



# Centre for Environmental Rights

Advancing Environmental Rights in South Africa

**The Honourable Mr Fikile Majola**

**Chairperson**

Portfolio Committee on Energy

By email: [fmajola@parliament.gov.za](mailto:fmajola@parliament.gov.za)

**Copied to:**

**Mr Arico Kotze**

**Secretary**

Portfolio Committee on Energy

By email: [akotze@parliament.gov.za](mailto:akotze@parliament.gov.za)

Our ref: RH/NL  
29 November 2017

**URGENT**

Dear Hon. Majola

## **RELEVANT INFORMATION IN RELATION TO THE DRAFT INTEGRATED RESOURCE PLAN FOR ELECTRICITY UPDATE & THE DRAFT INTEGRATED ENERGY PLAN**

1. We address you on behalf of the **Life After Coal/Impilo Ngaphandle Kwamalahle** Campaign (made up of the Centre for Environmental Rights (CER), groundWork and Earthlife Africa Johannesburg).<sup>1</sup>
2. We wish to bring to the attention of the Portfolio Committee on Energy numerous concerns in relation to the Integrated Resource Plan for Electricity: Update, Assumptions, Base-Case Results and Observations (“draft IRP Update”) and the draft Integrated Energy Plan (IEP) published for comment in November 2016. These concerns relate to, *inter alia*:
  - 2.1. the Department of Energy’s (DoE or “the Department”) failure to make available key data and records in relation to the draft IRP Update and IEP;
  - 2.2. the inadequate public consultation in relation to the draft IRP Update and IEP; and
  - 2.3. important and relevant information, which the Department must take into account in finalising the IRP and IEP.

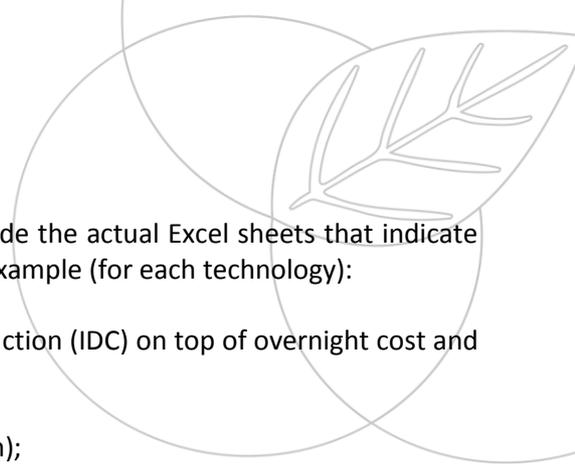
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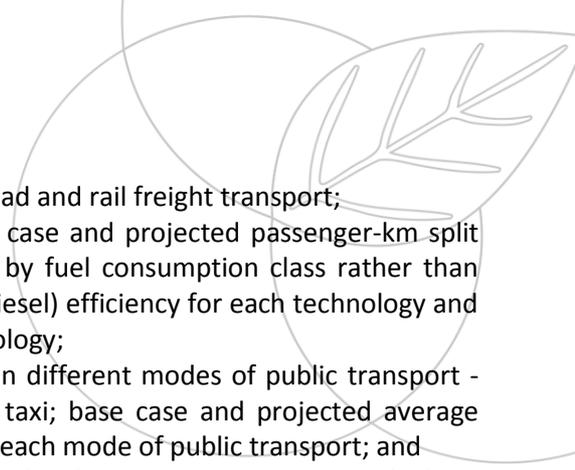
<sup>1</sup> The campaign aims to discourage investment in new coal-fired power stations and mines; accelerate the retirement of South Africa’s coal infrastructure; and enable a just transition to renewable energy systems for the people.

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## Access to key data and records

3. In a [letter of 29 November 2016](#) as well as [CER's comments](#) on the draft IRP Update and IEP of 31 March 2017 (attached marked **A** and **B** respectively), we requested copies of the following documents:
  - 3.1. the study commissioned by the Department's Nuclear branch;
  - 3.2. Eskom's and Kelvin coal-fired power station's detailed decommissioning plans and timelines, as well as cost estimates;
  - 3.3. a list of coal mines that would be closed as a result of Eskom decommissioning, including details regarding the costs to rehabilitate the coal mines and who would bear this cost;
  - 3.4. the terms of reference for the pre-feasibility study to extend the lives of Eskom's stations and all other records relating to Eskom's Fleet Renewal Strategy; and
  - 3.5. correspondence from the Department of Environmental Affairs to the DoE "*indicating that carbon budget methodology must be used instead of emissions decline constraints*".
4. We advised that, without access to these crucial documents, we – and other stakeholders - are unable to evaluate the draft IRP Update and IEP adequately. We did not receive a response from the Department.
5. On 31 July 2017, on behalf of groundWork, CER submitted a request for access to information in terms of the Promotion of Access to Information Act, 2000 (PAIA) to the Department. In this request, a copy of which is attached hereto marked **C**, we requested access to certain technical reports that underpinned the IRP process in particular:
  - 5.1. all records prepared by or on behalf of the Department reflecting the tariff implications of:
    - 5.1.1. the DoE's preferred base case for the IRP; and
    - 5.1.2. the least cost unconstrained IRP scenario requested by the Ministerial Advisory Council on Energy in its 31 October 2016 report; and
  - 5.2. all technical reports – and all updates thereto - which underpin the energy modelling and have been used as inputs to the current IRP/IEP process, including:
    - 5.2.1. Annexure A – Technical Report – Demand Modelling Report (used as input into the 2013 IRP/IEP process);
    - 5.2.2. Annexure A: Part 2 – Technical Report on Model Output – Optimisation Model Output (used as input into the 2013 IRP/IEP process);
    - 5.2.3. Annexure B – Model Input and Assumptions: Optimisation Model (used as input into the 2013 IRP/IEP process);
    - 5.2.4. Annexure A – "Forecasts for electricity demand in South Africa (2014 – 2050) using the CSIR sectoral regression model"; and
    - 5.2.5. any further or other plans and reports used to prepare the Integrated Resource Plan Update Assumptions, Base Case Results and Observations (Revision 1 – November 2016).
6. In terms of the PAIA requirements, a response was due by Friday 15 September 2017. However, no response was received, despite numerous follow-up correspondence and telephone calls.
7. On 6 October 2017, the Department – apparently in an attempt to satisfy our request for information – sent an email to the CER directing CER to various documents on the Department's website. We advised the Department that this was inadequate and not what was requested - these were simply links to data and reports already available online. We subsequently – following a request from the Department to narrow the scope of groundWork's request – clarified to the Department that the following records were requested:

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- 7.1. detailed input assumptions sheets for all IRP scenarios; which include the actual Excel sheets that indicate which inputs have been used in the IRP model. Such inputs are for example (for each technology):
    - 7.1.1. Overnight cost (R/kW);
    - 7.1.2. CAPEX (R/kW), which includes the Interest During Construction (IDC) on top of overnight cost and is the final model input;
    - 7.1.3. Fixed Operations and Maintenance Cost (FOM, R/kW/yr);
    - 7.1.4. Variable Operations and Maintenance Cost (VOM, R/MWh);
    - 7.1.5. Fuel cost (R/GJ);
    - 7.1.6. Heat rate (kJ/kWh);
    - 7.1.7. CO<sub>2</sub> emission factor (kg/MWh);
    - 7.1.8. Water usage (l/MWh) etc.;
    - 7.1.9. For solar PV and wind, the input profiles that have been used must be made available;
    - 7.1.10. For all technologies which have assumed future cost reductions, the above parameters (CAPEX, FOM, VOM, etc.) need to be made available for every year until 2050; and
    - 7.1.11. For all technologies, assumed capacity factors;
  - 7.2. further input assumptions, in detailed Excel format:
    - 7.2.1. Energy demand forecast in TWh/yr for each year;
    - 7.2.2. Peak demand forecast in GW for each year; and
    - 7.2.3. Actual hourly demand profile that went into the model for a couple of years from today to 2050, for example 2020, 2025, 2030, 2040 and 2050 (7.2.1. and 7.2.2. can then be derived from that);
  - 7.3. detailed output sheets for all scenarios. The information below is required for each scenario; including the actual Excel sheets which contain information which reflects the:
    - 7.3.1. Installed capacity in GW in each year for each technology;
    - 7.3.2. Energy produced in GWh/yr in each year from each technology;
    - 7.3.3. Wind/solar energy curtailed in GWh/yr (if any);
    - 7.3.4. Capacity additions in GW/yr in each year for each technology;
    - 7.3.5. Capacity decommissioning in GW/yr in each year for each technology;
    - 7.3.6. Resulting total system cost in R/yr in each year, broken down into CAPEX-related cost, FOM, VOM and fuel for each technology;
    - 7.3.7. Resulting average electricity tariff in each year;
    - 7.3.8. Total CO<sub>2</sub> emissions per year;
    - 7.3.9. Total water consumption per year;
    - 7.3.10. Actual hourly supply profile for each technology for a couple of years from today to 2050, for example 2020, 2025, 2030, 2040 and 2050 (7.3.1. and 7.3.2. can then be derived from that);
  - 7.4. constraints on the model (if any constraints have been put on the model) must be documented and explained; such as:
    - 7.4.1. Annual new-build limits for renewables in MW/yr;
    - 7.4.2. Explanation for new-build limits for renewables, which could include studies such as:
    - 7.4.3. Detailed grid studies (technical, cost);
    - 7.4.4. Detailed land requirement studies (e.g. strategic environmental assessments); and
    - 7.4.5. Detailed industry capacity and supply chain studies;
  - 7.5. additional questions related to the modelling of transportation fuels (petrol and diesel) demand and supply; particularly the “model assumptions” as to:
    - 7.5.1. Base case bulk freight demand and projected growth in bulk freight (in ton-kms); base case and projected split between rail and road bulk freight;
    - 7.5.2. Base case general freight demand and projected growth in general freight (in ton-kms); base case and projected split between rail and road general freight;

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- 7.5.3. Base case and projected change in modal split between road and rail freight transport;
  - 7.5.4. Base case and projected growth in passenger-kms; base case and projected passenger-km split between passenger vehicle technologies (petrol/ diesel, by fuel consumption class rather than engine capacity class; hybrid; EV); base case fuel (petrol diesel) efficiency for each technology and projected improvements in fuel efficiency, for each technology;
  - 7.5.5. Base case and projected split (in passenger-kms) between different modes of public transport - passenger rail, BRT (Bus Rapid Transport) and mini-bus taxi; base case and projected average energy efficiencies, as energy units per passenger-km, for each mode of public transport; and
  - 7.5.6. Projected passenger shifts between different transport modes, from private passenger vehicle to one or other mode of public transport; and

7.6. A compilation of consolidated comments received on the IRP.

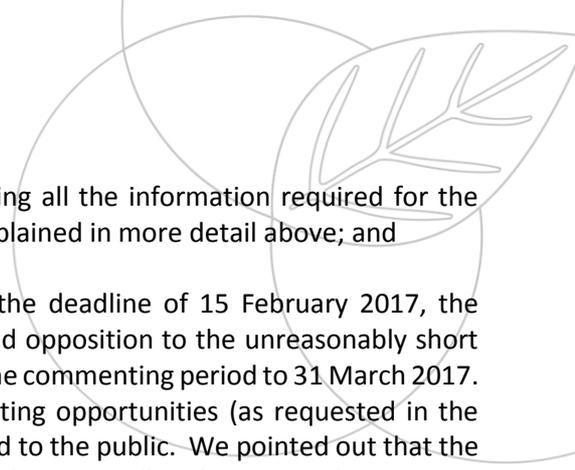
8. A copy of this email is attached marked **D**. More than one month has now passed since we provided the Department with this more detailed PAIA request. However, despite follow-up correspondence and inquiries, we have not received any response from the Department – nor any indication of when we might expect to receive a response or, at least confirmation that the Department is addressing the request.
9. In the interim, we understand that the Department and the Minister are on the brink of finalising the IRP; yet our, and our clients', rights to consider and comment on the draft IRP Update and the draft IEP have been severely hindered through the withholding of this critical information.
10. It is therefore crucial that the Department make these records available without delay, and we ask that the Portfolio Committee ensure that these records are made publicly available by the Department as a matter of urgency.

#### **Adequate consultation on the IRP**

11. We have, at numerous stages voiced our concerns over the adequacy of the consultation process being followed in relation to the draft IRP Update and draft IEP. In our [31 March 2017 comments](#) on the drafts (Annexure B), we recorded the following concerns with the public participation process followed:
  - 11.1. the public had been given little over a week to consider the draft IRP Update and draft IEP (a document of over 300 pages) prior to the commencement of the first series of public participation workshops in Johannesburg, Durban, Cape Town, and Port Elizabeth from 7 to 15 December 2016 – at which the public was invited to make presentations. This, we contended, and continue to contend, was unreasonable and unfair;
  - 11.2. public consultation meetings were only held in major cities<sup>2</sup> within South Africa, but not in the towns where communities most impacted by the energy decisions made in terms of the IRP Update and IEP (and where the majority of South Africa's energy-generation activities) are based – these being the towns within the Highveld; the Vaal Triangle; the South Durban basin and the Waterberg, where the refineries and coal-fired power stations are located and where additional polluting industries will be located. People in these areas are continuously being negatively impacted by, and suffering violations of their constitutional environmental rights as a result of, these polluting industries. For this reason we submitted that it was a fatal flaw to fail to hold consultation meetings in towns and areas such as: Middelburg; Witbank; Delmas; Sasolburg; Vereeniging; Secunda; Wentworth and Austerville (South Durban); Lephalale; and Steenbokpan;

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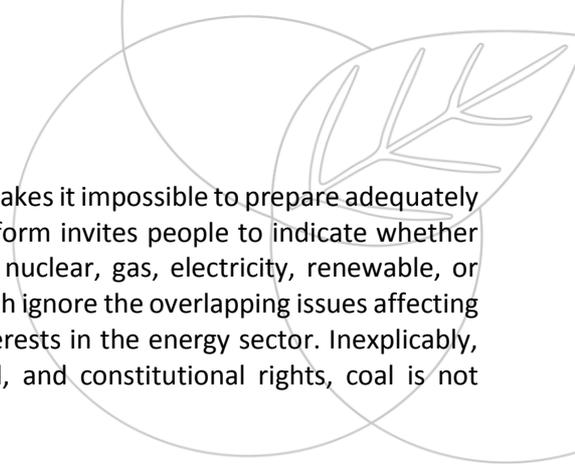
<sup>2</sup> Consultation meetings were, according to the DOE website, held in: Bloemfontein; Mmabatho; Durban; Port Elizabeth; Cape Town; Nelspruit; Polokwane; Kimberley; Cape Town; and Gauteng.

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- 11.3. the Department had not been open and transparent in providing all the information required for the public to comment on the draft IRP Update and draft IEP – as explained in more detail above; and
- 11.4. due to the short commenting period initially proposed, with the deadline of 15 February 2017, the Department agreed, after numerous requests for extensions and opposition to the unreasonably short comment period from both civil society and industry, to extend the commenting period to 31 March 2017. However, it was not clear whether further additional commenting opportunities (as requested in the attached letter (annexure A referred to above) would be afforded to the public. We pointed out that the draft IRP Update as made available in November 2016, in particular, was still in the very early stages, as it was only the base case and assumptions that had been made available, and the Department planned for further versions to be produced, based first on the different scenarios applied, and then a final “policy-adjusted’ version of the IRP Update. It was however, not clear whether and to what extent the public would be given an opportunity to consider and comment on these subsequent versions of the IRP Update. We submitted that refusing further comment opportunities on the draft IEP and draft IRP Update would clearly be a fatal flaw. Clarity had to be given as to when and at what stages, civil society would have a further opportunity to make representations on subsequent versions of the draft IEP and IRP Update before they were finalised.
12. Since these comments of March 2017, and in a Memorandum from the Parliamentary Office dated 29 September 2017, setting out responses to questions posed to the Minister of Energy by members of Parliament (attached marked E) it was advised that “[t]he process for consultation on IRP and IEP has been concluded with the public. The current process is to finalise the policy document and gazetting the final document for implementation. Consultation on the policy is concluded and final documents will be published.”
13. We tried to obtain clarity on the process from the Department and the Minister – following this memorandum and the appointment of the new Minister of Energy, Mr David Mahlobo - by writing to them on 23 October 2017, asking whether it remains correct that: (1) no further comment opportunities on the IRP Update or IEP are planned; and (2) final versions of these documents are due to be promulgated by the end of February 2018. We did not receive a response.
14. We are now advised that an Energy Indaba will be held on 7 and 8 December 2017 (although on 24 November 2017, we were advised that the Indaba would be held on 5 and 6 December 2017) – although the purpose and nature of the Indaba are not clear.
15. Our – and numerous other civil society organisations’ - concerns in relation to the Indaba have been set out in a joint letter of 28 November 2017. These concerns are briefly, the following:
- 15.1. it is not clear what the purpose of the indaba is. Indications are that there will be no further opportunity to provide written input into the draft IEP and IRP Update;<sup>3</sup> alternatively that the indaba will purport to constitute such opportunity.<sup>4</sup> If the indaba is being held in an attempt to solicit public participation on the draft IEP and IRP Update, it fails to provide an adequate or reasonable opportunity for interested parties to be heard. We disputed that the indaba can serve as any public participation process for decision-making;
- 15.2. the notice of the indaba is unreasonably short, which is made worse by it being scheduled at a very busy time of year, and in only one venue in Gauteng. As a result, many affected people, communities, and organisations will not be able to attend, which violates their rights to be heard; and

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<sup>3</sup> See Annexure E.

<sup>4</sup> <https://www.businesslive.co.za/bd/national/2017-11-21-mahlobo-announces-energy-indaba-for-public-participation-on-nuclear-programme/>.

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- 15.3. in addition, no agenda has been provided for the indaba, which makes it impossible to prepare adequately and to participate meaningfully. We note that the registration form invites people to indicate whether their “nature of business” is any of the following: petroleum, nuclear, gas, electricity, renewable, or “other”. It is not at all clear what is meant by these divisions, which ignore the overlapping issues affecting the energy sector, and the wide and diverse range of other interests in the energy sector. Inexplicably, and despite major impacts on climate, air quality, water, soil, and constitutional rights, coal is not mentioned as one of the interests.
16. We have placed on record that those organisations who participate in the Energy Indaba do so with the full reservation of rights to challenge this process, the IEP, the IRP Update and any other decisions, determinations, or other administrative acts undertaken by the Minister and/or the Department in relation to South Africa’s energy future. The letter also requests access to the outstanding records listed above, as crucial information for any consultation on the IRP and IEP. A copy of this letter is attached marked **F**.

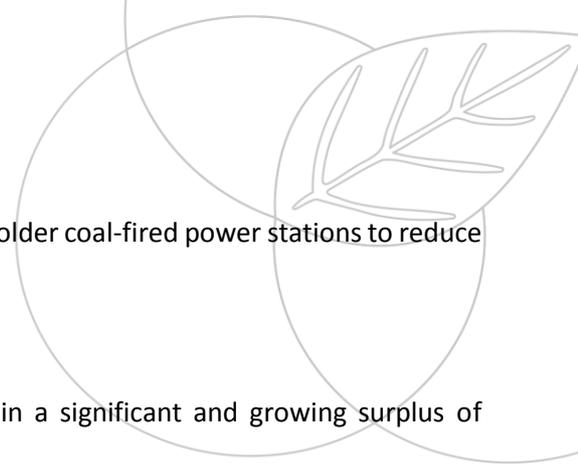
### Relevant information for the IRP and IEP

17. Following CER’s 31 March 2017 comments on the draft IRP Update and draft IEP (annexure B), further submissions on the drafts were addressed to the Department on 11 August 2017, in which we sought to bring to the Department’s attention important information and missing cost calculations from the draft IRP Update and draft IEP that had emerged since our submissions; these being:
- 17.1. the failure by both the Department and the Council for Scientific and Industrial Research (CSIR) (in relation to their ‘alternative IRP’<sup>5</sup>) to adequately take into account the health and water costs of existing and new investments in coal;
- 17.2. that the circulating fluidised bed combustion (CFB) technology planned to be employed by the proposed Thabametsi independent power producer (IPP) coal-fired power station, and other IPPs in the Coal Baseload IPP Procurement Programme (CBIPPPP) – including Khanyisa IPP, the other preferred bidder - results in significant emissions of the greenhouse gas nitrous oxide (N<sub>2</sub>O) – which needed to be considered in the IRP and IEP modelling; and
- 17.3. the failure to include the decommissioning cost; the used fuel storage and handling costs; and the cost of insurance risk cover in relation to nuclear in the costing model.
18. We asked the Department to confirm that it would take these issues into account in drafting the updated IRP and IEP. A copy of this letter is attached marked **G**.
19. On 20 November 2017, we again wrote to the Department (a copy of this letter is attached marked **H**) to bring further relevant information for purposes of finalising the IRP and IEP to its attention – this time it related to the findings of a recent study by Meridian Economics, titled “Eskom’s Financial Crisis and the Viability of Coal-Fired Power in South Africa” (“the Meridian study”),<sup>6</sup> which looks into several possible strategies to assist with ameliorating Eskom’s critical financial challenges. It investigates two questions:
- 19.1. should Eskom cancel part of its power station construction programme to reduce costs; and

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<sup>5</sup> The CSIR has since updated its alternative IRP. A presentation on the update can be accessed at <http://rodoyo.com/gtac/GTAC%20in%20Pretoria%20-%20Energy%20Planning%20-%20TBN%20-%204Aug2017.pdf>. See [http://www.engineeringnews.co.za/article/new-study-points-to-90-renewables-mix-being-least-cost-by-2050-2017-09-15/rep\\_id:4136](http://www.engineeringnews.co.za/article/new-study-points-to-90-renewables-mix-being-least-cost-by-2050-2017-09-15/rep_id:4136) [https://www.csir.co.za/sites/default/files/Documents/20170331CSIR\\_EC\\_DOE.pdf](https://www.csir.co.za/sites/default/files/Documents/20170331CSIR_EC_DOE.pdf) and [http://m.engineeringnews.co.za/article/new-csir-model-points-to-renewables-led-electricity-mix-by-2050-2017-11-16/rep\\_id:4433](http://m.engineeringnews.co.za/article/new-csir-model-points-to-renewables-led-electricity-mix-by-2050-2017-11-16/rep_id:4433).

<sup>6</sup> A study by Grové Steyn, Jesse Burton, Marco Steenkamp, 15 November 2017, available at [http://meridianeconomics.co.za/wp-content/uploads/2017/11/Eskoms-financial-crisis-and-the-viability-of-coalfired-power-in-SA\\_ME\\_20171115.pdf](http://meridianeconomics.co.za/wp-content/uploads/2017/11/Eskoms-financial-crisis-and-the-viability-of-coalfired-power-in-SA_ME_20171115.pdf).



- 19.2. should Eskom bring forward the decommissioning of some of its older coal-fired power stations to reduce costs?
20. The findings of the Meridian study are *inter alia* that:
- 20.1. Eskom's inflexible construction programme has now resulted in a significant and growing surplus of expensive generation capacity;
  - 20.2. Eskom should accelerate the **decommissioning of 3 of its older coal-fired power stations (Hendrina, Grootvlei and Komati) and curtail the completion of Kusile units 5 and 6 in order to save costs;**
  - 20.3. these interventions can be achieved **without affecting security of supply;**
  - 20.4. these interventions could **save Eskom up to R17 billion;**
  - 20.5. these estimates **do not reflect the additional large savings** in the impact on human health (you will recall that groundWork study by Dr Holland estimated the health costs of Eskom's coal-fired power stations to be USD 2,372.78 annually<sup>7</sup>), local environment and climate change that will result; and
  - 20.6. the system analysis undertaken by the CSIR Energy Centre – used for the study's reference scenario - finds in a 34 year, least cost optimised, power system operation and expansion plan, no new coal-fired power capacity is built after Kusile, and no new nuclear plant is built either. It states, "**new coal and nuclear plants are simply no longer competitive. When new capacity is required, demand is met at lowest cost primarily from new solar PV and wind**"<sup>8</sup> (our emphasis).
21. We also referred to a further new study by the Frankfurt Institute for Advanced Studies at the Goethe-University in Germany, which provides independent confirmation of the CSIR findings regarding the least-cost electricity mix for South Africa.<sup>9</sup> It finds that an electricity system based on wind and solar PV can supply electricity demand at 10%-30% more cheaply than based on new coal and nuclear – this is the case even when investments in the grid and transmission of electricity are taken into account. This study places it beyond any scientific doubt, from a cost perspective: no new coal or new nuclear should ever be built in South Africa again.
22. Both studies emerge amidst recent reports on Eskom's present dire financial circumstances.<sup>10</sup> Meridian finds that an even greater curtailment of Eskom's construction programme might be necessary if Eskom's financial crisis continues to worsen.
23. It is also worth noting that the Meridian study finds that part of the savings – if Eskom were to implement the above measures - could be used to cushion the impact on workers and communities by providing support for re-training, skills development and relocation.
24. We would like to point out that to date; we have not received responses from the Department to any of this correspondence, in which new and relevant information concerning the draft IRP Update and draft IEP was pointed out.

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<sup>7</sup> P15, Health impacts of coal fired power plants in South Africa, Dr Mike Holland, available at <http://www.groundwork.org.za/Documents/AirQuality/Annexure%20Health%20impacts%20of%20coal%20fired%20generation%20in%20South%20Africa%20310317.pdf>.

<sup>8</sup> P3, Executive Summary, Meridian study.

<sup>9</sup> Investment and operation co-optimization of integrating wind and solar in South Africa at high spatial and temporal detail, by Jonas Hörsch and Joanne Calitz, available at <https://arxiv.org/pdf/1710.11199.pdf>.

<sup>10</sup> <http://www.ee.co.za/article/alarmed-picture-emerges-eskoms-liquidity-dries.html>.

## Conclusion

25. As you are aware, the Constitution of the Republic of South Africa, 1996 (“the Constitution”) requires that the National Assembly provide a national forum for public consideration of issues, including by scrutinising and overseeing executive action. All executive organs in the national sphere are accountable to it and it is required to maintain oversight over organs of state and the exercise of national executive authority, including the implementation of legislation. The rules of the National Assembly reiterate that Portfolio Committees must maintain such oversight within their portfolios and may monitor, investigate, enquire into and make recommendations concerning any such executive organs of state.
26. In light of the above, we urge the Portfolio Committee to ensure:
- 26.1. that the Department make the requested and necessary outstanding records, as listed above, available without delay;
  - 26.2. that the Department provide for an adequate and fair public consultation process to be followed before promulgating the IRP Update and IEP – providing all members of the public with a reasonable opportunity to consider and comment on the latest drafts of the IRP Update and draft IEP and that any purported consultation meetings are accessible to **all** stakeholders with adequate notice and information on such meetings being provided well in advance. Failure to do this means that the public’s rights to participate in relation to these crucial planning documents – which will have far-reaching implications for the health and wellbeing of all South Africans - would be infringed; and
  - 26.3. that the Department take into account the relevant information referred to above including the findings of the CSIR, Meridian Economics and the Frankfurt Institute, in finalising the IRP Update and IEP.
27. We request that you kindly circulate this letter to the members of the Portfolio Committee.

Yours sincerely

**CENTRE FOR ENVIRONMENTAL RIGHTS**

per: 

**Robyn Hugo**

**Attorney and Programme Head: Pollution & Climate Change**

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