

## Schedule 1: 7. Operating and Maintenance Expenditure

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### 7.1 Provide:

#### (a) the model(s) and the methodology TransGrid used to develop total forecast opex;

- > TransGrid Revenue Proposal Opex Model, see the document TransGrid - Opex Model - 0117 – PUBLIC provided as a supporting document to the Revenue Proposal
- > TransGrid's approach to forecasting expenditure, submitted to the AER in June 2016. See TransGrid Forecasting Methodology 18\_19 to 22\_23-0616 - PUBLIC provided as a supporting document to the Revenue Proposal or via link to file: <https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/transgrid-determination-2018-23/initiation>
- > TransGrid's Revenue Proposal for the period 2018/19 to 2022/23, Section 6.2: Forecast Operating Expenditure Overview. See the document TransGrid – Revenue Proposal 18\_19 to 22\_23 – 0117 - PUBLIC

#### (b) justification for TransGrid's total forecast opex proposal,

TransGrid's Revenue Proposal for the period 2018/19 to 2022/23. See the document TransGrid – Revenue Proposal 18\_19 to 22\_23 – 0117 - PUBLIC.

Experts that TransGrid has relied on in making its total forecast opex proposal include:

- > Frontier Economics
- > Aurecon
- > BIS Shrapnel
- > KPMG
- > CEB
- > UMS Group (ITOMS)
- > AER
- > Herbert Smith Freehills

#### (i) why the proposed total forecast opex is required for TransGrid to achieve each of the objectives in clause 6A.6.6(a) of the NER;

The total forecast operating expenditure is TransGrid's considered view of the expenditure it will need to incur to meet the operating expenditure objectives.

The methodology that TransGrid has used to make its forecast has been guided by the obligations, objectives and principals that are explained in TransGrid's approach to forecasting expenditure, submitted to the AER in June 2016: *TransGrid Approach to Forecasting – 2018/19 to 2022/23*, June 2016. See TransGrid Forecasting Methodology 18\_19 to 22\_23 - 0616 - PUBLIC provided as a supporting document to the Revenue Proposal or via link to file: <https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/transgrid-determination-2018-23/initiation>

**(ii) how TransGrid’s proposed total forecast opex reasonably reflects each of the criteria in clause 6A.6.6(c) of the NER; and**

Explained throughout Chapter 6 of TransGrid’s Revenue Proposal for the period 2018/19 to 2022/23, summarised in Section 6.3.1: Operating Expenditure Criteria. See the document TransGrid – Revenue Proposal 18\_19 to 22\_23 – 0117 - PUBLIC

**(iii) how TransGrid’s proposed total forecast opex accounts for the factors in clause 6A.6.6(e) of the NER.**

Explained throughout TransGrid’s Revenue Proposal for the period 2018/19 to 2022/23, summarised in Section 6.3.2: Operating Expenditure Factors. See the document TransGrid – Revenue Proposal 18\_19 to 22\_23 – 0117 - PUBLIC

**7.2 Provide:**

**(a) the quantum of non-recurrent costs for each year of the forthcoming regulatory control period;**

TransGrid is not aware of non-recurrent costs within its base-step-trend operating expenditure forecasts, and therefore this is assumed to be zero.

**(b) an explanation of each non-recurrent cost.**

Not applicable.

**7.3 If TransGrid used a revealed cost base year approach to develop its total forecast opex proposal, provide:**

**(a) in Microsoft Excel format, reconciliation (including all calculations and formulae) of TransGrids forecast total opex proposal to forecast prescribed transmission services opex by opex drive in table 2.16.1:**

Refer to TransGrid’s Revenue Reset RIN response template “2.16 Opex Summary”, table 2.16.1. See the document TransGrid-18\_19 to 22\_23 Final Regulatory Information Notice Templates-0117-PUBLIC.

**(b) the base year TransGrid used;**

2016/17

and

**(c) explanation and justification for why that base year represents efficient and recurrent costs.**

Refer to TransGrid’s Revenue Proposal for the period 2018/19 to 2022/23, Section 6.4.1: Selection of Base Year. See the document TransGrid – Revenue Proposal 18\_19 to 22\_23 – 0117 - PUBLIC

**7.4 If TransGrid does not used the revealed cost base year approach to forecasting opex provide in Workbook 1 – regulatory determination: (a) forecast expenditure by opex category for each year of the forthcoming regulatory control period in table 2.16.2 for prescribed transmission services opex;**

Not applicable

and

**(b) in Microsoft Excel format, clear reconciliation (including all calculations and formulae) of TransGrid’s forecast total opex proposal to forecast prescribed transmission services opex by opex category in table 2.16.2:**

Not applicable.

**(c) explanation of major drivers for the increases and decreases in expenditure by opex category in the forthcoming regulatory control period compared to actual historical expenditure;**

Not applicable.

**(d) explanation and justification for:**

**(ii) why TransGrid considers no year of historic opex represents efficient and recurrent costs.**

Not applicable.

## Real price changes

**7.5 Provide the amount of total forecast opex attributable to changes in the price of labour and materials for each year of the forthcoming regulatory control period in Workbook 1 – regulatory determination, table 2.16.1 for prescribed transmission services opex.**

Refer to TransGrid's Revenue Reset RIN response template "2.16 Opex Summary", table 2.16.1. See the document TransGrid-18\_19 to 22\_23 Final Regulatory Information Notice Templates-0117-PUBLIC.

**7.6 Provide an explanation of:**

**(a) how, in developing the amount of total forecast opex attributable to changes in the price of labour and materials, TransGrid applied the real price measures in paragraph 7.5;**

TransGrid has escalated real price changes expected in the wages of its workforce (i.e. its internal labour). This has been done by weighting an independent expert forecast in accordance with the expected labour composition for TransGrid in its base year, 2016/17.

Refer to:

- TransGrid's Revenue Reset RIN response template "2.16 Opex Summary", table 2.16.1. See the document TransGrid-18\_19 to 22\_23 Final Regulatory Information Notice Templates-0117-PUBLIC.
- TransGrid's Revenue Proposal Opex Model. See the document TransGrid - Opex Model - 0117 – PUBLIC provided as a supporting document to the Revenue Proposal

**(b) whether TransGrid's labour price measure compensates for any form of labour productivity change.**

TransGrid's labour price measure does not compensate for any form of labour productivity change. This is in accordance with:

- BIS Shrapnel's Report on Expected Wage Changes, November 2016. See the Appendix to the Revenue Proposal, TransGrid – BIS Shrapnel – Appendix H Expected wage changes - 1116 – PUBLIC, which explains its wage measures and model on pages 20 – 24.

## Output growth change

**7.7 Provide the amount of total forecast opex attributable to changes in output growth for each year of the forthcoming regulatory control period in Workbook 1 – regulatory determination, table 2.16.1 for prescribed transmission services opex.**

Refer to

- > TransGrid's Revenue Reset RIN response template "2.16 Opex Summary", table 2.16.1 See the document TransGrid-18\_19 to 22\_23 Final Regulatory Information Notice Templates-0117-PUBLIC.

## 7.8 Provide an explanation of:

**(a) how, in developing the amount of total forecast opex attributable to changes in output growth, TransGrid applied the output growth change measure in paragraph 7.7;**

- Output growth was defined and applied in accordance with TransGrid's Revenue Proposal for the period 2018/19 to 2022/23, Section 6.4.3.2: Output Growth. See the document TransGrid – Revenue Proposal 18\_19 to 22\_23 – 0117 - PUBLIC
- The precise quantitative treatment is in TransGrid's Revenue Proposal Opex Model. See the document TransGrid - Opex Model - 0117 – PUBLIC provided as a supporting document to the Revenue Proposal.

**And**

**(b) whether TransGrid's output growth change measure compensates for any form of productivity change or forecast price change.**

- Yes, in relation to productivity change. This is to the extent that the opex requirement resulting from TransGrid's expected output growth change is calculated using an economy of scale factor, in accordance with TransGrid's Revenue Proposal for the period 2018/19 to 2022/23, Section 6.4.3.2: Output Growth. See the document TransGrid – Revenue Proposal 18\_19 to 22\_23 – 0117 - PUBLIC
- No, in relation to price changes. TransGrid's output growth is calculated from forecast commissioned augex relative to the replacement cost of the network:
- Augex is not adjusted for any expected future price inflation other than the consumer price index.
  - › The replacement cost of the network is not adjusted for any expected future price inflation other than the consumer price index.
  - › Since Augex is divided by the replacement cost of the network, the effect of the consumer price index cancels out.

## Productivity change

**7.9 Provide the amount of total forecast opex attributable to changes in productivity for each year of the forthcoming regulatory control period in Workbook 1 – regulatory determination, table 2.16.1 for prescribed transmission services opex;**

Refer to

- > TransGrid's Revenue Reset RIN response template "2.16 Opex Summary", table 2.16.1 See the document TransGrid-18\_19 to 22\_23 Final Regulatory Information Notice Templates-0117-PUBLIC.
  - Cells C16-I16 represent TransGrid's expectations of how changes in industry productivity will affect TransGrid's operating expenditure.
  - Cells C15-I15 represent the effect that network growth is expected to have on TransGrid's operating expenditure. This includes the effect of the economy of scale factor in 7.7(b). The quantitative effect of the economy of scale factor is shown in TransGrid's Revenue Proposal Opex Model. See the document TransGrid - Opex Model - 0117 – PUBLIC provided as a supporting document to the Revenue Proposal.
  - The isolated effect of economies of scale has not been included in Cells C16-I16 to avoid double counting.
  - Cell D18 represents the effect of planned permanent improvements in TransGrid's operating efficiency, scheduled to take effect in 2017/18. The effect this has not been included in Cells C16-I16 to avoid double counting.

## **7.10 Provide, in percentage year on year terms, the productivity measure that TransGrid used to develop the amount of total forecast opex attributable to changes in productivity;**

- > Not applicable for Industry Productivity (i.e. set to zero)
- > 3% (real terms) net reduction in opex in 2017/18 due to targeted business improvements, relative the current projection of cost.
- > Approximately a 47% total economy of scale factor for each year within the forecast period, applied to calculated network growth. See the document TransGrid - Opex Model - 0117 – PUBLIC provided as a supporting document to the Revenue Proposal for precise treatment.

## **7.11 Provide an explanation of:**

### **(a) how, in developing the amount of total forecast opex attributable to changes in productivity, TransGrid applied the productivity measure in paragraph 7.10;**

- > TransGrid applied a business specific efficiency change to forecast operating expenditure in 2017/18, reflecting permanent efficiencies that are expected to be achieved in TransGrid's cost base in that year.
- > TransGrid calculated a total economy of scale factor for each year of the forecast period by weighting established economies of scale linked to specific operating expenditure reporting categories. See the document TransGrid - Opex Model - 0117 – PUBLIC provided as a supporting document to the Revenue Proposal for precise treatment. The total economy of scale factor was then multiplied by the network growth in that year, in order to calculate the change in TransGrid's operating expenditure requirement in the following year.

### **(b) whether TransGrid's forecast productivity changes capture the historic trend of cost increases due to changes in regulatory obligations or requirements and industry best practice; and**

- > Industry productivity: No. Refer to explanation provided in TransGrid's Revenue Proposal for the period 2018/19 to 2022/23, Section 6.4.3.3: Productivity Change. See the document TransGrid – Revenue Proposal 18\_19 to 22\_23 – 0117 - PUBLIC
- > Planned efficiency changes in 2017/18: No. They represent a business specific forecast.
- > Economy of scale factors applied to network growth: Yes. The economies of scale factors used by TransGrid in its opex forecast are based on established economies of scale used by the industry over a long period of time.

### **(c) whether TransGrid's productivity measure includes productivity change compensated for by the labour price measure used by TransGrid to forecast the change in the price of labour.**

No.

## **Opex step changes**

## **7.12 Provide the amount of total forecast opex attributable to opex step changes for each year of the forthcoming regulatory control period in Workbook 1 – regulatory determination, table 2.17.1 for prescribed transmission services opex;**

Refer to:

- > TransGrid's Revenue Reset RIN response template "2.17 Step Changes", table 2.17.1. See the document TransGrid-18\_19 to 22\_23 Final Regulatory Information Notice Templates-0117-PUBLIC.

## 7.13 Provide an explanation of why TransGrid considers:

### **(a) the efficient costs of the step change are not provided by other components of TransGrid's total forecast opex such as base opex, output growth changes, real price changes or productivity change;**

The step change in TransGrid's forecast operating expenditure originates from the re-interpretation of existing regulations by a new regulator. The effect of this cannot be forecast using TransGrid's 2016/17 base year, since the increased controls and mitigations required will not be fully implemented.

Neither can the effect of the changes in obligations be explained by the output growth, price, or business specific productivity forecast in 2017/18 components of the forecast.

### **(b) the total forecast opex will not allow TransGrid to achieve the objectives in clause 6A.6.6(a) of the NER unless the step change is included; and]**

- The step change originates from the need to comply with mandatory obligations.
- The operating expenditure is required to meet those obligations.
- If TransGrid is in breach of its statutory or regulatory obligations, it risks having its transmission license revoked which may prevent its ability to provide prescribed transmission services in accordance with the objectives in 6A.6.6(a).

### **(c) the total forecast opex will not reasonably reflect the criteria in clause 6A.6.6(c) of the NER unless the step change is included.**

- The step change originates from the need to comply with mandatory obligations.
- The operating expenditure is required to meet those obligations.
- As explained above, (7.13 b), if TransGrid is in breach of its statutory or regulatory obligations, it risks having its transmission license revoked which may prevent its ability to provide prescribed transmission services in accordance with the objectives in 6A.6.6(a).
- In the event it is unable to provide prescribed transmission services in accordance with the objectives in 6A.6.6(a), by definition, it is then unable to provide prescribed transmission services that meet the opex criteria set out in 6A.6.6(c), since its prescribed transmission services may already fall short of the opex objectives.
- This is because the operating expenditure criteria incorporate the efficient, prudent and realistic expectations of the costs of meeting regulatory obligations through the reference to 'operating expenditure objectives'.

## Category Specific Opex

### **7.14 Provide the amount of total forecast opex attributable to category specific opex for each year of the forthcoming regulatory control period in Workbook 1 – regulatory determination, table 2.17.3 for prescribed transmission services opex. The amount of total opex attributable to category specific opex must align with the opex reported in table 2.16.1.**

Refer to:

- > TransGrid's Revenue Reset RIN response template "2.17 Step Changes", table 2.17.3. See the document TransGrid-18\_19 to 22\_23 Final Regulatory Information Notice Templates-0117-PUBLIC.