PUBLIC NOTICE FOR
STAKEHOLDER COMMENT ON ESKOM
SO_2 EMISSION DISPATCH PRIORITIZATION STRATEGY

Dear stakeholder,

Eskom, South Africa's primary electricity supplier, operates multiple coal-fired power stations that contribute significantly to the country's energy generation. Following Eskom's Minimum Emission Standards (MES) exemption applications, a decision by the Minister of Forestry, Fisheries, and Environment (DFFE), Dr. D.T. George (at the time), in respect of the exemption applications submitted by Eskom in terms of Section 59 of the National Environmental Management: Air Quality Act (NEMA: AQA), 2004 (Act No. 39 of 2004) was issued on the 31 March 2025. This decision outlines conditions that Eskom must comply with. In terms of condition Clause 7.43, Eskom is required to investigate how an SO_2 emission price R/kgSO_2 can meaningfully be included in its Dispatch Prioritisation Strategy. In addition, Eskom is required to develop a proposed design, publish it for stakeholder comment, and submit the report, along with all comments, to the Minister. As such, a summary of the study and the study is included in this email.

Stakeholders with an interest in the matter are requested to submit their comments to Eskom at EskomMES@eskom.co.za by 30 April 2026.

Further information can also be obtained by contacting the email address above.

Eskom has submitted this information to you based on your previous registration as a stakeholder in an air quality matter. If you do not wish to receive further information, please contact us at EskomMES@eskom.co.za, and we will remove you from our distribution list. Thank you.

Regards,

Eskom Generation team

Generation Division
Generation Head Office
Megawatt Park Maxwell Drive Sunninghill Sandton
PO Box 1091 Johannesburg 2000 SA
Tel +27 11 800 - 2030 www.eskom.co.za

Eskom Holdings SOC Ltd Reg No 2002/015527/30

PUBLIC NOTICE FOR STAKEHOLDER COMMENT ON ESKOM SO_2 EMISSION DISPATCH PRIORITIZATION STRATEGY

SUMMARY AND DISCUSSION ON ESKOM SO_2 EMISSION DISPATCH PRIORITIZATION STRATEGY STUDY

In June 2025, Eskom undertook a detailed technical assessment to respond to the minister's decision and conducted several studies to investigate how an SO_2 emissions price in R/kgSO_2 can meaningfully be included in the current merit order. The objective of the SO_2 price is to influence dispatch decisions by increasing the operational cost of generating units whose emissions have the greatest adverse health impacts.

The approach was to establish the SO_2 emissions price in R/kgSO_2 to be applied as a cost adder to the current total variable cost of coal-fired stations. The SO_2 emissions price was derived from a cost-benefit analysis (CBA) undertaken by Prime Africa Consult (2024). The CBA assessed population exposure to emissions from Eskom power stations located within the Waterberg and Highveld Priority Areas and monetised the associated SO_2-related health impacts. The health impact cost applied in the analysis reflects All-Cause Mortality only. The resulting health impact cost provided the basis for establishing the SO_2 emissions cost applied in this study. Annual SO_2 emissions and annual energy sent-out for each power station, based on FY2025 data, were calculated and used to define the base case. These inputs were used to derive a health impact cost per unit of energy sent out.

Several options were considered and investigated. The first three options adopt a similar pricing approach but differ in how they calculate the cost value adder. The fourth option explores alternative mechanisms to reduce SO_2 emissions while minimising the impact on production costs. The fifth option considers international practices and emission-reduction strategies implemented in other jurisdictions. The options considered are summarised as follows:

1) Separate priority areas,
2) Combined priority area,
3) An "additional cost" (higher penalty level) overlay,
4) Multi-objective optimisation (weighted objective variants), and
5) Cap-and-trade.

Dispatch impacts were quantified through hourly unit commitment and economic dispatch simulations in PLEXOS®, using a five-year planning horizon (FY2027–FY2031) under Corporate Plan-aligned assumptions. The modelling assessed the energy sent out, coal burn, SO_2 production, system marginal price (SMP), and system cost.

PUBLIC NOTICE FOR STAKEHOLDER COMMENT ON
ESKOM SO_2 EMISSION DISPATCH PRIORITIZATION STRATEGY

Electricity system adequacy is maintained in all scenarios from FY2027 to FY2031. SO_2 emissions are declining due to the evolving energy mix (notably the penetration of renewables), power station retirements (approximately 8 GW), and an overall reduction in Eskom's forecast energy demand. Overall, coal energy production is expected to decline from FY2027 to FY2031. As a result, SO_2 emissions are expected to decrease by 14.6% in the same period in the base case scenario. Applying SO_2 emission charges, whether by priority area or as a combined area charge, has only a minimal impact on reducing overall SO_2 emissions. The studies have found that implementing a priority-area emission charge results in SO_2 emissions decreasing by only 0.6% in FY2027, with this effect consistent throughout the study horizon. However, this small improvement in SO_2 emissions comes at a notable economic cost, as the annual average System Marginal Price (SMP) is projected to increase by 7% in FY2027. This demonstrates that while emission charges can influence dispatch decisions, their effectiveness in significantly reducing SO_2 emissions is limited unless the SO_2 emission charge is set at much higher levels, which would further escalate energy prices.

The study indicates that applying a significantly higher emission charge results in a 4.2% decrease in SO_2 emissions compared to the base case in the FY2027 comparison. However, this more pronounced environmental benefit comes at a considerable economic cost, as the annual average SMP rises sharply by 31%. This substantial increase in the energy market price highlights the trade-off between achieving meaningful emissions reductions and maintaining affordable electricity prices.

Applying a multi-objective approach has not yielded any benefit in SO_2 emissions reduction, due to the model's primary objective function, which is to minimise production cost. The results for multi-objective modelling are similar to the base case. Alternative options, such as cap-and-trade, could be considered to further reduce SO_2 emissions without incurring significant costs for Eskom generators, thereby increasing energy prices for consumers. It is also noted that optimization for SO_2 reduction could result in an undesirable increase in CO_2 emissions as production is shifted to more CO_2 polluting stations.

The attached report presents the results of a detailed investigation, outlining the outcomes and findings across all modelled options and recommendations.