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for a sustainable future

OCCASION

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UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



UNIDO - South Africa Energy Partnership



INCLUSIVE AND SUSTAINABLE INDUSTRIAL DEVELOPMENT

UNIDO - South Africa Energy Partnership

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FOREWORD

Energy is a fundamental prerequisite for development and economic growth. However, current energy supply and consumption patterns are not environmentally sustainable. In order to decouple industrial development and economic growth from energy consumption and environmental degradation, and at the same time meet the climate change mitigation goals set by the international community, industry needs to substantially increase its energy efficiency and progressively switch from carbon intensive to low-carbon and low-emission technologies, including renewable sources of energy. While the challenge remains daunting, there are policies, technologies, best practices and other instruments available to industry, policy-makers and the international community to establish and support such goals. The real immediate need and challenge is to globally disseminate and implement existing best available technologies and practices for industrial energy efficiency through knowledge sharing, capacity building, investments and partnerships.

UNIDO sees its role within the energy and climate change field as a catalyst for scaling-up investments in clean energy solutions, strengthening policy frameworks to create an enabling environment and to secure funding for increased market penetration of renewable energy, energy efficient and low-carbon technologies that promote sustainable industrial growth. In our endeavor to facilitate sustainable energy solutions, we also believe that the role of innovative partnerships is pivotal. Our partners seek to support our efforts in a range of activities – from funding mechanisms to technical expertise. Therefore, the multi-faceted Energy Programme of UNIDO centres on three strategic pillars: Industrial Energy Efficiency, Renewable Energy for Productive Uses, and Climate Policy and Networks.

This brochure presents UNIDO's collaboration with the South African Government as an outstanding example of multi-stakeholder projects, programmes, and partnerships within all three of UNIDO's strategic energy pillars.



A handwritten signature in blue ink, consisting of stylized Chinese characters, positioned above the printed name and title.

Li Yong
Director General



UNIDO Energy Programme

Introduction

Sustainable energy is the golden thread that connects economic and social development with environmental sustainability that allows the world to continue to grow and develop. Sustainable energy enables and empowers inclusive development; tackling numerous aspects of life, from job creation to economic development, and from security concerns to the empowerment of women. Therefore, sustainable energy lies at the heart of the core interests of all countries.

Changing consumption patterns, a growing population, increasing urbanization and varying energy systems present an increasing challenge to mitigating climate change while at the same time impacting both the energy and industrial sectors. UNIDO's activities in the field of energy and climate change are driven by addressing these challenges, as well as by concerns over energy poverty, energy security, and climate change issues.

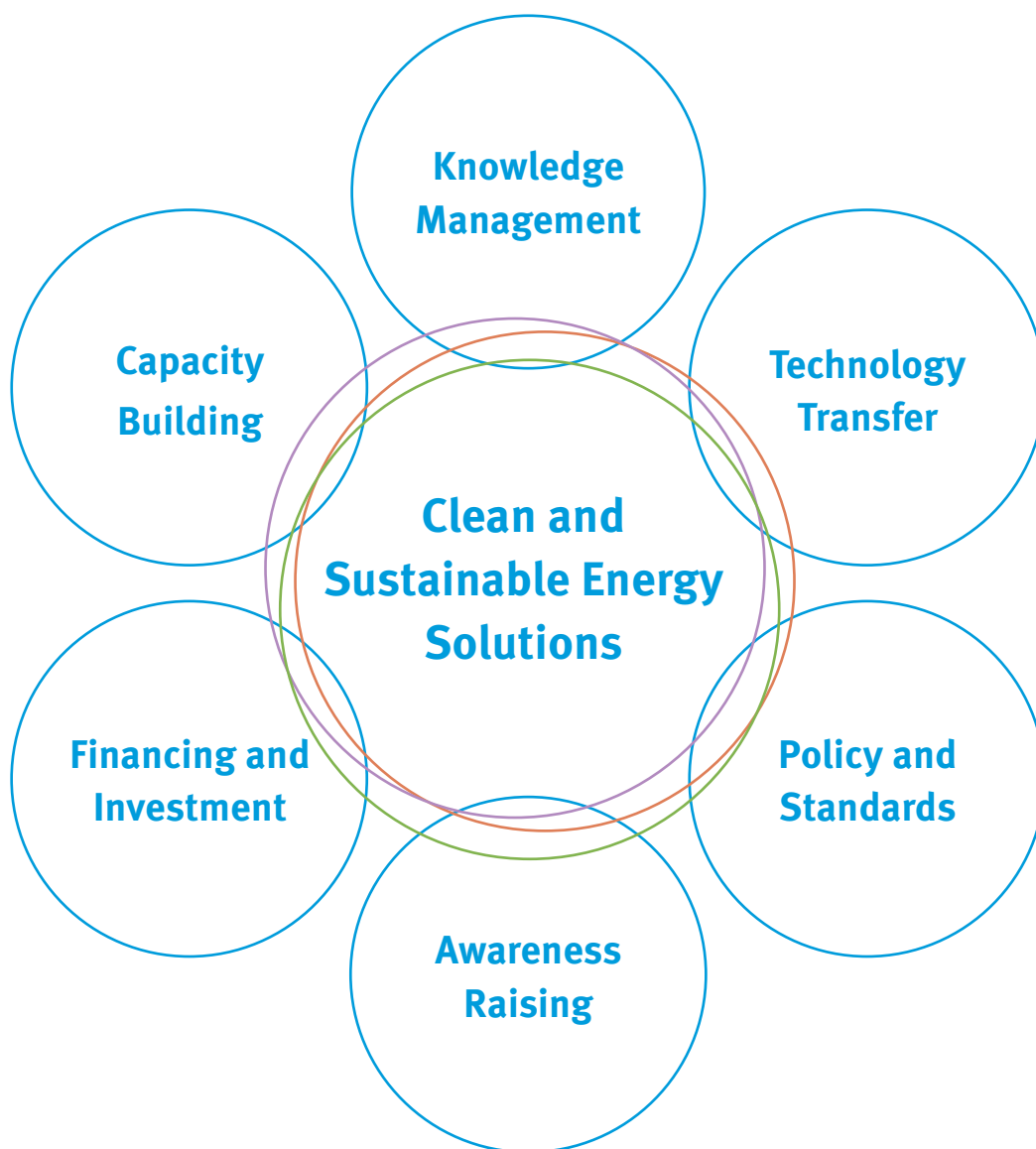
UNIDO seeks to address these concerns by promoting sustainable energy solutions in moving towards building 'Climate Resilient Industries.' UNIDO promotes sustainable energy solutions to assist industry in reducing their energy consumption, as well as by using clean renewable energy in the most efficient manner for the enhancement of industrial competitiveness and productivity, while mainstreaming gender and increasing employment opportunities.

The core responsibility of UNIDO's Energy Programme is to assist developing countries and countries with emerging economies in the transition to a sustainable energy future under the overarching mandate of Inclusive and Sustainable Industrial Development (ISID), through the application of renewable energy for productive uses and the efficient use of energy and low carbon technologies by industry. In transitioning to a sustainable energy future, the challenges presented in addressing energy poverty and climate change have become an integral part of UNIDO's activities.

UNIDO's Energy Programme is built on three strategic pillars, namely industrial energy efficiency, renewable energy for productive uses, and climate policy and networks. The core building blocks of UNIDO's Energy Strategy are technology transfer, knowledge management, policy and standards, awareness raising, financing and investment, and building capacity to provide inclusive and sustainable energy solutions. The energy strategy also focuses on mainstreaming the role of women and promoting youth employment in the design and implementation of energy projects, creating job opportunities, and fostering clean energy technological innovations to promote sustainable and inclusive industrialization.

As of June 2015, UNIDO's energy project portfolio totaled approximately US\$ 230 Million and is characterized by projects focusing on Energy Management Systems (EnMS) and standards, smart grids based on renewable energy and energy efficiency for industrial applications. UNIDO's Energy Strategy recognizes the significance of convening world energy leaders at global forums to engage in debates for addressing global issues on sustainable energy solutions, industrial development and climate change mitigation and thereby contributing to the 2030 Sustainable Development Agenda on energy and climate change. In response to demands from Member States and funding mechanisms such as the Global Environment Facility (GEF), UNIDO's Energy Programme has developed several global initiatives that focus on programmatic approaches to address national, regional and global issues. This has led to the creation of Flagship Programmes under the Energy Programme including the Climate Technology Centre and Network (CTCN),

Core Building Blocks of UNIDO's Energy Programme Providing Inclusive, Clean and Sustainable Energy Solutions



the Global Network of Regional Sustainable Energy Centres (GN-SEC) and the Global Cleantech Innovation Programme (GCIP) for SMEs. These Flagship Programmes harness synergies of sharing technological knowledge, best practices and global partnerships to facilitate catalytic and sustainable industrialization.

Additionally, UNIDO's Energy Programme acts as the focal point within UNIDO for all strategic energy partnerships, networks and conventions including UN-Energy, SE4ALL and the United Nations Framework Convention on Climate Change (UNFCCC). UNIDO's Energy Programme is also responsible for providing substantive support for the convening role of UNIDO on energy and climate change issues, and for promoting cooperation and partnerships with relevant UN and non-UN organizations and institutions.

Pillars of UNIDO's Energy Programme

1. Industrial Energy Efficiency

UNIDO's Industrial Energy Efficiency (IEE) Unit is responsible for promoting the efficient use of energy by industry and the dissemination of industrial energy efficiency best practices and technologies in order to accelerate economic growth and enhance competitiveness and job creation, while at the same time addressing climate change.

The IEE Unit places particular emphasis on addressing the energy efficiency requirements of Small and Medium-sized Enterprises (SMEs), as they represent the backbone of socioeconomic development in a country. As of June 2015, the IEE Unit's project portfolio amounted to approximately US\$ 105 Million, with a widespread geographical coverage of projects in over 20 countries, including three Least Developed Countries (LDCs).

The three core thematic areas of the UNIDO IEE programme are:

- a) Policy Development and Standards;
- b) Capacity Building and Awareness Raising;
- c) Technology Demonstration and Upscaling.

Furthermore, UNIDO's IEE programme focuses firstly on promoting the implementation of Energy Management Systems (EnMS) based on the International Organization for Standardization's (ISO) 50001 Energy Management Standard, and secondly on Energy Systems Optimization (ESO). Both of these IEE methodologies assist industry to achieve continual and system-wide IEE improvement.

Other IEE programmes focus on improvements to the energy-efficiency of energy intensive industrial equipment, energy-efficient and low-carbon transport vehicles, and related infrastructure.

2. Renewable and Rural Energy

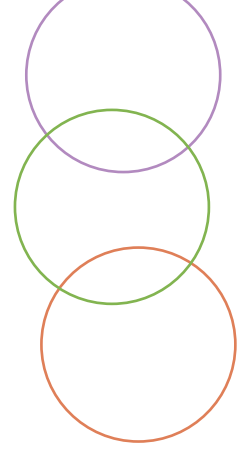


UNIDO's Renewable and Rural Energy (RRE) Unit is responsible for enhancing greater use of renewable sources of energy by industry and for facilitating access to affordable and sustainable energy by the communities in rural areas. UNIDO's RRE projects support productive activities as sources of income and employment opportunities, and further contribute to the mitigation of climate change in developing countries and countries with economies in transition.

UNIDO's RRE programme focuses on harnessing renewable energy for productive uses and industrial applications. UNIDO's ongoing RRE project portfolio as of June 2015 amounted to approximately US\$ 110 Million, with a widespread geographical coverage including over 30 countries.

UNIDO's RRE activities place a specific emphasis on promoting business models for renewable energy based mini-grids for enhancing access to energy, and on demonstrating the social and economic viability of selected renewable energy technologies. In the field of RRE, UNIDO seeks to strengthen the capacity of counterparts and local entrepreneurs to create sustainable energy enterprises and industrial prosumers that can deliver reliable and affordable energy

services based on renewable energy technologies and promote global standards on renewable energy technologies, appliances and systems, technology transfer, and local manufacturing of renewable energy technologies.



3. Climate Policy and Networks

UNIDO's Climate Policy and Networks (CPN) Unit responds to increasing demand for innovative partnerships, multi-level and integrated solutions to address the energy, climate and development challenges simultaneously. UNIDO's CPN Unit is responsible for developing and implementing integrated policies, global and regional multi-stakeholder partnerships, as well as advocacy and outreach activities in the field of sustainable energy and climate change.

The CPN Unit positions UNIDO strategically within the global energy and climate change debate, and executes global and regional programmes on low carbon and climate resilient technology innovation and entrepreneurship, as well as networks and centres. The CPN Unit focuses on promoting programmatic approaches, and coordinates work related to new and ongoing global and regional programmes, cross-cutting themes, nexus and knowledge management issues. In addition, the Unit also coordinates work related to global forums such as the Vienna Energy Forum, and participation in meetings of the Conference of the Parties (COP) and other relevant energy and climate conferences and events. In discharging its responsibilities, in line with the overall strategy of the Branch, the CPN Unit cooperates closely with the IEE and RRE Units, as well as other relevant organizational units within UNIDO, in particular with the Environment Branch, Technology Networks and Field Offices in order to develop and implement integrated and partnership-based programmes.

Policy, Partnerships and Global Forums

UNIDO participates in global forums and establishes partnerships with relevant stakeholder groups and organizations who share in UNIDO's inclusive and sustainable industrial development goals. There are three major types of partnerships that UNIDO's Energy Programme seeks to establish and maintain: multi-stakeholder platforms, strategic partnerships and knowledge partnerships.

Multi-stakeholder platforms are those with a large number of stakeholders from the public and private sectors. A multi-stakeholder platform aims to act as a catalyst in changing complex systems, shifting existing norms and improving structures (e.g. UN Energy, SE4ALL, and CTCN).

A strategic partnership is a platform with multilateral or bilateral donors and the private sector. In recognition of the important role played by the private sector in inclusive and sustainable industrial development, UNIDO's ties with the private sector are growing (e.g. Global Environment Facility (GEF), ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), and the Cleantech Open).

Knowledge partnerships work from the ground up through projects designed to serve as examples of 'best practices' for the industry in question and as catalysts that can support successful projects and transform them into longer-term programmes (e.g. Austrian Energy Agency (AEA), the Renewable Energy and Energy Efficiency Partnership (REEEP), and The Energy and Resource Institute (TERI)).

UNIDO Energy Portfolio in South Africa

Greening the COP17

Context

In line with the National Greening Framework and Guidelines, a Green Goal programme was implemented during the 2010 FIFA World Cup that focused on promoting clean energy technologies; low carbon urban transport and mobility; landscaping and biodiversity; green buildings, sustainable lifestyles and responsible tourism; and green goal communications. In response to the positive results of this programme, the South African Government partnered with the Global Environment Facility (GEF) and UNIDO to promote and up-scale some of the key activities under the National Greening programme during the COP17 in Durban in 2011. This programme formed an integral part of South Africa's response to the challenges of global climate change and its pursuit of a more sustainable growth and development agenda. To achieve this, the Government of South Africa engaged with a multitude of stakeholders, in particular the private sector, in their efforts to green the COP17.



Objective

The project aimed to demonstrate South Africa's commitment to reduced GHG emissions, promote renewable energy sources and ensure broad climate change awareness by decision-makers and the general public with a focus on showcasing targeted activities under the National Greening Programme and the South Africa-GEF partnership during the COP17 meeting in Durban in 2011.

Achieved results

- » Over 20,000 Green Passports were distributed during the COP17 to delegates, participants and visitors;
- » 45 submissions were received for the Clean Technology competition and 23 teams were chosen as semifinalists to receive mentoring and training support; as a result of this success, the Global Cleantech Innovation Programme for SMEs has been developed as a legacy programme with a follow-up project implemented in South Africa, as well as in six further countries around the world;
- » 300 bicycles were purchased by the project and an additional 500 were procured by the Department of Transport for rental during the COP17. Building upon this foundation, a new GEF-funded legacy project for the promotion of non-motorized transport and electric vehicles has been developed and is currently under implementation;
- » 71 Solar Water Heaters (SWHs) were purchased and 69 were installed at 19 selected rural clinics in iLembe District and 2 at schools; for sustainability purposes, more than 25 technicians were trained on the operation and maintenance of SWHs;

Donors and partners

Donors: Global Environment Facility (GEF)

Partners: Department of Environmental Affairs (DEA), Durban (eThekweni) Municipality

Industrial Energy Efficiency Improvement in South Africa

Context

South Africa is a highly energy-intensive economy that, while rapidly diversifying, is still structured around energy-intensive, large-scale operations, such as large-scale manufacturing, mining and primary minerals beneficiary industries. Therefore, there is a strong need for the increased promotion and implementation of industrial energy efficiency through the application of relevant national policies and strategies that address sustainable economic and industrial development and climate change mitigation.

Objective

The objective behind the Project (SA IEE Project) is to increase industrial energy efficiency in South Africa in order to contribute to national efforts to improve energy security and electricity supply, while at the same time ensuring that GDP growth is not constrained by energy shortages and rising prices. The SA IEE Project seeks to achieve this overall objective through the development of industrial energy efficiency policy frameworks; the introduction and promotion of ISO 50001 Energy Management Systems (EnMS) standard; industry capacity building and expert development in the field of EnMS and Energy Systems Optimization (ESO); as well as awareness creation with piloting and demonstration of EnMS and ESO within South African Industry. The project started its implementation in early 2010 and is scheduled for completion at the end of 2015.

Achieved results

- › National institutional capacity for the operationalization of the SANS/ISO 50001 standard was strengthened by training South Africa's first SANS/ISO50001 Lead Auditors and Training Centre Providers (TCPs);
- › The project has strengthened national knowledge on EnMS and ESO across a wide section of the South African industrial sector (both enterprise and consultancy), with some 2,300 course participants being trained in EnMS and different ESO topics by the end of 2013;
- › An ESO-based SME Energy Auditing Programme with approximately 220 SMEs audits;
- › The SA IEE Project has worked with approximately 150 medium and large companies assisting them to reduce their energy consumption by conducting EnMS implementations as well as ESO assessment and implementation activities;
- › By the end of 2015, the SA IEE project had supported 10 South African companies to be fully SANS/ISO 50001 certified, with more in the immediate pipeline for 2016.

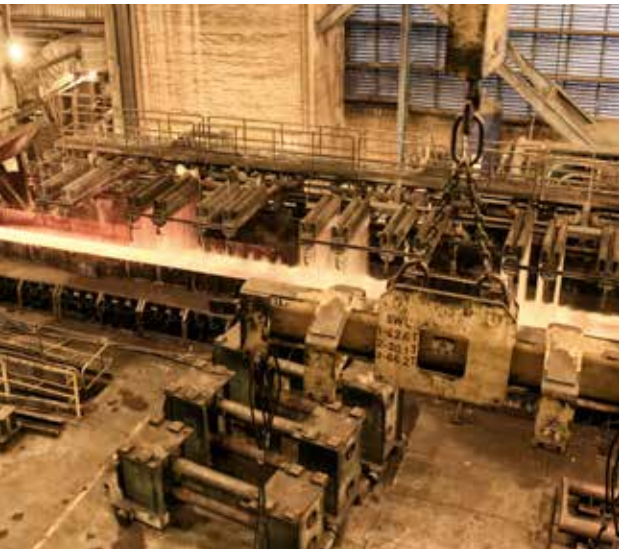


Donors and partners

Donors: Government of South Africa, through the Department of Trade and Industry (the dti), the UK Department for International Development (DFID), and the Swiss State Secretariat for Economic Affairs (SECO).

Partners: Department of Trade and Industry (dti), Department of Energy (DoE), National Cleaner Production Centre of South Africa (NCPC-SA), the National Business Initiative (NBI) and Business Unity South Africa (BUSA)

Industrial Energy Efficiency Improvement in South Africa through Mainstreaming the Introduction of Energy Management Systems and Energy Systems Optimization



Context

South Africa is in the midst of an energy constraint where demand is growing against a constrained supply. Traditionally dominated by the mining, manufacturing, petrochemicals and agriculture sectors, the economy is experiencing a slight deindustrialization with GDP growth being threatened by industrial tensions and delays in fixing infrastructure gaps, including electricity constraints. Given this situation, and persistently high unemployment, the South African Government recognizes the important role that IEE plays in lowering production costs, boosting industrial competitiveness, and contributing to the Government's objective of employment creation and protection.

Objective

The objective of the Project (SA IEE Phase II Project) is to build on the results and success of the previous SA IEE Project. The SA IEE Phase II Project will seek to further accelerate and expand the introduction of EnMS, ESO, and the Energy Management Standard ISO 50001

Series within the South African industrial (and selected commercial) context in order to realize increased investment in IEE through the wide-scale adoption of the two methodologies and ISO 50001 under: (i) enhanced institutional frameworks and regulatory environments; (ii) technical and implementation assistance to industry; and (iii) multi-level engineer, technician and operator capacity building programmes. The SA IEE Phase II Project will begin its implementation in January 2016 and run for four years.

Expected outcomes

- » Strengthened energy planning through improved data and reporting on energy consumption and potential savings that will be realized through EnMS and ESO implementation in South African industry;
- » Enhanced promotion of investment in IEE through strengthened policy and regulatory frameworks and support to increase the uptake of energy management standards, EnMS and ESO;
- » Expansion of the EnMS and ESO capacity building programme with the inclusion of new ESO topics and multi-level enterprise trainee courses under parallel National Qualification Framework (NQF) institutionalization and market capacitation enhances the capacity of the South African industrial sector to implement EnMS and ESO and achieve energy savings;
- » Access to finance increased with the energy and cost saving benefits of EnMS and ESO proven within the South African industrial context, with industry actively and progressively pursuing enhanced IEE;
- » South African enterprise management is aware of the potential financial, economic and climate change mitigation benefits that adopting EnMS and ESO can yield.

Donors and partners

Donors: Global Environment Facility (GEF), Swiss State Secretariat for Economic Affairs (SECO)

Partners: Department of Trade and Industry (dti), Department of Energy (DoE), National Cleaner Production Centre of South Africa (NCPC-SA), The South African National Energy Development Institute (SANEDI)

The Global Cleantech Innovation Programme (GCIP) for SMEs in South Africa

Context

In 2011, the Government of South Africa, with the support of the Global Environment Facility (GEF) and UNIDO, implemented the 'Greening the COP17' project. One of the four components of the project was the first South Africa Clean Technology Competition (2011 SA Cleantech) for green entrepreneurs and SMEs with innovative ideas and concepts in the areas of energy efficiency, renewable energy and green building practices. Building on this success, UNIDO is implementing the GCIP for SMEs to promote clean technology innovation in SMEs in South Africa in cooperation with the Technology Innovation Agency (TIA). The GCIP for SMEs is a global flagship programme of UNIDO with funding from the Global Environment Facility (GEF) and is executed in partnership with the Cleantech Open, USA.

Objective

The Global Cleantech Innovation Programme (GCIP) for SMEs in South Africa aims to enhance emerging clean technology startups and strengthen policy frameworks for innovation and startups. The Programme takes a competition-based approach to identify a pool of promising entrepreneurs and support them through ongoing mentoring, webinars and networking events in order to grow their innovative concepts into fully-fledged products ready for the national and global markets.

Achieved Results

- » Under the 2014 Cleantech Competition and Accelerator Programme, 68 applications were received and 24 teams were selected as semifinalists to progress through the Accelerator Programme;
- » In 2015, 120 applications were received for the programme; from which 18 were selected as semi-finalists to take part in the Accelerator Programme;
- » Khaya Power was selected as the 2015 GCIP South Africa National Winner and given the opportunity to fly to Silicon Valley and pitch their technology to international investors, as well as compete for the GCIP Global Prize. Based on its business model innovation, product development, and clear social and environmental impact, Khaya Power was named the 2015 GCIP Global Winner by a panel of international judges.
- » To date, 19 events have been organized to support the development of cleantech mentors, judges and entrepreneurs; 4 mentor trainings, 3 judge trainings, 2 National Academies, and 10 webinar (mentoring) sessions.



Donors and partners

Donor: Global Environment Facility (GEF)

Partners: Technical Innovation Agency (TIA), Department of Trade and Industry (dti)



Energy Efficient Low-Carbon Transport in South Africa

Context

The South African transport sector accounts for 28% of final energy consumption in South Africa (97% of which is in liquid fuels) with demand expected to double by 2050 and therefore, the sector plays an increasingly important role in the overall economic and energy performance of South Africa. South Africa is also experiencing a higher level of motorization as a result of increased commuting needs, an automobile dependent urban sprawl and personal wealth, in terms of both the number of wealthy people and disposable incomes. The ongoing use of transport fuel price subsidization only supports this growth, and is closely linked to the fact that automotive manufacturing is an important manufacturing sector in South Africa, being labor intensive and a significant employer.

In light of this, UNIDO is implementing a project on the promotion of energy-efficient, low-carbon transport in South Africa in cooperation with the South African National Energy Development Institute (SANEDI).

Objective

The project aims to promote the widespread use of electric vehicles (EVs) and non-motorized transport (NMT), as well as the development of the necessary infrastructure, as part of the Green Transport and Green Cities initiatives of South Africa. This will be achieved through close cooperation with the partner municipalities, as well as national government departments and the private sector for sustainability and national ownership.



Expected outcomes

- » Enabling policy and regulatory framework, together with strengthened institutional capacity and enhanced awareness; facilitating early and widespread use and local manufacturing of electric vehicles (EVs) and non-motorized transportation (NMT) in South Africa;
- » Improved non-motorized and public transport result in a reduction of GHG emissions in the transport sectors of the cities of Durban and Johannesburg; adequate infrastructure facilitates widespread utilization of EVs powered by renewable energy.

Donors and partners

Donor: Global Environment Facility (GEF)

Partners: South African National Energy Development Institute (SANEDI), Technology Innovation Agency (TIA), Cities of Durban and Johannesburg, Department of Trade and Industry (dti), Department of Environmental Affairs (DEA), Department of Transport (DOT), Department of Energy (DOE)

Promoting Organic Waste-to-Energy and Other Low-Carbon Technologies in Small and Medium and Micro-Scale Enterprises (SMMEs): Accelerating Biogas Market Development

Background

With official national unemployment levels at 25% and youth unemployment at even higher levels, the success of small, medium and micro-scale enterprise (SMME) is crucial not only to GDP growth in South Africa, but to job creation as well. SMMEs not only employ up to 61% of the workforce in South Africa, but also generate significant quantities of waste. This is particularly true for SMMEs in the agro-processing sector such as piggeries, dairies, beef lots, poultry farms, wineries, and fruit and vegetable farms and processors which generate large quantities of waste on a regular basis. Biogas systems can be attractive investments for agro-organizations with their ability to offset electricity costs and heat production costs, as well as providing an opportunity for additional income from digestate sales (as fertilizer), and by off-setting any current waste disposal costs.

Objective

To promote market-based adoption of integrated biogas technologies in SMMEs in South Africa

Expected Outcomes

- » Capacity of market players and enablers strengthened and technology support systems established;
- » Market environment for biogas strengthened and regulatory framework for grid-connected small to medium scale waste-to-energy projects developed;
- » Technical feasibility and commercial viability of waste-to-energy technologies demonstrated;
- » Investment in waste-to-energy technologies promoted.



Donors and partners

Donor: Global Environment Facility (GEF)

Partners: Department for Environmental Affairs (DEA), Department of Energy (DoE), Department of Trade and Industry (dti), Southern African Biogas Industry Association (SABIA).

The Southern African Centre for Renewable Energy and Energy Efficiency (SACREEE)



Context

Further to the request made by the Southern African Development Community (SADC) in 2012 for technical assistance, UNIDO developed a concept note on the Southern African Centre for Renewable Energy and Energy Efficiency (SACREEE) in November 2012. At a consultation meeting held in South Africa in March 2013, it was concluded that a regional entity needed to be established to support all Member States and other stakeholders in developing a regional market of renewable energy and energy efficiency technologies and services. Representatives of SADC Member States were also clear that given the importance of this sector, such

a regional entity would play a coordinating role in renewable energy and energy efficiency sectors in the region in line with the spirit of SADC policies.

The establishment of SACREEE and its hosting, as well as support budget, were approved by the Ministers responsible for Energy at the 34th Annual Meeting held in Johannesburg, South Africa in July 2015. The decision of the Ministers was further endorsed by the SADC Council of Ministers at the SADC Summit held in August in Gaborone, Botswana.

Objective

Promoting market-based adoption of renewable energy and energy efficiency technologies and energy services in SADC Member States, thereby supporting the Region's sustainable development objectives through: resource mobilization, policy, quality assurance, capacity building and knowledge management, communication, and investment in renewable energy and energy efficiency projects and programmes.

Expected Outcomes

- » Functional regional centre of excellence established and operated, regional programmes and projects developed, and funding/resources mobilized.
- » Harmonized policy, regulatory, and institutional frameworks developed that are conducive to broader and accelerated uptake of renewable energy and energy efficiency technologies, and practices in the region and countries assisted to develop national policies, strategies and regulations and action plans to promote the uptake of renewable energy and energy efficient technologies and energy services.
- » Capacities of market enablers and market players built to develop and implement renewable energy and energy efficiency investment projects/ programmes in the region.
- » Knowledge and information on good (and poor) practices harvested and shared to support implementation of renewable energy and energy efficiency investment projects/ programmes, and progress made in scaling up access to energy services disseminated.
- » Design, development, and deployment of renewable energy and energy efficiency technologies facilitated and business models built for the operation, maintenance and replication in Member States.

Donors and partners

Donor: Austrian Development Agency (ADA)

Partners: SADC Member States, EUEI PDF

Promoting Market-Based Deployment of Clean Energy Technology Solutions in Municipal Waterworks: Pilot Initiative in South Africa

Context

Climate change has direct impacts on cities through aggravated droughts and freshwater shortages and changes in climatic conditions can lead to increased frequency and severity of disease outbreak. Flash floods can destroy urban water infrastructure thereby compromising service delivery. Water conservation and water-use efficiency are key adaptation strategies for cities and generate significant mitigation benefits by reducing the energy demand of urban water and wastewater services. Based on growing urbanization and industrialization, demand for municipal water and wastewater in urban areas is projected to increase by at least 40% by 2030, which increases pressure on existing and often inadequate water-service supply infrastructure. Ultimately, this means that urban water, with pumps, motors, and other equipment operating 24 hours a day and continuously through the year, will continue to be one of the major drivers of GHG emissions growth in developing countries.

Objective

Pilot Initiative: Climate Change, Clean Energy and Urban Water in Africa has emerged as a potential solution to address interlinked challenges of industrialization, urban population growth and energy security. This project aims to demonstrate good practices in mainstreaming gender aspects into sustainable energy and water projects, wherever possible, and avoid negative impacts on women or men due to their gender, ethnicity, social status or age.

The overall objective of this project is to create model pathways of market-based approaches for cost effective deployment of clean energy technologies, services and systems in municipal waterworks initially piloted in South Africa. It is envisaged to establish public-private partnerships and create a solid basis for replication and scaling up of the initiative not only in the country, but also in the SADC region and throughout Sub-Saharan Africa. The specific objective is increased energy use efficiency and renewable energy production in municipal waterworks in three selected municipalities in South Africa (small and medium cities with about 100,000 inhabitants).

Expected Outcomes

The expected project outcome is enhanced local capacity through low carbon technology improvement, reduced energy consumption and promoted GHG emissions mitigation through implemented demonstration projects in targeted municipalities and strengthened market-based environment.



Donors and partners

Donor: European Union

Partners: The Renewable Energy and Energy Efficiency Partnership (REEEP), Department of Environmental Affairs (DEA)



Flagship Programmes

The Climate Technology Centre and Network (CTCN)

The CTCN is the mechanism of the United Nations Framework Convention on Climate Change (UNFCCC) to stimulate technology cooperation and enhance the development and transfer of technologies to developing country Parties at their request. The CTCN is co-hosted by UNEP and UNIDO and is supported by a consortium of eleven partner organizations around the globe. These are complemented by a global network of organizations with experience in technology development, deployment and transfer.

To fulfil its mandate the CTCN has three core functions:

- » Deliver technical assistance to developing countries to enhance transfer of climate technologies;
- » Provide and share information and knowledge on climate technologies;
- » Foster collaboration and networking of stakeholders on climate technologies.

Technical assistance is provided based on a demand driven process that begins with a request from a country's National Designated Entity (NDE). The dissemination of information and knowledge is carried out via trainings for NDEs, as well as the CTCN Knowledge Management System (KMS), an online platform that facilitates access to existing climate technology related data. The Network is a cornerstone and delivery channel for Technical Assistance and contributes to the KMS. UNIDO contributes to the CTCN by utilizing its strong expertise and experience in climate technologies, established partnerships with governments and the private sector, as well as its global network of field offices.

Objectives

To build or strengthen the capacity of developing countries to identify technology needs, to facilitate the preparation and implementation of technology projects and strategies to support action on mitigation and adaptation, and to enhance low-emission and climate-resilient development.



Global Network of Regional Sustainable Energy Centres (GN-SEC)

The Global Network of Regional Sustainable Energy Centres (GN-SEC) Platform is a powerful post-2015 South-South and triangular multi-stakeholder partnership, which is executed by UNIDO's CPN Unit in cooperation with various regional economic communities and organizations. The expanding partnership comprises of various Centres in Africa, the Caribbean and the Pacific. The CPN Unit provides key technical assistance for the establishment and operation of the Centres and the global platform provides a common umbrella for promoting south-south cooperation between the various regions.

Objectives

The Centres respond to the urgent need for enforced regional cooperation and capacities to mitigate existing barriers to renewable energy and energy efficiency investments, industries and markets. They assist in creating an enabling environment through tailored regional methodologies and interventions.

The Centres enjoy high-level support by the counterpart ministries, operate according to local procedures and respond to the individual needs of the respective national governments. The Centres complement and strengthen ongoing national activities in the areas of policy and capacity development, knowledge management and awareness raising, as well as investment and business promotion. They assist in building up local sustainable energy industries and maximizing local value creation along the value chains of sustainable energy investments. The Centres form a strong global advocacy group for sustainable energy issues and provide a strong link between international energy and climate agreements and concrete implementation on the ground. For instance, the Centres strengthen the implementation capacities of the Sustainable Energy For All (SE4ALL) Initiative.

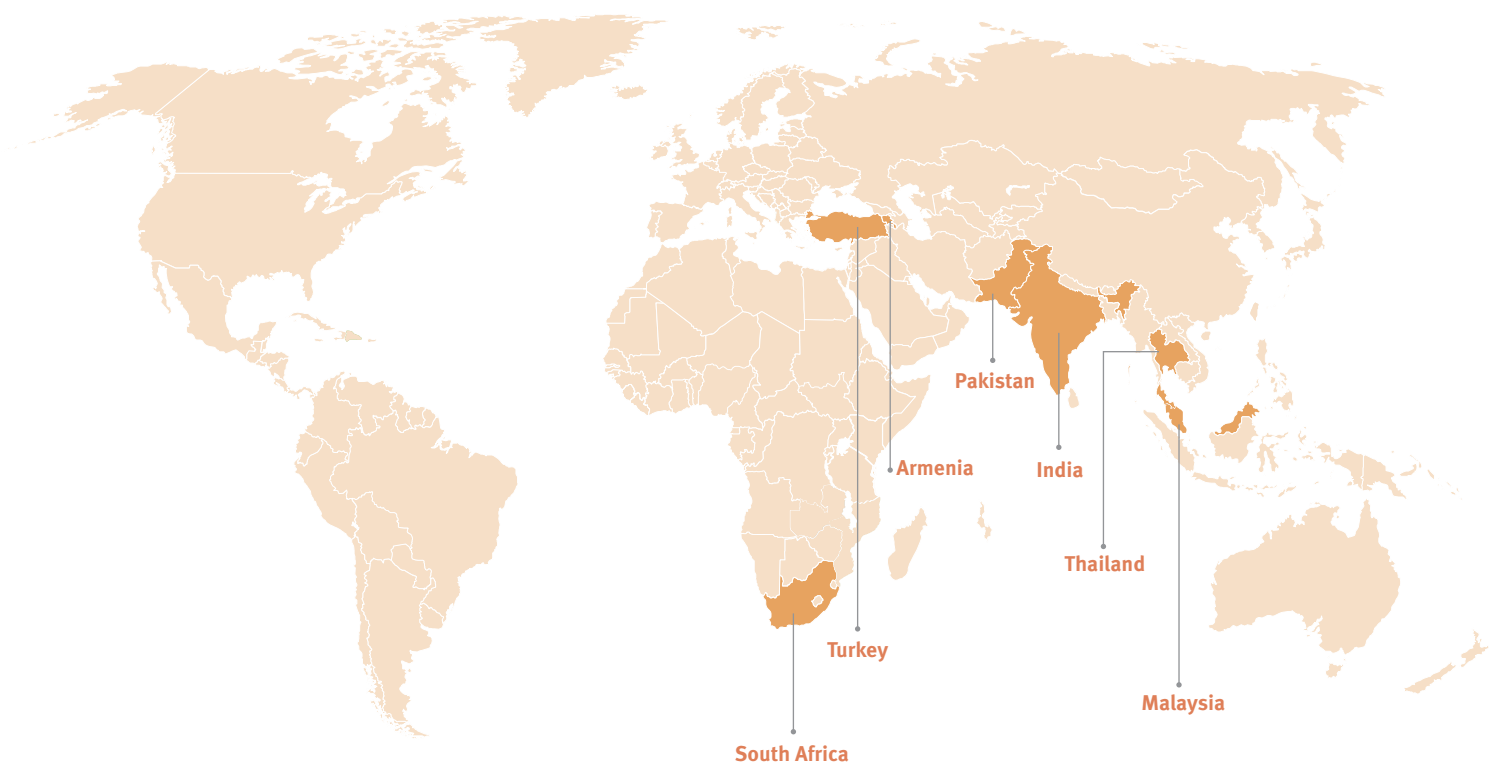
The Global Cleantech Innovation Programme (GCIP) for SMEs

In 2011, UNIDO, with the support of the Global Environment Facility (GEF) and the Government of South Africa, successfully implemented the ‘Greening the COP17’ project. Building on the success of the 2011 Clean Technology Innovation Competition, UNIDO and the GEF have developed a global flagship programme, the Global Cleantech Innovation Programme (GCIP) for SMEs. It currently encompasses 7 countries, and more than 10 countries have already expressed interest for the Programme to be developed in their countries.

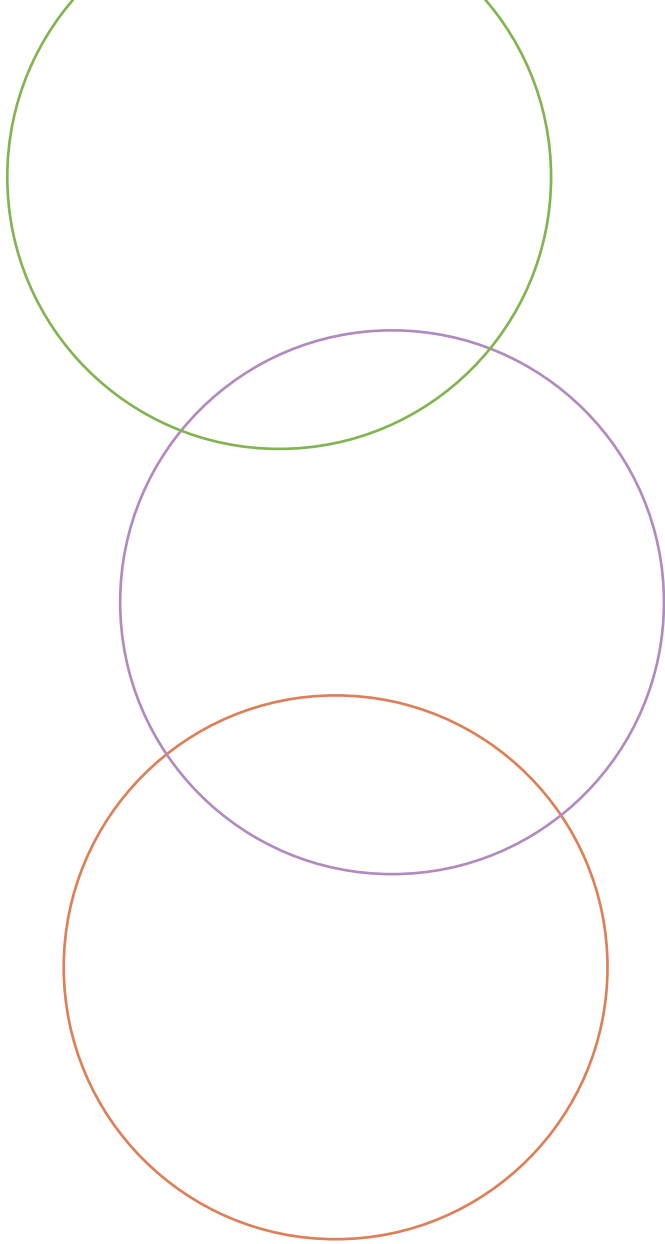
The GCIP for SMEs demonstrates the significance that UNIDO places on nurturing innovation in clean energy technologies, strategic partnerships and enhancing private sector involvement. The programme involves four key features - a competition to create an ecosystem for sustainable growth, the showcasing of innovative technologies, the provision of mentoring and training through the Cleantech Accelerator, and the enhancement and facilitation of access to capital.

Objectives

The Global Cleantech Innovation Programme (GCIP) for SMEs, in strong partnership with the Cleantech Open, USA and currently operating in Armenia, India, Malaysia, Pakistan, South Africa, Thailand, and Turkey, takes an innovation ecosystem approach to identify a pool of promising entrepreneurs and startups, and supports them through ongoing mentoring, webinars and networking events to grow their innovative concepts into full-fledged business models ready for the national and global markets.







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