South African Wind Energy Association

53 Dudley Road, cnr Bolton Avenue, Parkwood, Johannesburg, 2193

Tel: +27 (0) 11 214 0664
Email: admin@sawea.org.za

A registered non-profit organization and approved in terms of Section 18A tax benefit

Registration no: 034-566-NPO

Director-General
Department of Energy
Matimba House
192 Visagie Street
Pretoria

Sent via email: IRP.Queries@energy.gov.za

Dear Sir/Madam,

COMMENTS ON INTEGRATED RESOURCE PLAN UPDATE 2016

The above-mentioned matter refers.

On December 2nd 2016, The Department of Energy ("DOE") published the Integrated Resource Plan Update – Assumptions, Base Case Results and Observations (the IRP Update). The public was invited to provide input and comments on the IRP update until February 2017. Subsequently the DOE extended this period to end March 2017. The DOE also held nationwide public consultation workshops at which stakeholders were invited to make public representations on the IRP Update. The South African Wind Energy Association, under the banner of the South African Renewable Energy Council (SAREC), participated in the public consultation workshops held in Pretoria and Cape Town in December 2016. This submission confirms and extends those engagements.

The South African Wind Energy Association (SAWEA) welcomes the commencement of this policy consultation process. We look forward to working with the DOE to finalise an optimal least-cost plan for new generation capacity for the country

Should you have any enquiries, kindly contact Brenda Martin via email at brenda@sawea.co.za.

On behalf of the South African Wind Energy Association,

Best wishes

Brenda Martin
CEO

COMMENTS ON INTEGRATED RESOURCE PLAN UPDATE 2016

1. General Comments

We offer 4 general observations on the published IRP Update:

1. SAWEA rejects the current base case as an appropriate starting point.

   The current base case scenario should be re-modelled as a least-cost energy plan and re-issued for public consultation. The update should be based on a least-cost, base case for the country's electricity generation mix. In coming to this conclusion, SAWEA has considered that:

   a. The current update includes artificial constraints on the connection rates for wind and solar PV. No justification has been provided for these constraints.
   b. A least-cost base case is an essential starting point for the IRP process, as government has an obligation to minimise the burden of electricity supply costs to the South African economy and electricity consumers.
   c. The cost implications of any policy decision to depart from the least-cost base case should be quantified and justified to ensure rational and transparent policy making.
   d. No artificial constraints should be imposed on annual capacity additions for any technology. Research undertaken by the Council for Scientific and Industrial Research (CSIR) suggests that a very different base case will emerge, with a significantly lower total cost to the economy, a significantly lower level of carbon emissions, and a significantly lower demand for raw water. Each of these considerations are sufficient justification to re-run and re-issue the base case.
   e. Grid constraints may be temporary obstacles to the expansion of various supply technology options. If so these constraints should be determined via independent studies rather than by Eskom which has significant conflicts of interest. In the long run the grid can be expanded to address any capacity expansion plan and should not be a fundamental constraint.

2. The IRP should clarify the tariff path for each scenario.

3. The IRP should specify the assumptions used on key indices (inflation, growth, learning rates, discount rate).

4. The IRP should present sensitivity analysis for multiple scenarios prior to the policy adjustment phase.

2. Specific Comments

Definitions:

"Variable O&M Costs" - the sentence defining this term appears to be incomplete. Kindly rectify.

"P50 and P80" – this definition is also not complete. Kindly rectify.

Section 1: IRP Update Process

We are of the view that the review of the base case scenario should include an unconstrained renewable energy scenario using a least-cost criteria.

We are also of the view that the Policy Adjustment process should be subject to a public participation process. Further, we are of the view that Government must consider the following factors when making any policy adjustments to the unconstrained base case:

- Consequences for job creation
- Consequences for electricity prices, and how the burden of any additional costs might be shared by either the fiscus or electricity users
- Consequences for natural resource consumption (particularly water)
- Consequences for patterns of ownership and opportunity within the economy (where renewable energy has widespread geographic and organisational spread, as compared to other forms of generation which are typically far more concentrated.
- Consequences for financing and the burden on the public fiscus, either direct or via contingent liabilities, and on foreign direct investment
- Risk considerations, such as risk of delays, risk of cost overruns, risk of stranded assets
- Environmental considerations – including climate change; South Africa's international commitments on carbon emissions reductions; and meeting the priorities mentioned in the SA National Climate Change Response White Paper
- Impact on the local economy – including local manufacturing sector; preferential procurement; socio-economic impact; and enterprise development.

We are cognisant that Government may consider additional factors not mentioned above. We suggest that various scenarios are considered transparently during the policy adjustment process in order to achieve an optimal electricity generation mix.

As a priority, we strongly suggest that the IRP process is made more transparent and if necessary consideration is given to a second round of public consultation on the following:

- The revised base case that DOE has committed to
- Any other scenarios that DOE may generate or consider
- The factors that DOE may apply when making "policy adjustments".

Section 2: Planning Assumptions and Input Parameters

The IRP states that for solar photovoltaic and wind, the figures from the DoE IPP Office Renewable Energy bid window 4 were used, however it is not clear from the results, which figures were utilised as input parameters.

The CSIR has assumed the levelised cost of electricity (in April 2016) for the various technologies as follows:

- IPP Solar PV: R0.62/kWh (Expedited Bid Submission Phase)
- IPP Wind: R0.62/kWh (Expedited Bid Submission Phase)
- New build IPP coal: R1.03/kWh (Coal Baseload IPP Programme)[1]

The "hybrid cost" used for nuclear is not clear. Given the financial implications of nuclear new build, it is essential that these costs assumptions are transparent.

Section 2.2: Economic Parameters

Table 2 on page 10 makes reference to GDP/Energy Forecast and refers the reader to the CSIR Forecast Report. Clarity is sought on whether the DOE will update the GDP/Energy Forecast given the recent "CSIR re-optimised least-cost without constraints" scenario.

[1] http://www.ee.co.za/wp-content/uploads/2016/10/New_Power_Generators_RSA-CSIR-14Oct2016.pdf

Further, on table 2 reference is made to Cost of Unserved Energy specifying that NERSA will provide a report detailing the base year for the cost. More information as well as the long term scenario assumptions should be provided.

Section 2.3: Eskom Plant Performance

Eskom plant performance curve is assumed, in the moderate performance curve, to be constant over the planning horizon. Clarity is sought on how any improvements above the moderate performance curve, or any decline below the low plant performance curve, will be addressed in the plan since these have an impact on Eskom's electricity production.

Section 2.4: Committed Eskom New Build Dates

SAWEA is of the view that the Eskom new build plans should be subject to annual verification since any delay in the Eskom new build poses risks - such as impact in electricity prices; Eskom's financial viability; potential shifting of Eskom's allowed revenue via the NERSA regulatory process to cover for cost overruns instead of verifiable and prudently incurred costs.

All of the aforementioned impacts have the potential to be extended and borne by all electricity users, and generally to taxpayers via the funding and/or guarantees that is made available by Government.

Under the Renewable Energy IPP Procurement Programme (REIPPP), construction cost risks are borne by the IPP. We are therefore of the opinion that the IRP should consider Eskom's new build performance track record for construction cost and time overruns.

Section 2.5: Non-Eskom Plant

The role of Non-Eskom plants needs to be explained more. It is understood that some of these are co-generators connected to the Eskom grid and selling energy under either Short-Term Power Purchase Programme (STPPP) and/or Medium-Term Power Purchase Programme (MTPPP). To the extent these programmes have an impact on the Eskom's future tariff reviews and its financial standing, we are of the view that the cost assumptions and performance of these non-Eskom plants should be disclosed. We further suggest that the impact, if any, of these plants on the base case scenario is disclosed.

2.6: Ministerial Determination

Clarity is sought on how the capacity allocated in the Ministerial Determinations will be dealt with if the capacity has not yet been allocated in the Renewable Energy Independent Power Producer (REIPPPP) bidding rounds to-date, and whether such capacity will remain valid and roll-over into future bidding rounds, and what the associated timelines are.

Furthermore, table 5 needs to be clearer in terms of what capacity has been allocated under existing Ministerial Determinations, versus new capacity being allocated in the IRP.

It is important to note that the procurement for renewable energy capacity should be consistent each year in order to achieve sustained policy and investment certainty in the RE sector, which is vital to stimulate the local manufacturing sector (through local content) and job creation.
There should be no procurement gap for renewable energy as this will undermine the policy and investment certainty in the RE sector and will serve to hinder the establishment of a RE value chain, in particular as this relates to the local manufacturing sector.

2.7: Anticipated Integrated Demand Management

Does the cumulative saving of 466 MW take into account other demand response initiatives other than the Residential Mass Roll-out profile?

Table 12 on page 26 is not clear. The cumulative demand capacity over the planning is 500 MW, however, 1 000 MW demand capacity is indicated for certain years. Clarity is sought on this point.

2.8: Eskom Plant Life and Air Quality Retrofit

Environmental retrofitting has impact on Eskom's generation cost, which according to the cost disclosed on Eskom's MYPD 3 application include costs for water consumption, amongst others. These costs influences the tariff applied for by Eskom. Clarity is sought on how the assumptions regarding the environmental retrofits have been assessed and their impact taken into account in the modelling.

Section 3: New Generation Technology Cost and Performance Characteristic

Section 3.4: Learning Rates

There is no inclusion of learning rates for technologies such as battery storage and gas-fired generation. Is this deliberate or will consideration of these be reflected in the final iteration of the IRP?

Section 4: Emission Constraints and Costs

Section 4.1: CO_2 Emission Constraints

Clarity is sought on how the carbon budget approach will be factored-in given that the IRP document mentions that the base case scenario already includes emission constraints.

Section 5: Results and Observations from IRP Update and Base Case

- On page 26, it is mentioned that: "*The plan has not been optimized or adjusted to take into account some of the qualitative factors*". Details should be provided on which factors have been considered, and which are still to be considered.

- The same constraints to renewable energy annual additions proposed in IRP 2010 have been applied. We suggest that these constraints are removed. Any constraints on the scenario need to be backed by practical analysis. Furthermore, we are of the view that by placing a cap on additional capacity, the lowered capacity levels will have an impact on the ability to localize the manufacturing of renewable components, some of which have already been achieved.

- Renewable energy penetration might be enhanced by introducing flexible forms of technology that are able to provide margin reserves to follow the load variations.

- We suggest an inclusion of a discussion on dispatching and scheduling rules in performing the tariff scenario. And a discussion on the impact of grid capacity constraints.

Section 6: IRP Update Scenarios

We are of the view that the results of the update should be subject to a public participation process in order to afford the public to scrutinise and provide input on the results emanating from the policy adjustments.

3. Conclusion

South Africa has embarked on a green economy growth pathway and Government has committed itself to a low-carbon economy in line with international commitments to reduce carbon emissions by 42% by 2025.

This and other policy initiatives such as the introduction of the Renewable Energy Independent Power Producers Procurement Programme supports the move to a country energy mix that is secure, affordable and job-creating. Since the launch of the REIPPPP, we have seen its considerable contribution to the country's economy, to job creation and increasingly affordable power supply.

Renewable energy deployment is also recognized in plans such as the IPAP, which recognises the importance of green economic activity in the creation of new jobs. Furthermore, the DTI's black industrialist, SEZ and local content policies are well aligned with the structure of the REIPPPP RFP. As a result signficant investment has been made in local manufacturing and component assembly, with the IRP being a keystone guiding policy in this decision-making process. Total investment by the SA RE industry is currently estimated at R200 billion, with a further R58 billion on hold pending the conclusion of outstanding power purchase agreements. That renewable energy can play an important role in South Africa's energy mix and economic growth, is self-evident.

However, the sustainability of RE project investments and the ability of the industry to make long-term commitments of growth to job creation and socio-economic development requires continuity of the REIPPPP. This in turn is guided by new generation capacity as stated in the IRP and declared via Ministerial declarations. It is therefore important that the IRP update align itself clearly with the country's stated developmental pathway.

It is important to note that a pipeline of further investments are waiting in the wings, for the IRP update to be completed, as well as the general continuity of the REIPPPP. Both policy and implementation are therefore imperative at this point in the country's economic context.