SMART ELECTRICITY PLANNING

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

FACT FILE 6

MEETING THE NEED: SUPPLY SIDE OF THE EQUATION

This series of Fact Files has shown that South Africa doesn't need as much investment in old-style electricity generation technology as the government is planning to build. With good energy efficiency and conservation measures, and installing renewable energy, the country's energy needs can be met.

The Smart Electricity Planning *report is a robust civil society response to the government's blue print for electricity generation over the next two decades, the Integrated Resource Plan. It calls for:*

- *a smarter approach to investing in electricity generation*
- *for energy planners to note changing key energy sector assumptions*
- *to reconsider investment plans regularly as new technologies are refined and become more affordable*

It's about *energy services*, not just *electricity supply*

The government's Integrated Resource Plan, the IRP2010, focuses overwhelmingly on investing in a centralised, coal and nuclear powered grid. If the government invests in energy infrastructure as recommended by the IRP2010, the country's power generation capacity will almost double by 2030, from the current power generation capacity of about 45 gigawatts (GW) to an overall installed capacity of 89 GW. This includes the considerable investment going into the two new coal-fired power stations, Medupi and Kusile.

However the *Smart Electricity Planning* report calls for a different approach, one which includes multiple sources of energy. The reality of poor households, for instance, is that they use multiple different fuels to meet their domestic energy needs.

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

Multiple energy options: creating a robust, decentralised electricity supply system

Meeting a family's energy needs at this level isn't only about getting the home connected to the grid. It needs an integrated approach, and finding the most appropriate suite of energy options for that family. This reflects the nuances that 'smart electricity planning' allows for, on the supply-side of the energy planning equation.

Instead of investing in expensive, carbon-intensive and centralised technology such as Medupi and Kusile 'mega-projects', the *Smart Electricity Planning* report calls for solutions which are born out of a decentralised approach to energy supply which are more favourable to pro-poor energy.

Renewable energy will become ever more affordable and accessible as:

- technologies improve
- economies of scale kick in
- financing mechanisms mature
- public policy begins to take account of the negative impacts of coal and nuclear dependence

This makes investment in renewables, as a part of the suite of energy solutions for all South Africans, the smart way to meet everyone's energy needs.

See the modelling behind these smart planning ideas

The *Smart Electricity Planning* report includes a series of electricity futures for the country, providing alternative solutions to those recommended by the IRP2010. These were generated by the Electricity Governance Initiative, a collection of civil society organisations, using robust modelling software provided by the University of Cape Town's Energy Research Centre.
To view the full supply-side recommendations, find the document at **http://irp2.wordpress.com/smart-electricity/**.

Pro-poor, smart energy delivery: meeting the energy needs of households is about more than just hooking them up to the grid. It's about looking at the suite of options which best give a family the energy security it needs. This kind of integrated thinking is needed across supply-side energy delivery planning.

Energy Service	Range of options that are safe, affordable, low carbon alternatives
Lighting	• Electricity: grid, mini-grids, solar photovoltaic (PV) with compact florescent lightbulbs (CFLs) or LEDs • LED solar lanterns • Coke bottle lights
Cooking	• Electricity (grid, mini-grids) and efficient stoves • Wonder bags • LPG is 'cleaner' than coal, in carbon terms, and offers a safer alternative for those dependent on paraffin for cooking, such as backyard dwellers • Biogas for both cooking and sanitation • Fuel-efficient wood stoves use less fuel and reduce indoor air pollution, reduce emissions and lessen deforestation impacts
Water heating	• Solar water heaters
Space heating	• Electricity (grid, mini-grids) with efficient heating appliances • Building design and insulation – for both formal and informal housing • Efficient biomass stoves for space heating
Refrigeration	• Electricity (grid, mini-grids, solar PV) with efficient appliances
Communication and media	• Electricity (grid, mini-grids, solar PV) for cellphones, radios, television, computers, etc