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Independent Thematic Evaluation

UNIDO Renewable Energy Trust Fund



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

UNIDO OFFICE FOR INDEPENDENT EVALUATION

Independent Thematic Evaluation
UNIDO Renewable Energy Trust Fund



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

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Acronyms and abbreviations

AEA	Austrian Energy Agency
AMC	Approval and Monitoring Committee
3ADI	Africa (accelerated) agri-business and agro-industries development initiative (3ADI)
BTOMR	Back-to-Office Mission Report
CSR	Corporate Social Responsibility
DAC	Development Assistance Committee
EB	Executive Board
ECC	Energy and Climate Change
ECOWAS	Economic Commission of West African States
ECREEE	ECOWAS Centre for Renewable Energy and Energy Efficiency
EE	Energy Efficiency
EIA	Environmental Impact Assessment
ENE	UNIDO Energy Branch
ET	Evaluation Team
EU	European Union
EVA	UNIDO Office for Independent Evaluation
FAO	Food and Agriculture Organization
FiT	Feed-in Tariff
FSP	Full-Size Project
GEF	Global Environment Facility
GHG	Greenhouse Gases
ICSHP	International Center for Small Hydro Power
IDB	Industrial Development Board
IEA	International Energy Agency
IEE	Industrial Energy Efficiency
IFAD	International Fund for Agricultural Development
ISEC	International Solar Energy Centre for Technology Promotion and Transfer
ISID	Inclusive and Sustainable Industrial Development
LCP	Low Carbon Policy Unit
LDCs	Least Developed Countries
M&E	Monitoring and Evaluation
MDGs	Millennium Development Goals
NGO	Non-Governmental Organization
NPM	National Project Manager
ODG/EVA	Office of the Director General / UNIDO Office for Independent Evaluation
OECD	Organisation for Economic Co-operation and Development

PBC	Program and Budget Committee
PD, ProDoc	Project Document
PIF	Project Identification Form
PIR	Project Implementation Report
PPA	Power Purchasing Agreement
PPG	Project Preparation Grant
PSUs	Public Sector Undertakings
PV	Photovoltaic Technology
RBM	Results Based Management
RE	Renewable Energy
REEEP	Renewable Energy and Energy Efficiency Partnership
RETF	Renewable Energy Trust Fund
RRE	Renewable and Rural Energy Unit
SADC	Southern African Development Community
SADCREEE	Southern African Center for Renewable and Energy Efficiency
SDGs	Sustainable Development Goals
SE4ALL	Sustainable Energy for All
SMART	Specific, Measurable, Achievable, Relevant and Time-bound
SMEs	Small and Medium Enterprises
TF	Trust Fund
TOC	Theory of Change
ToR	Terms of Reference
TTF	Trade Trust Fund
UCSSIC	UNIDO Centre for South-South Industrial Cooperation
UNCTAD	United Nations Conference on Trade and Development
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
WTO	World Trade Organization

Glossary of evaluation terms

Term	Definition
Baseline	The situation, prior to an intervention, against which progress can be assessed.
Effect	Intended or unintended change due directly or indirectly to an intervention.
Effectiveness	The extent to which the objectives of a development intervention were or are expected to be achieved.
Efficiency	A measure of how economically inputs (through activities) are converted into outputs.
Impact	Positive and negative, intended and non-intended, directly and indirectly, long term effects produced by a development intervention.
Indicator	Quantitative or qualitative factors that provide a means to measure the changes caused by an intervention.
Intervention	An external action to assist a national effort to achieve specific development goals.
Lessons learned	Generalizations based on evaluation experiences that abstract from specific to broader circumstances.
Logframe (logical framework approach)	Management tool used to guide the planning, implementation and evaluation of an intervention. System based on MBO (management by objectives) also called RBM (results based management) principles.
Outcome	The achieved or likely effects of an intervention's outputs.
Outputs	The products in terms of physical and human capacities that result from an intervention.
Relevance	The extent to which the objectives of a development intervention are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donor's policies.
Risks	Factors, normally outside the scope of an intervention, which may affect the achievement of an intervention's objectives.
Sustainability	The continuation of benefits from an intervention, after the development assistance has been completed
Target group	The specific individuals or organizations for whose benefit an intervention is undertaken.

Executive summary

Background

The independent thematic evaluation of the Renewable Energy Trust Fund (RETF) was planned in the 2014/2015 Work Programme of the UNIDO Office for Independent Evaluation, following the evaluation of two other trust funds: Trade Trust Fund (TTF) and Africa (accelerated) agri-business and agro-industries development initiative (3ADI). The aim is to explore to what extent the Trust Fund is achieving its expected results of increasing energy access and energy security in developing countries through the deployment of renewable energy technologies. In addition, the evaluation assessed the extent to which the renewable energy trust fund has been effective in the formulation, design and subsequent implementation of a portfolio of concrete projects to scale up the use of renewable energy for productive uses in developing countries and economies in transition.

The Renewable Energy Trust Fund was established in compliance with a UNIDO General Conference decision adopted at its thirteenth session, in 2009 (GC.13/Decision 15(h) (ii)). . That decision provided that, as an exceptional measure, part of the unutilized balances of appropriations due to Member States in 2010 remaining on 31 December 2009, may be utilized for special accounts for technical cooperation activities during the biennium 2010-2011, aimed at renewable energy for productive activities. The Renewable Energy Trust Fund was designed as a strategic initiative to promote programmatic approaches and partnerships through concrete renewable energy projects with focus on technology demonstration, policy frameworks and capacity building with the expectation that measurable results and impacts would be achieved on the ground.

Key outcomes expected from Trust Fund projects included: a large portfolio of concrete projects formulated; increased access to modern energy and energy services for the productive sector in target countries based on renewable energy resources; and renewable energy markets promoted, developed and/or strengthened in beneficiary countries.

The evaluation was conducted primarily as an independent desk review by a team of independent consultants and managed by the UNIDO Office for Independent Evaluation. It involved a review of key program/project design and implementation documents and semi-structured interviews with UNIDO staff and managers within the RETF and other Trust Fund programs, donors and program stakeholders, to gain an understanding of the context and progress of the RETF program to date. The interviews were based primarily on the evaluation matrix presented in the inception report, and in annex C. No field observations have been made. Evidence of accomplishments has been obtained from secondary sources. While this does not invalidate the conclusions arrived at in this report, the evaluation team cannot indubitably attest to the accuracy of the secondary information used to arrive at some of the conclusions. Some of these limitations were assuaged through triangulation of evidence where feasible.

The key users of this evaluation are UNIDO management, the staff of the UNIDO Energy Branch, other UNIDO branches operating trust funds, as well as current and potential donors to the RETF and/or other UNIDO trust funds.

Key findings

In general, the evaluation finds positive examples of relevance, effectiveness and success, and an overall better than satisfactory level of performance. The evaluation finds that UNIDO's work in renewable energy for productive use is relevant to the evolving global context, environmental trends and energy needs especially in developing countries. The strategy to promote renewable energy markets and industry plays an important role in addressing the challenges of energy poverty, energy security and the concerns of climate change as major environmental issues of our time. The work on renewable energy is fully aligned with the UNIDO mandate to promote and "accelerate industrial development in developing countries and industrial development and co-operation on global, regional and national, as well as on sectoral levels".

The expenditures from the Trust Fund occurred over a period of four years since the establishment of the Fund in 2010. On the whole, the evaluation found that the Trust Fund mechanism is a useful vehicle for UNIDO to mobilize funds to undertake its renewable energy work. The RETF was used in an effective manner in developing proposals that led to the development, and ultimately, the implementation of a significant number of projects. The total value of projects developed is US\$ 274,241,926 including cash and in-kind co-financing. In monetary value, 32% of the Trust Fund's expenditures were dedicated to develop a pipeline of Global Environment Facility (GEF) projects, for a total of US\$ 36,644,732 in GEF Grants. In addition, these project concepts also received a total of US\$ 860,000 from the GEF for preparation.

The evaluation calculated the cost of doing business under the RETF and found that this represented an average of 10% of project grants mobilized, or 3% of total project budgets¹. The evaluation finds that this corresponds generally to the average of other Agencies, with a satisfactory level of financial efficiency. However, the grouping of sub-grants into umbrella grants appears not to have delivered increased efficiencies, since individual sub-projects were managed individually.

A coherent results construct is key to the measurement of performance and progress towards impact. The design of the project/program provides an objective and indicators necessary for an assessment of relevance and effectiveness. However, the formulation of some of the indicators is not sufficiently *Specific, Measurable, Achievable, Relevant and Time-bound* (SMART). In the context of Program Performance and Results Based Management (RBM), program objectives are intended to articulate results levels higher than direct outcomes yet, the RETF objective as stated in the log frame is set at a lower results level than the outcomes. For this reason, this evaluation considers the RETF results

¹ This ratio was obtained by dividing the total cost of doing business (RETF preparatory grants + GEF preparatory grants + agency fees or Project service costs) by the amount of grants mobilized for the projects (i.e. not including co-financing).

framework as incoherent. The idea of a sustainable trust fund was assumed by the Branch, and no activities were designed to mobilize resources to sustain the Trust Fund. There is now an opportunity to revise the results framework as the Branch is making efforts to replenish and create a sustainable Trust Fund. A key issue identified in the analysis of project design is the fact that “a sustainable” RETF was not considered in the project design logic.

In general, this evaluation finds that, with a few exceptions, the issue of gender mainstreaming is being addressed consistently not only within the renewable energy projects funded by the Trust Fund but in the Branch. With the development of specific guidance, tools and an indicator framework, the extent to which Branch projects differentially impact men and women will be better assessed and addressed during the design phase of projects.

In designing and implementing renewable energy projects, UNIDO actively collaborates with a number of energy technology centers, networks, and learning platforms worldwide to form strategic partnerships to promote knowledge management and best practices for technology transfer. At the international level, Trust Fund projects fostered partnerships to promote UNIDO’s comparative advantage in demonstration and pilot activities, awareness raising and institutional capacity building and networking. However, the evaluation found that internal collaboration within UNIDO was rather limited. This evaluation found a successful inter-unit collaboration between the Renewable and Rural Energy (RRE) and Industrial Energy Efficiency (IEE) units within the Energy Branch, however, no other significant examples of successful internal collaboration in UNIDO can be found in the development and implementation of the RETF portfolio.

The small-scale nature of the renewable energy technologies being used in these projects lend themselves to South-South cooperation. There is little evidence in the project concepts and full projects developed to date that South-South cooperation has been explored to any significant extent.

There is room for improvement of the reporting on performance and development results to Member States. Indeed, interviews with donors show that there is a lack of awareness by donors on what Trust Fund resources have been used for. This evaluation further notes that detailed data on funded Trust Fund projects were not easy to access and piecing them together took inordinate amounts of time and effort.

While it is too early to judge the results of individual project implementation, as many are still under preparation, the evaluation found that projects supported by the RETF served the objective of promoting increased access to Renewable Energy for production, agriculture and rural electrification.

Key recommendations

1. The RETF should be continued with a longer term objective of replenishing it through aggressive resource mobilization.
2. The RETF results framework should be revised in line with the basic principles of Results Based Management (RBM). The reconstructed Theory of Change included in this report should be reviewed, revised as necessary, and used as a guide to prepare a revised

program document complete with measureable indicators. Clear objectives should be set for the Trust Fund at a higher results level than outputs and outcomes.

3. To assure a sustainable Trust Fund, the evaluation recommends an enhanced level of advocacy to Member States and concerned stakeholders through, for example a video, concise reports with selected performance indicators.
4. The Trust Fund project document should be reviewed and, where necessary, revised for consistency with the program strategy document and applied to all projects developed under the Fund. In revising the results framework, the strategy indicators should be used as the basis for formulating measurable indicators of performance in the program document.
5. With the successful leveraging of GEF resources from the Trust Fund, the Energy Branch should consider using future mobilized RETF resources to develop a portfolio of non-GEF projects that include considerations for twinning with energy efficiency work.
6. South-South cooperation should be better explored and considered for inclusion as a criterion for project approval within the RETF.
7. Monitoring of verifiable milestones that track progress towards higher level results should be developed. This will allow the program to present a coherent set of information that would communicate progress being made in achieving the objectives of the Trust Fund. This will also facilitate ease of reporting to donors on the use of funds and the tracking of results in accordance with basic principles of program design and RBM.

1. Introduction and background

1.1 The Renewable Energy Trust Fund (RETF)

The UNIDO Renewable Energy Trust Fund (RETF) for productive activities was established in compliance with a UNIDO General Conference decision adopted at its thirteenth session, in 2009 (GC.13/Decision 15(h) (ii)). That decision provided that, as an exceptional measure, part of the unutilized balances of appropriations due to Member States in 2010 remaining on 31 December 2009, may be utilized for special accounts for technical cooperation activities during the biennium 2010-2011, aimed at renewable energy for productive activities.. The main objective of the RETF is to support the formulation, design and implementation of a portfolio of projects and programs that would promote the use of renewable energy for productive uses in developing countries and economies in transition. The RETF was designed as a strategic initiative to promote programmatic approaches and partnerships through concrete renewable energy projects with focus on technology demonstration, policy frameworks and capacity building with the expectation that measurable results and impacts would be achieved on the ground.

The RETF is being used primarily to support national level actions with the aim of:

- addressing key barriers such as policy, technical, financial and capacity to scale up renewable energy for productive uses;
- augmenting rural energy to promote income generation activities;
- promoting private sector investments in renewable energy;
- leveraging funding from the Global Environment Facility (GEF), European Union (EU) and other funding mechanisms; and
- strengthening energy and climate security.

The projects being developed under the RETF would also develop methodologies and tools for training, capacity building, mainstreaming social and economic impacts including gender dimensions, and effective monitoring of results and impacts of renewable energy projects. Successful piloting of renewable energy projects formulated under the RETF would result in the promotion of renewable energy markets in the beneficiary countries, which would assist in promoting access to modern energy services based on renewable technologies for the productive sector, thereby boosting the volume and competitiveness of productive activities, promoting economic growth and wealth creation, thus supporting the achievement of the Millennium Development Goals (MDGs).

The expected outcomes from the RETF project can be summarized as:

- a large portfolio of concrete projects formulated (at least 10 PIFs project concepts (Project Identification Forms) securing over US\$ 25 million from GEF);
- access to modern energy and energy services for the productive sector in target countries increased based on renewable energy resources; and

- Renewable energy markets promoted, developed and/or strengthened in beneficiary countries.

As stated in the logical framework developed for the RETF, the key outputs from the RETF project were to consist of:

- a systematic and transparent methodology and screening mechanism for selecting beneficiary country projects for promoting renewable energy;
- a portfolio of at least ten renewable energy projects (Project Identification Forms (PIFs) / Full-size projects (FSP)) in selected countries aimed at scaling up renewable energy and energy services for productive uses; and
- Project concepts (PIFs) submitted for securing funding (e.g. GEF) and co-financing from various sources.

UNIDO's activities in achieving various outputs include the following:

- receive and assess Member States' requests;
- develop a systematic and transparent scoring and screening tool for selecting projects;
- undertake pre-feasibility studies and carry out field visits and hold initial stakeholder consultations;
- map renewable energy potential resources and carry out need assessments through diagnostic studies;
- carry out socio-economic analyses;
- identify potential funding sources and secure co-financing commitments;
- apply methodology to screen beneficiary countries and select;
- carry out detailed consultation with all relevant key stakeholders for selected projects;
- formulate detailed concepts (PIFs) for promoting application of proven and cost effective renewable energy technologies, and linking them with concrete productive opportunities;
- process and submit concepts (PIFs) and project documents for securing funding to the donor (e.g. GEF) and/or other co-funding sources identified (EU, private sector and national and other multi/bilateral partners);
- mobilize and secure funding for preparatory Project Preparation Grant (PPG) phase and start implementation;
- process and submit project documents for funding to the donor (e.g. GEF) and/or other funding sources identified (private sector and national and other multi/bilateral partners);
- implement, monitor, evaluate and report on full size projects; and
- promote dissemination of best practices and knowledge management.

1.2 The evaluation

The independent thematic evaluation of the Renewable Energy Trust Fund was planned in the Work Program of the UNIDO Office for Independent Evaluation 2014/2015. This evaluation follows the evaluation of two other trust funds: Trade Trust Fund (TTF) and Africa (accelerated) agri-business and agro-industries development initiative (3ADI).

The evaluation was conducted between September and November 2014 by Mr. Segbedzi Norgbey, senior international evaluation consultant and team leader, and the independent evaluation consultants, Ms. Joana Talafre and Ms. Iva Bernhardt.

The RETF evaluation has three main purposes:

- generate information on the results and functions of the RETF and its suitability as a tool for planning and project development;
- assess the relevance of the RETF to the Inclusive and Sustainable Industrial Development (ISID) agenda; and
- provide lessons on the Renewable Energy Trust Fund for the future development of Trust Funds.

The primary objectives of the evaluation are to:

- assess the efficiency and effectiveness of RETF implementation and to determine if the RETF is achieving stated results and its objectives;
- assess the RETF, procedures and management including in comparison with the other UNIDO Trust Funds (3ADI, TTF, Food Security Trust Fund etc.);
- assess the performance of the RETF as a fund for development and implementation of Renewable Energy Projects; and
- Provide information about best practices and challenges in implementing the RETF and, if relevant, actionable recommendations on how to strengthen and simplify the modalities of the appraisal, approval and reporting processes.

The key users of this evaluation are UNIDO management, Member States, the staff of the UNIDO Energy Branch, other UNIDO branches operating trust funds, as well as current and potential donors to the RETF and/or other UNIDO trust funds.

The key question of the evaluation is to what extent the Trust Fund is achieving its expected results, i.e. to what extent has the renewable energy trust fund contributed to sustainable development through increasing energy access and energy security in developing countries through the deployment of renewable energy technologies. In addition, the extent to which the renewable energy trust fund has supported Member States in the formulation, design and subsequent implementation of a portfolio of concrete projects to scale up the use of renewable energy for productive uses in developing countries and economies in transition will be explored.

1.3 Evaluation approach and methodology

1.3.1 Evaluation approach

As stated in the TORs, the focus of the thematic evaluation includes:

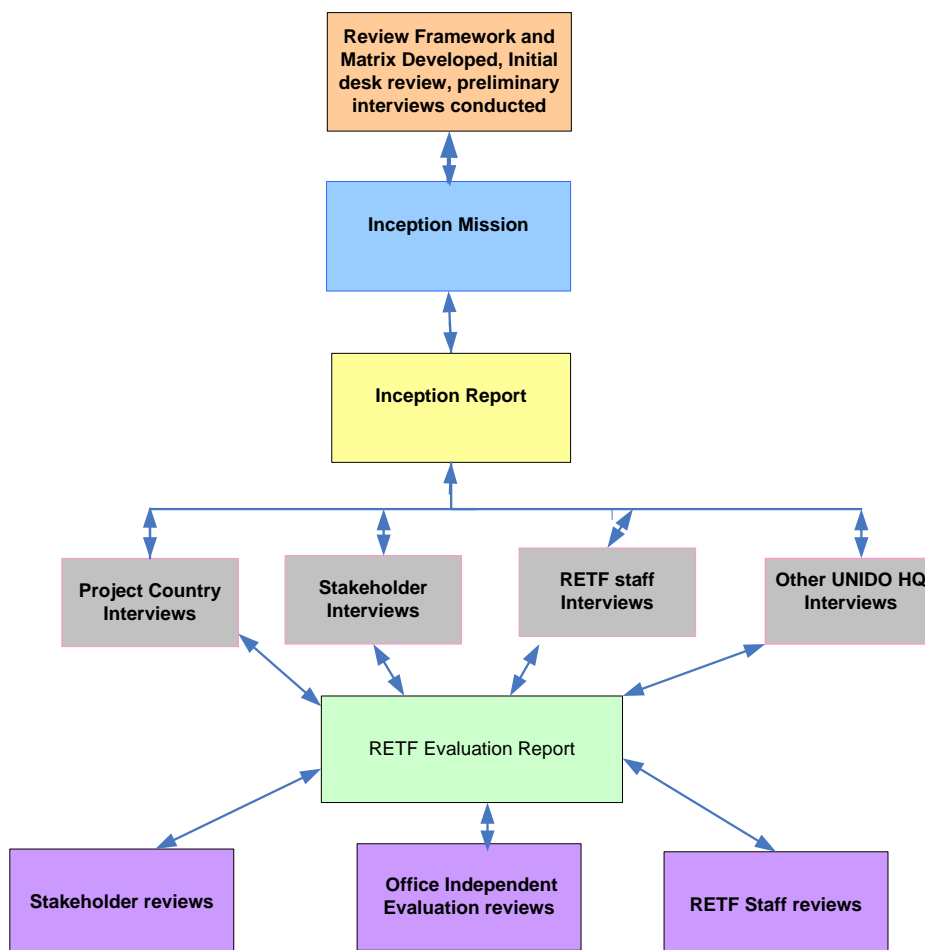
- assessment of the RETF as a funding mechanism;
- assessment of the RETF using the Development Assistance Committee (DAC) evaluation criteria (Relevance, Effectiveness, Efficiency, Sustainability and Impact); and
- desk review and portfolio analysis of the fourteen preparatory assistance projects financed directly from the RETF.

The evaluation was conducted primarily as a desk review and as an independent exercise with oversight from the UNIDO Office for Independent Evaluation according to the following key principles to ensure a balanced and fair outcome:

- **Focus on results:** Expected results, performance indicators, as well as potential risks are identified to ensure coherent and integrated results based management to frame the evaluation.
- **Learning:** The evaluators have adapted RBM principles, tools and indicators (i.e. the evaluation matrix), based on the needs and context of this evaluation, with the aim of increasing the potential for learning and focus on the achievements of the Renewable Energy Trust Fund.
- **Participatory approach:** The evaluation process has been consultative and collaborative. UNIDO staff members and other relevant internal and external stakeholders have been kept informed and regularly consulted throughout the assessment.
- **Evidence-based:** Insights and conclusions have been based on a variety of data and data collection methods, and, wherever possible, information has been triangulated in order to ensure the reliability and validity of evaluation analysis and conclusions.

Figure 1 below is a representation of the evaluation approach and key methodological elements.

Figure 1: Evaluation Approach



1.3.2 Data collection

Project Data: Both, primary and secondary data were collected and analyzed as part of the evaluation process. Secondary data were obtained mainly from the UNIDO Office for Independent Evaluation, UNIDO RETF staff in Vienna, as well as relevant partners and other organizations. Primary data was gathered through qualitative and quantitative methods, including desk reviews and semi-structured interviews. No country missions were undertaken by the evaluation team. This, of course, limits the ability of the evaluation team to make verifiable statements about accomplishments and the quality of project outcomes at the country level.

Documentary analysis: Key program/project design and implementation documents were reviewed during the inception phase and then further in-depth reviewed prior the preparation of

the final report. The aim was to gain a better understanding of the context and progress of the RETF program to date. Findings from the Inception review further informed the methodology and enabled refinement of the evaluation framework by filling information gaps and helping to identify further data collection needs. A portfolio analysis of projects implemented under the RETF was undertaken as a part of the documentary review. The final list of project documents received by the review team is contained in Annex A/Annex 4.

Key informant interviews: Semi-structured interviews were conducted with UNIDO staff and managers within the RETF other Trust Fund programmes, donors and program stakeholders were conducted to help orient the evaluation team and inform the development of both the inception and final reports. The interviews were based primarily on the evaluation matrix presented in the inception report. Because this evaluation is planned primarily as a desk review, the UNIDO Office for Independent Evaluation proposed visits only to the UNIDO headquarters to conduct interviews with program staff and managers and collect additional data for the evaluation. These interviews with program staff helped the evaluation team to examine the organizational aspects of the program. A list of interviewees is included in annex B.

1.4 Limitations of the evaluation

This evaluation was conducted primarily as a desk review. This implies that no field observations have been made. Evidence of accomplishments has been obtained from secondary sources. While this does not invalidate the conclusions arrived at in this report, the review team cannot indubitably attest to the accuracy of the secondary information used to arrive at some of the conclusions. Some of these limitations were assuaged through triangulation of evidence where feasible. There was limited availability especially of official representatives of donors who contributed to the Trust Fund. In fact, most of those interviewed had little knowledge of the Trust Fund and where they were aware, did not have any knowledge of progress being made towards achieving the goals of the Trust Fund. This limited the opportunity to interact with donors to gain first hand experiences and perspectives on the original intent of the Trust Fund and donor satisfaction with its implementation to date. Regarding recipient countries, the evaluation determined that because the bulk of the projects are still under development there was little to learn from interviewing representatives of these countries at this point.

Also, there were gaps in the information the evaluation team had access to. For example, TF progress reports were scant and progress reports on projects were not available, in large part because most of the projects were still in the development stages or in the early stages of implementation. It is difficult, therefore, to make any evaluative judgements on progress toward outcomes. Detailed data on funded Trust Fund project were not easy to access and piecing them together took inordinate amounts of time and effort. At the time of drafting this report the Evaluation Team is unsure whether, after much iteration, the final list and expenditures on funded projects is indeed accurate.

2. Renewable energy – The global context

The United Nations Commission on Sustainable Development defines renewable energy as the primary energy derived from geothermal, hydropower, solar, tide, wind and wave power, biofuels such as bagasse, charcoal, animal and vegetable waste and other (e.g. industrial, municipal) waste. The European Union further defines renewable energy sources as non-fossil energy sources such as wind, hydropower, biomass energy including biofuels, and geothermal energy (P.C. Maithani, 2008). A June 2004 International Conference on Renewable Energy's Declaration on Renewable Energy closely aligns with those of the EU and the United Nations Commission on Sustainable Development. Renewable energy sources are wide and varied and so are the technologies. While many of the renewable energy technologies are proven, for the most part however, costs of these technologies are high relative to the costs of fossil fuels (see table 1). While that is still the case the reality of their cost is changing rapidly to the point where peak prices are coming down. For example, solar photovoltaic is on the threshold of reaching competitiveness with retail electricity in some markets (Breyer and Gerlach, 2010).

Table 1: Cost of renewable power (2005 – 2050)

Technologies	Investment cost US\$/KW			Production cost US\$/KW		
	2005	2030	2050	2005	2030	2050
Biomass	1000-2500	950-1900	900-1800	31-103	30-96	29-94
Solar PV	3750-3850	1400-1500	1000-1100	178-542	70-325	>60-290
Solar Thermal	200-23000	1700-1900	1600-1800	105-230	87-190	>60-175
Wind on Shore	900-1100	800-900	750-900	42-221	36-208	35-205
Wind off Shore	1500-2500	1500-1900	1400-1800	66-217	62-184	60-180

Source: *Renewable Energy in the Global Context*, P. C. Maithani

2.1 Strategic role of renewable energy

Three key but interrelated reasons explain the drive to deploy renewable energy technologies. They include:

- Energy security;
- Promotion of economic development; and
- Reduction of environmental impacts associated with fossil fuel use and its consequent climate impacts.

The drive to deploy these technologies requires a long term policy perspective. For more industrialized countries, priority is given to renewable energy within the context of a comprehensive strategy for sustainable economic growth (OECD, 2011). Renewable energy

technologies promote economic growth through the exploitation of replenishing natural resources such as solar and wind power which would otherwise sit idle. To that extent, natural capital is recognized as a factor of production used to enhance societal well-being.

Sustainable economic growth policies that promote renewable energy resource use serve two objectives: 1) creation of new markets that recognize that natural resources are finite; 2) reducing dependency on fossil fuels as a path to economic growth. Job creation is an important policy objective for all governments. The renewable energy sector can be an important vehicle for creating high quality jobs (see table 2 below).

Table 2: Estimated employment in the renewable energy sector in 2010

Technology	Global employment	Key region
Biofuels	>1,500,000	Brazil 750,000 sugarcane ethanol
Wind Power	Approx. 630,000	China 15,000/ Germany 100,000/ Japan 26,000/ USA 85,000/ Spain 40,000/ Italy 28,000/ Denmark 24,000/ Brazil 14,000/ India 10,000
Solar hot water	Approx. 300,000	China 250,000/ Spain 7,000
Solar PV	350,000	China 120,000/ Germany 120,000/ USA 66,000/ Japan 26,000/ USA 17,000/ Spain 14,000
Biomass power	-	Germany 120,000 / United States 66,000 / Spain 5,000
Hydropower	-	Europe 20,000 / United States 8,000 / Spain 7,000
Geothermal	-	Germany 13,000 / United States 9,000
Biogas	-	Germany 20,000
Solar thermal power	~ 15,000	Spain 1,000 / United States 1,000
TOTAL	> 3,500,000	

Source: REN 2011 Cited in OECD/IEA 2011

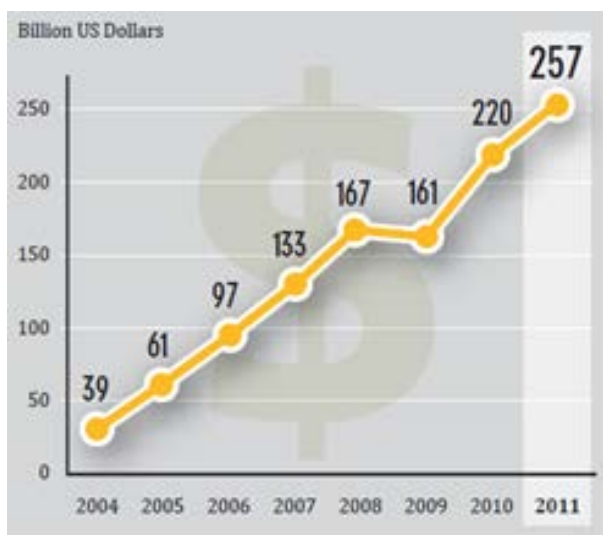
The recent success of China as an emerging economic power is a testimony to the fact that renewable energy strategies can promote sustainable economic growth. The potential of renewable energy as a vehicle to assist countries to become less dependent on energy imports, create jobs, contribute to technological innovation, mitigate climate change and contribute to generating prosperity has received significant attention in recent years.

A major initiative to substantially increase the share of renewable energy in the energy mix is Sustainable Energy for All (SE4ALL). More than 50 Governments from Africa, Asia, Latin America, and Small Islands Developing States have engaged with the initiative, and businesses and investors have committed over US\$ 50 billion to achieve the initiative's three objectives: universal energy access, doubling the share of renewable energy in the global energy mix and

doubling energy efficiency. According to the IEA (World Energy Outlook, 2011), renewable energy must increase from around 15% of final energy production to around 30% in 2030 to fulfil these objectives.

Renewable energy technologies have gone through an important transformation over the last few decades as a result of the efforts and industrial policies of a handful of countries. Many of the key leaders in renewable energy technologies such as Germany, Denmark and Japan have industrial economic objectives as a basis for investments in renewable energy technologies. Therefore, progressive renewable energy policies were developed to create the market conditions for these investments. Investments into renewables have continued to increase over the years, as the cost of renewable energy technologies have fallen across the board (see figure 2 below).

Figure 2: Global new investments in renewable energy, 2004-2011, REN 21



Renewable energy sources provide an opportunity for developing countries and countries with economies in transition to embrace a low carbon pathway facilitated by innovative, smart and locally relevant energy solutions. Current analysis of the long-term potential for renewable energy in industrial applications suggests that in 2050 up to 21% of all final energy use and feedstock in the manufacturing industry could be of renewable origin (UNIDO Renewable Energy Strategy). In addition, using renewable energy technologies in industry could lead to 10% reduction of all Green House Gases (GHG) emissions projected to 2050 or 25% of total expected emission reductions of the industry sector (UNIDO Renewable Energy Strategy).

In regions where the national electricity grid provides adequate coverage, the main focus has been to reduce reliance on imported fossil fuels and replace them with locally available renewable resources, reduce emissions and create local jobs and growth. In regions such as Africa and in isolated regions of Asia and Latin America where energy access is limited, off-grid

renewable energy solutions constitute a particularly competitive alternative to fossil fuel powered electricity networks and diesel generators, due to increased cost of fossil fuels and transportation. In both cases, countries have realised the importance of renewable energy in contributing to sustainable development, and have started to identify and implement programs and policies to improve the ongoing operational structures governing renewable energy markets.

Industrial development in developing countries and countries with economies in transition needs to be accelerated. One important input in the industrial process is energy but energy is not always available. In order for this to happen, there is an acute need to develop reliable and more widely-available sources of renewable energy, and for this energy to be used more efficiently. Hence, renewable energy is evidently a critical component of the diversified energy mix needed for promoting energy security in developing countries.

Many developing countries suffer from inadequate energy generation capacity, limited electrification, low power consumption, unreliable services and high energy costs, which leaves them exposed and vulnerable to volatile oil price in the global market. At the same time, these countries are expected to accelerate their economic development and reduce poverty. In fact, Least Developed Countries (LDCs) have some of the lowest electrification rates as well as very low commercial energy use per capita. In these countries the productive sector, dominated by Small and Medium Enterprises (SMEs), endures the heaviest impact due to the chronic lack of affordable and modern energy services, even though the sector is expected to stay competitive, add value to their products and services and create the economic environment necessary to stimulate economic growth and thus reduce poverty.

It is a paradox to have constant energy access and energy security challenges in developing countries as most of them are endowed with substantial renewable energy resources like hydro, wind, solar, geothermal and biomass resources. Therefore, renewable energy sources provide an ideal opportunity for developing countries to embrace a green growth pathway powered by innovative, smart and locally relevant energy solutions. Using renewable energy sources will increase the capacity and competitiveness of the productive sector in those countries and contribute to economic growth, wealth creation, employment generation and poverty reduction. The successful implementation of the concrete renewable energy projects formulated and implemented under the Renewable Energy Trust Fund was planned to result in promotion of renewable energy markets in the beneficiary countries, which would facilitate paving the way to move forward with enhanced access to modern energy services based on renewable energy technologies.

Yet, despite the potential contribution of the renewable energy sector to resolving some of the energy challenges in developing countries, markets for renewable energy remain largely underdeveloped due to the following key barriers:

- (i) market conditions for renewable energy technologies (including policy, legal and regulatory frameworks), and
- (ii) market enablers/facilitators such as technology experts, service providers, financing institutions, human resources and partners and networks.

3. Description of related UNIDO activities

3.1 Brief overview of Renewable Energy Trust Fund activities

In order to address the issues stated above, the overall strategic goal of this Renewable Energy Trust Fund is to contribute to sustainable development through increasing energy access and energy security in developing countries through the deployment of renewable energy technologies. The main objective of the fund is to support Member States in the formulation, design and subsequent implementation of a portfolio of concrete projects to scale up the use of renewable energy for productive uses. In addition, RETF would also facilitate development of methodologies and tools, and organizing training workshops for capacity building at the national/regional level.

The projects that were to be financed and implemented under the RETF should have focused primarily on renewable energy technologies demonstration, transfer, replication and scaling-up, as well as integral activities aimed at removal of barriers to private sector investment in renewable energy technologies. The integral activities of the projects promoted included:

- Promotion of appropriate policy and regulatory frameworks for the creation of an enabling framework for renewable energy access and production;
- Creation and development of markets and value chains in renewable energy and energy services for productive use;
- Strengthening of institutions, local capacities and networks through targeted capacity development (policymakers, experts, resource institutions, private and public sector utilities, energy service providers, small and medium-scale industries, local communities) to provide the technical and management human capital required to sustain the uptake of renewable energy technologies in the countries involved; and
- Design development and demonstration of renewable technology systems (on and off grid).

The market conditions for renewable energy technologies were to be created through two main sets of activities that were part of the projects financed and implemented under the RETF:

1. Establishment and operationalization of conducive policy, legal and regulatory frameworks on renewable energy (RE), which would enable potential investment by the private sector; and
2. Development of regional frameworks and markets in renewable energy and energy efficiency technologies, as the same tend to be country specific.

RETF projects were to include four main categories of activities, designed to assist countries in setting up the enabling conditions for better RE access:

1. Development of adequate technical skills through human resources training and capacity building;
2. Awareness raising and advocacy;
3. Technology cooperation, transfer and diffusion; and
4. Overcoming financial and economic barriers.

The following elements and activities were to be taken into consideration for the projects funded and implemented by the RETF:

- Alignment of projects with country priorities that result in local and global benefits;
- Identification and fostering of local capacity to adapt new technologies to local conditions and integrate them with local technologies;
- Inclusion of all stakeholders, including local community to ensure local development needs are met, and that productive activities are identified in project development;
- Ensure that local resources are used efficiently, in particular biomass and hydro, which may also have other uses in the local community;
- Promotion of building of adequate capacity for long-term operation, maintenance and further local development of renewable energy technologies and enterprises, to encourage local manufacturing and production;
- Up-scaling and replication of appropriate renewable energy solutions;
- Business partnerships to deliver viable business models, where necessary develop feasibility studies and pilot projects demonstrating business models; and
- Assistance to countries/ institutions to develop financial support schemes.

UNIDO has long recognized that environmental issues must be addressed in order to facilitate a sustainable industrial development in developing countries and economies in transition². The promotion of renewable energy markets and industry at a systemic level plays an integral role in addressing the challenges of energy poverty, energy security and climate change simultaneously. Therefore, economic development, and therewith, poverty reduction, can only be achieved if there is access to sustainable, affordable and locally relevant energy solutions to power productive and related activities. UNIDO strives to work towards this goal by focusing on promotion of renewable energy at a local level, with specific attention to the promotion of renewable energy in industrial applications for the benefit of people and enterprises.

The renewable energy strategy has been developed to prioritise activities in promoting renewable energy in line with Member States' needs and UNIDO's mandate, as defined by its Constitution. Energy has been an area of focus where UNIDO undertakes activities to promote sustainable industrial development, while at the same time contributing to the attainment of environmental sustainability, an important Millennium Development Goal³. Moreover, UNIDO is

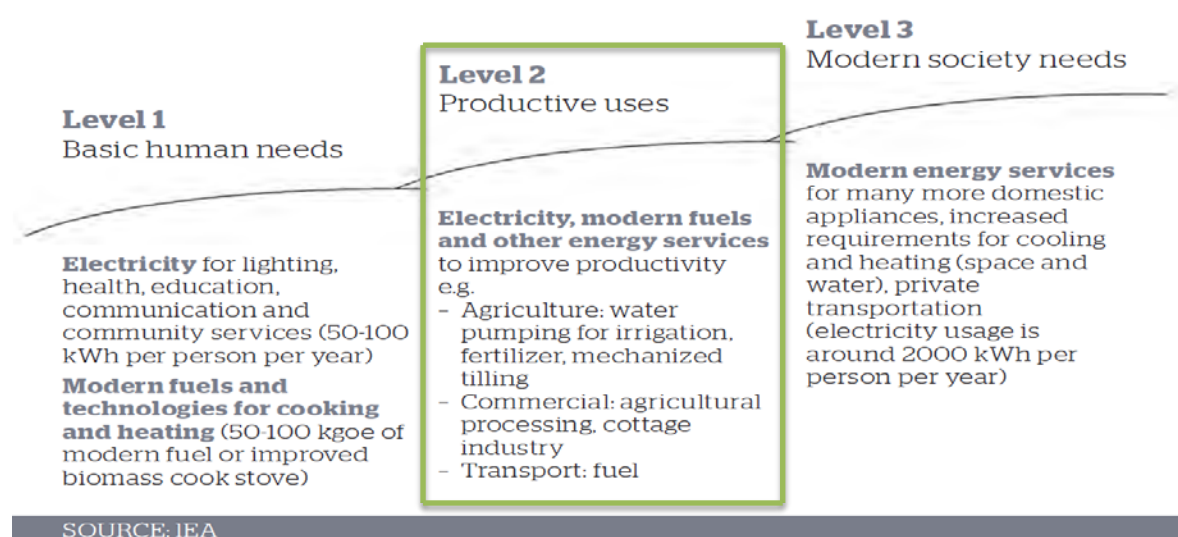
² UNIDO (2005). Strategic Long-Term Vision Statement

³ <http://www.un.org/millenniumgoals/>

the only agency within the UN system with the mandate to assist Member States with renewable energy solutions for productive uses benefitting both local communities as well as large and small enterprises. UNIDO also supports community-based productive activities, such as providing energy for farmers, traders, and craftsmen to improve efficiency of their businesses.

One of the main thematic areas of UNIDO's Energy Programme's mandate is to provide Renewable Energy for Productive Uses. Using renewable energy for productive uses presents level 2 of the incremental levels of access to energy according to the International Energy Agency (IEA) as it can be seen in figure 3 below.

Figure 3: Incremental Levels of Access to Energy



UNIDO's Energy Branch (ENE) is responsible for promoting access to energy for productive uses, including empowering industry to become more efficient through energy saving measures, or enabling businesses to become more competitive by using affordable local resources to produce energy for own-use, and by increasing economic activity through promoting access to energy. The focus is three-fold:

1. Shifting from conventional to renewable sources of energy in industrial development;
2. Continuing to reduce the amount of resources and energy through greater efficiency; and
3. Promoting sustainable energy policy and partnership globally.

The vision of the Renewable and Rural Energy (RRE) Unit within the Energy Branch is to achieve transformational change in industry through enabling local enterprises to produce and use renewable energy to generate prosperity.

The Renewable Energy Strategy aims to put in place long-term objectives and promote areas of strategic outcomes, to enable developing countries and economies in transition to build sustainable industries on renewable energy. The strategy also contains short-term targets, to be achieved by the end of 2018, based on successful implementation of ongoing projects. UNIDO has a portfolio of projects that are due for completion before 2018, and the following concrete deliverables are based on achieving the targets contained in these projects:

Indicators based on successful implementation of projects by the end of 2018⁴	
<i>Number of people gaining access to energy:</i>	<i>>135,000⁵</i>
<i>New renewable energy capacity installed:</i>	<i>~25 MW</i>
<i>Total renewable energy generated:</i>	<i>>125 GWh/year</i>
<i>Million tons of CO₂-eq avoided:</i>	<i>>3 million tons direct⁶</i>
<i>Number of SMEs benefitting from projects:</i>	<i>>600</i>

The main objectives of the UNIDO Renewable and Rural Energy (RRE) Unit are to:

- Promote renewable energy (RE) technologies for productive use;
- Increase the competitiveness of industries by reducing operation costs;
- Reduce Green House Gases (GHGs) emissions of industries by minimizing their fossil fuel dependencies with RE technologies; and
- Enhance modern energy access in rural areas to support productive activities and employment opportunities.

UNIDO's current Renewable Energy portfolio (the map with project details can be seen on Figure 4) encompasses around 63 renewable energy projects that are being implemented in around 35 countries, with an additional twenty in the pipeline. The majority of the projects are funded by the Global Environment Facility, while around 15% of the more than US\$ 115 million project portfolio is made available by bilateral and international donors and recipient governments. As Figure 5 shows, the GEF Portfolio grew from only two projects in the GEF-3 cycle to 23 projects in the GEF-5 replenishment cycle.

The types of technologies supported include rural electrification and energy for productive uses by setting up mini-grids based on small hydropower, solar, wind and biomass sources and solar thermal systems, gasifiers, biomass cook stoves for industrial applications in energy intensive manufacturing e.g. process heat and cooling applications, and for productive activities of small and medium sized enterprises (SMEs) such as agro-based industries.

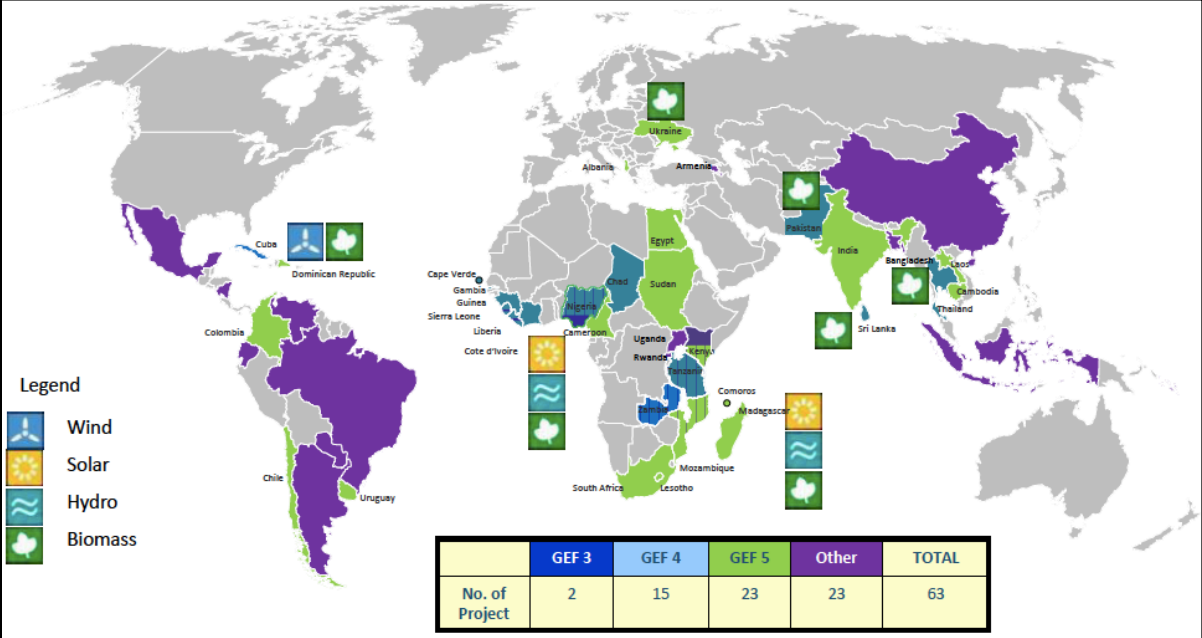
⁴ Renewable Energy Strategy: Building sustainable industries on renewable energy, p. 15

⁵ Calculated on the basis of MWh/year generated as a result of projects divided by average electricity consumption per capita in a given country (based on 13 projects), using World Bank Statistics 2010 – the number of people gaining access is not directly linked to total GWh/year generated, as electricity also supplies businesses.

⁶ Based on emissions over the lifetime of projects (typically between 10-20 years, depending on technology and size of project)

The renewable energy technology or policy framework to be promoted depends very much on geography, climate, population density, market structure, energy and transport infrastructure, regulatory framework etc.

Figure 4: UNIDO's global renewable energy portfolio map⁷



Delivering technology and technology transfer is accompanied by creation of an enabling environment for uptake and viability of renewable energy technologies, and in accordance with country needs, UNIDO provides services in the key areas of policy support, capacity building, business models and knowledge-management and awareness-raising.

The strategic objective of the Renewable and Rural Energy Unit is to enable developing countries and economies in transition to build sustainable industries on renewable energy.

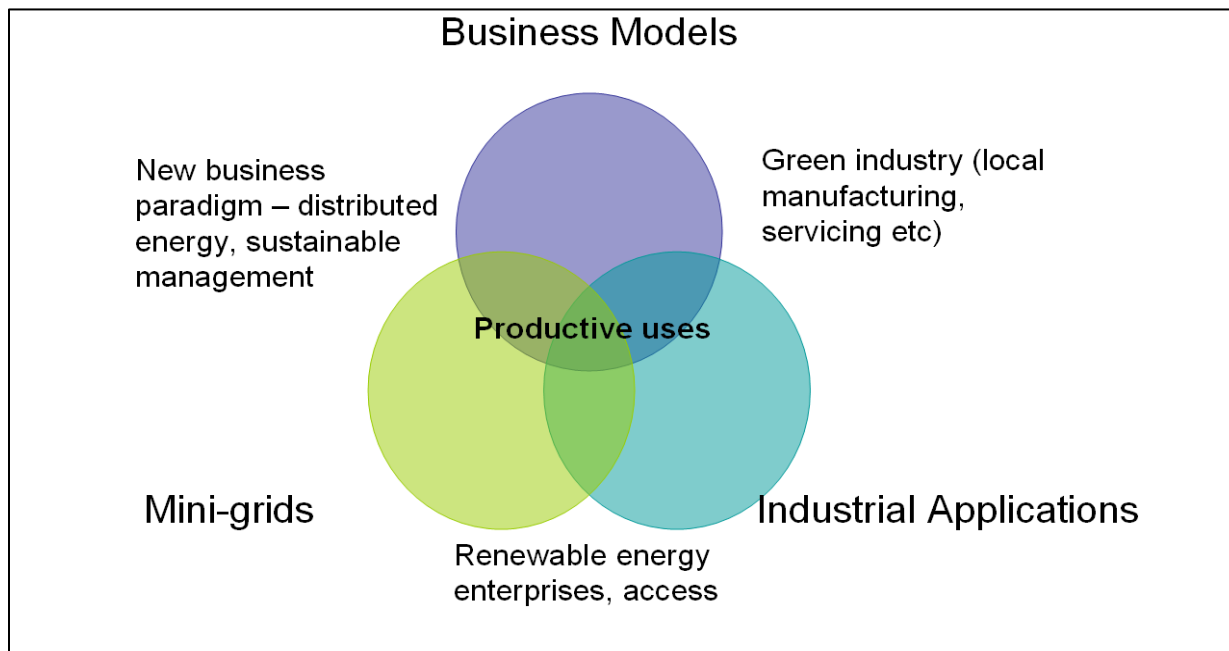
Compiled from the analysis of successful projects and lessons learned from past projects, UNIDO pursues three main strategic outcomes of the Renewable and Rural Energy Unit:

1. Mainstreaming the use of renewable energy in industrial applications, in particular in SMEs;
2. Implementing innovative business models to promote renewable energy as an industry in the business sector; and
3. Developing business opportunities for mini-grid development in rural areas.

⁷ Renewable Energy Unit Presentation, p.7

Figure 5 shows the interaction between the three main outcomes used to support renewable energy for productive uses.

Figure 5: Interaction between the three main outcomes used to support renewable energy for productive uses⁸



3.2 Brief overview of other important activities of the UNIDO Energy Branch

UNIDO's Mandate of Inclusive and Sustainable Industrial Development focuses on three main thematic areas:

1. Poverty reduction through productive activities;
2. Trade capacity-building; and
3. Energy and environment.

ISID aims to achieve equitable and sustainable social, economic and environmental growth whilst mainstreaming women and youth. The work of UNIDO's Energy Branch (ENE) lies within the thematic area of Energy and environment.

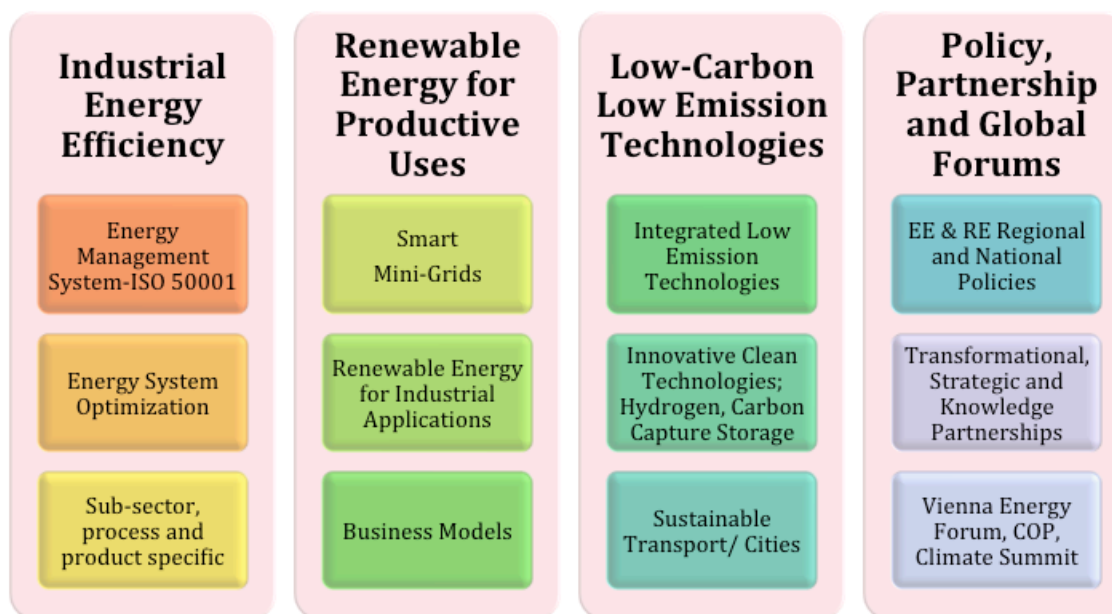
UNIDO's ENE Branch focuses on the following key priority areas linking to ISID in order to provide sustainable energy solutions for promoting climate resilient industry:

⁸ Renewable Energy Brochure, p.5

1. Promoting energy management standards and renewable energy based smart grids and industrial applications for efficient and climate resilient industries;
2. Enhancing gender and women empowerment in energy projects for equal job opportunities;
3. Fostering clean energy technological innovations in SMEs for promoting competitiveness and productivity;
4. Promoting regional / national sustainable energy centers for knowledge management and capacity building; and
5. Strengthening multi-stakeholders partnerships and networks, and South-South cooperation.

The four strategic pillars within the area of work of UNIDO's Energy and Climate Change Programme are shown on Figure 6:

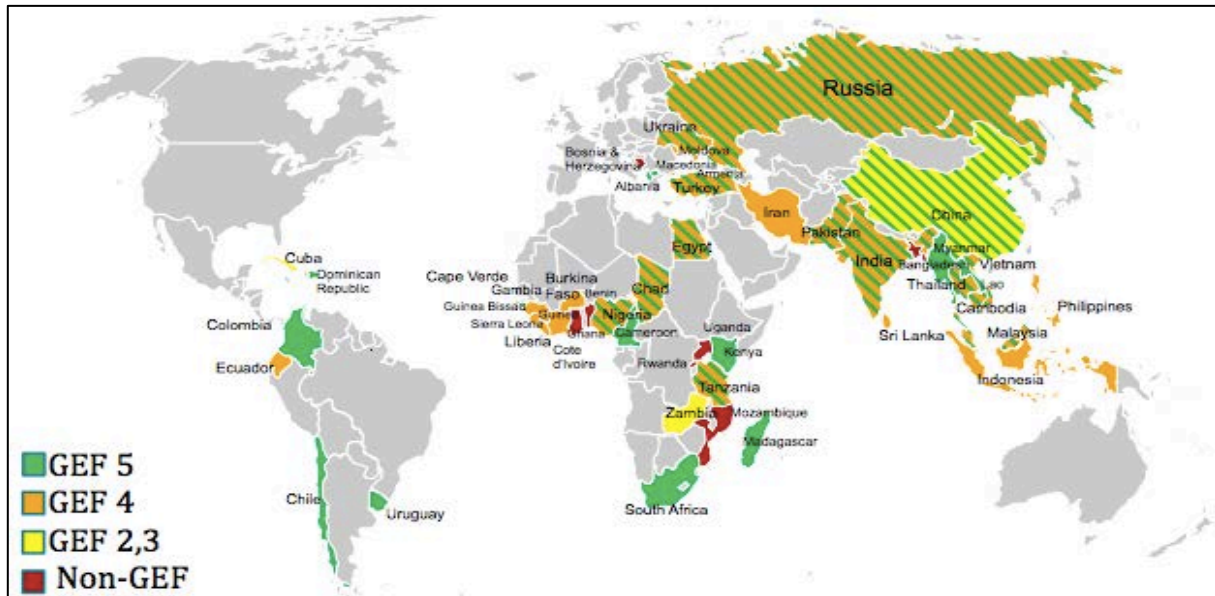
Figure 6: Four strategic pillars within the UNIDO Energy and Climate Change Programme⁹



UNIDO's Energy Branch has a present project portfolio of 104 projects for Renewable and Rural Energy and Industrial Energy Efficiency with Grant Amount of US\$ 240.7 million in 54 countries worldwide, thereof 15 projects in Least Developed Countries (LDCs), which can be seen in figure 7 below. At the moment 72 GEF projects and 32 non-GEF projects are implemented by the ENE Branch.

⁹ Energy and Climate Change Presentation from 1 September 2014, p. 9

Figure 7: UNIDO's energy projects footprint¹⁰



¹⁰ Energy and Climate Change Presentation from 1 September 2014, p. 11

4. UNIDO's Renewable Energy Trust Fund portfolio

General information - Portfolio review

The RETF was disbursed through 32 sub-grants (or projects), that received a total of US\$ 939,965¹¹ ¹² from the Trust Fund in preparatory assistance (not including support costs or GEF Agency fees) out of an endowment of US\$ 1,351,885, this represents a 70% rate of disbursement over four years. Some grants under the RETF were used to support the design of multiple projects (e.g. TE/GLO/11/030, which supported 17 project concepts, 11 of which were subsequently approved by the GEF). For the purposes of the evaluation, grants were broken down to their smallest unit, or individual "projects". The list of disbursed grants or "projects" is shown in table 3 below.

Most of the grants were channelled towards project preparatory assistance, meaning the development of project concepts or pre-concepts that were then transformed into Project Identification Forms (PIFs) (for those projects submitted to the GEF) and other project proposals. Based on data provided to by the Branch the evaluation is unable to determine the proportion of funds that were allocated to the implementation of projects. The evaluation was only able to identify two projects in which RETF contributions were made during implementation, and although UNIDO is sometimes listed as a co-financer in project documentation, it is not always clear where the contribution originates.

Of the total portfolio (32 projects), 6 project proposals were not approved beyond initial pre-concept stage¹³. These 6 projects received a total of US\$ 97,572, or 10% of RETF disbursements.

¹¹ Although accounting within the RETF was conducted in Euros, all figures are converted to US\$ for the purposes of this evaluation. The rate used is EUR 1 = US\$.1.261

¹² Since the drafting of this evaluation report, UNIDO has notified that additional funds had been committed under the RETF

¹³ All financial data was received through individual project managers or through the Fund management offices of the RETF

Table 3: List of sub-grants disbursed under RETF 2011-2014

Project title	Country	RETF amount used (US\$)	Status
Strengthening the agro-industrial growth centres for income generation and youth employment - Component on Solar Powered Business Information and Communication Platforms	Sierra Leone	16,037.40	Completed
Biomass energy for productive use for SMEs in the olive oil sector	Albania	12,813.02	Under implementation
Promoting integrated biomass and small hydro solutions for productive uses in Cameroon	Cameroon	60,301.02	Under implementation
Promoting the development of biogas energy amongst select small- and medium sized agro-industries	Chile	21,154.54	Under implementation
Promoting Renewable Energy Based Mini-Grids in Rural Communities for Productive Uses	Côte d'Ivoire	47,602.75	Under implementation
Stimulating industrial competitiveness through biomass-based, grid-connected electricity generation	Dominican Republic	28,221.18	Under implementation
Promoting business models for increasing penetration and scaling-up of solar energy	India	56,442.36	Under implementation
Establishment and first operating phase of the SADCREEE Centre	Southern African Development Region	63,050.00	Under implementation
Promotion and transfer of marine current exploitation technology in China and South East Asia - RETF contribution	Indonesia	96,906.59	Under implementation
Promoting low-head micro hydropower mini-grids	India	66,955.32	Under implementation
Low Carbon Low Emission Clean Energy Technology Transfer Programme	Kenya, Ethiopia	25,220.00	Under implementation
Establishment and First Operational Phase of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)	Central or Latin America	63,050.00	Under implementation
Fostering women's empowerment through gender mainstreaming sustainable energy programmes and initiatives	Global	37,830.00	Under implementation
Enhancing opportunities for clean lighting industry in Kenya	Kenya	34,558.97	Under preparation

Project title	Country	RETF amount used (US\$)	Status
Reduction of GHG emission through promotion of commercial biogas plants	Cambodia	13,319.94	Under preparation
Promoting low-carbon technologies for cooling and heating industrial applications	Egypt	9,043.89	Under preparation
Organic waste streams for industrial applications in India	India	13,673.02	Under preparation
Sustainable conversion of waste to clean energy for GHG emission reduction	Kenya	14,705	Under preparation
Increased energy access for productive use through small hydropower development in rural areas	Madagascar	8,689.55	Under preparation
Scaling up small hydro power (SHP) in Nigeria	Nigeria	14,850.80	Under preparation
Promotion of waste-to-energy applications in agro-industries	Tanzania	48,674.60	Under preparation
Reducing of Green House Gas Emissions in the Industrial Sector through Pelletization Technology in Lao PDR	Lao	20,249.14	Under preparation
Development of a full-scale proposal on increased use of low carbon technologies in Bosnia & Herzegovina	Bosnia Herzegovina	18,915.00	Under preparation
Promoting Biomass Gasification Technology for Productive Activities and Energy Services in Northern Uganda	Uganda	25,000.59	Under preparation
Promotion of Waste to Energy Technologies in the Rice Milling Sector in Myanmar for Access to Energy for Productive Activities	Myanmar	25,000.59	Under preparation
A public-private partnership for cook stoves	Lesotho	21,423.13	Dropped
Marine current GEF 5 project	Indonesia	16,120.62	Dropped
Biomass based energy production in Sierra Leone	Sierra Leone	16,037.40	Dropped
Promoting market based development of solar PV mini grids for productive uses in rural areas	Sudan	15,911.30	Dropped
Market development for sustainable production and use of liquid biofuels	Ukraine	5,925.44	Dropped
Sawmill waste to energy project	Zimbabwe	22,280.61	Dropped
Total RETF amount used (US\$)		939,965	

Beyond the 2 global projects (representing 7% of the trust fund expenditures), the portfolio covers 25 countries, with 12 projects (47% of expenditures) in Africa, 7 projects (33% of expenditures) in Asia, 3 projects (12% of expenditures) in Latin America and two in Eastern Europe. One project was dedicated to the internal operations of UNIDO, to support gender mainstreaming. Of the 6 projects that were not successful in moving towards stage 2 of preparation, 4 were in Africa, 1 in Asia, and 1 in Eastern Europe.

Figure 8: Number of approved and dropped projects by region

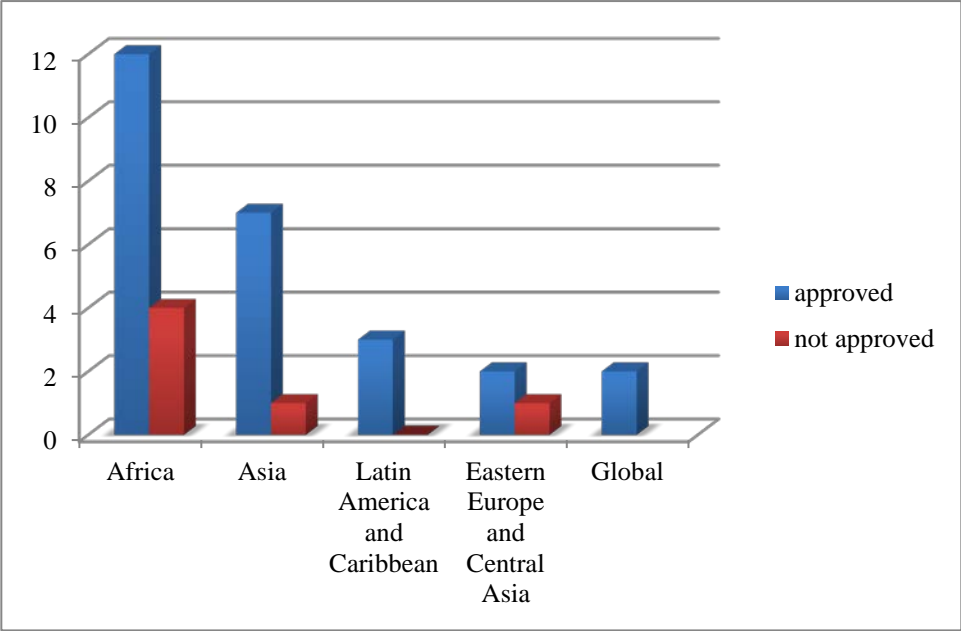
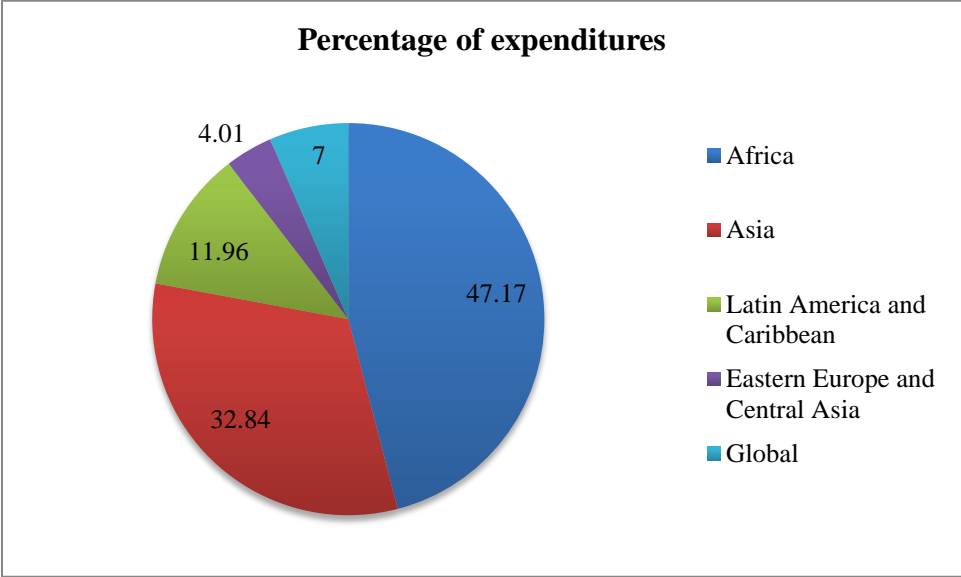


Figure 9: RETF expenditures by region



Regarding the source of funds, the Trust Fund received 35% of its contributions from three donors (Sweden, Italy and Denmark). Most of the contributions came from the reallocation of unutilized balances of Member States' contributions to the Trust Fund. An estimated 60% of the Trust fund contributions were allocated in 2010 and 35% in 2011, whereas no contributions were made to the Trust Fund in 2013 and 2014.

Table 4 – Source of funds and timing of contributions¹⁴

Country	2010	2011	2012	2013	2014	in US\$
Sweden	€ 19,530.42	€ 96,070.00	€ 31,923.75			186,027.98
Italy	€ 121,505.80	€ 17,723.54				175,568.20
Denmark	€ 15,504.67	€ 60,183.75	€ 22,465.75			123,772.41
Israel	€ 78,108.00					98,494.19
Portugal	€ 73,417.00					92,578.84
Norway	€ 16,503.92	€ 56,376.50				91,902.21
Brazil	€ 33,393.75	€ 37,631.92				89,563.37
Spain	€ 62,156.55					78,379.41
Finland		€ 49,793.75				62,789.92
Switzerland	€ 30,777.97					38,811.02
New Zealand	€ 5,728.14	€ 21,087.00				33,813.89
Austria	€ 25,000.00					31,525.00
Australia		€ 24,470.00	€ 146.69			31,041.65
Argentina	€ 18,432.77					23,243.72
Saudi Arabia	€ 15,917.18					20,071.56
Republic of Korea	€ 15,000.00					18,915.00
Poland	€ 9,792.00					12,347.71
India	€ 9,471.85					11,944.00
Turkey	€ 8,735.19					11,015.07
Ireland	€ 7,880.53					9,937.35
South Africa	€ 7,209.35					9,090.99
Thailand	€ 5,631.36					7,101.14
United Arab Emirates	€ 5,372.08					6,774.19
Malaysia	€ 5,287.96					6,668.12
Others (below EUR 5,000)	€ 59,219.90	€ 4681.25				80,579.35

¹⁴ For reasons of length this table only reflects contributions above 5000 Euros.

5. Performance and results of the Renewable Energy Trust Fund

5.1 Strategic relevance

UNIDO's Renewable Energy programmatic framework is closely aligned with the objectives of internationally agreed development goals, including the Millennium Development Goals. In order to assess the strategic relevance of the RETF it is useful and necessary to compare the portfolio as a whole and its individual projects, with the mandates and priorities of UNIDO to gauge its bearing on broader sustainable development goals.

This assessment explores the alignment of projects with specific UNIDO programmatic and thematic priorities, ISID as well as with the MDGs, and the (forthcoming) Sustainable Development Goals (SDGs). The following questions were asked:

- Have the activities under RETF supported the achievement of broader sustainable development goals and will they contribute to the post-2015 development agenda?
- Have the projects under RETF met and adhered to the priorities of the Institution? Have the projects under the RETF supported the Inclusive and Sustainable Industrial Development agenda?

UNIDO's work in renewable energy for productive use is fully justified by the evolving global context, environmental trends and energy needs especially in developing countries. The strategy to promote renewable energy markets and industry plays an important role in addressing the challenges of energy poverty, energy security and the concerns of climate change as a major environmental issue of our time. The work on renewable energy is fully aligned with the UNIDO mandate to promote and "accelerate industrial development in developing countries and industrial development and co-operation on global, regional and national, as well as on sectoral levels". The vision of the Energy Branch of "achieving transformational change in industry through enabling local enterprises to produce and use renewable energy to generate prosperity" is consistent with UNIDO's mandate and its comparative advantage within the UN family. This vision statement provides the common logic to which the programs/projects under the RETF were linked.

The RETF project document clearly states that many developing countries who are expected to accelerate their economic development and reduce poverty suffer from inadequate energy generation capacity. There is often limited electrification, low power consumption, unreliable services and high energy costs. This leaves these countries exposed and vulnerable to volatile oil price rises in the global market. Most of the Least Developed Countries (LDCs) have the lowest electrification rates as well as very low per capita consumption of commercial energy. Small and Medium Enterprises (SMEs) dominate the productive sector, and therefore are most impacted by the chronic lack of affordable energy making them uncompetitive and less effective

in delivering products and services necessary to stimulate economic growth. To that extent, the objectives of the RETF are relevant to the aspirations of developing countries and countries with economies in transition in promoting economic growth and reducing poverty.

In general, the subject areas being tackled by the projects and programs being developed under the Trust Fund are highly relevant to the needs of developing countries and countries with economies in transition. In terms of project themes, topics and areas of concentration, the evaluation has found that projects targeted some frequent themes, such as the use of biomass energy, agro-industrial applications, rural electrification and rural energy accessibility (including energy for production in small scale rural enterprises). Some projects focused on building enabling environments for investments into RE, such as the Madagascar project, whereas other projects focused on piloting and demonstrating technologies. Most projects, however, contained a blend of policy and demonstration activities.

Projects can be grouped according to four main thematic clusters:

- Use of biomass (e.g. Albania, Dominican Republic);
- Biogas (e.g. Cambodia, Chile);
- Waste-to-energy (e.g. Kenya, India, Egypt); and
- Small hydropower (e.g. Madagascar, United Republic of Tanzania).

There are good linkages between the individual projects and the RETF objectives, as stated in the RETF project document. Furthermore, these projects are all relevant to the overall UNIDO mission and purpose. An analysis of linkages between the individual projects and UNIDO's objectives can be found in annex F.

There is a growing need for support in creating renewable energy markets in developing countries in the effort to promote industrial growth. The strategic intent articulated in the renewable energy strategy and project document is clear and seems to be largely understood among staff and Member States, although with differences in accentuation.

The objective of the RETF “to support the formulation, design and implementation of a portfolio of projects and programs that would promote the use of renewable energy for productive uses in developing countries and economies in transition” was therefore aligned with UNIDO's mandate and programmatic objectives as well as to the MDG 1: Eradicate extreme poverty and hunger; MDG 7: Ensure environmental sustainability; and MDG 8: Develop global partnership for development. The evaluation also found that there was significant alignment between the projects' and programmatic thematic priorities and regional priorities as designed in UNIDO's Programs.

However, the evaluation found that this alignment was somewhat unbalanced, meaning that projects under the RETF did not always sufficiently highlight their contribution to various UNIDO programs, such as:

- C.1.4. Women and Youth in Productive Activities;
- C.1.5. Human Security and Post-crisis Rehabilitation;
- C.2.2. Competitive Productive Capacities for International Trade;
- C.2.3. Quality and Compliance Infrastructure;
- C.2.4. Industrial Export Promotion and SME Consortia;
- C.2.5. Corporate Social Responsibility for Market Integration; and
- C.3.4. Capacity-building for the Implementation of Multilateral Environmental Agreements.

It is possible that, in order to remain relevant to the whole of UNIDO's programmes, the RETF needs to demonstrate how it responds to a greater number of UNIDO's priorities. This may also enable it to support the development of more varied projects, supported by a broader variety of donors. The strong focus on GEF funding within RETF has meant that projects were more closely aligned to GEF priorities. That said, the objectives of the RETF remain valid given the continued demand.

At the project level, while the RETF promotes the scaling up of locally renewable energy and energy efficiency solutions, the project documents at concept stage provide a limited overview of the social impacts of this scaling up and the impacts on marginalized communities. It is recommended that these issues should be fully addressed in full project design, particularly for the GEF projects.

The evaluation has found that the activities and the outputs of the RETF (meaning the individual projects and the portfolio as a whole) are consistent with the overall goal of the RETF; however there is insufficient evidence to draw any conclusion as to the effectiveness, impacts or sustainability of the projects as most of them are still under project implementation or under project preparation.

5.2 Analysis of project design

The "Theory of Change (TOC)" approach was used as the framework for the analysis of Trust Fund project design in this evaluation. It examined how project activities are intended to generate results by articulating sets of cause and effect relationships (see figure 10). In contrast to a logical framework, a full theory of change allows consideration of multiple pathways and better captures the actions required, and possible risks, at various stages 'along' the causal pathway from activities towards the intended results.

Two important aspects of the theory of change are "impact drivers" and "assumptions." Assumptions are – explicitly or implicitly - made by individuals and groups planning activities, and/or devising the sub-program as a whole, that define the surrounding external conditions or expectations of conditions under which the program will operate, and which can influence whether certain elements in the theory of change, or cause-to-effect linkages between them, function as planned. Impact drivers are critical elements or factors (finances, political conditions, etc.) that are necessary (though not sufficient) for the program to reach its high-level objectives.

The theory of change is fundamental to the understanding of the underlying program logic and for this evaluation, it depicts what and how UNIDO planned or intends to achieve results in RETF. It also illustrates how UNIDO attempts to build on its relative comparative advantage in the area of renewable energy. The theory of change is composed of causal chains showing the changes occurring from outputs towards intermediate states and further, and impact.

The difference between drivers and assumptions is that UNIDO can make efforts in its interventions to ensure that drivers are present, usually through partnerships. Assumptions are outside UNIDO's control and the only way UNIDO can deal with them is through risk mitigation strategies. These elements of the theory of change are key to identifying potential or critical partnerships, additional or different outputs needed other than those that were planned, or other re-arrangements of the original strategy in order to adjust the causal framework and likelihood of reaching impacts. The likelihood of UNIDO's contribution to impact is essentially assessed by reviewing the internal logic of the theory of change, and the extent to which drivers and assumptions are present to allow changes to occur along the causal pathways.

Some of the questions the theory of change examined more closely include:

- What is missing in the logic chain (outcomes or intermediate outcomes, assumptions, etc.) that should be included/considered if the strategy is to function according to plan?
- What components or intended results are working well according to the strategy and which should be removed/revised, and why?
- What assumptions underlie the logic of the results chain and where are they most critical? Are there any "killer" assumptions that throw off the entire logic chain? Has the RETF program identified these assumptions and put in place adequate risk mitigation strategies in planning and implementation?
- What impact drivers or enabling conditions are necessary for the success of the strategy and where are they needed in the theory of change? Has UNIDO identified and ensured the presence of these impact drivers in their planning and implementation?

While the project document states, among other things, that "the RETF will primarily support the formulation of concrete projects at the national level to promote activities aiming at (i) addressing key barriers such as policy, technical, financial and capacity to scale up renewable energy for productive uses; (ii) augmenting rural energy to promote income generation activities; (iii) promoting private sector investments in renewable energy, (iv) **leveraging funding from the GEF, EU and other funding mechanisms**; and (v) strengthening energy and climate security", interviews with staff indicate that the project document served as a framework only for the GEF component of the Trust Fund. That the larger component of the Fund does not have any controlling framework document that provides the basis for expending the resources of the Trust Fund is incomprehensible. This evaluation believes that the language in the framework document developed for the "GEF" component shows that it was intended for the entire portfolio of Trust Fund projects. Indeed, the evaluators note that the project document made it easier to communicate the criteria for managing the Fund. In the small minority of cases where dissatisfaction was shown regarding the way the fund was being managed, the lack of clarity in

the way the fund was disbursed seemed to have been at the root of the dissatisfaction. Be it as it may, the analysis presented below should be valid for the entire Trust Fund.

5.2.1 Trust Fund design and strategy

As designed, the Trust Fund is comprised of three key outputs. They are: a) a set of project concepts and proposals; b) confirmed financing of renewable energy projects i.e. portfolio of renewable energy projects developed; and c) methodologies for developing, implementing and monitoring renewable energy projects. Under stated assumptions, these outputs are expected to lead to four outcomes including: 1) increased capacity of proponent countries to formulate investment plans beyond projects; 2) promotion of renewable energy markets in beneficiary countries; 3) increased available funds for investment in renewable energy technologies; and 4) enhanced in-house synergies. The stated objective for the Trust Fund is to “support Member States in the formulation, design and subsequent implementation of a portfolio of concrete projects to scale up the use of renewable energy for productive uses in developing countries and economies in transition”.¹⁵ This objective was supposed to lead to the strategic goal of contributing to sustainable development through increasing energy access and energy security in developing countries through the deployment of renewable energy technologies.

The RETF is being used primarily to support the formulation of concrete projects at the national level for promotion of activities aiming at:

- addressing key barriers such as policy, technical, financial and capacity to scale up renewable energy for productive uses;
- augmenting rural energy to promote income generation activities;
- promoting private sector investments in renewable energy;
- leveraging funding from the Global Environment Facility, European Union and other funding mechanisms; and
- strengthening energy and climate security.

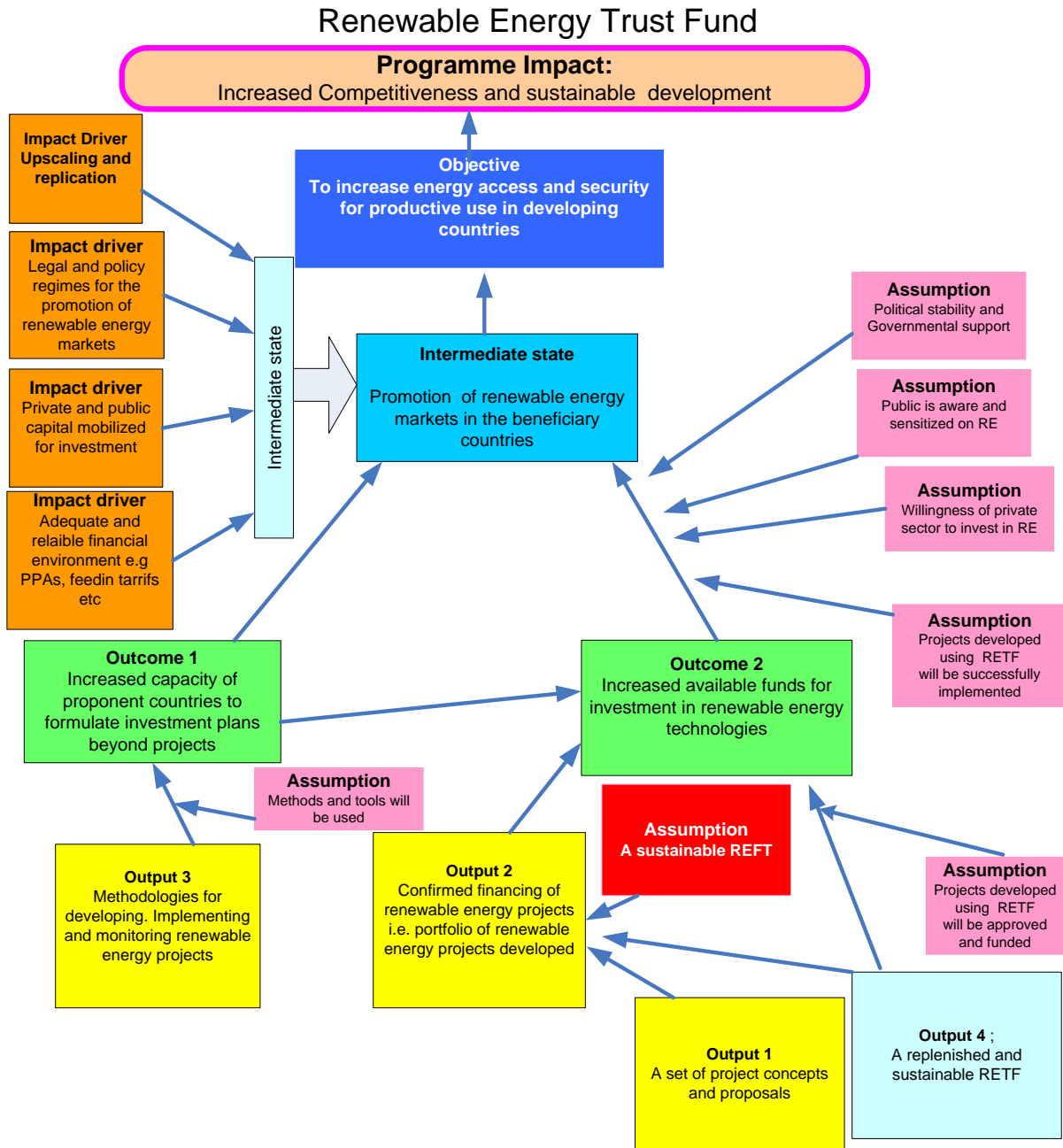
The projects being developed under the RETF would also develop methodologies and tools for training, capacity building, mainstreaming social and economic impacts including gender dimensions, and effective monitoring of results and impacts of renewable energy projects. Successful piloting of renewable energy projects formulated under the RETF was to result in the promotion of renewable energy markets in the beneficiary countries, which would greatly help moving forward with enhanced access to modern energy and energy and services based on renewable technologies for the productive sector, thereby boosting the volume and competitiveness of productive activities, and promoting economic growth and wealth creation, thus supporting the achievement of the Millennium Development Goals (MDGs).

¹⁵ Project document on Renewable Energy Trust Fund, p. 7. Also see the RETF Logical Framework (part of the Project Document for the RETF).

5.2.2 Trust Fund design logic

The Evaluation Team observes that the project document is clearly drafted and easy to read and understand. It clearly laid out criteria for eligibility for funding. The design of the project/program provides an objective and indicators allowing for an assessment of relevance and effectiveness. However, the formulation of some of the indicators is not sufficiently *Specific, Measurable, Achievable, Relevant and Time-bound* (SMART). In the context of Programme Performance and Results Based Management (RBM), programme objectives are intended to articulate results levels higher than direct outcomes. Yet, the Trust Fund (TF) objective as articulated in the log frame is set at a lower results level than the outcomes. The objective is basically a concatenation of two project outputs which does not amount to a higher results level. For this reason, the results framework is incoherent and the intervention logic, as currently formulated, is flawed.

Figure 10: Reconstructed Theory of Change for the Renewable Energy Trust Fund



The evaluation team believes that, of the four outcomes stated, two can easily be reformulated as outcomes based on RBM principles: “Increased available funds for investment in renewable energy technologies” and “Increased capacity of proponent countries to formulate investment plans beyond projects”. The “promotion of renewable energy markets” is an intermediate state in the causal logic. The objective of the program will then be to “to increase energy access and security for productive use in developing countries.” The objective then is set at a higher results level than the outputs and outcomes (see Figure 10).

Because the objective level, as currently formulated, is lower than the direct results (outcome) in the intervention logic, the tendency would be to meet the target of “formulating at least 10 projects for securing US\$25 million from the GEF and various multilateral, bilateral and private sector financiers” and claim success. However, the real objective of the Trust Fund goes well beyond the formulation of projects and securing funding to implement them. Indeed, this creates problems with reporting to donors. A review of the Progress reports on the Trust Fund shows clearly that the focus of reporting has been on the development of a concrete pipeline of projects and the leveraging of resources to implement the projects. In exception of the projects funded by the GEF Trust Fund that are currently in implementation, little effort was made to describe progress towards the real development objectives/development impact.

The Evaluation Team believes that performance monitoring is essential for Results Based Management but such monitoring should take place at a level where the attribution of the results to the actions of the organisation is much more certain. Performance reporting to governments and donors at levels that do not focus on progress towards the delivery of development results is unlikely to be satisfactory. Indeed, interviews with donors show that there is a lack of awareness by donors on what Trust Fund resources have been used for. It would seem that monitoring of verifiable milestones that track progress towards higher level results will allow the program to present a coherent set of information that would better communicate progress being made in achieving the objectives of the Trust Fund.

For a more effective RBM framework, the objectives of the Trust Fund should be defined at a higher results level than the immediate outcome. This should be considered as an issue of the highest priority in the next revision to the Trust Fund document. The next opportunity to revise this results framework is at this stage where the Branch is making efforts to replenish and create a sustainable Trust Fund. Indeed, a key issue identified in the analysis of project design is the fact that “a sustainable” TF was not considered in the project design logic. The idea of a sustainable trust fund was assumed and no activities were designed to mobilize resources to sustain the Trust Fund.

Recognizing the flaws in the results framework, the evaluation looked rather to the renewable energy strategy document for evidence of consistency and found that all the projects funded by the Trust Fund are consistent not only with the purpose and objectives of the strategy but also with GEF priorities.

To achieve the goals of the program, replication and up scaling of the interventions is critical. To a very significant extent, and especially in the design of GEF project, conscious efforts were made to ensure that replication strategies which included developing local capacities to adapt technologies to local conditions and integrating them with local knowledge, with the aim to promote wide-spread dissemination of renewable energy solutions were articulated in the project document.

5.2.3 Key assumptions and drivers

For changes to happen along the causal pathways to impact a number of external conditions need to be met or external factors need to be present. Key assumptions made by the Trust Fund (over which the program has no influence) are that Governments have long-term political will and adequate human and financial resources to implement laws and regulations and enforce them. Other assumption are: the private sector is willing to invest in RE, public is aware and sensitized on RE, there is political stability and governmental support in project countries, and projects developed using RETF will be approved and funded. Key drivers for change are that adequate and reliable financial environment e.g. Power Purchasing Agreements (PPAs), Feed-in Tariffs (FiT) etc. are put in place, private and public capital is mobilized for investment, legal and policy regimes for the promotion of renewable energy markets are put in place, and up scaling and replication strategies are implemented.

5.3 Management of the Renewable Energy Trust Fund

5.3.1 Trust Fund operations

Based on an exhaustive review of existing TF documents and interviews undertaken at UNIDO HQs the Evaluation Team is able to offer the following assessment of the management of the Trust Fund.

The recent (July 2014) evaluation of the Trade Trust Fund (TTF) and our own assessment show that there is no common approach to the administration of Trust Funds in UNIDO. Unlike the TTF where Fund resources are centrally managed together with other programmable funds and no applications are made directly to the TF, a substantial part of the RETF was based on a framework project document, which provided for the development of a methodology and clear criteria for eligibility. The criteria include, among other things, the following:

- Alignment with UNIDO's thematic priorities with clear focus on high impact renewable energy interventions for productive uses and industrial applications;
- Alignment with originating country's priorities, policies and strategies for energy access and security, as well as climate change;
- Potential of project to attract co-financing with a high leveraging ratio;
- Potential to attract private sector investment (i.e. high bankability potential);
- Alignment of project objectives with those of the GEF-5 Climate Change Focal Strategy, resulting in local and global environmental benefits, promoting RE technology demonstration and transfer (for proposal to be submitted to the GEF);
- Commitment of requesting country to work with UNIDO;
- Potential for cross-UNIDO linkages, where appropriate, particularly with regards to RSF/RFO and PTC/AGR;
- Number and kind of target beneficiaries; and
- Potential for scaling up and replication.

Indeed, following the establishment of the RETF, a renewable energy strategy was developed. The strategy laid out the mandate and vision for a renewable energy program in UNIDO, outlines the context within which such a program was developed, describes the program framework including the component projects, the strategies to be used and the monitoring and evaluation system. In addition in-house expertise was used to develop a methodology and screening mechanism for selecting potential projects. The Renewable energy program has since worked with stakeholders and partners to: formulate project concepts (including GEF Project Identification Forms - PIFs) and full size project documents; submitted developed PIFs to the GEF and other funding organizations; mobilized and secured funding for selected projects; initiated implementation of funded projects, and carried out their monitoring. To date none of the funded projects is due for evaluation. During the GEF-5 project development cycle alone, UNIDO submitted fifteen (15) requests on behalf of Member States for a variety of renewable energy and energy efficiency projects.

It would seem that the RETF has been used as a unique instrument to promote the vision and goals of the strategy. The funds seem to be used strategically to leverage resources for the implementation of the priorities of the renewable energy focal area. An allocation of US\$330,000 was set aside specifically to support the formulation, design and subsequent implementation of a concrete portfolio of projects and programs using resources from the GEF to scale up the use of renewable energy for productive uses in developing countries and economies in transition. While there is delegated authority to the Director of the Energy Branch to make funding decisions to the tune of US\$15,000 for the Trust Fund component allocated for mobilizing resources from the Global Environment Facility, the remaining TF was previously officially managed by the Approval and Monitoring Committee (AMC), which was an inter branch project approval committee and presently by the Executive Board). The selection decisions for projects made by the Branch and sent to the AMC for the non-GEF component of the Trust Fund are usually not reversed unless, of course, a project fails to meet the selection criteria. This delegated authority to the Branch Director to make approval decisions for the GEF component and selection decisions and the flexibility to use Fund resources to leverage additional resources from the GEF seemed to have made the process efficient and seamless.

While there is no departmental management decision-making committee on TF resource allocation, with minor exception, the large majority of project managers interviewed were satisfied with the process of allocation of the resources of the TF. Indeed, most of them were aware of, and clearly understood, the project selection criteria. However, the fact that a minority of staff feel there is a lack of transparency in the resource allocation process suggests the need for better dissemination of the eligibility criteria.

Our review shows that all projects funded under the RETF are consistent with the objectives of the Fund and the vision and goals of the Renewable Energy Strategy. As of the date of this evaluation, approximately 30%¹⁶ of the Trust Funds remain undisbursed (although additional

¹⁶ The evaluation has learned from the Director of the Energy Branch, after the preparation of this report, that the remaining Trust fund resources have since been obligated.

funds have been committed since the evaluation was completed). The expenditures from the Trust Fund occurred over a period of 4 years.

5.3.2 Efficiency and effectiveness of Trust Fund implementation

Efficiency:

The issue of whether the RETF funds were used in an efficient manner, from a purely monetary perspective can be determined by comparing the costs of project preparation to the amount leveraged. If one adds all project preparation funds (RETF and GEF Project preparation grants (PPG)), one obtains an amount of US\$ 1,749,963. Used to leverage a total project amount of over US\$ 274 million, this represents approximately a ratio of 1% between preparation and total project budget (including co-financing). The ratio of project preparation funds represents 20% of project grants leveraged from the GEF and other donors (that is, not including co-financing).

In addition, the projects allowed the Agency to leverage a total of US\$ 6 million in fees, for example GEF agency fees and Project Service Costs on RETF grants and project budgets. If one considers that the fees perceived represent the cost of doing business, then the total cost of developing projects represents an average of 10% of the grants mobilized for the project (not including co-financing, which could be in-kind); if compared to the total project budgets, this ratio comes down to 3%. The evaluation finds that this corresponds generally to the average of other Agencies, and a satisfactory level of financial efficiency.

However, the multiplication of small grants for pre-concept and concept development may not have been the most efficient use of RETF funds, compared to interventions in a later stage of project design or even implementation. Even the grouping of sub-grants into umbrella grants appears to not have led to any significant gains in effectiveness, since each “sub-grant” was managed individually, by different project managers, without any evidence of cost-sharing or coordination among them.

The portfolio review and the review of progress reports as well as interviews of project managers show clearly that the Trust Fund was in great demand and was used by staff to leverage substantial amounts of resources for the renewable energy program. The RETF has been tremendously successful in achieving its stated objectives and leveraged resources from GEF and bilateral (Japan) and multilateral sources (SADCREE with Austria and EU). On the whole, it can be said that the RETF was used in an effective manner in developing proposals that led to the development, and ultimately, the implementation of a significant number of projects.

Looking at total project values, the largest project developed through a RETF grant was US\$ 41,095,785 (“Reducing of Green House Gas Emissions in the Industrial Sector through Pelletization Technology in Lao PDR”, Project No. SAP ID 140057) and the smallest was US\$ 95,836 (“Fostering women's empowerment through gender mainstreaming sustainable energy programs and initiatives” Project No. SAP ID 140057), a project targeted at internal UNIDO

procedures. Based on available data on the anticipated total project budgets, we can affirm that each dollar spent in RETF funds led to US\$ 328 in financing for projects (grant and co-financing combined).

Most grants were disbursed between 2011 and 2013, and the last grant was approved internally in May 2014. At the time of writing, 13 projects were being implemented, 1 project had been completed and the others were at various stages of preparation.

The total value of projects developed is US\$ 274,241,926, including cash and in-kind co-financing. In monetary value, 32% of the Trust Fund's expenditures were dedicated to develop a pipeline of GEF projects, for a total of US\$ 36,644,732 in GEF Grants. In addition, the project concepts also received a total of US\$ 860,000 from the GEF for preparation. There did not appear to be a correlation between the amount invested by the RETF and the amount leveraged from financiers (GEF or donors), nor did there appear to be any correlation between the availability of additional preparation funds from GEF and the speed of preparation, or with the size of the project total.

Out of the 29 sub-grants, 6 were dropped at pre-concept stage, either because they were not approved by the intended donor (GEF, in these cases) or because other circumstances led to their cancellation. This represents nearly 20% of the total number of projects, but only 10% of expenditures.

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While the utility of the Trust Fund has been high, it is too soon to state that the projects developed by the Fund have achieved their objectives. Indeed, 77% of the project portfolio is currently in the project preparation stage (PIF approved) and 23% in the implementation phase. The success of the RETF in developing a large portfolio of renewable energy projects, both GEF and non-GEF, has strengthened UNIDO's capacity to provide technical assistance to the renewable energy sector particularly in developing countries. In addition, tools and methodologies have been developed and workshops organized to promote and facilitate the use of renewable energy technologies.

Similar to the findings from the evaluation of the Trade Trust Fund, it is not possible to make any evaluative judgements about beneficiary satisfaction with project implementation, impact and sustainability because most of the projects are still under development or implementation. The original intent of the Trust Fund was to develop Preparatory Assistance projects. For that

reason, effectiveness is largely measured in terms of the ability to secure funding to develop full projects. Of the four projects currently under implementation in the project portfolio, the project to promote renewable energy based grids in rural communities in Cote D'Ivoire provides an example of a successfully completed renewable energy project implemented with Project Preparatory Grant funding from the RETF. It is presented below (box 1) as an example of the potential of the Trust Fund portfolio to influence regulatory reform and provide clean energy access in rural communities for productive use.

Box 1: Renewable energy based grids in rural communities in Cote D'Ivoire

The installed capacity of 1,210 MW of electricity in Cote D'Ivoire is evenly split between thermal plants and hydroelectric power. One third of the population of Cote d'Ivoire have access to electricity. In order to provide access to the remaining two-thirds, the current national plan makes provision for decentralized grids powered by fossil fuels without any consideration of environmental impacts.

The more environmentally friendly alternative is the replacement of the fossil-fuel powered grids with renewable energy options comprising a combination of biomass, small hydropower and photovoltaic. The renewable decentralized grids are the most cost-effective and cleaner option. It is all the more promising given the tremendous potential in the country to generate power from renewable sources especially from solar energy.

The Cote d'Ivoire project was designed to promote solar-based photovoltaic mini-grids in order to increase energy access to rural communities. As designed, the project would 1) develop a critical mass of skilled technicians and knowledgeable public officials; 2) built awareness especially in the private sector on appropriate technologies and good practices; c) link energy access to productive uses; and 4) formulate and strengthen policies that encourage the involvement of the private sector and facilitate access to innovative financing. When completed the project is expected to develop a 120 KW photovoltaic based power generating capacity made up of three photovoltaic mini-grid facilities.

The key expected outcomes of the project are: a) an effective market oriented policy and regulatory framework to stimulate investments in renewable energy; b) a portfolio of RE projects prepared for pilot PPG GFF investments; c) reduced GHG emissions and increased access to rural electrification. The total cost of the project was estimated at US\$ 3.87 million of which it was expected US\$ 3 million will come private sector financing, in particular from Bank investments.

The project was designed to work with national partners at the central and local government levels with private sector (including banks and other financial institutions) a suppliers and service providers. The directorate of New and Renewable Energies of the Ministry of Mines and Energy is a key partner in the monitoring of project progress at the national level. Local private sector providers were to be trained and assisted in identifying and setting up of power delivering services (including installation and maintenance of equipment) in rural areas. Local Banks were to provide the required capital for the purchase of equipment.

To a large extent, the project was implemented as planned. To date the project seems to be progressing well towards its overall development objective and within the required time period. The 2014 Progress Implementation Report (PIR) report notes that the project has successfully raised the profile of RE as part of the government's priorities and contributed towards the revision of the regulatory framework. As a result, the investor climate has also improved which was underlined by an investment promotion forum held in Abidjan in January 2014 where UNIDO organised a plenary panel discussion on RE potentials in the country. Work on the review of the legislative framework has been completed offering diagnosis of existing framework and recommendations on ways to promote the use of renewable energy. For all intents and purposes therefore, substantial progress has been made on outcome 1.1 aimed at developing an effective, market-oriented policy framework to stimulate RE investments.

With regards to outcome 3.1 relating to technology demonstration and creation of awareness and technical capacities, seven solar based mini-grids are being installed in the Zanzan region (north east of the country) in a remote area. Total estimated capacity is over 200 KW of solar power, servicing almost 4,000 households. The realisation of these mini-grids is the result of cooperation between the project and an EU funded project. The beneficiary is a local Non-Governmental Organization (NGO) called Akwaba which is in charge of the overall coordination and business model including the villages and relevant authorities. The mini grids are expected to be operational in the second half of 2015.

The success of the RETF in leveraging substantial project funds suggests that the TF model has the potential as a source of funds to assist program managers in developing their programs. With regards to GEF projects, the Trust Fund enabled UNIDO as a new GEF Implementing Agency to travel to countries and work with partners to develop project ideas and as shown above, the payoff has been tremendous.

5.3.3 Cooperation and partnerships

In designing and implementing renewable energy projects, UNIDO actively collaborates with a number of energy technology centers, networks, and learning platforms worldwide (see annex E for a detailed list), to form strategic partnerships to promote knowledge management and best practices for technology transfer. The renewable energy technologies covered by these centers include solar energy, small hydropower, biomass and hydrogen. The objectives of these centers of excellence are to strengthen local and regional capacities in the respective technological areas, to facilitate knowledge transfer and the development of markets, as well as South–South and North-South cooperation.

At the international level, partnerships are fostered to promote UNIDO's comparative advantage in demonstration and pilot activities, awareness raising and institutional capacity building and networking. For example, in the RETF supported UNIDO renewable energy project designed to promote ultra-head micro power technology to increase access to renewable energy for productive uses in rural India, a strategic partnership was forged between the government of Japan, the state government of Uttarakhand in India, and the Alternate Hydro Energy Center, India Institute of Technology to transfer technology, build institutional capacity, raise awareness and demonstrate the use of mini-grid systems for productive uses.

In the Low Carbon Low Emission Clean Energy Technology Transfer Program, UNIDO sought to promote rapid deployment of Low Emission Clean energy technologies through demonstration projects, capacity building and knowledge management and the strengthening of market conditions for investment. While the demonstration projects are located in Kenya and Ethiopia, other beneficiaries from the capacity building activities include ECOWAS, East African Economic Community and the Southern African Development Community (SADC). Realizing the importance of the Low Carbon Low Emission Clean Energy Technologies, UNIDO Energy Branch has urged UNIDO to create a new Unit called Low Carbon Policy (LCP) Unit within the restructuring of UNIDO Energy and Environment Service and the new structure of the Energy Branch from December 2014.

UNIDO has forged Business Partnerships between UNIDO, ECREEE and the company Philips on the installation of 15 photovoltaic (PV) lighting systems in Cape Verde. A Partnership was also formed between UNIDO, ECREEE, Columbia University and University of Cape Verde to provide a Fellowship for Sustainable Energy Solutions.

The program Renewable Energy Program has forged a partnership between UNIDO and the company Schneider Electric on the potential to enhance the productivity of rural African micro-industries and businesses through a clean, innovative and standardized micro-power plant.

Partnerships have also been formed between UNIDO and Public Sector Undertakings (PSUs) to assist in Corporate Social Responsibility (CSR) initiatives for promoting sustainable development through RE and EE technologies. Others include ECREEE: ECOWAS Regional Centre for Renewable Energy and Energy Efficiency, REEEP: Renewable Energy and Energy Efficiency Partnership, TERI: The Energy and Resources Institute, AEA: Austrian Energy Agency, and IIASA: International Institute for Applied Systems Analysis.

In general, the RETF projects collaborate with national and regional centers such as UNIDO International Solar Energy Centre for Technology Promotion and Transfer (ISEC) at Lanzhou, China, UNIDO International Centre for Small Hydro Power (ICSHP) with headquarters in Hangzhou, China, UNIDO Regional Centre for Small Hydro Power (SHP) in Trivendrum, India, UNIDO Regional Centre for Small Hydro Power (SHP) in Abuja, Nigeria. United Nations agencies such as the Food and Agriculture Organization (FAO) and the International Fund for Agricultural Development (IFAD) on agri-business development; United Nations Development Programme (UNDP) on private sector development and field representation; the United Nations Environment Programme (UNEP) on cleaner production and implementation of multilateral environment agreements; the United Nations Conference on Trade and Development (UNCTAD), the World Trade Organization (WTO) are key collaborators.

Internal collaboration within UNIDO is rather limited. Besides inter-unit collaboration between RRE and IEE within ENE for the project “Promoting low-carbon technologies for cooling and heating industrial applications in Egypt”, no significant examples of successful internal collaboration in UNIDO can be found in the development and implementation of the RETF portfolio.

5.3.4 South-South cooperation

An interesting aspect of collaboration forged by the Branch is South-South cooperation to promote Technology Transfer and Knowledge Management. Examples include:

- India UNIDO Centre for South-South Industrial Cooperation (UCSSIC) - Benin, Nigeria: Biomass gasification technology;
- India (UCSSIC) - Bangladesh: Solar Micro-utility enterprises for promoting rural energy and productive uses;
- China (International Centre for Small Hydro Power and International Solar Energy Center): Renewable Energy based electricity Generation for Isolated Mini Grids in Zambia, Sierra Leone, Nigeria, Latin America and the Caribbean (LAC) region.

Specific examples of South-South cooperation in the portfolio of projects funded by the RETF could however not be found.

5.4 Gender

One of the projects funded by the RETF was designed to promote gender mainstreaming in sustainable energy programs and initiatives. The project is an “internal initiative of the Energy and Climate Change (ECC) Branch to fully exploit opportunities within its current and future energy portfolio to promote women’s empowerment and gender equality, which forms an integral part of inclusive and sustainable industrial development”¹⁷. The project is in line with the UNIDO Policy on Gender Equality and the Empowerment of Women, as well as the 2013 Lima Declaration. It was undertaken in response to the growing demand from the donor community and partners including the Global Environment Facility (GEF) for increased gender consideration in UNIDO projects. It also recognized the special contribution UNIDO can make in designing program activities that understand the role of gender and the differential impact of these activities on men, women and children. The project was to produce energy projects where gender is considered at the design stages with the objective of promoting women’s empowerment and gender mainstreaming through sustainable energy programs and initiatives. Good practice models were to be developed for improved linkages with other thematic areas and technical branches within the organization.

As designed, the project would produce two key outputs: 1) Energy-gender strategy and operational guidelines; and 2) Gender mainstreaming demonstrated at the project level and best practices established. The two outputs would be produced by implementing the following activities:

- develop an energy-gender action plan, including gender mainstreaming tools and indicators;
- conduct energy-gender trainings for UNIDO staff;
- organize workshops and/or expert group meetings to raise awareness and build capacity;
- demonstrate gender mainstreaming in at least 2 existing energy projects; and
- develop at least two new energy project proposals to demonstrate gender mainstreaming.

The project started implementation in September 2014 and will continue until August 2015. To date, a Guide on Gender mainstreaming in Energy and Climate Change projects has been produced and it contains tools and guidelines for designing projects. Among other products are: the ENE¹⁸ gender mainstreaming guidance note¹⁹; the ECC gender indicator framework; and Resources from ECC staff training on gender mainstreaming.

¹⁷ Fostering women’s empowerment through gender mainstreaming sustainable energy programmes and initiatives, SAP ID 130289, page 1

¹⁸ Please note that the name of the Branch has been changed with an interoffice memorandum dated 19 December 2014 from Energy and Climate Change Branch (ECC) to Energy Branch (ENE).

¹⁹ Guide on Gender Mainstreaming. Energy and Climate Change Projects, UNIDO, Vienna, 2014, internet://www.UNIDO.org/Gender

A review of the projects developed for funding by the GEF Trust Fund shows that, following GEF guidelines, all the projects developed under the RETF portfolio have addressed gender in one way or the other even if the issue of differential impacts on men and women have not been addressed in great detail. With respect to the non-GEF portfolio, the result is mixed. While some of the projects have mentioned gender differentials, some projects are completely silent on the subject.

In general, this evaluation finds that, with a few exceptions, the issue of gender mainstreaming is being addressed consistently not only within the renewable energy projects funded by the Trust Fund but in the Branch. With the development of specific guidance, tools and an indicator framework, the extent to which Branch projects differentially impact men and women will be better assessed and addressed during the design phase of projects.

5.5 Reporting, monitoring and evaluation

Section F of the project document provides for the monitoring, reporting and evaluation of the Trust Fund. What is not clear is the nature and type of monitoring and reporting to be undertaken. Monitoring and reporting, according to the project document, was to be undertaken through “the submission of project documents for approval through UNIDO’s internal processes, submission of finalized project proposals in line with the GEF priorities and other funding source guidelines, assessment of back-to-office mission reports (BTOMRs), activity and progress reports for all projects stages”.

As discussed under project design above, progress reporting on the Trust Fund shows clearly that the focus of reporting has been on the development of projects and the leveraging of resources to implement the projects. Reporting has not been done comprehensively on the Trust Fund as a development instrument including the progress being made toward the achievement of higher level results. While the monitoring and reporting framework in the project document is unclear and lacks specificity, the Renewable Energy Strategy contains very precise indications of what would be monitored and reported. Indeed, it specifies quantitative indicators and targets based on successful implementation of projects by the end of 2018. The indicators include:

- Number of people gaining access to energy: >135,000
- New renewable energy capacity installed: ~25 MW
- Total renewable energy generated: >125 GWh/year
- Million tons of CO₂-eq avoided: >3 million tons direct
- Number of SMEs benefitting from projects: >600

What the above suggests is that the renewable energy strategy anticipates a more rigorous level of monitoring and a results framework that is consistent with RBM principles than the project framework document. Because the project document was developed prior to the development of the strategy, it would seem that in future revisions to the results framework, the strategy indicators should be used as the basis for formulating measurable indicators of performance in the program document.

While there is evidence to show that regular reporting is done on the RETF to the UNIDO Industrial Development Board (IDB) and to the Programme and Budget Committee (PBC), the reports are not informative and contain little information on milestones and progress towards the achievement of the development results of the RETF. Projects funded by the GEF Trust Fund are required to prepare Project Implementation Reports (PIRs). This is done consistently, however, specific reporting for non-GEF projects, if any, is done only upon request of a Member States. It is not surprising therefore, that interviews with donor Member States reveal a lack of knowledge of progress in the Trust Fund. Indeed, some contributing governments are not aware that they had even contributed to the Trust Fund.

There is, overall, little independent evaluative evidence for the projects in the Trust Fund Portfolio for because the projects are mostly in their design stages and a few are under implementation. Indeed, most projects financed by the RETF were preparatory grants and as such, would not require evaluation. As for their implementation, projects would be subject to normal evaluation requirements: for example GEF projects require evaluation and evaluation is provided for in project budgets. The project documents of the current projects have planned or budgeted for evaluations. Terminal evaluations are planned and more or less budgeted for.

6. Conclusions and recommendations

In general, the evaluation finds positive examples of relevance, effectiveness and success, and an overall better than satisfactory level of performance. The evaluation finds that UNIDO's work in renewable energy for productive use is relevant to the evolving global context, environmental trends and energy needs especially in developing countries. The strategy to promote renewable energy markets and industry plays an important role in addressing the challenges of energy poverty, energy security and the concerns of climate change as major environmental issues of our time. The work on renewable energy is fully aligned with the UNIDO mandate to promote and "accelerate industrial development in developing countries and industrial development and co-operation on global, regional and national, as well as on sectoral levels".

Conclusion

On the whole, the evaluation found that the RETF was used in an effective manner in developing proposals that led to the development, and ultimately, the implementation of a significant number of projects. The total value of projects developed is US\$ 274,241,926, including cash and in-kind co-financing. In monetary value, 32% of the Trust Fund's expenditures were dedicated to develop a pipeline of GEF projects, for a total of US\$ 36,644,732 in GEF Grants. In addition, these project concepts also received a total of US\$ 860,000 from the GEF for preparation grants. With the level of success demonstrated in leveraging project funds using the RETF this evaluation believes that the Trust Fund mechanism is a useful vehicle for UNIDO to mobilize funds to undertake its renewable energy work

Recommendation 1

The RETF should be continued with a longer term objective of replenishing it through aggressive resource mobilization.

From a purely monetary perspective efficiency can be determined by comparing the costs of project preparation to the amount leveraged. If one adds all project preparation funds (RETF and GEF PPG funds), one obtains an amount of US\$ 1,769,817. Used to leverage a total project amount of over US\$ 274 million, this represents approximately a ratio of 1% between preparation and total project budget (including co-financing). Compared to the amount of grants mobilized by the GEF and other donors (i.e., not including co-financing), the ratio goes up to 20%. In addition, the projects allowed the organization to leverage a total of US\$ 6 million in fees, for example GEF fees and Project Service Costs on RETF grants and project budgets. If one considers that the fees received represent the cost of doing business, then the total cost of developing projects represents an average of 10% of the grants mobilized for the project (not including co-financing, which could be in-kind); if compared to the total project budgets, this ratio comes down to 3%.

The evaluation finds that this corresponds generally to the average of other Agencies, and a satisfactory level of financial efficiency. However, the multiplication of small grants for pre-concept and concept development may not have been the most efficient use of RETF funds, compared to interventions in a later stage of project design or even implementation. Even the grouping of sub-grants into umbrella grants appears to not have led to any significant gains in effectiveness, since each project or sub-grant was managed individually, by different project managers, without any evidence of resource pooling or cost savings. In summary, the evaluation finds that the RETF demonstrated more than satisfactory levels of effectiveness and efficiency.

Conclusion

A coherent results construct is key to the measurement of performance and progress towards impact. As stated above the design of the project/programme provides an objective and indicators necessary for an assessment of relevance and effectiveness. However, the formulation of some of the indicators is not sufficiently *Specific, Measurable, Achievable, Relevant and Time-bound* (SMART). In the context of Programme Performance and Results Based Management, programme objectives are intended to articulate results levels higher than direct outcomes yet, the TF objective as stated in the log frame is set at a lower results level than the outcomes. For this reason, this evaluation considers the results framework as incomplete and incoherent, and needs to be revised according to the basic principles of RBM in order to become a useful tool in mobilizing resources for the Trust Fund.

Recommendation 2

The RETF results framework should be revised in line with the basic principles of Results Based Management (RBM). The reconstructed Theory of Change included in this report should be reviewed, revised as necessary, and used as a guide to prepare a revised programme document complete with measureable indicators. Clear objectives should be set for the Trust Fund at a higher results level than outputs and outcomes.

Conclusion

There is now an opportunity to revise this results framework as the Branch is making efforts to replenish and create a sustainable Trust Fund. A key issue identified in the analysis of project design is the fact that “a sustainable” RETF was not considered by the Branch in the project design logic. The idea of a sustainable trust fund was assumed by the Branch and no activities were designed to mobilize resources to sustain the Trust Fund.

Recommendation 3

To assure a sustainable Trust Fund, the evaluation recommends an enhanced level of advocacy to Member States and concerned stakeholders. E.g. video, concise reports with selected performance indicators.

Recommendation 4

The Trust Fund programme document should be reviewed and where necessary revised to make it consistent with the programme strategy document. In revising to the results framework, the strategy indicators should be used as the basis for formulating measurable indicators.

Conclusion

In designing and implementing renewable energy projects, UNIDO actively collaborates with a number of energy technology centers, networks, and learning platforms worldwide to form strategic partnerships to promote knowledge management and best practices for technology transfer. At the international level, Trust Fund projects fostered partnerships to promote UNIDO's comparative advantage in demonstration and pilot activities, awareness raising and institutional capacity building and networking. However, the evaluation found that internal collaboration within UNIDO was rather limited. This evaluation found a successful inter-unit collaboration between the Renewable and Rural Energy and Industrial Energy Efficiency units within the Energy Branch, however, no other significant examples of successful internal collaboration in UNIDO can be found in the development and implementation of the RETF portfolio.

As stated above, renewable energy and energy efficiency are two sides of the same coin and synergies could be gained from implementation of projects of dual objectives.

Recommendation 5

With the successful leveraging of GEF resources from the Trust Fund the Branch should consider using future mobilized TF resources to develop a portfolio of non-GEF projects including considerations for twinning with energy efficiency work.

Conclusion

The small scale nature of the renewable energy technologies being used in these projects lend themselves to South-South cooperation. There is little evidence in the project concepts and full projects developed to date that South-South cooperation has been explored to any significant extent perhaps because it is not a criterion for project approval.

Recommendation 6

South-South cooperation should be better explored and included as a criterion for project approval in the RETF.

Conclusion

There is room for improvement of the reporting on performance and development results to Member States. Indeed, interviews with donors show that there is a lack of awareness by donors on what Trust Fund resources have been used for. This evaluation further notes that

detailed data on funded Trust Fund projects were not easy to access and piecing them together took inordinate amounts of time and effort.

Recommendation 7

Monitoring of verifiable milestones that track progress towards higher level results should be developed. This will allow the programme to present a coherent set of information that would communicate progress being made in achieving the objectives of the trust Fund. This will also facilitate ease of reporting to donors on the use of funds in accordance with basic principles of programme design and RBM.

7. Lessons

1. One key lesson to be learned from the way the Trust Fund was set up and operated is that, while the TF was officially managed by the Approval and Monitoring Committee (AMC), there was delegated authority to the Director of the Energy Branch to make selection decisions about projects to be funded. This delegated authority to the Branch Director to make selection decisions and the flexibility to use fund resources to leverage additional resources bilaterally seemed to have made the process efficient and seamless.
2. Renewable energy and energy efficiency are two sides of the same coin. Energy saved is energy that does not need to be produced. While recognizing that the two aspects of UNIDO's energy work are sufficiently large that they could be managed separately, the two are indeed not distinct. This evaluation observes that the separation between UNIDO's work in renewable energy and energy efficiency is, indeed, artificial with little synergies between them. Of the total portfolio of projects reviewed only one sought to purposefully explore the twinning between renewable energy and energy efficiency. This evaluation suggests that in replenishing the Trust Fund and expanding the project portfolio, efforts should be exerted to assure that twinning between renewable energy and energy efficiency is explored in the projects. The evaluation suggests that the replenished Trust Fund should be named Sustainable Energy Trust Fund reflecting the idea of both Renewable Energy and Energy Efficiency.

Annex A: Terms of reference



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

Terms of reference for the Independent Thematic Evaluation of the UNIDO Renewable Energy Trust Fund

July 2014

I. Introduction and background

The independent thematic evaluation of the Renewable Energy Trust Fund (RETF) was planned in the Work Programme of the UNIDO Office for Independent Evaluation 2014/2015. This evaluation follows the evaluation of the other two trust funds: Trade Trust Fund (TTF) and Africa (accelerated) agri-business and agro-industries development initiative (3ADI).

The renewable energy trust fund (RETF) for productive activities was established in compliance with the decision GC.13/Decision 15(h) from the 13th General Conference from 2009, using part of the amount of unutilized balances of appropriations of technical cooperation programmes of Member States in 2010, with main objective being to support the formulation, design and implementation of a concrete portfolio of projects and programmes to scale up the use of renewable energy for productive uses in developing countries and economies in transition. The RETF was to be a strategic initiative that would promote programmatic approaches and partnerships through concrete renewable energy projects with main focus on technology demonstration, policy frameworks and capacity building for productive uses with measurable results and impacts on the ground.²⁰

Access to reliable, secure, and cost-effective energy supply and services based on renewable energy is essential for achieving sustainable industrial development and poverty reduction, as energy is a critical input for economic growth and environmental sustainability, directly linked to the key global challenges that the world faces today, such as climate change.

Many developing countries and countries with economies in transition are endowed with substantial renewable energy resources in terms of hydro, wind, solar, geothermal, biomass (particularly in the agro processing sector) including agro waste and biofuels, that are variably distributed across continents, with some regions blessed with all forms of energy potential. There are major untapped opportunities for scaling up the application of renewable energy for productive uses and industrial development. Yet, despite an increased interest in harnessing the vast potential of renewable energy to meet growing energy needs, business-as-usual scenarios depict an energy future largely dominated by fossil fuels, with many countries continuing to suffer from inadequate energy generation capacity, limited electrification, low power consumption, unreliable services, and high energy costs, due to numerous challenges and barriers.

The RETF is being used primarily to support the formulation of concrete projects at a national level for promotion of activities aiming at:

- (i) Addressing key barriers such as policy, technical, financial and capacity to scale up renewable energy for productive uses;
- (ii) Augmenting rural energy to promote income generation activities;

²⁰ Progress Report on the UNIDO RETF, November 2011

- (iii) Promoting private sector investments in renewable energy;
- (iv) Leveraging funding from the Global Environment Facility (GEF), European Union (EU) and other funding mechanisms; and
- (v) Strengthening energy and climate security.

The projects being developed under the RETF would also develop methodologies and tools for training, capacity building, mainstreaming social and economic impacts including gender dimensions, and effective monitoring of results and impacts of renewable energy projects. Successful piloting of renewable energy projects formulated under the RETF would result in promotion of renewable energy markets in the beneficiary countries, which would greatly help moving forward with enhanced access to modern energy and energy and services based on renewable technologies for the productive sector, thereby boosting the volume and competitiveness of productive activities, and promoting economic growth and wealth creation, thus supporting the achievement of the Millennium Development Goals (MDGs).

The overall strategic goal of the renewable energy trust fund is to contribute to sustainable development through increasing energy access and energy security in developing countries through the deployment of renewable energy technologies. The main objective of the fund is to support member states in the formulation, design and subsequent implementation of a portfolio of concrete strong projects to scale up the use of renewable energy for productive uses in developing countries and economies in transition.²¹ In addition, the RETF would also facilitate development of methodologies and tools, and organizing training workshops for capacity building at the national / regional level.

The expected outcomes from the RETF project can be summarized as:

- A large portfolio of concrete projects formulated (at least 10 PIFs securing over US\$25 million from GEF);
- Access to modern energy and energy services for the productive sector in target countries increased based on renewable energy resources; and
- Renewable energy markets promoted, developed and/or strengthened in beneficiary countries.²²

The most recent document prepared as an update on the fund (IDB.41/11, Chapter I) highlights the total funding generated. To date, the trust fund amounts to the value of about €1,072,138 (including support costs). The expected outcomes of the activities under the RETF are finalization and submission of over 10 concrete projects to promote renewable energy for productive uses and industrial applications, and the same have been overreached. These projects leveraged GEF funds to the tune of US\$25 million (which has also been exceeded to US\$39 million) and attracted five times more the amount for total project costs, including co-financing from other funding sources such as the EU, private sector and national and other multi/bilateral partners (details are presented in Table 2).

²¹ Project document on Renewable Energy Trust Fund, p. 7

²² Please see the RETF Logical Framework (part of the Project Document for the RETF) as part of Annex 6

As stated in the logical framework given for the RETF, the key outputs from the RETF project will consist of:

- A systematic and transparent methodology and screening mechanism for selecting beneficiary country projects for promoting renewable energy;
- A portfolio of at least ten renewable energy projects (Project Identification Forms (PIFs) / Full-size projects (FSP)) in selected countries aimed at scaling up renewable energy and energy services for productive uses; and
- Project concepts (PIFs) submitted for securing funding (e.g. GEF) and co-financing from various sources.

UNIDO's activities in achieving various outputs were expected to be:

- Receive and assess member states' request;
- Develop a systematic and transparent scoring and screening tool for selecting projects;
- Undertake pre-feasibility studies and carry out field visits and hold initial stakeholder consultations;
- Map renewable energy potential resources and carry out need assessments through diagnostic studies;
- Carry out socio-economic analyses;
- Identify potential funding sources and secure co-financing commitments;
- Apply methodology to screen beneficiary countries and select;
- Carry out detailed consultation with all relevant key stakeholders for selected projects;
- Formulate detailed concepts (PIFs) for promoting application of proven and cost effective renewable energy technologies, and linking them with concrete productive opportunities;
- Process and submit concepts (PIFs) and project documents for securing funding to the donor (e.g. GEF) and/or other co-funding sources identified (European Union (EU), private sector and national and other multi/bilateral partners);
- Mobilize and secure funding for preparatory Project Preparation Grant (PPG) phase and start implementation;
- Process and submit project documents for funding to the donor (e.g. GEF) and/or other funding sources identified (private sector and national and other multi/bilateral partners)
- Implement, monitor, evaluate and report on full size projects; and
- Promote dissemination of best practices and knowledge management.

Donors were invited to make contributions to this trust fund. These contributions could be, if so desired, limited to specific regions or purposes, for instance for technical and economic analysis and advice only. Details of the donors' contributions can be found in Annex 2. In the Bibliography (Annex 1), reference is made to the project document for the Renewable Energy Trust Fund prepared by the Energy and Climate Change Branch (ECC) of UNIDO.

Given UNIDO's expertise in project development and implementation, the organization is in a very unique position to utilize the funds of the RETF to develop and subsequently leverage co-financing for implementation of various projects in renewable energy for productive activities.

In order to achieve the main objectives of the RETF, in-house expertise was used in developing a systematic methodology and screening mechanisms for selecting potential projects; working with key stakeholders and partners in formulating concrete project concepts (including Project Identification Forms - PIFs) and full scale documents; submit developed PIFs to the GEF and other funding organizations; mobilizing and securing funding for selected projects; initiating implementation of funded projects, and carrying out their subsequent monitoring and evaluation. Only in the GEF-5 project development cycle, UNIDO has received over fifteen requests from member states for a variety of renewable energy and energy efficiency projects.

In the past funds money for the RETF has been administered and approved by the Approval and Monitoring Committee (AMC). After AMC has issued the authorization, the Renewable and Rural Energy Unit (RRE) / ECC can issue the Project Allotment Document (PAD) for the Project Preparatory Assistance or the Project from the RETF.²³ The future approval procedure for funds of the RETF after the ceasing of the existence of AMC is still unclear.

RRE/ECC does regular reporting on the RETF to the UNIDO Industrial Development Board (IDB) and to the Programme and Budget Committee (PBC). Specific reporting per project, if any, is done only upon request of a Member State.

Implementation Status of the follow-up GEF and non-GEF projects originating from the RETF

Since its establishment, a total number of 31 projects have been approved that are directly or indirectly deriving from the Renewable Energy Trust Fund. Fourteen direct RETF financed Preparatory Assistance Projects amounting in total to €945,020 (a detail tentative list is presented in Annex 3) were implemented. 24 In Annex 4 is shown a detailed list of the thirteen GEF Projects which generated GEF financing of US\$39.7 million, and total project budget (including co-financing) of almost US\$225 million for which preparation seed money were used from the Project 5: "Preparatory Assistance for Development of Renewable Energy P" shown in Annex 3. Four²⁵ non-GEF Projects with a financing of US\$10.7 million and total project budget of US\$28.5 million deriving directly from the Preparatory Assistance projects (shown in Annex 5) are currently under implementation. The list of 31 directly or indirectly from RETF funded

²³ Interview with Ms. Sabine Kuchner-Folkhard on 26.06.2014.

²⁴ This table contains only 14 direct projects for which the RETF was used, the 3 new pipeline projects for Bosnia and Herzegovina, Uganda and Myanmar from 2014 are not included in this table yet as they are in the approval phase, they should be added in the Thematic Evaluation Inception Report.

²⁵ The information on the financing and co-financing of the non-GEF projects should be amended within the Inception Report. It was agreed not to include the three additional pipeline non-GEF projects (SAP ID 130032, 130276, and 130289) which are now in the project preparatory phase. There are four non-GEF Full Size Projects (FSPs) under implementation at the moment.

projects, which are related to the RETF-funded projects has a total RETF funds allocated to about US\$51.66 million, with total project budget including financing and co-financing of US\$254.8 million.

One non-GEF project funded by the Austrian Development Agency (ADA) with €1.8 million is the Southern African Center for Renewable and Energy Efficiency (SADCREEE) that will be established as subsidiary organization of Southern African Development Community (SADC) region. The Caribbean Center for Renewable Energy and Energy Efficiency (CCREEE) for the Caribbean Region, funded with US\$1 million by the Government of Austria is currently in its preparatory phase. The Japanese Government funds two other projects in Ethiopia and Kenya with US\$5 million for promoting rapid deployment and dissemination of new low carbon low emission clean energy technologies, products, services and systems, and the project of US\$1 million for promotion of ultra-low head micro hydropower mini-grids to increase access to energy for productive uses in rural areas.²⁶

II. Budget information

Detailed information on the main donors and the contributions they have made to the RETF is given in Annex 2: “Donors and their contributions to the RETF”. Table 1 presents the contributions received since the establishment of the RETF, the disbursements per year and the RETF funds available:

Table 1: Allocation, disbursements and funds available from the RETF

2010	Allocation (€)	€ 649,576
	Disbursement (€)	€ 14,371
2011	Allocation (€)	€ 367,962
	Disbursement (€)	€ 372,900
2012	Allocation (€)	€ 54,536
	Disbursement (€)	€ 413,780
2013 1)	Allocation (€)	€ 0
	Disbursement (€)	€ 110,069
2014 2)	Allocation (€)	€ 0
	Disbursement (€)	€ 33,900
Total	Allocation (€)	€ 1,072,074
	Disbursement (€)	€ 945,020
	RETF Funds available (€)	€ 127,054
1): In 2013 no contributions were received/assigned to the TF Renewable Energy		
2): In 2014 no contributions yet assigned.		

Source: Finance SAP, June 2014

²⁶ The information on the financing and co-financing of the non-GEF projects should be amended within the Inception Report.

To date, the disbursed budget from RETF has been used in 14 project preparatory assistances, amounting to €945,020, and the available funds for further projects is €127,054 (for details please see comment 9 on page 7).

Table 2 shows that, since its establishment, a total number of 31 projects (14 preparatory assistance projects from the RETF, 13 follow-up GEF projects and 4 follow-up non-GEF projects) have been approved.

Table 2: Projects approved and financed directly as project preparatory assistance from the RETF, follow-up related GEF RETF projects, and follow-up related non-GEF RETF projects

	Number of Projects	Funding Received	Total Project Costs ²⁷
Preparatory Assistance Projects Approved and Financed directly from the Renewable Energy Trust Fund (RETF)	14 ²⁸	€945,020	€945,020
Follow-Up Related GEF Renewable Energy Fund Trust Fund (RETF) Projects ²⁹	13	US\$39,704,000	US\$224,964,000
Follow-Up Related non-GEF Renewable Energy Trust Fund (RETF) Projects	4 ³⁰	US\$10,671,161	US\$28,538,841
Total	31*	US\$51,660,388	US\$254,788,068

* Indicative numbers only, to be verified by the evaluation

Source: Energy and Climate Change Branch, SAP June 2014

III. Rationale and purpose of the evaluation

The evaluation of the Renewable Energy Trust Fund (RETF) was included in the ODG/EVA Work Programme for 2014. The purposes of the evaluation are to:

- Generate information on the results and functions of the RETF and its suitability as a for planning and project development;
- Assess the relevance of the RETF to the Inclusive and Sustainable Industrial Development (ISID) agenda; and
- Provide learning on the Renewable Energy Trust Fund to feed in for the future development of Trust Funds.

The primary objectives of the thematic evaluation are to:

- Assess the efficiency and effectiveness of RETF implementation the RETF and achieving stated results; is the RETF achieving its objectives?
- Assess the performance of the RETF as a fund for development and implementation of Renewable Energy Projects; and
- Provide information about best practices and challenges in implementing the RETF and, if relevant, actionable recommendations on how to strengthen and simplify the modalities of the appraisal, approval and reporting processes; and

²⁷ Total Project Costs includes both financing and co-financing for the full-size GEF and non-GEF projects.

²⁸ The 3 new pipeline projects for Bosnia and Herzegovina, Uganda and Myanmar are not included in this table. They should be included in the Inception Report for this Thematic Evaluation of the RETF.

²⁹ That derived from Project 5: "Preparatory Assistance for Development of Renewable Energy P" from Annex 3.

³⁰ Four non-GEF Full Size Projects (FSPs) are under implementation at the moment, however there are also three more projects from the non-GEF projects, that should be included in the Inception Report for this Evaluation.

- Assess the RETF, procedures and management including in comparison with the other UNIDO Trust Funds (3ADI, TTF, Food Security Trust Fund, etc.).

The key users of this evaluation will be UNIDO management, the staff of the UNIDO Energy and Climate Change Branch, other UNIDO branches operating trust funds, as well as current and potential donors to the RETF and/or other UNIDO trust funds.

The key question of the thematic evaluation on the RETF is to what extent the trust fund is achieving its expected results, i.e. to what extent has the renewable energy trust fund contributed to sustainable development through increasing energy access and energy security in developing countries through the deployment of renewable energy technologies. Furthermore, it should assess to what extent the renewable energy trust fund has supported member states in the formulation, design and subsequent implementation of a portfolio of concrete strong projects to scale up the use of renewable energy for productive uses in developing countries and economies in transition.

IV. Scope and focus of the evaluation

The time period to be covered by the evaluation is the period since the establishment of the Renewable Energy Trust Fund in 2010 until September 2014.

The focus of the thematic evaluation will be:

1. Assessment of the RETF as a funding mechanism;
2. Assessment of the RETF using the Development Assistance Committee (DAC) evaluation criteria (Relevance, Effectiveness, Efficiency, Sustainability and Impact); and
3. Desk review and portfolio analysis of the fourteen preparatory assistance projects financed directly from the RETF.

1. Assessment of the RETF as a funding mechanism

This part will assess to what extent the RETF has been used and is useful as a project planning, and development tool and been attuned to the needs of the organization. Has the RETF been adhered to, have identified priorities been acted upon, have the RETF supported management and decision-making and did it contribute to identifying new renewable energies projects with its help?

The evaluation will build on the RE Trust Fund Implementation Reports, UNIDO Annual Reports and thematic evaluations, such as UNIDO Projects for the Promotion of Small Hydro Power for Productive Use, UNIDO's contribution to the Millennium Development Goals and the thematic evaluation of the UNIDO Trade Trust Fund.

2. Assessment of the RETF using the Development Assistance Committee (DAC) evaluation criteria (Relevance, Effectiveness, Efficiency, Sustainability and Impact).

This part will follow the structure and content of the RETF using the Development Assistance Committee (DAC) evaluation criteria (Relevance, Effectiveness, Efficiency, Sustainability and Impact). Specific attention will be given to the results-based targets included in the RETF and related to the three thematic priorities of UNIDO at the formulation of the RETF; the achievement of the goals of UNIDO's energy portfolio is to promote the transfer of innovative and low-carbon technologies through demonstration, scaling up and replication of locally relevant renewable energy and energy efficiency solutions. Another key area of assistance by UNIDO to member states has been in the promotion of investment in renewable energy technologies, particularly from the private sector. To this effect the Renewable and Rural Energy programme (RRE) in the ECC Branch has been promoting renewable energy technologies and markets for productive uses and income generation activities. Specific attention will be given to what extent new programme initiatives were launched, keeping in mind that the RETF was designed as a flexible tool and be able to respond to changes in the Organization's operating environment and the development needs of Member States. An assessment of crosscutting issues mentioned above will equally be conducted.

Findings from the Independent Thematic Review of UNIDO Projects for the Promotion of Small Hydro Power for Productive Use, as well as findings of all Renewable Energies project evaluations would also be taken into consideration wherever relevant. The exact scope of the evaluation will be defined in the inception report.

3. Desk review and portfolio analysis of the fourteen preparatory assistance projects financed directly from the RETF

A desk review, including a portfolio analysis of funded projects along a list of criteria that will be defined in the Inception Report (type of projects, substance areas covered, regional focus, budget, management, etc.) will be conducted. The Portfolio Analysis (Review) will be done for all projects for which funding from the RETF was used. The desk review will be complemented with interview with the corresponding Project Managers. No field mission is planned.

The portfolio analysis will examine if the RETF-funded projects lead to other main Energy and Climate Change Branch projects. The analysis will show if joint activities with international organizations (Sustainable Energy for All (SE4ALL), International Renewable Energy Agency (IRENA), United National Environment Programme (UNEP), United National Development Programme (UNPD) have been realized.

V. Key evaluation issues and questions

A. The Renewable Energy Trust Fund (RETF)

(i) Relevance of the RETF to UNIDO and donors

To what extent:

- Is the RETF relevant to donors and their priorities?
- Is the RETF relevant to UNIDO and its member states priorities?

- Is the trust fund modality, in principle, a relevant tool to achieve the objectives set out in the RETF Project Document? How does it compare to other UNIDO modalities and what are the strengths and weaknesses?
- How important is the RETF for UNIDO?
- Is the RETF an active funding mechanism for UNIDO at the moment? How are the donors' contributions for the RETF developing?
- As UNIDO has other resources for Preparatory Assistance (PAs), how important is the RETF for UNIDO's own Programmable Resources or Resourcing? Did they all fit with the purpose for RETF? To what extent have the funded projects been aligned with the goals?
- Are the objectives of the RETF aligned to UNIDO's mandate and programmatic objectives?

(ii) Design of the RETF

- How was the intervention logic of the RETF designed?
- Were sound and good Results Based Management (RBM) principles applied in the design of the RETF?
- Have lessons from other trust funds been taken into consideration during the formulation or its subsequent modifications?
- Is the RETF Project Document clearly formulated, including criteria for eligibility?

(iii) Management of the RETF

To what extent:

- Were the projects in line with the purpose and objectives of the RETF?
- Were projects formulated based on the logical framework approach and included appropriate output and outcome indicators within a realistic timeframe?
- Did criteria for approval of projects funded by RETF exist? To what extent were they applied?
- Was there clarity, awareness and understanding of eligibility and selection criteria for the preparatory assistance projects from the RETF in UNIDO?
- Have the available funds been utilized within a reasonable timeframe?
- Was the RETF implemented according to the RETF Project Document?
- Were the modalities for appraisal and approval of RETF-funded Renewable Energies Projects adequate, clear, effective and efficient? Were the reporting processes of the RETF adequate and how frequent was the reporting to Member States on the RETF? Details on the modalities for appraisal and approval should be written in the Inception Report for the Evaluation.

(iv) Results and potential impact of the RETF using the DAC criteria of evaluation

To what extent:

- Has the RETF achieved its objectives?
- Have individual projects achieved their objectives?
- Has the RETF strengthened UNIDO's capacity to provide assistance in the Renewable Energy Sector to member states?

(v) Gender and environment

- Have gender aspects been considered in the appraisal, implementation, formulation, management of the RETF, and will it benefit with participation fostered?

- Did the projects contain the aspect of environmental sustainability?
- Extent to which the RETF has considered (mainstreamed) the environmental sustainability?

VI. Evaluation approach and methodology

The evaluation team will carry out a desk review of available information on Trust Funds (guiding documents, evaluations, etc.). The desk review will include a relevant sample of external trust funds (i.e. those of other agencies) as well as other UNIDO trust funds and will provide an analysis of trends and developments of TFs with a view to detecting future demands and requirements of UNIDO RETF (future outlook).

In terms of **data collection** the evaluation team will use different methods ranging from a desk review (an indicative bibliography is given in Annex 1) to **interviews** with UNIDO managers looking at the portfolio in its entirety and individual projects.

Interviews will be made with the Project Managers, management of the Energy and Climate Change Branch, Director of Energy and Climate Change (ECC) Branch, Managing Director Programme Development and Technical Cooperation (PTC), and Staff of the funds mobilization unit, Director Trade Capacity Building (TCB) Branch, and Approval and Monitoring Committee (AMC) Secretariat.

Strength, Weaknesses, Opportunities and Threats (SWOT) analysis will be conducted of the Trust Funds as a funding modality, with a special emphasis on the RETF.

Based on the information collected through interviews and desk review the evaluation team will analyse and review the original logical framework of the UNIDO RETF. This theory will map out how inputs and activities should have logically led to outputs, outcomes and impacts. This will enable the evaluation to determine in how far the design of RETF and its activities are adequate, whether they are consistent with the RETF Project Document and with UNIDO's thematic priorities.

The evaluation team will ensure that the findings are **evidence based**. This implies that perceptions, hypotheses and assertions obtained in interviews will be validated through cross checks and **triangulation** of sources.

While maintaining independence, the evaluation will be carried out based on a **participatory approach**, which seeks the views and assessments of all stakeholders. These include government counterparts, involved private sector representatives, other UN organizations, multilateral organizations, bilateral donors, beneficiaries as well as UNIDO regular and project staff.

The concrete mix of methods will be further detailed as needed in the inception report.

VII. Timing

The evaluation is scheduled to take place between September and December 2014.

Activity	Estimated date
Desk Review and Portfolio Analyses by members of evaluation team	September/October 2014
Initial interviews at HQ to assess scope	September/October 2014
Inception report	September/October 2014
Presentation of preliminary findings at HQ	October 2014
Drafting of report	October 2014
Collection and incorporation of comments	November 2014
Issuance of final report	November 2014
Issuance of the synthesis report on all three TFs	December 2014

VIII. Evaluation team

The evaluation team will include:

1. One senior international evaluation consultant who will act as team leader with responsibility for the evaluation report and who will cover assessments of the evaluation issues outlined in sections IV and V of the TOR.
2. One senior international evaluation consultant to carry out research, data and portfolio analysis and to coordinate with the Evaluation team the conducting of the evaluation according to the ToR.

The members of the evaluation team will be contracted by UNIDO. The tasks of the team leader are specified in the job description attached to this ToR in Annex 6.

All members of the evaluation team must not have been involved in the design and/or implementation, supervision and coordination of any intervention to be assessed by the evaluation and/or have benefited from the programmes/projects under evaluation.

One member of UNIDO's Office for Independent Evaluation (ODG/EVA) will manage the evaluation and will act as a focal point. Additionally, the UNIDO ECC will support the evaluation team.

IX. Evaluation process and reporting

The detailed evaluation plan, including details of the methodologies to be applied, detailed interview guidelines, literature review for the portfolio analysis, and/or use of survey instruments will be presented by the team leader in the **inception report**, following the review of documents and interviews at UNIDO HQ.

The evaluation team will present its preliminary findings to the UNIDO managers involved in the renewable energy trust fund as well as other branches operating trust fund(s) and other stakeholders at UNIDO Headquarters. A draft evaluation report will be circulated for comments. The reporting language will be English. The draft outline of the evaluation report is contained in Annex 8.

Review of the draft report: The draft report will be shared with UNIDO management and project managers for initial review and consultation. They may provide feedback on any error of fact and may highlight the significance of such errors in conclusions. The evaluators will take comments into consideration when preparing the final version of the evaluation report.

X. Deliverables

- Inception Report
- Presentation of preliminary findings to counterparts and HQ staff
- Draft Report – October 2014
- Final Evaluation Report on the Renewable Energy Trust Fund

XI. Quality assurance

All UNIDO evaluations are subject to quality assessments by the UNIDO Evaluation Group. Quality control is exercised in different ways throughout the evaluation process (briefing of consultants on ODG/EVA methodology and process, review of inception report and evaluation report). The quality of the evaluation report will be assessed and rated against the criteria set forth in ODG/EVA quality checklist for evaluation reports as presented in Annex 9.

XII. Annexes

1. Bibliography
2. Donors and their contributions to the RETF
3. Projects (Project Preparatory Assistances) for which direct funds from RETF were used
4. List of approved and under implementation GEF projects derived from the Preparatory Assistance for Development of Renewable Energy Projects of the RETF funds
5. List of non-GEF projects derived from RETF funds that are currently under implementation
6. Logical Framework from the Project Document of the Renewable Energy Trust Fund (RETF)
7. Job descriptions for evaluation team members
8. Evaluation report outline
9. Checklist on the quality of the evaluation report

Annex 1: Bibliography

- UNIDO (2011). Project Document – Renewable Energy Trust Fund.
- UNIDO (2014). Renewable Energy Strategy: Building sustainable industries on renewable energy.
- UNIDO (2011-2014). Implementation Reports of Trust Fund on Renewable Energy.
- UNIDO (2011). UNIDO activities related to energy. Report by the Director-General.
- UNIDO (2011). UNIDO institutional support for the United Nations Secretary-General's initiative on sustainable energy for all.
- UNIDO. Training Manual on Sustainable Energy Regulation and Policymaking for Africa.
- All related UNIDO IDB PBC Reports since the beginning of the RETF.
- Project documents of individual Renewable Energy projects.
- Project progress reports and self-assessments.
- Back-to-office reports of project managers.
- Renewable Energy reports from different sources.
- UNIDO Strategies, in particular with regard to Renewable Energy Capacity Building.
- UNIDO (2010). Independent thematic review. UNIDO Projects for the Promotion of Small Hydro Power for Productive Use.
- UNIDO (2014). Preparatory and first operational phase of the ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE) ADA / AECID / ECOWAS/ UNIDO.
- UNIDO (2014). ODG/EVA Work programme and provisional budget for 2014/2015.
- UNIDO (2014). Independent evaluation. Africa (accelerated) agri-business and agro-industries development initiative (3ADI).
- UNIDO (2014). Independent thematic evaluation. UNIDO Trade Trust Fund.
- Other evaluations (As standards should be stated in the Bibliography to be used for this thematic evaluation).

Annex 2: Donors and their contributions to the RETF³¹

Country	2010	2011	2012	2013 ¹⁾	2014 ²⁾	Total
Italy	€ 121,505.80	€ 17,723.54				€ 139,229.34
Israel	€ 78,108.00					€ 78,108.00
Portugal	€ 73,417.00					€ 73,417.00
Spain	€ 62,156.55					€ 62,156.55
Brazil	€ 33,393.75	€ 37,631.92				€ 71,025.67
Switzerland	€ 30,777.97					€ 30,777.97
Austria	€ 25,000.00					€ 25,000.00
Sweden	€ 19,530.42	€ 96,070.00	€ 31,923.75			€ 147,524.17
Argentina	€ 18,432.77					€ 18,432.77
Norway	€ 16,503.92	€ 56,376.50				€ 72,880.42
Saudi Arabia	€ 15,917.18					€ 15,917.18
Denmark	€ 15,504.67	€ 60,183.75	€ 22,465.75			€ 98,154.17
Finland		€ 49,793.75				€ 49,793.75
Australia		€ 24,470.00	€ 146.69			€ 24,616.69
Republic of Korea	€ 15,000.00					€ 15,000.00
Poland	€ 9,792.00					€ 9,792.00
India	€ 9,471.85					€ 9,471.85
Turkey	€ 8,735.19					€ 8,735.19
Ireland	€ 7,880.53					€ 7,880.53
South Africa	€ 7,209.35					€ 7,209.35
New Zealand	€ 5,728.14	€ 21,087.00				€ 26,815.14
Rest Countries (Member States)	€ 75,511.30	€ 4,625.25	€ 0.00	€ 0.00	€ 0.00	€ 80,136.55
Total	€ 649,576.39	€ 367,961.71	€ 54,536.19	€ 0.00	€ 0.00	€ 1,072,074.29

Source: Finance SAP June 2014, Agresso Total TC

³¹ For 2013 and 2014 it is still not decided if there will be Member States Contributions made to the RETF

Annex 3: Projects (Project Preparatory Assistances) for which direct funds from RETF were used³²

Projects (Project Preparatory Assistances) for which funding of RETF was used			Released Budget (a) excluding 13% Project Support Costs (PSC)	Expenditure (c+d)	Funds Available (a-b-c-d)
	Grant	Sponsored Program	EUR	EUR	EUR
1	TECMR12002_TF Renewable Energy	110035-0-01-01	47,820.00	40,222.84	7,597.16
2	Industr. Competitiveness Through Biomass	100285-1-01-01	22,380.00	17,798.18	4,581.82
3	TEIND12004_TF renewable energy	110040-0-03-02	44,760.00	44,544.17	215.83
4	RAF - Establishing a SADCREEE Centre PA	120253-0-01-03	50,000.00	61,695.57	-11,695.57
5*	Preparatory Assistance for Development of Renewable Energy P	103155-1-01-01	330,000.04	232,988.53	97,011.51
6	Preparatory assistance - Solar powered business information	103005-1-01-01	12,718.03	10,682.75	2,035.28
7	TERAS12005_TF renewable energy	106049-1-03-01	76,849.44	0.00	76,849.44
8	Tanzania GEF 5 PPG: Waste to energy	120319-0-01-02	38,600.00	29,055.20	9,544.80
9	IVC - Promoting RE based grids rural	100186-1-04-01	37,750.00	9,902.90	27,847.10
10	TEGLO_120601_TF Renewable Energy	120601-0-01-01	20,000.00	12,977.40	7,022.60
11	TEKEN_130032_TF renewable energy	130032-0-01-01	27,406.00	25,272.32	2,133.68
12	TEIND_120182_TF Renewable Energy	120182-1-01-02	53,097.00	0.00	53,097.00
13	TERLA_130276_TF for renewable energy	130276-1-02-01	50,000.00	34,990.00	15,010.00
14	TEGLO_130289_TF Renewable Energy	130289-1-01-01	30,000.00		30,000.00
Overall Result			841,380.51	520,129.86	321,250.65

Source: Energy and Climate Change Branch, SAP June 2014

³² * From the Preparatory Assistance for Development of Renewable Energy Projects derived 13 GEF Projects

Annex 4: List of approved and under implementation GEF projects derived from the Preparatory Assistance for Development of Renewable Energy Projects of the RETF funds ³³

Project Manager	Country	Region	GEF ID	GEF Cycle	Status	RETF used	Title	Total GEF Grant (\$ Mio)	Agency Fee (\$ Mio)	GEF Contribution (\$ Mio)	Co-financing (\$ Mio)	Total Project Cost (\$ Mio)	GEF PPG (\$ Mio)	UNIDO PPG (\$ Mio)	UNIDO cofinancing MSP/FSP (\$ Mio)	Approval Date PIF
Draeck	Albania	ECA	5342	GEF 5	PIF approved	PrePIF - TEGLO11030	Biomass energy for productive use for SMEs in the olive oil sector	1.070	0.093	0.927	4.507	5.434	0.050	0.025	0.050	31 Jul 2013
Thomas	Cambodia	Asia	5421	GEF 5	PIF approved	PrePIF - TEGLO11030	Reduction of GHG emission through promotion of commercial biogas plants	1.698	0.147	1.500	8.230	9.730	0.050	0.050	0.060	26 Nov 2013
Singh	Cameroon	AFR	4785	GEF 5	PIF approved	PrePIF- TEGLO11030 Co-financing PPG TECMR12002	Promoting integrated biomass and small hydro solutions for productive uses in Cameroon	2.266	0.206	2.000	10.000	12.000	0.060	0.060	0.060	7 Jun 2012
Zetsche	Chile	RLA	5335	GEF 5	PIF approved	PrePIF - TEGLO11030	Promoting the development of biogas energy amongst select small- and medium sized agro-industries	1.933	0.168	1.715	8.665	10.380	0.050	0.040	0.060	1 Jul 2013
Draeck	Côte d'Ivoire	AFR	4005	GEF 4	MSP under implementation	Co-financing MSP - TEIVC12004	Promoting Renewable Energy Based Mini-Grids in Rural Communities for Productive Uses	1.005	0.091	0.864	3.877	4.741	0.050	0.050	0.050	28 Jan 2010
Zetsche	Dominican Republic	RLA	4747	GEF 5	MSP under implementation	PrePIF-TEGLO11030 Co-financing PPG TEDOM12002	Stimulating industrial competitiveness through biomass-based, grid-connected electricity generation	1.496	0.136	1.300	7.620	8.920	0.060	0.030	0.060	29 Feb 2012
Ghoneim	Egypt	AFR	4790	GEF 5	PIF approved	PrePIF - TEGLO11030	Promoting low-carbon technologies for cooling and heating industrial applications	7.205	0.625	6.500	41.650	48.150	0.080	0.050	0.060	12 Apr 2013
Draeck	India	Asia	4788	GEF 5	FSP under implementation	PrePIF- TEGLO11030 Co-financing PPG TEIND12004	Promoting business models for increasing penetration and scaling-up of solar energy	4.890	0.445	4.365	21.826	26.191	0.080	0.060	0.075	29 Feb 2012
Draeck	India	Asia	5087	GEF 5	PIF approved	PrePIF - TEGLO11030	Organic waste streams for industrial applications in India	3.737	0.324	3.333	18.215	21.548	0.080	0.060	0.075	12 Apr 2013
Thomas	Kenya	AFR	5154	GEF 5	PIF approved	PrePIF - TEGLO11030	Sustainable conversion of waste to clean energy for GHG emission reduction	2.310	0.210	2.000	9.572	11.572	0.100	0.020	0.060	17 Dec 2013
Draeck	Madagascar	AFR	5317	GEF 5	PIF approved	PrePIF - TEGLO11030	Increased energy access for productive use through small hydropower development in rural areas	3.235	0.294	2.856	14.150	17.006	0.085	0.040	0.060	7 Nov 2013
Thomas	Nigeria	AFR	5375	GEF 5	PIF approved	PrePIF - TEGLO11030	Scaling up small hydro power (SHP) in Nigeria	3.000	0.260	2.690	14.870	17.560	0.050	0.050	0.060	20 Jun 2013
Thomas	Tanzania	AFR	4873	GEF 5	PIF approved	PrePIF- TEGLO11030 Co-financing PPG TEURT12008	Promotion of waste-to-energy applications in agro-industries	5.860	0.533	5.277	26.455	31.732	0.050	0.050	0.060	15 Nov 2012
Total	13							39.704	3.532	35.327	189.637	224.964	0.845	0.585	0.790	

Source: Energy and Climate Change Branch, SAP June 2014

³³ All 13 GEF projects derived from the Project 5 of Annex 2 of the RETF funds - Preparatory Assistance for Development of Renewable Energy Projects

Annex 5: List of non-GEF projects derived from RETF funds that are currently under implementation³⁴

Project Manager	Country	SAP ID	Status	RETF used	Title	Total Funds rec'd	Total Project Cost	Project Funds (\$)	Total Project Costs (\$)
Mhlanga	RAF	120386	Under implementation	PA TERA12020	Establishment and first operating phase of the SADCREEE Centre	euro 1,800,000	euro 14,938,000	2,448,000	20,315,680
Singh	RAS	106049	Under implementation	co-financing - TERAS12005	Promotion and transfer of marine current exploitation technology in China and South East Asia - RETF contribution	euro 634,677	euro 634,677	863,161	863,161
Aoki	India	120182	Under implementation	PA TE IND	Promoting low-head micro hydropower mini-grids	euro 1,000,000		1,360,000	1,360,000
Sugiura	GLO	120601	Under implementation	PA TEGLO	UNIDO-METI TT Programme	USD 6,000,000		6,000,000	6,000,000
Total	4							10,671,161	28,538,841

Source: Energy and Climate Change Branch, SAP June 2014.

³⁴ These four non-GEF Full Size Projects (FSPs) are under implementation at the moment, however there are also three more projects from the non-GEF projects that should be included in the Inception Report for this Evaluation. It was agreed with Ms. Sabine Kuchner on 26.06.2014 not to include the three additional non-GEF projects (SAP ID 130032, 130276, and 130289) which are now in the project preparatory phase.

Annex 6: Logical framework from the Project Document of the Renewable Energy Trust Fund³⁵

	Intervention logic	Verifiable indicators	Sources of verification	Risks/ Assumptions
Strategic Goal	<ul style="list-style-type: none"> To contribute to sustainable development through increasing energy access and energy security in developing countries through the deployment of renewable energy technologies. 	<ul style="list-style-type: none"> Establishment of enabling environments and markets for renewable energy technologies in the target countries Increase in the diversity and competitiveness of the productive sector in target countries Increased share of renewable energy in the energy mix of target countries Appropriate management and technical capacity base to support the growth and role of renewable energy for energy access and security 	<ul style="list-style-type: none"> National statistics Human Development reports Energy Development and Access Indices Renewable energy technologies transfer and development in target countries 	<ul style="list-style-type: none"> Willingness of host countries to continue to work with UNIDO Energy access and renewable energy remain a priority for the host governments
Immediate Objective	<ul style="list-style-type: none"> To support member states in the formulation, design and subsequent implementation of a portfolio of concrete projects to scale up the use of renewable energy for productive uses. In addition, RETF would also facilitate development of methodologies and tools, and organizing training workshops for capacity building at the national / regional level. 	<ul style="list-style-type: none"> A target of formulating at least 10 projects for securing US\$25 million from the GEF and various multilateral, bilateral and private sector financiers 	<ul style="list-style-type: none"> Successful PIFs approved within the UNIDO system Project documents submitted to the GEF for CEO endorsement UNIDO PAD issuances 	<ul style="list-style-type: none"> Close cooperation continues with the GEF and other agencies and potential funding organisations Success in mobilising and assuring co-funding of successful GEF projects

³⁵ p.14-16 from the Project Document on the Renewable Energy Trust Fund

	Intervention logic	Verifiable indicators	Sources of verification	Risks/ Assumptions
Outcomes	<ul style="list-style-type: none"> • A large portfolio of concrete projects formulated (at least 10 PIFs securing over US\$25m from GEF) • Increased access to modern energy and energy services for the productive sector in target countries based on renewable energy resources • Renewable energy markets promoted, developed and/or strengthened in beneficiary countries • In-house synergies enhanced in project development and implementation 	<ul style="list-style-type: none"> • Over US\$25m mobilized for the portfolio of projects supported • Clearly defined policy and regulatory frameworks promoting investments in renewable energy technologies • Increase in the number of independent power producers and mini electricity grids based on renewable energy resources • Number of productive activities arising from the interventions in the beneficiary countries • Number of projects prepared and/or implemented through inter-disciplinary involvement 	<ul style="list-style-type: none"> • National statistics • Energy Development and Access Indices • Policy documents and feed in tariffs in beneficiary countries <ul style="list-style-type: none"> • AG and AMC 	<ul style="list-style-type: none"> • Selected projects will be approved by the GEF • Selected projects fully funded and implemented in the target countries <ul style="list-style-type: none"> • Having enough projects requiring inter-disciplinary participation
Outputs	<ul style="list-style-type: none"> • a systematic and transparent methodology and screening mechanism for selecting beneficiary country projects • a portfolio of at least ten renewable energy projects in a number of member states aimed at scaling up renewable energy and energy services for productive uses. • Project concepts (PIFs) and detailed project documents submitted for GEF and other donor for funding and co-financing 	<ul style="list-style-type: none"> • A systematic and transparent methodology and screening tool for selecting projects • Number and quality of concepts (PIFs) and project documents submitted through UNIDO's internal processes • The methodology and Excel-based screening tool for projects selection 	<ul style="list-style-type: none"> • Letters of request and communications from various member states • Communications with the GEF and other potential funding organisations • Minutes of various UNIDO committees 	<ul style="list-style-type: none"> • Host countries will validate ownership of the projects and maintain commitment to work with UNIDO • Mobilised funding is realised from the committed donors and financiers

	Intervention logic	Verifiable indicators	Sources of verification	Risks/ Assumptions
Activities	<ul style="list-style-type: none"> Assess member states' request Develop a systematic and transparent scoring and screening tool for selecting projects Undertake pre-feasibility studies and carry out field visits and hold initial stakeholder consultations Map resource potential and assess needs through diagnostic studies Carry out socio-economic analyses identify potential funding sources and secure commitment Apply methodology to screen beneficiary countries and select Carry out detailed consultation with all relevant key stakeholders for selected projects formulate detailed concepts (PIFs) and project design documents for promoting application of proven and cost effective renewable energy technologies, and linking them with concrete productive opportunities Process and submit concepts (PIFs) and project documents for funding to the GEF and or other funding sources identified (EU, private sector and national and other multi/bilateral 	<ul style="list-style-type: none"> Assistance request letters from member states Communications and consultations held with various stakeholders Projects selected and submitted Concepts (PIFs) and project documents developed Letters of co-financing received from all committed co-financiers and funders 	<ul style="list-style-type: none"> Regular progress reports Back to office mission reports following field visits and meetings with stakeholders 	<ul style="list-style-type: none"> All key stakeholders remain committed to the projects selected

	Intervention logic	Verifiable indicators	Sources of verification	Risks/ Assumptions
	partners) <ul style="list-style-type: none"> • Mobilize and secure funding • Start implementation, and subsequently monitor, evaluate and report on funded projects • Promote dissemination of best practices and apply knowledge management 			

Annex 7: Job descriptions

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE
AGREEMENT (ISA) – SAP ID 140154 – “Independent Thematic Evaluation: UNIDO
Renewable Energy Trust Fund”

Title:	Senior International Evaluation Consultant (Team Leader)
Main Duty Station and Location:	Home-based
Mission/s to:	Vienna, Austria
Start of Contract (EOD):	1 September 2014
End of Contract (COB):	30 November 2014
Number of Working Days:	23

ORGANIZATIONAL CONTEXT *The Office for Independent Evaluation is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides factual information about result and practices that feed into the programmatic and strategic decision-making processes. Evaluation is an assessment, as systematic and impartial as possible, of a programme, a project or a theme. Independent evaluations provide evidence-based information that is credible, reliable and useful, enabling the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. The Office for Independent Evaluation is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.*

PROJECT CONTEXT *The senior international evaluation consultant will act as a Team leader in this thematic evaluation on UNIDO Renewable Energy Trust Fund according to the terms of reference. She/he will be responsible for the preparation of the evaluation report, including the coordination of inputs from other team members. This concerns in particular the overall assessment of evaluation issues in section V of the TOR. The Team Leader will perform the following tasks:*

MAIN DUTIES	Concrete/ measurable Outputs to be achieved	Expected duration	Location
<p>Preparatory phase</p> <p>Study renewable energy and project documentation (including progress reports, documentary outputs, available evaluation reports and self-evaluation reports)</p> <p>Study relevant background information (national policies, international frameworks, Renewable Energy issues of countries of intervention, etc.)</p> <p>Analyse intervention logic and design</p> <p>Develop survey questionnaire</p> <p>Review of portfolio information</p>	<p>Analytical overview of available documents and of UNIDO activities in Renewable Energy</p>	<p>6 days</p>	<p>Home-based</p>
<p>Briefing and Debriefing with Evaluation Group at HQ, and presentation of preliminary findings in Vienna</p> <p>Lead interviews with project managers and key stakeholders at HQ</p> <p>Develop methodology and interview guidelines</p> <p>Prepare inception report (development of the detailed evaluation work plan including survey instruments and preliminary analysis of intervention logic)</p> <p>Present preliminary findings and recommendations to the stakeholders at UNIDO</p> <p>Carry out additional interviews if necessary</p> <p>Present and discuss the findings, conclusions and recommendations at UNIDO HQ with a wider audience (e.g. at PTC-EVA or at ECC seminar)</p>	<p>Key issues of evaluation identified;</p> <p>Scope of evaluation clarified;</p> <p>Inception report, including the proposed methodology, approach and evaluation programme</p> <p>Feedback on preliminary findings</p> <p>Information gaps filled</p> <p>Final report presented; Strategy implications of evaluation report discussed, action plan developed</p>	<p>7 days</p>	<p>Vienna, UNIDO HQ</p>
<p>Drafting of evaluation report</p> <p>Analysis of survey results</p> <p>Prepare the draft evaluation report; supervise production of relevant chapters of the report by the other team members</p> <p>Adapt the evaluation report in light of additional evidence presented or factual corrections made; integrate comments from UNIDO Evaluation Group and stakeholders</p> <p>Prepare final evaluation report, incorporating comments received</p>	<p>Draft report</p> <p>Feedback on draft report</p> <p>Final report</p>	<p>10 days</p>	<p>Home-based</p>
<p>Total</p>		<p>23 days</p>	

REQUIRED COMPETENCIES

Core values:

1. Integrity
2. Professionalism
3. Respect for diversity

Core competencies:

1. Results orientation and accountability
2. Planning and organizing
3. Communication and trust
4. Team orientation
5. Client orientation
6. Organizational development and innovation

Managerial competencies (as applicable):

1. Strategy and direction
2. Managing people and performance
3. Judgement and decision making
4. Conflict resolution

MINIMUM ORGANIZATIONAL REQUIREMENTS

Education: Advanced university degree in environment, energy, engineering, economics, development studies or other relevant discipline with a specialization in renewable energy/industrial development and/or climate change.

Technical and Functional Experience:

A minimum of twenty years practical experience in the field of climate change, including experience at the international level involving technical cooperation in developing countries. Exposure to the needs, conditions and problems in developing countries.

Languages: Fluency in written and spoken English is required. Fluency and/or working knowledge of another official UN language, particularly French desirable.

Absence of Conflict of Interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the Office for Independent Evaluation.



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA) – SAP ID 140154 – “Independent Thematic Evaluation: UNIDO Renewable Energy Trust Fund”

Title:	Senior International Evaluation Consultant
Main Duty Station and Location:	Home-based
Mission/s to:	Vienna, Austria
Start of Contract (EOD):	01 September 2014
End of Contract (COB):	30 November 2014
Number of Working Days:	23

ORGANIZATIONAL CONTEXT *The Office for Independent Evaluation is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides factual information about result and practices that feed into the programmatic and strategic decision-making processes. Evaluation is an assessment, as systematic and impartial as possible, of a programme, a project or a theme. Independent evaluations provide evidence-based information that is credible, reliable and useful, enabling the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. The Office for Independent Evaluation is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.*

PROJECT CONTEXT *The senior international evaluation consultant will act as a team member in this thematic evaluation on UNIDO Renewable Energy Trust Fund according to the terms of reference. She/he will be responsible for the preparation of the evaluation report together with the Team Leader, including the coordination of inputs from other team members. This concerns in particular the overall assessment of evaluation issues in section V of the TOR. The senior international evaluation consultant will perform the following tasks:*

MAIN DUTIES	Concrete/measurable Outputs to be achieved	Expected duration	Location
<p>Preparatory phase</p> <p>Study renewable energy and project documentation (including progress reports, documentary outputs, available evaluation reports and self-evaluation reports)</p> <p>Study relevant background information (national policies, international frameworks, Renewable Energy issues of countries of intervention, etc.)</p> <p>Analyse intervention logic and design</p> <p>Co-develop survey questionnaire</p> <p>Review of portfolio information</p>	<p>Analytical overview of available documents and of UNIDO activities in Renewable Energy</p>	<p>6 days</p>	<p>Home-based</p>
<p>Briefing and Debriefing with Evaluation Group at HQ, and presentation of preliminary findings in Vienna</p> <p>Interviews with project managers and key stakeholders at HQ</p> <p>Develop methodology and interview guidelines</p> <p>Co-prepare inception report (development of the detailed evaluation work plan including survey instruments and preliminary analysis of intervention logic)</p> <p>Present preliminary findings and recommendations to the stakeholders at UNIDO together with the evaluation team leader</p> <p>Carry out additional interviews if necessary</p> <p>Present and discuss the findings, conclusions and recommendations at UNIDO HQ with a wider audience (e.g. at PTC-EVA or at ECC seminar) together with the evaluation team leader</p>	<p>Key issues of evaluation identified;</p> <p>Scope of evaluation clarified;</p> <p>Inception report, including the proposed methodology, approach and evaluation programme</p> <p>Feedback on preliminary findings</p> <p>Information gaps filled</p> <p>Final report presented; Strategy implications of evaluation report discussed, action plan developed</p>	<p>7 days</p>	<p>Vienna, UNIDO HQ</p>
<p>Drafting of evaluation report</p> <p>Analysis of survey results</p> <p>Co-prepare the draft evaluation report; production of relevant chapters of the report</p> <p>Participate in adaptation of the evaluation report in light of additional evidence presented or factual corrections made; integrate comments from UNIDO Evaluation Group and stakeholders</p> <p>Co-prepare final evaluation report, incorporating comments received under the supervision of the team leader</p>	<p>Draft report</p> <p>Feedback on draft report</p> <p>Final report</p>	<p>10 days</p>	<p>Home-based</p>
<p>Total</p>		<p>23 days</p>	

REQUIRED COMPETENCIES

Core values:

1. Integrity
2. Professionalism
3. Respect for diversity

Core competencies:

1. Results orientation and accountability
2. Planning and organizing
3. Communication and trust
4. Team orientation
5. Client orientation
6. Organizational development and innovation

Managerial competencies (as applicable):

1. Strategy and direction
2. Managing people and performance
3. Judgement and decision making
4. Conflict resolution

MINIMUM ORGANIZATIONAL REQUIREMENTS

Education: Advanced university degree in environment, energy, engineering, economics, development studies or other relevant discipline with a specialization in renewable energy/industrial development and/or climate change.

Technical and Functional Experience:

A minimum of fifteen years practical experience in the field of climate change, including experience at the international level involving technical cooperation in developing countries. Exposure to the needs, conditions and problems in developing countries.

Languages: Fluency in written and spoken English is required. Fluency and/or working knowledge of another official UN language, particularly French desirable.

Absence of Conflict of Interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the Office for Independent Evaluation.

Annex 8: Evaluation report outline

Acronyms and Abbreviations

Glossary of Terms

Executive Summary

MAIN REPORT:

I. BACKGROUND

1. Introduction and Background

- Introduction
- Evaluation objectives
- Methodology
- Evaluation process
- Limitations of evaluation

2. International Renewable Energy context

- Brief introduction of Renewable Energy (RE) context
- Brief overview of recent economic development
- Development and renewable energy challenges facing client countries
- Relevant government policies, strategies and initiatives

3. Description of related UNIDO activities

- Brief overview of Renewable Energy Trust Fund activities
- Major Renewable Energy activities, main objectives and problems they address
- Brief overview of other important activities

II. ASSESSMENT

4. UNIDO's Renewable Energy Trust Fund Portfolio

- Portfolio Review
- Conclusions

5. Performance and Results of the Renewable Energy Trust Fund

- Relevance of the RETF to UNIDO and donors
- Design of the RETF
- Management of the RETF
- Results and potential impact of the RETF using the DAC criteria of evaluation
- Gender
- Main Conclusions

III. FUTURE ISSUES

IV. MAIN CONCLUSIONS AND RECOMMENDATIONS

V. LESSONS LEARNED

VI. ANNEXES

- Annex A: Terms of reference
- Annex B: List of persons met
- Annex C: Bibliography
- Annex E: References

Annex 9: Checklist on evaluation report quality**Checklist on evaluation report quality**

Report quality criteria	UNIDO Evaluation Group Assessment notes	Rating
Report Structure and quality of writing		
The report is written in clear language, correct grammar and use of evaluation terminology. The report is logically structured with clarity and coherence. It contains a concise executive summary and all other necessary elements as per TOR.		
Evaluation objective, scope and methodology		
<p>The evaluation objective is explained and the scope defined.</p> <p>The methods employed are explained and appropriate for answering the evaluation questions.</p> <p>The evaluation report gives a complete description of stakeholder's consultation process in the evaluation.</p> <p>The report describes the data sources and collection methods and their limitations.</p> <p>The evaluation report was delivered in a timely manner so that the evaluation objective (e.g. important deadlines for presentations) was not affected.</p>		
Evaluation object		
<p>The logic model and/or the expected results chain (inputs, outputs and outcomes) of the object is clearly described.</p> <p>The key social, political, economic, demographic, and institutional factors that have a direct bearing on the object are described.</p> <p>The key stakeholders involved in the object implementation, including the implementing agency(s) and partners, other key stakeholders and their roles are described.</p> <p>The report identifies the implementation status of the object, including its phase of implementation and any significant changes (e.g. plans, strategies, logical frameworks) that have occurred over time and explains the implications of those changes for the evaluation.</p>		
Findings and conclusions		
<p>The report is consistent and the evidence is complete (covering all aspects defined in the TOR) and convincing.</p> <p>The report presents an assessment of relevant outcomes and achievement of project objectives.</p> <p>The report presents an assessment of relevant external factors (assumptions, risks, impact drivers) and how they</p>		

<p>influenced the evaluation object and the achievement of results.</p> <p>The report presents a sound assessment of sustainability of outcomes or it explains why this is not (yet) possible.</p> <p>The report analyses the budget and actual project costs.</p> <p>Findings respond directly to the evaluation criteria and questions detailed in the scope and objectives section of the report and are based on evidence derived from data collection and analysis methods described in the methodology section of the report.</p> <p>Reasons for accomplishments and failures, especially continuing constraints, are identified as much as possible.</p> <p>Conclusions are well substantiated by the evidence presented and are logically connected to evaluation findings.</p> <p>Relevant cross-cutting issues, such as gender, human rights, and environment are appropriately covered.</p>		
Recommendations and lessons learned		
<p>The lessons and recommendations are based on the findings and conclusions presented in the report.</p> <p>The recommendations specify the actions necessary to correct existing conditions or improve operations ('who?' 'what?' 'where?' 'when?').</p> <p>Recommendations are implementable and take resource implications into account.</p> <p>Lessons are readily applicable in other contexts and suggest prescriptive action.</p>		

Rating system for quality of evaluation reports

A number rating 1-6 is used for each criterion: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, Highly Unsatisfactory = 1, and unable to assess

Annex B: List of interviewees

Name	Title	Agency/ Institution	Date/Location
Ms. Margareta de Goys	Director, Office for Independent Evaluation	UNIDO	October 13, 2014 Vienna, Austria
Mr. Javier Guarnizo	Senior Evaluation Officer, Office for Independent Evaluation	UNIDO	October 13, 2014 Vienna, Austria
Mr. Philippe Scholtes	Managing Director, Programme Development and Technical Cooperation Division (PTC)	UNIDO	October 15, 2014 Vienna, Austria
Mr. Peter Ulbrich	Director, Programme Support and General Management Division - Financial Services Branch (PSM/FIN)	UNIDO	October 15, 2014 Vienna, Austria
Mr. Pradeep Monga	Director, Energy and Climate Change Branch (PTC/ECC)	UNIDO	October 20, 2014 Vienna, Austria
Mr. Sam Hobohm	Director, Office for Strategic Planning, Coordination And Monitoring (ODG/SPQ)	UNIDO	October 20, 2014 Vienna, Austria
Ms. Adot Killmeyer-Oleche	Unit Chief, Quality Monitoring Unit Office for Strategic Planning, Coordination And Monitoring (ODG/SPQ/QUA)	UNIDO	October 20, 2014 Vienna, Austria
Mr. Juergen Hierold	GEF Coordinator and Unit Chief Partnerships Mobilization Unit (PTC/PRM/PMU)	UNIDO	October 21, 2014 Vienna, Austria
Mr. Diego Masera	Unit Chief, Renewable and Rural Energy Unit (RRE), Energy and Climate Change Branch (ECC)	UNIDO	October 17, 2014 Vienna, Austria
Mr. Alois Posekufa Mhlanga	Industrial Development Officer Renewable and Rural Energy Unit (RRE), Energy and Climate Change Branch (ECC)	UNIDO	October 13, 2014 Vienna, Austria
Mr. Jossy Thomas	Industrial Development Officer Renewable and Rural Energy Unit (RRE), Energy and Climate Change Branch (ECC)	UNIDO	October 14, 2014 Vienna, Austria
Mr. Rana Singh	Industrial Development Officer Renewable and Rural Energy Unit (RRE), Energy and Climate Change Branch (ECC)	UNIDO	October 17, 2014 Vienna, Austria
Mr. Mark Draeck	Industrial Development Officer Renewable and Rural Energy Unit (RRE), Energy and Climate Change Branch (ECC)	UNIDO	October 15, 2014 Vienna, Austria

Name	Title	Agency/ Institution	Date/Location
Mr. Hiromi Sugiura	Senior Programme Management Expert, Energy and Climate Change Branch (ECC)	UNIDO	October 16, 2014 Vienna, Austria
Mr. Martin Lugmayer	Project Manager, Energy and Climate Change Branch (ECC)	UNIDO	October 15, 2014 Vienna, Austria
Mr. Kentaro Aoki	Industrial Development Expert, Renewable and Rural Energy Unit (RRE), Energy and Climate Change Branch (ECC)	UNIDO	October 16, 2014 Vienna, Austria
Mr. Nina Zetsche	Industrial Development Officer, Renewable and Rural Energy Unit (RRE), Energy and Climate Change Branch (ECC)	UNIDO	October 14, 2014 Vienna, Austria
Mr. Rana Ghoneim	Industrial Development Officer, Industrial Energy Efficiency Unit (RRE), Energy and Climate Change Branch (ECC)	UNIDO	October 21, 2014 Vienna, Austria
Ms. Sabine Kuchner-Folkhard	Programme Assistant, Energy and Climate Change Branch (ECC)	UNIDO	October 14, 2014 Vienna, Austria
Mr. Edme Koffi	Unit Chief, Regional Programme and Field Representation Branch Africa Bureau (PRF/RPF/AFR)	UNIDO	October 16, 2014 Vienna, Austria
Mr. Paulo Augusto Sá Pires Filho	Third Secretary	Permanent Mission of Brazil to UNIDO	October 22, 2014 Vienna, Austria
Ms. Beth-Eden Kite	Deputy Permanent Representative	Permanent Mission of Israel to The United Nations, OSCE and International Organizations in Vienna	October 23, 2014 Vienna, Austria
Mr. Pierluigi Colapinto	Second Secretary	Permanent Mission of Italy to the International Organizations	October 23, 2014 Vienna, Austria
Mr. Erik Lindfors	Alternate Permanent Representative – Minister Counsellor	Permanent Mission of Sweden to the International Organizations	October 22, 2014 (Telephone Interview)
Mr. Luise Flugler Calesen	Alternate Permanent Representative	Permanent Mission of Denmark to the International Organizations	October 20, 2014 (Telephone Interview)

Annex C: Evaluation matrix

Evaluation Question	Indicators	Data Collection and Analysis Method	Information Sources
<p>Relevance of the RETF to UNIDO and donors:</p> <p>Is the RETF relevant to donors and their priorities?</p>	Expressed indication of importance of the RETF by donors	Program document review, donor interviews	Interviews of selected Donors to the RETF including GEF
Is the RETF relevant to UNIDO and its Member States priorities?	Expressed indication of importance of the RETF by UNIDO	Desk review of Program Documents, interviews of program staff and senior management	UNIDO strategy documents, project documents
Is the trust fund modality, in principle, a relevant tool to achieve the objectives set out in the RETF Project Document? How does it compare to other UNIDO modalities and what are the strengths and weaknesses?	Stated and demonstrated success of the use of TFs as a program implementation too.	Review of evaluations of other trust Funds both in UNIDO and in other agencies, interviews	Evaluation documents, senior/middle management in UNIDO
How important is the RETF for UNIDO?	Stated need by UNIDO and Governments for UNIDO assistance	Interviews of selected Government official and UNIDO officials, Desk review of documents,	Previous evaluations, government officials and relevant UNIDO officials
Is the RETF an active funding mechanism for UNIDO at the moment? How are the donors' contributions for the RETF developing?	Perception and expressed importance by UNIDO officials, ration of pledges to payments, size of the RETF	Interviews of staff and senior management. Review of RETF program and financial records interviews	Senior managers and staff, program documents
As UNIDO has other resources for Preparatory Assistance (PAs), how important is the RETF for UNIDO's own Programmable Resources or Resourcing? Did they all fit with the purpose for RETF? To what extent have the funded projects been aligned with the goals	Ratio of RETF resources to UNIDO programmable resources, consistency of RETF projects with UNIDO energy strategy	Interviews, desk review	Strategy and planning / project documents
Are the objectives of the RETF aligned to UNIDO's mandate and programmatic objective	<ul style="list-style-type: none"> - Overlaps/differences between UNIDO RETF objectives - UNIDO mandate - objectives of other intergovernmental processes 	- Desk review, staff interviews	- Planning and strategy documents, program staff and senior managers

<p>Design of the RETF:</p> <p>How was the intervention logic of the RETF designed? Were sound and good Results Based Management (RBM) principles applied in the design of the RETF? Is the RETF Project Document clearly formulated, including criteria for eligibility?</p>	<p>Quality of</p> <ul style="list-style-type: none"> - causal logic linking project outputs, program outputs and Expected outcomes in the RETF/RETF projects - intermediate states (between outputs and outcomes, between outcome and impacts) identified 	<p>Desk review, reconstructed Theory of Change (TOC), staff interviews</p>	<p>Program/project planning and strategy documents, program staff and senior managers</p>
<p>Have lessons from other trust funds been taken into consideration during the formulation or its subsequent modifications?</p>	<p>References to lessons from implementation of other Trust Funds</p>	<p>Desk review, evaluations, staff interviews</p>	<p>Program/project documents, program performance reports, quarterly project reports</p>
<p>Management of the RETF:</p> <p>Were the projects in line with the purpose and objectives of the RETF?</p>	<p>Degree to which activities under each area of intervention are strategically aligned with one another and to the objectives of the RETF</p>	<p>Desk review, staff interviews</p>	<p>Program staff, Program/project documents, evaluations</p>
<p>Were projects formulated based on the logical framework approach and included appropriate output and outcome indicators within a realistic timeframe?</p>	<p>The existence and quality of the LFMs</p>	<p>Desk review, staff interviews</p>	<p>Program staff, Program/project documents, evaluations</p>
<p>Did criteria for approval of projects funded by RETF exist? To what extent were they applied? Was there clarity, awareness and understanding of eligibility and selection criteria for the preparatory assistance projects from the RETF in UNIDO?</p>	<p>Extent to which the criteria for project selection were systematically used</p> <p>Perception of the level of clarity and measure of understanding of eligibility and selection criteria</p>	<p>Desk review, staff interviews</p> <p>Desk review, staff interviews, project country interviews</p>	<p>Program staff, Program/project documents, evaluations</p> <p>Program staff, Program/project documents, evaluations, interviews with country partners</p>
<p>Have the available funds been utilized within a reasonable timeframe?</p>	<p>Fund disbursements relative to the implementation of work plan activities</p>	<p>Desk review, staff interviews, project country interviews</p>	<p>Financial reports and project/program documents</p>
<p>Was the RETF implemented according to the RETF Project Document?</p>	<p>Consistency of implementation with project document</p>	<p>Desk review, staff interviews</p>	<p>project program/ performance reports, evaluations reports</p>
<p>Were the modalities for appraisal and approval of RETF-funded Renewable</p>	<p>Quality of project review and approval processes</p>	<p>Desk review, staff interviews</p>	<p>program staff, project program/ performance reports, evaluations</p>

Energies Projects adequate, clear, effective and efficient?			reports
Were the reporting processes of the RETF adequate and how frequent was the reporting to Member States on the RETF?	Frequency of reporting, perception of Member States and donors of adequacy of reporting	Desk review, staff interviews, interviews with donors and Member States	program staff, project program/ performance reports, evaluations reports, Member States
Results and potential impact of the RETF using the DAC criteria of evaluation: Has the RETF achieved its objectives?	- Level of achievement according to indicators: - outputs - outcomes (TBD: based on agreed theory of change) targets	Documentation review, key informant interviews	Project evaluations, progress reports, project and program reviews, meeting minutes, procedural documentation
Have individual projects achieved their objectives?	- Level of achievement according to indicators: - outputs - outcomes (TBD: based on agreed LFM) Targets	Documentation review, key informant interviews	Project evaluations, progress reports, project and program reviews, staff
Has the RETF strengthened UNIDO's capacity to provide assistance in the Renewable Energy Sector to Member States?	-Extent to which changes along causal pathways from outputs through outcomes to impacts happened as anticipated - Level of achievement at the higher results level according to indicators	- Documentation review, key informant interviews	Project evaluations, progress reports, program reviews and evaluations, staff
Gender and environment: Have gender aspects been considered in the appraisal, implementation, formulation, management of the RETF, and will it benefit with participation fostered?	Extent to which the criteria for project selection were systematically used	Documentation review, key informant interviews	ProDocs, Planning and strategy documents Project evaluations, progress reports
Did the projects contain the aspect of environmental sustainability? Extent to which the RETF has considered (mainstreamed) the environmental sustainability?	Design elements that have enabled persistence of results (per desk reviewed project, per field visit country activity/project) - political &/or social - institutional (including government, non-government) - financial - ecological	Documentation review, key informant interviews	ProDocs, Planning and strategy documents Project evaluations, progress reports meeting minutes, procedural documentation, Staff & managers in-country project

Annex D: Bibliography

1. UNIDO. 2011. Project Document – Renewable Energy Trust Fund.
2. UNIDO. 2014. Renewable Energy Strategy: Building sustainable industries on renewable energy.
3. UNIDO. 2011-2014. Implementation Reports of Trust Fund on Renewable Energy.
4. UNIDO. 2011. UNIDO activities related to energy. Report by the Director-General.
5. UNIDO. 2011. UNIDO institutional support for the United Nations Secretary-General's initiative on sustainable energy for all.
6. UNIDO. Training Manual on Sustainable Energy Regulation and Policymaking for Africa.
7. All related UNIDO IDB PBC Reports since the beginning of the RETF.
8. Project documents of individual Renewable Energy projects.
9. Project progress reports and self-assessments.
10. Back-to-office mission reports of project managers.
11. Renewable Energy reports from different sources.
12. P.C. Maithani, 2008. Renewable Energy in the Global Context, Concept Publishing Co.
13. UNIDO 2013. Guide on Gender Mainstreaming, Energy and Climate Change Projects, V.14-07088 December 2014
14. UNIDO Strategies, in particular with regard to Renewable Energy Capacity Building.
15. UNIDO. 2010. Independent thematic review. UNIDO Projects for the Promotion of Small Hydro Power for Productive Use.
16. UNIDO. 2014. Preparatory and first operational phase of the ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE) ADA / AECID / ECOWAS/ UNIDO.
17. UNIDO. 2014. ODG/EVA Work programme and provisional budget for 2014/2015.
18. UNIDO. 2014. Independent evaluation. Africa (accelerated) agri-business and agro-industries development initiative (3ADI).
19. UNIDO. (2014). Independent thematic evaluation. UNIDO Trade Trust Fund.
20. Other evaluations (As standards should be stated in the Bibliography to be used for this thematic evaluation).

Annex E: UNIDO Partners and networks

UNIDO Energy Technology Centers

UNIDO International Solar Energy Centre for Technology Promotion and Transfer at Lanzhou, China, UNIDO-ISEC: www.unido-isec.org

International Centre for Small Hydro Power with headquarters in Hangzhou, China, ICSHP: www.inshp.org

Regional Centre for Small Hydro Power (SHP) in Trivendrum, India: www.unidorc.org

Regional Centre for Small Hydro Power (SHP) in Abuja, Nigeria: www.unidorcabuja.org

Networks

National Cleaner Production Centers (46 countries):

<http://www.unido.org/index.php?id=o5133>

Investment and Technology Promotion Offices (13 countries):

<http://www.unido.org/index.php?id=5136>

UNIDO South-South Industrial Cooperation Centers (India and China)

Learning Platforms

Green Industry Platform: <http://www.unido.org/index.php?id=1002609>

Renewable Energy Observatory for Latin America: <http://www.renenergyobservatory.org/>

Renewable Energy Knowledge Management Platform (RE MAP) – under tender

UN Agencies UNIDO cooperates with:

Food and Agriculture Organization (FAO) and the International Fund for Agricultural Development (IFAD) on agri-business development;

United Nations Development Programme (UNDP) on private sector development and field representation;

United Nations Environment Programme (UNEP) on cleaner production and implementation of multilateral environment agreements;

United Nations Conference on Trade and Development (UNCTAD),

World Trade Organization (WTO),

International Trade Centre (ITC),

Executive Secretariat of the Enhanced Integrated Framework (EIF) on trade capacity-building;

World Bank on Environment and Energy.

Preferred Partners

The Energy and Research Institute: www.teriin.org/

International Institute for Applied Systems Analysis: <http://www.iiasa.ac.at/>

ECOWAS Regional Centre for Renewable Energy and Energy Efficiency in Praia, Cape Verde, ECREEE: www.ecreee.org

Renewable Energy and Energy Efficiency Partnership, REEEP: <http://www.reeep.org/>

Annex F: Project relevance assessment

Country/ Project title	Project objective	Area of Focus	Adherence to UNIDO program areas	Regional priorities	MDGs and Sustainable Development Goals
Albania	Increase the use of biomass in industrial energy consumption for productive use through demonstrated use of modern biomass technologies in SMEs in the olive oil industry, and disseminate results to other sectors, with the overall aim to reduce greenhouse gas (GHG) emissions, increase energy independence and improve competitiveness of the national economy through low-carbon industrial development.	<p>Technological Demonstrations:</p> <p>Technology demonstrated for use of modern biomass technologies in industrial processes in Albania</p> <p>Policy frameworks:</p> <p>The enabling market and regulatory environment for biomass technology in industry created in Albania</p>	<p>C.3.2: Resource-efficient and Low-carbon Industrial Production</p> <p>C.3.3: Clean Energy Access for Productive Use</p>	<p>- Promoting renewable energy in the agro-food and other small and medium enterprises (SMEs)</p> <p>- Agro-industry efficiency growth through introduction of cost saving technologies</p>	<p>MDG 7- Environmental sustainability</p> <p>SDG:</p> <p>- OWG3- sustainable agriculture</p> <p>- OWG5- sustainable and inclusive growth</p>
Cambodia	To promote investments in biogas based rural electricity enterprises (REE) for increasing rural electrification	<p>Capacity Building</p> <p>Creating awareness on climate change and building capacity in commercial biogas based mini-grids</p> <p>Policy frameworks</p> <p>Creating enabling environment for investments in commercial biogas technology</p> <p>Technological demonstrations</p> <p>Demonstrating biogas based mini-grid technologies in commercial farms</p>	<p>C.3.2: Resource-efficient and Low-carbon Industrial Production</p> <p>C.3.3: Clean Energy Access for Productive Use</p>	<p>- Promotion of industrial energy efficiency and energy management standards, focusing on a new generation of energy-saving technologies.</p> <p>- exploring the scope for expanding the use of renewable sources of energy, such as wind, solar, biomass, small hydropower and biofuels.</p>	<p>MDG 7- Environmental sustainability</p> <p>SDG:</p> <p>- OWG3- sustainable agriculture</p> <p>- OWG5- sustainable and inclusive growth</p>

Cameroon	To reduce GHG emissions through promotion of investments and a market in the scale up and replication of integrated renewable energy solutions for productive uses and industrial applications	<p>Policy frameworks: Strengthening the legal and regulatory framework for renewable energy Mechanisms to promote and sustain private sector investments in renewable energy generation</p> <p>Technological Demonstrations Demonstration of the technical and commercial viability of integrated renewable energy mini grids</p>	<p>C.1.2: Business, Investment and Technology Services</p> <p>C.3.3: Clean Energy Access for Productive Use</p>	scaling up of access to energy by demonstrating the potential of renewable energy, accelerating power generation in rural areas, promoting industrial energy efficiency, strengthening national capacities and policies	<p>MDG 7- Environmental sustainability</p> <p>SDG: OWG5- sustainable and inclusive growth</p>
Chile	To reduce GHG emissions by promoting investment and market development of biogas energy technologies in select agro-industries located in one region ³⁶ of Chile.	<p>Policy frameworks: Policy and institutional support for biogas use within SMEs strengthened.</p> <p>Enhancement of investment in biogas-to-energy technologies in select small- and medium-sized agro-industries.</p> <p>Capacity building: Capacities for the development of biogas technologies for agro-industrial applications in SMEs strengthened.</p>	<p>C.1.2: Business, Investment and Technology Services</p> <p>C.1.3: Agribusiness and Rural Entrepreneurship Development</p>	initiatives in SME cluster development	<p>MDG 7- Environmental sustainability</p> <p>SDG: OWG5- sustainable and inclusive growth</p>
Cote D'Ivoire	To develop a market based	Policy Frameworks:	C.1.2:	technology upgrading	MDG 7- Environmental sustainability

³⁶The exact region will be determined during the PPG phase.

	approach for improving the access to renewable energy-based modern energy services in rural areas.	<p>Developing institutional capacity and raising awareness</p> <p>Strengthening the policy and regulatory framework</p> <p>Capacity Building:</p> <p>Establishing renewable energy based mini grid facilities and knowledge transfer</p> <p>Dissemination of lessons learned and independent evaluation</p>	Business, Investment and Technology Services	programme	SDG: OWG5- sustainable and inclusive growth
Dominican Republic	To reduce GHG emissions from industrial free zones in the Dominican Republic by stimulating the use of renewable biomass-based electricity production for self-supply and sales of surplus energy to the grid.	<p>Policy Frameworks:</p> <p>Policy support to decentralized biomass-based electricity generation.</p> <p>Technological demonstrations:</p> <p>Demonstration and finance of proven biomass-based electricity generation technology in a commercial context.</p> <p>Supportive activities for training, promotion and dissemination.</p>	<p>C.3.2: Resource-efficient and Low-carbon Industrial Production</p> <p>C.3.3: Clean Energy Access for Productive Use</p>	renewable energy technologies, industrial energy efficiency	<p>MDG 7- Environmental sustainability</p> <p>SDG: OWG5- sustainable and inclusive growth</p>
Egypt	To develop the market environment for the diffusion and local manufacturing of solar energy systems used in heating and cooling applications.	<p>Policy frameworks:</p> <p>Develop the Policy and Regulatory framework to support the use of low carbon technologies for heating and cooling in industrial and</p>	<p>C.1.2: Business, Investment and Technology Services</p> <p>C.3.2: Resource-efficient and Low-carbon Industrial</p>	promote future-oriented policy and institutional frameworks for energy-related and environmental measures, based on national environmental policies,	<p>MDG 7- Environmental sustainability</p> <p>SDG: OWG5- sustainable and inclusive growth</p>

		<p>commercial applications</p> <p>Improve the market manufacture, supply and distribution of solar technologies for cooling and heating</p> <p>Technological demonstrations:</p> <p>Support the deployment of low carbon technologies for multipurpose applications in industrial and commercial application through technology transfer and passing on know-how to local manufacturers</p> <p>Capacity Building:</p> <p>Build the capacity of technical staff designing, developing and servicing solar systems</p>	<p>Production</p> <p>C.3.3: Clean Energy Access for Productive Use</p>	<p>priorities and institutional needs</p>	
India	<p>Will focus on using organic waste streams for industrial renewable energy (RE) applications in SMEs, in line with the priorities of the Government of India (GoI), as outlined in the National Action Plan on Climate Change (NAPCC) and relevant National Missions, including the National Mission for Enhanced Energy Efficiency in Industry (NMEEE), with the overall aim to increase the competitiveness of SMEs and</p>	<p>Policy frameworks</p> <p>Strengthening the policy and institutional framework</p> <p>Encouraging scale up of relevant technologies in waste to energy and other uses.</p> <p>Technological Demonstration:</p> <p>Demonstration of the most relevant</p>	<p>C.1.2: Business, Investment and Technology Services</p> <p>C.3.2: Resource-efficient and Low-carbon Industrial Production</p> <p>C.3.3: Clean Energy Access for Productive Use</p>	<p>transformation of industrial structures</p>	<p>MDG 7- Environmental sustainability</p> <p>SDG: OWG5- sustainable and inclusive growth</p>

	reduce dependency on fossil fuels.	technologies in selected sectors Capacity building: Capacity building of public and private sector stakeholders			
India	Will focus on developing business models for promoting solar energy based heating and cooling applications in selected industrial sectors in line with priorities outlined in the National Action Plan on Climate Change (NAPCC) and the Jawaharlal Nehru National Solar Mission (JNNSM) with the overall view to reduce GHG emissions and increase competitiveness in the national economy.	Policy frameworks: Strengthening of policy and institutional framework Technology investment and application Scaling up of solar technologies in industrial applications Capacity building Awareness raising and capacity building	C.1.2: Business, Investment and Technology Services C.3.2: Resource-efficient and Low-carbon Industrial Production C.3.3: Clean Energy Access for Productive Use	transformation of industrial structures	MDG 7- Environmental sustainability SDG: OWG5- sustainable and inclusive growth
Kenya	To promote investments in waste-to-energy (WTE) technologies to increase electrification and to reduce greenhouse gas (GHG) emission	Capacity building: Capacity development and knowledge management Technological demonstration: Establishment of agro-industrial WTE plants Policy Frameworks: Promotion of investment into WTE plants	C.1.2: Business, Investment and Technology Services C.3.2: Resource-efficient and Low-carbon Industrial Production	technology upgrading programme	MDG 7- Environmental sustainability SDG: OWG5- sustainable and inclusive growth
Madagascar	Stimulate the use of small hydropower (SHP) to reduce Greenhouse Gas (GHG) emissions and trigger	Policy Framework: National Low- Carbon Energy Development	C.1.2: Business, Investment and Technology Services	scaling up of access to energy by demonstrating the potential of renewable energy, accelerating	MDG 7- Environmental sustainability SDG: OWG5- sustainable and inclusive

	productive use for income generation, in line with priorities of the Government of Madagascar, as outlined in the National Policy for the Environment, with the overall aim to increase the competitiveness of its SME sector and reduce dependency on fossil fuels.	Plan as a framework to support the development of renewable energy (RE) - with focus on small hydropower projects (SHP) Capacity building: Sustainable model for replication in place Targeted capacity strengthening carried out and knowledge management in place	C.3.2: Resource-efficient and Low-carbon Industrial Production C.3.3: Clean Energy Access for Productive Use	power generation in rural areas, promoting industrial energy efficiency, strengthening national capacities and policies ; technology upgrading programme	growth
Nigeria	To promote investments in SHP technology and strengthen local manufacturing of SHP turbines in Nigeria	Capacity building: Human and institutional capacity building Upgrading the capacity for local fabrication of SHP turbines and control systems in Nigeria Policy frameworks: Promoting investments in SHP sector	C.1.2: Business, Investment and Technology Services C.2.2: Competitive Productive Capacities for International Trade	scaling up of access to energy by demonstrating the potential of renewable energy, accelerating power generation in rural areas, promoting industrial energy efficiency, strengthening national capacities and policies ; technology upgrading programme	MDG 7- Environmental sustainability SDG: OWG5- sustainable and inclusive growth
Tanzania	To promote investments in waste-to-energy (WTE) technologies for energy (electricity + thermal energy) generation in agro-industries	Capacity building: Capacity development and knowledge management Policy Frameworks: Creation of financing facility Technological demonstrations: Demonstration of WTE technologies	C.1.2: Business, Investment and Technology Services C.1.3: Agribusiness and Rural Entrepreneurship Development C.3.3: Clean Energy Access for Productive Use	scaling up of access to energy by demonstrating the potential of renewable energy, accelerating power generation in rural areas, promoting industrial energy efficiency, strengthening national capacities and policies ; technology upgrading programme	MDG 7- Environmental sustainability SDG: - OWG3- sustainable agriculture - OWG5- sustainable and inclusive growth

