NATIONAL ENERGY REGULATOR OF SOUTH AFRICA

Consultation Paper

Framework for the Cost of Unserved Energy for Licensed Electricity Distributors

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Abbreviations

COEO	Cost of Electricity Outages
COUE	Cost of Unserved Energy
DM	District Municipality
GDP	Gross Domestic Product
GVA	Gross Value Added
HVAC	Heating, Ventilation and Air Conditioning
I-O	Input-Output
ISIC	International Standard Industrial Classification
IRP	Integrated Resources Plan
KSACS	Key Sales and Customer Service division
kWh	Kilowatt hour
LM	Local Municipality
LCC	Life Cycle Cost
LSM	Living Standard Measure
SNA	System of National Accounting
StatsSA	Statistics South Africa
SU	Supply Use

Definitions

Codes	means the Distribution Code, the Grid Code, or any other code, published by NERSA, as applicable and amended, modified, extended, replaced or re-enacted from time to time.
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 in order to make optimal planning decisions.
Cost of Electricity Outages (COEO)	means the direct cost that the economy incurs due to unplanned outages of short duration (less than three hours) or planned outages of long duration (greater than three hours). The cost is based on a snapshot of the current economy accepting that the economy may be in a state of disequilibrium as may be reflected by price distortions and subsidies. The COEO is a measure of the loss of value added to the economy due to the outages.
Distribution Code	means the set of documents titled South African Distribution Code published by NERSA in September 2007, as amended, modified, extended, replaced or re-enacted from time to time.
Distribution Network	means the distribution network of any distributor which operates at a nominal voltage of 132kV or less, as described in the Codes, as that the system may be refurbished, modified, extended or developed from time to time.
Gross Domestic Product (GDP)	Means the total market value of all final goods and services produced within a given period by factors of production located within a country. GDP is not a perfect measure of social welfare and society's economic well-being because its accounting rules do not adjust for production that causes negative externalities, it does not say anything about the distribution of income, it does not include all economic activities in the economy, and it does not say anything about life expectancy, literacy, unemployment or poverty.
Integrated Resources Plan (IRP)	means the coordinated schedule for generation expansion and demand – side intervention programmes, taking into consideration multiple criteria to meet electricity demand.

Licensed Electricity Distributors	refers to Municipal and Private electricity distributors licensed by NERSA
South African Grid Code	means the set of documents entitled ‘South African Grid Code’ published by NERSA in July 2010, version 8.0 2010 as amended, modified, extended, replaced or re-enacted from time to time.

EXECUTIVE SUMMARY

The National Energy Regulator (NERSA) is a regulatory authority established as a juristic person in Terms of Section 3 of the National Energy Regulator Act, 2004 (Act No. 40 of 2004). NERSA's mandate includes the regulation of the electricity supply industry. According to Section 4(ii) of the Electricity Regulation Act, 2006 (Act No. 4 of 2006) ('the ERA'), the Energy Regulator must regulate electricity prices and tariffs.

NERSA is the administrative authority for the South African Grid Code ('the Grid Code') in terms of sections 35(1) and 14(t) of the Electricity Regulation Act, 2006 (Act No. 4 of 2006). In accordance with the Act, NERSA shall ensure that the Grid Code is developed, implemented and complied with for the benefit of the industry.

The Distribution Network Code version 6, section 7.2.1(6) requires that the Cost of Unserved Energy (COUE) as an economic parameter used in distribution network planning studies shall have a process of establishment approved by NERSA. This draft Framework therefore aims to enable Distributors to comply with the Distribution Network Code and to also ensure an orderly and economic expansion of the network infrastructure to meet future electricity demand with an acceptable level of reliability.

NERSA hereby requests stakeholders to comment on the proposed Framework for Cost of Unserved Energy for Licensed Electricity Distributors as set out in this consultation paper. Written comments should be addressed to:
Mr. Melusi Nyoni, Kulawula House, 526 Madiba Street, Arcadia, 0083, Pretoria; or via email at: COUEMunics@nersa.org.za. The closing date for the comments is 20 October 2017. NERSA will also hold a public hearing on a date to be advised wherein presentations may be made by interested and affected parties.

1. BACKGROUND

In the past, R75/kWh was used as the value for the Cost of Unserved Energy (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. The value of R75/kWh, previously quoted in the media and within Eskom, was based on a survey of key customers by Eskom's Key Sales and Customer Service (KSACS) division. The initial study had the following key features:

- The study was based on face-to-face surveys. This led to a large dependency on the knowledge and experience of the individual that represented the customer.
- The study was based on an estimate of the financial impact to the individual customer not the economic cost.
- The R75/kWh figure was an average of the COUE estimate of large industrial customers, not a weighted average for all customers.
- The R75/kWh figure was a figure quoted during the interim of the surveys conducted and did not reflect the overall results, thus it was shared to report progress, with clear instructions not to utilise it for any purpose.
- The study was not benchmarked against any international methodologies applied elsewhere.

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 the purposes of power system planning [generation expansion or Integrated Resources 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.

On 30 March 2015, Eskom submitted to the Energy Regulator the COUE Methodology for approval with the associated model for estimating (a) the cost to the South African economy of electricity outages and (b) the COUE to be used for power system planning. This was followed by the approval of Eskom's COUE methodology by the Energy Regulator on 29 October 2015.

After having seen the complexity involved in the development of the Eskom's COUE methodology, the Energy Regulator decided to develop a COUE Framework for Licensed Electricity Distributors to help municipalities to determine their own COUE values as most of the small municipalities do not have planning departments and rely on the service of Eskom Distribution planners or Consultants. The framework for Licensed Electricity Distributors shall be based on the concept that is already approved for Eskom's COUE methodology.

Further to that, the Distribution Network Code version 6, section 7.2.1(6) requires that the COUE as an economic parameter used in distribution network planning studies shall have a process of establishment approved by the National Energy Regulator.

2. WHERE AND HOW IS COUE USED

COUE is used to provide an economic value to the cost of electricity interruptions to electricity customers and the economy as a whole. These values are used to inform a number of investment and refurbishment decisions on the power system, with the aim of optimising the reliability of the network. The benefit of reducing the frequency and duration of electricity interruptions is quantified in economic terms so that business cases for network investment, planning and refurbishment can be appropriately defined and optimal levels of reliability engineered for the needs of the South African economy.

The impact of an investment decision on the reliability of supply is usually measured by the change in the amount of unserved energy experienced due to interruptions of supply. The evaluation of its worth to the customer requires a knowledge of the cost of unserved energy, i.e. of the economic losses associated with a unit of unserved energy. To this end, the COUE figures are one of the key economic evaluation parameters for investments to upgrade and refurbish the network at Generation, Transmission and Distribution levels.

Generation planning requires COUE to assess the risk of economic damage (at macro-economic level) as a result of generation capacity inadequacy. Generation planning is concerned with constrained economic growth and total losses in the economy resulting from supply interruptions.

Investment in the Transmission System can occur when the specified technical and investment criteria is met. The economic impact of losing a load or not being able to supply a load needs to be determined before a decision is made regarding new investment. COUE is one of the economic parameters used by Transmission when making investment decisions.

Distribution uses COUE for load forecasting, reliability based planning and investment decisions. Load forecasting is premised on sub-zone classification and customer class building up from substation level. This requires economic impact measurement disaggregated by substation and by economic segment. Reliability-based planning uses the COUE values in a way similar to Generation to support capital investment breakeven planning. Distribution Planning also uses COUE in determining the least Life Cycle Cost (LCC) of infrastructure investment alternatives. The cost of the project to the electricity utility is weighed against the (cost) impact to customers of energy not served if the project is not done.

Stakeholder Comment # 1

Some municipalities already own and operate generation facilities and sell power to their existing customers. Should COUE be applied to justify distributor's generation investments that are not part of the IRP and Ministerial determinations?

3. MACRO-ECONOMIC METHOD AS A METHOD TO CALCULATE THE COUE

A number of different methods are used to calculate the COUE. These methods include macro-economic method, customer surveys, market-based method and analytical method.

However this framework only covers the macro-economic method because it uses officially published macro-economic data such as Gross Domestic Product (GDP) [and gross value added (GVA)] and household expenditure measures. This method divides the macro-economic indicators by total electricity usage to estimate the cost of interruption per kWh.

Other major advantages of using the macro-economic method are that:

- it is feasible and simple to implement as a result of data availability;
- it uses official, publicly available data and is thus, transparent, verifiable and repeatable;

- the method is consistent with the System of National Accounting (SNA) methodology of the United Nations;
- it enables and supports macro-economic modelling;
- it allows for scalability of COUE measures from a national level to higher resolution (e.g. municipal level); and
- it provides measures that support the data requirements of reliability planning.

The macro-economic method has already been approved by NERSA for use by Eskom and is therefore recommended as the preferred COUE estimation method for the rest of the distributors since investment decisions are taken in the public interest on an on-going basis.

4. TECHNICAL DETAILS OF THE MACRO-ECONOMIC METHOD

The COUE for municipal distributors is calculated by dividing the municipal Gross Value Added (GVA) by the electricity (kWh) used. The residential COUE is derived as the ratio of the household expenditures on electricity appliances and the household electricity usage for the relevant local municipality.

It is important to emphasise that the economic COUE, following from the definition, measures the value (in Rand GVA per kWh) placed on a unit of electricity not supplied due to an unplanned outage of short duration (**less than three hours**). For economic activities, the relationship between GVA and Gross Domestic Product (GDP) is used as an indicator of economic activity. Annual GVA and GDP, by economic sectors, are both officially measured and reported annually by Statistics South Africa (StatsSA). GVA and GDP are both measures of economic output. The relationship is defined as:

GVA + taxes on products - subsidies on products = GDP

As the total aggregate of taxes on products and subsidies on products are only available at the national economy level, GVA is used for measuring regional gross domestic product and other measures of the output of entities smaller than a whole economy.

The Economic COUE is expressed both as direct and total impacts on the economy, i.e. the Cost of Electricity Outages (COEO). 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.

The Direct Economic COUE is disaggregated to 62 International Standard Industrial Classification (ISIC) sectors and District and Local Municipalities. The indirect cost of these power outages to the economy is measured as the indirect impact on the economy as a consequence of the changes in sales and expenditure in the whole economy resulting from direct costs. These indirect costs to the economy, i.e. the costs associated with complex cross-linkages in the economy, is also measured in terms of GVA. Figure 1 below shows the components of Total economic cost.

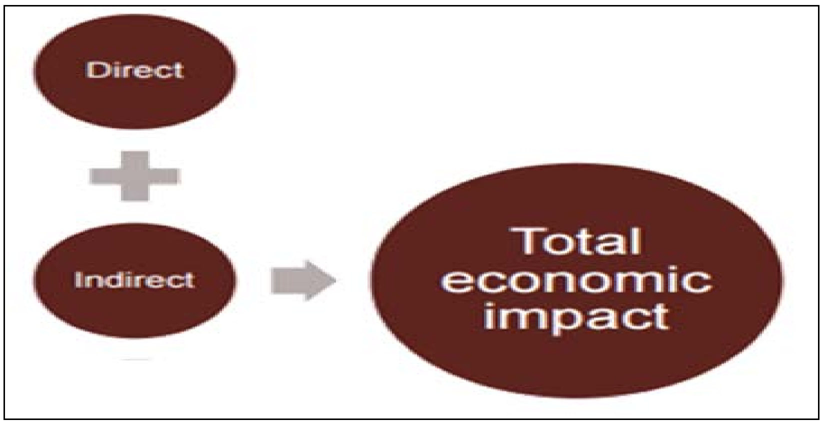

Figure 1: Total Economic Cost

The 1993 SNA requires countries to compile annual Supply and Use tables (SU-tables) as it forms an integrated part of the 1993 SNA. Accordingly, the annual estimates of GVA and its components, as well as output, intermediate consumption expenditure, final consumption expenditure and GDP estimates all have their origin in the annual SU-tables. StatsSA uses the SU-tables framework to derive nominal estimates of GVA and GDP on a detailed, 62-sector, industry and commodity level.

The Supply table shows the origin of the resources of goods and services, and the Use table shows the uses of these goods and services and the cost structure of the various industries. As a result, SU-tables report both the GVA generated and the electricity used by 62 different industries over a 12-month calendar year accounting period. The electricity is a necessary production input for each of the industries to generate its GVA. The tables are reported in monetary terms and therefore the cost of electricity as an input into production is known for each industry, and how much gross value is added in each industry.

This type of analysis, which is also known as impact analysis, enables sophisticated economic impact analysis, including productivity analysis. In this way, StatsSA's SU-tables provide the foundation for development of an Input-Output (I-O) model and for analysis of the Total COUE effect. The COUE model adopts the methodology proposed by StatsSA for the construction of an I-O model from the SU-tables, and for analysis of results. Thus, the SU-tables provide a powerful analytical tool as they are conveniently integrated into macroeconomic models in order to analyse the linkages and interaction between final demand, intermediate consumption, GVA and industrial output levels.

The SU-tables further report on all the other inputs from all the other sectors that are used for a specific industry to achieve GVA. These are called intermediate inputs and explain the inter-industry relationships that exist in the economy.

Consequently, the COUE model uses the SU-tables to construct a single I-O table (refer to Figure 2) to establish the linkages and interrelationships between industries, products and other economic variables. In the I-O table the rows represent the outputs and the columns represent the inputs.

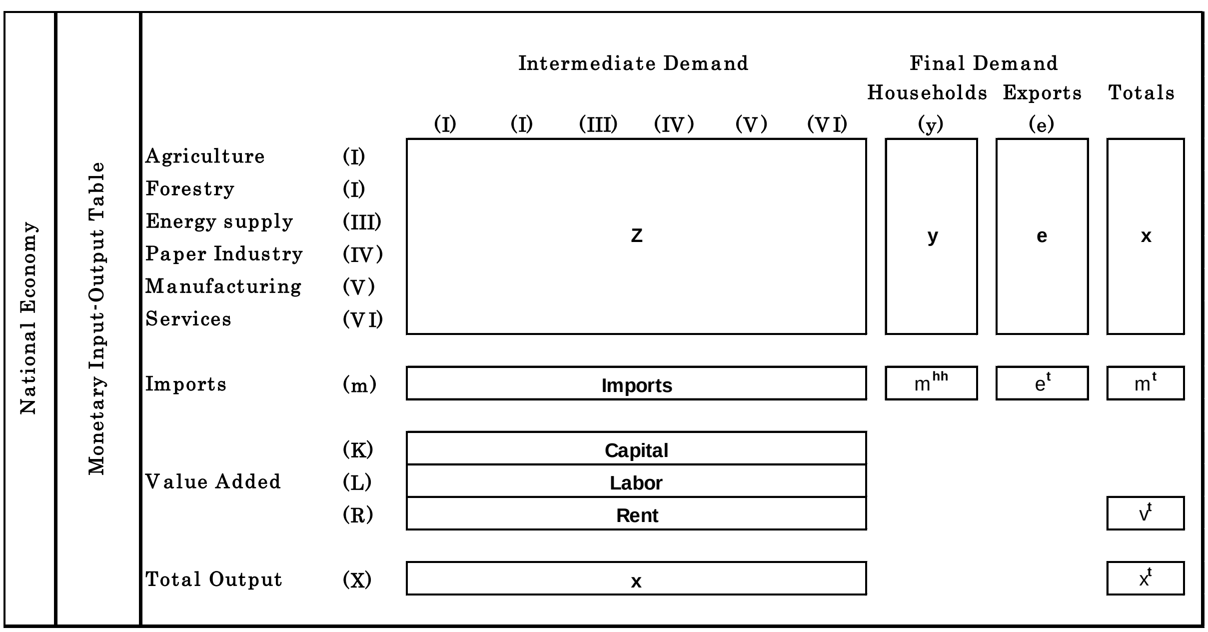

Figure 2: StatsSA Method for constructing I-O Table from SU Tables

The I-O model enables the estimation of both direct and total effects of 1kWh of electricity on the economy. This is achieved through two types of coefficient matrices: Input coefficients and Inverse coefficients.

Input coefficients are estimated by dividing all the transactions in each column of the I-O table by the total output of each column. These coefficients describe the production input structure for each industry. However, input coefficients will only measure direct production and excludes any spill over effects throughout the rest of the economy. The I-O table enables the derivation of the so-called 'Leontief inverse' matrix which reflects not only the direct effects on the production process, but also incorporates the indirect effects on the production process, resulting from a change in demand for a specific product. This method is a well-established method and earned Wassily Leontief the Nobel Prize in Economics in 1973. The Leontief inverse thus measures all the linkage effects and interrelationships between industries and final consumers and thus also the total impact on the economy. The 'Leontief inverse' matrix enables the assessment of a scenario where 1kWh is forgone/or gained in the economy.

The Residential COUE, in turn, is measured as the portion of household expenditure by South African households on goods and services that are electricity dependent, expressed as a ratio of residential electricity consumption. Residential lifestyles are increasingly electricity dependent for goods and services such as communication, personal care, security, education, household income generation and leisure activities. Short duration power outages result in an opportunity cost of not having or using these goods and services and results in discomfort, nuisance and lost leisure opportunities.

5. STEP BY STEP APPROACH OF CALCULATING THE COUE USING THE MACRO-ECONOMIC METHOD

The calculation of the COUE using the macro-economic model has already been adopted by Eskom and was approved by the Energy Regulator for the first time in 2015, which lead to its COUE values being used in the development of the IRP as well as in Eskom's Transmission and Distribution planning.

Figure 3 below summarises the COUE methodology used to determine the Economic COUE and the Residential COUE as outputs.

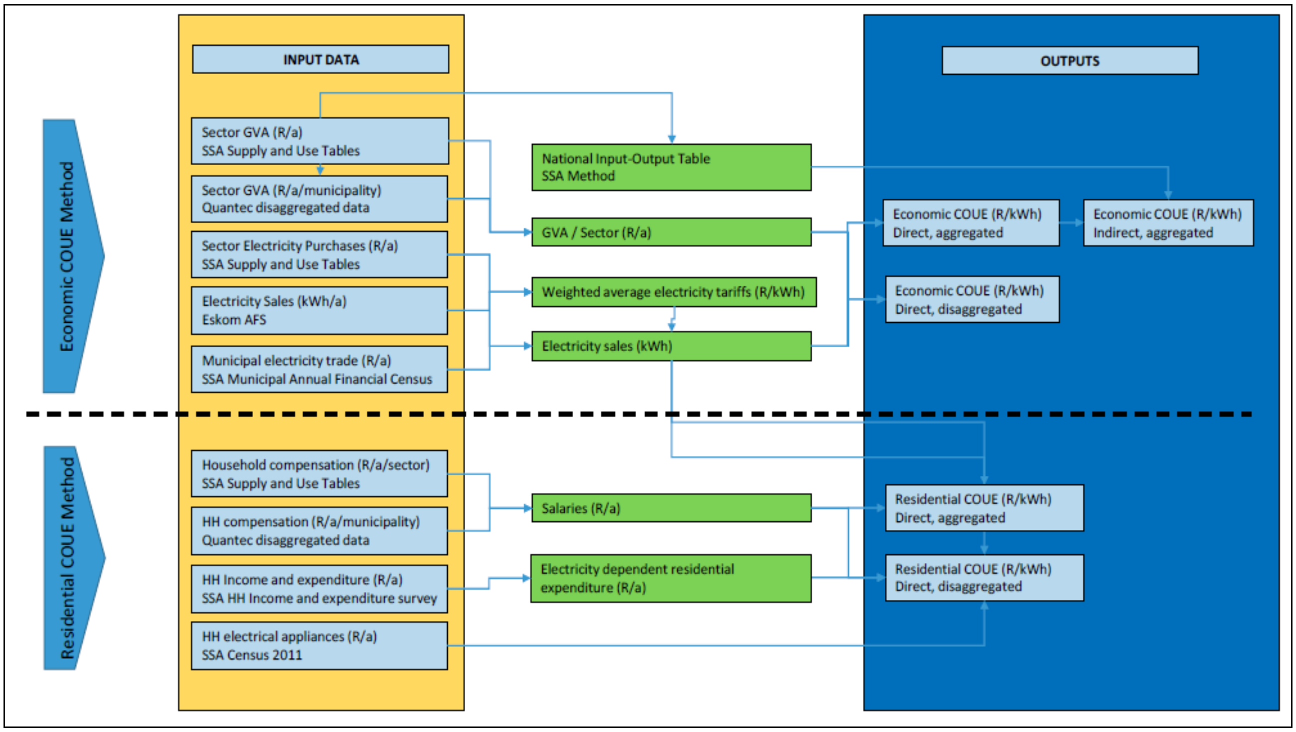

Figure 3: Summarised COUE methodology

The decision-making tree in Figure 4 below provides guidance on which economic COUE to use for distributors and it also helps to identify areas requiring clarity in steps 1 to 5. A distributor may adopt the route of using National COUE figures or Municipal COUE figures.

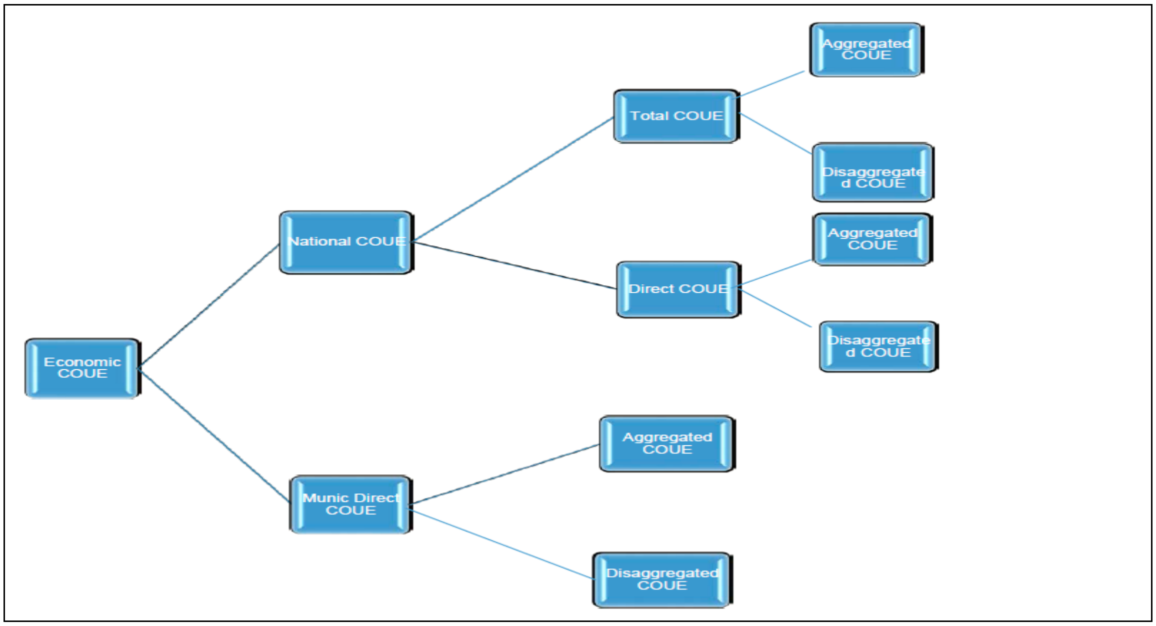

Figure 4: Economic COUE decision tree

The following steps are used to derive the outputs (direct, indirect economic COUE and residential COUE) of the methodology shown in Figure 3. These steps can also be adopted by the Licensed Electricity Distributors.

Step 1: Sectoral GVA analysis of electricity use in the economy

Step 1 uses the data obtained from StatsSA, which report both the GVA generated and electricity used by 62 different industries over a 12 month period. The electricity is a necessary production input for each of the industries to generate its GVA. The GVA data are reported in monetary terms and therefore the cost of electricity as an input data is known for each industry and how much GVA in each industry.

<u>Stakeholder Comment # 2</u>
How should GVA be broken down to only consider GVA attributed to electricity consumption? For example, in coal mining each tonne produced requires use of fossil fuel energy (diesel) to drive trucks and electrical energy to power Heating, Ventilation and Air Conditioning (HVAC) equipment, so 100% of the GVA cannot be attributed to electricity usage.

Step 2: Sectoral estimation of electricity used in economic and residential sectors

The official data sources available are the electricity purchases by industries (and residential sector), reported by the Supply Use (SU) tables and the Annual Financial Census of Municipalities (AFCM). SU-tables report both the GVA generated by and the electricity used by 62 different industries over a 12-month calendar year accounting period. No consolidated database of actual kWh sales by 62 International Standard Industrial Classification (ISIC) system either at a national or a disaggregated municipal level exists. This is a consequence of an increasingly complex electricity generation, transmission and distribution system involving Eskom, Independent Power Producers (IPPs) and District Municipalities (DM) and Local Municipalities (LM). Thus, although Eskom sales data is available at an aggregated, national level, IPP generation and DM and LM sales data are not currently available. Estimates are required for deriving a national aggregate kWh consumption estimate; and for deriving sectoral kWh electricity use requires the estimation of weighted average electricity tariff by ISIC industry.

Stakeholder Comment # 3
What are your views in that disequilibrium is caused by an economy where electricity tariffs are not cost reflective due to cross-subsidisation between customer groups?

Stakeholder Comment # 4
Electricity consumed to produce certain amounts of GVA (Rands) may be produced by companies receiving electricity supply from the municipality and also through own-generation. How should the cost R/kWh for own-generated electricity be handled in calculating the weighted average electricity tariffs by the ISIC industry?

Step 3: Aggregated Direct COUE and Disaggregated Direct COUE levels

Direct COUE is calculated cumulatively and by industry by dividing the GVA (Rands) and the estimated kWh used as derived in steps above. Furthermore a weighted average of these direct impacts calculates the aggregated Direct COUE. This weighted average is calculated by weighting the Direct COUE of all industries to the amount of electricity used in each industry.

Table 1 below, obtained from the COUE model (**please refer to Appendix A: Eskom COUE model**), summarises the aggregated and disaggregated Direct

COUE estimates for South Africa in 2014. The aggregated Direct COUE estimate derived from the model can be interpreted to reflect the weighted average direct economic production loss that can be expected, in an average year, as a result of manifold, short duration, unplanned power outages across the country. The disaggregated Direct COUE value varies by industry, depending on the energy intensity of the industry.

Table 1: Direct COUE at country level

COUE: Economic Effect	GVA Current Prices (R millions)	% of National GVA	Total economic electricity use (GWh)	Direct Effect (R GVA/kWh)
Agriculture	82 777	2.4%	5 386	15.37
Mining	285 771	8.4%	26 935	10.61
Manufacturing	451 578	13.2%	68 178	6.62
Electricity and water supply	127 154	3.7%	15 604	8.15
Construction	117 663	3.4%	536	219.36
Trade	408 398	11.9%	3 562	114.66
Transport and communication	318 117	9.3%	3 248	97.93
Finance	661 834	19.4%	6 299	105.08
Community services	675 042	19.7%	4 217	160.06
General Government	291 982	8.5%	4 441	65.75
Total Economy	**3 420 316**	**100%**	**138 406**	**24.71**

The COUE model also includes aggregated Direct COUE and disaggregated Direct COUE per municipality as shown below in Table 2.

Table 2: Direct COUE at municipal level

Local Municipality	Agriculture [SIC 1]	Mining [SIC 2]	Manufacturing [SIC 3]	Electricity [SIC 4]	Construction [SIC 5]	Trade [SIC 6]	Transport [SIC 7]	Finance [SIC 8]	Community services [SIC 93-96; 98]	General Government [SIC 99]	Economic COUE (R/kWh)
	R/kWh	R/kWh	R/kWh	R/kWh	R/kWh	R/kWh	R/kWh	R/kWh	R/kWh	R/kWh	R/kWh
P1D01M01: City of Cape Town Metropolitan Municipality	13.45	10.38	5.14	5.91	211.70	141.06	82.74	103.55	42.76	116.72	27.59
P2D07M01: Nelson Mandela Bay Metropolitan Municipality	13.45	10.38	5.14	5.91	211.70	141.06	82.74	103.55	42.76	116.72	21.83
P5D11M01: eThekwini Metropolitan Municipality	13.45	10.38	5.14	5.91	211.70	141.06	82.74	103.55	42.76	116.72	22.08
P7D04M01: Ekurhuleni Metropolitan Municipality	13.45	10.38	5.14	5.91	211.70	141.06	82.74	103.55	42.76	116.72	18.55
P7D05M01: City of Johannesburg Metropolitan Municipality	13.45	10.38	5.14	5.91	211.70	141.06	82.74	103.55	42.76	116.72	26.90
P7D06M01: City of Tshwane Metropolitan Municipality	13.45	10.38	5.14	5.91	211.70	141.06	82.74	103.55	42.76	116.72	29.88

Distribution network infrastructure may service more than one customer group or be dedicated to one particular customer in a certain sector. Table 2 above shows that each distributor has disaggregated Direct COUE (e.g. R13.45/kWh for Agriculture in City of Cape Town municipality) and aggregated Direct COUE (e.g. R27.59/kWh for City of Cape Town municipality).

Stakeholder Comment # 5

The model gives the result of the national aggregated Direct COUE value and aggregated Direct COUE values per municipality. Is it appropriate for distributors to use the national aggregated Direct COUE given that some municipalities do not have all the 10 economic sectors considered in calculating the national aggregated Direct COUE?

Stakeholder Comment # 6

For each municipality, the model gives the results of the aggregated Direct COUE and disaggregated Direct COUE. For a proposed network investment; at times the percentage contribution of customers per sector is known and at other times is unknown. Therefore, is it appropriate to use the disaggregated Direct COUE when percentage contribution of customers per sector is known and then use the aggregated Direct COUE when percentage contribution of customers per sector is not known?

Step 4: Total COUE estimate

The impact of an economic event on local, regional, and national economies is greater than the total of the direct size of the event. This is because the money not spent due to such event is again not spent by the recipient local businesses and employees.

Thus, a direct effect in one industry will have an indirect effect on many other industries and will ultimately impact on household expenditure. These effects are formally defined as follows:

- Direct effect: expenditures associated with events that constrain or enable a production sector(s) (first order).
- Indirect effect: expenditures that result from suppliers and customers who transact with the first order affected sector(s).
- Induced effect: results from changing expenditure of employees in the direct and indirect sectors.
- Total effect: this is the sum of the direct, indirect and induced effects.

The total effect of a 1kWh interruption on the economy can be estimated through an I-O model. This is a quantitative economic technique that represents the linkages and interdependencies between different sectors of a national economy.

Stakeholder Comment # 7

The model gives the results of national COUE and municipal-specific COUE values. Metros have a bigger contribution to the national GVA than smaller municipalities such that economic disturbances in a Metro tend to have a more profound effect on the national GVA. Is it appropriate to therefore use national COUE figures for all Metros and then use municipal-specific COUE figures for Non-Metros?

Stakeholder Comment # 8

It has to be noted that national Total COUE (i.e. the bigger COUE value) means that the distributor should build more networks than when they use national Direct COUE. Furthermore the capital budget approved by a municipal council is usually smaller than that of project planning, which in the end calculates the LCC value which takes into account the use of COUE.

Which value (national Total COUE or national Direct COUE) would be more appropriate to use under these circumstances, taking into consideration that the licensed distributor should balance its needs as well as those of its customers?

Step 5: Residential COUE estimate

The Economic COUE estimated above in steps 1 to 4 provides a proxy measure of the dependence of economic productivity on electricity; the Residential COUE provides a proxy measure for the utility on electricity usage in the household. Consequently, short duration power outages result in discomfort or nuisance. The discomfort caused by power outages can be estimated by taking as a proxy annual household expenditures on goods and services that require electricity for use.

StatsSA conducts extensive household income and expenditure surveys every five years. The most recent data available is for 2010/11 and contains approximately 870 household expenditure categories. The Residential COUE model assumes that 153 of those categories relates to electricity utility. Together these expenditures comprise 14.3% of income earned from ‘compensation of employees’ as reported in the SU-tables. Short duration power outages would make these expenditures temporarily wasteful, may result in disruption, discomfort or nuisance. Thus, by dividing electricity-dependent household expenditure by residential electricity use, the Residential COUE R/kWh estimate is shown in Table 3 below (taken from **Appendix A: Eskom COUE model**).

Economic COUE and Residential COUE cannot be added together because they measure different impacts (production loss vs discomfort) and because they have different units (GVA vs household expenditure). These measures can however be used together in a multi-criteria decision-making framework.

Table 3: Residential COUE estimate at municipal level

Local Municipality	Residential COUE (R/kWh)
	R/kWh
P1D01M01: City of Cape Town Metropolitan Municipality	8.93
P2D07M01: Nelson Mandela Bay Metropolitan Municipality	7.36
P5D11M01: eThekwini Metropolitan Municipality	8.89
P7D04M01: Ekurhuleni Metropolitan Municipality	7.15
P7D05M01: City of Johannesburg Metropolitan Municipality	7.76
P7D06M01: City of Tshwane Metropolitan Municipality	7.59

Stakeholder Comment # 9

The COUE model also gives out the results for residential COUE per municipality in addition to the national residential COUE. The Living Standard Measure (LSM) varies from one municipal area to the other with some smaller municipalities consisting of residents who use fewer electrical goods than in bigger Metros.

Therefore, should distributors use the national Residential COUE figure or municipal specific Residential COUE?

In conclusion, if Licensed Electricity Distributors are to use municipal-specific COUE figures, then they will only need four steps in the development of their own COUE values as step 4 of the COUE methodology determines the COUE value at national level.

6. COUE PROJECT CATEGORIES

Project categories defined in Distribution Network Code include:

- Shared investments include strengthening, reliability and refurbishment projects.
- Dedicated investments created for sole use of a customer.
- Strategic/statutory investments include investments formally requested in terms of government policy and Generators.
- International connections.

COUE may not be used in justifying Dedicated investments and International connections because all project costs are fully recoverable from the customer. COUE may not be used in justifying Statutory investments except for new generation capacity under the IRP.

<u>Stakeholder Comment # 10</u>
Is it appropriate to limit the use of COUE to only justifying shared network investments?

7. CONDITIONS PRECEDENCE

The Licensed Electricity Distributors should either adopt the COUE values calculated in the attached COUE model or the most recent version of the model, or use the steps provided in this framework to determine their own COUE values.

Should a Licensed Electricity Distributor opt to develop its own COUE methodology, then that methodology must be submitted to the Energy Regulator for approval within 12 months after the approval of this framework. Failure to comply with this condition of the framework will result in non-compliance with section 7.2.1(6) of the Distribution Network Code by the Licensed Electricity Distributor and no exemption will be granted thereafter unless substantial reasons are provided to the Energy Regulator.

<u>Stakeholder Comment # 11</u>
Section 7.2.1(6) of the Distribution Network code states that *'the COUE shall be determined by a NERSA-approved process'*. In light of this requirement by the Grid Code, should Licensed Electricity Distributors be allowed to develop their own COUE methodology and model, and then submit to NERSA for approval if they are not in support of this framework proposed by NERSA?

8. COUE UPDATES

There should be an alignment on the review period of the input data of the COUE model, COUE levels for Eskom and of those of Licensed Electricity Distributors. This then means Eskom will keep on doing annual reviews of the input data of the COUE model and COUE levels up until the next review of their COUE methodology, which is scheduled to happen in the 2020/21 financial year.

However this condition is only applicable to Licensed Electricity Distributors that will adopt the COUE values as calculated and updated by Eskom.

9. DISCLAIMER

In order to harmonise the process of the development of the COUE methodology for Licensed Electricity Distributors, the Energy Regulator has made use of the Eskom COUE model in order to explain the methodology using a practical approach, but this does not mean that the Energy Regulator is imposing Eskom's COUE methodology on other Licensed Electricity Distributors.

Also, Eskom granted NERSA permission to extend the use of its COUE model to other Licensed Electricity Distributors but with the following conditions:

- *'Within the COUE model, data from a privately-owned company is used to disaggregate the Supply & Use (SU) tables Gross Value Added (GVA) data to a municipality level, and also to disaggregate the household income, as measured by "compensation of employees" to a municipal level. Eskom therefore cannot accept responsibility for updating this privately-sourced data within the COUE model on behalf of other entities.*
- *Eskom will not be liable for the use of the COUE methodology and model by NERSA or any other legal entity as well as any consequences as a result thereof.'*

10. ANY OTHER COMMENTS

Stakeholders are welcome to provide any other comments that may assist NERSA in the development of the COUE framework for Licensed Electricity Distributors.

Appendix A: Eskom COUE Model

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