

Real price effects and scope for ongoing efficiency in PR6

Commission for Regulation of Utilities

24 June 2025



FINAL REPORT

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EXECUTIVE SUMMARY

This report sets out CEPA’s analysis of trends that might affect the unit costs of a notionally efficient electricity network operator and system operator in Ireland during Price Review 6 (PR6)—the regulatory economics concept of ‘frontier shift’. Frontier shift is the rate at which the unit costs of an efficient company change over time. It captures both changes in the volume of inputs needed to produce a level of output and in the price of inputs used.

Frontier shift expressed in real terms is expected ‘ongoing efficiency’ improvements net of ‘real price effects’ (RPEs). Ongoing efficiency improvements relate to the change in the volume of inputs used because of new technology or working practices. RPEs (also sometimes referred to as differential inflation) are the changes in prices of those inputs, net of HICP inflation already applied under the regulatory framework.

E.1. TREATMENT OF RPEs IN THE PR6 REGULATORY FRAMEWORK

In recent price reviews, the CRU has tended to rely on an ex-post review of network companies’ costs as the tool to manage real unit cost uncertainty and to facilitate that companies recover their efficiently incurred input costs over the price control period. If companies face substantial changes in their efficient costs due to input price pressures within the period, these will be reflected in allowed revenues as a true-up to cost allowances ex post.

We conclude in this report that the focus, and the pressures on delivery in PR6 means there is a risk this approach may not provide sufficient predictability for the management of RPEs for this price control.

The scale of investment, and the risk of substantial cost forecast changes due to input cost volatility and supply chain constraints, is considerable in PR6. There is a risk that if ex ante allowances for operating expenditure (opex) and capital expenditure (capex) do not include any upfront provision for RPEs, and dedicated mechanisms are not in place to manage the risk that input costs increase during the price control, this could hamper delivery of the critical investment and transformation programmes required in PR6.

We therefore propose that PR6 cost allowances include an explicit ex ante provision for differential inflation, i.e., an RPE allowance. We propose that the CRU would set the RPE allowance for opex ex ante and that this would not be reopened until the price control’s ex post review. The network companies will, as a consequence, be expected to manage within this allowance within the price control period. For capex, we think there may be merit in making a provision for RPEs in ESB Networks ex-ante allowances. We also think there may be merit in a within period reopener / uncertainty mechanism to manage the forecast uncertainty of input costs and to aid monitoring of the impact on the capital programme.

We would expect the obligation would then continue to be on the electricity network companies to fully justify at the PR6 ex post review that the input costs that they incurred in their opex and capex were economic and efficiently incurred, consistent with the CRU’s current regulatory framework.

E.2. OPEX RPEs

We have reviewed the network companies’ proposals on opex RPEs in PR6 and have undertaken our own analysis to inform our conclusions on what an appropriate ex ante allowance might be.

ESB Networks

For **ESB Networks**, we conclude that there is evidence to support including an RPE allowance for labour, materials and business service costs ex ante. For labour costs, we propose a:

- lower end estimate of 0.8% per annum; and
- higher end estimate of 1.4% per annum.

The lower end estimate reflects the average long-term labour RPE wedge implied by Ireland's Central Statistics Office's (CSO) all sectors' wage series, excluding a selection of outlier years.

The higher end estimate assumes labour RPEs implied by the latest Central Bank of Ireland forecasts of wage and HICP growth in the Irish economy apply for three years from 2025, and then the per annum RPE reverts to a long-term historical average of 0.8% for the last three years of PR6, following a period of wage catch-up relative to HICP inflation.

For materials costs, we propose an ex ante allowance of 0.7% per annum based on the long-term average of the CSO Wholesale Price Index (WPI) for Buildings and Construction, excluding 2021-22 as outlier years. For business service and IT and Telecoms costs, we use the same RPE wedge as we propose for EirGrid's non-labour costs, i.e., 1.2% per annum which is based on long-term averages of CSO service producer price indices.

Overall, this results in a **proposed weighted average RPE on total opex of c. 0.8-1.3% per annum for ESB Networks for PR6.**¹

EirGrid TSO

For **EirGrid TSO**, we conclude there is evidence to support including an ex ante RPE allowance for labour and non-labour costs. EirGrid has requested the allowed labour RPE reflect two components: i) a catch-up component to reflect a wage-gap EirGrid state has emerged in its labour unit costs over PR4 and PR5 compared to the rate of real wage growth experienced in skilled sectors such as ICT, finance, professional services and utilities (1.3-2.0%); and ii) a forecast component to maintain the competitiveness of its labour costs with these skilled sectors in PR6 (2.2%).

We do not consider that EirGrid has adequately evidenced the need for the first component. Our analysis suggests that EirGrid's weighted average basic salary costs per FTE on a level (i.e. €) basis appear to closely track in recent years the € level average across the sectors EirGrid state are its comparator cohort. As we discuss in the main report, while this does not mean EirGrid's remuneration package will be sufficiently competitive to retain and attract new employees during PR6, we conclude that before being able to accept the first component of EirGrid's labour RPE request, more substantive evidence on the need is required from business.

On the second, forecast labour RPE component, we propose a:

- lower end estimate of 1.3% per annum; and
- higher end estimate of 1.7% per annum.

The lower end estimate is the average RPE wedge for the CSO's electricity, water supply and waste management index for the period of PR4 and PR5. It is also equal to the long-term average labour RPE wedge for the sectors EirGrid use to inform their RPE proposals, excluding Global Financial Crisis and COVID years².

The lower end estimate is equal to the long-term average labour RPE wedge for the sectors EirGrid use to inform their own RPE proposal, excluding outlier years. The higher end estimate is the higher end estimate for ESB Networks labour RPE, with a 0.3% uplift to reflect the historical EirGrid sector wedge they find in their analysis.

For the TSO's non-labour costs, we propose an ex ante RPE allowance of 1.2% per annum based on taking the long-term average implied RPE from the CSO's Services Producer Price Index (SPPI) for legal, accounting, public relations and business management and the HICP.

Overall, this results in a **proposed weighted average RPE on total opex of 1.3% - 1.5% per annum for EirGrid's TSO business.**

¹ The range slightly differs for the TAO and DSO because of differences in the mix of labour, materials and business service costs. The range for the DSO is 0.8% - 1.3% and the range for the TAO is 0.9% - 1.3%.

² Excluding these years is conservative, as they are a period when a negative labour RPE wedge is observed.

E.3. CAPEX RPEs

We consider a range of options in this report for how uncertainty in ESB Networks input costs in capex could be managed during the price control. We identify two shortlisted options that might help strengthen the approach compared to solely relying on the ex post review to manage input cost uncertainty.

Option A – a Use It or Lose It (UIOLI) ring-fenced risk / uncertainty pot

The **first option** would involve CRU creating a ring-fenced risk / uncertainty pot in the ex-ante capex allowances for ESB Networks to manage RPEs during the price control. The pot would be:

- included in the ex ante allowed revenues, so funded upfront by consumers;
- set separately for each transmission and distribution price control; and
- ring-fenced from other components of the capex allowance.

If and when ESB Networks require additional funding above the core components of the capex allowances to manage input cost variation, it would notify the CRU it intends to utilise this ring-fenced pot. During the price control, the CRU would give high-level approval the ring-fenced allowance can be drawn and ESB Networks would allocate the proportion of the pot utilised to the relevant components of its capital programme.

At the ex-post review, as under the current framework, ESB Networks would then be expected to justify its use of the risk / uncertainty provision, and the drivers of the input price effects it faced. Any underspend of the ring-fenced pot would be returned to customers via the true-up to the RAB and allowed revenues at the start of PR7. It would in effect be a 'Use It or Lose It (UIOLI)' style uncertainty mechanism.

Option B – Reopeners

The **second option** would be to use reopeners to permit ESB Networks to request that the CRU adjust capex allowances within period for changes in input costs. We would envisage this operating as follows:

- The ex-ante price control capital allowances would reflect a defined capital programme, and unit prices used to set the ex ante capex allowances.
- If ESB Networks identify / incur higher costs due to revised cost forecasts and increases in real unit prices – i.e., RPEs – it would request / trigger a reopener in its capex allowances.
- The CRU would assess ESB Networks' request as part of an annual reopener window within the price control reaching a decision as part of its annual tariff setting process. We would envisage that:
 - The reopener would need to meet defined trigger criteria – e.g., that the change in input costs has met a materiality threshold.
 - This within period regulatory decision would be light touch, limited solely to ESB Networks having adequately demonstrated the high-level need and variation in its forecast costs.
 - ESB Networks would track and report on how these price effects, impacted the costs of its capital programme within period.
- The CRU would then assess the outturn incurred costs at the ex-post review to confirm the economy and efficiency of the incurred spend.

We understand this second option to be closest to ESB Networks proposal for how uncertainty of input costs should be managed within period for PR6.³

Identifying a preferred option

If the CRU are content to provide a ring-fenced uncertainty / risk provision in its ex-ante capex allowances for RPEs that consumers fund upfront during the price control, then the first option would be our preferred approach.

This option has the attraction of requiring limited regulatory administration and scrutiny by CRU during the price control and will provide a clearer baseline for conducting an ex post assessment of the impacts of RPEs on the capex programme. It is similar to how risk / uncertainty provisions are funded and utilised on large infrastructure programmes, where uncertainty provisions are drawn over time as the project matures through development and construction and projects risks – including the impacts of inflation on costs – are gradually reduced.

However, if there was a concern with funding (ultimately uncertain) capex RPEs upfront during PR6 that may not ultimately be incurred (and/or with the creation of another component to capex allowances) and being able to differentiate RPEs from other cost pressures that might require in period changes to capex allowances, we suggest that the CRU consult on managing capex RPEs within period through reopener mechanisms.

In the absence of strong market evidence of expected RPEs in ESB Network's capex during PR6, if the preferred approach for consultation was the first option, then we would propose that the ring-fenced RPE allowance be set up to 10% of the components of ESB Network's capex programme where there is considered to be the greatest uncertainty of input costs. This is not inconsistent with the level of risk / uncertainty assumed in the costings of other large-scale infrastructure projects, and might also be considered an ex ante provision for optimism bias.

We do not consider the same mechanism is needed for EirGrid's TSO non-network capex given the relative scale of the programme. However, this might be an issue that the CRU wishes to consult on.

E.4. ONGOING EFFICIENCY

Both licensees state that macroeconomic trends in the Irish economy and the degree of dynamic change taking place within the electricity sector during PR6 limit the scope for achieving ongoing efficiencies. ESB Networks in particular cite low Total Factor Productivity (TFP) in the Irish economy as an important headwind.

The purpose of the Ongoing Efficiency challenge is to encourage the network companies to adopt new technologies and management practices over time, replicating the forces of competition to drive out continual cost efficiencies. This does not mean that the rate of productivity growth in the electricity networks sector must relate to productivity growth in the wider economy, which is affected by a range of headwinds and tailwinds.

We caution against ESB Networks and EirGrid's proposals, and the work of their consultants, on the scope for realising ongoing efficiencies in PR6. That analysis is presented as being over a complete business cycle and 'long-term' but in fact it focuses more on Irish productivity growth since the Global Financial Crisis of 2008-09. As we discuss in the main part of this report, there are several reasons why the resulting average is likely to understate the scope for productivity growth amongst the regulated Irish electricity networks.

Whilst the productivity downturn in the general Irish economy is relevant to the PR6 decision, we consider that the CRU should anchor its proposals to longer-term 'through the cycle' productivity trends.

With this in mind:

³ It is similar to the approach that the CRU took to providing a differential inflation adjustment to Irish Water's cost allowances as part of the interim review of RC3.

- Over the period 1970 to 2023, the Central Bank of Ireland estimates economy-wide TFP growth at 2.3% per year although it has been on a downward trend in recent decades – since 2000 it has averaged a more modest 1.2% per year, which we consider to be stretching but achievable over the PR6 period.
- The Bank of Ireland uses a baseline TFP growth forecast of 0.6% per year over the period to 2050 – this is a relatively cautious assumption where productivity growth never recovers to the pre-2008 trend.
- The Irish Fiscal Advisory Council suggests that Irish TFP growth is between 0.2% and 1%, and adopts a 0.4% central assumption for its 2050 projections.

Therefore, we find there is evidence to demonstrate that the scope for productivity growth over the PR6 period is positive. Moreover, there are several potential tailwinds in the electricity networks sector, including:

- A step-up in investment over the PR6 period.
- Potential for AI and increasingly digitised methods of managing the networks.
- Continued innovation funding in PR6 building on investment in prior price controls.⁴

Additionally, we note that several regulated infrastructure managers in the UK have proposed Ongoing Efficiency challenges of between 0.5% to 1% per year since 2023. Although Brexit has introduced greater barriers to trade between the UK and Ireland, we do not consider it likely that there are substantial barriers to technology diffusion across the Irish Sea in the electricity networks sector.

Given that there is an inherent information asymmetry between regulated infrastructure managers and the regulator, we suggest that on average these proposals are also likely to represent the minimum that is achievable over the next 5 years. The Ongoing Efficiency challenge in UK water and energy networks has also been tested by the Competition and Markets Authority (CMA)⁵ in relation to the PR19 and RIIO-2 appeals, which found that 1% was a stretching but achievable challenge.

Therefore, in our view, an appropriate Ongoing Efficiency challenge would be positive and between:

- 0.4% / 0.5% based on the least ambitious energy and water network companies in the UK; and
- 1% / 1.2% based on the most ambitious water network companies in the UK and taking a balanced interpretation of historical and forecast evidence of the potential for TFP growth in the Irish economy.

At PR5, we noted that EirGrid as TSO may have less scope for capital substitution in the delivery of its controllable opex than some other Irish companies. We also noted that this may change in future with technological advancements, such as artificial intelligence and machine learning. We noted that as a result, estimates of TFP and Labour Productivity may have the potential to overstate the level of productivity improvements that EirGrid could reasonably be expected to be made over PR5, based on the current available information.

As a result, we applied a downwards adjustment to the evidence base to account for this and ultimately proposed an Ongoing Efficiency challenge of 0.4% for the TSO in PR5. As we discuss in the main report, the Utility Regulator in Northern Ireland in its most recent price control review for SONI TSO (2020-2025) took a more sceptical view of these arguments, ultimately adopting an Ongoing Efficiency challenge of 0.6% for its Final Determination.

⁴ While many of the innovation programmes that have been funded in past price controls and in PR6 are likely to relate to future improvements in quality of service and productivity of output, we might expect that at innovation funding is also likely to result in increasing the scope for cost reductions over time. The impact is of course, difficult to quantify with any precision but is an important point of differentiation between electricity networks and other sectors of the Irish economy.

⁵ The UK's competition and regulatory appeals body.

EirGrid has also argued elsewhere in its PR6 submission (see discussion above on labour cost trends) that its comparable sectors include ICT, finance and professional services. These are sectors in coming years that have been identified in various studies as offering scope for productivity linked to new technology and AI deployment.

Whilst the longer-run aggregate productivity outcome of these new technologies and processes, in particular AI, are still uncertain, we consider that these opportunities reflect a tailwind to realise ongoing efficiencies which are not extensively explored in EirGrid's Business Plan.

Overall, for ESB Networks, we propose a range for the Ongoing Efficiency challenge in PR6 of:

- 0.5% - lower end; and
- 1.0% - higher end.

For EirGrid TSO, we propose a range for the challenge in PR6 of:

- 0.4% - lower end; and
- 0.6% - upper end.

E.5. PROPOSED FRONTIER SHIFT CHALLENGE

Our overall proposals for a plausible range for an ex ante Frontier Shift cost trend in TSO, DSO and TAO opex for PR6 are summarised in the table below.

Table E1: Proposed Frontier Shift ranges

	RPEs (1)		Ongoing Efficiency (2)	Frontier Shift: (1) + (2)	
	Low	High		Low	High
TSO	1.3%	1.5%	-0.5%	0.8%	1.0%
DSO	0.8%	1.3%	-1.0%	-0.2%	0.3%
TAO	0.9%	1.3%	-1.0%	-0.1%	0.3%

Source: CEPA

For the TAO and DSO, we assume a 1% Ongoing Efficiency challenge, i.e., our higher end estimate, for both the low and high end of the Frontier Shift range given the recent regulatory precedent in Ireland and UK has assumed a 1% target for infrastructure managers. For the TSO, we assume the mid-point of our Ongoing Efficiency range, i.e., 0.5%, a challenge slightly higher than assumed for the PR5 determination. This reflects an assumption of opportunities for realising ongoing efficiencies from a continued step up in investment into the TSO business and new technologies and processes (e.g., related to AI).

If the mid-point of the range is used to define the cost trend for opex allowances in PR6 this would imply: a ~ 0.9% per annum increase in the TSO allowances; and a ~ 0.1% per annum increase in the DSO and TAO allowances respectively.

1. INTRODUCTION

1.1. PURPOSE

This paper sets out CEPA’s analysis of trends that might affect the unit costs of a notionally efficient electricity network operator and system operator in Ireland during Price Review 6 (PR6)—the regulatory economics concept of ‘frontier shift’. Frontier shift is the rate at which the unit costs of an efficient company change over time. It captures both changes in the *volume* of inputs needed to produce a level of output and in the *price* of inputs used.

Frontier shift expressed in real terms is expected ‘ongoing efficiency’ improvements net of ‘real price effects’ (RPEs). Ongoing Efficiency improvements relate to the change in the volume of inputs used because of new technology or working practices. RPEs (or differential inflation) are the changes in prices of those inputs, net of the inflation indexation already applied under the regulatory framework. If an efficient company were expected to make a one percent annual efficiency gain but its input prices were also rising at one percent a year, it would be expected to keep the cost of producing its outputs approximately constant over time—frontier shift would be zero.

The PR6 period will see a significant step up in investment in Ireland’s electricity network and will require profound change in the organisation and working practices of the electricity licensees in both their functions as asset owners and system operators of the electricity network. Uncertainty of inflation rates in the Irish and global economy and pressures in supply chains are also expected to persist as the companies move into this investment period.

In this context, it is crucial the PR6 price controls are set on a basis that allows the electricity network companies to recover with confidence their efficiently incurred costs, including changes in input prices. At the same time, it is crucial the companies are incentivised to deliver ongoing efficiencies where possible.

1.2. REPORT STRUCTURE

The rest of this report is structured as follows:

- **Section 2** sets out our approach to assessment of RPEs and Ongoing Efficiency in PR6 and interactions with design of the regulatory framework.
- **Section 3** provides our assessment of the electricity licensees’ proposals on RPEs on operating costs and presents our proposals.
- **Section 4** addresses Ongoing Efficiency.
- **Section 5** considers options for a capital expenditure (capex) input price uncertainty mechanism.
- **Section 6** summarises our conclusions and recommendations.

2. APPROACH AND REGULATORY FRAMEWORK DESIGN

In this section, we briefly set out the background and context to PR6 and the issues this raises for how the CRU might approach the treatment of RPEs and Ongoing Efficiency in its price controls.

The CRU has in recent price reviews tended to rely on the ex-post review of the costs incurred by companies during a price control as the tool to facilitate companies recovering their efficiently incurred input costs and to manage uncertainty of input prices. We conclude that the focus, and the pressures on, delivery in PR6 mean that providing upfront clarity to companies on the treatment of these costs will help to facilitate delivery. We propose, therefore, that PR6 include an explicit ex ante provision for differential inflation⁶, i.e., an RPE allowance.

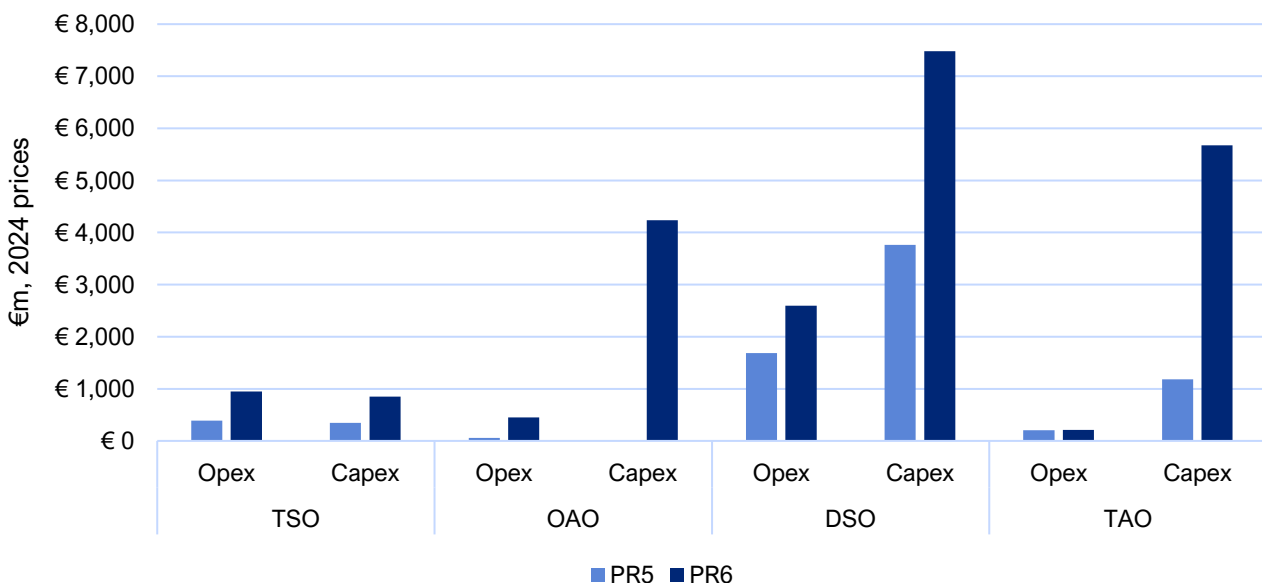
Given the uncertainties of the scale and the cost of ESB Networks capex programme, we also propose that a reopener / uncertainty mechanism be introduced for PR6 to manage capex input cost uncertainty. We explain the need for this mechanism in this section of the report and options for its design in Section 5.

Finally, we summarise our approach for estimating and testing the need for RPEs in the companies' operating expenditure (opex) and our approach to estimating scope for Ongoing Efficiency in PR6.

2.1. CONTEXT TO PR6

The network companies have forecast a substantial increase in their opex and capex during PR6 (as illustrated in Figure 2.1 below) to deliver on the strategic outcomes and objectives of the price control; i.e., continued decarbonisation of electricity, secure and resilient electricity networks and supplies, and empowerment of customers.⁷ The companies' Business Plans raise substantial deliverability challenges for ESB Networks and EirGrid but also risks to manage related to the uncertainty of the input costs faced over the period.

Figure 2.1: Company forecasts of controllable opex and capex in PR6 compared to PR5 outturn⁸



Source: CEPA analysis of licensee BPQs

⁶ Net of forecast HICP to which cost allowances are already indexed.

⁷ CRU (2024): 'Price Review 6 – Strategy Paper', available [here](#).

⁸ The figure reports opex and capex under the high cases reported for PR6 in EirGrid and ESB Networks business plans, so in ESN Networks case it includes capex in their baseline and Agile Investment Framework (AIF) requirement.

Both network companies highlight in their Business Plans that they face considerable input cost pressures looking forward to PR6. ESB Networks reference research from Frontier Economics⁹ that finds potential for input price pressures in labour and materials opex of 1% to 2% above HICP inflation in PR6. ESB Networks also highlights that at the same time as it proposes to deliver a once in a generation increase in investment in the electricity network, *“we are doing so in parallel with many other countries across the world. This will pose challenges in terms of resourcing, supply chain access, and access to capital.”*¹⁰ The scale of investment required across the transmission and distribution network, means that managing supply chains, contractor availability and “supply led” price pressures on capital programmes will be central to the deliverability of the PR6 capital programme.

EirGrid highlight that since the PR5 decision, *“there has been unprecedented inflationary pressure due to geopolitical events, supply chain pressures and coordinated global movements towards net zero goals.”*¹¹ Referencing research from KPMG, EirGrid states that it faces substantial labour cost pressures in PR6 to improve its remuneration package to compete with other employers. It highlights headwinds in relation to its strategic workforce development, staff retention and turnover, all in a backdrop to a challenging recruitment environment where the TSO will need to attract significant new talent into the business to meet its FTE requirements.

EirGrid also highlight pressures in relation to IT costs. It states that its unit IT costs have grown over the last two price controls and are set to place further price pressure in PR6 due to multiple factors including:

- Increasing cyber resilience requirements.
- Shift to cloud, requiring opex solutions instead of capex solutions.
- Supply chain constraints and resourcing.
- Increasing data intensity.

At the same time, both licensees have indicated how macroeconomic trends in the Irish economy and the degree of dynamic change taking place within the sector during PR6 will limit scope for achieving ongoing efficiencies:

- ESB Networks reference that *“estimates for the wider economy suggest a negative growth range of -0.9% to 0.3% over the PR6 period”* and conclude it *“is conservatively not factoring into our allowances for PR6 any equivalent adjustment for productivity. In effect, therefore, we are targeting outperformance of the wider economy in terms of our ongoing productivity.”*¹²
- EirGrid state that the *“while the EirGrid business will certainly transform during the PR6 period, the nature of that transformation is not such that it provides a stable and ongoing platform for continued annual productivity improvements at the frontier. To that end we do not believe that [aiming up on assumption of the scope for ongoing efficiency in the context of business transformational activity during PR5] is necessarily appropriate [at PR6]. Moreover, the scope for ongoing efficiency gains is likely to be low in PR6 due to the real, dynamic change that will occur.”*¹³

Aspects of these headwinds were highlighted in the CRU’s PR6 Strategy Paper.

For example, the CRU stated that the *“scale of potential investment required [in PR6] presents challenges for ramping up and delivery of capex programmes, constrained (local & global) supply chains and managing resulting upward cost pressures.”* The Strategy Paper also noted that network companies will need to *“clearly set out how*

⁹ Frontier Economics (2024): ‘Real price effects and ongoing productivity in PR6’

¹⁰ ESB Networks (2024): ‘Price Review 6 – Business Plan’, p. 224.

¹¹ EirGrid (2024): ‘TSO Look forward submission – 2026-2030’, p. 152

¹² ESB Networks (2024): ‘Price Review 6 – Business Plan’, p. 224.

¹³ EirGrid (2024): ‘TSO Look forward submission – 2026-2030’, p. 156

they propose to manage the uncertain macroeconomic outlook for PR6, the overhang from recent inflationary pressures and the impacts on local price benchmarks.”¹⁴

The CRU's Strategy Paper also highlighted the opportunity in PR6 for the network companies to embed business transformation projects and changes to their operating models (e.g., ESB Networks move towards an independent DSO operating model) to maximise revealed and ongoing efficiencies. Recent electricity network price control cycles have also provided significant allowances for innovation funding and business transformation, some of which might now be expected to support some scope for realising ongoing efficiencies in PR6.

The context leading into PR6 is, therefore, one of headwinds in managing price pressures and deliverability of an unprecedented investment programme, but also an opportunity to transform network business operations, utilise new technologies, particularly in data and digitalisation, to improve productivity.

2.2. REGULATORY TREATMENT OF COST TRENDS

One of the objectives of the CRU's regulatory framework as stated in the PR6 Strategy Paper is to enable network companies to recover their efficient costs and, at the same time, ensure that customers pay no more than the efficient costs for the services that they use. The CRU's approach to the treatment of cost trends in its recent electricity network price control decisions has in general been to:

- provide for ex ante allowed costs to grow in line with general consumer price inflation (HICP); and
- use the ex-post review of the companies' incurred costs to manage and facilitate the recovery of efficient input price pressures companies may incur above this.

Alongside indexing cost allowances to general consumer (i.e., HICP) price inflation, the PR5 decision also built into its ex-ante opex allowances a challenge for the companies to realise ongoing efficiencies over the 5-year price control. This was set equal to:

- 1% for ESB Networks; and
- 0.4% for EirGrid TSO.

The differences in the Ongoing Efficiency challenges applied were a result of inherent differences between the asset-light TSO and ESB Networks as the transmission and distribution network's asset owner. The TSO was considered to have more limited scope for capital substitution in its opex.¹⁵

Licensee proposals on treatment of cost trends in PR6 regulatory framework

Both licensees include commentary and proposals on how they believe the CRU should treat input price trends and Ongoing Efficiency in the PR6 regulatory framework.

EirGrid argue for **an ex-ante cost trends framework in PR6**.

It states that it “agrees its costs on an ex-ante contracting basis with third-party suppliers and through pay claims from the workforce. Our preference is to set regulatory allowances through building a best ex-ante estimate into the [Business Plan Questionnaire] along the lines of a base-step-trend (BST) approach, which reflects how EirGrid agrees its costs. This would be adjusted ex-post for consumer price inflation (HICP) but preserve the ex ante estimate of the real price wedge, thereby sharing the risk between EirGrid and customers in relation to the ex-ante estimation on which EirGrid would seek to agree and negotiate its costs.”¹⁶

¹⁴ CRU (2024): 'Price Review 6 – Strategy Paper', p. 35-36.

¹⁵ This issue is discussed in further detail in later sections of the report.

¹⁶ EirGrid (2024): 'TSO Look forward submission – 2026-2030', p. 152

EirGrid state that this change of approach, compared to the framework in PR5, will help to provide greater certainty of its revenue allowance “at a time that we are seeking to deliver a comprehensive PR6 programme. It will also fairly allocate price risk between EirGrid and our customers.”¹⁷

In contrast, ESB Networks conclude that “while the external evidence points to significant input cost pressures greater than inflation, we are cognisant that regulatory precedent in Ireland has been to address RPEs through setting appropriate ex ante costs allowances and the ex post assessment, rather than an explicit RPE allowance. ESB Networks cost submissions reflect this standard practice, and ESB Networks is not seeking a further ex ante allowance for RPEs, outside of the ex post review process (where ESB Networks would expect to recover efficiently incurred RPEs).”¹⁸ It, therefore, **proposes the retention of the ex post framework applied at PR5.**

As part of engagement with network companies on the development of the PR6 regulatory framework, ESB Networks have also commented that given “the scale of investments required for PR6, the risk of substantial cost forecast changes due to input cost volatility and supply chain constraints is considerable. It would not be proportionate for ESB Networks to bear this risk alone. For these reasons, we propose that the PR6 regulatory framework incorporates some protection for input cost uncertainty.”¹⁹

ESB Networks has proposed that input cost uncertainty should be managed via reopeners with:

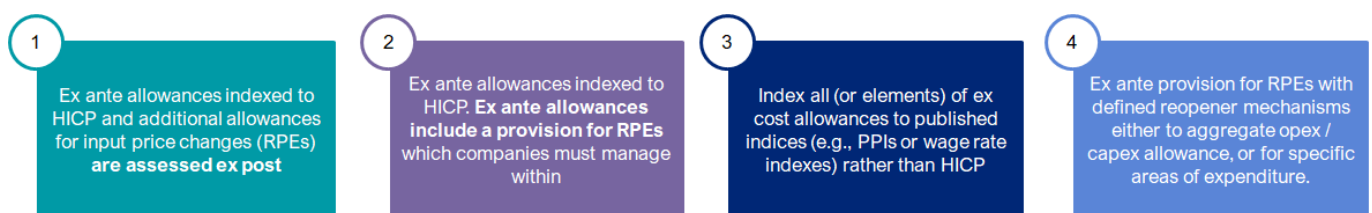
- Uncertainty mechanisms implemented and / or expanded for specific cost categories (i.e. HV reinforcement and Transmission) that are highly exposed to significant fluctuations in input prices.
- Clear and structured reporting requirements to ensure transparency in ESB Networks' decision-making processes and ongoing monitoring and assessment of its input costs.

Our assumption is that volatility in input prices and costs in areas that are not subject to these specific uncertainty mechanisms / reopeners would instead be managed within period by ESB Networks and the ex post review used to justify recovery of any incurred costs that exceed ex-ante allowances.

Options for the treatment of cost trends in the PR6 regulatory framework

Given the context to PR6 and the scale of the investment challenge, we have considered a range of options for the regulatory treatment of cost trends in PR6. Four options are illustrated in Figure 2.2 below which draw on recent experience in other utility price controls in Ireland, the UK and Europe.

Figure 2.2 – Subset of options for treatment of RPEs / cost trends in PR6 regulatory framework



Source: CEPA

Option 1 would be aligned with the approach that has been taken to manage input price trends in several recent CRU price control decisions. It would require the licensees to manage input price pressures (over and above HICP inflation) within period, and where additional efficient costs are incurred, these would be expected to be justified and recovered via the k-factor process at the price control’s ex-post review (i.e., at the PR7 review).

¹⁷ Ibid.

¹⁸ ESB Networks (2024): ‘Price Review 6 – Business Plan’, p. 224.

¹⁹ ESB Networks (2025): ‘RPEs and Ongoing Efficiency’, March 6th

Option 2 has been the approach that several UK regulators have taken in recent price controls. Under this option, the CRU would set an ex-ante allowance for input price trends and Ongoing Efficiency. Whilst the expectation might be the network companies should seek to manage within this allowance once it has been set, the ex-post cost assessment – which will remain part of the regulatory framework for PR6 – would provide scope for companies to justify additional efficient costs from further RPEs above these allowances.

Option 3 is an approach that has been applied – in different ways – in some recent UK price control decisions. Ofgem in RIIO-2 has indexed its RPE allowances to a range of published price indices for labour, materials, electrical equipment etc. In PR24, Ofwat retained, or introduced new, true-up mechanisms for RPEs linked to labour and energy prices in water companies' costs. EirGrid in their submission on cost trends also reference several European precedents of regulators either indexing cost allowances or overall revenue allowances, to indices other than general consumer price inflation to reflect input price pressures.

Option 4 is a variant of Option 1 and 2. Ex ante allowances for RPEs might still be established upfront at the price review²⁰ and either a general reopener, or a targeted uncertainty mechanism, would then apply – with supporting reporting requirements – to allow additional cost allowances be released into a company's allowed revenues if the inflationary pressures were demonstrated to exceed the ex-ante allowance (and/or it was not possible for the licensee to carry this additional cost until the time of the price control's ex post review).

Recent CRU precedent

In its recent PC5 gas networks price control decision for opex, the CRU set an overall efficiency challenge / cost trend of 1% which consisted of balancing scope for catch-up²¹ and Ongoing Efficiency, and potential for RPEs in opex during PC5. Any differential inflation over and above this cost trend, and within capex, was expected to be managed via the price control's ex-post review. The approach is closest to Option 1 above.

Treatment of differential inflationary pressures was also considered by the CRU in the 2022 Interim Review²² of Irish Water's current price control, RC3. The CRU consulted on a range of options involving an HICP adjustment, some with a further differential inflation adjustment and one involving an ex-post review.

For opex, CRU applied a series of targeted differential inflation adjustments for energy and Design Build Operate contracts within Irish Water's opex. For capex, Irish Water proposed a hybrid index (comprised of several separate indices²³) to forecast what it considered to be the actual inflationary pressures it faced as a water utility. While the CRU decided to allow Irish Water to recover the additional euro funding requested, it did not approve the specific or hybrid indices proposed by Irish Water (or any other indices). Rather, the CRU stated that it would review the capital investment in the RC3 lookback when outturn data was available.

In this decision paper, the CRU also applied a framework of assessment to determine if it was appropriate to make an adjustment for unexpected inflationary pressures. The criteria the CRU applied included:

- Are the external inflationary factors being faced by Irish Water real?
- Are they material and beyond management control?
- Absent an adjustment to the RC3 allowance, would there be undesirable consequences from a policy perspective for water and wastewater customers?

²⁰ Or ring-fenced as a separate 'use it lose it' pot within the allowances.

²¹ Following benchmarking of Gas Networks Ireland.

²² CRU (2022): 'Irish Water Revenue Control 3 – Interim Review', available [here](#).

²³ The index comprised several components of construction and services costs, including labour, materials, project management, legal services etc. Individual indices and weightings were proposed for each of these components. See Irish Water (2022): 'Capital Expenditure submission', available [here](#).

2.3. CEPA PROPOSALS AND APPROACH

Recommended treatment of cost trends in PR6

We recommend **setting ex ante provisions for RPEs in cost allowances at PR6.**

The scale of investment, and the risk of substantial cost forecast changes due to input cost volatility and supply chain constraints, is considerable in PR6. There is a risk that if ex ante allowances for opex and capex do not include any upfront provision for RPEs, and/or dedicated mechanisms are not in place to manage the risk that input costs increase materially during the price control, this could hamper delivery of the critical investment and transformation programmes that are required in PR6.

Our proposal would be for the CRU to set an **RPE provision in allowed opex, net of an ongoing efficiency challenge**, which would not be subject to any reopener within period. Both licensees will still be expected to justify their incurred opex at the price control's ex-post review, which would also provide an opportunity to recover any additional efficient costs which exceed the ex-ante RPE provision built in the opex allowance.

For capex, given the scale of the PR6 investment programme and the importance of this programme's delivery during PR6, we agree with ESB Networks that the **regulatory framework requires flexibility via reopener / uncertainty mechanisms that offer protection to input cost uncertainty.** There are several options for how this could be implemented in as simple and pragmatic way as possible, as we discuss in Section 5.

If a provision for RPEs / differential inflation is made on an ex-ante basis, then it would also be appropriate and consistent for the CRU to set an **Ongoing Efficiency challenge** to ensure that both companies are incentivised to operate at the frontier and manage their cost trends appropriately.

Whilst there has been recent precedent of some UK regulators indexing RPE allowances (Option 3 above), we understand there has been some issues with the selected indices not always accurately matching network companies' incurred costs within period. Given its complexity, we do not consider this approach would be appropriate for PR6.²⁴ One of the concerns with setting ex-ante RPE allowances (Option 2 above) raised in other contexts, has been the potential for them to lead to windfall gains or losses for regulated companies.²⁵ We consider this less of a risk in the context of the CRU's ex post cost assessment framework. Under our proposals, we would expect the obligation would continue to be on the network companies to fully justify at the PR6 ex-post review that the costs they incurred in their opex and capex are economic and efficiently incurred.

Approach

For opex, we have assessed the need for RPEs using a holistic approach rather than treating the criteria as hard pass/fail tests. We consider the following in determining whether an RPE is required:

- **Materiality** – whether the cost category represents a material share of opex, using a 10% threshold. We also assess whether the proposed RPE would result in a change of at least 0.1% of total opex.
- **Justifiable** – whether the cost pressure is outside management control and shows a sustained divergence from the general inflation measure.
- **Forecastable** – whether there are robust and independent indices available to support a credible and transparent forecast.

²⁴ Not least because there are also more limited published indices that related directly to the Irish supply / producer markets than, for example, exist in the UK.

²⁵ See for example, the experience in RIIO-1 as discussed in CEPA (2018): 'Review of the RIIO Framework and RIIO-1 performance', available [here](#).

Where the need for an RPE allowance is identified, we identify a preferred index, or indexes, and sources of forecast input price inflation, to inform a proposed cost trend for PR6 ex ante allowances.

As we discuss in Section 3, EirGrid has requested an additional adjustment to its requested labour RPE on the basis that it considers a wage gap has emerged in its business in PR4 and PR5 compared to comparable 'EirGrid skilled sectors' in the wider Irish economy. As part of our analysis, we have assessed this request for a 'market equilibrium' catch-up adjustment component to the labour RPE allowance.

Finally, to assess the scope for Ongoing Efficiency we have considered a range of sources of evidence including the report submitted by ESB Networks from Frontier Economics and published studies on Total Factor Productivity (TFP) potential in the Irish economy from organisations such as the Irish Fiscal Advisory Council, the Central Bank of Ireland (CBI) and statistical / macro-economic agencies. We have also reviewed regulatory precedent of Ongoing Efficiency challenges in recent Ireland and the UK price controls and the proposals that various regulated infrastructure managers, including the electricity transmission network licensees in Great Britain, have proposed in their recent business plans and submissions into network price control proceedings.

Our approach to setting a capex RPE allowance would depend on the design of the preferred reopener / uncertainty mechanism, as discussed in Section 5.

3. RPES IN OPEX

Both licensees submitted consultancy reports on opex RPEs in PR6. Both licensees highlight considerable headwinds that they face in relation to opex input price growth during PR6 with expected above-inflation increases in both labour and non-labour costs. In EirGrid's case, they state a further uplift is needed in PR6 to provide a market equilibrium wage rate and close a wage-gap that has emerged relative to market benchmarks.

In this section we review the licensees' proposals on opex RPEs and set out our own analysis and conclusions.

3.1. LICENSEE PROPOSALS

ESB Networks

ESB Networks submitted a report from Frontier Economics which analyses historical and forecast data on input price trends in the Irish economy which they use to inform a view of the RPEs that ESB Networks may face in its opex in PR6. Frontier split ESB's opex into two categories (labour and materials) and find evidence of:

- positive expected labour RPEs in the **range of 1% to 1.8%**, which amongst a range of factors they relate to wages potentially catching-up with recent high rate of general consumer price inflation; and
- positive expected materials RPEs in the **range of 1% to 2.7%**, based on historic evidence of wholesale price increases.

Frontier Economics conclude that the *“result of this analysis is a weighted opex RPE of 1% to 2% for the PR6 period.”* As discussed in Section 2, in its Business Plan submission, ESB Networks has in practice excluded RPEs (and Ongoing Efficiency) from its opex forecasts. ESB Networks state that in relation to opex, *“ESBN's proposal is to maintain CRU's PR5 approach, where RPEs are assessed through an ex post assessment.”*

For capex, as discussed in Section 2, ESB Networks has requested that uncertainty mechanisms should be implemented and / or expanded for specific cost categories (i.e. HV reinforcement and Transmission) that are highly exposed to significant uncertainty in input costs and fluctuations in input prices.

EirGrid

EirGrid's proposals on opex RPEs in PR6 are supported by a report from its advisor KPMG.²⁶

KPMG state that over the last two price controls to date (2016-2024) wages across all economic sectors in Ireland have grown by 1.18% above HICP inflation per year, on average. They state that in “EirGrid-comparable skilled” sectors – i.e., ICT, Professional, Scientific and Technical, Finance and Electricity Water and Waste sectors – this figure was **1.48% per year above HICP**, representing a 0.3% wedge per year as compared with the average per annum wage growth experienced in the broader economy over the two price control cycles.

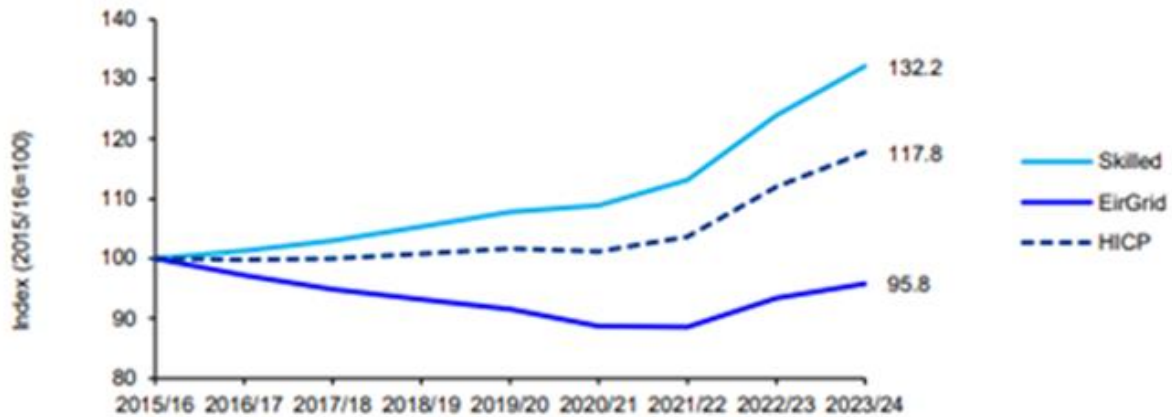
By comparison, KPMG report that the average annual growth in unit labour costs at EirGrid was 2.6% below HICP inflation over the last two price controls (PR4 and PR5). They state that by *“by 2023/24, unit labour costs at EirGrid were 27.5% lower than if they had grown in line with comparable skilled sectors over the last two price controls.”*

These relative trends are illustrated in the figure below.

KPMG highlight that while the number of FTEs that EirGrid employs has increased over the periods of PR4 and PR5, EirGrid has increasingly relied on contractors in recent years. For opex, EirGrid FTEs have risen by 65% since 2015/16, and for capex, the number of FTEs on capex has risen by 52% over the same period. KPMG state that this period has coincided with an increase in labour costs of only 20.9% in real terms at EirGrid, but EirGrid's contractor costs over the same period have risen by over 400%.

²⁶ KPMG (2024): 'Long-term cost trends in Ireland'

Figure 3.1: Nominal labour unit costs (per FTE) at EirGrid vs. HICP and 'EirGrid skilled' comparator index



Source: KPMG²⁷

KPMG state that “[t]he increasing use of contractors may be indicative that EirGrid is relying more on external contractors to address its skills gap. The data also indicates that, while there have been cost savings on lower FTE costs through lower salaries, there has been a significant increase in expenditure on contractors and a more significant increase overall.” This may lead to two inferences:

- firstly, contractor costs in EirGrid will need to reflect market equilibrium labour prices; and
- secondly, if the necessary skill sets are not attracted by EirGrid directly into its own employees, this may increase the reliance that the business has to place on contractors, at a potentially higher cost to the EirGrid business (and ultimately electricity consumer).

KPMG report trends of recent labour market developments in Ireland and supply and demand pressures on the skilled sectors used as the basis for forecasting EirGrid’s input cost trends in PR6. KPMG report that:

“Nominal wage inflation both at the aggregate level and for high skill sectors has outstripped HICP inflation in the first two quarters of 2024 ... Nominal wages across all NACE economic sectors grew at an average annualised rate of 4.2% in the first two quarters 2024, while the equivalent figure for HICP was 1.0%. Wages in high-skill sectors grew at a markedly higher rate. For example, nominal wages in professional services grew at an average annualised rate of 2.8% (or 1.9%pts above HICP); 3.8% in financial services (or 2.8%pts above HICP); 4.7% in the ICT sector (or 3.7%pts above HICP); and 10.4% in electricity, water and waste sectors (or 9.4%pts above HICP).”

A range of data is reported by KPMG which is considered to show **there has been a positive and statistically significant wedge between wage growth in the Irish economy and HICP** and this is forecast to continue into PR6 – that is, there is evidence of a **positive labour RPE**. KPMG find that the data shows this positive wedge is greater for EirGrid ‘skilled sectors’ by 0.3% over the period of PR4 and PR5.

Various demand and supply side pressures are referenced as acting on the equilibrium expected wage rate for the EirGrid business in PR6 which it is implied will mean that EirGrid will face considerable headwinds in recruiting, retaining and managing turnover of employees, unless its remuneration package is allowed to increase with comparable skilled sectors in the Irish economy. KPMG highlight how:

- The significant step up in investment across utility-intensive sectors and increased demand for specialized labour will create **demand side pressures** that will increase EirGrid’s equilibrium wage rate.

²⁷ The EirGrid index is constructed using the 2015/16 as the base year and then making it grow at a rate equal to the sum of HICP and the average annual unit cost growth rate over the observed period (net of HICP).

- An ageing workforce, issues with training in the economy and challenges with migration of skilled labour into the Irish economy will act as **supply side pressures** on labour costs.

KPMG conclude that for EirGrid to provide an economy-wide competitive wage in PR6 and in turn retain and attract skilled workers, the following may need to be considered:

- adjusting wages in line with future market movements; and
- closing the wage gap that has emerged between EirGrid skilled sectors since 2015/16.

KPMG presents a range of scenarios for the degree to which the stated wage gap might be closed during PR6, as summarised in the table below. KPMG conclude that closing the historical gap by 20-30% and ensuring that wages at EirGrid then grow in line with comparable high-skill sectors from that point (i.e., during PR6), could require an annual labour cost RPE of **3.5-4.2% above HICP**. We understand this is the labour RPE that EirGrid propose should be applied by the CRU to set its TSO price control for PR6.

Table 3.1: Real wage growth at EirGrid required under different scenarios

Scenario	PR6 annual nominal growth	PR6 annual growth net of HICP
A Wages grow in line with HICP	1.9%	-
B Wages grow in line with historic growth rate in all economic sectors	3.8%	1.9%
C Wages grow in line with historic growth rate in 'EirGrid skilled' sectors	4.1%	2.2%
D Scenario C plus closing a historical gap by 20%	5.4%	3.5%
E Scenario D plus closing a historical gap by 30%	6.1%	4.2%
F Scenario E plus closing a historical gap by 100%	10.7%	8.8%

Source: KPMG (CEPA adapted)

On non-labour costs, KPMG conclude that based on historical evidence of the CSO's services producer price index (SSPI) it would be reasonable to assume that EirGrid's non-labour costs would be expected to grow at **an annual average rate of at least 3.17% points above HICP inflation** during the period of PR6.

3.2. COMMENTS ON LICENSEE PROPOSALS

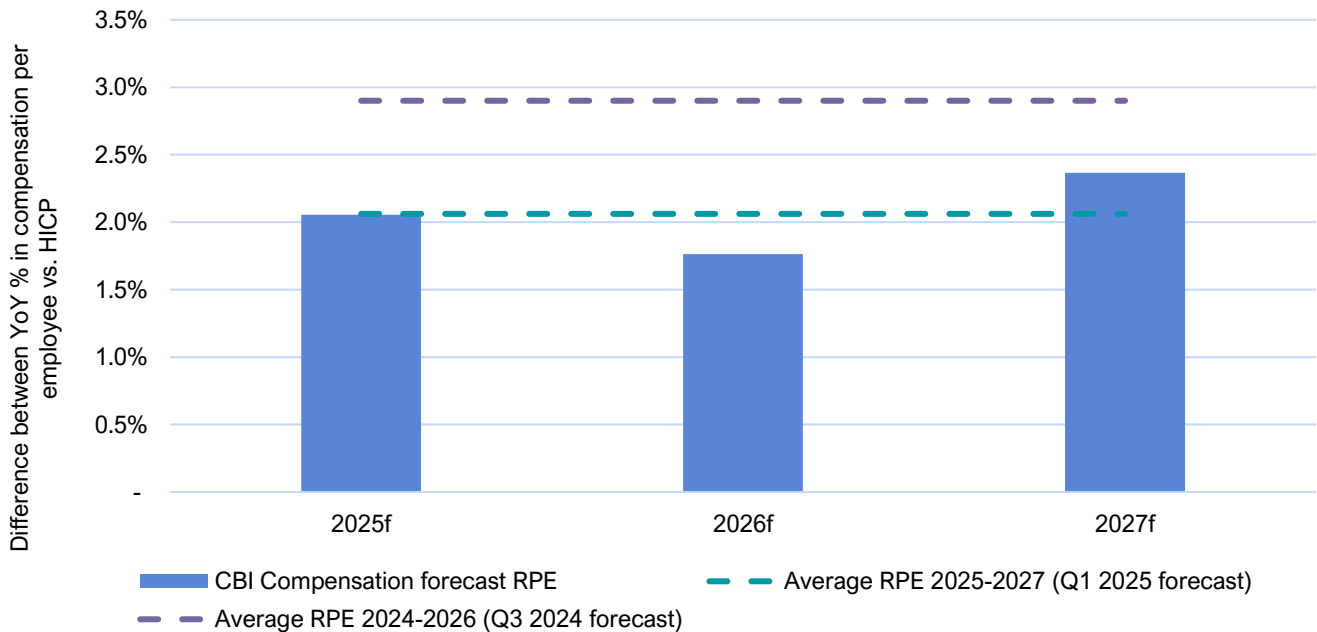
ESB Networks

The Frontier Economics report ESB Networks reference to inform their opex RPE forecast follows a standard regulatory approach of using historical and forecast evidence to inform RPE trends.

We agree with Frontier Economics that both historical and forecast information offer insights into the input cost trends the electricity network companies may experience in PR6. We agree that given the recent period of high inflation, and how this may impact future wage settlements in the economy, that it is important to consider forecast as well as historical evidence. However, it is also important to note that at the time of writing there are several headwinds that may affect the global and Irish economy – e.g., the USA's introduction of import tariffs – which mean there is considerable uncertainty in the macroeconomic environment looking into PR6 period.

The most recent Central Bank of Ireland (CBI) Quarterly (Q1 2025) notes that there were already signs of the labour markets easing recently, but that they continued to remain tight, and this is one of the main factors underpinning their projection for increases in wages out to 2027. A reflection of the slight easing of labour market conditions referenced in the latest CBI bulletin, average real growth rate over the next 3-years has fallen since the CBI forecast Frontier Economics report, 2.9%, to 2.1%, as illustrated below.

Figure 3.2: Labour RPEs measured by CBI Compensation forecasts



Source: CEPA analysis of Central Bank of Ireland, Quarterly Bulletin Q1 2025

The reduction in the CBI’s forecast serves to illustrate that there is considerable uncertainty of the labour RPE in PR6. Furthermore, as we note above, the most recent CBI bulletin was published prior to the recent introduction of new import tariffs by the USA and consideration of their impact on economies including Ireland.

As we have previously commented in the context of Gas Network Ireland’s price control review²⁸, the volatility in the CBI forecasts means we would guard against using them as a piece of information in isolation given any forecast RPE will apply for the duration of PR6 and is uncertain. In that context, we also noted that even if the CBI’s forecast wage pressures were realised in the general economy, network utilities may be insulated from those trends to a degree because of sector specific approaches for contracting specialist external labour and setting pay deals with its staff. Similar issues apply to ESB Networks (and indeed, EirGrid) in a PR6 context.

As a result, recent wage growth forecasts we believe need to be interpreted with some caution in judging an appropriate RPE allowance for the period of PR6. As we discuss below – and indeed, in Frontier Economics’ report for ESB Networks – a more conservative approach would be to rely on longer term historical estimates of labour RPEs from CSO Average Hourly Earnings (AHE) data as a proxy of the rate of real labour cost inflation in PR6. Frontier quotes a long-term average labour RPE of 0.5% for the total economy (all NACE economic sectors) for the period 2009-2023. Excluding 2022 and 2023 from this average - a period of low real wage growth due to the high headline rate of consumer price inflation – this average is equal to 1%.

Another factor Frontier Economics note in their report is because the recent period of high consumer price inflation has for some sectors of the economy outpaced wage inflation, in future years there may be need for catch-up across the economy-wide wage settlements. To the extent that this issue may apply to ESB Networks in PR6, then this may further strengthen the case for the CRU setting an ex ante labour RPE in PR6 to ensure that realised input cost pressures do not result in the licensee needing to reallocate opex allowances away from addressing needs of the network in order to be able to fund the input cost pressures.

Comparing ESB Networks weighted average salary costs (as reported in their BPQ) to trends in comparable sectors in recent years (see figure below) suggests this might be a risk in PR6.

²⁸ CEPA (2023): ‘PC5 Frontier Shift – Final report’

Redacted

Source: CEPA analysis of CSO data

On material costs, we are broadly in agreement with the sources of evidence that Frontier Economics reference in their report, which align with indices CEPA has previously analysed in other contexts, including in PC5.

We also consider that the Wholesale Price Index (WPI) published by the CSO – which Frontier concludes is the most appropriate for capturing ESB Networks’ materials price changes – provides an important source of evidence for helping to judge an expected materials RPE in PR6, particularly if it is an index in practice used in ESB Networks’ construction contracts and works frameworks (as Frontier state is the case in their report).

However, it is important to note that the WPI has experienced particularly high rates of growth compared to the HICP in recent years. We would be highly cautious in assuming the relative levels of price growth in the WPI and HICP observed during 2021-22 will apply in PR6. We consider that any WPI average that gives weight to this period is likely to be less reflective of an expected materials RPE in PR6. Frontier only analyse data of the WPI up to 2023 which means that the relatively low 12-month growth rate in the WPI over 2024 and the start of 2025 (c. 0.4% on a nominal basis) is also not captured in their analysis given the time it was completed.

EirGrid

There are several points to note with regards EirGrid’s proposal for RPEs in PR6 and KPMG’s supporting analysis, which overall suggest that the CRU should be cautious before accepting EirGrid’s proposals, particularly as regards its proposals for a “catch-up” labour RPE in PR6.

First, it is important to note that KPMG’s analysis does not provide a benchmarking study of the level of EirGrid’s labour costs. The analysis does not provide an assessment of EirGrid’s absolute remuneration position relative to the ‘skilled comparable’ labour market segments that are referenced in KPMG’s analysis.

Rather – as the KPMG report clearly states – the scope of their analysis is an assessment of how the relative trend in the *growth rate* of EirGrid’s unit labour costs has evolved over the past two price controls compared to published indices of ‘skilled sectors’ which EirGrid and KPMG consider are the most relevant comparators for the labour markets EirGrid employees are expected to be recruited from.

The analysis shows how the relative position of EirGrid’s unit labour costs has evolved over the last two price controls. But it does not show how EirGrid’s employee wage *levels* – and other elements of the company’s remuneration package, such as pensions – may have evolved during this period. To understand this, we compared

EirGrid's nominal average salary rate – on a weighted average basis across grades – to the CSO wage indices KPMG use as the comparable sectors for EirGrid as illustrated in Figure 3.4 below.



Figure 3.4 shows how EirGrid's weighted average annual earnings²⁹ – as reported in Section 2.8 of the TSO BPQ – have declined over time relative to a simple average of CSO ICT, finance, professional services and electricity/gas/water sector indices which EirGrid and KPMG use in their RPE analysis.

However, this decline is from a position looking back to 2011 where EirGrid's average payroll costs appear to have been at a *premium* on average to these sectors. Figure 3.4 suggests on average, across the sectors that EirGrid and KPMG state are the most comparable to the TSO business, that rather than a gap with the level of wages on average in the sectors in KPMG's analysis, EirGrid's average wages – and indeed, the recent nominal growth rate of basic salaries – appear to in recent years closely track the average salary rates in the comparator sectors.

Second, EirGrid and KPMG assert, but do not evidence, why the sectors they use to inform their input cost trend proposals at PR6 should be considered the most applicable comparators to the TSO business in PR6. Given the level of labour RPE that is requested for the period, we would suggest the CRU would require a more substantive justification from the EirGrid business that these are indeed the most applicable sectors for its TSO business, including why simply taking an unweighted average of the four sector indices is appropriate given these are some of the highest paying sectors of the economy relative to average pay levels in the general economy.

By extension it is therefore asserted, and not evidenced, that the gap in the *growth* rate of EirGrid average earnings relative to these sectors of the economy must be closed for EirGrid's *level* of remuneration to remain competitive with these sectors of the economy. As figure above shows, EirGrid's position relative to these sectors on euro levels basis paints a more complicated picture. On first appearances we considered there might be an inconsistency in EirGrid's Business Plan proposal that only 20-30% of the stated 'wage gap' would need to be closed in PR6 for EirGrid to retain and attract employees during PR6. If EirGrid are recruiting from the sectors referenced as its relevant labour markets, and the wage gap is consistent with the conclusions in KPMG's analysis, we might expect a far greater proportion of the 'gap' would need to be closed in order for EirGrid's rate of remuneration *at the margin* to be competitive and attract new employees into the business.

²⁹ Excluding pensions, PRSI and other payroll costs.

The analysis above helps to illustrate why such an inconsistency may not exist. Average pay levels in the TSO do not appear materially inconsistent with the sectors EirGrid and KPMG state are the best comparators for the TSO business. This would explain why applying a percentage RPE uplift to EirGrid's staff costs over the course of PR6 would not leave the business in a fundamentally uncompetitive positive relative to these sectors.

Third, KPMG appear to analyse wage rate growth rates excluding Irregular Earnings and therefore, we assume also Other Labour Costs, such as pensions. They compare this to what is stated as EirGrid 'unit labour costs' as reported in EirGrid's TSO BPQ. KPMG do not report what the unit labour cost for EirGrid includes, but there is a risk that comparing the historical growth rate of this benchmark to the growth rate of basic salaries in other sectors of the economy may provide an unbalanced analysis of the relative competitiveness of EirGrid's remuneration package, once for example the terms of pensions and other benefits are taken into consideration.

Neither the EirGrid Business Plan nor KPMG's report appears to discuss how these issues might influence judgements of the relative competitiveness of EirGrid's remuneration package.

We note that CSI analysis has found that there has emerged over time a private – public pay differential in some sectors of the economy Ireland.³⁰ This analysis took account of compositional differences between the public and private sector, such as occupational mix, sectors of activity, gender balance, union membership, etc. The public sector pay gap in 2022 was estimated to range from -6.6% to +0.9% depending on the specification applied and the treatment of the additional superannuation contribution. We are not stating that such a pay differential is appropriate in EirGrid's case. However, the analysis helps to illustrate how different organisations across the Irish economy can maintain pay differentials and still attract employees for similar occupations.

Fourth, as discussed above, to justify the need for the level of labour RPE proposed, EirGrid and KPMG highlight a series of demand and supply pressures on equilibrium wage levels in the Irish economy and EirGrid. As we have noted above, the CBI continues to reference tightness in the Irish labour market in its recent quarterly bulletin and how this may continue to be supportive of growth in nominal wages. However, it also notes that vacancy-slack measures have increased particularly in sectors such as ICT, Finance and Professional Services, and that an increase in potential labour supply may curb wage pressures at the upper-end of the wage distribution.

Finally, as a counterpoint to the challenges raised above, one rationale for EirGrid requiring a 'catch-up' component to its labour RPE, despite average pay levels appearing to track comparator sector average levels, is if the TSO's mix of grades are different to the mix reflected in the CSO sector salary averages. In this case, EirGrid's level of remuneration package may not be sufficient to attract and retain staff, and to support the organisational growth that EirGrid state is required to deliver on the objectives of PR6.

With this issue in mind, EirGrid state in their Business Plan that *"our remuneration frameworks and benefits need to become market competitive, including that this early career progression comes at a higher annual percentage cost trend line than an organisation with a more mature and experienced workforce. Our plan is for growth and expansion over the next five years, so we must put in place best practice people frameworks to ensure we can compete."* They also highlight that *"staff benefits package also requires investment on well-being, flexibility and health insurance, as gaps in these areas make us less competitive in the market."*³¹

A simple example helps to illustrate this point.

If there were, for example, three grades in a regulated company with a wage rate of €100, €200 and €300 and there were 100 FTEs in the first grade, 10 in the second and 5 in the third, the weighted average wage rate would be €117 for the company. The company's weighted average wage rate might still align with the overall sector average, but if the first grade's wage rate was €10 below market rates, then the company's remuneration package may not be sufficiently competitive to attract employees into this grade. We have illustrated this below.

³⁰ Econometric Analysis of the Public-Private Sector Pay Differential 2022 - Central Statistics Office

³¹ EirGrid (2024): 'TSO Look forward submission – 2026-2030', p. 154

Figure 3.5: Illustration of impact of staff mix effects on weighted average remuneration



Source: CEPA

This mix effect could justify EirGrid needing a further allowance over and above a forecast RPE for the PR6 period despite its weighted average pay levels appearing to be consistent with the level in sectors EirGrid consider are its comparators. However, we are not aware of EirGrid evidencing such a point in its submissions.

Overall, in light of the issues we have raised above, we do not consider that EirGrid has provided sufficient evidence to justify the ‘catch-up’ element of its labour RPE proposal. More substantive evidence is needed for such an adjustment to be allowed in its PR6 decision.

3.3. CEPA PROPOSAL

Need assessment

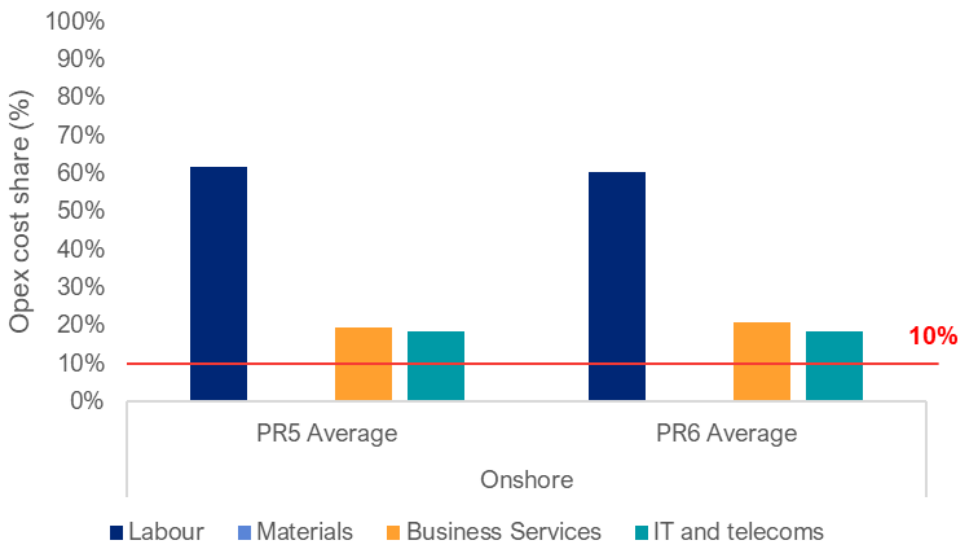
As discussed in Section 2, as a first step in our analysis we have applied a holistic framework to assess the need for ex ante RPE allowances in PR6.

This includes whether there is evidence that the RPE is likely to be **material**, **forecastable** and **justified** in terms of being outside of management control and whether historical and forecast evidence suggests it should be expected there will be a sustained divergence from general consumer price inflation. This is similar to the test that the CRU applied to provide differential inflation allowances as part of its Interim Review of RC3 for Irish Water.

As we have previously commented, we consider that elements of electricity network company labour costs are within the control of the licensees to manage; for example, their labour terms and conditions, payroll policies³² and the mix of staffing decisions that will all input into the average labour unit prices observed. However, both network companies also operate in competitive labour markets with external supply and demand pressures that are outside of companies’ management to control. As illustrated in Figure 3.6 and Figure 3.7 below, we find that labour represents a material share of EirGrid and ESB Networks’ opex. We have also identified a long-term wedge between inflation and wages and for the reasons set out above, consider this wedge is (to a degree) outside of management control given the companies operate in competitive labour markets. There also exists good-quality data for the purpose of ex ante and ex post review.

³² Including negotiation with unions.

Figure 3.6: Assessment of materiality of EirGrid opex categories³³

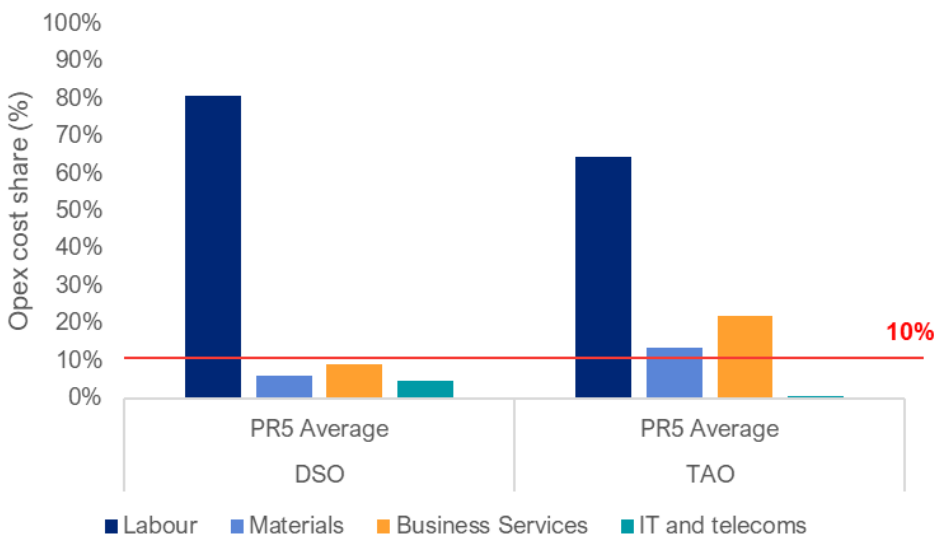


Source: CEPA analysis of EirGrid BPQ data

For the reasons we have set out above, we do not consider that the need for EirGrid’s catch-up component of its labour RPE request has been sufficiently evidenced and justified. Therefore, we consider only a forwarding looking labour RPE allowance, i.e., to reflect expected differential inflation during PR6, at this stage.

On materials, as the figure below illustrates, our analysis of ESB Networks BPQ data of the breakdowns in its PR5 opex indicates that a materiality threshold of 10% would not be exceeded for the DSO’s materials opex but would be met for the TAO. To ensure consistency between the two price controls – and given we understand that ESB Networks in practice operate its transmission and distribution activities on an integrated basis – we propose to include an ex ante RPE allowance for materials opex in both price controls.

Figure 3.7: Assessment of materiality of ESB Network opex categories in PR5



Source: CEPA analysis of ESB Networks BPQ data

³³ As EirGrid does not provide a detailed cost breakdown, we apply the same cost allocation methodology used in PR5.

Business services and IT and telecoms costs have historically been material cost categories for EirGrid but less so for ESB Networks. The data series considered for this category of opex at PR5 (sub-indices of SPPI) are volatile over time and may not provide an accurate reflection of future differential inflation in PR6. Nevertheless, we take a conservative approach and provide an RPE allowance for both network companies on the basis Business Services and IT and telecoms might reasonably be grouped together for a materiality assessment.

Labour opex

For labour costs, we have set out above why we consider that the CSI forecasts of labour compensation growth relative to HICP should be interpreted with some caution. We consider the average labour RPE of c. 2% implied by the latest CBI Quarterly Bulletin forecast for the next three years should provide an upper bound on an appropriate ex-ante RPE allowance for both licensees for PR6. We also consider evidence of the long-term historical averages of the labour RPE wedge, and supplement this with the latest CBI forecast evidence.

For ESB Networks labour costs, we propose a:

- lower end RPE estimate of 0.8% per annum; and
- higher end RPE estimate of 1.4% per annum.

The lower end estimate reflects the average long-term labour RPE wedge implied by Ireland's CSO all sectors' wage series, excluding a selection of outlier years during the Global Financial Crisis and COVID years.

The higher end estimate assumes labour RPEs implied by the latest Central Bank of Ireland forecasts of wage and HICP growth in the Irish economy apply for three years from 2025 and the per annum RPE rate then reverts to a long-term historical average of 0.8% for the final three years of PR6, following a period of wage catch-up relative to HICP inflation. The proposed RPE allowance is then the average annual RPE rate of this five-year series.

As discussed above, EirGrid has requested a labour RPE that reflects two components: i) a catch-up component to its labour unit costs compared to the rate of real wage growth experienced in skilled sectors such as ICT, finance, professional services and utilities during PR4 and PR5 (1.3-2.0%); and ii) a forecast component to maintain the competitiveness of its labour costs with these skilled sectors in PR6 (2.2%).

For the reasons we have set out above, we do not consider that EirGrid has adequately evidenced the need for the first component of its RPE request. On the second (forecast) component, we propose a:

- lower end RPE estimate of 1.3% per annum; and
- higher end RPE estimate of 1.7% per annum.

The lower end estimate is the average RPE wedge for the CSO's electricity, water supply and waste management index for the period of PR4 and PR5. A reliance on this estimate would reflect a judgement that further evidence is required from EirGrid to justify placing weight on the other RPE wedge implied by the other sectors EirGrid include in their comparator cohort – ICT, Finance, Professional Services etc.

However, as 1.3% is also equal to the long-term average labour RPE wedge for the sectors EirGrid use to inform their RPE proposals, excluding Global Financial Crisis and COVID years³⁴, this estimate is not inconsistent with longer-term evidence of this RPE wedge implied by these sectors.

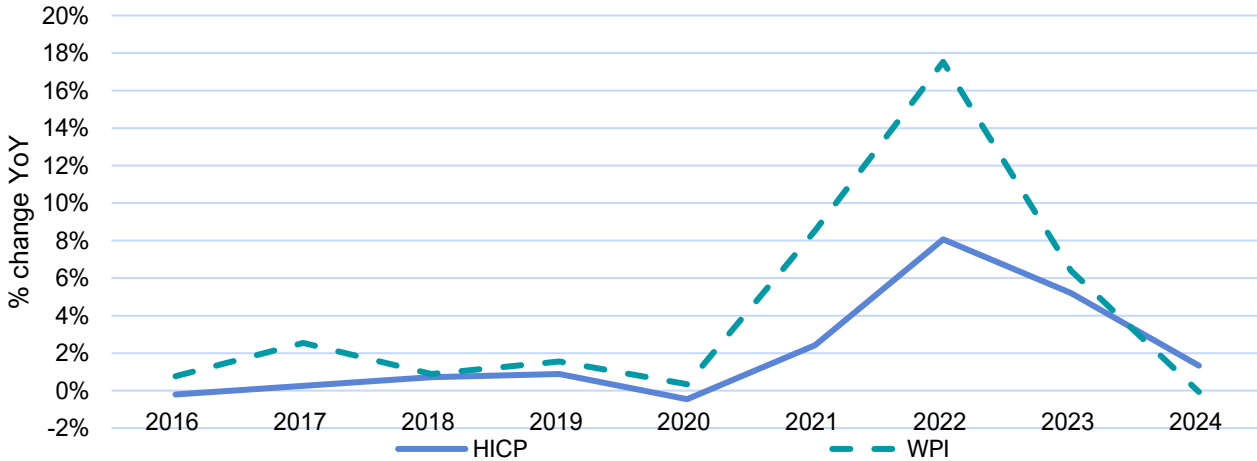
The higher end estimate is the higher end estimate for ESB Networks labour RPE, with a 0.3% uplift to reflect the historical wedge KPMG find in their analysis of the EirGrid sectors they use in their analysis. This estimate gives weight to the evidence in KPMG's report of a structural wedge between the sectors that EirGrid say they recruit from and the long-term growth rate of wages in the general Irish economy.

³⁴ Excluding these years is conservative, as they are a period when a negative labour RPE wedge is observed.

Materials opex

For materials, we note that recent evidence from the CSO’s WPI shows a 12-month year on year rate of price growth *below* the current rate of inflation in the HICP, as illustrated in the figure below.

Figure 3.8: WPI vs. HICP 12-month YoY price growth



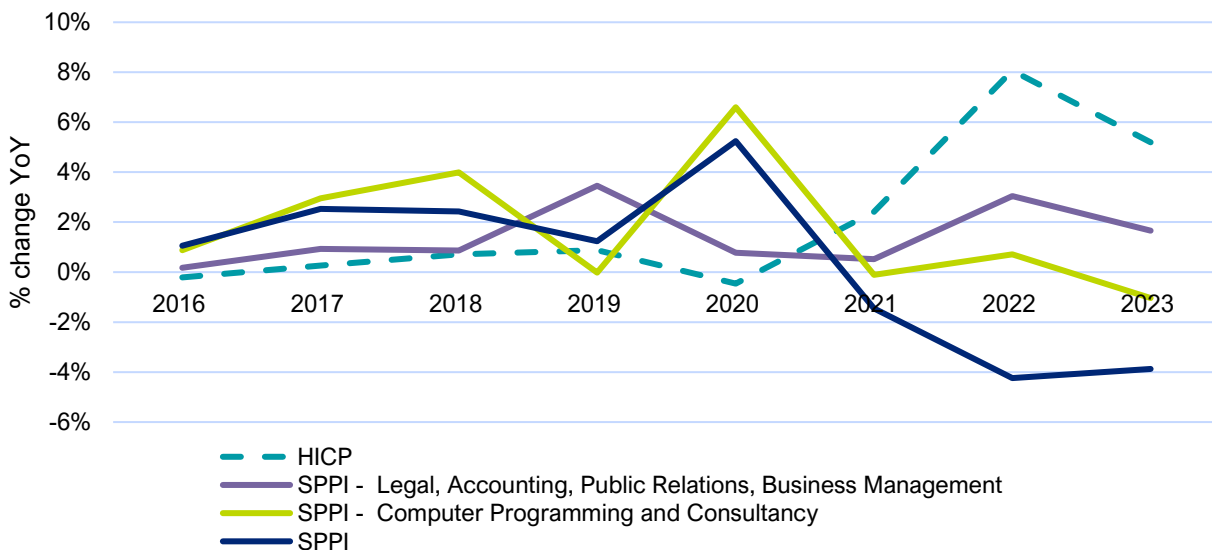
Source: CEPA analysis of CSO data

Other materials indices such as the IPI Electrical Equipment index have also experienced negative real price growth in the past 12-24 months. We are cautious about assuming a negative RPE given recent volatility in materials prices and note the supply chain pressures ESB Networks reference as impacting their opex and capex. We propose a materials RPE of 0.7% per annum based on the long-term average of the WPI over the period 2016 – 2024, excluding 2021 and 2022 given the exceptional circumstances that occurred in those years.

Business Services, IT and Telecoms

We reviewed a range of service related producer price indices to inform an RPE allowance for ESB Networks and EirGrid’s Business Services and IT & Telecoms opex. The figure below compares the year-on-year growth rate of several CSO SPPI indices (Legal, Accounting, Public Relations, Business Management, Computer Programming and Consultancy and the overall SPPI) with the HICP for the period 2016-2023.

Figure 3.9: SSPI indices vs. HICP 12-month YoY price growth



Source: CEPA analysis of CSO data

This shows that the wedge relative to the HICP has not been very volatile over time and for all the indices was negative during 2023. In the most recent update by the CSO, they reference that services producer prices were on average 4.3% higher in Quarter 4 (Q4) 2024 when compared with the same period in 2023. Amongst the most notable changes in the 12 months to Q4 2024 the CSO referenced Advertising & Other Professional Activities (+6.2%), Information & Communication (+6.0%) and Legal, Accounting, Public Relations & Business Management Consultancy (+4.1%). Given the current rate of Irish HICP inflation, this would imply a positive RPE.

We are highly cautious in relying on any single source of evidence to inform an RPE allowance for these categories of opex. The volatility of the wedge compared to the HICP might indicate that Business Services and IT and Telecoms are areas that do not meet the ‘forecastable’ criteria for allowing an RPE.

However, we are also cognisant that, particularly for EirGrid, these costs are a material component of opex. In the absence of a single compelling piece of evidence, we assume an RPE allowance of 1.2% for Business Services and for IT and Telecoms. This reflects the average wedge to the HICP across the two subcomponent indices of the SSPI and the SSPI over the period of 2016-2023.

Overall RPE allowances

Applying the opex shares for labour costs, materials, Business Services, IT and Telecoms as we used for the materiality assessment, we estimate the following ranges for RPE allowances for total opex.

Table 3.1: Estimated RPE per annum allowances

	Low	High
TSO	1.3%	1.5%
DSO	0.8%	1.3%
TAO	0.9%	1.3%

Source: CEPA analysis

4. MANAGING UNCERTAINTY OF CAPEX RPES

This section considers options for how uncertainty of input prices in ESB Networks capex programmes could be managed under the regulatory framework in PR6. The sections which follow:

- recap on why a mechanism may be needed for PR6;
- options for the form an uncertainty mechanism could take; and
- assess the options and set out proposals for consultation.

4.1. NEED

As discussed in Section 2, we agree with ESB Networks that the scale of its investment programme, and the importance for customers of this programme's delivery in PR6, means the regulatory framework requires some form of reopener / uncertainty mechanism for managing input price uncertainty within period.

The scale of the investment in PR6 necessitates an evolution of the solely ex post approach that has been taken at recent electricity network price controls to ensure that there is clarity in how input price pressures are impacting capex and to manage the risk between the licensee and customers. This is necessary to protect the interests of consumers that increases in costs that are passed through into consumer charges remain economic and efficient, and to provide clarity and predictability to ESB Networks of the recovery of its costs.

If the capital programme in PR6 was less of an unprecedented step up in the required spend and uncertainty, we consider there would be a stronger case for the CRU proposing a 'no change' approach which relies on the price control's ex post review process to manage input cost uncertainty.

4.2. OPTIONS

We have developed three options that the CRU might consult on as part of its forthcoming PR6 draft determination and consultation. It is important to note that these options are not necessarily mutually exclusive. Aspects of different approaches could be combined for a defined regulatory treatment in PR6.

We briefly describe each option in the subsections below.

Option A – Use it Or Lose It (UIOLI) risk / uncertainty pot with ex post review

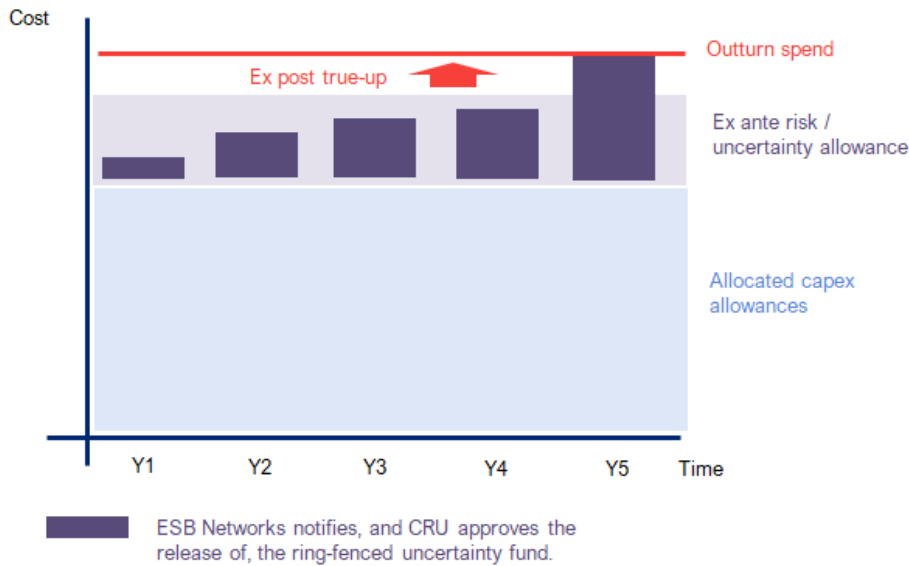
A ring-fenced risk / uncertainty pot would be included in the ex-ante capex allowances for management of RPEs on the capex programme in PR6. This pot would be set separately for each transmission and distribution price control and would be ring-fenced from the other components of the capex allowance. It would be included in the ex ante allowances and so would be funded upfront by customers over the course of the price control.

If ESB Networks require additional funding above the other components of the capex allowances to manage input cost uncertainty, it would notify the CRU that it intended to utilise this ring-fenced provision. Within the price control, the CRU would give high-level approval that the ring-fenced allowance can be drawn and ESB Networks would allocate the proportion of the pot that utilised to the relevant component of its capital programme.

At the ex-post review, as under the current framework, ESB Networks would be expected to justify its use of the risk / uncertainty provision, and the drivers of the input price effects it faced. An important part of the company's PR6 lookback submission would, therefore, include how the uncertainty / risk provision was utilised and on which projects in ESB Network's capital portfolio it was assigned to. Any underspend of the uncertainty / risk pot would be addressed via the true-up to the opening RAB at the start of PR7, and hence it is a UIOLI style mechanism.

The approach in concept is illustrated below.

Figure 4.1: Drawdown of UIOLI risk / uncertainty allowance



Source: CEPA, note the illustrated use of the risk / uncertainty allowance is intended to show cumulative spend

If incurred spend exceeds the ring-fenced risk / uncertainty provision³⁵ then as is illustrated in Y5 in the figure above, this would be expected to be addressed in the ex-post review.

During the price control, the CRU would be approving the release of the ring-fenced UIOLI allowance and notified of input costs escalating the capex programme. But the ex-post review would ultimately determine the allowed spend reflected in the RAB, as per the current regulatory framework. The may change to the current regulatory framework is there would be an unallocated allowance for managing RPEs ex ante, with the mechanism also intended to provide transparency of where in the capital programme this is being released into.

A variant of this approach would be to not include the risk / uncertainty pot in the ex-ante allowances and instead adjustments would be made to allowed revenues within period as specific reopeners. In effect, a notification and confirmation of the use of the ring-fenced pot would result in CRU introducing a within period reopener to ESB Networks capex allowances and revenues if notified at an appropriate reopener window. This would be similar to the approach proposed under Option C.

Option B – Ex-ante allowance based on WPI with ex-post reconciliation

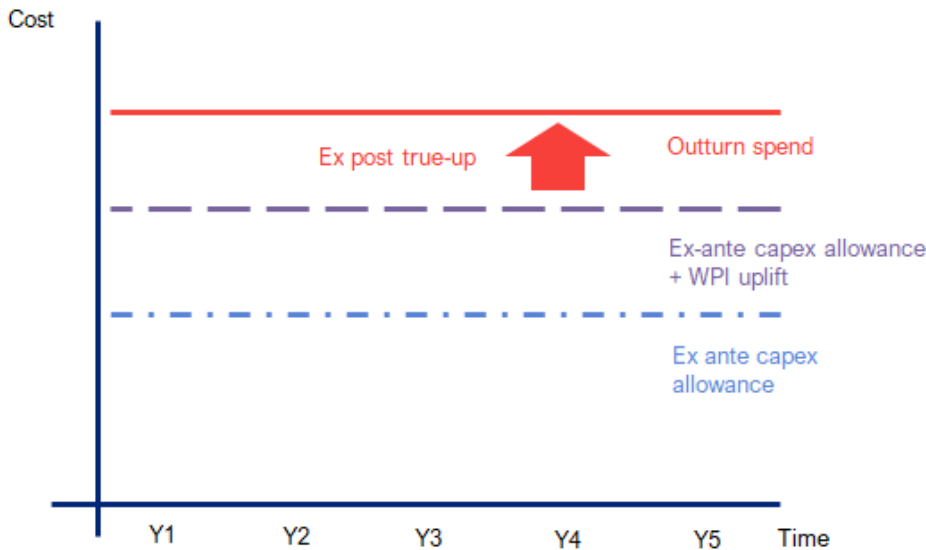
Under this approach, ex-ante capex allowances, or components of the capex allowances, would be indexed to the CSO's WPI to provide an ex-ante provision for capex RPEs.

The ex-post review would provide a reconciliation of how the company's outturn input cost pressures compare to this provisional allowance. Consistent with the CRU's regulatory framework, the WPI index would not be a cap on the costs that the company can recover from its allowed revenues. But it would have provided an ex-ante provision for managing input cost uncertainty within period and a clear reference point for the ex-post review.

The figure below illustrates how this might work in conceptually.

³⁵ That is, the pot is fully drawn.

Figure 4.1: WPI index provision within period provision for capital cost price effects



Source: CEPA

Option C – Management of price effects via reopener provisions

Under this approach, there would be defined reopeners to components of the transmission and distribution network capital programme which would permit ESB Networks to request that the CRU adjust its capex allowances within period. We might envisage this operating as follows:

- The ex-ante price control capital allowances would reflect a defined capital programme, and unit prices used to set these capex allowances.
- If ESB Networks identify / incur higher costs due to revised cost forecasts and increases in unit prices – i.e., price effects – it would request / trigger a reopener in its cost allowances.
- The CRU would assess ESB Networks’ request as part of an annual reopener window within the price control period reaching a decision as part of its annual tariff approval process. We would envisage that:
 - The reopener would need to meet defined trigger criteria – e.g., that the change in input costs has met a materiality threshold.
 - This within period regulatory decision would be light touch, limited solely to ESB Networks having adequately demonstrated the high-level need and variation in its forecast costs.
 - ESB Networks would track and report on how these price effects, impacted the costs of its capital programme within period.
- The CRU would assess the outturn incurred costs at the ex-post review to confirm the economy and efficiency of the spend.

We understand this approach to be closest to how ESB Networks propose that the effects of input price uncertainty are managed during PR6.

Prior the start of the price control, we would expect further definition of how ESB Networks is expected to report its incurred spend so that price effects can be clearly differentiated from volumes changing costs. The CRU might also articulate a set of principles of its expectations for the ex-post review. For example, that:

- The licensee would be expected to demonstrate how its costs have varied compared to published price indices of construction and electrical engineering.

- Input price inflation was demonstrated to be outside of the licensee’s control to manage and/or ESB Networks took adequate actions to mitigate as far as possible the input cost inflation.
- Transparency and accuracy of reporting of how changes in input costs impacted the capital programme³⁶ would significantly strengthen the case for the expenditure to be allowed at the ex post review.

4.3. ASSESSMENT

There are a range of factors that require consideration in selecting an option. This includes whether the approach would provide an adequate ex ante allowance for ESB Networks managing RPEs within period, the transparency and simplicity of the approach and the impact on the stability of revenues and tariffs. Whether the CRU considers it appropriate that consumers pay during the price control for RPEs that may or may not be incurred, before the true-up of revenues at the price control’s ex post review, is another relevant factor.

We have provided a simple criteria assessment of the options in the table below. To aid with the assessment, we have also assessed the option of continuing with the ex-post review as the tool to manage capex RPEs in PR6.

Table 4.1: Criteria assessment of the options

Criteria	Ex post	Option A	Option B	Option C
Limit funding of uncertain RPEs within period	Green	Red	Orange	Yellow
Simplicity of approach	Orange	Yellow	Orange	Yellow
Transparency of the impacts of RPEs	Red	Green	Orange	Green
Regulatory administration within period	Green	Yellow	Yellow	Yellow
Mitigate company cashflow and cost recovery risk	Red	Yellow	Orange	Green
Tariff and revenue volatility within period	Yellow	Green	Orange	Yellow

Source: CEPA analysis

The assessment in Table 4.1 would suggest that Option A and Option C would be the short-listed options if the CRU wished to consider an alternative approach to asking ESB Networks to manage capex RPEs until the ex post review. As reflected in the scoring of the options, Option A and Option C are similar in their design philosophy and intent. An important difference between them is because Option A includes the uncertainty / risk provision in the allowed revenues ex ante, it would require consumers to fund this provision for RPEs for the entirety of PR6 until the outcomes of the ex-post review. In contrast, with Option C, additional allowances are only released into allowed revenues when the trigger for a reopener of the capex allowances is agreed within period.

Option C might, therefore, be viewed as a slightly more complex regulatory process for managing within period uncertainty relative to Option A³⁷. By requiring reopeners within period, Option C may also result in greater revenue and tariff volatility compared to Option A.

However, Option A’s approach of creating another component to capex allowances – on top of other changes to the regulatory framework in PR6, such as introduction of delivery obligations – might also be viewed as adding regulatory complexity and uncertainty compared to Option C. There would also be a complication of which asset category – and, therefore, asset life – the ex-ante uncertainty / risk provision would be assumed allocated against for the purposes of setting the ex-ante price control’s depreciation building block. Whilst this is not an unresolvable issue, it would add further complication.

³⁶ In contrast, to volume or mix of works effects.

³⁷ Which only requires the CRU to approve notification that the ring-fenced risk / uncertainty provision is used to fund cost escalation.

From a licensee perspective, we envisage that there may be a preference for Option C over Option A because Option C may be perceived as providing greater regulatory commitment – because of the reopener decision – to the recovery of the input cost escalation than an approach where an uncertainty / risk provision is drawn down within period, and the use of this provision is assessed ex post. However, if the reopener process is to be agile, then in practice we would assume the decisions would still be subject to the CRU's ex post review of outturn costs and so, the difference between Option A and Option C in this case would be limited.

4.4. CEPA PROPOSAL

If the CRU are content to provide a ring-fenced uncertainty / risk provision in its ex-ante capex allowances for RPEs that consumers fund upfront during the price control, then Option A would be our preferred approach.

This option has the attraction of requiring limited regulatory administration and scrutiny by CRU during the price control and will provide a clearer baseline for conducting an ex post assessment of the impacts of RPEs on the capex programme. It is similar to how risk / uncertainty provisions are funded and utilised on large infrastructure programmes, where uncertainty provisions are drawn over time as the project matures through development and construction and projects risks – including the impacts of inflation on costs – are gradually reduced.

However, if there was a concern with funding (ultimately uncertain) capex RPEs upfront during PR6 that may not ultimately be incurred (and/or with the creation of another component to capex allowances) and being able to differentiate RPEs from other cost pressures that might require in period changes to capex allowances, we suggest that the CRU consult on managing capex RPEs within period through reopener mechanisms.

In the absence of strong market evidence of expected RPEs in ESB Network's capex during PR6, and if the preferred approach for consultation was Option A, then we would propose that the ring-fenced RPE allowance be set up to 10% of the components of ESB Network's capex programme where there is considered to be the greatest uncertainty of input costs. This is not inconsistent with the level of risk / uncertainty assumed in the costings of other large-scale infrastructure projects, and might also be considered an ex ante provision for optimism bias.

We do not consider the same mechanism is needed for EirGrid's TSO non-network capex given the relative scale of the programme. However, this might be an issue that the CRU wishes to consult on.

5. ONGOING EFFICIENCY

In this section we assess the licensees' proposals on the scope for ongoing efficiency in PR6 and set out our proposals on what may be an achievable target for the price control period.

We conclude there is, on balance, greater scope for ongoing efficiencies than both licensees have proposed in their PR6 business plans. We conclude an ongoing efficiency challenge of up 1% per annum is achievable in ESB Network's opex and capex for the period of PR6. We consider a range of 0.4 – 0.6% is achievable for EirGrid TSO reflecting inherent differences in its operating activities compared to the onshore asset owner.

5.1. LICENSEE PROPOSALS

ESB Networks

ESB Networks reference analysis from Frontier Economics that concludes that a balanced view of the data on productivity growth in the Irish economy suggests average annual productivity growth has been negative in the range of -0.9% to -0.3%. As discussed in Section 2, ESB Networks assume a zero ongoing efficiency target in their business plan which on the basis of Frontier Economics' findings they conclude is conservative.

Frontier Economics in their analysis note that there are several challenges in estimating the potential for ongoing productivity in PR6 because of limitations in the data set for Ireland that regulators typically use to estimate historical productivity; the EU KLEMS database. Frontier also note that interpreting Irish productivity data is challenging as a result of the influence of large foreign multinational enterprises (MNEs) have on Ireland's economic statistics which can be distorted by capital movements of these MNEs.³⁸

Frontier Economics conclude that these issues make *"it difficult to continue to rely on the EU KLEMS database, as the 2009 release covers a period which now is over 30 years old, while more modern releases suffer in terms of data quality for Ireland specifically."*³⁹ The report highlights, however, that for PR6 there is a new source of evidence for the Irish economy given the CSO now publish a dataset with a wide range of productivity metrics and a detailed sectoral breakdown. Frontier state that this breakdown includes the ability to remove large foreign MNEs from the data, meaning the data is less volatile than EU KLEMS (NACE 1) and significantly less volatile than EU KLEMS (NACE 2) which were the datasets considered at PR5 review.⁴⁰

Frontier's analysis includes TFP estimates on both a Value Added (VA) and Gross Output (GO) basis, as well as Labour Productivity on a VA basis. They consider *"the 'market sectors dominated by domestic and other enterprises' category as the representation of Ireland's domestic market economy, as this captures companies in competitive sectors while excluding large foreign MNEs. We additionally consider a narrower grouping of industries likely to be relevant to ESB Networks' activities."* The narrow group is referenced as an unweighted average of NACE (Rev 2) sectors D, E, F and H – covering electricity, gas, steam, AC supply, water supply, sewerage, waste management and remediation activities, construction, transportation and storage. The full time period of the dataset is used to produce the productivity estimates in their analysis.

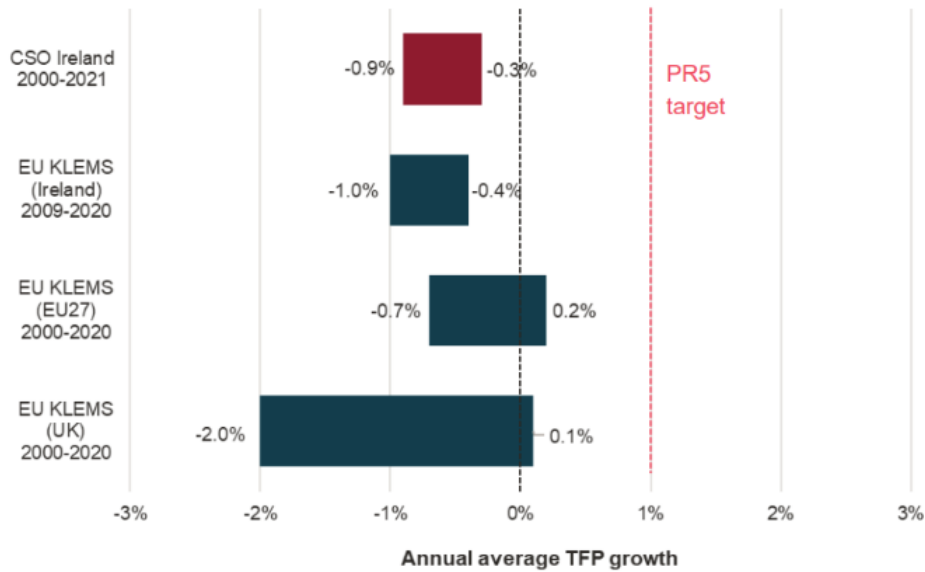
Based on this evidence, Frontier conclude that a reasonable estimate of average TFP growth over the past 22 years is somewhere in the range of -0.9% to -0.3%. While Frontier consider the CSO data to provide the best view of Irish productivity they also analyse several other sources including EU KLEMS datasets. A summary of the analysis is provided in the figure below.

³⁸ For further discussion of this issue see ESRI Working Paper No. 795 (2024): 'Demographics, higher investment and the future potential growth rate of the Irish economy', available [here](#).

³⁹ Frontier Economics (2024): 'Real price effects and ongoing productivity in PR6', p.18

⁴⁰ See CEPA (2020), Real price effects and ongoing productivity improvements for PR5

Figure 4.1: Summary of Frontier Economic analysis of TFP growth from CSO data and other sources



Source: Frontier Economics

Frontier Economics also show evidence of labour productivity (LP) estimates in the Irish economy on both a historic and forecast basis. For all the periods of the analysis the LP estimates are positive and for Ireland range from 6.9% (2014-2018) to 0.5% (2004-2008). Frontier Economics note that LP estimates may not be directly to ESB Networks opex and the OECD estimates that the analysis is based on do not adjust the Irish data for the impact that large foreign MNEs may have on the LP estimates.

EirGrid

EirGrid did not submit supporting analysis or studies that analyse the scope for productivity in its TSO business in PR6. As discussed in Section 2, it states in its Business Plan that:

“[w]hile the EirGrid business will certainly transform during the PR6 period, the nature of that transformation is not such that it provides a stable and ongoing platform for continued annual productivity improvements at the frontier. To that end, we do not believe that an upward adjustment to the KLEMS or other figures such as was applied ... at PR5 is necessarily appropriate. Moreover, the scope for ongoing efficiency gains is likely to be low in PR6 due to the real, dynamic change that will occur.

Overall, this would suggest the ongoing efficiency opportunities within PR6 are low and capped at the 0.4% previously estimated for PR5, which represents an upper bound. Within the range of potential error bars of the cost trends we have set out, it is reasonable to assume these low percentages are captured within the statistical noise.”⁴¹

We understand that as a result, EirGrid proposes that no further ongoing efficiency challenge should be applied to their forecast costs in PR6.

5.2. COMMENTS ON LICENSEE PROPOSALS

The purpose of the ongoing efficiency challenge is to encourage the network companies to adopt new technologies and management practices over time, replicating the forces of competition to drive out continual cost efficiencies.

⁴¹ EirGrid (2024): ‘TSO Look forward submission – 2026-2030’, p. 156

This does not mean that the rate of productivity growth in the electricity networks sector must relate to productivity growth in the wider economy, which is affected by specific headwinds and tailwinds.

We caution against ESB Networks and EirGrid's proposals, and the work of their consultants. That analysis is presented as being over a complete business cycle and 'long-term' but in fact it focuses more on Irish productivity growth since the Global Financial Crisis of 2008-09. There are several reasons why the resulting average is likely to understate the scope for productivity growth amongst the regulated Irish electricity networks:

- The Irish growth accounting data has become increasingly difficult to interpret since 2015 in the context of tax inversion practices by multinational companies, and the ability of the central statistics office to address this issue is constrained by international rules.
- The drivers of the productivity slowdown across Europe relate to the weakness of recovery in business and public investment since the Global Financial Crisis, a factor which is less relevant to the networks given the long-term stability of the regulatory framework for investment planning. In turn, this allows the networks to work closely with their supply chains to drive out efficiency gains. It also protects capital investment from being cut during cyclical downturns.
- Frontier Economics appears to supplement its analysis using a targeted set of comparators. Its comparator set is not transparently explained but appears to include a range of sectors which exhibit lower than average historical productivity growth, typically driven by factors which are less relevant to the networks (e.g. productivity slowdown in construction is related to the low profit margins limiting the incentive to invest in productivity enhancing measures).
- The TFP data does not capture the scope for productivity improvements from embodied technical change.⁴²
- For several of the sectors cited as comparators to infer long-term productivity potential, their expenditure is often on aspects of quality of service/environmental outputs which are not measured in national accounts as an output of the industry. As a result, they may provide an underestimate of the scope for productivity within electricity network sectors.

Whilst the productivity downturn is relevant, we consider that the CRU should anchor its proposals to longer-term 'through the cycle' productivity trends.

Over the period 1970 to 2023, the Central Bank of Ireland estimates economy-wide TFP growth at 2.3% per year although it has been on a downward trend in recent decades – since 2000 it has averaged a more modest 1.2% per year, which we consider to be stretching but achievable over the PR6 period. The Bank of Ireland uses a baseline TFP growth forecast of 0.6% per year over the period to 2050 – this is a relatively cautious assumption where productivity growth never recovers to the pre-2008 trend. The Irish Fiscal Advisory Council suggests that Irish TFP growth is between 0.2% and 1%, and adopts a 0.4% central assumption for its 2050 projections.⁴³

Therefore, we find there is evidence to demonstrate that the scope for productivity growth over the PR6 period is positive. Moreover, there are several potential tailwinds in the electricity networks sector, including:

- A step-up in investment over the PR6 period.
- Potential for AI and increasingly digitised methods of managing the networks.

⁴² Disembodied technical change refers to the productivity gains which are made through the process by which output is produced from inputs of a given quality (e.g., through the introduction of new business practices which employ a more efficient approach to utilising inputs). Embodied technical change refers to the productivity gains made from employing new inputs relative to the use of a comparable amount of pre-existing inputs (e.g., from updating the quality of existing stock of machinery).

⁴³ See Appendix B for a summary of these sources.

- Continued innovation funding in PR6 building on investment in prior price controls.⁴⁴

Additionally, we note that several regulated infrastructure managers in the UK have proposed ongoing efficiency challenges of between 0.5% to 1% per year since 2023 (see Appendix A). Although Brexit has introduced greater barriers to trade between the UK and Ireland, we do not consider it likely that there are substantial barriers to technology diffusion across the Irish Sea in the electricity networks sector. Challenges proposed include:

- SP Energy Networks (0.4%) (RIIO-T3)
- Cadent, SGN, WWU, NGN and the least ambitious water companies (0.5%) (RIIO-GD3)
- National Grid Electricity Transmission (0.7%) (RIIO-T3)
- Anglian Water and Northumbrian Water (0.8%) (PR24)
- South Staffs Water (1.1%), SES Water and Portsmouth Water (1.0%) (PR24)

Given that there is an inherent information asymmetry between the electricity network companies and the regulator, we suggest that on average these proposals are likely to represent the minimum that is achievable over the next 5 years. The ongoing efficiency challenge in UK water and energy networks has also been tested by the CMA in relation to the PR19 and RIIO-2 appeals, which found that 1% was a stretching but achievable challenge.

Therefore, in our view, an appropriate Ongoing Efficiency challenge would be positive and between:

- 0.4% / 0.5% based on the least ambitious energy and water network companies in the UK; and
- 1% / 1.2% based on the most ambitious water network companies in the UK and taking a balanced interpretation of historical and forecast evidence of the potential for TFP growth in the Irish economy.

At PR5, we noted that EirGrid as TSO may have less scope for capital substitution in the delivery of its controllable opex than some other Irish companies, although we also noted that this may change in future with technological advancements, such as artificial intelligence and machine learning. We noted that as a result, estimates of TFP and LP may have the potential to overstate the level of productivity improvements that EirGrid could reasonably be expected to be made over PR5, based on the current available information.

As a result, we applied a downwards adjustment to the evidence base to account for this and ultimately proposed an Ongoing Efficiency challenge of 0.4% for the TSO. It is worth noting that the Utility Regulator in its most recent price control review for SONI (2020-2025) in Northern Ireland took a more sceptical view of these arguments, ultimately adopting an Ongoing Efficiency Challenge of 0.6% for its Final Determination.

The Utility Regulator noted that:

- Placing weight on labour productivity estimates - which are more applicable for an asset light company - suggested positive scope for Ongoing Efficiency.
- SONI had not evidenced that it was relatively efficient – which neither has EirGrid in its PR6 submissions - and therefore, in the absence of better information, it was reasonable to assume that scope for catch-up efficiencies cancelled out limits on capital substitution.

⁴⁴ While many of the innovation programmes that have been funded in past price controls and in PR6 are likely to relate to future improvements in quality of service and productivity of output, we might expect that at innovation funding is also likely to result in increasing the scope for cost reductions over time. The impact is of course, difficult to quantify with any precision but is an important point of differentiation between electricity networks and other sectors of the Irish economy.

- Whilst productivity will be dependent on capital substitution “*in our view SONI can also benefit from such an effect. Productivity is also seen in the services sector of the economy, which may be more comparable to SONI than production or manufacturing where capital substitution might have a greater impact.*”⁴⁵
- SONI had also asked for a material increase in capital allowances. “*These are, at least in part, aimed at productivity improvements (i.e. Transition to Cloud, Smarter Outage Management etc.). SONI has claimed that those costs categorised by UR as a capital substitution are small compared to the increase in UR’s proposed productivity challenge. However, this position does not seem reasonable.*”⁴⁶ We understand similar programmes are proposed for EirGrid’s non-network capex in PR6.

EirGrid has also argued elsewhere in its PR6 submission (see above discussion on input price trends) that EirGrid comparable sectors are ICT, finance and professional services.

These are sectors that in coming years have been identified as offering scope for productivity linked to technology and AI deployment Whilst the longer-run aggregate productivity outcome of new technologies and processes such as AI are still uncertain, we consider that these opportunities reflect a tailwind to realise ongoing efficiencies not referenced in EirGrid’s business plan.

5.3. CEPA PROPOSAL

For ESB Networks, we propose a range for the Ongoing Efficiency challenge in PR6 of:

- 0.5% - lower end; and
- 1.0% - higher end.

For EirGrid TSO, we propose a range for challenge in PR6 of:

- 0.4% - lower end; and
- 0.6% - upper end.

⁴⁵ Utility Regulator (2020): ‘Final Determination for SONI Price Control 2020-2025’, Annex 4 – Cost Allowances’, p. 32.

⁴⁶ Ibid.

6. RECOMENDATIONS

This report sets out CEPA’s analysis of trends that might affect the unit costs of a notionally efficient electricity network operator and system operator in Ireland during Price Review 6 (PR6).

The main conclusions from this analysis are as follows:

- a proposed weighted average RPE allowance on total opex of c. 0.8-1.3% per annum for ESB Networks for PR6⁴⁷;
- a proposed weighted average RPE allowance on total opex of 1.3% - 1.5% per annum for EirGrid’s TSO business;
- a proposed range for the Ongoing Efficiency challenge for ESB Networks in PR6 of:
 - 0.5% - lower end;
 - 1.0% - higher end;
- a proposed range for the Ongoing Efficiency challenge for EirGrid TSO in PR6 of:
 - 0.4% - lower end; and
 - 0.6% - higher end.

Our overall proposals for a plausible range for an ex ante Frontier Shift cost trend in TSO, DSO and TAO opex for PR6 are summarised in the table below.

Table 6.1: Proposed Frontier Shift ranges

	RPEs (1)		Ongoing Efficiency (2)	Frontier Shift: (1) + (2)	
	Low	High		Low	High
TSO	1.3%	1.5%	-0.5%	0.8%	1.0%
DSO	0.8%	1.3%	-1.0%	-0.2%	0.3%
TAO	0.9%	1.3%	-1.0%	-0.1%	0.3%

Source: CEPA

For the TAO and DSO, we assume a 1% Ongoing Efficiency challenge, i.e., our higher end estimate, for both the low and high end of the Frontier Shift range given the recent regulatory precedent in Ireland and UK has assumed a 1% target for infrastructure managers.

For the TSO, we assume the mid-point of our Ongoing Efficiency range, i.e., 0.5%, a challenge slightly higher than assumed for PR5. This reflects an assumption of opportunities for realising ongoing efficiencies from a continued step up in investment into the TSO business and new technologies and processes (e.g., related to AI).

If the mid-point of the ranges are used to define the allowed ex ante cost trend for opex during PR6, then this would imply: a ~ 0.9% per annum increase in the TSO opex allowances; and a ~ 0.1% per annum increase in the DSO and TAO opex allowances respectively.

We have also set out a proposal for how the CRU might consult on the treatment of capex input cost uncertainty in PR6 including two potential options – both with pros and cons – that would provide greater transparency and predictability on regulatory treatment within period.

⁴⁷ The range slightly differs for the TAO and DSO because of differences in the mix of labour, materials and business service costs. The range for the DSO is 0.8% - 1.3% and the range for the TAO is 0.9% - 1.3%.

Appendix A REGULATORY PRECEDENT

A.1. REGULATORY DECISIONS

Table A1: Regulatory precedent of ongoing productivity challenges

Country	Regulator	Sector	Period	Ongoing productivity (% p.a)
Country of Ireland	CRU	Electricity (PR6)	2026-2030	Ongoing
		Electricity Transmission and Distribution (PR6)	2026-2030	-0.9% - -0.3% Proposed (ESBN)
		Electricity Transmission and Distribution (PR5)	2021-2025	1.0% Opex (ESBN) 0.4% Opex (EirGrid)
		Gas Transmission Operators (PC5)	2022-2027	1% Opex
	Water (RC3)	2022-2024	1%-6% ⁴⁸ Opex 3%-5% ⁴⁹ Capex	
	CAR	Airport (Dublin 5th Determination)	2020-2024	Not explicit
UK	Ofgem	Electricity Transmission Operators (RIIO-T3)	2026-2031	0.7% Proposed (National Grid) 0.4% Proposed (SP Energy Networks)
		Electricity Distribution Operators (RIIO-ED2)	2023-2028	1.0%
England and Wales	Ofwat	Water (PR24)	2025-2030	0.8%-1.2%
	CAA	Airport (Heathrow H7)	2022-2026	1% Opex
		National Air Traffic (NR23)	2023-2027	Not explicit
	CMA	Water PR19	2020-2024	1% Totex
GB	CMA	Gas Distribution and Transmission (RIIO-GD2 & T2)	2021-2026	1.05% Opex 0.95% Capex/repex
	Ofgem	Electricity Distribution (RIIO-ED2)	2023-2028	1.0% Totex
		Gas Distribution (RIIO-GD2)	2021-2026	1.25% opex 1.15% capex/repex
		Transmission (RIIO-T2)	2021-2026	1.25% opex 1.15% capex/repex

⁴⁸ The original RC3 decision was 2% p.a. for the first two years, then 4% p.a. for the third year, and then 6% p.a. per annum for the last two years.

⁴⁹ 3% p.a. for non-committed projects that had been started yet. 5% p.a. on new non-network capex. There was no efficiency challenge on non-controllable capex; none on major projects or existing committed network capex.

Country	Regulator	Sector	Period	Ongoing productivity (% p.a)
		Electricity Distribution (RIIO-ED1)	2016-2023	0.8%-1.1% Totex
		Gas Distribution (RIIO-GD1)	2013-2021	1.0% Opex 0.7% Capex/replex
		Gas Distribution (RIIO-T1)	2013-2021	1.0% Opex 0.7% Capex/replex
Northern Ireland	UR	Electricity Distribution and Transmission (RP7)	2025-2031	1.0% Opex 1.0% Capex
		Electricity Distribution and Transmission (SRP20)	2020-2025	0.6% Totex
		Gas Transmission (GT22)	2022-2027	0.8% Opex/replex
		Gas Distribution (GD23)	2023-2028	1.0% Opex 1.0% Capex
		Electricity Distribution and Transmission (RP6)	2017-2024	1.0% Opex 1.0% Capex
		Water & Sewerage (PC21)	2021-2027	0.8% Opex 0.6% Capex
		Water & Sewerage (PC15)	2015-2021	0.9% Opex 0.6% Capex
		Gas Distribution (GD17)	2017-2022	1.0% Opex 1.0% Capex

Source: CEPA analysis

A.2. INFRASTRUCTURE MANAGER PROPOSALS

The electricity Transmission Operators (TOs) in Great Britain have been more ambitious in their proposed ongoing efficiency challenges compared to the Irish network companies in PR6. The table below summarises the proposals on ongoing efficiency in each of the respective business plans.

However, in our view, their proposals represent a 'cautious' view of the relevant evidence base. They base their proposals on consultancy reports which present a disproportionately negative assessment of the scope for frontier shift productivity growth in the energy networks industry and as such their proposals should be seen as the minimum that they should be able to achieve.

Table A2: Electricity TOs proposed Ongoing Efficiency Challenge for RIIO-T3

	OE	Justification provided by company / its consultants
National Grid	0.7% Capex and Opex	<ul style="list-style-type: none"> • Above the Bank of England's 0.5% forecast for TFP. • Set their OE at the top of the 0.1%-0.7% range they derived from external benchmarking of comparator sectors. • Average productivity growth has slowed down from 0.65% between 1996-2019 to just 0.12% between 2009-2019.

	OE	Justification provided by company / its consultants
Scottish Power Energy Networks	0.4% pa.	<ul style="list-style-type: none"> • TFP(GO) was used as the basis for OE target. • TFP(VA) considered as a sensitivity, as measures do not account for all inputs into production. • SPT's economic advisor (Oxera) argues that it cannot be applied to aggregated cost bases without adjustment. Oxera argues that VA is seen as an incomplete measure. • Oxera⁵⁰ suggest OE target ranging from 0.0%-0.5% p.a. • SP state that productivity should be estimated over complete business cycles, with more weight on data from 1996-2019 and 2010-2019. • The focus of their analysis is on the construction sector. 0.4% aligns with the productivity growth in the construction sector and the most recent business cycles. • They concluded there was insufficient evidence to justify separate targets for opex and capex at RIIO-2; and a single rate is the most sensible.
SSEN-T	<p>Not explicit in their RIIO-T3 plan</p> <p>For RIIO-T2 they used 0.53% for Opex and 0.26% for Capex</p>	<p>Not explicit for RIIO-T3</p> <ul style="list-style-type: none"> • During RIIO-T2⁵¹ they observed an 1.1-1.3% p.a.⁵² real wage increase above inflation. Resulting in an RPE escalator of 0.46% of total expenditure. Applying this after a TFP assumption for opex of 0.3%-0.6% p.a.

⁵⁰ Source: <https://www.spenergynetworks.co.uk/userfiles/file/Oxera-Ongoing-Efficiency-and-Real-Price-Effects.pdf>

⁵¹ Source Main Business Plan: <https://www.ssen-transmission.co.uk/information-centre/riio-t2-plan-and-uncertainty-mechanisms/>

⁵² Source Business plan summary: <https://www.ssen-transmission.co.uk/information-centre/riio-t2-plan-and-uncertainty-mechanisms/>

Appendix B **PRODUCTIVITY ESTIMATES**

Table B1: % TFP rates

	Country	Period	Long term TFP Growth potential	Key Points
Fiscal Advisory Council	Ireland	2021-2050	Short run (2021-2025) 2.5% p.a. Convergence to long run (2026-2030) 0.8% p.a. Long run (2031-2050) 0.4% p.a.	<ul style="list-style-type: none"> • 0.4% is close to the average observed over the period since 2000. • Between 1961-2018 GNI* basis rates have fallen from 3.7-1.2, while domestic GVA basis has fallen from 2.4-1.4.
ESRI	Ireland	2021-2026	0.6% p.a.	<ul style="list-style-type: none"> • TFP between 1995-2023 was highly volatile. The average growth rate was 0.5% p.a. (EU was 0.2% p.a.). • Assume: investment to output to remain at 20%, unemployment rates to remain at 4.3%.
BCL Database	n.a.	1890-2022	n.a.	<ul style="list-style-type: none"> • Detailed database containing historic data on GDP per capita, labour productivity, TFP, age and capital intensity for European countries.
McQuinn and Whelan (2016)	Euro	Not explicit	0.2% p.a.	<ul style="list-style-type: none"> • Slump in investment has caused significant negative supply side effects, reducing supply-side growth by 0.6% p.a. • Historical analysis based on data through 2013, 2014 was used as first year of the simulation. • Low growth rate has been the trend for a sufficiently long period to be considered a sensible underlying trend • Low rate represents a sluggish future performance consistent with the disappointing trends in all euro countries. • 2000-2023 TFP growth was 0.2%
Department of Finance	Ireland	2023-2050	Convergence rate (by 2030) 0.8% p.a. 0.4% (by 2050)	<ul style="list-style-type: none"> • Overall based on the Fiscal Council's predictions. • Global productivity is considered, as well as decreasing opportunities to increase productivity

Source: CEPA analysis of various sources



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