NATIONAL ENERGY REGULATOR OF SOUTH AFRICA

In the matter regarding

THE REVIEW OF ESKOM'S COST OF UNSERVED ENERGY METHODOLOGY

By

ESKOM HOLDING SOC LIMITED (ESKOM)

DECISION

Based on the available information and the analysis of submissions/comments received on the review of Eskom's Cost of Unserved Energy (COUE) Methodology, the Energy Regulator, at its meeting held on 31 March 2022 approved:

1. the reviewed Eskom's COUE Methodology with its associated model and COUE values for 2020, subject to the following conditions being met:
    a) the input data of the COUE model and COUE levels must be updated annually for the next three years, starting with the update in 2022; and
    b) the methodology must be reviewed every three years.

REASONS FOR DECISION

EXECUTIVE SUMMARY OF THE ASPECTS OF THE ESKOM COST OF UNSERVED ENERGY METHODOLOGY

1. The main aspects of Eskom Cost of Unserved Energy (COUE) Methodology are as follows:
   a) Macro-economic method
   b) COUE output measures: Economic and residential sectors:
      Step 1: Sectoral gross value-added (GVA) analysis of electricity used in the economic and residential sectors
      Step 2: Sectoral estimation of electricity used in the economy
      Step 3: Direct Economic COUE at national and sectoral disaggregated levels
      Step 4: Results for the direct and total economic COUE
      Step 5: Results for the residential COUE at a national level

2. The macro-economic method uses the publicly available macro-economic data such as the gross domestic product (GDP), gross value added (GVA) and household expenditure measures. This method divides the macro-economic indicators by the total electricity usage to estimate the COUE.

3. The economic COUE is expressed both as direct and total impacts on the economy. Thus, the direct cost of short duration power outages to the economy is measured in terms of production opportunity forgone, as GVA/kWh per economic sector. On the other hand, the indirect cost of these power outages to the economy is measured as the indirect impact on the economy due to the changes in sales and expenditure in the whole economy resulting from direct costs.

4. The residential COUE provides a proxy measure for the utility of using electricity in the household. It is measured as the portion of household expenditure by South African households on electricity-dependent goods and services, expressed as a ratio of residential electricity consumption.

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DEFINITIONS

'Cost of unserved energy (COUE)' means the value (in Rand per kWh) that is placed on a unit of energy not supplied due to an unplanned outage of short duration. Typically, a power system planner would balance the total COUE against the cost to supply the energy not delivered to make optimal planning decisions.

'Cost of load-shedding (COLS)' means the value (in Rand per kWh) that is placed on a unit of electricity not delivered due to frequent, recurring and planned outages. COLS accounts for the inherent resilience and adaptive response of end-users (i.e. investing in mitigating measures or inherently more resilient e.g. due to ability to substitute).

'Gross domestic product' means the concept that quantifies aggregate economic activity in a certain geographic area, mostly defined as a country. It is a measure of the total value of final goods and services produced by an economy during a particular period.

'Gross value added' means value added to the producing sectors which consist of capital and labour. These sectors add values by receiving wages, interest, profit and taxes.

'Macro-economic method' means the approach that employs readily available macro-economic data such as the GDP, GVA and household expenditure measures. This method divides the macro-economic indicators by total electricity usage to estimate a cost of interruption per kWh.

ABBREVIATIONS AND ACRONYMS

COUE	Cost of unserved energy or cost of the unplanned power outages
COLS	Cost of load-shedding
ESI	Electricity Supply Industry
GDP	Gross domestic product
GRID CODE	South African Grid Code
GVA	Gross Value Added
GWh	Gigawatt hour
kWh	Kilowatt hour
NERSA	National Energy Regulator of South Africa
StatsSA	Statistics South Africa

1. BACKGROUND

1.1 The COUE is the value (in Rand per kWh) that is placed on a unit of energy not supplied due to an unplanned outage of short duration. Typically, a power system planner would balance the total COUE against the cost to supply the energy not delivered to make optimal planning decisions.

1.2 In the past, R75/kWh was used as the value for the COUE. This COUE value was used in the absence of an industry-accepted study as a justifiable value to determine the electricity infrastructure investment based on economic criteria.

1.3 Following the supply interruptions of 2008, Eskom commissioned a range of studies to estimate the impact of interruptions of the electricity supply on the economy. The impact of electricity outages on the economy is complex and multidimensional, and studies to determine the impact can at best be indicative. In addition to assessing the impact of electricity outages on the economy, Eskom identified the need for estimating the COUE for power system planning (generation expansion or Integrated Resource Plan [IRP], transmission and distribution). However, the COUE is a key economic parameter in electricity infrastructure planning. The COUE is a critical parameter in determining the optimum supply system adequacy.

2. LEGAL MANDATE

2.1 Section 4(c) of the National Energy Regulator Act, 2004 (Act No. 40 of 2004) empowers the National Energy Regulator of South Africa (NERSA) with the responsibility to undertake the functions detailed in section 4 of the Electricity Regulation Act, 2006 (Act No. 4 of 2006) ('the Act').

2.2 The Act sets out the powers and functions of NERSA. In accordance with section 35(1) of the Act, NERSA shall ensure that the Grid Code is developed, implemented and complied with for the benefit of the ESI.

2.3 In performing its mandated functions, NERSA is required to ensure that the following objects set out in section 2 of the Act are achieved:

(a) The efficient, effective, sustainable and orderly development and operation of electricity supply infrastructure in South Africa.
(b) The interests and needs of present and future electricity customers and end-users are safeguarded and met, having regard to the governance, efficiency, effectiveness and long-term sustainability of the electricity supply industry within the broader context of economic energy regulation in the Republic.
(c) Investment in the electricity supply industry is facilitated.
(d) Universal access to electricity is facilitated.

(e) The use of diverse energy sources and energy efficiency is promoted.
(f) Competitiveness and customer and end-user choice are promoted.

2.4 As a result of powers and functions of the Regulator, NERSA developed the Grid Code. According to section 7.2.1(6) of the Distribution Network Code and section 7.7(5) of the Transmission Network Code, the cost of unserved energy (COUE), as an economic parameter used in the transmission and distribution network planning studies, shall have a determination process that is approved by NERSA.

2.5 The review of Eskom's COUE model as submitted by Eskom is the consequence of the application of section 35(1 and 2) and evaluation of the regulatory space to ensure effective and efficient administration of the industry.

2.6 The review of Eskom's COUE model does not violate any existing law or policy, and it serves to entrench the national regulatory framework, for which NERSA is the custodian.

2.7 When Eskom has completed its mandated task, which is a license condition and the application for the approval submitted to NERSA, it is peremptory for NERSA to follow the required legal process for the approval of the review of Eskom's COUE model. The legal process satisfies the provisions of section 10 of the National Energy Regulator Act and insulates the process from indefensible judicial review. This process should be appropriately recognised as the end part of the approval process of Eskom's COUE model. Part of the expectation is that NERSA should reflect in its consideration of the approval of the review of Eskom's COUE model in terms of economic impact, public interest and striking a fair balance between the interests of customers and end-users; and licensees and investors in the Electricity Supply Industry (ESI).

2.8 The process that NERSA has to undertake must satisfy the dictates of section 10(g) of the National Energy Regulator Act and the provisions of the Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000) (PAJA), rendering the decision-making process lawful.

3. NERSA DECISION-MAKING PROCESS

3.1 On 2 June 2021, Eskom submitted the COUE five-year methodology review and 2020 update report and model for the Energy Regulator's (ER) approval, in line with the ER's decision taken 29 October 2015, attached hereto as **Appendix A**.

3.2 NERSA drafted its consultation paper to satisfy the provisions of PAJA that require NERSA to undertake a public participation process for the approval of COUE five-year methodology review and 2020 update, which was

subsequently approved by NERSA's Electricity Subcommittee (ELS) on 8 September 2021 for publication.

3.3 NERSA published the COUE Five-Year Methodology Review and 2020 Update Consultation Paper on 27 September 2021, requesting stakeholders and members of the public to submit written comments.

3.4 The closing date for the submission of comments was 25 October 2021. However, it was extended to 2 December 2021 for the stakeholders that requested an extension.

3.5 The public hearing was not held as the information submitted by Eskom and written stakeholders' comments were considered sufficient to reach the decision.

4. OBJECTORS AND OTHER INTERVENING PARTIES

4.1 NERSA advertised the COUE Five-Year Methodology Review and 2020 Update Consultation Paper on the following platforms:
(a) The NERSA website on 23 September 2021
(b) *Sunday Times* newspaper on 26 September 2021
(c) *Business Day* newspaper on 27 September 2021
(d) *Die Beeld* newspaper on 27 September 2021.

4.2 NERSA received no objections to the approval of the COUE Five-year Methodology Review and 2020 Update.

4.3 NERSA received the written comments from two stakeholders, namely:
(a) Minerals Council South Africa
(b) Energy Intensive Users Group (EIUG).

4.4 The comments received were under the following key main aspects, as discussed in the COUE Five-year Methodology Review and 2020 Update Consultation Paper:

(a) The relevancy of the COUE
(b) COUE methodology review by Eskom
  (i) Proposed changes on the COUE methodology and reasons
  (ii) 2020 Update levels
(c) Future updates of the COUE methodology
(d) Eskom's differentiation between cost of load shedding (COLS) and COUE
(e) Any additional comments.

4.5 The stakeholders' written comments were considered in the approval of the COUE Five-Year Methodology Review and 2020 Update. The stakeholder

comments received in response to the questions posed are summarised in the section below, including the NERSA analysis.

5. ANALYSIS OF STAKEHOLDER'S WRITTEN COMMENTS

The COUE values are important parameters in the ESI because they allow the network planners to make informed estimates as to whether it is worthwhile to experience supply interruption or to put measures to mitigate it.

The stakeholders within the ESI provided written comments. The analysis of stakeholders' written comments was presented in the following chronological order:

a) The relevancy of the COUE
b) COUE methodology review by Eskom
   (i) Proposed changes on the COUE methodology and reasons
      - Removal of the two-year lag of the economic data
      - Removal of the disaggregated municipal COUE values
      - COUE model simplification and functionality improvement
   (ii) COUE 2020 Update levels
c) Review of the COUE methodology
d) Difference between COUE and COLS

5.1 Relevancy of the COUE

5.1.1 Stakeholders were requested to comment if the COUE is still relevant to use in the planning process to estimate the impact of unplanned outages on the economy and households, and subsequently used as one of the contributing parameters in influencing electricity infrastructure investment given the poor plant performance and continued power interruptions.

Stakeholders' comments

5.1.2 Both stakeholders cited that COUE is valuable and still relevant as it contextualises the impact of unplanned outages and given that it is used in various decision-making, including tariff design, optimising reserve margin; customer to cut off and return to service; investment allocation criteria; cogeneration and IPP planning; input in the IRP; OCGT/peaking station usage planning and it is prescribed as Grid Code requirement.

5.1.3 Caution was advised in attempting to directly project the COUE into planning capacity expansions since it is a historical value. Planning investment in electricity infrastructure is not likely to be influenced directly by COUE without a significant element of forward projection; contemplating supply-demand shortfalls, changing structure and generation type within the ESI, should be considered.

NERSA analysis

5.1.4 The COUE is prescribed in the Grid Code requirements and is generally regarded as an important parameter in long-term generation planning and used in a wide range of management decisions by utilities and countries.

5.1.5 However, COUE determined by Eskom should be used with caution in decision-making, given that its interpretation differs from other approaches. For example, the determination of the Direct COUE using the total GVA implies that the gross add value is solely dependent on electricity. Therefore, this assumption may overestimate the effects; the actual cost of unplanned outages may be lower than the COUE values, given that some production/servicing activities can continue without electricity.

5.1.6 NERSA agrees that COUE influences various decisions as per the stakeholder comment. However, the COUE, even in the electricity infrastructure decisions, is not considered in isolation; other factors taken into account include the frequency of the unplanned outages and energy not served (and the revenue lost or not earned by suppliers thereof); electricity supplier's cost and the availability of funds to invest on the electricity infrastructure. In addition, the network projects are initiated based on the forecast demand for an area.

5.1.7 The COUE, based on historical values, can be used as a proxy in the absence of a forecasted COUE. However, the future COUE can be derived and used for better-informed decisions. The potential approach to estimate COUE is explained below.

5.2 Eskom's Proposed Changes on the COUE Methodology

The following section highlights the changes suggested by Eskom as part of the COUE methodology review.

Removal of the two-year lag of the economic data

5.2.1 Stakeholders were requested to advise how they will be affected by alternative economic datasets and recommend other alternative sources.

Stakeholders' comments

5.2.2 Both stakeholders support using alternative economic datasets as a sensible option to achieve better end-result. Furthermore, using StatsSA is acceptable given that it is an internationally recognised agency that is collecting, compiling and publishing socio-economic data, similarly to the practice in New Zealand. Stakeholders did not recommend any alternative economic dataset sources.

NERSA analysis

5.2.3 The decision to use the new alternative economic dataset from StatsSA is also supported as it will eliminate the two-year lag and ensure that recent information informs the decision-making process. NERSA identified no alternative economic dataset.

Removal of the disaggregated municipal COUE values

5.2.4 Stakeholders were requested to advise how they will be affected by the removal of the disaggregated municipal COUE values.

Stakeholders' comments

5.2.5 The proposal to remove disaggregated direct municipal COUE is supported by stakeholders, given that the lack of municipal data renders the process complex and could result to inaccurate outcomes. Furthermore, differentiating the COUE at municipal level adds complexity without a commensurate benefit, given that the impact of an electricity outage on a customer at different municipalities is not too dissimilar.

NERSA analysis

5.2.6 NERSA supports the removal of the disaggregated direct COUE at a municipal level, given its complexity, lack of relevant data and its implication of delaying the annual updates.

COUE model simplification and functionality improvement

5.2.7 Stakeholders were requested to comment on how they will be affected by the simplification and functionality improvement of the COUE model. In addition, stakeholders were asked to advise on the aspects of the COUE model that need improvements.

Stakeholders' comments

5.2.8 The simplification and functionality improvement of the model is supported by stakeholders as it is more user-friendly, interactive, enhances reporting with graphs and spreadsheets, allows for better planning and extraction of data for use in other activities.

5.2.9 To improve decision-making and guide on important policies, forward-looking projection of scenarios instead of only focusing on data-to-interpreted COUE result should be considered. Furthermore, model improvements can include the introduction of a historical track of the evolution of COUE, together with an element of forward projection. The two elements to be considered include the extent of Unserved Energy as a proportion of total served energy and the relative frequency of events and instance of extent of Unserved versus Supplied Energy in the events.

NERSA analysis

5.2.10 NERSA welcomes the simplification of the model, which aims to improve the functionality of the model and the presentation of the COUE results.

5.2.11 NERSA agrees that forecast COUE can be used to project scenarios and is paramount in making appropriate decision together with other planning activities undertaken by the various players in the ESI outside the COUE study.

5.2.12 Eskom provides historical COUE values in the COUE model. The energy unserved is calculated and estimated by Eskom at the planning stage, considering the historical and actual frequency and severity of outage events multiplied by the COUE to determine or estimate the Customer Interruption Cost (CIC).

5.2.13 The future direct COUE value can be estimated using the two forecast COUE components: the economic outlook and expected energy consumption. However, the COUE can be forecasted at the country level, not per sector, given the difficulties that may be experienced in an attempt to estimate sectoral COUE values.

5.3 2020 COUE Levels

5.3.1 The COUE values are still estimated through the macro-economic method, which uses the published macro-economic data such as the GDP, GVA and household expenditure measures. This method divides the macro-economic indicators by the total electricity usage to estimate a cost of interruption per kilowatt hour (kWh).

5.3.2 The COUE methodology derives three forms of the COUE values, namely the direct economic COUE, total economic COUE and the residential COUE, as shown in **Appendix A** and **B**. COUE values measure the cost of short duration, unplanned power outages to the economy and resident as measured in terms of the opportunity forgone to produce output and to use electricity-dependent products.

Economic COUE

5.3.3 The direct economic COUE at a national level is calculated as GVA divided by the electricity consumed. The direct economic COUE is translated to the total economic COUE using the multiplier. As shown in Table 1, the national aggregated direct and total economic COUE for 2020 are R29.05 GVA/kWh and R101.73 GVA/kWh, respectively.

Table 1: Economic COUE for 2020 in South Africa

Sector	GVA	Economic electricity use	Direct COUE		Total COUE
	R million	GWh	R GVA/kWh	Multiplier	R GVA/kWh
Agriculture	119 588	5 770	20.73	3.35	69.49
Mining	372 936	28 703	12.99	3.96	51.46
Manufacturing	573 369	70 230	8.16	9.31	76.00
Electricity and water supply	167 196	21 805	7.67	3.56	27.32
Construction	140 171	636	220.25	1.95	429.53
Trade	655 222	4 579	143.08	1.22	174.52
Transport and communication	396 436	2 600	152.48	4.00	609.34
Finance	879 512	7 452	118.03	3.86	456.17
Community services	266 051	5 182	51.34	1.97	101.09
General Government	859 229	5541	155.07	1.20	186.04
Total Economy	**4 429 711**	**152 498**	**29.05**	**3.50**	**101.73**

5.3.4 Stakeholders were invited to comment if the practice used to determine the economic COUE is appropriate; and if these values can be used to measure the cost of unplanned outages to the economy for the planning purpose.

Stakeholders' comments

5.3.5 The stakeholders cited that the use of GVA and basic approach applied to calculate the aggregated direct COUE and total economic COUE values appear rational and appropriate. However, stakeholders cautioned on the approach undertaken of simply dividing the output with electricity consumed when the sectorial-based analysis is attempted, given the following:

- Finance has a higher COUE compared to mining, implying that the former is affected mostly by outages compared to the latter. This is not true given that the real sector, mining, manufacturing and agriculture are more affected than finance. This was an outcome of the studies undertaken by Pakistan and Sri Lanka.
- In contrast to electricity-intensive sectors, sectors with typically small connected loads tend to be more flexible. There is no doubt that interruptions cause inconvenience to the finance sector but can often be worked around with a lower impact on the GVA, unlike the mining sector.

5.3.6 Stakeholders also recommended the exports or income per worker as an alternative metric that could be used to indicate the extent to which sectors are affected by unserved energy. The export multiplier could be used to calculate the total impact. The same calculation could be used for income per worker.

NERSA analysis

5.3.7 NERSA agrees with the stakeholders. In reality, mining operations and production processes are likely to be affected more by unplanned outages than the finance sector, given their inability to substitute and find sufficient alternative energy sources easily, the higher energy consumed and its contribution to the former can be estimated using the energy intensity.

5.3.8 Eskom also agrees with the stakeholder's opinion, having cited that the impact of interruptions on finance is low, which is supported by the limited energy

usage in the finance sector. However, the pattern is not reflected in the current sectoral COUE values estimated as the sectoral gross added value per kWh.

5.3.9 In the clarification requested, Eskom stated that the current COUE value cannot be used to compare sectors. The COUE value is a parameter used by engineers in decision-making to balance the expenses of various design choices on a project against the COUE, i.e. if any design option works out higher than the COUE, it is not feasible and should not be considered.

5.3.10 The utility further stated that the significance of the COUE measured as the sectoral gross added value per kWh shows that every unit of energy used generates a much higher income from finance than in mining, given that mining is energy-intensive. The GVA reflects the monetary value of goods and services, which could result in higher output per kWh in Rand value for finance relative to mining. For example, finance has a higher COUE value than mining because the sector achieves higher GVA and consumes less kWh energy such that the division of Rand GVA by kWh gives a larger value.

5.3.11 The COUE macro-economic model does not measure the actual impact of an outage because the GWh used in the calculation is the energy consumed and not unserved energy due to an outage. Instead, the COUE, using the GVA and energy served, aims to estimate the opportunity cost of an outage measured as the forgone sectoral gross values added.

5.3.12 However, the shortcoming of the current COUE model is that it cannot be directly used to interpret the importance or contribution of electricity in the respective sectors' production without making adjustments to them, such as the consideration of the sectoral energy consumption and/or the dependency of the country or sectors' production or servicing activities on electricity.

5.3.13 The metrics of exports or income per worker as alternative approaches are noted. However, similarly to the current COUE approach, the outcome of these two suggested metrics are likely to be skewed and contrary to reality, given that: exports represent only a portion of total production and main exporters also consume more energy than the others; sectors like general government have high income per capita and consume low energy. Therefore, the results of the recommended metrics will need to be adjusted to reflect electricity contribution, similar to the current COUE method. Eskom will, however, be requested to explore the two alternative approaches as recommended by the stakeholder.

Residential COUE

5.3.14 The Residential COUE is measured as the portion of household (HH) expenditure on goods and services that are electricity-dependent divided by

the residential electricity consumption. Table 2 below shows the 2020 residential COUE of R9.03 household expenditure/kWh.

Table 2: Residential COUE at a national level

COUE: Household Effect	2020
Total household income (R m)	2 390 015
Portion of household expenditure on electricity use	14.3%
Household leisure & convenience expenditure (R m)	342 515
Total residential electricity use (GWh)	37 948
Electricity utility (R HH Expenditure/kWh)	**9.03**

5.3.15 Stakeholders were invited to comment if the practice used to determine the residential COUE is appropriate and if these values can be used to measure the cost of unplanned outages to residents for the planning purpose.

Stakeholders' comments

5.3.16 Even though the approach does not fully capture income from the informal sector, household expenditure on electricity divided by electricity consumption is sound. However, the outcome is possibly understated as the calculation does not apply a multiplier of the residential sector into the economy to derive the full impact of the average discomfort caused to households. The discomfort experienced by household due to working from home should not be ignored in future iterations.

NERSA analysis

5.3.17 Residential COUE is estimated considering the household expenditure on electricity-dependent goods (not household expenditure on electricity) divided by electricity. NERSA believes that this approach captures the full impact on the residents as it measures the inability to use all the electricity-dependent goods.

5.3.18 The electricity-dependent goods (such as printers, laptops and routers) purchased for working from home are reflected in the expenditure for electricity-dependent goods value. Therefore, the inability to use those products will be captured in the residential COUE and on the direct economic COUE through the decrease in economic output. In addition, the failure to undertake economic activities at home due to unplanned outages is reflected in the changes in economic sectors and COUE regardless of being taken home.

5.4 Review of the COUE Methodology

5.4.1 Stakeholders were requested to comment on whether the review of the Eskom COUE Methodology should remain at every five years or be reduced to three years, considering the imminent restructuring within Eskom.

Stakeholders' comments

5.4.2 Stakeholders support the three-yearly review of the COUE to allow for the changes to be incorporated: Eskom restructuring, a new multi-year price determination, reduction of prices from the different renewables bid windows, Eskom maintenance, load-shedding, other datasets and ultimately the change in the ESI.

NERSA analysis

5.4.3 The restructuring at Eskom and changes across ESI are eminent and will directly or indirectly affect COUE determination as per the stakeholder's comments. Therefore, it is recommended that the review be undertaken after three (3) years to incorporate the potential changes.

5.5 Eskom's Differentiation between COUE and Cost of Load-Shedding

5.5.1 Eskom interprets unplanned outages and load-shedding differently. The impact of unplanned outages and load-shedding is measured using the COUE and CoLS, respectively.

5.5.2 Stakeholders were requested to comment if Eskom's differentiation between short-term unplanned outages and load-shedding measured using COUE and CoLS is acceptable, and if not being informed or being informed about these outages makes a difference in the impact on the end-users?

Stakeholders' comments

5.5.3 The stakeholder stated that scientifically the calculations are different, but the effect is the same. For the mining industry, it helps to be informed timeously both because it impacts the safety of workers and enables companies to save on costs. In short, it lowers or makes the COUE benign.

5.5.4 Historically, Eskom's view of the differentiation between the CoLS and COUE may well have been valid in the case of infrequent, sudden events. However, the situation in the supply industry is certainly changing, with the prevalence of a clear deficit emerging on the supply side. The distinction between interruption types is increasingly overlapping, with the corresponding merging of the cost attributable to such events becoming less distinct.

NERSA analysis

5.5.5 The supply interruption notice period, availability of funds to invest in alternative energy sources and ability to change times of the electricity-

dependent activities play a major role in differentiating the effects of unplanned and planned outages to customers, as highlighted below.

5.5.6 In line with Eskom's definition of these two outages, NERSA agrees that there could be overlapping because an unplanned outage may degenerate into a planned electricity interruption. However, customers affected by an unplanned outage are likely to experience more costs as it occurs without any notification. Eskom will then notify customers about the impending load shedding event; customers if told within reasonable period can use alternative energy sources or defer production activities to a later stage which then reduces the effect.

5.5.7 The stakeholder also confirmed that being informed lowers the effects of outages; therefore, COUE and COLS may not be the same. This is supported by Eskom's study, which shows a far lower R9.53/kWh for COLS when compared to the COUE of R29.05/kWh.

5.5.8 NERSA also concurs that there may be a blurred line between the unplanned and planned outages from the customer's perspective; customers may not be able to differentiate between the two outages. For example, the two outages may result into the same effect if no warning was received, no alternative electricity supply and electricity-dependent activities cannot be deferred,

5.6 Additional Comments

5.6.1 In addition to the above-mentioned requests for stakeholder's comments, NERSA requested any other comments or proposals relating to the Eskom COUE five-year review and 2020 update, including the COUE 2020 update model.

Stakeholders' comments

5.6.2 No additional comments from stakeholders.

NERSA analysis

5.6.3 NERSA is aware that some of the data used in the COUE model are not updated annually, or other assumptions may need to be changed in line with the environment. However, Eskom is required to update periodic information in the COUE model as soon as it is available from the data providers. This includes, but is not limited to using the recent Households Income and Expenditure Survey (IES) or Living Conditions Survey (LCS) in estimating the portion of household income used to purchase electricity-dependent goods.

6. CONFIDENTIALITY

There are no confidentiality issues.

7. CONCLUSION AND RECOMMENDATION

7.1 The two stakeholders who submitted the written comments stated that as prescribed in the Grid Code, the COUE is an important parameter in the planning process. Stakeholders welcomed Eskom's proposed change but cautioned against the approach of simply dividing the output with electricity consumed to determine the sector COUE values, given that it may derive outcomes that differ from reality when the sectors are compared.

7.2 Eskom's proposed changes will fast-track the annual updates and approvals and ensure that the COUE is considered in the planning and infrastructure decision-making processes in line with the Grid Code.

7.3 The COUE values are important parameters in the ESI because they allow the network planners to make informed estimates as to whether it is worthwhile to experience supply interruption or put measures to mitigate it.

7.4 From the conspectus of the facts and evidence presented to NERSA on the Eskom COUE Methodology Review and 2020 Update, it is thus appropriate to make the decision as set out above.

ATTACHMENT

Appendix A and B: Eskom COUE Methodology Review and 2020 Update Report and COUE 2020 Update Model