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09 December 2022

BUSA SUBMISSION TO NECOM ON COGENERATION

INTRODUCTION

BUSA is a confederation of business organisations, including chambers of commerce and industry, professional associations, corporate associations, and sectoral organisations. It represents South African business on macro-economic and high-level issues that affect it at the national and international levels. BUSA's function is to ensure that business plays a constructive role in the country's economic growth, development, and transformation, as well as to create an environment in which businesses of all sizes and in all sectors can thrive, expand and be competitive.

As a principal representative of business in South Africa, BUSA represents the views of its members in several national structures and bodies, both statutory and non-statutory. BUSA also represents businesses' interests in the National Economic Development and Labour Council

BUSA welcomes the opportunity to submit the briefing document on cogeneration as requested by NECOM at the NECOM BUSA engagement that took place on the 15th of November 2022.

The Case for Cogeneration Procurement

Your request for a briefing document on Cogeneration at the recent BUSA/NECOM engagements has reference.

Brief History of Procurement of Cogeneration

A timeline of noteworthy events affecting cogeneration procurement in SA is as follows:

2006 – 2011: NERSA was developing COFIT – a Cogeneration Feed-In Tariff, with a REFIT to incentivise cogeneration and renewable energy investments. NERSA introduced a broader definition of Cogeneration than is common, with waste heat and fuels included. In the West, cogeneration is more typically known as Combined Heat and Power (CHP) and excludes any wastes. NERSA and DMRE still use the broader NERSA definition.

2007 – 2017: Eskom launched several products that targeted Cogeneration. The Pilot National Cogeneration Programme (PNCP) was the first of these, followed by the Wholesale Electricity Scheme (WEPS), Medium Term Power Purchase Programme (MTPPP), and the Short-Term Power Purchase Programme (STPPP). These all suffered from the legal limitations of Eskom only being able to purchase on short to medium-term PPAs, (so not attracting any new investments) and, in the IPPs opinion, a one-sided "Take-it-or leave-it' approach by the Buyer. The last of these programmes (STPPP and WEPS) all ended in 2017 when the previous rounds of PPAs were not renewed, leaving some 370 MW of existing generation with no home. This remains an opportunity to bring these existing generators back into supporting the Grid.

2010: The IRP 2010 was gazetted that included 2 columns in the summary table of relevance – an "Other Renewables" and a "Cogeneration" column for 325 and 800 MW, respectively, spread

over 4 years. The IRP was gazetted with an addendum that dealt with actions needed for the short term. This stated that Cogeneration needed “urgent attention” from the Government, Eskom, and Business as it was seen as an essential part of dealing with the load shedding that had started the previous year.

August 2011: DMRE announced the establishment of the RE-IPPP programme of procurement to execute the IRP2010 plan for additional generation. This stopped NERSA’s development of a COFIT.

2012 – 2014: Two Ministerial Determinations for Cogeneration were concurred to by NERSA, totalling 1800MW. An RFP followed, run by the DMRE’s IPP Procurement Office. This was unsuccessful, and no projects closed financially.
BUSA and SAIPPA met with the IPP Procurement Office at the time to offer suggestions for a more successful Cogen programme. The advice was not taken, and there has been no further procurement of Cogeneration by DMRE.

IRP 2019: Before this update to the IRP being gazetted, BUSA’s delegation at NEDLAC were instrumental in having the two columns of “Other” and “Cogeneration” (referred to above) combined into one, entitled “Other”, and the annual allocation increased from 200MW/a to 500 MW/a. This plan was for the full IRP period from 2019 to 2030 and a total of 6000MW. BUSA was entirely behind this plan; by that stage, a report on the cogeneration potential in SA (published in 2017, see below) had identified a potential of over 6200MW.

August 2020 Ministerial Determination: The start of the procurement of the IRP2019 “Other” column referred to above has been called the Risk Mitigation – IPP Procurement. This totalled 2000MW, and the plan for 2019 to 2022 at 500 MW/a. While the Ministerial Determination made it clear that this was for procuring the “Other” technologies, including Cogeneration (this was referred to explicitly), the resulting RFP and projects that were bid were vastly different. The rules made it impossible for any Cogeneration projects to be bid. This was brought to DMRE’s attention at the bidders’ conference, but DMRE has consistently stuck to the position that the RFP was “technology agnostic.” It was no such thing, with the successful bidders being gas-to-power and PV with battery storage technologies; the only ones that could meet the stringent “Greenfields” and short-term dispatch requirements.

August 2022 Ministerial Determination: Like the RM-IPPPP 2020 version, this Ministerial Determination for 1000 MW uses the “Other” column allocation (for 2023 and 2024 at 500MW/a) in the IRP2019 for the Eskom Standard Offer Programme (SOP). The SOP has an announced tariff of 58.8 c/kWh and a maximum of a 3-year PPA. It will not attract any investment under these terms. It will only interest existing wind and PV generators, which have the power to sell outside of other arrangements, and traders. The tariff is far too low for any fuel-based technologies to participate.

December 2022: BUSA has objected to the lack of cogeneration procurement by DMRE for over 16 years at the November 2022 NERSA public consultations. More specifically, we have pointed out that the recent Ministerial Determination for 1000MW is flawed as it again will exclude any participation of cogeneration.

Potential for Cogeneration in SA

In 2015 GIZ sponsored a study to identify the amount of cogeneration installed in SA and the potential (given the existing tariffs). This report was updated in 2017 and was part of GIZ's support of the SAGEN programme between DMRE and the German Government.

The report found that the existing cogeneration running in the country had been consistently underestimated. DMRE had assumed this to be ~400MW in the IRP 2010 planning and 499MW in IRP 2019. The GIZ report surveyed all the major industries in the country and identified over 1500MW of installed capacity.

There are no known prior surveys of SA's cogeneration potential, but the same survey in 2017 identified over 6 200MW of potential cogeneration in manufacturing, commercial and public facilities. This is 25% larger than a facility such as Medupi or Kusile.

Copies of these reports have been circulated, and the findings have been presented to various forums. They are available on request.

Benefits of Cogeneration

- The thermal efficiency (useful work out as a % of fuel energy in) of cogeneration is typically 2X to 3X that of Eskom's power generation. This is because most of the fuel energy is rejected in the cooling towers at a utility power station. In contrast, heat is not rejected in cogeneration but dries paper, crystallises sugar, etc.
- Cogeneration relies on a host plant where heat and power are consumed. These host plants are currently operating, so existing grid connections, infrastructure, management, financing, environmental and land permitting, and myriad other support activities are already in place.
- A sizeable portion of the Cogeneration potential is in rural areas, so rural job creation and development are positive spin-offs.
- Cogeneration is linked directly to the host load, so consumption and generation track each other. This has important benefits for the System Operator, who does not have to supply backup power when the cogeneration fails.
- Cogeneration reduces the requirements for grid infrastructure, as it reduces or reverses the inflow of power from the grid. This has a significant, positive influence on transmission network planning that will be a major constraint in deploying other renewable energy technologies.
- Cogeneration is an integral part of any national manufacturing strategy –power and heat are essential to most manufacturing operations.
- Cogenerators played a meaningful role in reducing the effects of load shedding in the past. They did this by participating in Eskom's Medium-Term Power Purchase Programme (MTPPP), Short-Term Power Purchase Programme (STPPP) and Wholesale Electricity Pricing System programme (WEPS) and added hundreds of MWs of immediately available generation capacity to supplement Eskom's generation.

Recommendations for Cogeneration Procurement

- Encourage the rapid start of the Eskom SOP and Emergency Generation Procurement programmes at commercially reasonable prices that reflect IPPs costs of generation, not Eskom's. These will play a positive role in getting more generations onto the grid.
- Intervene to stop DMRE and NERSA from using the plan for "Other" technologies in IRP2019 from being applied to the Eskom Short-Term programmes. These "Other" technologies need a bespoke procurement programme, and the RFP must be appropriate

for “Distributed Generation, Cogeneration, Biomass and Landfill,” as required in the IRP 2019.

- Investigate what is needed to launch a COFIT. This is the best model to incentivise the wide diversity of Cogeneration opportunities. A ponderous, slow, overhead heavy and “One-size-fits-all” procurement programme in the mould of the RE-IPPPs is not a good fit with Cogenerators’ needs.
- The price of new power will always be a sensitive issue. Expecting IPPs to compete against Eskom’s base load power (as in the SOP programme) is unrealistic, given their written-down assets, utility-scale operations, and government support. The RE-IPPP programme has shown the value of a competitive bidding process, which should be used for cogeneration. Whatever pricing benchmark is used, the cost to the economy (~ R75/kWh) and the cost of alternatives (OCGTs at ~ R7.50/kWh) need to be driving the decision-making, not the now outdated costs of coal at utility sale.
- Many other issues bedevil IPPs and prevent them from playing a more meaningful role in our current electricity crisis. Government policy, reducing risks for investors and engendering a more supportive environment for IPPs are all part of what is needed. At the core, however, is decision-makers needing to be in tune with IPP requirements. This aspect needs improvement, and we look forward to a future with more meaningful engagement.

Yours faithfully