



## The Eskom National Efficient Lighting Programme: Compact Fluorescent Lamps (CFL) Clean Development Mechanism (CDM) Project

### Key messages

- More than 30 million CFLs distributed free of charge to South Africa since 2007.
- More than seven million tonnes of carbon dioxide (CO<sub>2</sub>) emissions saved.
- More than 30 000 jobs created.
- Millions of rand saved by households every year for using efficient lighting.
- CFL Sustainability Programme to distribute 20 to 40 million CFLs between 2011 and 2013.
- Innovative Carbon Credits Strategy is considered an important part of sustaining this leading energy package.

### Context and Eskom climate change strategy

South Africa ratified the United Nations Framework Convention on Climate Change (UNFCCC) in August 1997 and acceded as a party to the Kyoto Protocol in July 2002. South Africa contributes to global efforts to combat climate change, including participation in the Clean Development Mechanism (CDM), while ensuring the sustainability of its economy, environment, and society.

Eskom, the South African state-owned electricity utility, is fully supportive of the South African approach towards combating climate change and has itself been active in the climate change discussions since the early 1990s. In a proactive approach, Eskom developed a comprehensive range of voluntary climate change initiatives, including actively pursuing a more diverse energy supply mix and implementing energy efficiency interventions as sign of demonstrating its commitment to combating the challenges of climate change.



Eskom's Climate Change Strategy unpacks its commitment to this challenge in six key pillars: (i) diversification of the energy supply mix; (ii) energy efficiency; (iii) adaptation to impacts of climate change; (iv) innovation through research, development, and demonstration; (v) investment through carbon markets; and (vi) progress through advocacy and communication.

Eskom remains supportive of the **carbon market as a tool to provide additional revenue to reduce emissions**. We are keen to see policy certainty post 2012 for a long-term global carbon market. The carbon market is an essential mechanism for levelling the playing field by making technologies more accessible and, in turn, inviting sustainable investment into developing countries. We currently participate in the CDM and view it as a good vehicle for bridging some of the cost gaps, as well as the wide-scale deployment of low-carbon-emitting technologies. Eskom uses a shadow price for carbon to evaluate all investment decisions and to level the playing field across a variety of technologies.

### Eskom CFL CDM Project

As part of its Demand-side Management (DSM) Strategy, Eskom has installed more than 30 million CFLs nationwide since 2007, which were distributed through a combination of door-to-door, gate-to-gate, and exchange points. This programme has reduced energy usage, which equates to a reduction of more than seven million tons of CO<sub>2</sub> emissions, and saved participating households money on their electricity bills. In addition, more than 30 000 temporary jobs were created for South Africans.

To help sustain these energy savings, Eskom plans to continue the distribution of CFLs nationwide under the CFL Sustainability Programme, which is expected to distribute 20 to 40 million CFLs between 2011 and 2013. The first phase will distribute more than six million CFLs in the Western Cape, Limpopo, Mpumalanga, and the Eastern Cape.

An integral component of these projects is the generation of carbon credits to cover the costs associated with the purchase of lamps, distribution, disposal, and communication, as well as monitoring and verification procedures.



### Project contribution to the sustainable development agenda

#### Contribution to national economic development

The Eskom CFL projects will contribute significantly to South Africa's national economic development through encouraging the more efficient use of electricity by residential energy consumers. Residential electricity evening peak demand contribution is approximately 35% of national generation capacity, and efficiency gains in this sector have significant benefits for the national economy.

The Integrated Demand Management (IDM) Programme of Eskom recognises the contribution lighting can make to achieve the national energy efficiency objectives in its Accelerated Energy Efficiency Plan (AEEP). The South African Government has recognised the specific need for energy efficiency in the residential sector since at least 2005, with the publication of the 2005 National Energy Efficiency Strategy (NSS). Improving energy efficiency reduces the need to build more electricity generation capacity. This is particularly important given the high cost associated with energy infrastructure.

Finally, the sale of certified emission reductions (CERs) and verified emission reductions (VERs) in the international carbon market by the project proponents will have a positive foreign exchange impact for South Africa.

## Contribution to social development in South Africa

The Eskom CFL projects also deliver significant socio-economic benefits through temporary job creation and delivering energy savings to households. The skills acquired by contractors in the roll-out assist them to secure more jobs and permanent placements. In order to deliver the CFL projects, Eskom has engaged, directly and through partnerships, a large workforce over the short term to install and distribute CFLs, as well as manage measurement and verification (M&V) tasks associated with the projects.

Participating households experienced cost savings on their electricity bills. A 60 W incandescent exchanged for a 15 W CFL delivers approximately R40 per year in cost savings (based on an electricity price of R0.71/kWh).

A household exchanging six CFLs would, therefore, save R250 per year, a material saving for low- and middle-income households.



## Contribution to environmental sustainability

The introduction of energy-efficient lighting in households reduces consumption, which, in turn, reduces the demand for electricity from the grid, which is mainly supplied by coal-fired generation. In this way, the project contributes to the reduction of GHGs, other gases, and particulate matter produced during the burning of fossil fuels to generate electricity. For every one million CFLs distributed, electricity consumption is reduced by up to 60 GWh/year.

## Status and milestones of the CDM Project

Table 3: Eskom Carbon Credit Strategy and carbon credit projects status

Eskom CFL Programme	Number of CFLs distributed – estimated tonnes of CO <sub>2</sub> saved	Years of CFL distribution	Type of carbon credit accreditation	Current status	Future milestones
Historical roll-out projects	30 million CFLs - more than seven million tCO <sub>2</sub>	2007-2010	GS large-scale VER project ( <i>voluntary market</i> )	<ul style="list-style-type: none"> <li>GS feasibility analysis</li> </ul>	<ul style="list-style-type: none"> <li>Validation – February 2012</li> <li>GS accreditation – June 2012</li> <li>First VER issuance – September 2012</li> </ul>
Greenfield projects	1.5 million CFLs – more than 300 000 tCO <sub>2</sub>	2011	CDM small-scale projects ( <i>compliance market</i> )	<ul style="list-style-type: none"> <li>Stakeholder consultation completed</li> <li>Currently in CDM validation</li> </ul>	<ul style="list-style-type: none"> <li>CDM registration mid 2012</li> <li>First issuance of CERs 2013</li> </ul>
Sustainability projects	20 to 40 million CFLs – more than six million tCO <sub>2</sub>	2011-2013	CDM programme of activities ( <i>compliance market</i> )	<ul style="list-style-type: none"> <li>Stakeholder consultation completed</li> <li>Currently in CDM validation</li> </ul>	<ul style="list-style-type: none"> <li>CDM registration mid 2012</li> <li>First issuance of CERs 2013</li> </ul>



**Next steps include:**

- completion of the validation process;
- registration with UNFCCC;
- monitoring, measurement, and verification;
- designated operational entity (DOE) verification and certification in 2012; and
- first issuance in 2013.

**Project participants include** Eskom Holdings SOC Limited in South Africa, BNP Paribas in the United Kingdom, and RAMP Carbon in Australia as project development consultants.

**Other Eskom projects considered under CDM include:**

- Sere Wind Farm in the Western Cape;
- photovoltaic (PV) power systems at Eskom power stations and Eskom head office at Megawatt Park;
- national solar water heating (SWH) programme;
- concentrated solar power (CSP);
- underground gasification; and
- biomass co-firing.



*For further information and project contact, please contact Enoch Liphoto, Project Manager: CDM Projects on 011 800 6995 or via email at [enoch.liphoto@eskom.co.za](mailto:enoch.liphoto@eskom.co.za).*

