هيئة تنظيم الكهرباء والإنتاج المزدوج

ELECTRICITY & COGENERATION REGULATORY AUTHORITY

General Framework of Revenue Requirement Determination Methodology

ECRA

2020

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1 Introduction

The purpose of this document is to set out the general framework of Electricity & Cogeneration Regulatory Authority's (ECRA) revenue requirement methodology for calculating the permitted regulatory revenue for regulated companies in the Kingdom of Saudi Arabia. ECRA has a duty to protect customers' interests while ensuring that companies in the electricity sector are financially viable and sustainable. One mechanism used by ECRA to meet this duty is the regulation of revenue in the electricity sector in the Kingdom[1]. This document sets out ECRA's approach to establishing the appropriate level of revenue to cover economic and efficiently incurred costs.

The manner in which the revenue will be recovered (i.e. tariffs) is not covered in this document.

1.1 Purpose of the Revenue Requirement

The methodology used to establish a regulated company's revenue requirement must achieve a balance between protecting customers from inefficiency and excessive costs and ensuring that companies are able to recover the revenue required to finance their licensed activities. The methodology incorporates variables determined through competitive markets, such as the cost of financing, in the calculations. This helps to ensure that regulation acts as a proxy for competition – it also places pseudo-competitive pressures on companies in order to make them operate as they would in a competitive market. Quality of service standards are also required to prevent regulated companies from reducing costs (and, thereby, increasing profits) by reducing levels of service.

The revenue requirement determination methodology has been developed to meet the following regulatory principles (FACTS):

- **Fairness.** Customers (present and future) should be confident that the prices they pay are cost reflective of efficient expenses. This should be balanced with regulated companies', and their investors', confidence that they will earn an appropriate return on costs that are efficiently incurred in the provision of services to customers. All parties should be confident that they can engage in the process.
- **Accountability.** ECRA is accountable to the Council of Ministers and holds regulated companies accountable. All parties are accountable to customers for costs incurred, services provided and planned improvements.
- **Credibility.** All interested parties should be comfortable with the methodology for calculating revenue requirement and the accuracy and reliability of the

[1] In this stage (2021-2023) this framework will apply to the Saudi Electricity Company (SEC).

underlying data. There should be trust that the processes and procedures will be implemented and followed consistently.

- **Transparency.** The requirements, methodology and principles governing the calculation of the regulated revenue requirement should be clearly established and followed. The mechanisms for raising and addressing queries with the regulator should be clear and robust.
- **Systematicity.** Customers, the regulated companies, and investors should be clear on how the process will be implemented and how it is expected to evolve over time in line with market developments.

1.2 Structure of this Document

This document has been structured to detail the framework to establish the revenue required for regulated companies in the Kingdom:

- Section 2 outlines the broad policy and regulatory framework governing the development and operation of the revenue requirement determination methodology;
- Section 3 provides the processes to be followed in calculating the revenue requirement, including the timeline for data submissions and ECRA's decision-making process;
- Section 4 discusses the data request templates that regulated companies must submit to ECRA, as well as ECRA's data validation process;
- Section 5 describes the methodology for calculating the revenue requirement;
- Section 6 stipulates the manner in which ECRA may undertake periodic reviews of the methodology to determine if modifications are required.

These sections are supported by a number of annexes which include a glossary and guidance on the Compliance Statement which must be submitted by the regulated companies.

1.3 Intended Audience

This document has been developed in order to provide regulated companies and other stakeholders a summary of ECRA's obligations and its general framework of revenue requirement determination methodology, i.e. the manner in which information provided by the regulated companies will be used to determine the regulated revenue for their licensed activities.

This document may be updated to reflect any changes to the methodology, if and when these changes occur. The methodology contained herein will be applicable from 01 January 2021. However, it is expected that, as the sector continues to evolve and experience is gained regarding the application of the methodology, changes may be required.

2 Legal Framework

This section summarises the current legal framework that provides ECRA with the power to regulate revenue for licensed activities and that obliges licensees to support ECRA's work in this area. This includes the relative roles and responsibilities of the regulator and the regulated companies, the objectives and conditions governing the revenue requirement, and broader policy and regulatory developments that may affect the revenue requirement determination methodology.

2.1 Roles and Responsibilities

The 2005 Electricity Law ("the Law"), the 2007 Electricity Law's Implementing Regulations Related to The Duties of The Authority ("the Implementing Regulations"), and the 2007 Charter of The Electricity & Cogeneration Regulatory Authority ("the Charter") impose a number of obligations and responsibilities on ECRA and provide it with the powers to meet its responsibilities.

2.1.1 Cost Recovery

ECRA's mandate to regulate the revenue of organisations licensed to undertake electricity activities in the Kingdom is established across these three documents – they state that licensees are required to gain ECRA's approval for their tariffs and to report on the costs underpinning those tariffs. Article 9(2)(a) of the Law requires ECRA to ensure that licensees are able to fully recover efficiently incurred costs and earn a "reasonable return" on capital.

2.1.2 Data Provision

The three documents give ECRA the power to require licensees to provide the necessary information so that it can determine the "reasonableness" of those returns. Article 4 of the Charter requires ECRA to periodically review the cost of electricity services in accordance with scientific and technical principles and to submit reports on these reviews to the Council of Ministers. Article 3 of the Implementing Regulations reinforces ECRA's ability to request information from licensees – it allows ECRA to specify the format of and deadlines for the submission of information. Furthermore, Article 23 of the Implementing Regulations gives ECRA the authority to define reporting requirements for the components of the cost of providing electricity service (such as assets, profit and loss, revenue, costs, liabilities and reserves).

2.1.3 Quality of Service

The policy and regulatory framework enables ECRA to consider the quality of service provided to customers when establishing the appropriate revenue requirement for licensed organisations. Article 4 of the Law places an obligation on ECRA (through its Board of Directors) to issue regulations and procedures to define performance

standards and relationships for licensees[2]. It also requires ECRA to monitor the implementation of these rules in relation to licensees' administrative, accounting and investment activities. Article 9(2)(c) of the Law allows ECRA to provide incentives for performance improvement by licensees.

2.1.4 ECRA's Approval

ECRA's duties are also established through the requirement placed on licensees to seek the Authority's approval in relation to factors such as their quality of service, requested tariff levels, costs underpinning these tariffs, and the acquisition and maintenance of the licensees' assets. For example, Article 7 of the Law requires licensees to comply with the rules, procedures and values of tariffs established by ECRA.

2.1.5 Licences of Regulated Activities

The Licences of regulated activities place further requirements on licensees – these relate to both the manner in which the costs are incurred and the way in which they are reported. For example, the licences requires licensees to procure the assets and services necessary to deliver their licensed activities from the most economical sources available given other parameters such as the timeliness of delivery and reliability of the assets and services. There is also a requirement to trade goods and services with affiliate or separate businesses of the licensee on "arm's length terms". Also, the licences require licensees to provide information to ECRA in the manner and at the times specified by ECRA at their own cost. Finally, the licences require licensees to maintain a register of all relevant assets in the manner specified by ECRA and to obtain ECRA's permission before these licensed assets can be used to facilitate financing of investment requirements.

2.2 Revenue Requirement

The objectives of the revenue requirement determination methodology are established in the Law. Article 2 of the Law requires customers' rights to be protected. Article 2 also requires that the private sector is encouraged to invest and participate in the growth of the electricity industry, and that such investment earns a fair economic return. These requirements are supplemented by Article 3 of the Charter, which requires ECRA to support the sustainable development of the electricity industry. Combined, these Articles clearly establish criteria that need to be taken into account in determining regulated companies' revenue requirements, however ECRA is given the flexibility to determine the most appropriate methodology for calculating those revenue requirements.

A clear example of this is in the allocation of costs between licensed activities owned by the same company. Article 27 of the Implementing Regulations allows ECRA to issue directions and decisions requiring participants in the sector to corporatize separate business units and to establish registers of associated assets and

[2] Key Performance Indicators for the Electricity and Desalination Sectors in the Kingdom of Saudi Arabia "KPI Manual".

employees. In addition, a process for allocating these assets and employees to each business needs to be established. However, it is left to ECRA to decide upon the most appropriate approach (for example, whether to use the approach currently employed by licensees or to introduce a new approach).

In addition, licences require plans for development, expansion and reinforcement of the regulated companies' systems to be submitted to ECRA for approval on an annual basis. However, the manner in which ECRA assesses these annual plans and associated capital expenditure has been left to ECRA's discretion.

2.3 Broader Policy and Regulatory Developments

There are a number of elements of the broader policy and regulatory framework that have an impact on the revenue requirement, both directly and indirectly. These range from economy-wide objectives to specific initiatives for regulated companies to invest in order to provide the services (and ensure the service quality) required by customers. These policies need to be considered in determining companies' revenue requirements.

Economy-wide objectives derive from government policies and plans – these include Saudi Vision 2030 and the associated Vision Realization Programmes. Objectives contained within these policies and plans, such as increasing the proportion of the population covered by electricity services, and the proportion of renewable resources in the energy mix, have implications for the Kingdom's electricity system. For example, increasing the coverage of electricity services may require additional investment in infrastructure assets; while an increased emphasis on renewables may also require additional investment in infrastructure assets and may affect system operation.

Specific initiatives include the Standards of Service established by ECRA and any direct instructions from government agencies.

The technical standards to which the electricity systems must be operated may have repercussions for the level of investment required. For example, if a standard is tightened to provide an improved quality of service, additional expenditure may be required and it may be substantial.

Regulated companies may be required to undertake investments to meet broader policy objectives. In these circumstances, they should not be penalised for meeting these obligations. However, they should still be held accountable for procuring the required assets and services from the most economical source available. Licensed companies are required to seek approval for planned capital expenditure and variations therein.

3 Process for Calculating the Revenue Requirement

3.1 Introduction

The purpose of this Section is to outline the process for setting regulated companies' revenue requirements. As well as establishing the timeline for the determination of the revenue requirement, this Section also defines the responsibilities of the various stakeholders in the process.

3.2 Underlying Principles

The process for setting the revenue requirement should ideally be structured to meet a number of key criteria:

- The final determination is aimed to be produced by the end of the third quarter of the year before the year in which the revenue requirement or the revenue correction is to be applied;
- The process should include a period of consultation, allowing regulated companies and other stakeholders to comment on ECRA's Initial Determination;
- The process should complement other regulatory mechanisms governing regulated companies, including the assessment of investment plans;
- The process should facilitate constructive engagement between the parties involved, over the whole duration of the process, in particular with the objective of avoiding either side resorting to a formal dispute resolution;
- The process should not impose excessive burden upon the regulated companies (i.e. they should not be continually working to update their submissions) or ECRA (i.e. it should not be continually working to assess the companies' submissions);
- The process should be the same for all regulated companies operating in the electricity sector; and
- Time should be allowed to review the implementation of the process, to derive "lessons learned", and to incorporate those lessons into the process for the next revenue requirement determination cycle.

3.3 The Process

The overall process for determining regulated companies' revenue requirements is made up of six steps:

Step 1: Company data submissions

The companies complete the ECRA-supplied data templates and deliver their submissions to ECRA. The data submitted is required to be credible and robust.

Step 2: ECRA Review

ECRA carries out a review of the companies' submissions, comparing them against its internal assumptions and analysis, asking for clarifications and/or additional data as required, and identifying areas to be discussed with the companies.

Step 3: Initial determination

ECRA produces its Initial Determination of regulated companies' revenue requirements.

Step 4: Stakeholder consultation

The companies and other stakeholders can comment on ECRA's Initial Determination.

Step 5: Final determination

Based on the results of the Stakeholder Consultation, as well as additional analysis, ECRA issues its Final Determination.

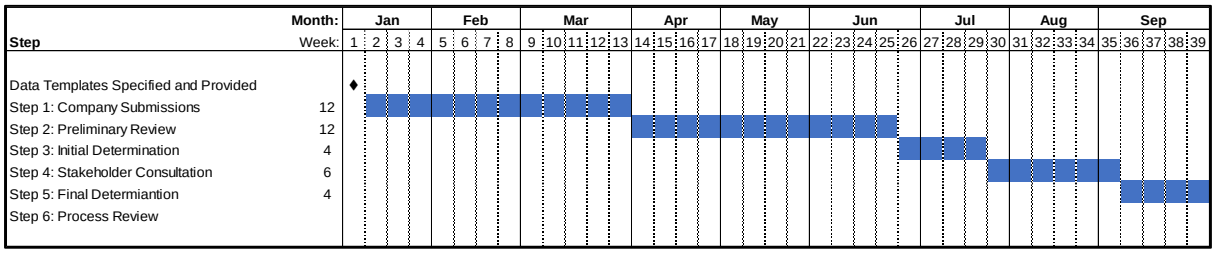
Step 6: Process review

ECRA conducts a review of the way in which the process was implemented based on stakeholders' feedback and considers whether to make changes for the next Price Control period.

3.3.1 Timeline

The timeline for the Revenue Requirement Setting Process is shown in Table 1 below:

Table 1: Revenue Requirement Setting Process: Timeline



However, this timeline is indicative only. In advance of beginning each new determination process, ECRA may adjust the calendar that is specific to that particular process. This calendar will consider, among other considerations, public holidays in Saudi Arabia.

4 Reporting Templates and Data Validation

4.1 Data Templates

ECRA has prepared data templates for regulated companies in MS-Excel format, to request data from companies that includes costs, the value of fixed assets and performance characteristics. The data submitted by companies in these data templates will be used by ECRA to set the companies' revenue requirements. Through these data requests, companies will be required to provide data such as:

- Operational expenditures (Opex) by cost category, including capitalized opex and details of employee expenses;
- Data pertaining to the gross and net book values of fixed assets at the beginning and end of each year, annual additions and disposals of fixed assets, annual reclassifications of fixed assets, and annual depreciation of fixed assets; and
- The annual values of pass-through costs such as licence fees and Zakat.

With respect to fixed assets, ECRA directs that companies should submit total book values, gross and net, as well as the book values of fixed assets funded by customer contributions and grants. Companies should not recover the costs of fixed assets funded by customer contributions and grants[3] through the revenue requirement (as these investments are funded from alternative sources).

In addition to cost and fixed asset data, the data requests ask companies for various data related to the performance characteristics of the licensed businesses. Some of the requested performance data serve as inputs into the revenue requirement calculations.[4] Other types of performance data are not yet used directly in the revenue requirement calculation but are used to assess the performance of the regulated businesses. For example, it requested data related to electricity losses reliability, and customer service.

The data templates ask companies to provide both historical and forecast data. The forecast data requested will cover at least the period until the end of the relevant price control period.

[3] Non-refundable financial support from a third party (mostly government) in cash or in kind.

[4] For example, the data templates request capacity data, network length and the number of customers from regulated companies. Such data are used to calculate the Output Indexes, which in turn are used to calculate allowed opex, as discussed in Section 5.

4.2 Data Validation

Data is submitted to ECRA by the company through the data submissions. As it is used to calculate the revenue requirement, the data must be accurate. ECRA must, therefore, be able to assess and verify the integrity and validity of the data.

Once ECRA receives the completed data templates from companies, it will go through a process of data validation, to ensure that all required data has been provided and to ensure that the data is of high quality (i.e. that it is correct and provided in the right format).

This process will involve:

- Checking that the data provided is complete, i.e. that all the requested data has been provided;
- Ensuring that the data provided is internally consistent;
- Identifying outliers; and
- Assessing at a high level the reasonableness of the data and especially of the forecasts, such as the output factors.

Following this process, ECRA may ask the companies to clarify their data submissions, or if necessary, to re-submit the data (where information was missing or found to be incorrect).

5 Revenue Requirement Determination Methodology

5.1 Introduction

This section describes ECRA's overall methodology for calculating the revenue requirement.

5.2 Underlying Principles and Assumptions

5.2.1 Underlying principles

This methodology setting out the general approach to calculating the revenue requirement is consistent with a number of high-level principles.

- It helps to fulfil ECRA's key objective of protecting customers' interests by regulating the revenue of the regulated companies;
- It encourages efficiency and improvements in the regulated companies' performance;
- It aims to provide a stable and predictable future revenue stream for licensees and a fair return to licensees;
- The methodology is applied consistently across all regulated companies, but uses company-specific data to determine each company's specific revenue requirement;
- No company will be allowed to earn a return on pass-through costs; and
- It covers only the costs associated with regulated activities that are subject to ECRA's oversight.

5.2.2 Assumptions

- ECRA shall review and approve regulated companies' investment plans through a process separate from the process of setting the revenue requirement;
- The historical cost-based approach has been adopted for the valuation of assets;
- The adoption of a multi-year price control period provides the regulated companies with time to engage with efficiency targets and an incentive to pursue improvements; and
- Any unregulated businesses that are not subject to ECRA's oversight are separated from the regulated business, and the revenue requirements are not set to recover the costs associated with non-regulated activities. ECRA will determine such assets and costs associated with non-regulated activities and account for them accordingly in revenue requirement calculations.

5.3 Regulated Companies Revenue Requirement

This section defines the general methodology for calculating the revenue requirement for regulated companies.

5.3.1 Revenue Requirement Master Formula

The formula for calculating the revenue requirement for a regulated company for a particular year *t* within the price control period is as follows:

$$RR_t = AO_t + RoI_t + Dep_t + Dis_t + PTC_t + RC_t \quad (1)$$

Where:

$$AO_t = Actual\ opex_R \times Output\ factor_t \times Inflation\ factor_t \times Efficiency\ factor_t + Extraordinary\ opex_t \quad (2)$$

and:

$$RoI_t = WACC \times (RAB_t + WC_t) \quad (3)$$

Substituting these formulae produces the following formula:

$$RR_t = (Actual\ opex_R \times Output\ factor_t \times Inflation\ factor_t \times Efficiency\ factor_t + Extraordinary\ opex_t) + WACC \times (RAB_t + WC_t) + Dep_t + Dis_t + PTC_t + RC_t \quad (4)$$

Where:

- RR_t = Revenue Requirement (in year *t*);
- AO_t = Allowed opex;
- *Actual opex*$_R$ = Actual opex (excluding capitalized and extraordinary opex) in the reference year for the price control period;
- *Output factor*$_t$ = a factor to take account of the impact of changes in output on costs between year *t* and the reference year *R*;
- *Inflation factor*$_t$ = a factor to take into account the expected rate of inflation (to take account of economy-wide changes in costs which are outside the company's control) between year *t* and the reference year *R*;

- *Efficiency factor*$_t$ = a factor to take account the expected improvement in operating efficiency between year *t* and the reference year *R*;
- *Extraordinary opex*$_t$ is the value of any extraordinary opex in year *t* on which the company is allowed to earn a revenue, and which is not otherwise captured within the methodology;
- *RoI*$_t$ = Return on Investment;
- *WACC* = Weighted Average Cost of Capital set for the duration of the regulatory period;
- *RAB*$_t$ = Regulatory Asset Base that is the value of all regulated assets upon which the company is allowed to earn a return on investment;
- *WC*$_t$ = Working Capital allowance;
- *Dep*$_t$ = Depreciation allowance;
- *Dis*$_t$ = *Allowed Disposal Costs;*
- *PTC*$_t$ = Pass-Through Costs; and
- *RC*$_t$ = Revenue Correction.

The determination of each of these elements is set out in the rest of this section.

5.3.2 Allowed Opex

Allowed Opex (AO) is defined as the operational expenditure associated with providing electricity services to customers at the required standards and quality in the most cost-efficient manner.

Companies can recover operating costs excluding capitalized opex (i.e. costs treated by companies as a cash expense) through the allowed opex component of the revenue requirement formula. By contrast, companies can recover their capitalized opex costs through the revenue requirement in subsequence years, as allowed capitalized opex is added to Construction Work in Progress (CWIP) and eventually to the *RAB* when it is commissioned.

Allowed opex in year *t* (excluding capitalized opex) is determined for each of year of the price control as:

$$AO_t = Actual\ opex_R \times Output\ factor_t \times Inflation\ factor_t \times Efficiency\ factor_t + Allowed\ Extraordinary\ opex_t \quad (5)$$

Actual opex$_R$ (excluding capitalized and extraordinary opex) is the actual opex for the reference year of the price control period.

Hence, this approach is based on companies' actual opex in a reference year (*R*) taken from the companies' data submissions, which should be in line with their accounting information.

In general, ECRA may define a reference year based on average opex observed across a number of historical years through discussions with the regulated company. This is to avoid (1) distorting opex allowances by relying on data for any particular year, which could be distorted by large year-on-year fluctuations; and (2) to avoid providing regulated companies with an incentive to inflate their opex in a particular year (e.g. by conducting one-off expenditures during the reference year to increase allowances for subsequent years). Where the reference year comprises multiple years, ECRA will normalize each year's data to the level of outputs and inflation of the final year within the reference year period. ECRA may use the audited financial statements for verification purposes and may request the companies for additional information or justification.

The approach then sets allowances by updating reference year opex for changes in the outputs delivered by the company using the output factor, and for inflation to keep this component of the revenue requirement in line with the cost pressures caused by whole-economy inflation. Additionally, the opex value will be adjusted for the rate at which ECRA expects the company to improve efficiency. Adjustments to Actual opex in the reference year, to take account of changes in output, inflation and improvements in efficiency, are discussed in sections 5.3.2.1, 5.3.2.2 and 5.3.2.3 respectively.

However, there may be a requirement to apply "step changes" to increase or decrease the company's allowed opex at a rate higher or lower than implied by the inflation, output and efficiency indices. This need may arise, for instance, to allow the company to recover the costs of compliance with regulations and instructions from the government, such as the Council of Ministers or any government entity within their rights. In the event of such step changes in opex, this would be applied as an adjustment to the reference year opex.

The allowed opex also, include a provision for the cost of extraordinary opex that ECRA deems efficient and which is not otherwise captured (e.g. through a step-change). Unless provided with evidence from the company, ECRA shall set this allowed cost of extraordinary opex at zero, and in any case will set the allowance at zero before an ex post assessment.

5.3.2.1 Output Factor

Changes in regulated companies' output must be taken into account in determining their revenue requirement. This is because there may be additional costs associated with additional outputs that are considered outside the control of the companies such as network length, customers' demand and energy, and number of customers. As a result, it is appropriate to provide an allowance for unexpected changes in these variables within the revenue requirement calculation.

It is also considered that an element of opex is fixed (i.e. it does not change in response to changes in output), and this must, likewise, be taken into account in calculating the revenue requirement.

The output index is, therefore, calculated as follows:

$$\begin{aligned} Output\ index_t &= (Output\ index_{t-1}) \\ &\times \left\{1 + a \times \left(\frac{A_t}{A_{t-1}} - 1\right) + b \times \left(\frac{B_t}{B_{t-1}} - 1\right) \right. \\ &\left. + c \times \left(\frac{C_t}{C_{t-1}} - 1\right) + \cdots \right\} \end{aligned} \quad (6)$$

Where:

- "A", "B" and "C" represent the outputs that are outside the control of the regulated company;
- The sum of "a", "b" and "c" represents the proportion of opex which is variable;

And:

$$a + b + c + \cdots \leq 1 \quad (7)$$

It should be noted that the values for "a", and "b" and "c" will be subject to review by ECRA.

The output factor is then calculated as:

$$Output\ factor_t = \frac{Output\ index_t}{Output\ index_R} \quad (8)$$

To the best of its ability, including through the use of auditing, the regulated company should ensure that the data on output drivers is accurate. If the regulated company discovers errors in the historical data, the company must inform ECRA of the change in the historical data. This will be part of the annual submission of actual costs and capital additions for the purposes of the Revenue Correction factor.

Additionally, the calculation of the output factor must reflect the corrected data in both the numerator and the denominator of Equation (8) above. For example, if the company identifies additional output (e.g. length of network) which already existed in the reference year but was not already reflected in its registers, the Output Factor calculation should be corrected to include this output in the reference year and all subsequent years, rather than treating this discovery as genuine growth in outputs.

5.3.2.2 Inflation Factor

The expected or forecast rate of inflation is included in the calculation of the revenue requirement to provide regulated companies with an allowance for the general increase in prices which are outside their direct control.

The choice of an inflation index is determined by its reliability, timeliness, stability and simplicity.

The IMF publishes its World Economic Outlook (WEO) twice a year (in April and October), presenting IMF's analysis of global economic developments during the near and medium term.

The IMF's WEO forecasts for the Kingdom's rate of inflation as measured by consumer prices is used in the calculation of the revenue requirement.

The inflation factor is defined as:

$$Inflation\ factor_t = \frac{CPI_t}{CPI_R} \qquad (9)$$

Where *CPI* is the IMF's published Consumer Price Index at the end of the relevant year for the Kingdom of Saudi Arabia.

5.3.2.3 Efficiency Factor

An efficiency factor is included in the calculation of the revenue requirement in order to protect customers from inefficiency and excessive costs and to provide the regulated company with an opportunity to over-achieve against those targets and increase its profits, which the benefit is ultimately be passed back to customers in future price control periods. The efficiency factor is applied to all of the company's opex.

The level of expected annual efficiency improvement will be set by ECRA against company performance and the evolution of the sector prior to the start of each price control period. The efficiency index is, thus, defined as follows:

$$\begin{aligned} Efficiency\ index_t \\ &= Efficiency\ index_{t-1} \\ &\times\ (1 - Targeted\ efficiency\ improvement) \end{aligned} \qquad (10)$$

The efficiency factor is defined as:

$$Efficiency\ factor_t = \frac{Efficiency\ index_t}{Efficiency\ index_R} \qquad (11)$$

5.3.3 Return on Investment

In providing services to its customers, a regulated company may need to invest on fixed assets which in turn, needs to be financed through debt and equity funds. These funds have costs associated with them which need to be compensated through the cost of capital i.e. the *WACC*.

The rest of this section examines allowed return on investment for capital employed in licenced activities.

5.3.3.1 Regulatory Asset Base

The Regulatory Asset Base (*RAB*) is a regulatory construct, which represents the value of assets used for provision of regulated activities on which the regulated company has to recover its cost.

ECRA will define the *RAB* from its detailed analysis of the historically incurred capital investments (including allowances for Interest During Construction (IDC) and Capitalized opex as described below) based on the company's asset register and subject to a review of the efficiency or "prudence" of these investments (also discussed below). ECRA will allow a rate of return on the defined *RAB* based on allowed Net Book Value (NBV) of the company's asset register: the sum total book value of assets (including IDC and Capitalized opex) at any point in time, less accumulated depreciation/disposals and disallowed inefficient expenditures.

In some cases, where a detailed asset register is not available, ECRA will set the *RAB* based on an aggregated view of the value of assets added to and depreciated from the asset base (as a holding assumption pending the development of an asset register for the company). In such cases, ECRA will set the opening value of the *RAB* (at the start of the price control period) based on the NBV of company financed fixed assets, consistent with the share of the NBV of assets shown on the company's audited accounts required for the regulated activities.

Total Fixed Assets (FC_{TOTAL}) can be split between three categories on the basis of the way in which those assets have been financed:

- Fixed assets, which have been financed by the company by a combination of debt and equity (FC_{D+E});
- Fixed assets, which have been financed by Customer Contributions (FC_{CuC}); and
- Fixed assets, which have been financed by Grants (FC_{G}).

In effect:

$$FC_{TOTAL} = FC_{D+E} + FC_{CuC} + FC_{G} \quad (12)$$

The company will not be allowed to earn a return on fixed assets financed by customer contributions and by grants. Therefore, the *RAB* will be determined as follows:

$$RAB = FC_{TOTAL} - FC_{CuC} - FC_G \quad (13)$$

The *RAB* changes as assets' depreciation is removed from it and increases as the cost of assets that ECRA allows enters the *RAB*. Hence, the *RAB* will then be updated each year to reflect (1) allowed cost of assets added during the year including financing costs and capitalized opex during construction; (2) depreciation; and (3) net book value of assets disposed, such that:

$$RAB_{closing,t} = RAB_{opening,t} + Allowed\ costs\ of\ assets\ added_t - Depreciation_t - NBV\ of\ assets\ disposed_t \quad (14)$$

And:

$$RAB_{opening,t} = RAB_{closing,t-1} \quad (15)$$

The opening *RAB* refers to the *RAB* at the beginning of the year and the closing *RAB* refers to the *RAB* at the end of the year (which is equal to the opening *RAB* in the next year). Companies will earn a return in each year on the average of their opening and closing *RAB*s:

$$RAB_t = RAB_{average,t} = \frac{RAB_{opening,t} + RAB_{closing,t}}{2} \quad (16)$$

The various components used to adjust the *RAB* (i.e. Allowed cost of assets added, depreciation, disposals) are discussed in the sub-sections below.

Capital Additions (Allowed cost of assets added)

In order to be included in the *RAB*, ECRA considers that a new asset must satisfy two key principles, namely that the investment cost has been "prudently" incurred and that it is a "used and useful" investment. ECRA defines these standards as:

- Prudent investment standard: ECRA will assess the efficiency of regulated companies' past investments and will only consider information that was known or that should have been known at the time a decision to invest was made by a regulated company. ECRA will only refuse to add investments to a regulated company's *RAB* if the investment decision would not have been made by a reasonable investor, given the information available at the time.

- Used and useful standard: ECRA interprets the used and useful standard to include assets that are commissioned and dedicated to providing the regulated electricity services to customers. The used and useful standard should not prevent assets that satisfy the prudent investment standard and are capable of providing a useful service to customers from entering the *RAB*, such as oversized assets built (or land held) for future use.

It is recognised that certain assets (such as network connections) may be financed by customer contributions, while other assets (such as government "social projects") may be financed by grants. As discussed above, assets funded through customer contribution or grants will not enter the *RAB*.

As the cost of assets added will only enter the *RAB* when the asset is commissioned and not when the capital expenditure is incurred, the allowed cost of assets entering the *RAB* needs to include an allowance for costs relating to the Construction Work in Progress (CWIP), i.e. for (1) Interest During Construction (IDC) and (2) the capitalized opex.

In developing an approach to determine the allowed cost of assets to enter the *RAB* (the allowed addition to the *RAB*), ECRA will balance two features of the regulatory regime: (1) that it should encourage companies to select their investments efficiently and in the interests of customers; and (2) that it should provide reasonable assurance to investors in the regulated companies that they will be able to recover efficiently incurred costs (including their cost of capital).

ECRA will conduct an ex post assessment of whether it considers companies' cost of assets added to have been incurred efficiently through a review process, before determining the cost of assets that should be added to the *RAB*.

The process includes criteria for assessing the reasonableness of investments, reflecting the prudent investment and used and useful standards discussed above. The companies are required to provide detailed information to ECRA to demonstrate their adherence to the Project Investment Test (PIT), for investments above a set materiality threshold. ECRA will sample a selection of these projects, and will assess whether the sampled projects meet the required evidentiary threshold. The proportion of the projects that fail to meet the PIT criteria (weighted by value of investment) may define the proportion of the company's cost of assets added that is not allowed to enter the *RAB*.

Prior to completion of ECRA's ex post assessment of the efficiency of costs, ECRA will set the *RAB* (and hence cost allowances) based on the company's forecast of capital additions, as submitted in the data templates, and including Interest During Construction as well as Capitalized opex. Actual costs may be higher or lower than the company's forecast of costs. Future revenue requirements will adjust for this difference through the Revenue Correction (*RC*) term, such that (1) companies are remunerated, in the sense that they receive the full Net Present Value (NPV) of their investment through allowed revenue, for all costs ECRA decides are efficient, and (2) companies are not remunerated for any cost that ECRA decides is not efficient.

Interest During Construction (IDC)

ECRA requires that the new cost of added assets provided by the regulated company (on which ECRA's ex post determination of allowed cost of added assets is based) excludes interest during construction, which should be separately reported. ECRA will then calculate an *IDC adjustment* cap as described in the formula below.

The calculation of the *IDC adjustment* cap will be performed on the basis of the allowed cost of debt (a component of the determination of the allowed *WACC*). The *IDC adjustment* cap will be calculated as:

$$IDC\ adjustment_t = \left\{\frac{Allowed\ cost\ of\ assets\ added\ excluding\ IDC_t}{N} \times (1+COD) \times \frac{(1-(1+COD)^N)}{-COD}\right\} - Allowed\ cost\ of\ assets\ added\ excluding\ IDC_t \quad (17)$$

Where:

- *COD* is the allowed cost of debt used in the *WACC* determination;
- *N* is an average construction period (in years) calculated by ECRA by dividing the value of CWIP by the value of asset additions (i.e. the value of transfers from CWIP to fixed assets) for historical years. This determination reflects an average construction period of assets, some of which have shorter construction period and some of which have longer construction period. ECRA may revise this estimate as further evidence provided from the company on the appropriate average construction period comes to light.

If the company's actual IDC, measured in aggregate across all capital additions in a particular year, is lower than the *IDC adjustment* cap, ECRA may add the company's reported IDC to the *RAB*. If the actual IDC exceeds the *IDC adjustment* cap, ECRA will add the value calculated according to the *IDC adjustment* formula above.

In advance of an ex post review of the efficiency of capital additions, ECRA will use the company's forecast capital additions, which include IDC, as a provisional addition to the *RAB*. As part of the ex post review, ECRA will adjust these additions with either each year's actual IDC, or the calculated *IDC adjustment* cap based on the efficient level of capital additions. Any deviations from ECRA's ex ante assumptions will be adjusted for on an NPV-neutral basis in the Revenue Correction term, discussed in Section 5.3.7.

Capitalized Opex

ECRA requires that the cost of added assets provided by the regulated company (on which ECRA's ex post determination of allowed cost of added assets is based) excludes capitalized opex, which should be separately reported. ECRA will then calculate a capitalized opex cap as described in the formula below.

$$\begin{aligned} &Capitalized\ opex_t \\ &= Capitalized\ opex_R \\ &\times \frac{Allowed\ cost\ of\ assets\ added\ excluding\ IDC\ and\ Capitalized\ opex_t}{Actual\ cost\ of\ assets\ added\ excluding\ IDC\ and\ Capitalized\ opex_R} \\ &\times Efficiency\ factor_t \end{aligned} \quad (18)$$

Where:

- *Capitalized opex$_R$* is the actual level of Capitalized opex expenditure in Reference Year R. The reference year in this case does not need to be the same as the reference year for calculating allowances for non-capitalized opex, discussed further in Section 5.3;
- *Allowed cost of assets added excluding IDC and Capitalized opex$_t$* is the ex post allowance for assets added in year *t*;
- *Actual cost of assets added excluding IDC and Capitalized opex$_R$* is the actual cost for assets added in year *R*;
- *Efficiency factor$_t$* takes into account the expected improvement in operating efficiency between year *t* and the reference year *R*. More information on the efficiency factor is provided in Section 5.3.3.3.

If the company's actual capitalized opex, measured in aggregate across all capital additions in a particular year, is lower than the capitalized opex cap, ECRA may add the company's reported capitalized opex to the *RAB*. If data on actual capitalized opex is not available, or if the actual capitalized opex exceeds the capitalized opex cap, ECRA will add the value calculated according to the capitalized opex cap formula above.

However, there may be a requirement to apply "step changes" to increase the company's allowed capitalized opex at a rate higher than the capitalized opex cap. This need may arise, for instance, to allow the company to recover the costs of compliance with regulations and instructions from the government, such as the Council of Ministers or any government entity within their rights. ECRA may apply step changes as an adjustment to the capitalized opex cap based on the assessment of the evidence provided from the company.

In advance of an ex post review of the efficiency of capital additions, ECRA will use the company's forecast capital additions, which include capitalized opex, as a provisional addition to the *RAB*. As part of the ex post review, ECRA will adjust these additions with either each year's actual capitalized opex, or the calculated capitalized opex cap based on the efficient level of capital additions. Any deviations from ECRA's ex ante assumptions will be adjusted for on an NPV-neutral basis in the Revenue Correction term, discussed in Section 5.3.7.

Depreciation

Depreciation is addressed in Section 5.3.4.

Disposals

The disposal of an asset is when that asset is sold or retired during the year. In case of an asset disposed of before the end of its normal economic life, the NBV of the asset disposed (as shown on the company's statutory accounts, but accounting for the amount, if any, that was never added to the *RAB* when it was commissioned) shall be deducted from the *RAB*. In addition, the annual deprecation value for disposed assets shall be removed from the total depreciation value as discussed in Section 5.3.4.

In the case of assets disposed of at the end of their normal economic lives, these will normally be fully depreciated, and as such no adjustment to the depreciation would be required.

In case of extraordinary disposal of an asset and efficient early retirement before its normal economic life, the regulated company will be remunerated for the remaining NBV as well as any net costs of disposal as described in Section 5.3.5, subject to ECRA's review of the prudency of that decision.

5.3.3.2 Working Capital

Working Capital (*WC*) is intended to provide an allowance for the capital required by a regulated company to pay for its day-to-day costs and obligations (i.e. opex) over a specified period of time. This allowance is particularly important as it provides reassurance that a company can operate such that it will have the cash available to cover its short-term operation costs.

The working capital allowance has been set at 45 days of opex (i.e. 1.5 months out of 12 months, or 12.5% of allowed opex):

$$Working\ Capital\ (WC)_t = 12.5\% \times AO_t \qquad (19)$$

The working capital allowance (i.e. the number of days of opex) is subject to review by ECRA.

5.3.3.3 Weighted Average Cost of Capital

The Weighted Average Cost of Capital (*WACC*) is the regulated return allowed on a company's assets.

It is important that a consistent approach is used to determine the *WACC*, while computing the revenue requirement:

- A "vanilla" *WACC* will be used which implicitly takes account of tax within the calculations. It does this through the use of a pre-tax cost of debt and a post-tax cost of equity:

$$WACC_{Vanilla} = \frac{D}{(D+E)} COD + \frac{E}{(D+E)} COE \quad (20)$$

Where:

D = value of debt;

E = value of equity;

COD = pre-tax (gross) nominal cost of debt;

COE = nominal return on equity.

- ECRA may at its discretion determine the *WACC* using a specified level of gearing (the amount of a company's debt as a proportion of the sum of its debt and equity) to establish a notionally efficient standard for all companies.
- The Capital Asset Pricing Model (CAPM) is used to establish the *COE* because of the clear theoretical foundation and relative simplicity of its implementation. The CAPM estimates the return associated with a risk-free investment and adds the premium for the assumed risk associated with investing in the equity market, although this premium is weighted by the relative risk of the regulated company compared to the broader market (i.e. the beta).
- The cost of debt may be estimated using the risk-free return and a premium to compensate for the additional risk associated with the company's default risk. For the first price control period, ECRA may consider the actual cost of debt at the beginning of price control period in the above estimation.

The total RoI component of the revenue requirement is therefore defined as:

$$RoI_t = WACC \times (RAB_t + WC_t) = WACC \times \left\{\frac{1}{2} \times ((RAB_{opening,t} + Allowed\ cost\ of\ assets\ added_t - Dep_t - NBV\ of\ disposed\ assets_t) + RAB_{opening,t}) + 12.5\% \times AO_t\right\} \quad (21)$$

5.3.4 Depreciation

Depreciation is included in the calculation of the revenue requirement to ensure that regulated companies are able to recover the initial cost of assets over their useful lives.

ECRA will keep a record of the asset register and will set the value of the depreciation at the start of the price control period based on the share of the assets required to fulfil its regulatory activities.

Thereafter, the company shall receive an allowance for the depreciation of the allowed cost of assets added subsequently to the *RAB*. As an initial ex ante determination, ECRA assumes that new assets will depreciate on a straight-line basis over an appropriate average useful life. The determination of useful life reflects a weighted

average of assets, some of which have shorter useful lives and some of which have longer useful lives. ECRA may revise ex ante estimate as further evidence on the appropriate average asset life assumption comes to light. ECRA assumes that the new assets enter the *RAB* in the middle of the year, and so will only depreciate half of their annual depreciation value in the year of addition. Hence, the ex-ante deprecation of the RAB's assets is determined as follows:

$$Dep_t = Dep_{t-1} + \frac{Allowed\ cost\ of\ assets\ added_{t-1} + Allowed\ cost\ of\ assets\ added_t}{2 \times Average\ useful\ life} \quad (4)$$

Alongside ECRA's initial determination, ECRA may also determine regulatory asset lives by asset class, based on international regulatory precedents and accounting standards. During its ex post review of the company's efficient actual capital additions to the *RAB*, ECRA will determine the ex-post value of depreciation based on each company's detailed asset register. The company will be allowed to recover depreciation on allowed assets based on the timing and rate at which they depreciate from the company's asset register. This treatment will ensure that customers pay for the historical costs of assets with a profile more closely linked to their usefulness to the customers.

In the determination process of the ex-post value of depreciation, ECRA also will take into account the lifetime adjustment for historical assets in the asset register, if any, and remove deprecation value of disposed assets from the asset register. However, any deviations from ECRA's ex ante assumptions will be adjusted for on an NPV-neutral basis in the Revenue Correction term, discussed in Section 5.3.7.

In some cases, where a detailed asset register is not available, ECRA will determine the depreciation value by depreciating the opening value of the *RAB* (as described on 5.3.3.1) on a straight-line basis over a period of time (i.e. the "remaining life" of assets) determined by ECRA. Thereafter, the depreciation of assets added to the *RAB* will be added to deprecation value based on an aggregated view of the value of these assets. ECRA will determine the ex-post value of depreciation based on an actual weighted average asset life for each year's additions, which may be longer than its ex ante determination if the balance of additions was tilted towards longer-lasting assets, and vice versa.

If appropriate, ECRA reserves the right to scrutinise the weighted average asset life resulting from the mix of capital additions carried out by the company in a given year, and to continue to apply its ex ante assumption rather than the actual weighted average asset life for that year's additions. Additionally, if data on asset lives entering the company's balance sheet is not available, ECRA will determine the appropriate asset life for that year's additions.

Once an asset register is available for a company and ECRA switches to the *RAB* determination based on it, there may be an accumulated difference between the depreciation allowed on historical investments during the transitional period when

ECRA determined the *RAB* based on the aggregate assets and average lifetime. In making the switch, ECRA may allow that regulated company receive a one-off adjustment to ensure the company can recover costs which ECRA deems to have been prudently incurred in net present value terms. Depending on the size of the adjustment, it could be spread out over multiple years.

5.3.5 Allowed Cost of Extraordinary Disposal

Based on ECRA's assessment, the regulated company may be allowed to recover additional revenue in relation to extraordinary early asset disposals, where the company decommissions an asset before the end of its useful life. This allowance is necessary in the case where the company retires an asset before it has been fully depreciated, which could result in the company being under-remunerated for the initial investment.

Early retirement (i.e. before the normal economic life for the asset class in question) can be efficient in some circumstances, if, for instance, these assets are no longer be needed, but were efficient at the time of addition. In some situations, the sale price of equipment should also factor into the decision over whether to retire it early, as well as any costs of disposal or decommissioning.

Efficient decisions by the company to dispose of assets before the end of the normal economic life *for the asset class* (i.e. not the average *across all assets*) should therefore be afforded an allowance to recognize that (1) the historical investment cost should be returned to the investor because the investment was efficient, and (2) the depreciation approach would not have returned this value to the investor in preceding years.

In case of an extraordinary disposal event, the revenue requirement may include the following components:

$$Dis_t = NBV\ of\ asset + Cost\ of\ disposal - Revenue\ from\ disposal \quad (22)$$

If the cost of extraordinary disposal is substantial, ECRA may decide to allow this cost to be recovered over multiple years, with the company being compensated for the cost of finance at the *WACC*.

However, some checks will be needed to avoid over-compensating the company and its investors for the historical investment costs associated with decommissioned assets. As such, allowances made for early decommissioning through the revenue correction requirement should only be made in respect of exceptional items:

- Once assets are decommissioned, the NBV of these assets (as shown in the company's accounts) should be removed from the *RAB*. This ensures that the company does not continue to be remunerated for an asset it no longer operates. If this occurs at or beyond the end of the economic life of the asset, then there will be no NBV to remove.
- In circumstances where the company elects to retire an asset before the end of its normal economic life for efficiency or other technical reasons, the allowed cost of

extraordinary disposal shown in the formula above may be positive, yielding an additional revenue to the company:

- Unless provided with evidence from the company, ECRA shall set this allowed cost of extraordinary disposal at zero, and in any case will set the allowance at zero before an ex post assessment. However, if the company considers it has retired assets before the end of their normal economic lives, it can make a submission to ECRA setting out the value of such economic disposals, and the reasons why it has been compelled (and/or was efficient for it) to decommission assets early. For instance, extreme weather events or instructions from government or courts may necessitate early retirement. This submission shall be made annually to ECRA.
- If ECRA is satisfied that the decision to retire the asset early was efficient and conforms with the company's various technical requirements and planning and operational standards, then ECRA will make an allowance for the allowed cost of extraordinary disposal of such assets as part of the revenue correction process. The allowed disposal value shall be equal to the NBV of the decommissioned asset, as stated in the company's statutory accounts, pro-rated as appropriate by the ratio between the asset's initial value and the value added to the *RAB*, to ensure that the company does not receive remuneration for inefficient capex by disposing of the asset before the end of its useful life.

- If the company sells assets previously included in the *RAB*, the proceeds from such sales shall be used to offset the allowed cost of extraordinary disposal shown in the formula above. The company may also request that the costs of decommissioning be included in the allowed cost of extraordinary disposal, and such costs would be subject to review and approval by ECRA using similar regulatory principles to those applying to its ex post review of the company's capex.

5.3.6 Pass-Through Costs

Pass-Through Costs (*PTC*) are costs over which a regulated company has no control and as per the case may include, for example, fuel cost, energy purchase cost, and licence fees. The company will be allowed to recover its actual costs for items classified as pass-through items.

5.3.7 Revenue Correction

The objective of the Revenue Correction (*RC*) process is to ensure that neither the regulated companies nor customers are put at a disadvantage due to (inevitable) errors in forecasting uncertain future parameters, such as inflation or demand growth. The need for revenue correction arises because of differences between the forecast values and the actual values of the parameters used to determine revenue requirement. It is also required to correct for differences between revenue earned and revenue requirement based on actual outturn values.

The revenue correction component of the price control is an adjustment to the revenue requirement in a given year, to account for the difference in a preceding year between

(1) actual revenue earned; and (2) allowed revenue, but adjusted for the outturn values of pre-defined uncertain parameter values.

These predefined uncertain parameter values which ECRA would update include the following:

1. The outturn value of the company's actual direct cost of assets added that would be added to the *RAB*, subject to ECRA's assessment of what proportion of cost it considers was efficiently incurred. ECRA will also add allowance for interest during construction and capitalized opex to the share of the company's direct cost of assets added.
2. The outturn value of depreciation allowance;
3. ECRA's determination on the allowed cost and disposal value of assets decommissioned efficiently before the end of their normal lives, less any sale proceeds from asset sales;
4. The outturn value of inflation;
5. The outturn values of outputs ;
6. The outturn value of the pass-through items; and
7. The outturn value of the extraordinary opex if any, and ECRA's assessment of what proportion of that costs are considers to be efficiently incurred.

The outturn values of the parameters above in year *t* will not be known until sometime in year *t+1*. Once these outturn values become available, ECRA will be able to calculate the level of revenue requirement that regulated company should have been allowed if these uncertain parameter values had been known in advance.

Then the company's under- or over-recovery will be calculated as the difference between adjusted allowed revenue (i.e. the adjusted revenue requirement) and outturn revenue for the given company.

ECRA will apply the revenue correction annually with a two-year lag, even if a price control spans multiple years, i.e. under- or over-recovery in year *t* will be compensated through the *RC* term in the year *t+2* revenue requirement.

The *RC* component of year *t* revenue requirement will be based on the difference between retrospective (adjusted) revenue requirement for the year *t-2* (based on outturn data on parameters listed above) and actual revenue in year *t-2*. ECRA will determine the *RC* component for year *t* in year *t-1*, once the outturn data for year *t-2* becomes available:

$$RC_t = (1 + WACC)^2 \times (Adjusted\ RR_{t-2} - Actual\ Revenue_{t-2}) \qquad (23)$$

In the formula above, ECRA scales up/down the under/over recovery component by adding two year's financing cost at the allowed *WACC*, to compensate regulated company (or customers) for the 2-year time lag in the revenue correction formula.

6 Periodic Methodological Review

For consistency with the principles of a transparent, credible, accountable, systematic and fair process, ECRA will refrain from adapting or changing the price control process during a price control period. In addition, any potential changes to the methodology will be pursued through targeted and systematic modifications, with consultation prior to implementation with all relevant stakeholders. As a result, the periodic methodological review will be undertaken on the basis of data for recent price controls as part of the preparations for the subsequent price control.

The periodic review will initially involve an assessment against the regulatory principles (FACTS):

- **Fairness:** Are the established parameters creating a fair outcome for customers and regulated companies? Are the efficiency factors for each business creating an unfair surplus or deficit of revenue? Is the reporting requirement proportionate to the risks and magnitude of costs?
- **Accountability:** Is everyone meeting their requirements and being held accountable for the information provided and progress against established timescales? If not, are there barriers that need to be overcome to hold parties accountable or help them comply?
- **Credibility:** Is ECRA receiving the data it requires to credibly establish the revenue for regulated companies in the Kingdom? Is this data consistent between submissions and explained by appropriate commentary? Is the estimated revenue consistent with the data provided? Are the outcomes consistent with the objectives of regulating monopolistic revenue, such as ensuring the company's capital expenditures meet the used and useful standard for capital additions?
- **Transparency:** Do participants understand and evidence their submissions? Are the positions reached by ECRA clearly aligned with the regulatory framework? Can interested stakeholders access and understand relevant information? Are the selected output and inflation factors an appropriate proxy for cost drivers beyond each company's control?
- **Systematic:** Is a clear, orderly process being followed? Are the steps undertaken clearly documented? Do the processes feed into each other and avoid duplication? Are the incentives consistent with the desired behaviours, such as cost reduction and improvement in quality of service?

In exploring whether modifications are required for subsequent price controls, ECRA will compare the observed values for regulated companies with the targets and assess developments within the wider environment. For example, ECRA may wish to consider whether the target value or the estimated value of opex in the final year of the price control period provides the most appropriate baseline for determining opex in the subsequent price control period.

Annex A: Glossary and Abbreviations

Authority: Electricity & Cogeneration Regulatory Authority, Kingdom of Saudi Arabia

Capital additions: the cost involved for adding new assets or improving existing assets within a business and may take the form of adding new parts or features that are expected to increase the useful life or potential of an asset. May also involve adding new assets to increase production or capacity. Repairs made to maintain the usefulness of a piece of equipment or an asset is merely maintenance and not a capital addition.

Capitalization of opex: the reallocation of opex to capex at the end of each year. This reflects the fact that some opex relating to the development of new assets or the upgrading of existing assets may have benefits beyond the year in which the expense was incurred. For example, the manpower hours used to deliver an asset can be capitalized to some extent, but the training of staff to ensure they can deliver the asset cannot. The IFRS accounting standard provides guidelines on the capitalization of opex.

Customer contributions: the connection charges received from customers as an advanced payment for services that have not yet been received. As deferred revenue, they are technically a liability and will evolve to a revenue source when this service is provided.

Depreciation: compensation for the loss in value arising over time from factors such as wear and tear and technological change.

Efficiency factor: the targeted rate of cost reduction through increased productivity.

Energy Purchase cost: The cost of electricity purchased from Independent Power Producer (IPPs), Independent Water & Power Producer (IWPPs), generation companies and other sources.

Fixed assets: Assets required to provide the regulated service, which deliver benefits over multiple accounting periods.

Inflation factor: the expected or forecast rate of inflation.

Interest During Construction (IDC): Interest that accumulates to finance the development and construction of a utility's assets, before the asset is commissioned (i.e. during the period of construction).

Operational expenditure (opex): the operational expenditure associated with meeting customers' needs to the required standard.

Output factor: a proportion of the forecast change in the principal determinants (such as network length, peak demand and number of customers) of the level of operating costs.

Price control period: The period over which fixed regulatory parameters relating to a regulated company's revenue requirement will apply.

Regulated company: the company that is licenced by ECRA to deliver a provision of electricity services to customers such as generation, transmission, and distribution companies.

Regulatory Asset Base (RAB): only those assets which are required to provide the regulated service. All other company assets are excluded from the RAB.

Retirement: an asset which is no longer under the control of that entity, no longer in existence, or no longer capable of being used in the manner for which the asset was originally acquired, constructed, or developed. The sale, abandonment, recycling, or disposal in some other manner other than temporary removal of a long-lived asset from service.

Return on Investment (RoI): the element of the revenue requirement which allows the company to develop, operate and maintain the regulated assets through earning a reasonable return on their investment.

The Law: The 2005 Electricity Law

Weighted Average Cost of Capital (WACC): the regulated return allowed on a company's capital employed and should be equivalent to the opportunity cost of investing in the company. In other words, it is the rate of return that an investor could make from investing their money elsewhere at the same risk.

Working Capital (WC): capital required to meet day-to-day cash costs and obligations

Abbreviations

Authority	Electricity & Cogeneration Regulatory Authority
Capex	Capital Expenditure
CAPM	Capital Asset Pricing Model
CPI	Consumer Price Index
ECRA	Electricity & Cogeneration Regulatory Authority
IDC	Interest During Construction
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
KPIs	Key Performance Indicators
NBV	Net Book Value
Opex	Operational Expenditures
PIT	Project Investment Test
RAB	Regulatory Asset Base
RoI	Return on Investment
RR	Revenue Requirement
SAR	Saudi Riyals
The Charter	The 2007 Charter of The Electricity & Cogeneration Regulatory Authority
The Implementing Regulations	The 2007 Electricity Law's Implementing Regulations related to the duties of The Authority.
The Law	The 2005 Electricity Law
WACC	Weighted Average Cost of Capital
WEO	World Economic Outlook

Annex B: Template for Statement of Compliance

It is vital that the information provided by the company to ECRA accurately represents the company's credible expectations and has been thoroughly quality assured prior to its submission to ECRA. Therefore, in addition to completing the data templates and accompanying commentary, regulated companies are required to submit a Statement of Compliance signed by a director (or authorised representative) of the company.

The Statement of Compliance should address the following points:

- The information provided is accurate and has been quality assured by senior management to ensure that it represents the company's true expectations;
- No relevant information has been omitted from either the data template;
- The information has been supplied in the manner specified by the Authority;
- The costs represented in this submission were (or will be) incurred from the most economical sources available having regard to the quantity and nature of the assets and services required to discharge obligations under the Electricity Law;
- The register of all relevant assets comprising the relevant business has been prepared and maintained in the form specified by the Authority;
- The business has been planned, operated, maintained and, when necessary, expanded to ensure customers are provided with a safe, reliable and efficient supply of electricity;
- Separate regulatory accounts have been maintained for each business undertaken by the regulated company;
- The procurement of goods or services from an affiliate for the purpose of discharging obligations under the Electricity Law was undertaken on arm's lengths terms; and
- There has been no cross-subsidy with any affiliated business(es).

The Director (or authorised representative) should sign and date this statement and provide their email and contact phone number.

هيئة تنظيم الكهرباء والإنتاج المزدوج

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