



Press Release

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Energy efficiency – Realising immediate and direct financial gains for the poor

Energy efficiency practices have far-reaching financial benefits for the underprivileged as these provide daily cost savings, especially at a time when the global economy is under pressure. The South African National Energy Development Institute (SANEDI) believes people need to be fully informed, to understand the importance of sustainable energy practices in order to benefit from the associated savings.

In South Africa, Government has since 2003 made Free Basic Electricity (FBE) services available to the country's poorest households. This means that each household receives 50kWh per month; which provides enough power for basic lighting and a small TV and radio.

Homes that have pre-paid electricity meters can monitor their usage and top up when the free electricity is used, while those with conventional meters will be charged at the end of the month for the extra used.

Barry Bredenkamp, General Manager Energy Efficiency at the South African National Energy Development Institute (SANEDI) believes this is where energy efficiency and its financial benefits come into play. "This will stretch the allocated FBE services and translate into approximately financial savings of up to as much as 30 percent of the normal monthly electricity bill," he explains.

"Those households that are reliant on monthly grants and FBE will immediately start benefiting from cost savings associated with the implementation of energy efficiency interventions, for example coating roofs with Cool Surface paint, insulating leaky windows and doors and purchasing the correct, more energy efficient appliances. It will free up money for other pressing expenses, ultimately contributing to the quality of their daily lives," says Bredenkamp.

As mentioned above, there are additional immediate energy efficient and inexpensive steps that can be taken: replacing all lighting with LED bulbs; carefully monitoring water heating usage; using more energy efficient appliances and cooking with LPG gas. Long-term strategies include recoating roofs with cool roof technology to alleviate to use of cooling appliances such as fans and switching to solar-powered energy resources.

Energy efficiency research

SANEDI, together with the University of Cape Town (UCT), is currently conducting an in-depth study that aims to collate household-level energy data relating specifically to energy consumption and appliance usage patterns. This will form an important part of reviewing the country's energy efficiency goals and set new targets.

Previously, it has been difficult to obtain accurate energy consumption data from the SA residential sector. Importantly, this study will build on previous work conducted by the Department of Mineral Resources and Energy (DMRE) under the umbrella of the Standards & Labelling Programme, to enhance the understanding of household energy consumption and appliance ownership and choices.

“The study will for example look at households’ understanding of where electricity is used and how it can be reduced. Also, it will investigate whether appliance energy efficiency is a purchasing consideration,” explains Bredenkamp.

The access to energy challenge

Access to energy remains a major global challenge with approximately one in seven individuals impacted and almost three billion using polluting fuels like paraffin and wood for basic heating and cooking purposes, says the World Bank. Critically, access to energy has a direct impact on the underprivileged, which are more likely to remain poor if they stay unconnected, not to mention the negative health impacts associated with indoor air quality, as a result of burning these fuel sources.

In those countries where access to energy is gaining momentum, renewable energy is not growing at the same rate. “It is encouraging to see an upward trend; however, many are still lagging behind when it comes to educating users on the benefits of energy efficiency or implementing renewable energy sources from the get-go,” he comments.

“The reality is that energy efficiency and sustainable energy go hand in hand with financial savings; it’s a relationship that has the potential to make a significant impact on the energy-hungry world we live in.” concludes Bredenkamp.

Ends 637 words

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About SANEDI

The South African National Energy Development Institute (SANEDI), established by the Government, directs, monitors and conducts applied energy research to develop innovative, integrated solutions to catalyse growth and prosperity in the green economy. It drives scientific evidence-driven ventures that contribute to youth empowerment, gender equity, environmental sustainability and the 4th Industrial Revolution, within the National Development Plan (NDP), through consultative, sustainable energy projects. For more information, go to www.senedi.org.za.

- Developing a methodology and approach for conducting the household survey, using best practices.
- Design an electricity consumption survey questionnaire for South Africa. The questionnaire will be approved by the project team consisting of DMRE/SANEDI/UNDP
- The sample size should be dependent on the methodology and approach selected by the selected.
- Recruiting and training of enumerators and supervisors
- Data analysis of collected data
- Data should be provided in a compatible format like excel
- Compilation of findings and recommendations

Activities will be carried out under the oversight provided by DMRE/SANEDI/UNDP.

4.2. LEAP Model Update & Revision

LBNL has developed a bottom up standalone electricity demand model of the residential sector in LEAP. The model allows policy makers to evaluate potential electricity savings, from increased appliance efficiency, in the residential sector. The model is therefore a useful tool to evaluate electricity savings from S&L programmes, as well as review targets.

The model projects end use electricity consumption based on appliance penetration, appliance stock, appliance efficiency, expected lifetimes and intensity. Drivers of demand within the model are households. Data required for the model therefore includes estimates of base year appliance ownership, intensity of use and technical performance characteristics (lifetimes and appliance efficiency) and assumptions around future penetration rates, intensity of use technical performance characteristics, household growth, income growth and electrification rates. Appliances covered include clothes washing, dishwashers, dryers, freezers, ovens, fridges, air conditioning, lighting, electric water heating, TV's and standby loads.

The objective of this module is to improve the data underpinning the LEAP model using amongst others the data available from the survey, and to review and improve where possible the sector and end use disaggregation within the model.

4.3. The Impact of the S&L Programme

The Survey outcome and LEAP model will be used to assess the impact of the S&L programme to date. The impact of the programme will be assessed in terms of electricity savings achieved and intensity change.

4.4. Review & Update of EETMS residential targets

The updated LEAP model will be used to review the EETMS targets. This work will be completed under the oversight of the DMRE/SANEDI/UNDP and will cover technology and policy options that can improve efficiency in the residential sector. The modelling will explore the savings possible under different appliance options and end uses. The outcome will be used to review the targets set under the EETMS.

5. EXPECTED OUTPUTS

1. Inception Report, including proposed methodology, locations, project team and time schedule and budget allocated to each deliverable agreed with DMRE/SANEDI/UNDP
2. A household questionnaire
3. A database containing household survey data in a format agreed with DMRE/SANEDI/UNDP
4. Survey report detailing data obtained and analysis of results, challenges

faced and lessons learned.

5. Residential sector LEAP model
6. Final Report detailing (i) the impact of the S&L programme according to the household data gathered and updated LEAP model (ii) a review of the EETMS residential targets
7. A workshop to share results, data and model