulatory investment tests.** We have also previously submitted via different forums that a regulatory investment test for investments exceeding say $5m could have merit. Subjecting sufficiently large network investments to market-testing, akin to Transpower's $20m major CAPEX threshold, could potentially lessen capex bias by:
  - providing more visibility over the EDB decision-making process
  - increasing market engagement
  - applying more scrutiny to large projects that have the most impact on customer bills

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.

[2] This is a rough estimate. We will be look at it in more detail in future asset management plans

Answer: As mentioned above, the Commission should consider a totex approach, but at this point, we don't have a view on whether it should be adopted and in what form.

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:

C. Questions relating to current expenditure incentive mechanisms[3]

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: Yes.

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).[4] 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:

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:

[3] See "IRIS equivalence staff paper"

[4] 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.

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: Yes, at points when project costs and options are being considered and comparable to set allowances.

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?[5]

Answer: We agree with other suppliers that the complexity of the current IRIS incentive mechanism can make it difficult respond to the incentives it provides in conjunction with the range of factors that affect planning and managing a portfolio of assets.

We support trialing a simpler expenditure incentive mechanism similar to Ofgem's totex incentive mechanism. We are interested in whether a totex-like incentive could be tested under the Commission's current capex-opex approach.

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:

Yes, the benefits of this change would outweigh the increased complexity.

Applying a different (lower or zero) incentive rate to consumer-driven expenditure would create considerable benefits by eliminating the following problems with the current IRIS mechanism:

- Distributors' consumer connection, system growth and asset relocation allowances have a high probability of forecast error. Because the current IRIS incentive scheme applies to all capex – including customer connection capex - distributors are rewarded/penalised for this forecast error. We don't think they should be.

- The potential IRIS penalties/rewards that arise from forecast errors incentivise deferral of customer-initiated expenditure that would otherwise be prudent and efficient and, most importantly, meet customer needs.

The outcome of applying lower incentive rates to consumer connection capex is that it will support customers to connect when they want and pay a reasonable cost. Distributors (and ultimately customers) should not be in a financial win/lose situation because customer connections don't match a historical trend.

Applying different incentive rates to different types of capex should be do-able because capex allowances are built up by category, and EDBs report expenditure by

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

capex category in their information disclosures. However, applying this change to opex would be more difficult because the Commission's current approach to setting opex allowances doesn't build up expenditure by category.

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?[6]

Answer: One option is to trial a simpler expenditure incentive mechanism similar to Ofgem's totex incentive mechanism. We are interested in whether a totex-like incentive could be tested under the Commission's current capex-opex approach.

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).[7]

Answer: If the Commission were to move to a totex approach, Ofgem's TIM appears to be a suitable incentive mechanism to adopt.

The problems with the TIM appear to be manageable. As noted in the staff working paper, applying an incentive rate that increases over time can address the time-inconsistent natural incentive problem. While using multiple years as the 'base year' or changing how opex allowances are determined can remove the incentive to shift opex to the base year.

A significant advantage of the TIM, relative to IRIS, is that it is simple to understand and apply, so EDBs are more likely to respond to the incentives.

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:

D. Questions relating to innovation and sandboxing[8]

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

[6] 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.

[7] 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.

[8] 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

	of the DPP reset rather than in the IMs. Are there any changes to the IMs[9] we should consider to better enable innovation?
	Answer: Not aware of any at this stage, but may have some observations after applying for one.
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 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: Because innovation projects and pilots are generally opex-heavy, and we don't have a specific opex allowance for innovation, the regulatory regime does implicitly prevent activity on this.
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: Spending capex/opex not included in the AMP/approved allowances on solutions and activity which may not work or be cost-effective, but have the potential to deliver the network service at lower cost.
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: In the long run, assuming effective innovation and appropriate regulatory settings, consumers should benefit significantly from innovation, far outweighing the initial cost of the innovation itself. By ensuring its innovation funding is well targeted and narrowly directed at real network benefits, the Commission should be able to limit the short-term risk while potentially providing material long-term benefits to consumers. Conversely, placing all the risk on suppliers will disincentivise R&D and innovation (it would be economically more prudent to adopt capex-heavy, known products) or force EDBs to develop products for use outside the regulatory framework.
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:

[9] 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

D6.	**What are they key ingredients of an effective regulatory sandbox? What aspects of the regulatory sandboxes implemented by the AER[10], OEB[11] and Ofgem[12] do you consider should be implemented under Part 4 regulation and why are these elements important for your business?**
	Answer: This is a good question and could be well informed by the experience of regulators and participants in those markets. For example, understanding how lack of certainty about outcomes is treated, timeliness of approval/implementation/assessment processes, and source of funding.
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:
D8.	**What projects do you have planned that would benefit from the implementation of a regulatory sandbox?**
	Answer: We have some ideas which could involve trialling network alternatives in a live setting, but where they are not being relied upon. This could address concerns from distribution engineers in the areas of integration, control, communications, supporting systems, reliability, controllability.

[10] 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

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

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