Annex B - PC28: Approach to Real Price Effects

Utility Regulator

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DISCUSSION PAPER

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Contents

EXECUTIVE SUMMARY 4

Key lessons from the approach to RPEs in the PC21 Final Determination 4

Uncertainty around future input prices 6

Summary of recommendations to inform the PC28 Draft Approach 7

1. APPROACH TO REAL PRICE EFFECTS AT PC21 9

1.1. Opex RPE forecast at PC21 9

1.2. Capex RPE forecast at PC21 10

1.3. The energy price crisis and inflation over the PC21 period 11

1.4. Outturn RPEs 12

2. CONSIDERATIONS FOR THE PC28 APPROACH 14

2.1. Choice of input cost categories 14

2.2. Setting appropriate RPE forecasts 15

2.3. RPE forecast uncertainty and appropriate risk allocation 16

2.4. The transition from RPI to CPI or CPIH 19

EXECUTIVE SUMMARY

To inform its consideration of emerging issues ahead of the PC28 Draft Approach consultation, the Utility Regulator ("UR") asked CEPA to consider whether it might treat Real Price Effects ("RPEs") differently at PC28, in the context of exceptional inflation in recent years due to the European energy price crisis between late 2021 and mid 2023. This issue is part of a wider exchange of early views between the UR and NIW around risk allocation and cost sharing with respect to unforeseen cost increases compared to the allowances set in the Final Determination.

KEY LESSONS FROM THE APPROACH TO RPES IN THE PC21 FINAL DETERMINATION

At PC21, the UR set allowances which included an ex-ante RPE component to recognise that the following input cost categories exhibit historic price growth faster than RPI inflation[1]:

Table 1.1: Indices used to establish RPE rates used in the Frontier Shift adjustment at PC21, by cost category

Category	Opex	Capex
Labour	• OBR's average earnings growth forecast.	• Same as opex.
Materials, plant and equipment	• **Equipment:** Average annual growth of 1.7% (before RPI inflation) based on growth in the *ONS machinery and equipment price index*[2] and the *ONS Manufacturing PPI*[3] over prior 6 years.	• For **civils materials**, the UR used average annual growth in the *ONS Construction Output Price Indices* (2.9%).[4] • **Plant and equipment**, the UR used *BCIS Plant and Road Vehicles index* (2.6%). • For **machinery**, the UR used the same index as opex (1.7%).
Chemicals	• Considered long-term trends in the ONS Chemicals PPI[5] but ultimately used an average annual RPE of 2.7% based on a weighted average of historical ONS data and global GDP growth projections, with greater weight assigned to the latter.	• N/A
Power	• Long-term electricity price forecasts published as *BEIS's Updated Energy and Emissions Projections*[6].	• N/A

Source: CEPA analysis of UR PC21 Final Determination – Annex K. Note that the UR used the above indices to assess trends in input costs before netting off forecast RPI growth (i.e. nominal growth in input prices).

Over the course of PC21, wholesale energy prices in Ireland increased significantly higher than forecast. In turn, NIW incurred higher than forecast power costs which is one factor contributing to NIW's underperformance against its original opex allowances. We estimate that over the period 2021/22 to 2023/24, NIW has spent £727m against a PC21 Final Determinations allowance of £661m (both figures in 2018/19 prices). The UR has addressed higher than expected energy prices through the PC21 mid-term review, which increased NIW's opex allowances by £54m

[1] Utility Regulator (May 2021) "PC21 Final Determination – Annex K: Opex and Capex Frontier Shift", available at uregni.gov.uk.

[2] The ONS has discontinued this series but publishes similar PPI series for the manufacturing of machinery sector.

[3] The ONS has discontinued this series but publishes similar PPI series for the manufacturing sector.

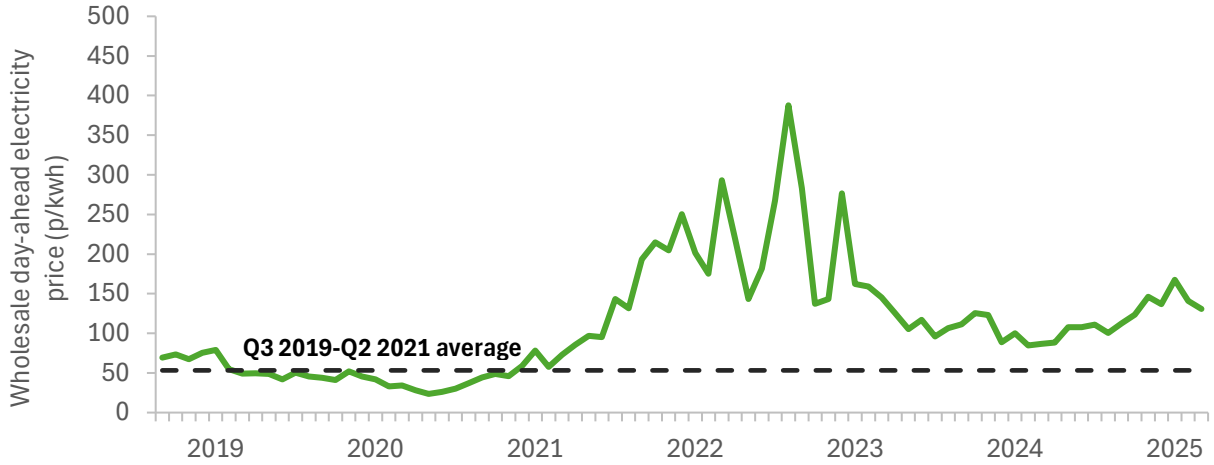
[4] ONS (February 2025) "Construction output price indices: Table 3 (all repair and maintenance)", available at ons.gov.uk.

[5] The ONS has discontinued this series but publishes similar PPI series for chemicals and chemical products sector.

[6] Since BEIS was replaced by the Department for Energy Security and Net Zero (DESNZ), the latest version of these projections are published at gov.uk, see Annex M.

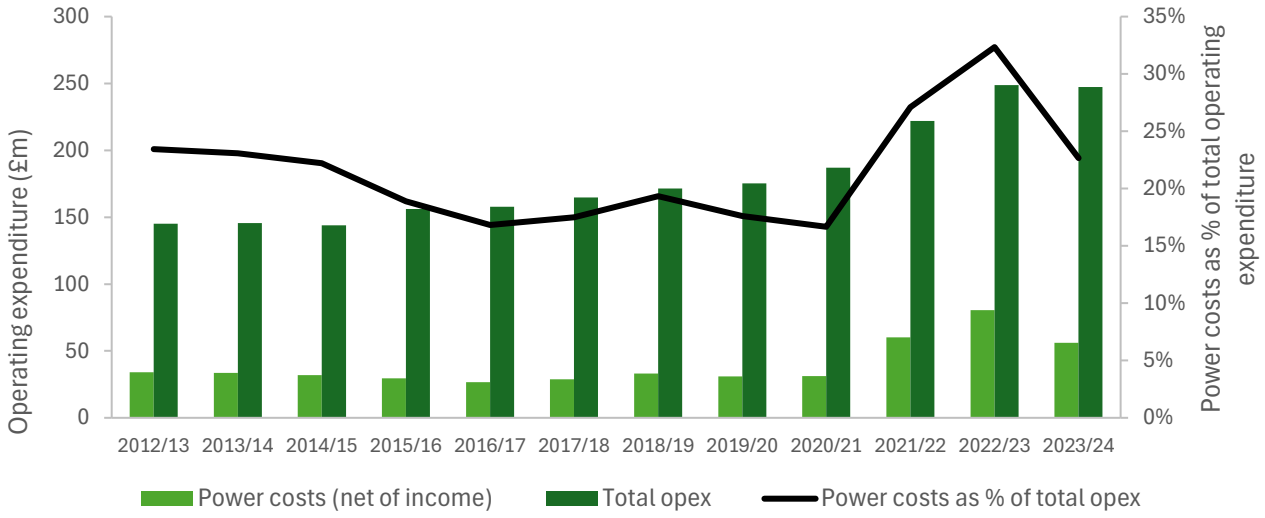
compared to the PC21 Final Determination to cover the estimated variance in power costs for the final three years of the price control period.[7]

Figure 1: Day-ahead wholesale electricity prices, 2019–2025



Source: Data provided by UR in 'historical-irish-electricity-prices.csv'

Figure 2: NIW power costs and total outturn opex, 2012/13 to 2023/24 (£m)



Source: CEPA analysis of NIW RFI response

As Irish wholesale energy prices have normalised over the past 12-18 months, NIW's power costs have also fallen. Our understanding is that NIW does not have the ability to hedge the price of its electricity tariff ahead of consumption[8], and so its power expenditure should be well correlated with changes in wider wholesale energy markets (noting that it may have some ability to reduce its consumption during peak periods and on days where prices are highest, or to "shift its load" to off-peak periods).

The energy price crisis is relevant to the UR's opex cost assessment approach at PC28 in the following ways:

[7] Utility Regulator (September 2024) "Mid-Term Review – Final Determination", available at uregni.gov.uk.

[8] The water companies in England and Wales adopt a range of hedging strategies for power prices. This meant that the impact of the European energy price crisis was not immediately reflected in their power costs, but has gradually increased their costs in 2022-23 and 2023-24.

- **Base year:** If the UR was setting NIW's opex allowances today, its choice of base (outturn) year might include some of the impacts of the energy price crisis. The impacts should fade in subsequent outturn data, but at present the energy price crisis also increases the estimated opex efficiency gap in recent years.
- **RPE forecasts:** If the UR was setting NIW's opex allowances today, we would expect negative RPEs for energy and MPE in the first year of the price control reflecting the ongoing normalisation of wholesale energy prices. However, if energy prices are in line with long-term averages in the base year – which the UR currently expects to be 2025/26 – the forecast RPEs will depend on the outlook for Irish energy prices at the time of the draft determination.
- **Risk allocation:** Large, unforeseen increases in input prices above RPI inflation generates pressure on NIW to find offsetting reductions in other areas of opex which is more 'discretionary' but nonetheless 'efficiently incurred' and support longer-term objectives (e.g. staff training).

The UR is still at an early stage of the development of its PC28 approach and therefore, it does not need to take firm decisions on the points above at the present time. However, we would recommend that the UR considers how the external economic environment has changed before "rolling over" its PC21 approach. Specifically:

- **Base year:** The UR should ensure that its choice of base year is consistent with the estimation of the opex efficiency gap and the direction of its RPE forecasts. It should try to avoid embedding the impacts of the energy price crisis in NIW's opex allowances, and/or mis-calibrating the efficiency challenge because of the impact of the energy price crisis on recent estimates of the efficiency gap and its RPE forecast.
- **RPE forecast (energy):** The UR should consider a range of evidence on the outlook for energy prices, including market-based estimates where available. Independent forecasts can be quickly overtaken by market developments and sometimes focus on long-term trends rather than a near-term, 5-year outlook which is more relevant to PC28. As there is no objectively 'right approach' to forecasting volatile inputs like electricity prices, we recommend that the UR aims to adopt an approach to setting the energy RPE forecast which is both easily understood and replicable.

UNCERTAINTY AROUND FUTURE INPUT PRICES

The wider issue which the UR should also consider is whether input price risks are likely to become more material and difficult to manage in the context of the efficient operation of NIW over the PC28 period. Although the UR sets NIW's expenditure allowances independent of how NIW's ultimate funder and shareholder (the Department for Infrastructure, "DfI") decides to set its operating budget, the reality is that:

- NIW has very limited flexibility to move its operating budget between years, or to switch between capex and opex, in order to manage short-term budgetary pressures created by unexpected increases in input prices – particularly for energy; and
- If volatile input prices – such as energy prices – increase by more than expected, NIW may need to request additional funding from the DfI which may not be approved; or it must make offsetting opex reductions elsewhere in order to remain within its annual control totals.

Wholesale energy prices are inherently volatile and it is not unusual that NIW would manage large changes in the wholesale price from one year to the next. However, the 2021/22–2022/23 period saw exceptional volatility which was self-evidently outside of the range that NIW could reasonably expect to manage (the increase in power costs between 2020/21 and 2022/23 was equivalent to around 15% of annual opex). Whilst it is very unlikely that there will be another energy price crisis of a similar scale during the PC28 period, there remains significant geopolitical uncertainties which could affect energy prices, including uncertainty over any temporary or permanent resolution of conflicts triggered by the Russian invasion of Ukraine, and in the Middle East.

In that context, the UR might reflect on PC21 to consider how the future price control framework might better support NIW if it were to experience a similar uncontrollable 'macroeconomic' input cost shock. For example:

- In an early version of its draft RIS3 business plan, National Highways proposed a **risk buffer** in its energy RPE forecast (~25 basis points) to reflect the challenges of forecasting inflation and the increasing 'wedge' between general inflation and outturn inflation in the construction sector due to the energy price crisis.
- Ofwat has introduced an **ex-post energy cost adjustment mechanism** at PR24. This includes an end of period 'true-up' between forecast and outturn energy prices. The true-up will be reflected in the regulated companies' revenue allowances from PR29 onwards (meaning that if outturn prices are higher than forecast, the companies must wait up to 25 years before fully recovering energy overspend during PR24).

Future uncertainty around energy prices could have indirect effects on other costs incurred by NIW, including labour, materials and chemicals prices. But, in our view, a degree of uncertainty is inherent in the process of forecasting RPEs and the UR's approach at PC21 was well aligned with good practice in similar contexts. Whilst there was some volatility in materials and chemicals prices in recent years, NIW has not (yet) provided evidence to show that the case for extending cost sharing or changing the allocation of RPE forecast risk would be justified. NIW would need to establish that these price fluctuations were beyond its ability to manage and that they represent a material share of total expenditure.

We recommend that input price risk for these categories (labour, materials, chemicals) should remain with NIW, on the basis that an efficient publicly funded infrastructure manager would have access to (limited) contingency funds to manage unforeseen cost pressures without excessive disruption to its wider portfolio.

However, given that power costs increased from 17% to 32% of opex over the PC21 period to date, and the uncertainty around forecast power prices in the current geopolitical environment, we recommend that the UR use the Draft Approach consultation to discuss a means to 'reset' the energy RPE forecast mid-period if wholesale power prices on the island of Ireland significantly diverge from the UR's forecast and beyond a 'deadband range' (e.g. NIW bears the first +/-X% change in real electricity prices[9]). Effectively, this would build upon and codify the approach taken at the PC21 Mid-Term Review and be implemented alongside a similar review point, if the Mid-Term review approach is retained for PC28. The UR should note that in this approach the definition of 'significant divergence' will be important to NIW but is ultimately a matter of UR judgement now that electricity prices have returned to close to longer-term, pre-crisis averages (see Figure 1 above).

Additionally, the UR should consider whether its proposed opex allowances and the allowed return taken together include an appropriate 'risk buffer'. Such a risk buffer may be required to provide NIW with efficient contingency to ensure that unforeseen increases in energy prices do not force it to cut other areas of opex in a fashion which undermines its longer term efficiency.

SUMMARY OF RECOMMENDATIONS TO INFORM THE PC28 DRAFT APPROACH

1 **Base year and the opex efficiency gap:** The UR should ensure that its choice of base year is consistent with the estimation of the opex efficiency gap and the direction of its RPE forecasts, noting the potential impact of the 2021–2023 energy price crisis on all three of the above components.

2a **Labour RPE forecast (opex):** We have not identified any concerns with the use of the OBR's average earnings forecast to set the labour RPE at PC21, which is well aligned with Ofwat's approach at PR24. Subject to changing conditions in the Northern Ireland labour market, we recommend that the UR continue with this approach at PC28.[10]

[9] We use the term 'real' to mean the change in electricity prices net of CPI or RPI (i.e. the UR's chosen indexation measure).

[10] On average over the period 2025/26 to 2029/30, the OBR currently forecasts average earnings growth of 2.4% per year compared to CPI growth of 2.1% per year, which would generate a forecast labour RPE (relative to CPI) of 0.26% per year.

2b **Labour RPE forecast (capex):** We have not identified any concerns with the use of the BCIS Civil Engineering index or the ONS ASHE Private Sector Earnings index to inform its forecast. Another option which the UR may wish to consider is the ONS ASHE Construction Sector index[11].

Additionally, we recommend that the UR continues to use the OBR's average earnings forecast (as per recommendation 2a above) to inform its forecast since this reflects expected labour market trends.

3 **Energy RPE forecast (opex):** We recommend that the UR considers a range of evidence on the outlook for energy prices, including market-based estimates where available. As there is no objectively 'right approach' to forecasting volatile inputs like electricity prices, we recommend that the UR aims to adopt an approach to setting the energy RPE forecast which is both easily understood and replicable.

4a **Materials RPE forecast (opex):** Whilst the UR set an RPE forecast for materials (opex) at PC21, we note that Ofwat did not set an RPE forecast for material in relation to botex at PR24. This is not a major point of concern, but the UR may wish to gather additional evidence from NIW to assure itself that this is a material share of opex where price increases above general inflation are difficult for NIW to manage.

We do not have any concerns with the UR's choice of RPE indices at PC21 (assuming the discontinued indices used are replaced by the ONS' replacement series), but it may wish to consider a wider range of potential indices at PC28 (e.g. ONS Repairs and Maintenance COPI[12]). We recommend that the UR considers longer term trends in the RPE beyond the last 6 years, because this is a relatively short time period where the average can be affected by outlier events (such as the energy price crisis).

4b **Materials RPE forecast (capex):** We have not identified any concerns with the use of the ONS Construction Output Price Indices or the BCIS Plant and Road Vehicles index. Aligned with the point above, we recommend that the UR considers long-term historical RPE trends, so that the average historical RPE used for the forecast is less affected by outlier events (such as the energy price crisis).

5 **Chemicals RPE forecast:** We have not identified any concerns with the use of the ONS Chemicals PPI where changes in real chemicals prices are analysed over long-time periods. Whilst there may be some relationship between the prices of a wide basket of industrial chemicals and global GDP growth, NIW is likely to use a more specific set of chemicals where this relationship is weaker. We caution against sources of evidence which are more 'opaque' in their relevance to NIW's future chemicals costs.

6 **Managing input price uncertainty:** We recommend that the UR use the Draft Approach consultation to discuss a means to 'reset' the energy RPE forecast mid-period if wholesale power prices on the island of Ireland significantly diverge from the UR's forecast and beyond a 'deadband range'.

Other input price risks (e.g. labour, construction materials, chemicals) would typically reside with the publicly funded infrastructure manager. We do not recommend a 'pass-through' or 'cost sharing' mechanism for these input cost categories unless outturn inflation is both truly exceptional and beyond what NIW was reasonably expected to manage without compromising its legal obligations to customers and the environment. However, we note that some other public-sector infrastructure managers have an explicit contingency allowance for managing these risks without disrupting the wider investment portfolio.

Therefore, the UR should consider whether its proposed opex allowances and the allowed return taken together include an appropriate 'risk buffer' to provide NIW with efficient contingency to manage volatility in energy and other input prices to the extent that this volatility is beyond management control.

[11] ONS (October 2024) "Earnings and hours worked, industry by four-digit SIC: ASHE Table 16.5a", available at ons.gov.uk.

[12] ONS (February 2025) "Construction output price indices: Table 3 (all repair and maintenance)", available at ons.gov.uk.

1. APPROACH TO REAL PRICE EFFECTS AT PC21

To inform its consideration of emerging issues ahead of the PC28 Draft Approach consultation, the Utility Regulator ("UR") asked CEPA to consider whether it might treat Real Price Effects ("RPEs") differently at PC28, in the context of exceptional inflation in recent years due to the European energy price crisis between late 2021 and mid 2023.

The UR sets price control allowances for NIW which are indexed to a general measure of inflation (this was RPI at the PC21 review but is likely to become either CPI or CPIH at the PC28 review). Some of NIW's inputs may exhibit underlying rates of cost inflation that are not well correlated with general inflation. We refer to the difference between RPI / CPI and the change in price of the relevant input prices as Real Price Effects (RPEs).

The RPE for a given input price is calculated as follows (IPI_t is the input price index for a given input price in year t):

$$RPE_t = \frac{1 + (IPI_t / IPI_{t-1})}{1 + (RPI_t / RPI_{t-1})} - 1$$

This discussion paper is part of a wider exchange of early views between the UR and NIW around risk allocation and cost sharing with respect to unforeseen cost increases compared to the allowances set in the Final Determination. In this discussion paper, we focus on categories of costs which we describe as 'input prices' because they are inputs to NIW's production process (e.g. the cost of labour) rather than focusing on the uncertainty around e.g. the cost of meeting legal and environmental obligations.

The input cost categories used at PC21 are shown in the table below. In line with regulatory practice in other UK sectors, where input costs are not assignable to a discrete category these are allocated as 'Other'.

Opex		Capex	
• Labour	• Rates	• Labour	• Plant and equipment
• Equipment	• Bad debt	• Specialist labour	• Other
• Chemicals	• EA charges	• Materials – machinery	
• Power	• Other	• Materials – civils	

1.1. OPEX RPE FORECAST AT PC21

The UR set the following input price forecasts at PC21 in respect of NIWs opex allowances.

Table 1.1: Opex RPE forecast at PC21

Category	Share	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Labour	47%	3.0%	0.7%	2.4%	2.5%	2.1%	3.5%	3.5%	3.5%
Equipment	11%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
Chemicals	3%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%
Power[13]	13%	✂	✂	✂	✂	✂	✂	✂	✂
Rates	11%	2.6%	1.3%	2.6%	2.1%	2.5%	2.8%	3.0%	3.0%
Bad debt	5%	2.6%	1.3%	2.6%	2.1%	2.5%	2.8%	3.0%	3.0%
EA charges	5%	2.6%	1.3%	2.6%	2.1%	2.5%	2.8%	3.0%	3.0%
Other	5%	2.6%	1.3%	2.6%	2.1%	2.5%	2.8%	3.0%	3.0%
Weighted IPI	100%	**3.0%**	**1.5%**	**2.7%**	**2.6%**	**2.5%**	**3.1%**	**3.3%**	**3.3%**
RPI forecast		2.6%	1.3%	2.6%	2.1%	2.5%	2.8%	3.0%	3.0%
Net RPE		**0.4%**	**0.2%**	**0.1%**	**0.5%**	**0.0%**	**0.3%**	**0.3%**	**0.3%**

[13] The forecast for Power input prices was redacted from the UR's Final Determination document. For the purposes of calculating a weighted IPI forecast, we back-calculated an approximate forecast based on Table 5.1 of Annex K.

The UR generated the input price forecasts shown in Table 1.1 above using the following sources of evidence:

- Labour: input price forecast based on the OBR average hourly earnings forecast over the PC21 period.[14]
- Equipment: input price forecast based on a holistic assessment of the ONS machinery and equipment price index and the ONS Producer Price Index (PPI) for manufacturing (excluding food, drink, tobacco, and fuel) over the six years prior to PC21.[15]
- Chemicals: the ONS Chemicals PPI index[16] using historical data from 1997 onwards, whilst also having regard to forecast global GDP projections – taking an average of the two approaches.
- Power: input price forecast is redacted from the Final Determination but was informed by BEIS's Updated Energy and Emissions Projections.
- All other input price forecasts were assumed to grow in line with forecast RPI inflation.

1.2. CAPEX RPE FORECAST AT PC21

Table 1.2: Capex RPE forecast at PC21

Category	Share	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Labour	30%	3.0%	0.7%	2.4%	2.5%	2.1%	3.5%	3.5%	3.5%
Specialist labour	15%	3.0%	0.7%	2.4%	2.5%	2.1%	3.5%	3.5%	3.5%
Machinery	10%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
Civils	15%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Plant and equipment	25%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%
Other	5%	2.6%	1.3%	2.6%	2.1%	2.5%	2.8%	3.0%	3.0%
Weighted IPI	100%	**2.8%**	**1.6%**	**2.5%**	**2.5%**	**2.4%**	**2.8%**	**3.0%**	**3.0%**
RPI forecast		2.6%	1.3%	2.6%	2.1%	2.5%	2.8%	3.0%	3.0%
Net RPE		**+0.2%**	**+0.4%**	**-0.1%**	**+0.4%**	**-0.1%**	**+0.0%**	**+0.0%**	**+0.0%**

Source: CEPA analysis of UR (May 2021) Final Determination – Annex K

The UR generated the input price forecasts shown in Table 1.2 using the following sources of evidence:

- Labour and specialist labour: same OBR average hourly earnings forecast as used for the opex forecast. At PC15 the UR applied a 1.25% uplift for specialist labour but at PC21 it decided that this was not justified on the basis of a refreshed review of the BCIS Civil Engineering – labour and supervision index.
- Machinery: input price forecast based on a holistic assessment of the ONS machinery and equipment price index and the ONS Producer Price Index (PPI) for manufacturing (excluding food, drink, tobacco, and fuel) over the six years prior to PC21.
- Civils: input price forecast based on the ONS Construction Output Price Indices (COPI) New Work index.
- Plant and equipment: input price forecast based on the BCIS Plant and Road Vehicles index (90/2) over the period 1997/98 to 2019/20.
- Other input prices were assumed to grow in line with forecast RPI inflation.

[14] OBR (March 2020) "Economic and fiscal outlook – supplementary economy tables" available at obr.uk.

[15] The ONS has discontinued these series but publishes the following, similar series: *PPI index input – C – Inputs into production of manufactured products (Series ID: GHIP);* and *PPI index input – C28 – Inputs into production of machinery and equipment n.e.c. (Series ID: GHGV).*

[16] The ONS has discontinued this series but publishes a similar index: *PPI index output domestic – C20 – Chemicals and chemical products (Series ID: G6SV).*

1.3. THE ENERGY PRICE CRISIS AND INFLATION OVER THE PC21 PERIOD

During PC21 wholesale energy prices in Ireland increased significantly higher than forecast and this fed through into other measures of inflation, including the RPI and the input prices of energy intensive construction materials.

As a result of this wider economic shock, NIW incurred higher than forecast power costs. This is one factor contributing to NIW's underperformance against its original opex allowances. We estimate that over the period 2021/22 to 2023/24, NIW has spent £727m against a PC21 Final Determinations allowance of £661m (both figures in 2018/19 prices). The UR has addressed higher than expected energy prices through the PC21 mid-term review, which increased NIW's opex allowances by £54m compared to the PC21 Final Determination to cover the estimated variance in power costs for the final three years of the price control.[17]

As Irish wholesale energy prices have normalised over the past 12-18 months, NIW's power costs have also fallen, as shown in Figure 2 below. Our understanding is that NIW does not have the ability to hedge the price of its electricity tariff ahead of consumption[18], and so its power expenditure should be well correlated with changes in wider wholesale energy markets (noting that it may have some ability to reduce its consumption during peak periods and on days where prices are highest, or to "shift its load" to off-peak periods).

Figure 1: Day-ahead wholesale electricity prices, 2019–2025

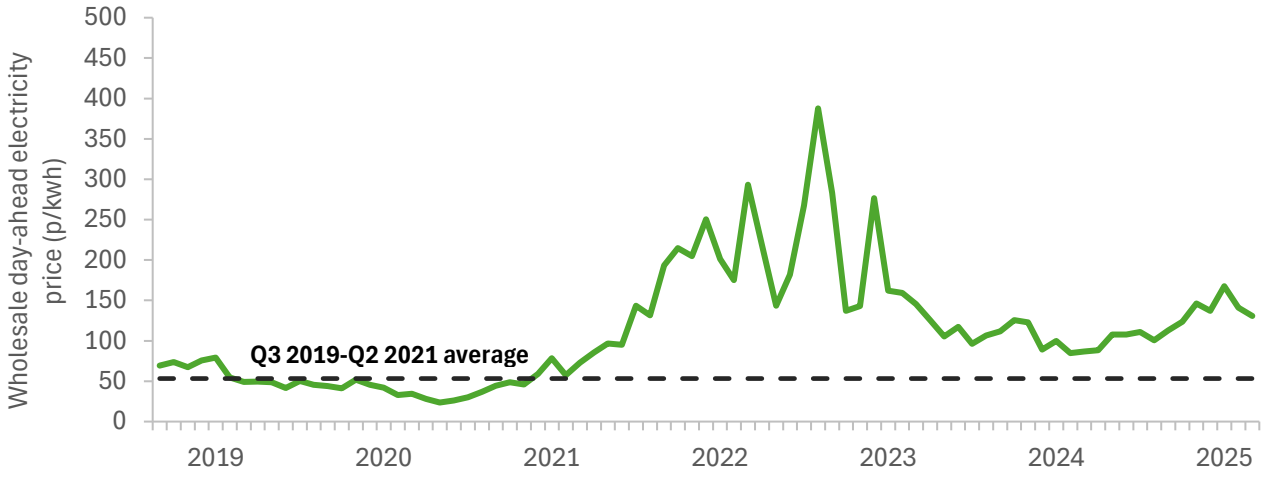
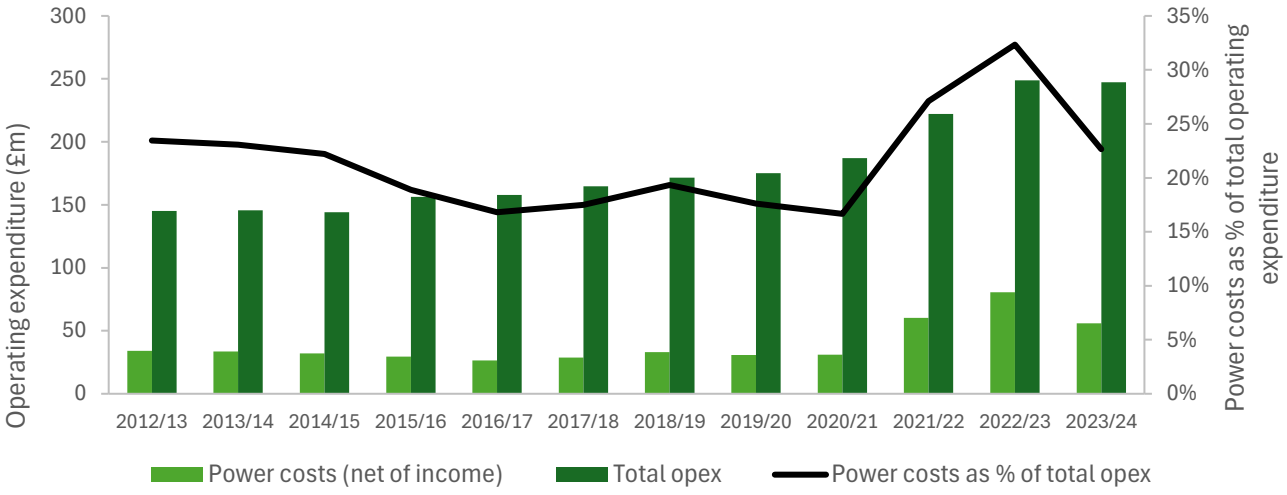


Figure 2: NIW power costs and total outturn opex, 2012/13 to 2023/24 (£m)



Sources: Data provided by UR in 'historical-irish-electricity-prices.csv' and CEPA analysis of NIW RFI response

[17] Utility Regulator (September 2024) "Mid-Term Review – Final Determination", available at uregni.gov.uk.

[18] Water companies in England and Wales adopt a range of hedging strategies for power prices. Therefore, the impact of the energy price crisis was not immediately reflected in their power costs but has increased their costs in 2022-23 and 2023-24.

1.4. Outturn RPEs

Both the RPI and the input price inflation ("IPI") forecasts used in the PC21 Final Determinations subsequently turned out to be too low (relative to actual growth in the underlying price indices[19]). The combination of volatile UK hours worked in the aftermath of the Covid-19 restrictions and the European energy price crisis meant that growth in wages, chemicals, power and construction materials prices was relatively significantly higher over the period 2021/22 to 2023/24, which also fed into general measures of inflation, including the RPI.

The outturn IPI and RPEs for each category are shown in Tables 1.3 and 1.4 below, using the same or successor indices to those used by the UR at PC21.

Table 1.3: Outturn Opex RPEs

Category	Share	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Labour	47%	6.7%	8.6%	-4.8%	6.3%	6.5%	4.2%	-	-
Equipment	11%	0.0%	-0.8%	13.1%	18.2%	-1.8%	-1.0%	-	-
Chemicals	3%	-2.2%	1.3%	14.4%	22.1%	-10.3%	-2.0%	-	-
Power[20]	13%	-33.9%	4.4%	278.3%	20.1%	-49.3%	16.1%	-	-
Other[21]	21%	2.6%	1.2%	5.8%	12.9%	7.5%	3.3%	-	-
Weighted IPI	100%	**-0.6%**	**4.9%**	**37.3%**	**11.6%**	**-1.9%**	**4.8%**	-	-
RPI (outturn)		2.6%	1.2%	5.8%	12.9%	7.5%	3.3%	-	-
Net outturn RPE		**-3.1%**	**+3.6%**	**+29.8%**	**-1.2%**	**-8.7%**	**+1.4%**	**-**	**-**

Source: CEPA analysis of OBR, ONS and UR outturn data

Table 1.4: Outturn Capex RPEs

Category	Share	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Labour	30%	6.7%	8.6%	-4.8%	6.3%	6.5%	4.2%	-	-
Specialist labour	15%	6.7%	8.6%	-4.8%	6.3%	6.5%	4.2%	-	-
Machinery	10%	0.0%	-0.8%	13.1%	18.2%	-1.8%	-1.0%	-	-
Civils	15%	3.1%	1.0%	5.6%	10.9%	4.3%	2.8%	-	-
Plant and equipment	25%	2.0%	0.0%	3.4%	8.8%	4.4%	4.3%	-	-
Other	5%	2.6%	1.2%	5.8%	12.9%	7.5%	3.3%	-	-
Weighted IPI	100%	**4.1%**	**4.0%**	**1.1%**	**9.1%**	**4.9%**	**3.5%**	-	-
RPI (outturn)		2.6%	1.2%	5.8%	12.9%	7.5%	3.3%	-	-
Net outturn RPE		**+1.5%**	**+2.8%**	**-4.4%**	**-3.3%**	**-2.4%**	**+0.2%**	-	-

Source: CEPA analysis of OBR, ONS and BCIS outturn data

Although the PC21 input price forecasts were too low, the RPI forecast was also lower than outturn RPI inflation. To estimate the net effect of this 'forecast error' on NIW, we calculated the forecast change in real prices at the PC21 Final Determination and the actual change in real prices. We find that:

[19] Note that this does not imply that NIW's costs should have grown in line with the underlying indices. For example, NIW may have been able to avoid some of the volatility in wage growth in 2019/20 and 2020/21 because the number of hours worked by its workforce was less affected by Covid-19 restrictions which had an impact on the ONS survey data.

[20] Using data on wholesale Irish energy prices provided by the Utility Regulator in the file 'historical-irish-electricity-prices.csv' as this contains the longest time-series, but which likely overstates the volatility of delivered energy prices paid by NIW.

[21] Other also includes Rates, bad debt and EA charges.

- At the PC21 Final Determination, the UR assumed that there would be a real terms 2.1% increase in opex input prices (i.e. above RPI) and a 0.7% increase in capex input prices over the PC21 period.[22]
- As at 2024/25, there has been a ~19% real terms *increase* in actual opex input prices and a ~6% real terms *decrease* in actual capex prices using the same (or very similar) indices as was used at the PC21 review.
- But if we exclude energy prices from the opex calculation (by assuming energy prices grew in line with RPI[23]), we find that at 2024/25 actual opex input prices have *decreased* in real terms by around ~3%.

Summary of findings from Section 1

We find that NIW did face additional opex cost pressures during PC21 as a result of the significant differences between assumed input price growth in the PC21 RPE forecasts and outturn input price growth. But this was entirely driven by power costs and partly offset by decrease in the real input prices of other opex cost categories. On the capex side, it has benefited in financial terms from higher than forecast outturn RPI inflation, which resulted in a real terms decrease in input prices.

[22] Before the productivity challenge shown in the frontier shift calculations in Table 5.1 and Table 5.2 of Annex K.

[23] We also assume that rates, EA charges, bad debt and other costs grew in line with RPI inflation, since there was no independent proxy index for these other costs at PC21.

2. CONSIDERATIONS FOR THE PC28 APPROACH

In Section 2, we draw upon the lessons learned from PC21 to set out some relevant considerations for the UR's approach to RPEs at PC28. We draw these considerations together under the general headings of:

- Choice of input cost categories
- Setting appropriate RPE forecasts
- RPE forecast uncertainty and appropriate risk allocation
- The transition from RPI to CPI or CPIH

2.1. CHOICE OF INPUT COST CATEGORIES

As part of our review of the UR's approach to RPEs at PC21, we considered the input cost categories that it used to set RPE forecasts and resulting cost allowances.

In general terms, we found that the UR's use of the labour, specialist labour, chemicals, power and materials, plant and equipment categories is reasonably well aligned with regulatory practice in other UK sectors – albeit slightly more granular than the approach of Ofwat and Ofgem in that materials, plant and equipment categories are disaggregated. We have no significant concerns with this approach, although the UR should be mindful of the risk that a more disaggregated set of cost categories means that there is more scope for NIW's input cost weightings to change from period to period, and there may be resulting questions about the consistency of its cost allocation methodology and/or the efficiency of its cost weighting structure. It also increases the potential incentive for NIW to exploit the information asymmetry by allocating more of its cost base to RPE categories where it is confident that the UR will adopt a higher input price forecast in order to maximise its ex ante cost allowances (particularly if there is a large difference between the machinery, civils and plant & equipment forecasts as there was at PC21).

The main difference between the PC21 approach and Ofwat's approach to the English and Welsh water companies, Ofwat does not set an explicit RPE forecast for Rates, EA charges or bad debt.[24] Ofwat recognises that there is some uncertainty around these future cost categories, and the position at PR24 is that:

- **Business and cumulo rates** are treated as unmodelled base cost allowances rather than RPE categories, where Ofwat has incorporated its view of forecast changes to expenditure on business rates following the expected business rates revaluation in 2026 and 2029. Ofwat notes that the scale of the revaluations is uncertain and will apply a cost sharing mechanism such that 90% of any under/over-spend on actual rates compared to the PR24 forecast will be shared with / recovered from customers.[25]
- **Environment Agency water abstraction and wastewater discharge consent charges** are also treated as unmodelled base cost allowances. Ofwat notes that future environmental regulation and permit costs are uncertain and will apply a cost sharing mechanism such that 75% of any under/over-spend on EA permits compared to the PR24 forecast will be shared with / recovered from customers.[26]
- **Bad debt** is captured by the base expenditure benchmarking models for retail costs and includes an increase in bad debt costs because of increasing water bills.

[24] It is assumed that these costs fall into the 'Other' input cost category and that they will increase in line with the general measure of inflation used in the PR24 Final Determination (CPIH).

[25] Ofwat (Feb 2025) "PR24 final determinations: expenditure allowances", see Section 2.3.1., p.64., available at ofwat.gov.uk.

[26] Ofwat (Feb 2025) "PR24 final determinations: expenditure allowances", see Section 2.3.2., p.67., available at ofwat.gov.uk.

We also note the following minor differences between the UR's approach and Ofwat and Ofgem's cost structures, where they have adopted different structures to reduce the risk that the assessment is influenced by different allocation policies across companies, or for rewarding inefficient cost structures. For example:

- Ofgem distinguished between general and specialist labour in setting RPE forecasts at RIIO-ED2. However, Ofwat did not distinguish between general and specialist at PR24.
- Both Ofwat and Ofgem treat materials, plant and equipment as a combined cost category, rather than separately distinguishable categories.
- Ofgem uses 'Transportation and storage' as an input cost category in the RIIO-2 reviews, but in most cases it did not pass the materiality threshold for setting an RPE allowance or inclusion in the true-up mechanism.

Summary of considerations in respect of input cost categories.

In general, we find that the UR's approach at PC21 was relatively well aligned with the practice of other economic regulators in GB, although the UR adopts a more disaggregated input cost weighting structure which carries additional risk that NIW adopts an inefficient cost weighting structure, and that there is a greater incentive to allocate costs to categories where NIW is more confident of securing a higher RPE forecast.

Apart from the minor points identified above, we did not observe any material concerns with the UR's approach to setting RPE forecasts at PC21. In that context, the UR may wish to focus its efforts at PC28 on whether:

- It is possible and/or desirable to separately estimate any expected changes in NIW's business rates costs, and to treat this as a tightly specified cost sharing item. Although business rates typically rise in line with CPI inflation, NIW might be able to demonstrate that revaluations will increase costs by more than CPI.
- It remains worthwhile treating EA charges and bad debt as separate cost categories, as we have not seen strong evidence to suggest that they need to be treated differently to the 'Other' cost category, where prices are assumed to increase in line with the general inflation measure.

2.2. SETTING APPROPRIATE RPE FORECASTS

The general approach which the UR adopted to setting input price forecasts at PC21 (and which therefore determine the resulting RPE allowance) is in line with the approaches that other economic regulators in GB adopt with respect to RPEs. It assesses independent forecasts of the relevant input prices over the future price control period, where these come from reputable sources such as the Office of Budget Responsibility, and if independent forecasts are not available, it adopts forecasts based on average annual historical growth in relevant independent price indices.

As part of our review, we made the following minor observations:

- We noted that the ONS has subsequently discontinued the indices used to set the input price forecasts for equipment (opex), machinery (capex) and chemicals (opex) – specifically, the manufacturing PPI, inputs for manufacturing machinery and equipment PPI, and the chemicals PPI. Instead, the ONS publishes successor indices which are similar and considered appropriate if the UR is minded to continue with its existing approach.[27]
- Although the UR considered historical trends in chemicals prices recorded by the ONS (which were negative in real terms), it argued that future chemicals prices would be more closely linked to global GDP growth. Whilst there is a logic to this assessment, the relationship is indirect and therefore the validity of the

[27] PPI index input – C – Inputs into production of manufactured products (Series ID: GHIP); PPI index input – C28 – Inputs into production of machinery and equipment n.e.c. (Series ID: GHGV); and *PPI index output domestic – C20 – Chemicals and chemical products (Series ID: G6SV)*.

UR's assessment is open to challenge. It is not an obvious improvement on a method which examines long-term outturn growth in chemicals prices against long-term growth in the general inflation measure.

- The government department energy price forecasts used to set the Power IPI forecast at PC21 are relatively long-term and 'strategic' in nature and are infrequently updated. This means that such forecasts can be overtaken by market developments, as happened during the European energy price crisis. They also tend to understate the potential volatility in wholesale electricity prices between financial years, which can be material even in normal market conditions.
- Where possible, long-term average growth rates over a period of at least 10 years is preferable to the shorter periods used at PC21 (such as the 6 years used to inform the materials forecasts), as this will help to smooth out any outlier events which may impact year-on-year growth rates.

Looking ahead to PC28, the UR will also need to consider the interaction between the 'base year' of its opex efficiency assessment, its estimate of the opex efficiency gap and the outlook for input prices, taking into account any residual impact of the energy price crisis. For example, if the UR was setting NIW's opex allowances today, its choice of base (outturn) year might include some of the impacts of the energy price crisis, and therefore we would expect negative input price forecasts for energy, chemicals and materials, plant and equipment in the first year of the price control, reflecting the ongoing normalisation of wholesale energy prices.

At this early stage of the PC28 review process, we understand that the UR is planning to use 2025/26 as the base year of its opex efficiency assessment. It is likely that the impact of the energy price crisis will have receded from NIW's outturn cost data by this point. Therefore, we do not recommend that the UR takes any specific action at this point, except to remain mindful of how the external economic environment has changed before "rolling over" its PC21 approach, so that it reduces the risk of mis-calibrating the efficiency challenge through its RPE forecast.

Summary of considerations in respect of the UR's approach to input price forecasts.

- The UR should be mindful of the interaction between the base year of its opex efficiency assessment, its estimate of the opex efficiency gap and its input price forecasts, so that it reduces the risk of mis-calibrating the efficiency challenge due to any residual impacts of the energy price crisis.
- When setting its input price forecasts, it is best practice to use sources of evidence and adopt assumptions which are transparent and easily replicated by an external audience. This is particularly relevant to the input price forecasts for energy, chemicals and construction materials.
- When using average historical growth rates to inform the forecast, long-term averages over a period of at least 10 years is preferable to the shorter periods used at PC21 (such as the 6 years used to inform the materials forecasts), as this will help to smooth out any outlier events which may impact year-on-year growth rates.
- The UR should consider a range of evidence on the outlook for energy prices, including market-based estimates where available. Some forecasts are quickly overtaken by market developments and focus on long-term trends rather than a near-term, 5-year outlook which is more relevant to PC28. As there is no objectively 'right approach' to forecasting volatile inputs like electricity prices, we recommend that the UR aims to adopt an approach to setting the energy RPE forecast which is both easily understood and replicable.

2.3. RPE FORECAST UNCERTAINTY AND APPROPRIATE RISK ALLOCATION

To inform its approach to PC28, the UR asked us to consider whether input price risks are likely to become more material and difficult to manage in the context of the efficient operation of NIW over the PC28 period, and whether this might influence its approach to RPEs and the allocation of forecast risk.

Although the UR sets NIW's expenditure allowances independent of how NIW's ultimate funder and shareholder (the Department for Infrastructure, "Dfl") decides to set its operating budget, the reality is that:

- NIW has very limited flexibility to move its operating budget between years, or to switch between capex and opex, in order to manage short-term budgetary pressures created by unexpected increases in input prices – particularly for energy; and
- If volatile input prices – such as energy prices – increase by more than expected, NIW may need to request additional 'in-year contingency' funding from the DfI, or it must make offsetting opex reductions elsewhere in order to remain within its annual control totals.

In our view, without access to external (private sector) sources of equity and debt capital, NIW is more constrained in its ability to manage input price risks then the English and Welsh water companies, where the increase in input prices is largely beyond NIW's ability to mitigate or control through its management of the supply chain.

2.3.1. Approaches taken by other economic regulators in Great Britain

Other GB regulators adopt different approaches to RPEs depending on how the sector is funded and the intended risk/reward balance and have therefore adopted different approaches to dealing with input price risk.

Ofwat (PR24). Ofwat applies an ex-post 'true-up' mechanism to specific RPE categories. At PR24, this covers labour costs (for base and enhancement allowances) and the (combined) materials, plant and equipment ("MPE") category (only applies to enhancement allowances).

In setting allowances, Ofwat has assumed that labour costs will grow in line with a range of independent external wage forecasts collated by HM Treasury[28] and that MPE costs will grow in line with CPIH inflation. At the end of the PR24 price control period, Ofwat will then 'true-up' for the difference between outturn growth in the ONS manufacturing wages index (for base labour expenditure), the ONS construction wages index (for enhancement labour expenditure) against the PR24 forecast; and between outturn growth in the ONS Construction Output Price Index: new work – infrastructure (for enhancement MPE expenditure) against the PR24 forecast. The differences between the outturn and forecast index values are used to calculate how much additional expenditure can be recovered from consumers in future price control periods (or return money to customers through lower charges).

Ofwat has not set an RPE forecast for chemicals, MPE (base allowances) or the 'other' cost categories – and they are not included in the ex-post true-up mechanism – because these categories did not satisfy a holistic assessment to determine whether:

- The cost category is 'material' as a share of base and/or enhancement expenditure;
- There is evidence that input price inflation is not well captured by CPIH inflation;
- Input price inflation is largely within the companies' control; and
- There are independent indices which appropriately measure changes in input prices.

Therefore, water company allowances related to these cost categories will increase in line with CPIH inflation.

In response to the energy price crisis and recognising that elevated energy prices meant that water companies' costs would be above the costs implied by its econometric base cost benchmarking models, Ofwat also introduced a separate 'energy cost adjustment mechanism' with similar principles to its approach to other RPEs and ex-post true-up mechanisms. The energy cost adjustment mechanism is designed such that it: (1) estimates each company's efficient starting energy costs; (2) uplifts the efficient starting costs to reflect the growth in GB energy prices caused by the energy price crisis; (3) sets an RPE forecast which assumes a gradual normalisation in energy prices over the PR24 period; and (4) creates an ex-post true-up mechanism to calculate the difference between the RPE forecast and the independent DESNZ industrial energy price index.[29]

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[28] HM Treasury (August 2024) "Forecasts for the UK economy: a comparison of independent forecasts", Table M6, available at gov.uk. These forecasts cover the period 2024 – 2028, and so for the 2029 and 2030, Ofwat assumes 3% p.a. nominal wage growth which is aligned with long-term average wage growth in the UK over the last 20 years.

[29] Ofwat's approach to RPEs at PR24 is summarised in CEPA (December 2024) "PR24 Final Determinations – Real Price Effects and the energy crisis cost adjustment mechanism" available at ofwat.gov.uk.

Ofgem (RIIO-2). As part of the RIIO-2 energy network price controls, Ofgem applies a similar approach to RPEs, incorporating both an ex-ante RPE forecast and an ex-post true-up based on the difference between outturn growth in an independent proxy index for the relevant input prices, and its RPE forecast. The main difference with Ofwat's approach, is that Ofgem does not apply a holistic assessment to determine whether an RPE allowance as justified. If the individual cost category represents more than 10% of total expenditure and there is an appropriate, robust and independent price index which acts as a proxy for input price trends, Ofgem sets an RPE forecast and includes the cost category within an 'in-period' true-up mechanism (i.e. differences between outturn and forecast RPE allowances are recovered from or returned to consumers via charges via the annual reconciliation on a 2 year lag).

The impact of the energy price crisis on the energy network companies' costs had yet to emerge at the time of the RIIO-2 reviews, and so energy price uncertainty is not directly addressed by the RIIO-2 framework.

ORR (PR23). With respect to Network Rail, the publicly funded infrastructure manager, the Office of Rail and Road incorporated an ex-ante input price adjustment for input price growth in excess of CPI over the period 2024–2029. Due to data availability constraints, the ORR did not set distinct input cost categories – the input cost adjustment covers collectively the categories of staff wages, plant, materials, contractors and 'other' costs based on an analysis of relevant independent cost indices and the historic 'wedge' between these indices and the CPI index.[30] Electricity costs are not included within this adjustment because Network Rail's 'traction electricity' is funded via a separate charging mechanism on rail operators, and because Network Rail's own 'non-traction' electricity costs did not pass the ORR's materiality test.

Since Network Rail is publicly owned and funded, there is no ex-post mechanism for dealing with the difference between outturn and forecast input price growth: like NIW, Network Rail must manage its expenditure within annual allowances agreed with the UK Department for Transport. However, it has additional flexibility to defer or accelerate capital expenditure from current or future years of up to 10% of its capital expenditure ("CDEL") budget. It also has full flexibility to transfer budget from operating to capital expenditure, and to defer up to 0.75% of operating expenditure from the year concerned to a later year.

In addition, Network Rail's allowances also include a £1.7 billion financial risk buffer (or contingency reserve) which ensures that it has sufficient funds to carry out efficient works and deliver specified outputs. This covers a wide range of portfolio risks including – but not limited to – the risk that inflation and input prices turn out to be higher than forecast due to factors beyond Network Rail's control.

2.3.2. Relevant considerations for PC28

Wholesale energy prices are inherently volatile. It is not unusual that NIW or any other UK infrastructure manager would manage large changes in the wholesale price from one year to the next. However, the 2021/22–2022/23 period saw exceptional volatility which was self-evidently outside of the range that NIW could reasonably expect to manage given that (a) it does not have the same access to private capital or sources of debt finance as the privately owned water networks in England and Wales; and (b) the increase in power costs between 2020/21 and 2022/23 was equivalent to around 15% of its annual opex allowance.

Whilst it is very unlikely that there will be another energy price crisis of a similar scale during the PC28 period, there remains significant geopolitical uncertainties which could affect energy prices, including uncertainty over any temporary or permanent resolution of conflicts triggered by the Russian invasion of Ukraine, and in the Middle East. In that context, the UR might reflect on PC21 to consider how the future price control framework might better support NIW if it were to experience a similar uncontrollable 'macroeconomic' input cost shock and the impact that this might have on other areas of operating expenditure.

The ex-post mechanisms which are available to Ofwat and Ofgem are not appropriate in this context because NIW does not have access to external sources of financing the additional in-year expenditure. However, there is an option to 're-open' the final cost allowances if energy prices deviate from the PC28 forecast in an unmanageable

[30] ORR (October 2023) "PR23 final determination: supporting document – sustainable and efficient costs", see Chapter 9: Efficiency, headwinds, tailwinds, inflation and input prices, available at orr.gov.uk.

fashion. For example, the UR may wish to use the Draft Approach consultation to discuss a means to 'reset' the energy RPE forecast mid-period if wholesale power prices on the island of Ireland significantly diverge from the UR's forecast and beyond a 'deadband range' (e.g. NIW bears the first +/-X% change in real electricity prices).

Effectively, this option would build upon and codify the approach taken at the PC21 Mid-Term Review and be implemented alongside a similar review point, noting that the UR is separately considering whether the mid-term review should continue in its current form. The UR should note that in this approach the definition of 'significant divergence' will be important to NIW but is ultimately a matter of UR judgement now that electricity prices have returned to close to longer-term, pre-crisis averages (see Figure 1 on p.11. above).

Future uncertainty around energy prices could have indirect effects on other costs incurred by NIW, including labour, materials and chemicals prices. But, in our view, a degree of uncertainty is inherent in the process of forecasting RPEs and the UR's approach at PC21 was well aligned with good practice in similar contexts. In addition, as we show in Section 1, NIW was not disadvantaged during PC21 by the increase in wages, materials and chemicals prices, because growth in these prices was less than the unexpected increase in the RPI index.

In that context, whilst there has been some volatility in materials and chemicals prices in recent years, NIW has not (yet) provided evidence to show that the case for extending cost sharing or changing the allocation of RPE forecast risk beyond (potentially) energy prices would be justified. In our view, NIW would need to establish that these price fluctuations were beyond its ability to manage and that they represent a material share of total expenditure. As a starting point for the PC28 review, we recommend that input price risk for these categories (labour, materials, chemicals) should remain with NIW.

However, on the basis that an efficient publicly funded infrastructure manager would have access to (limited) contingency funds to manage unforeseen cost pressures without excessive disruption to its wider portfolio, the UR should also consider whether its proposed opex allowances and the allowed return taken together include an appropriate 'risk buffer'. Such a risk buffer may be required to provide NIW with efficient contingency to ensure that unforeseen increases in energy prices do not force it to cut other areas of opex which would otherwise be deemed 'efficient' (and which it may not be able to restore or fund in future years).

Summary of considerations in respect of input price uncertainty and risk allocation.

- The UR may wish to consider options which 're-open' NIW's cost allowances if energy prices deviate from the PC28 forecast in an unmanageable fashion. For example, the UR may wish to use the Draft Approach consultation to discuss a means to 'reset' the energy RPE forecast mid-period if wholesale power prices on the island of Ireland significantly diverge from the UR's forecast and beyond a 'deadband range' (e.g. NIW bears the first +/-X% change in real electricity prices).
- As a starting point for the PC28 review, we recommend that input price risks relating to labour, materials, plant and equipment, chemicals and 'other' costs should remain with NIW.
- The UR should also consider whether its proposed opex allowances and the allowed return taken together include an appropriate 'risk buffer' that provides efficient contingency to ensure that unforeseen increases in energy prices do not force it to cut other areas of opex in a manner which undermines longer-term efficiency.

2.4. The transition from RPI to CPI or CPIH

For reasons separate from the RPE-related issues considered in this paper, the UR is also considering whether to move away from RPI indexation at PC28 and adopt either CPI or CPIH instead. In that context, the UR asked us to set out any relevant considerations that arise from that decision with respect to its approach to RPEs.

With respect to those categories where the Utility Regulator sets an ex-ante RPE allowance (i.e. those shown in Table 1.1 on p.4.) the transition from RPI to CPI (or CPIH) has no impact on NIW or consumers. This is because the UR's approach to RPEs is based on establishing an input price forecast ("IPI") for each input cost category before netting of the relevant general inflation measure to establish the resulting RPE. To illustrate this point, in Box 1

below we use the OBR's average earnings forecast to show that the move from RPI to CPI increases the estimated labour RPE, but that the net impact on NIW and consumers is neutral.[31]

Box 1: Illustration of RPE-neutral effect of transition from RPI to CPI

We assume that NIW's efficient labour costs are £10m per year in 2024/25 prices.

The OBR's latest average hourly earnings forecast for 2025/26 and 2026/27 is 4.0% and 2.1% respectively.

The OBR's latest RPI forecast for 2025/26 and 2026/27 is 4.2% and 3.1% respectively.

The OBR's latest CPI for 2025/26 and 2026/27 is 3.2% and 1.9% respectively.

The RPI-based RPEs for labour would be -0.18% and -0.96% respectively.

The CPI-based RPEs for labour would be 0.76% and 0.15% respectively.

NIW's nominal labour allowances are calculated as follows:

$$Nominal\ allowance\ _t = £10m \times (1 + General\ Inflation_t) \times (1 + RPE_t)$$

In both cases, NIW's nominal labour allowances would be £10.4m in 2025/26 and £ 10.6m in 2026/27.

The transition from RPI to CPI does have an impact with respect to the input cost categories where the UR anticipates or assumes that costs increase in line with general inflation. At PC21, this included Rates, EA Charges, Bad Debt and 'Other' costs. Because the rate of annual RPI growth is on average higher than CPI – 0.8% per year higher over the past 16 years – the UR would therefore be assuming a slower rate of nominal price growth for these cost categories at PC28. If the nominal growth rate (i.e. the RPI) was evidentially the more appropriate growth rate for these items, then one might argue that the UR would now be creating a greater efficiency challenge for NIW.

However, we have not seen evidence that Rates, EA Charges, Bad Debt or any other costs are more intrinsically related to RPI than CPI. Since CPI is recognised as a more accurate measure of general inflation – and it is the concept of general inflation to which the input cost forecast is related – we do not consider that the transition from RPI to CPI imposes an additional efficiency challenge on NIW. Moreover, since the relevant cost categories accounted for 21% of opex and only 5% of capex, any impact on NIW's overall allowances would be relatively small.

In respect of costs which are allocated to the 'Other' category, we consider that it would be appropriate to assume that these costs increase in line with CPI inflation, as this is conceptually aligned with the UR's approach at PC21.

In respect of costs which are allocated to the 'Rates' and 'EA Charges' categories, the UR may first wish to engage with NIW to understand what (if any) increases the company is expecting, and the uncertainty around its forecasts. We observe from the PR24 determinations that the uncertainty around the relevant forecasts in England and Wales was sufficiently uncertain and material that Ofwat has introduced a separate cost sharing mechanism, and the UR may wish to consider whether there is a similarly material issue for NIW.

[31] In practice, RPI has been shown to be biased upwards, especially when inflation is high. Under the existing RPE approach, RPI indexation may marginally overcompensate NIW in periods of unexpectedly high inflation because the RPE is calculated ex-ante.

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