SMART ELECTRICITY PLANNING

Fast-tracking our transition to a healthy, modern, affordable electricity supply for all.

EXECUTIVE SUMMARY

Like all developing countries, South Africa faces a number of basic social, economic and environmental challenges. As we seek to forecast and plan ahead, we have a choice: we can draw only on historical information to make choices grounded in past experience, or we can also recognise the high level of uncertainty currently present, and the need for planning that is more robust and attuned to change.

At this time, an electricity planning approach is called for that has the capacity to make the necessary adjustments timeously, that seeks to address key socio-economic challenges for improved livelihoods and that sets out to protect dwindling ecosystems services.

In the context of widespread change associated with the global Energy sector, this report aims to provide a fresh look at South Africa's Electricity Demand, reviews available energy conservation and efficiency technologies for key economic sectors and seeks to debunk the outdated belief that South Africa's Electricity Supply can only be satisfied affordably and reliably using utility-scale coal and nuclear power.

Using a reliable modelling tool called SNAPP and considering our unique socio-economic realities we have used the IRP2010 investment plan as the reference case for all our technical scenarios and investigated what innovative and prudent planning should take into account.

We have prepared three Demand scenarios and two Supply scenarios. We believe these scenarios are pro-poor, promote gender equality, are achievable, will save money and will attach a greater value to the capacity of South African citizens to collectively commit to using energy more efficiently. This is a report of our findings.

There is a pressing need to re-assess how both electricity and energy planning are undertaken for the poor in South Africa. Note that electrification, though an undoubtedly important focus of energy access should be seen as only one sub-set of an integrated approach to meeting the demand for energy services. **Pro-poor energy and electricity planning must address multiple social and environmental objectives.**

We recognise that there is a need for further research on how to practically achieve what we show to be possible. As committed researchers and practitioners working in the Civil society sector who operate with limited financial resources, we have utilised resources available to us to highlight what smarter electricity planning can take into account. **We hope that this report will stimulate stakeholders with resources to undertake the required additional research.**

The report begins with an introduction as to **why smarter electricity planning is called for at this time.** This includes reflecting on how the Energy sector has developed over time, reviewing the current contextual factors that influence Energy choices going forward, and assessing how all of this has a bearing on Electricity planning today.

The two main chapters of the report are then introduced – **Demand and Supply.** Our work in the chapter on Demand is grounded in our informed opinion that the RP2010 was based on inflated demand assumptions. In addition, a comprehensive review of recent local and international reports and case studies on the potential of energy conservation and efficiency of all economic sectors pointed to the need for lower electricity demand forecasts as compared to IRP2010, without constraining economic growth. Using SNAPP we then modelled two Supply scenarios based on the different demand assumptions. Here we investigated what pro-poor electricity supply should take into account and the potential contribution of RE. Our research here revealed very different ideal capital investment outcomes compared to the IRP2010 investment plan.

Next we investigated the **job creation potential** from various RE supply options. **In South Africa the primary unemployment challenge is not skills or lack of them; it is that the number of people needing jobs far exceeds the number of jobs available**. RE provides many opportunities for labour intensive jobs and we provide evidence to support this assertion.

We conclude by considering the **Institutional frameworks** that are needed to support realisation of forward thinking electricity planning. We have set out to present innovative but achievable options which can fast track transition to smarter Energy planning that can benefit everyone.

It is our hope that anyone who reads this report will find it inspiring and instructive and renew their commitment to participating in the realisation of a Smart electricity future.

The Smart Electricity Planning report is a civil society response, under the Electricity Governance Initiative of South Africa (EGI-SA), to the South African government's Integrated Resource Plan, which lays out a blueprint for how to meet the country's electricity needs in coming decades.
For more information, please find the full report at **http://irp2.wordpress.com/smart-electricity/.**

Additional enquiries can be directed to the content editor: Brenda Martin, brenda@90x2030.org.za or the project manager: Yvette Abrahams, yvettea1@telkomsa.net