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# CLEAN ENERGY FOR DEVELOPMENT

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2009





















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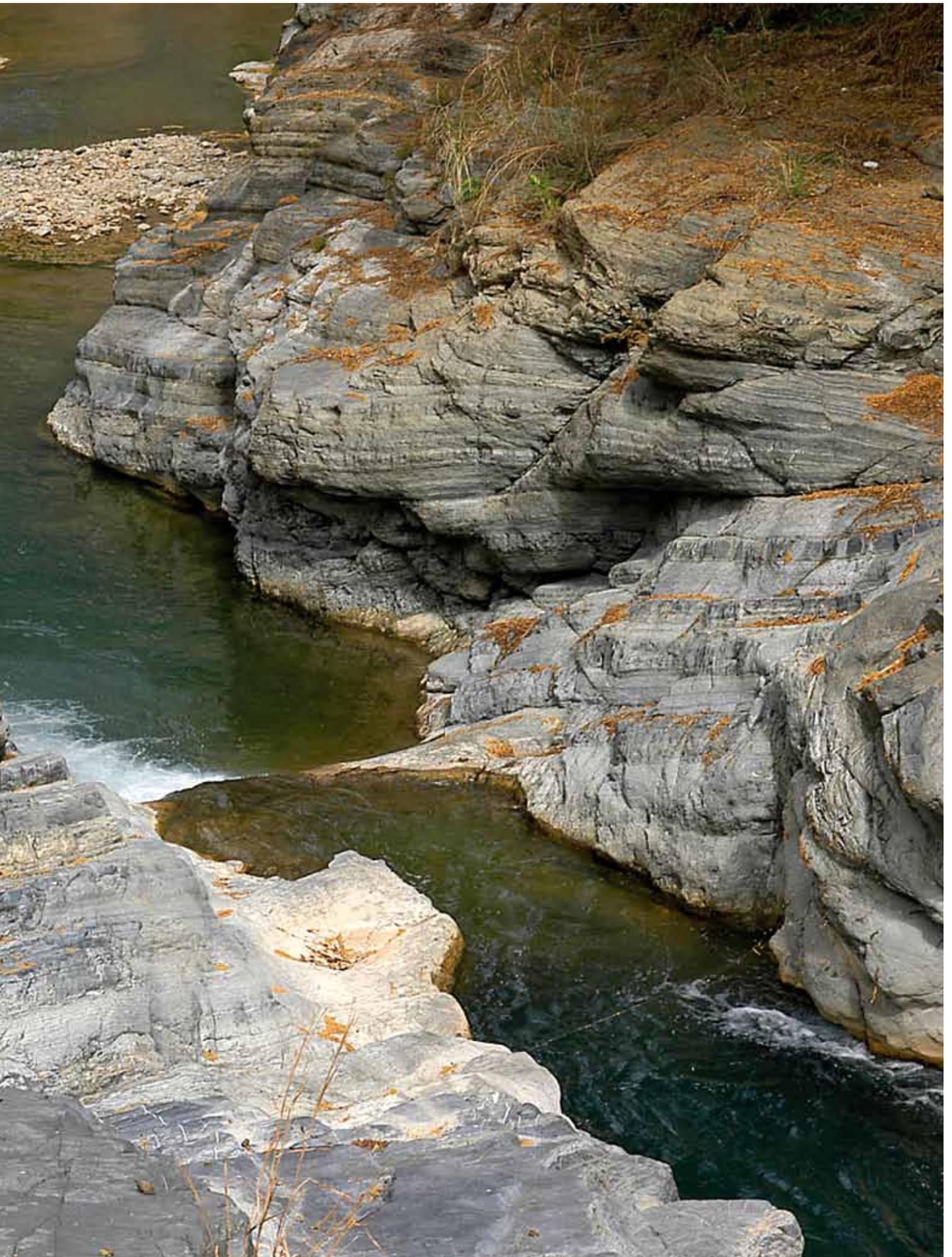


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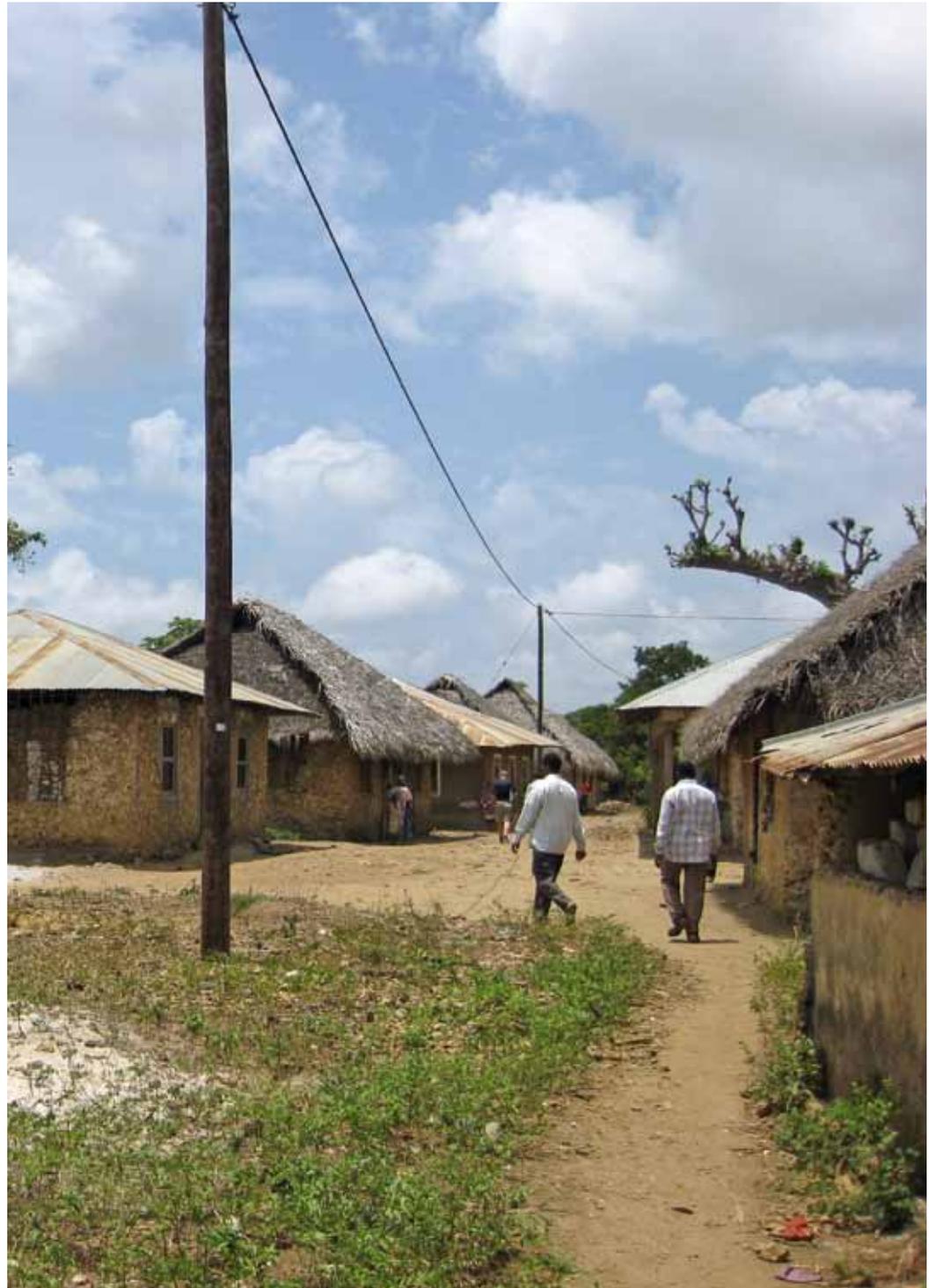








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# CLEAN ENERGY FOR DEVELOPMENT

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2009



## CLEAN ENERGY FOR DEVELOPMENT ANNUAL REPORT 2009

In 2009, climate change was widely recognised as the most serious environmental problem facing the globe. Still, fossil fuels remain our most important source of energy. In order to prevent a rise in global temperatures of more than two degrees Celsius, we have to reduce greenhouse gas emissions. This can only be achieved through cleaner extraction of energy from fossil fuels, together with increased deployment of renewable sources of energy.

Energy is vital for developing countries in their fight against poverty. At the same time, the planet will not withstand poor countries using energy in the way that the developed world has in the past. This is a challenge for all energy-related development policy. Norway has expertise in the management of both fossil and renewable energy sources. We are thus well-positioned to address these dilemmas when we provide assistance in the energy field.

Energy has been at the core of Norway's development assistance policy for many years. This has resulted in the Clean Energy for Development Initiative and the Oil for Development Initiative. Both initiatives can help increase economic growth and prosperity in some of the poorest countries in the world.

The current annual report presents some of the activities and key achievements of the Clean Energy for Development Initiative in 2009.

The Initiative has two main goals: access to affordable energy services based on renewable energy sources, and reduction of greenhouse gas emissions.

In 2009, approximately 1.6 billion people did not have access to electricity. Through Clean Energy for Development, we assist developing countries, at their request, in their efforts to provide the whole population with energy services. Such assistance should be followed up by policies that target the poor. Energy access should encourage sustainable economic activity especially in the countryside and can help women to live better lives. We believe that we can make a difference based on our experience from developing our own energy system. Norway has extensive expertise in hydropower development, electricity transmission, energy policy and administrative planning.

In addition to bilateral cooperation within the field of clean energy, we also cooperate with other donors, regional and multilateral institutions and non-governmental organisations.

We believe that engaging both local and international private investors is crucial for economic development, including in the energy sector.

This report shows how the Clean Energy for Development Initiative makes use of Norwegian and other relevant expertise to contribute to economic development and the fight against poverty in our partner countries.

Erik Solheim  
Minister of the Environment and International Development  
Oslo, May 2010



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## HIGHLIGHTS 2009

There has been a steady increase in the budget allocated for clean energy assistance during the past 5-6 years. In 2009 the amount of bilateral assistance and earmarked funding through multilateral organisations for clean energy was more than NOK 700 million. Investments made through Norfund, which totalled almost NOK 100 million in 2009, come in addition to this. Funds that are not earmarked through multilateral organisations brings the total amount allocated to clean energy to well above NOK 800 million.

At the end of 2009, Norway was cooperating with more than 20 countries within the field of clean energy, through bilateral and multilateral cooperation. The overall aim of Norway's clean energy assistance is to alleviate poverty by giving people access to affordable energy. Although access to energy is necessary, it is not a sufficient condition for fighting poverty. Policies that target the rural poor; that make energy affordable for the poorest and that encourage sustainable economic activity must also be in place. Modern energy can be an important contributor to the fulfillment of the Millennium Development Goals, especially for health and education. Access to modern energy can also have positive effects on gender issues.

Assistance with capacity building and institutional development, with an emphasis on legislation, resource mapping and national planning, remain among the most important areas for bilateral energy cooperation. Other areas include strengthening the framework for commercial investment, protecting vulnerable groups and the environment and encouraging partner countries' to participate in regional energy cooperation. Responsiveness to recipient countries' wishes and needs is fundamental. Multilateral assistance complements the bilateral cooperation.

- On 7 October 2009, the President of Uganda and the Norwegian Minister of the Environment and International Development opened Bugoye hydro-power station in Uganda. The power station has an installed capacity of 13 MW (82GWh) and was financed jointly by Trønder Energi, Norfund and the Norwegian Ministry of Foreign Affairs. The hydropower station is capable of producing the equivalent of about 7% of total electricity sales in Uganda.
- In August 2008, a new agreement was signed between the Revolutionary Government of Zanzibar and Norway on financing the construction of a subsea cable from the mainland of Tanzania to Pemba Island. Norway is contributing NOK 300 million (the total project cost is NOK 400 million), making it one of the largest Norwegian grants to an energy project. The 73 km cable will connect Pemba Island with the Tanzanian electricity grid in Tanga and will enter operation in the second quarter of 2010. The cable replaces three old diesel generators and will support economic and social development by providing stable electricity supply for several decades into the future.
- On 30 November 2009, Ethiopia's State Minister of Finance and Economic Development, Ahmed Shide and the Norwegian ambassador signed an agreement on financing the feasibility, social and environmental studies for the Mandaya and Beko-Abo multipurpose projects on the Blue Nile. The project's overall goals are to develop reliable and environmentally sustainable power supply and to improve living standards in Ethiopia and the region. This is one of the largest hydropower contracts in Ethiopia with a total budget of NOK 90 million.
- Norway remains committed to supporting the rebuilding of the power sector in Liberia, which was decimated during the long civil war. 2009 was a year of transition for Norwegian support, during which the remaining projects

under the so-called Emergency Power Program were completed and agreements for a long-term, sustainable sector development were developed. The power sector in Liberia is still very small and Norway is involved in nearly all aspects of the sector's development.

- Norway's main goal in Nepal is to contribute to a successful peace process and support the preparation of a new constitution. The bilateral energy cooperation with Nepal can be grouped in the following three main areas: government to government cooperation; education and research; and non-governmental organisations and the private sector. Norwegian energy cooperation with Nepal aims at facilitating commercial clean energy investments, such as hydro power as well as increased dissemination of off-grid technologies needed in order to increase people's access to energy. By 2009 Norwegian support had contributed to installation of solar home systems in 43 000 households while 6000 households had gotten access to electricity via micro hydro power plants. 60 000 new improved cooking stoves were installed. The budget was almost NOK 60 million in 2009.
- Norway has supported the energy sector in Bhutan for more than 20 years. Since 2002 the cooperation has also included landslide prevention measures. The ongoing phase III of the collaboration includes "Institutional strengthening of the energy sector", "Landslide prevention measures" as well as financing two pre-feasibility studies and 15 reconnaissance studies within the "Accelerated hydropower development programme". The pre-feasibilities and reconnaissance studies started up in April 2009 and are expected to be finished in 2011.
- In 2009, Norway also funded several private initiatives. Through contact between Indian and Norwegian authorities, support for the electrification of 30 villages in India with solar power was secured, and agreements between Norad and Scatec Solar India, and between Indian Renewable Energy Development Agency and Scatec Solar India were established in 2009.
- Norwegian Church Aid has an ongoing project to electrify villages in Afghanistan. Over the period 2005-2009, 118 villages and 7805 households have been fully electrified. Due to the focus on women and the use of the "Barefoot Approach" the project has provided women and their families with new livelihood opportunities, as well as educational and health benefits. Moreover, women have slowly been given space in decision making processes and their role has changed in the rural communities involved.
- The World Bank Group Initiative Lighting Africa conducted a pilot baseline study in Kenya, providing a snapshot of an African lighting market in transition.

Norway's energy related assistance overarching goal is to reduce poverty. The Clean Energy for Development Initiative however, covers only a limited part of the result chain that leads to poverty reduction. Measuring impacts of development cooperation necessitates reliable baselines and clear goals and objectives in the project descriptions. Furthermore, the poverty reduction impacts of energy-related development cooperation is achieved years after the assistance has been provided. Measuring and communicating the results of energy related assistance is therefore challenging. There is an ongoing effort to improve tools and indicators to ensure that energy-related cooperation is effective. In this first annual report for the Clean Energy for Development Initiative, the focus has been on giving an overview of what has been done in 2009 and some key achievements.

## THE CLEAN ENERGY FOR DEVELOPMENT INITIATIVE

The Clean Energy for Development Initiative was launched in 2007 to coordinate and ensure the quality of an increased clean energy portfolio in Norway's development cooperation activities. Although the initiative is fairly new, Norway has been providing energy-related development assistance for decades.

The Clean Energy for Development Initiative is organized as a project under the auspices of the Section for International Development Policy at the Ministry of Foreign Affairs. The Section's policy director, together with the Secretariat in Norad, serve as important focal points for the overall coordination of the initiative. Decision-making and responsibility for the various budget lines remain within the different appropriating units of the Ministry of Foreign Affairs, embassies, Norad and Norfund.

- **The working group**  
The Clean Energy for Development Initiative working group is a small group that meets approximately every other week to discuss strategic and operational matters related to the programme. The working group is headed by the Ministry of Foreign Affairs, with participants from the Ministry of the Environment, the Ministry of Petroleum and Energy, Norfund and Norad.
- **The project group**  
The project group consists of representatives from various sections of the Ministry of Foreign Affairs, Norad and Norfund with budgetary responsibility as well as the Norwegian Ministry of Petroleum and Energy and the Ministry of the Environment
- **The reference group**  
To promote efficient external cooperation and communication, the initiative also has a loosely defined reference group, with participants from private sector, civil society, academia and public administration.
- **The Secretariat**  
The Clean Energy for Development Secretariat is led by the Head of the Clean Energy Unit in Norad. The main tasks of the Secretariat are to administer the activities of the working group, project group and reference group, and disseminate information and results. Beyond that, the focus is on maintaining and strengthening dialogue with embassies, regional energy advisers, the Ministry of Foreign Affairs, multilateral players and civil society and on providing analysis and tools to support the initiative. The Secretariat is part of Norad's Energy Department, which is also where the Oil for Development Secretariat is located. This organisational arrangement underscores the links between the Oil for Development and the Clean Energy for Development initiatives, and aims to ensure a holistic approach to energy development assistance in our partner countries.
- **The Norwegian embassies**  
The Norwegian embassies play an essential role in the Clean Energy for Development Initiative. Budgetary and decision-making authority for the bilateral portfolio rest with the embassies. The embassies hold valuable local and regional knowledge and network with government agencies, industry, civil society as well as international organisations and other donors in their respective countries.
- **Norfund**  
Norfund is the development finance institution that serves as the commercial investment instrument of Norway's development policy. By investing in profitable companies and transferring knowledge and technology, it helps to reduce poverty and to promote economic progress in poor countries

- **Key implementing partners**  
The Norwegian Water Resources and Energy Directorate (NVE) and the Norwegian national transmission system operator (Statnett) are essential partners in implementing the Clean Energy for Development Initiative. They contribute with expertise in their field and are sought after partners when it comes to institutional cooperation. The International Centre for Hydropower holds a strong position as a capacity building institution in the field of developing clean energy projects. Private sector investment in the clean energy projects is also crucial to achieving the goals of the Clean Energy for Development Initiative. Through guarantee instruments provided by GIEK Norway is able to reduce private investors' risks and thus contribute to investments that would otherwise not be done. Examples of important commercial companies in the field of clean energy are SN Power Africa, Tinfos and Trønder Energi. Non-governmental organisations play an important role both as watchdogs and in helping to implement clean energy projects on the ground.
- **Multilateral organisations**  
A growing share of Norwegian development cooperation is channelled through multilateral organisations such as the United Nations and the International development banks. This is also the case within the field of clean energy, where these organisations play an important normative and operational role.

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# THEMATIC AREAS

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## THEMATIC AREAS

Norway's efforts in the field of clean energy and development focus on the areas where Norway can make a difference and where Norway has a special expertise to offer. In light of this, the Clean Energy for Development Initiative has focused on certain thematic areas. Some of these thematic areas are cross-cutting, such as gender issues related to the energy sector. In addition to cross-cutting issues, some thematic priority areas, such as the mobilisation of private sector, rural electrification and institutional cooperation, have been taken out as special projects.

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## LEVERAGING PRIVATE INVESTMENT

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The energy-related investment needs of poorer countries are substantial and are far beyond the levels currently attainable by means of public and donor contribution alone. In order to go beyond the already substantial 'business-as-usual' investment needs and also promote the adoption of clean technologies, donor countries will have to play key roles in both transferring technology and competence, as well as scaling up energy infrastructure and services. Most donors and policy makers now agree that if we are to prove successful in meeting these challenges, public-private partnerships will have to be a central theme in our development programmes and policies. This is reflected in the policy platform for the Clean Energy for Development Initiative (11/2007) which states:

*"There is broad agreement that without private sector involvement, it is not possible to mobilize sufficient capital to finance required investment in Africa. A condition for increasing clean energy production, particularly in Africa, will therefore require that public authorities and/or development partners contribute to construction costs...." "The Norwegian contributions will be relatively small compared with energy sector investment requirements. It will therefore be of critical importance to utilize Norwegian resources in a catalytic manner and ensure synergies with other initiatives."*<sup>1</sup>

In 2009, a project called "Leveraging private investment to clean energy projects in development partner countries" was initiated by Norad. The

project analyses critical bottlenecks which currently hinder private clean energy investments in developing countries. This analysis will serve as an input to the parallel and subsequent work of identifying targeted initiatives which could be expected to directly leverage private capital flows.

The project was carried out based on a mandate approved by Clean Energy for Development Initiative working group.

The objectives are two-fold:

- Identify and analyse the key bottlenecks currently hindering the scaling up of investment in clean energy projects in developing countries and determine a productive, sustainable and responsible role for innovative public contributions, principally development assistance, in alleviating these bottlenecks.
- Provide Norwegian policy makers with the analytical basis, as well as a proposed organisational set-up and partnership structure, to allow implementation of the key recommendations arising from the first objective.

The ambition is to publish a Norad report which documents the approach, methodology, analysis, findings and recommendations of the working group, lead by Norad.

The key recommendations will be the basis for contributions to policy making and budgeting processes.

Finally, the ambition is to invite domestic and international stakeholders to a seminar, where the findings of the report will be presented and discussed in light of related international policy and financing trends.

1 — See: <[http://www.regjeringen.no/nb/dep/ud/dok/rapporter\\_planer/planer/2007/ren\\_energi\\_utviklingsarbeidet.html?id=489316](http://www.regjeringen.no/nb/dep/ud/dok/rapporter_planer/planer/2007/ren_energi_utviklingsarbeidet.html?id=489316)>. Translated by author.

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## RURAL ELECTRIFICATION

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In 2009 Norad carried out a project to increase the focus on rural electrification. The aim of the project was to formulate a more systematic approach for the issues for Norwegian development cooperation. An important motivation for the project is the acknowledgement that electrification of remote and rural areas, although important for many reasons, can become a huge burden on the electric utility and thus the recipient country. This has been shown in recent reviews and evaluations.

The project assesses and recommends various suitable technologies and project approaches and also provides guidelines for the initial consideration of rural electrification projects.

The work was done by the consultancy NORPLAN in cooperation with Norad staff. The Norad report 18/2009: "Norwegian development assistance to rural electrification" is a result of the project. The report is a best practice guide for planning rural electrification projects. Two working papers were written during the process. "Technology options for rural electrification" (Sweco, 2009); and "Appropriate uses of subsidies and tariffs in rural electrification projects" (NORPLAN, 2009).

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## ENERGY EFFICIENCY

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According to the World Energy Outlook 2009 published by The International Energy Agency, energy efficiency will be the largest contributor to CO<sub>2</sub> abatement in the 450 Scenario (the 450 Scenario relates to the concentration of CO<sub>2</sub> equivalents in the atmosphere that would lead to a temperature increase of no more than 2° C).

Energy efficiency in development cooperation is one of Norway's priority areas within the Clean Energy for Development Initiative.

Efficient power systems are a main focus when Norway supports partner countries in developing their electricity and energy sectors. In Norway's main partner countries, the energy programmes are comprehensive and energy efficiency measures are integrated in the cooperation.

In addition to energy efficiency measures as part of broad energy programmes in main partner countries, Norway has also actively supported specific energy efficiency projects and programmes in other countries and through multilateral cooperation in 2009.

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## ENERGY, GENDER ISSUES AND EQUAL OPPORTUNITIES

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Managing to include women's rights and gender issues in development cooperation requires more than just targeted women's rights and gender equality policies and activities. According to Norwegian government policy (Whitepaper 11/2007–2008 "On Equal Terms"), women's rights and gender equality should form just as natural a part of energy and infrastructure programmes as of for example health programmes. The white paper was followed up by the Norwegian action plan for women's rights and gender equality launched in 2007.

A mid-term review of the action plan was conducted in 2009. One of the main conclusions of the review was that gender mainstreaming continues to be weak especially in the energy sector. Gender mainstreaming refers to the integration of gender policy considerations into core institutional thinking. Addressing and/or integrating gender issues implies mainstreaming these issues.

However, the mid-term review also concluded that there is a substantial under-reporting of good gender mainstreaming. In the clean energy area, there are now valuable examples of how women's rights and gender equality are systematically included in the terms of references for appraisals and reviews, e.g. through:

- Requesting or encouraging that the team conducting the work should consist of both men and women.
- Requesting specific measures to secure the participation of both men and women in the planning and implementation of the project.
- Including measures ensure that both men and women benefit from the project/ activity.

- Identifying potential obstacles to the participation of both men and women.

There has been a heightened focus on gender issues in the Clean Energy for Development Initiative in 2009. Examples of this are the initiatives taken by the Norwegian embassies in Tanzania and Mozambique.

Early 2009, the Norwegian embassy in Tanzania initiated a survey on the participation of women in the energy sector. The specific purpose was to increase the number of female professionals in the energy sector, with a focus on management, policy and decision-making. The survey concluded that several steps were needed to raise the number of women opting to study science and mathematics. The embassy is following up on the conclusions and recommendations of the survey, and will enter into a contract with Engineers Registration Board (ERB) to provide support for women engineers in the Structured Engineers Apprenticeship Program (SEAP). The budget is NOK 11 million over 5 years, and 200 women will have the possibility to participate in the project. The development objective of the project is "To contribute to sustainable socio-economic development in Tanzania by promoting gender balance in professional training and empowering women engineers to confidently hold and manage professional responsibilities in government, industry and business".

A regional seminar on how to mainstream gender issues and women's rights in development policy areas and programmes, including energy, was conducted in Mozambique.

### Key achievements 2009 Gender issues and equal opportunities

- Survey of women in the energy sector in Tanzania.
- Regional seminar on gender issues in Mozambique. Consultation with key sector stakeholders and civil society regarding the planned cooperation, with a particular focus on the link with gender concerns. The Energy Department arranged a seminar in April 2009 on gender issues and women's rights.
- The Energy Department in Norad launched a gender review in September 2009 in cooperation with the peace, gender and democracy department in Norad.

Institutional cooperation is generally not an end in itself, but an instrument of institutional development. This is defined as “enhancing an institution's capacity to enable it to meet its responsibilities in a sustainable, targeted and efficient manner”.

To summarise major experiences, the energy department has in 2008–2009 studied several reviews and evaluation reports, written by external consultants in the period 1980–2008. They primarily focus on the energy and petroleum sectors, but the environmental, fishery, educational and health sectors are also included to some extent.

To make the cooperation (twinning) successful, it is essential to ensure that there is a match between the institutions, and the planning phase is hence critical. According to the studied reports, there is unfortunately a lack of proper analysis of competence, capacity, mandates, ambitions and motivation.

There is insufficient analysis of needs and the ownership of planned activities/programmes are insufficient. In many cases the planning of activities is too ambitious, and not simple and smart. More use should be made of logical planning models, needs assessments and, stakeholder and institutional analyses.

Several positive findings are pointed out:

- The local partners are largely positive about Norwegian support and the results achieved.
- Norway can offer a broad range of institutions/experts (actors).
- Norwegian actors are flexible, and good at interactive cooperation.
- Norwegian actors are good at not presenting the one and only answer, but rather advice for consideration.
- Stability over time gives good conditions for creating the necessary commitment, ownership and hence successful institutional development.

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# BILATERAL COOPERATION

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## BILATERAL COOPERATION

Bilateral cooperation in the Clean Energy for Development Initiative is particularly focused on areas where there is a demand for Norwegian expertise.

In core countries, the bilateral cooperation is extensive and covers many areas within the energy sector. The core countries for bilateral cooperation within the Clean Energy for Development Initiative are: Ethiopia, Liberia, Mozambique, Nepal, Tanzania, Timor-Leste and Uganda. There are historical and political reasons why these countries are core countries.

In addition to these core countries, Norway has programmes with other (non-core) countries that vary in content and size. In some countries Norway promotes private sector development by supporting projects initiated by private sector.

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# CORE COUNTRIES

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# ETHIOPIA

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In Ethiopia the electrification level remains at less than 15 %. Annual per capita consumption is approximately 28 kWh. In late 2009 Norway entered into a new agreement with the Ethiopian government to finance the feasibility, environmental and social studies for the Beko-Abo and Mandaya multipurpose projects in the Blue Nile Sub-basin. The agreement includes capacity building and technical assistance within the Ministry of Water Resources of Ethiopia.

In conjunction with the above Norway also entered into an agreement with the Eastern Nile Technical Regional Office (ENTRO) on technical support to facilitate consultation and information sharing between the three Eastern Nile countries – Egypt, Sudan and Ethiopia – in relation to the feasibility studies for the Mandaya and Beko-Abo multipurpose projects, and to ensure coordination between ENTRO's Joint Multipurpose Program (JMP) and the feasibility studies.

During the 2008 flood season Norad financed a sediment and hydrology campaign on the Blue Nile to ensure good quality measurements. This is important for the feasibility studies as well as the joint multipurpose programme on the Blue Nile. The 2009 campaign was a follow-up of the 2008 sediment and hydrology campaign.



## COUNTRY FACTS

**OFFICIAL NAME**  
Federal Democratic  
Republic of Ethiopia

**CAPITAL**  
Addis Ababa

**CHIEF OF STATE**  
President  
GIRMA Woldegiorgis

**HEAD OF GOVERNMENT**  
Prime Minister  
MELES Zenawi

**POPULATION**  
85 237 338  
(July 2009 est.)

**ELECTRICITY  
CONSUMPTION**  
3 130 GWh (2007 est)

**ELECTRICITY  
PRODUCTION**  
3 460 GWh (2007 est)



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## ONGOING PROJECTS

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### Feasibility studies for the Beko-Abo and Mandaya

### Key achievements in Ethiopia 2009

Multipurpose projects which comprise:

- Pre-feasibility study of Beko-Abo (which will continue to a full technical feasibility study of Beko-Abo if recommended by the pre-feasibility study)
- Full technical feasibility study of Mandaya
- Full environmental and socio-economic impact assessment by an independent consultancy team.
- Technical support to the Eastern Nile Technical Regional Office as regional facilitator.

#### Objectives

The objectives of the feasibility studies are to enable the Ethiopian government to make informed decisions on future multipurpose development as well as to enable the region to prioritise future developments on the Blue Nile.

#### Cooperating institutions

Ethiopia:

- Ministry of Finance and Economic Development, as a signatory.
- Ministry of Water Resources, as an implementer.
- Eastern Nile Technical Regional Office, as regional facilitator.

Norway:

- NVE for the capacity building and technical assistance to Ministry of Water Resources.

#### Project period

2009–2012

#### Total budget

- Ministry of Finance and Economic Development, Ethiopia: NOK 135.3 million.
- Eastern Nile Technical Regional Office: NOK 6 million



Etiopia. Photos: David A Wright NVE



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# LIBERIA

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Norway is committed to supporting the rebuilding of the power sector in Liberia, which was decimated during the civil wars from 1989 to 2003. 2009 was a year of transition for Norwegian support, during which the remaining projects under the so-called Emergency Power Program were completed and agreements for a more long-term, sustainable sector development were developed. The power sector in Liberia is still very small and Norway is now involved in nearly all aspects of the sector's development.

Norwegian financial contributions in 2009 were targeted at three core cooperation areas;

1. Management Contract for the Liberian Electricity Corporation
2. Monrovia Gaps Project
3. Establishment of an institutional cooperation programme between Ministry of Lands, Mines and Energy and NVE

In addition Norway has committed USD 29 million of funding for distribution investments over 5 years to enable the Liberian Electricity Corporation to become a fully operative electric utility. This is required for Liberia to be able to develop its significant renewable energy potential, including the rebuilding of the totally destroyed 64 MW Mt. Coffee run-of-the-river plant in the St. Paul River close to Monrovia. Mt. Coffee has a potential of approximately 100 MW with minor environmental and social impacts.



COUNTRY FACTS

OFFICIAL NAME  
Republic of Liberia

CAPITAL  
Monrovia

CHIEF OF STATE  
President Ellen  
JOHNSON SIRLEAF

HEAD OF GOVERNMENT  
President Ellen  
JOHNSON SIRLEAF

POPULATION  
3 441 791  
(July 2009 est.)

ELECTRICITY  
CONSUMPTION  
325 GWh (2007 est)

ELECTRICITY  
PRODUCTION  
350 GWh (2007 est)



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## ONGOING PROJECTS

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### Management Contract for Liberian Electricity Corporation (LEC)

#### Objectives of the project

The overall objective of this support is to put in place an international operator who will manage LEC for 5 years and thereby:

- Establish LEC as a competent, professional, financially robust and responsible electric utility.
- Significantly improve electricity services throughout Monrovia, reduce sector costs and thereby electricity prices, and enable LEC to effectively manage donor contributions so as to achieve at least 30,000 new connections.

#### Cooperating Institutions

- Ministry of Lands, Mines and Energy and Liberian Electricity Corporation
- International Finance Corporation

#### Project Period

2010-2015

#### Total Budget

NOK 12 million

### Monrovia Gaps Project

#### Objectives of the project

The overall objective of the project is to improve access to electricity among the residents of Monrovia, as well as the overall performance of the Monrovia grid, and thereby LEC. Additionally, the project should improve safety along the affected roads and reduce the use of costly and environmentally damaging small diesel generators.

#### Cooperating Institution

Liberian Electricity Corporation

#### Project Period

2009-2011

#### Total Budget

NOK 82 million

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**Institutional Cooperation  
between MLME and NVE  
2010–2015**

Objectives of the project:

The overall goal of the institutional cooperation is to contribute to the economic and social development of Liberia. This will be approached by helping to develop skills at monitoring and managing water and energy resources through capacity building at the Ministry of Lands, Mines and Energy.

Cooperating Institutions

- Ministry of Lands, Mines and Energy
- NVE

Project Period

2010–2015

Total Budget

NOK 51 million

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**Emergency power  
project II**

Objectives of the project:

Assist with emergency assistance to Monrovia through an emergency package providing 7 MW of diesel generation capacity (approximately NOK 41 million). This covers some of the most urgent needs of humanitarian domains; such as hospitals, schools etc. In addition, NOK 8 million was allocated to a distribution project in the Paynesville township, with the objective of connecting small scale industry and shops by building an approximately 10 km 22 kV line and associated low voltage reticulation and customer connections.

Cooperating Institutions

- Ministry of Lands, Mines and Energy of the Republic of Liberia
- Liberia Electricity Corporation

Project Period

2007–2010

Total Budget

NOK 49 million

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## Key achievements in Liberia 2009

- Plans and documentation for the implementation of the management contract for the Liberian electricity company developed.
- Start-up of the Monrovia gaps project. The role of contracting officer's technical representative was awarded to a consultant company.
- Preparation for institutional cooperation between Ministry of Lands, Mines and Energy and NVE.
- Consultation with key sector stakeholders and civil society regarding the planned cooperation, with a particular focus on the link with gender concerns.
- Technical review of diesel generators.



Liberia. Photo: Tor Morten Sneve, Norad



Liberia. Photo: Solveig Ulseth, Norplan

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# MOZAMBIQUE

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In Mozambique, almost 90 % of the population lacks access to electricity. Mozambique has significant undeveloped hydro power resources. Hydro power development can contribute to poverty reduction indirectly through for instance increased industrialisation, increased revenues from power exports and greater employment opportunities. More immediate benefits are a potential for increased access to electricity for parts of the population relying on traditional biomass with its detrimental effects on health and limited development potential.

The Norwegian assistance aims to increase the electrification access rate and support national goals of sustainable exploration of Mozambique's renewable energy resources by improving the legislative framework and increasing the implementation capacity of governmental institutions. In 2009 bilateral energy assistance to Mozambique totalled NOK 96 million. In addition, Norwegian assistance is also channelled through multilateral organisations such as the African Development Bank and the World Bank.

Mozambique is one of Norway's main cooperating countries within the field of clean energy. In 2009 five main projects were under implementation in Mozambique.

The Programme for Basic Energy Conservation (ProBEC) was established in 1990 has been supported by Norway since 2008. The purpose of the programme is to improve the quality of life of poor people in the region through increased access to energy in a socially- and environmentally friendly manner. The programme is a regional initiative and Mozambique is one of the countries involved. Currently the programme is managed by the Norwegian embassy in Maputo. The programme has been supported by several European countries and the Norwegian contribution has been NOK 25 million in the period 2008-2010.



COUNTRY FACTS

OFFICIAL NAME  
Republic of Mozambique

CAPITAL  
Maputo

CHIEF OF STATE  
President  
Armando GUEBUZA

HEAD OF GOVERNMENT  
Prime Minister  
Aires Bonifacio ALI

POPULATION  
21 669 278  
(July 2009 est.)

ELECTRICITY  
CONSUMPTION  
10 610 GWh (2007 est.)

ELECTRICITY  
PRODUCTION  
15 910 GWh (2007 est.)

Norway has also entered into an agreement with the International Development Association for the establishment of a trust fund to finance transmission projects of regional importance currently being planned. The fund has a budget of NOK 500 million for the period 2008-2013. The overall objective of the fund is to increase the availability and reliability of low cost, environmentally friendly electricity in the region, thereby increasing the competitiveness of industry, fostering economic growth and decreasing poverty.



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## ONGOING PROJECTS

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### Institutional Capacity Building in the Ministry of Energy

#### Objectives

- Increase the impact of national energy policies by pro-actively guiding the sector.
- Enhance the planning and regulatory functions for the power, down-stream hydrocarbon and overall bio-fuel sectors as well as for the renewable energy sector, increase processing capacity, and also create the legal and socio-economic framework to enable the sector to grow.
- Strengthen the ability to plan for larger investments and negotiate with investors.
- Enhance the efficiency and effectiveness of the ministry in performing its ancillary internal functions.

#### Cooperating institution in Mozambique

- Ministry of Energy

#### Project period

2007–2011

#### Total budget

NOK 30 million.

Disbursed in 2009: NOK 7 million

### Technical Assistance to Electricidade de Moçambique

#### Objectives

The objective of the technical assistance is to strengthen Electricidade de Moçambique's capacity to develop, structure, finance, promote and implement large power generation and transmission projects.

#### Cooperating institution in Mozambique

Electricidade de Moçambique

#### Project period

2008–2010

#### Total budget

NOK 13 million.

Disbursed in 2009: NOK 1.5 million

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## Cabo Delgado Electrification Project

### Objectives

The objective of rural electrification is to contribute to socio-economic development in rural areas by promoting infrastructure improvements and stimulating economic and social activities in districts and local communities.

### Cooperating institution in Mozambique

Electricidade de Moçambique

### Project period

2006–2010

### Total budget

NOK 200 million

Disbursed in 2009: NOK 68.5 million

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## Gurue-Cuamba-Lichinga Transmission System

### Objectives

Assist Electricidade de Moçambique with construction and development of the Gurué-Cuamba-Lichinga transmission line, and distribution lines around the same cities.

### Cooperating institutions in Mozambique

- Electricidade de Moçambique
- Co-Financing with Sweden

### Project period

2002–2010

### Total budget

NOK 189.1 million (Norway)  
and SEK 120 million (Sweden)

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## Marrupa-Cuamba-Mecanhelas Electrification Project

### Objectives

Enhance economic and social development in Niassa Province, by giving households, enterprises and business increased access to electricity, as well as by improving quality of life in local communities by providing a reliable electric power supply for public administration and services.

### Cooperating institutions in Mozambique

- Electricidade de Moçambique
- Co-Financing with Sweden who is lead donor.

### Project period

2007–2010

### Total budget

NOK 41 million (Norway), and SEK 52 million (Sweden) by 2008

## Key achievements in Mozambique 2009

- Initial phase of Institutional Capacity Building in the Ministry of Energy.
- Technical Assistance to Electricidade de Moçambique (EDM).
- Procurement and actual land clearance started for transmission line in Cabo Delgado.
- Financial support for the already finished project relating to the Gurue-Cuamba-Lichinga transmission lines.
- Grid extension in Niassa province.



Mozambique, Spar Kol cooking stove  
Photo: Hans Terje Ylvisåker MFA



Mozambique.  
Photo: Tor Morten Sneve, Norad

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# NEPAL

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Nepal has large undeveloped hydro power resources (more than 80 000 MW), but about 60 % of the population still has no access to electricity. Norwegian energy cooperation with Nepal aims at developing the hydro power potential in Nepal.

Norwegian energy co-operation to Nepal aims at developing hydro power and rural electrification to contribute to economic growth. Emphasis will be placed on sustainable management of resources.

To develop large hydroelectric projects, Nepal needs to attract foreign investors. The Norwegian commercial energy sector is represented in Nepal through SN Power and BKK, which are the major shareholders of Himal Power Limited. Himal Power Limited has successfully operated the 60 MW Khimti Hydro Power plant since it was commissioned in 2000.

SN Power is planning to develop the 880 MW Tamakoshi III project together with Tata Power, a major Indian power company. Annual energy production will be approximately 2 700 GWh. Investment costs will be in the order of NOK 9.6 billion (or NOK 9 600 million). Financial closure is expected in late 2011 at the earliest and commissioning in 2016. BKK is also considering new hydro power projects in Nepal.

Our bilateral energy assistance to Nepal includes i) government to government cooperation, ii) education and research and iii) NGOs/private sector. In 2009 the bilateral aid, including assistance through the NGO channel, amounted to approximately NOK 60 million.

Together with Denmark (lead donor), Norway supports off-grid electrification through micro-hydro, solar home systems and improved cooking stoves in remote areas through the Alternative



#### COUNTRY FACTS

OFFICIAL NAME  
Federal Democratic  
Republic of Nepal

CAPITAL  
Kathmandu

CHIEF OF STATE  
President  
Ram Baran YADAV

HEAD OF GOVERNMENT  
Prime Minister  
Madhav Kumar NEPAL

POPULATION  
28 563 377  
(July 2009 est.)

ELECTRICITY  
CONSUMPTION  
2 600 GWh (2009 est)

ELECTRICITY  
PRODUCTION  
2 243 GWh (2007 est)

Energy Promotion Centre, which is a state agency under the Ministry of Environment. Norwegian support to the Alternative Energy Promotion Centre amounted to NOK 42 million in 2009. Norway is financing about 43 % of the total programme budget.

Grid electrification/community development projects supported by Norway are implemented by independent power producers such as Himtal Power Limited and Butwal Power Company. These projects help to give local communities a reasonable share of revenues from the Khimti and Jhimruk hydro power plants. The major capacity building projects supported by Norway are assistance to energy sector education at universities (Norad's programme for master studies (NOMA programmes)) and research level. Norway is also supporting applied research activities related to the Hydro Power sector in Nepal (i.e. modelling and turbin testing).

Norway also cooperates with the Department of Electricity Development which is a part of the Ministry of Energy Resources, in preparing hydro power feasibility studies for schemes that later are to be transferred to private developers.

In addition, bilateral assistance provided management support to Butwal Power Company and the Independent Power Producers Association in Nepal (IPPAN).



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## ONGOING PROJECTS

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### Energy Support and Assistance Programme (ESAP) Off-grid energy solutions

#### Objectives

Improve the living conditions of the rural population by enhancing their energy access with solutions that is efficient, environmental friendly and socially justifiable.

Cooperating institutions in Nepal  
Alternative Energy Promotion Centre

Project period  
2007-2012

Total budget  
NOK 125 million

### Rural electrification and mitigation (including community development)

#### Objectives

- Mitigation component: increase access of the targeted population to economic and social activities, leading to a balanced and sustainable socio-economic growth and well-being.
- Rural electrification component: use electricity to improve living standards and to enhance socio-economic activities.

Cooperating institution in Nepal  
Butwal Power Company

Project period  
2006-2010

Total budget  
NOK 12.8 million

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**Khimti Neighbourhood  
and Development  
Project (grid electri-  
fication and community  
development)**

Objectives

Increase the living standards and incomes of people living in the project area.

Cooperating institution in Nepal

Himal Power Limited

Project period

2007-2010

Total budget

NOK 19.6 million

**Small hydropower  
feasibility studies**

Objectives

Contribute to economic and social development in rural areas.

Cooperating institutions

Nepal:

- Government of Nepal

Norway:

- NVE

Project period

2004-2011

Total budget

NOK 10 million

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## Renewable Nepal

### Objectives

The purpose of Renewable Nepal is to build applied research capacity at Nepalese universities and research institutions that can serve the Nepalese energy industry. Renewable Nepal is based on the model of Research Council of Norway's "Renergi" programme.

### Cooperating institutions

Nepal:

- Kathmandu University

Norway:

- Sintef Energy Research AS

### Project period

2009–2013

### Total budget

NOK 843 000 (in 2009)

## Turbine Laboratory at Kathmandu University

### Objectives

Build applied research and development capacities at Nepalese universities in order to serve the industry and private sector system analysis.

### Cooperating institution

Kathmandu University

### Project period

2009–2010

### Total budget

NOK 4.6 million

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## Feasibility study for a twinning arrangement between NEA and Statnett

### Objectives

- To examine to what extent there is a basis for long term cooperation between Nepal Electricity Authority (NEA) and Statnett.
- The twinning arrangement will provide assistance to NEA in different areas to improve its capability and capacity (issues on transmission capacity development, transmission system operation, strengthening of the capability and capacity to participate in regional power cooperation and increasing NEA's capacity in power system analysis).

### Cooperating institutions

Nepal:

- Nepal Electricity Authority (NEA)

Norway:

- Statnett

### Project period

2009–2010

### Total budget

NOK 1.5 million in 2009

## Pro-Poor Hydro Power

### Objectives

Enable the rural poor to obtain profitable ownership of their local water resources. Pro-Poor Hydro Power aims at enable poor people to own their water resources. The local poor will be enabled to invest through proportionate labor contribution, grants and soft loan mechanisms.

### Cooperating institutions

People, Energy & Environment Development Association

### Project period

2008–2010

### Total budget

NOK 6.5 million

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## Key achievements in Nepal 2009

- During 2009 SN Power made significant progress with the 880 MW/2.7 TWh Tamakoshi III project. The technical feasibility study and environmental social impact assessment (ESIA) were completed. Financial closure of the project may be reached in 2012. Tamakoshi III may be commissioned in 2016.
- Norwegian support to the Alternative Energy Promotion Centre contributed to mini-grid electrification of 6 000 households (micro hydro), installation of solar home systems in 43 000 households and the installation of 60 000 new improved cooking stoves in 2009.
- Norway entered into two agreements with Kathmandu University that will strengthen Nepal's energy research capacity.
- Hydro Lab has started to provide services on headworks design review and also hydraulic design review of hydro power projects.
- Three feasibility studies for small hydro power projects were completed in 2009 and will be offered to private developers.
- A new concept for how poor people's labor contribution can be converted into shares in hydro power projects is being developed



Nepal, Photo: Øivind Johansen, OED

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# TANZANIA

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In spite of rapid economic growth and the Tanzanian government's focus on improving energy supply, Tanzania is still struggling with one of the lowest electrification levels in Africa. Less than 14 % of the total Tanzanian population has access to electricity, while only 2-3 % of the rural population has access to electricity.

Since 1986, Norway has contributed with about NOK 186 million for electrification of the two main islands of Zanzibar, Unguja and Pemba. More than 100 villages have been connected to the electricity grid, giving access to 88 % of the population. The programme on Zanzibar, being a unique contributor to electrification, is currently under end review, which will conclude on lessons learned and replication options of the programme in other parts of Tanzania.

In August 2008, a new agreement was signed between the Revolutionary Government of Zanzibar and Norway on financing the construction of a subsea cable from the mainland of Tanzania to Pemba Island. Norway is contributing NOK 300 million (the total project cost is NOK 400 million), making it one of the largest Norwegian grants to an energy project. The 73 km cable will connect Pemba Island with the Tanzanian electricity grid in Tanga and will enter operation in the second quarter of 2010. The cable replaces 3 old diesel generators and will promote economic and social development by improving electricity supply, meeting demand for 20-25 years to come.

Tanzania submitted a request for funding of a five year institutional cooperation between the Tanzania Electric Supply Company Limited (TANESCO) and Statnett in May 2009. Following Norad appraisals and a Norwegian embassy decision,



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## TANESCO and Statnett signed a cooperation agreement in December 2009.

### COUNTRY FACTS

OFFICIAL NAME  
United Republic of  
Tanzania

CAPITAL  
Dar es Salaam

CHIEF OF STATE  
President  
Jakaya KIKWETE

HEAD OF GOVERNMENT  
President  
Jakaya KIKWETE

POPULATION  
41 048 532  
(July 2009 est.)

ELECTRICITY  
CONSUMPTION  
3 182 GWh (2007 est)

ELECTRICITY  
PRODUCTION  
3 786 GWh (2007 est)

Norad also funded the the CO<sub>2</sub> Focus' Mwanza Landfill Project in 2009. The object of the project is to use gas from solid waste for electricity production. The budget was NOK 491 500.



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## ONGOING PROJECTS

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### Electrification Zanzibar phase IV

#### Objectives

Electrification of villages on the two main islands of Zanzibar, Unguja and Pemba.

#### Cooperating institution in Tanzania

The Revolutionary Government of Zanzibar, through the Ministry of Finance of the United Republic of Tanzania.

#### Project period

2007–2009

#### Total budget

NOK 45 million

### IMESPORE Integrated Modern Energy Services for Sustainable Development and Poverty Reduction programme

#### Objectives

Facilitate up-scaling of access to sustainable energy technologies and services.

#### Cooperating institution in Tanzania

Tanzania Traditional Energy Development and Environment Organisation (TaTEDO)

#### Project period

2007–2010

#### Total budget

NOK 10 million

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**Electrification Pemba  
– implementation phase,  
subsea cable**

Objectives

The purpose of the project is to have a least cost reliable supply of electricity on Pemba meeting demand for 20-25 years to come.

Cooperating institution  
in Tanzania

The Revolutionary  
Government of Zanzibar

Project period

2008–2011

Total budget

NOK 300 million

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**Institutional Co-operation  
between TANESCO and  
Statnett**

Objectives

To achieve a customer-oriented and improved transmission system operator, single buyers function and improved corporate efficiency.

Cooperating institutions

Tanzania:

- TANESCO

Norway:

- Statnett

Project period

2009–2014

Total budget

NOK 37 million (NOK 22 million for phase I and NOK 15 million for optional phase II)

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## Norwegian support for implementation of small hydropower projects in Tanzania

### Objectives

The objective of this study is to assess four small hydropower projects and recommend one or two for further implementation based on their feasibility. The projects have all previously been studied at a reconnaissance/pre-feasibility level:

- Pinyinyi hydropower project in the Ngorongoro district of Arusha region.
- Mtambo hydropower project in the Mpanda district of Rukwa region.
- Nzowve hydropower project in the Sumbawanga district of Rukwa region.
- Kwitanda hydropower project in the Tunduru district of Ruvuma region.

### Cooperating institution in Tanzania

Rural Energy Agency

### Project period

June 2009–March 2010

### Total budget

NOK 825 000

## Makambako Wind Park

### Objectives

Feasibility study for a possible establishment of a 100 MW wind park in Makambako.

### Cooperating institutions

Tanzania:

- Sino-Tan Renewable Energy Limited

Norway:

- Norsk Vind Energi AS, Stavanger

### Project period

2006–2009

### Total budget

NOK 1 108 943 (50 % of approved project budget of NOK 2 217 886)

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## Key achievements in Tanzania 2009

- Electrification of more than 100 villages on Zanzibar.
- Increased use of efficient wood fuel stoves.
- Subsea cable to Pemba laid, replacing old diesel generators.
- Initial preparation for twinning agreement between TANESCO and Statnett.
- Initial preparation for potential-support with the implementation of small hydro projects.
- Feasibility study for a possible wind farm.
- Support with a CDM project.

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# TIMOR-LESTE

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Norway has since 2002 supported the electricity sector in Timor-Leste through institutional cooperation, expanding power production capacity, management support, electricity metering and billing, rehabilitation of the electricity grid, development of a small scale hydropower scheme and planning of a medium scale hydropower project. The support has been governed by several bilateral agreements between Timor-Leste and Norway.

The cooperation has had an institutional component and a technical/commercial component. The goal of the former is to assist in developing the management of the hydro power sector in Timor-Leste through an institutional cooperation arrangement with NVE, and the goal of the latter was to establish a viable economic base for electricity supply in the country through support to Electricidade de Timor Leste (EdTL) and the introduction of an effective revenue collection system.

Norway has financed a feasibility study and environmental impact assessment for a 28 MW run-of-the-river hydro power plant at Iralalaru in the eastern part of Timor Leste and an associated 132 kV transmission line to Dili. The Gariuai micro hydro power plant has also been constructed and was commissioned in November 2008. In 2009 Gariuai was unfortunately hit by an unforeseen land-slide, which destroyed parts of the penstock. Efforts to assess the damage and take remedial action have been conducted in 2009, and the plant will be operational again before the 2010 rainy season.

An agreement between Timor-Leste and Norway on continuing institutional cooperation was signed in September 2009. The purpose of the cooperation is to significantly improve efficiency and effectiveness of the water resources and power



COUNTRY FACTS

OFFICIAL NAME  
Democratic Republic of  
Timor-Leste

CAPITAL  
Dili

CHIEF OF STATE  
President  
Jose RAMOS-HORTA

HEAD OF GOVERNMENT  
Prime Minister Kay Rala  
Xanana GUSMAO

POPULATION  
1 131 612 (2009)

ELECTRICITY  
CONSUMPTION  
120 GWh

ELECTRICITY  
PRODUCTION  
130 GWh

management in Timor-Leste by 2014. This will be achieved through improving legal frameworks, capacity building, hydro – meteorological mapping and a hydro power master plan. The cooperation will strengthen the National Directorate of Water Resource Management and the National Directorate of Environment. Feasibility studies for two hydro power schemes will be conducted.

The Norwegian contribution to the cooperation is NOK 50 million NOK over the period 2009 to 2014.



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## ONGOING PROJECTS

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### Institutional cooperation within the power sector, phase three

#### Objectives

- The overall goal of phase three of the programme is to contribute to the economic and social development of Timor-Leste.
- The purpose of phase three of the programme is to improve significantly the general efficiency and effectiveness of power and water resource management in Timor-Leste by 2014.

#### Cooperating institutions

- Ministry of Infrastructure
- NVE

#### Project period

2009-2014

#### Total budget

NOK 50 million

### Key achievements in Timor-Leste 2009

- Signed new 5 year institutional cooperation.
- Operational hydrological data model.
- Completion of tender documents for the 28MW Iralalaru hydro power plant.
- Capacity building within relevant authorities.



Timor-Leste in-take Garuai. Photo: Erik Børset, Norplan

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# UGANDA

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In Uganda, the electrification level remains less than 10 % in total and only 2 % for the rural population. Key areas of cooperation include investments in national infrastructure, where Norway since 1995 has contributed approximately NOK 50 million annually, thus financing or co-financing more than 25 projects. The major contribution includes investments in national power infrastructure. Support to capacity building through institutional twinning arrangements and training activities have been other priority areas of cooperation. Some support has also been provided for rural electrification.

In June 2009 a new strategy for continued energy cooperation with Uganda was approved. The strategy is based on national development priorities, coordination with other donors and an evaluation of the value added provided by Norwegian support. Mobilisation of commercial investments and direct support for energy infrastructure is a key focus for the strategy, which gives priority to the following areas of support:

- Development of transmission system infrastructure with national and regional significance.
- Feasibility studies and other support for commercial large scale hydropower investment.
- Rural electrification investments.

Institutional capacity building for the Uganda Electricity Transmission Company (UETCL) will in addition be supported through an ongoing twinning arrangement with Statnett.



## COUNTRY FACTS

**OFFICIAL NAME**  
Republic of Uganda

**CAPITAL**  
Kampala

**CHIEF OF STATE**  
President Lt. Gen. Yoweri  
Kaguta MUSEVENI

**HEAD OF GOVERNMENT**  
President Lt. Gen. Yoweri  
Kaguta MUSEVENI

**POPULATION**  
32 369 558  
(July 2009 est.)

**ELECTRICITY  
CONSUMPTION**  
2 086 GWh (2007 est)

**ELECTRICITY  
PRODUCTION**  
2 256 GWh (2007 est)



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## ONGOING PROJECTS

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### Bugoye 13 MW hydro power plant completed in 2009

#### Objectives

Help meet the energy needs of the Ugandan population to promote environmentally sustainable social and economic development.

#### Cooperating institution in Uganda

- Commercial investors: Trønder Energi and Norfund.
- Lender: The Emerging Africa Infrastructure Fund (EAIF). GIEK (political risk guarantee provided to Trønder Energi).
- Uganda: Ministry of Finance, Planning and Economic Development.

#### Project period

2006–2009

#### Total budget

Approximately NOK 360 million (including working capital and financial costs during construction), comprising approximately NOK 112 million of equity, approximately NOK 96 million loan and approximately NOK 50 million development grant.

### UETCL capacity building Twinning UETCL – Statnett phase II

#### Objectives

- Contribute to the provision of sufficient and sustainable electricity to Uganda and the region.
- Make UETCL more efficient in its function both as a single buyer and as a transmission system operator in fulfilling its public service obligations.

#### Cooperating institutions in Uganda

In Uganda: UTCL

In Norway: Statnett

#### Project period

2009–2010

#### Total budget

NOK 14 million

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**Feasibility studies of  
six rural electrification  
projects**

Objectives

Facilitate the required feasibility studies and tender documents as a basis for further development of the six rural electrification projects.

Cooperating institution  
in Uganda

Rural Electrification Agency

Project period

2009–2010

Total budget

NOK 5 million

**Feasibility study of the  
Karuma interconnection  
project**

Objectives

Enable the Government of Uganda to prepare for the financing and construction of the Karuma interconnection project

Cooperating institutions  
in Uganda

UETCL

Project period

2008–2010

Total budget

NOK 14.6 million

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**Feasibility study of  
a Transmission line,  
Hoima-Kafu**

Objective

Contribute to increasing the electrification level in Uganda and to improving the opportunities for increased social welfare, education, health and income generation.

Cooperating Institutions

UETCL

Project period

2010–2011

Total Budget

NOK 7 million

**Feasibility study of Isimba  
Hydropower Project**

Objective

Contribute to increasing the electrification level in Uganda and to improving the opportunities for increased social welfare, education, health and income generation. Furthermore, to facilitate the required planning process and prepare documents for construction tendering.

Cooperating Institution in Uganda

Ministry of Energy and Mineral  
Development

Project period

2009–2011

Total Budget

NOK 18 million

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## Key achievements in Uganda 2009

- Commissioning of the Bugoye hydro power plant.
- Capacity building within UETCL in the areas of finance, transmission infrastructure, regional cooperation, and information management.
- Initial preparation for feasibility studies of six rural electrification projects.
- Initial preparation for feasibility study of the transmission line between Hoima and Kofu.
- Consultant to start feasibility study for Isimba Hydropower Plant.
- Tendering process for Karuma-Kawanda interconnection.
- Further dialogue with Ministry of Energy to extend the project pipeline on:
  - A regional interconnection Uganda- DR Congo.
  - A feasibility study on the transmission line Nkeud- Bunia.
  - A transmission line in western Uganda, Nkenda- Hoima.
  - Implementation of two rural electrification projects in western and south-western Uganda.
- An energy seminar for all the Norwegian embassy staff in Africa dealing with energy project was held in Kampala in April 2009.

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# NON-CORE COUNTRIES

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## ANGOLA

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Angola has great potential within hydropower, including small hydro and in 2009 there has been an ongoing contact between the Ministry of Energy and the Norwegian embassy in Luanda regarding possible cooperation.

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## BANGLADESH

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Several private initiatives were funded in Bangladesh in 2009:

Biomass thermal power  
– Solør Bioenergi AS

The project includes a feasibility study in relation to the possible establishment of a biomass-based thermal power plant, aiming to map relevant technical and commercial aspects, i.e. ability to produce sustainable and stable power for main tea producer and people living on the plantation. Approved for support of NOK 1.93 million (70 % of budget) which was disbursed in 2009. Final decision on investment not confirmed.

Solar power plant  
– Solør Bioenergi Holding AS

Feasibility study to map all relevant technical and commercial aspects related to establishment of a solar power plant (in cooperation with Renewable Energy Corporation ASA). Approved for support of NOK 150 000 (60 % of approved budget), not completed in 2009.

Green telecom base-stations  
– Scatec Solar

Feasibility study for an investment programme replacing fossil fuel (diesel) with solar energy at telecom base stations in Bangladesh. Approved for support of NOK 445.000 (50 % of approved budget). The study will be conducted in 2010.

### Ongoing projects

In 2009 Norway supported institutional cooperation programmes within the Department of Energy and Department of Geology and Mines in Bhutan, in addition to finance reconnaissance surveys and pre-feasibility studies of hydropower sites as part of Bhutan's accelerated hydropower plan. Both departments are administered by the Ministry of Economic Affairs in Bhutan and are important to the economic development of Bhutan.

The main output of the project is enabling of the staff of the various institutions in the energy sector in Bhutan to better carry out their duties under the country's programme for accelerated hydropower development.

Preparation for institutional cooperation between the Royal University of Bhutan and the Norwegian University of Science and Technology (NTNU) in the field of hydropower engineering has started.

#### STRENGTHENING OF THE ENERGY SECTOR.

##### Objective

The goal of the programme is the accelerated development of the hydropower resources of the country, and for attracting investors to implement hydropower projects, thereby leading to socio-economic development and poverty reduction. Furthermore, to ensure the required regulatory capacity to allow the growth of the power sector in an orderly and cost effective manner, and thereby to support the accelerated hydropower development strategy of the 10th five year plan for Bhutan.

##### Cooperating institutions

- Department of Energy, Ministry of Economic Affairs
- NVE

##### Project period

2008-2011

##### Total budget

NOK 15 million

#### MANAGEMENT OF THE RISKS THAT NATURAL HAZARDS REPRESENT TO NEW INFRASTRUCTURE DEVELOPMENT IN BHUTAN

##### Objective

The main goal of the programme is to mitigate natural hazards to infrastructure development in Bhutan through technology transfer and a build up of capacity at the Department of Geology and Mines and stakeholders.

##### Cooperating institutions

- Department of Geology and Mines, Ministry of Economic Affairs
- Norwegian Geotechnical Institute (NGI)

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## CHINA

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Project period  
2008–2010

Total budget  
NOK 6 million

### PRE-FEASIBILITY STUDIES AND RECONNAISSANCE STUDIES

#### Objectives

Reconnaissance surveys for the remaining listed sites under the power system master plan, pre-feasibility studies of project sites and a detailed programme report of one site including environmental studies.

#### Cooperating institutions

- Department of Energy, Ministry of Economic Affairs
- NVE

Project period  
2008–2011

Total budget  
NOK 15 million

### KEY ACHIEVEMENT IN BHUTAN 2009

- Capacity building of the staff in various institutions in the energy sector.
- Development of early warning systems for sustainable infrastructure development started.
- Regional cooperation and dissemination of knowledge.
- Reconnaissance surveys for unvisited sites under the Bhutan power system master plan. Pre-feasibility studies of two project sites launched in April 2009.

In addition to the energy efficiency measures as part of broad energy programmes in main partner countries, Norway has also actively supported specific energy efficiency projects and programmes in China.

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## Ongoing projects

### CHINA UTILITY BASED ENERGY EFFICIENCY FINANCING PROGRAMME (CHUEE)

#### Objectives

- Reduce Chinese emissions of greenhouse gases (GHG) in line with the Chinese government's target of reducing Gross Domestic Product energy intensity by 20%. The target for reduction is 6 million tonnes annually (60 million tonnes in total).
- Develop financial markets by encouraging banks to improve risk management practices, introduce new lending products and to expand coverage to the under-served small and medium sized enterprise market segments.
- Improve industrial energy efficiency and use of renewable energy sources.
- Replace highly polluting fossil fuels with greater use of renewable energies combined with comprehensive energy efficiency improvements in industries including small and medium enterprises and industries.

#### Cooperating institutions

- Multilateral organisation: International Finance Corporation (IFC)

#### Project period

2008–2010

#### Total budget

Norad's contribution:  
up to NOK 18 million.

Total donor funding USD 13.38 million  
(NOK 70 million)

In 2009, NOK 6.6 million was disbursed

### NHO – ENSI

Establishment and development of a centre for energy efficiency in Dalian.

#### Objectives of the project

Helps improve energy efficiency in Chinese industry and buildings and contribute to economic growth, reduced use of fossil fuels and lower green-house gas emissions.

#### Cooperating institutions

- Norway: Energy saving International AS (ENSI), Confederation of Norwegian Enterprises (NHO).
- China: Dalian Development Area, China Enterprise Confederation (CEC).

#### Project period

2009–2012

#### Total budget

NOK 22.72 million

Norad: NOK 14.990 million

China: NOK 7.730 million

Disbursed 2009: NOK 3 million

### INNOVATION NORWAY ENERGY MANAGEMENT PROGRAMME PHASE II

#### Objectives of the project

- Help improve energy efficiency in Chinese industry and contribute to a cleaner environment and lower green-house gas emissions.
- Spread knowledge about available energy efficient technologies, including Norwegian technology, to key actors in China.
- Contribute to the central actors' understanding of, and ability to apply, good energy management practices.

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## EURASIA

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### Cooperating institutions

- Norway: NHO
- China: China Enterprise Confederation (CEC)

### Project period

2008–2009

### Total budget

NOK 1.9 million.

Disbursed 2009: NOK 0.5 million

### KEY ACHIEVEMENTS 2009

#### CHINA

- Capacity building through series of seminars for relevant industry owners and leaders.
- Identification of energy efficiency projects.

The main focus of Norwegian development assistance within the Clean Energy for Development Initiative is directed towards developing countries in Africa and South-East Asia. The Norwegian government, however, also supports projects in Eurasia. The majority of the projects have been within energy efficiency, but also within hydropower development and the preparation of CDM projects. Examples of projects supported by the Norwegian government are:

### Energy efficiency and environmental improvements in Ukraine

The goal is to increase knowledge in the public sector with respect to energy efficiency in buildings, industry and schools, so that European Union environmental standards can be met. The project is being implemented by Reinertsen AS, Tekna and the Norwegian Society for the Conservation of Nature.

### CDM Programme of Activities for greenfield hydropower projects in Georgia

The goal is to provide assistance with the development of small, mini and micro greenfield hydropower projects in rural areas of Georgia by setting up a CDM Programme of Activities and providing manuals, tools and templates for following a step-by-step project development process. The project is being implemented by Norsk Energi.

## Ongoing projects

“Climate change, Environment and Clean Energy” is one of the priority areas of cooperation between India and Norway with the aim of to establishing partnerships between government, the private sector and research institutions within these fields. An agreement with The Energy and Resources Institute was signed in 2008 on cooperation between Indian and Norwegian research institutions related to climate change and clean energy.

In 2009 a pilot project with the objective of electrifying 30 Indian villages using solar power was initiated.

### SOLAR RURAL ELECTRIFICATION OF – 30 VILLAGES PUBLIC- PRIVATE-PEOPLE PILOT PROJECT

#### Objective

Increase electrification in rural areas in the developing world by using renewable energy (solar photovoltaic) alleviating poverty and mitigating climate change. The project aims to prepare the ground for scalable commercial village electrification using renewable energy, and thus help fill the current investment gap between, on the one hand, needed investments in village electrification, and on the other, insufficient private sector involvement.

#### Cooperating institutions

- Scatec Solar AS and Scatec Solar India Pvt Ltd
- Ministry of New and Renewable Energy and India Renewable Energy Development Agency

#### Project period

2009–2013

#### Total budget

NOK 21.5 million, approximately 63 % supported by Norad.

### CDM PROJECT

#### Objective

Support to CDM development for a project to replace fossil fuel with solar energy at telecom base stations in India.

#### Cooperating institutions

Scatec Solar AS and  
Scatec Solar India Pvt Ltd

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Project period  
2009–2010

Total budget  
Approved for support of  
NOK 830 000 in 2009.

**OFF-GRID RENEWABLE  
ENERGY FUND**

Objective:  
Analyse and consider the establish-  
ment of an innovative fund to promote  
business model innovation in deliver-  
ing renewable services to the rural  
populations of India.

Cooperating Institutions:

- Ministry of New Renewable En-  
ergy, India.
- Department for international De-  
velopment, United Kingdom.

Project period:  
2009- 2010

Total Budget  
Approved for support of NOK 830 000  
in 2009.

**BIOCO2**

Objective:  
An integrated multidisciplinary  
project using solar energy for the  
production of renewable hydrogen  
combined with CO<sub>2</sub> capture, to address  
global warming and energy production.

Cooperating Institutions:

- Ministry of New Renewable  
Energy, India.
- Indian Institute of Technology,  
Kharagpur.
- Uppsala University
- Bioforsk.

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Project period  
2008- 2010

Total Budget  
NOK 8.7 million.

**KEY ACHIEVEMENTS  
IN INDIA 2009**

- Support for the electrification of  
30-villages initiative, and agree-  
ments between Norad and Scatec  
Solar India, and between India  
Renewable Energy Development  
Agency and Scatec Solar India  
were established in 2009.
- The installation of photovoltaic  
systems for electricity generation  
started in 2009 and will be final-  
ised during the first half of 2010.
- A financial advisory group with a  
mandate to develop and test out  
business models for private sector  
investments combined with public  
financing mechanisms, was initiat-  
ed in 2009 and will be inaugurate  
d in March 2010.

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## INDONESIA

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In April 2009 in connection to the Indonesian Foreign Minister Hassan Wirajuda's visit to Norway, Indonesia and Norway made mutual commitments to step up their development cooperation on democracy, energy and fisheries.

On the same occasion, the two parties signed an agreement on the "Baron Technopark Renewable Energy Project". The goal of the project is to build a research and utilisation model for electricity generation technologies using renewable energy sources. Norway is supporting the project with NOK 6.5 million over a period of 3 years, 2009–2012. In 2009, a total amount of NOK 1,5 million was disbursed to Baron Technopark.

Tinfos AS and KF Fjellsikring AS have established a private company in Indonesia, under the name of PT.Sulawesi Mini Hydro Power. Its purpose is to develop and operate mini hydro power plants generating and distributing power to the local community. The project is called Tanka-Manipi and has an installed power of 10 MW. An annual power generation is estimated at 44 GWh, and the power plant will enter operation in 2010. The company has also started a capacity building programme, with the aim of transferring know-how and training local employees on all levels. Norad financially supports this training programme with NOK 480 000, part of which is being disbursed in 2009 and 2010.

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## LAOS

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Norway's development cooperation with Laos in the clean energy field focuses on hydro power projects and rural electrification. Norad has been instrumental in developing the Lao energy sector since around 1990, through modernising the water management and electricity legislation. Norad has also financed feasibility studies for the Xeset 2 and Xeset 3 hydro power schemes, recommending the development of the former. The studies were conducted by Norconsult. Xeset 2 has been constructed and commissioned. Xeset 2 has a capacity of 76 MW, annual mean production of 281 GWh and also contributes to 20 GWh of increased production in another plant.

Over the period 2006 to 2009 Norway gave financial support to the construction of the Xeset 2 hydro power project by financing the owner's engineer, in this case also Norconsult.

In 2009 Norad gave support to the 1st phase of a rural electrification project in cooperation with the World Bank. Initial talks regarding funding of a 2nd phase of the rural electrification project were also conducted.

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## Ongoing projects

### XESET 2 HYDROPOWER PROJECT (COMPLETED IN 2009)

Financial support an owner's engineer for the implementation phase of the Xeset 2 hydropower project

#### Objective

The objective of the consultancy services is to assist Electricité du Laos (EdL) in the role as owner's engineer with technical and contractual matters for the successful implementation of the Xeset 2 hydropower project.

#### Cooperating institutions in Laos

- EdL

Project period  
2006–2009

Total budget  
NOK 9 million

### RURAL ELECTRIFICATION 1<sup>ST</sup> PHASE RURAL ELECTRIFICATION PROJECT

#### Objective

Improve incomes and living standards of an estimated 123 500 households (42 000 on-grid and 10 000 off-grid in phase I plus 51 500 on-grid and 20 000 off-grid in phase II) in southern rural provinces in Laos.

#### Cooperating institutions in Laos

- Ministry of Energy and Mines
- EdL

#### Project period

The project was approved for financing in 2005, construction completed in 2009.

#### Total budget

Phase I: approximately NOK 224 million. The mixed credit component supported by Norad was estimated to be worth approximately NOK 56 million.

#### KEY ACHIEVEMENTS IN LAOS 2009

- Completion of rural electrification project.
- Access rate was increased from 16 % in 1995 to now 63 % by June 2009.
- Power sector financial performance and operational efficiency was significantly improved as a result of the “Action plan for financial sustainability of the power sector” implemented under the rural electrification project phase 1, a World Bank financed project which Norad made contribution to in 2009.

### Ongoing projects

The Ministry of Spatial Planning and Environment through the Ministry of Economy approached the Government of Norway for technical assistance with the preparation of a strategic environmental impact assessment for Morača River.

The Norwegian Ministry of Foreign Affairs asked NVE to assist the Ministry of Energy with procurement of consultants and quality assurance of the process and the report.

#### STRATEGIC ENVIRONMENTAL IMPACT ASSESSMENT FOR THE RIVER MORACA

##### Objective

Strategic environmental impact assessment for detailed spatial plan for hydro power projects on the River Morača.

##### Cooperating institutions

- Ministry of Economy and Ministry of Spatial Planning and Environment
- NVE

##### Project period

2008–2010

##### Total budget

NOK 1.8 million

#### KEY ACHIEVEMENTS IN MONTENEGRO 2009

- Proposals for a strategic environmental impact assessment were evaluated by a team from the Ministry of Energy and NVE in early January.
- The contract for the assignment of the assessment was signed between NVE and COWI, on behalf of the Ministry of Energy, on 20 January 2009.
- Inception Report was submitted by COWI in March 2009.

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## NICARAGUA

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### Ongoing projects

In 2008 the Norwegian government launched a Central America study which designated Climate, Environment and Energy as one of three strategic areas of cooperation between Norway and Central America.

An energy delegation from Norway visited two energy seminars arranged in Nicaragua and Guatemala in January 2009. A Nicaraguan-Norwegian dialogue was established, and possible areas of cooperation were assessed. The agreement on the “Development of Small Hydro-Electric Plants for Productive Use in Off-grid Zones” programme was signed in November 2009.

Initial talks with the Ministry of Energy regarding further possibilities of cooperation within the field of clean energy were conducted. The Ministry of Energy expressed its interest in obtaining Norwegian support for the upgrading and updating of hydroelectric development pre-feasibility studies carried out several years ago. This initiative will have impact on the capacity of the government to offer an attractive potential project portfolio to international investors, Norwegians included.

#### DEVELOPMENT OF SMALL HYDRO-ELECTRIC PLANTS FOR PRODUCTIVE USE IN OFF-GRID ZONES

##### Objective

The overall goal of the project is to contribute to reducing poverty levels in the rural communities in the Northern Atlantic Autonomous Region and the Central Region of Nicaragua.

##### Cooperating institutions

The project will be implemented by the Ministry of Energy and the funds will be channelled through UNDP.

##### Project period

2009–2012

##### Total budget

NOK 60 million over the project period. The programme is co-financed by Co-sude (Switzerland) and the Government of Nicaragua.

#### KEY ACHIEVEMENTS IN NICARAGUA 2009

- Agreement between the Government of Nicaragua and Norway signed on 20 November 2009.

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## THE PALESTINIAN TERRITORY

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### Ongoing projects

Norway's energy assistance to the Palestinian territories started after the 1993 Oslo Agreement. Norway has financed a substantial part of the electricity infrastructure in the West Bank and Gaza, including repairs after actions of war. In September 2008 Norway and the Palestinian Authority signed an agreement on Norwegian support to the project "Palestine Energy Sector Assistance Phase V", worth NOK 105 million. In February 2009 an Addendum to that agreement was signed where the Ministry of Foreign Affairs agreed on behalf of Swedish International Development Cooperation Agency (Sida) to administer a Swedish grant of SEK 30 million to phase V.

#### PALESTINIAN ENERGY SECTOR ASSISTANCE PHASE V

##### Objective

- Remediying current power system deficiencies.
- Improving electricity service delivery and public accountability.
- Laying the legal, institutional, economic and financial and technical basis for efficient power system development.
- Finalising the necessary power infrastructure to meet the growth of demand up to 2020.

##### Cooperating institution

Palestine:

- PEA

##### Project period

2008–2010

##### Total budget

NOK 105 million (and SEK 30 million on behalf of Sida).

#### KEY ACHIEVEMENTS IN THE PALESTINIAN TERRITORY IN 2009

- Progress on the development of four new bulk 161/33/22KV supply substations in the West Bank.
- Progress on connection of remaining villages to the grid and modification and rehabilitation of the existing systems, as well as the sub-component of pre-paid meters.

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## SOUTH AFRICA

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The South African Energy Sector Policy Research Programme was initiated in March 2006 with the signing by South Africa and Norway of the business plan proposed by the Department of Energy.

The programme was to run over a period of about three years until the end of March 2009, with a total budget of NOK 35 mill. Norway has agreed to a no cost extension of the programme until March 2010.

Overall programme goals: “Legislation and regulatory framework in place and implemented in support of DME’s energy goals” and “Sustainable access to all forms of energy and related opportunities for various consumer groups through the optimal allocation of appropriate energy options by 2015.” The programme comprises five sub-programme business plans with more detailed goals and outputs for the respective government institutions involved, and five institutional contracts for the twinning of these with relevant sister institutions in Norway. The involved institutions have been twinned as follows: Restructuring of the electricity industry, promotion of renewable energy options: Energy Development Corporation (EDC) and the NVE.

- Liberalisation of the hydrocarbons sub sector: Petroleum Agency of South Africa and the Norwegian Petroleum Directorate
- Regulation of the energy sector: National Energy Regulator (NERSA) and NVE.

- Promotion of renewable energy options: Energy Development Corporation and NVE.
- Transformation of the core functions of the Petroleum Agency: Department of Energy and Norwegian Petroleum Directorate.

In 2009 Norad also funded a private initiative project on power generation from biomass.

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## Ongoing projects

### ELECTRICITY RETICULATION NETWORKS

#### Activities

- Mapping bottlenecks and weaknesses in the energy distribution system.
- Study of electricity reticulation for municipalities and local distributors.
- Capacity building through a series of meetings and workshop.

#### Project period

2006–2009 (extended to 2010)

#### Total budget in 2009

NOK 16 million

### CENTRAL ENERGY FUND (CEF) / ENERGY DEVELOPMENT CORPORATION (EDC)

#### Activities

Several workshops in South Africa and Norway.

#### Project period

2006–2009 (extended to 2010)

#### Total budget 2009

NOK 1.4 mill

### INDEPENDENT POWER PRODUCER (IPP) FRAMEWORK

#### Activities

- Proposals for legal framework on governance of the relationships between the single-buyer and IPP.
- Develop necessary policy formulation and decision to support the implementation of the new system.
- Three benchmark study tours to Turkey, Thailand and China were accomplished.

#### Project period

2006–2009 (extended to 2010)

#### Total budget 2009

NOK 1.2 mill

### ENERGY PLANNING

#### Activities

- Capacity building to implement the integrated energy modelling and planning functions at DoE.
- A total of 16 participants from DoE, NERSA and Statistic South Africa attended a workshop on energy planning in Pretoria, August 2009.

#### Project period

2006–2009 (extended to 2010)

#### Total budget in 2009

NOK 2.5 million

### REGULATION OF THE ENERGY SECTOR

#### Activities

- Capacity building within regulation.
- Development of the licensee information system.
- Policy to promote the stability of the energy sector price path analysis.
- Policy to promote the stability of the energy sector modelling
- Develop web-based reporting system.

#### Project period

2006–2009 (extended to 2010)

#### Total budget in 2009

NOK 2.8 million

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## POWER GENERATION FROM BIOMASS

### Objective

Feasibility study Phase III for testing technologies to find the best technology for generating power for industry from waste from the timber industry and agriculture.

### Cooperating institutions

- EDC
- Biowood Norway AS

### Project period

2006–2009

### Total budget

Phase III was approved for support of NOK 250 000 in 2009.

- A Carbon Coordinator, appointed in August 2008 to strengthen the CDM capacity within EDC.
- Planning functions for integrated energy modelling implemented.
- 53 NERSA staff members attended NERSA/NVE regulatory conference, in Pretoria.
- Seven NERSA staff members attended the Electricity ELRI in Oslo.
- Capacity building within the licensee information system provided.
- Capacity building workshop within NERSA staff.
- Licensee information system developed, tested and rolled-out.
- Feasibility study on power generation from biomass was carried out.

## KEY ACHIEVEMENTS IN SOUTH AFRICA 2009

- Final report on the condition of the electricity reticulation networks for the FIFA 2010 World Cup was delivered.
- Stakeholder workshop on FIFA World Cup project findings and recommendations was held.
- Five Department of Energy staff attended the Electricity Regulatory Initiative (ELRI) seminar in Norway.
- The process to establish system operator legislation was set in progress.
- Work on draft IPP Framework report continued and policy formulation and decisions were completed.
- Completion of a study to develop a framework for economic development using hybrid-based electricity generation for stand-alone applications and mini-grids.

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## SRI LANKA

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To facilitate electrification in war affected areas in the North and East of Sri Lanka, Norway has since 2005 supported an Asian Development Bank led programme under the Conflict Affected Area Rehabilitation Project (CAARP). In 2009 Norway supported the project with NOK 23.7 million. Since 2005 Norway has contributed to the electrification of 77 villages.

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## VIETNAM

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The history of cooperation between Vietnam and Norway goes back more than 40 years.

In 2009 Norway supported one clean energy in Vietnam. The project is an institutional cooperation project between Ministry of Natural Resources and Energy, Vietnam and NVE.

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FORMULATION OF PROCESSES  
AND CAPACITY BUILDING  
PACKAGE ON LICENSING  
WATER RESOURCES EXPLOI-  
TATION AND UTILISATION  
FOR HYDROPOWER

Objective

The objective of the project is to contribute to the sustainable, environmentally as well as socially sound management of water resources and the development of hydropower projects in Vietnam by:

- Establishing an efficient and transparent system for licensing hydropower projects and other kinds of reservoirs including multipurpose reservoirs
- Building adequate competence of personnel involved in the licensing process through various forms of training.

Cooperating institution

- Ministry of Natural Resources and Environment
- NVE

Project period

October 2006 – December 2010

Total budget

NOK 10.15 million. Norwegian contribution NOK 8.85 million. Vietnamese contribution NOK 1.3 million.

KEY ACHIEVEMENTS IN  
VIETNAM 2009

- Workshops on developing licensing routines and procedures and input to the second draft of the hydropower licensing guidelines.
- Study trips to Norway organised by NVE.
- Increased basic knowledge on hydropower development and the environment for candidates who attended the International Centre for Hydropower courses in Trondheim, Norway.

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## ZAMBIA

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ICH conducted a two-week course on hydropower development. The course was held in cooperation with Kafue Gorge Regional Training Centre with financial support from Norad.



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# REGIONAL COOPERATION

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## REGIONAL COOPERATION

Norway provides direct financial and technical assistance for regional energy collaboration. Important areas are energy planning, power trading and the expansion of infrastructure.

# SOUTH AFRICAN DEVELOPMENT COMMUNITY (SADC)

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In order to implement the South African Development Community (SADC) Common Agenda, SADC and International Co-operating Partners (ICPs) have developed a new SADC/ICP Partnership. This new partnership, as outlined in the Windhoek Declaration (April 2006), aims at an effective dialogue and cooperation between SADC and ICPs. SADC designated Norway as lead ICP in energy in January 2007, and the Norwegian Embassy in Maputo took the lead on the Norwegian side. A senior energy expert has been assigned to the Norwegian embassy in Maputo.

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## ONGOING PROJECTS

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### New SADC/ICP Partnership

#### Objectives

The main objectives for the assistance of the Coordinator are to assist SADC with facilitating the co-ordination of ICPs involved or interested in activities within the energy sector:

- to strategically advise the SADC Secretariat and other SADC structures on the various ICPs' comparative advantages and individual ICP priorities of support to the sector;
- to maintain a continuous dialogue and flow of information between SADC and ICPs on regional energy issues.

#### Cooperating institution:

- SADC

#### Project period:

2008-2010

#### Project budget:

NOK 2.5 million per year, covering the salaries and subsistence allowance for a full time energy coordinator based in Maputo, professional backstopping and contingencies.

### Key achievements 2009

- Support for, and strengthening of information exchange among the ICPs.
- Identification of areas where coordinated ICP initiatives can make a significant contribution to address SADC's energy challenges.
- ICP cooperation to fund new initiatives to develop renewable energy and energy efficiency programmes.
- Dialogue and strategic support to the SADC Secretariat.

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# THE COORDINATION CENTRE OF SOUTHERN AFRICAN POWER POOL (SAPP-CC)

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The Southern African Power Pool (SAPP) was created with the primary aim of providing reliable and affordable electricity supply to the consumers of each of the SAPP members, consistent with reasonable utilisation of natural resources and the impact on the environment.

The members of the SAPP have undertaken to create a common market for electricity in the SADC region and to let their customers benefit from the advantages associated with this market.

Since 2003, Norway has provided NOK 35 million for support to the Coordination Centre of Southern African Power Pool (SAPP-CC) for developing a competitive electricity market in the SADC-region. Meanwhile Sweden has provided financial support worth SEK 10 million for a project on long term transmission pricing and ancillary services market development, both of which are important to the development of a competitive market.

In addition to this, Norway contributed NOK 2.5 million to SAPP-CC for updating the Pool Plan for the SADC-region ranking the available transmission and generation projects on a least-cost regional basis. The main study was financed by the World Bank.

In December 2006, SAPP-CC requested an extension of joint Norwegian and Swedish financial support for the implementation of the competitive market. After a long appraisal process, the project was launched in 2009.

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## ONGOING PROJECTS

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### Implementation of a Competitive Electricity Market in Southern Africa

#### Objectives

To implement a competitive electricity market where existing national utilities, IPPs, Independent Transmission Operators and big end users will participate in trading.

#### Cooperating institution:

- SAPP-CC

#### Project period:

January 2009-December 2011

#### Total budget:

NOK 22.5 million  
(Sweden SEK 12 million)

### Key achievements 2009

- Launching of the competitive electricity market.

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# THE EAST AFRICAN COMMUNITY (EAC)

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The East African Community (EAC) is the regional intergovernmental organisation of the Republics of Kenya, Uganda, the United Republic of Tanzania, Republic of Rwanda and Republic of Burundi with its headquarters in Arusha, Tanzania.

The EAC is committed to engaging EAC Partner States in an initiative to scale up access to modern energy services to meet the Millennium Development Goals and to ensure that at least half of the EAC population has access to modern energy services by 2015. A regional strategy on scaling up access to modern energy services has been developed.

The strategy recommends the establishment of a Programme Coordination Unit hosted by the EAC Secretariat to spearhead implementation of activities along the four areas identified as critical to the success of the strategy. A project document defining the terms of reference for the programme coordination unit, its activities and budget for the first two years of operation has been developed. In addition, each EAC Partner State has developed a work plan for associated national activities for the first two years.

In January 2009, the EAC Secretariat requested Norwegian support for recruitment of a project development officer for a two year contract (2009 – 2011) with the aim of securing planning and coordination of the implementation activities of the strategy and to facilitate the associate involvement by the EAC Secretariat and submitted a project document which had been developed through the EAC Energy Secretariat.

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## ONGOING PROJECTS

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**Support to develop a regional strategy on scaling up access to modern energy services (The Strategy) – recruitment of a project development officer.**

Objectives

The EAC Energy Access Strategy will encourage EAC Partner States to scale up access to modern energy services to ensure that at least half of the EAC population has access to modern energy services by 2015.

Cooperating institution:

- EAC

Project period:

2009-2011

Total budget:

NOK 1.73 million

**Key achievements  
2009**

- The procurement process for the project development officer has started.

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# THE COORDINATION CENTRE OF EASTERN AFRICAN POWER POOL (EAPP-CC)

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Countries in East Africa have been planning, developing and implementing their power systems in isolation and with the view to satisfying only national demand growth, although with some limited bilateral power exchange agreements between some countries in the region. During the last decade there has been a growing political interest in scaling up regional integration.

The East Africa Power Pool (EAPP) was formed in February 2005. The main role of EAPP is to coordinate power system interconnections in East Africa optimise development of power generation resources in an economically and environmentally sustainable manner and ensure efficient provision of adequate, secure and affordable power.

In November 2008, the permanent EAPP Secretariat (EAPP – PS) requested assistance from the Norwegian Embassy in Dar es Salaam. A draft project document was submitted in March 2009 and the final project document for technical assistance for operationalisation of the EAPP Coordination Centre (EAPP-CC) and Independent Regulatory Body was submitted in May 2009

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## ONGOING PROJECTS

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### The implementation of a competitive electricity market in Eastern Africa.

#### Objectives

The main objective of the project is to operationalise the EAPP Coordination Centre and Independent Regulatory Body by 2012 to facilitate efficient power trading in the region when the critical mass of regional interconnection projects has been realised.

#### Cooperating institution:

- The Coordination Centre of Eastern African Power Pool (EAPP-CC)

#### Project period:

2009-2011

#### Total budget:

NOK 15 million

### Key achievements 2009

- The procurement process for the required consultancy services has started.

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# NILE BASIN INITIATIVE (NBI)

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The Nile Basin Initiative (NBI) is a partnership initiated and led by the riparian states of the Nile River through the Council of Ministers of Water Affairs of the Nile Basin states (Nile Council of Ministers). The NBI seeks to develop the river in a cooperative manner, share substantial socioeconomic benefits and promote regional peace and security. Cooperative water resources management is complex in any international river basin. In the Nile Basin, which is characterized by water scarcity, poverty, a long history of dispute and insecurity, and rapidly growing populations and demand for water, it is particularly difficult.

The Uganda-Democratic Republic of Congo transmission line is a prioritised NBI and NELSAP power programme project. This interconnection line is part of the overall regional system plans, which also include Tanzania, Burundi and Rwanda and will make it possible to cooperate between countries and to introduce cross-border trading.

In November 2002 feasibility study of a power interconnection between Kenya and Tanzania recommended the construction of a 330 kV single circuit line between Nairobi and Arusha and expected to link the region with the Southern African Power Pool (SAPP) through another 330 kV transmission line between Tanzania and Zambia. Dry hydrological conditions resulting in serious power deficits made financiers reluctant to fund the project, which was put on hold.

New developments such as proposed power imports from Ethiopia to Kenya, new gas and coal fired plants in Tanzania, reinforcement of the Kenya-Uganda power interconnection and planned connections between Uganda, Rwanda and Burundi which would effectively create a regional power pool of five countries, made the Kenya-Tanzania interconnection critical. In March 2009, the governments of Kenya and Tanzania jointly requested Norwegian financial assistance for the project.

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## ONGOING PROJECTS

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### Feasibility study for a transmission line between Nkenda in Uganda and Bunia in the Democratic Republic of Congo

#### Objectives

The purpose of the project is to contribute to increase the electrification rate in Uganda and Democratic Republic of Congo and to improve opportunities for increased social welfare, education, health and income generation.

#### Cooperating institution:

- Uganda: Ministry of Finance, Planning and Economic Development

#### Project period:

2009-2011

#### Project budget:

NOK 14.5 million

### The Kenya-Tanzania power interconnection, feasibility study, environmental and social impact assessment

#### Objectives

The purpose of the project is to improve access to electricity in NBI countries through increased cross-border sharing of power

#### Cooperating institution:

- Nile Basin Initiative:  
Nile Equatorial Lakes Subsidiary  
Action Programme (NELSAP)

#### Project period:

2009-2011

#### Project budget:

NOK 24 million

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# CONSUMER UNITY AND TRUST SOCIETY, CENTRE FOR COMPETITION, INVESTMENT AND ECONOMIC REGULATION (CUTS C-CIER)

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With the support of the Norad, the Consumer Unity and Trust Society, Centre for Competition, Investment and Economic Regulation is undertaking an initiative over two years (2008-2010) in Nepal, Bangladesh, and two states of India (West Bengal and Rajasthan) to build the capacity of consumer groups and civil society organisations in action oriented research, and advocacy with policymakers and regulatory agencies to effect pro-consumer changes in the regulatory and policy processes governing the electricity market.

In 2009 Norad contributed NOK 980 000 to the project.



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# MULTILATERAL COOPERATION

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## UN-Energy

Norway is a strong supporter of the United Nations (UN) and is one of its most important contributors. There are many organisations within the United Nations that deal with clean energy, but none that have energy as a sole focus area. The most important UN organisations that Norway contributes to that have a clean energy portfolio are UNDP, UNEP, UNIDO and UN-Habitat.

After the World Summit on Sustainable Development in 2002, UN-Energy, an inter-agency mechanism on energy was established. UN-Energy's task is, amongst other things, to promote system-wide collaboration in the area of energy, with a coherent and consistent approach. In 2007 Kandeh Yumkella was elected as Chair. Dr. Yumkella is the Director General of UNIDO (United Nations Industrial Development Organisation). To promote policy coherence and operational cooperation within the UN-System, UN-Energy has created 3 thematic clusters: the Energy Access Cluster, the Renewable Energy Cluster and the Energy Efficiency Cluster. In addition to joint publications UN-Energy has in 2009 been working with a compilation of all UN- activities within the field of energy, a future for UN-Energy and a knowledge network. These three projects will be launched in New York in April 2010.

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## UNDP

UNDP is the United Nations' development network which links and coordinates global and national efforts to reach the Millennium Development Goals. Environment and Energy is one of UNDP's seven priority areas.

UNDP focuses both on upstream activities, for example policies needed to support energy options for sustainable development, and on downstream activities concentrated on integrated energy solutions addressing social, economic and environmental objectives to address poverty and promote sustainable development.

In 2009 Norway contributed with approximately NOK 2 billion to UNDP. NOK 29 million (USD 4.7 million) was contributed to UNDP's Thematic Trust Fund for Energy and Environment (EE TTF). Total 2009 funding of the EE TTF was USD 6.0 million which means that Norway contributed more than 78 % of the funding.

One programme funded through the EE TTF is the Energy Access Program. The overarching goal of the programme is to strengthen the capacities of developing countries to expand access to modern energy services to the poor.

The Energy Access Program has amongst other things assisted national counterparts in their efforts to mainstream energy issues into national development strategies by developing a catalogue of policy notes, guidelines, tools, and other resources currently available.

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## UNEP

The United Nations Environment Program (UNEP) has identified six cross-cutting thematic priorities.

These thematic priorities are, in alphabetical order:

- Climate change;
- Disasters and conflicts;
- Ecosystem management;
- Environmental governance;
- Harmful substances and hazardous waste;
- Resource efficiency – sustainable consumption and production.

Norway has actively worked for a non-earmarking of support to UNEP, and has therefore allocated its support in line with the organisations own thematic priorities. In 2009, Norway contributed NOK 100 million through the framework agreement with UNEP. This contribution was disbursed on the different thematic priority areas as follows: Climate change (25 %); Disasters and conflicts (5 %); Ecosystem management (25 %); Environmental governance (20 %); Harmful substances and hazardous waste (15 %) and Resource efficiency (10 %).

UNEP's work within energy falls within the Climate Change priority area. The goal of UNEP's Energy Branch is to bring environmental considerations into energy sector decisions, with a focus on reducing emissions of greenhouse gases. The energy branch works on the following areas: mobilising finance, energy efficiency, renewable energy, transport and bio-energy.

UNEP is actively engaged in producing information and sharing knowledge about various aspects of financing climate change mitigation and adaptation.

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Two examples are:

- “Global Trends in Sustainable Energy Investment 2009 Report”. This report is released by UNEP SEFI and New Energy Finance. It provides an overview of capital flows and an analysis of the trends in sustainable energy investment activity.
- “The Global Financial Crisis and its Impact on Renewable Energy Finance”. This study provides a clearer picture of the impact of the global financial crisis on the renewable energy sector and draws upon both survey-based empirical research and transaction-based data analysis.

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## UN-Habitat

The United Nations Human Settlements Program, UN-HABITAT, is the United Nations agency for human settlements. It is mandated by the UN General Assembly to promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter for all.

Access to Clean Energy and Energy Efficiency is part of the agenda in UN-HABITAT's work towards the goal of “Cities without slums”. UN-HABITAT has both a normative and an operational function.

Norway contributed NOK 93 million to UN Habitat under the framework agreement and programme agreement in 2009.

An example of UN-Habitat's work within the field of Clean Energy in 2009 is the publication “Sustainable Urban Energy Planning – a handbook for cities and towns in developing countries” on which UN-HABITAT worked together with UNEP and ECLEI – Local Governments for Sustainability.

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## MULTILATERAL DEVELOPMENT BANKS

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### UNIDO

The United Nations Industrial Development Organisation (UNIDO) is a specialised agency of the United Nations. Its mandate is to promote and accelerate sustainable industrial development in developing countries and economies in transition.

UNIDO focuses on three main thematic areas to achieve its goals:

- Poverty reduction through productive activities
- Trade capacity –building
- Energy and Environment

In 2009 Norway contributed NOK 46.5 million to UNIDO of this almost NOK 7 million was a core contribution.

Norway's contribution to UNIDO's work within clean energy in 2009 was concentrated on the support for a National Cleaner Production Centre in Sri Lanka, where the Norwegian contribution in 2009 amounted to almost NOK 3 million. Norway has supported the National Cleaner Production Centre in Sri Lanka since it was established in 2001. The objective of the support to NCPC has been to contribute to sustainable development by promoting and building capacities on cleaner production methods and policies.

### World Bank Group

The World Bank supports developing countries' efforts to provide cleaner and reliable electricity services to households and businesses through its financing instruments, policy advice, partnerships, and knowledge transfer. In the fiscal year 2008/2009 (ending in June) World Bank Group financing for renewable energy and energy financing exceeded NOK 19.4 billion. This was 24 % more than the previous year. Renewable energy and energy efficiency financing represented more than 40 % of total energy financing in 2008/09. In 2009 Norway provided NOK 779 million to the International Development Assistance (IDA), which gives concessional loans and grants to low income countries.

#### THE NORWEGIAN THEMATIC TRUST-FUND FOR PRIVATE SECTOR INVESTMENTS (NTF-PSI)

Norway provides co-financing to the World Bank's work with energy related issues mainly through the Norwegian Trust Fund for Private Sector and Infrastructure (NTF-PSI).

Around NOK 70 million is allocated annually through NTF-PSI. Thematic priorities in the 2009 call for proposals were:

- (i) Adaptation to climate change: focus on infrastructure and private sector engagement, and
- (ii) Creating an environment for private sector engagement and access to finance in post-conflict/ conflict-affected countries.

The NTF-PSI energy portfolio includes the following projects and global programmes:

- The Energy Sector Management Assistance Program (ESMAP)

- Lighting Africa
- Clean Energy and Production Technology for Mining (Southern Africa)
- Environmental and Social Capacity Building for Sustainable Fund Aureos (Africa).
- Integrated Water and Hydropower Resource Management in the Vrbas River Basin (Bosnia)

#### THE ENERGY SECTOR MANAGEMENT ASSISTANCE PROGRAM (ESMAP)

The Energy Sector Management Assistance Program (ESMAP) is a global, multidonor technical assistance programme aimed at promoting environmentally sustainable energy solutions for poverty reduction and economic growth. 11 bilateral donors and the World Bank provide grant funding for ESMAP. In 2009 Norway contributed USD 750 000, or approximately 5 % of the programme's total budget of USD 14 million. It is managed by the Energy, Transport and Water Department of The World Bank Group.

##### Key activities and results in 2009 include:

- Launch of the Country Energy Sector Vulnerability Assessments Program to help countries assess the effects of financial crises, volatile oil prices, and climate change on the energy sectors for better-informed policymaking. A number of country studies have been initiated, and a few already completed, regarding the impact of the global financial crisis on priority investments; paths to low carbon growth and energy efficiency options; as well as regional approaches to energy development.
- Technical assistance has been provided to increase client capacity in the areas of energy pricing (Egypt); establishment of a competitive electricity market

(Turkey); harnessing indigenous gas resources (Vietnam); boosting renewable energy supply (Nepal); and mobilising local expertise for rural electrification (Africa regional).

- Launch of the Renewable Energy Market Transformation Initiative to help countries build their institutional capacity to develop, plan, and implement strategies to quickly deploy selected renewable energy technologies. During 2009, the Renewable Energy Market Transformation Initiative supported market transformation activities in China and India, the development of roadmaps in half a dozen countries and regional activities, with others in the works, covering wind, geothermal, small hydroelectric, and concentrating solar power.

#### LIGHTING AFRICA

Lighting Africa is a joint International Finance Corporation (IFC) and World Bank programme that seeks to support the global lighting industry in developing affordable, clean, and efficient modern lighting and energy solutions for millions of Sub-Saharan Africans who currently live without access to the electricity grid. It is managed by a joint World Bank and IFC team, working together globally and locally in Africa to manage and implement the programme, supported by a host of organisational partners.

#### CLEAN ENERGY AND PRODUCTION TECHNOLOGY FOR MINING (SOUTHERN AFRICA)

Clean Energy and Production Technology for Mining is managed by the International Finance Corporation (IFC). The objective of the project is to identify barriers to, and solutions for, energy efficiency, power generation (through suitable renewable

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technology) and other productivity improvements in 4-5 mines in Southern Africa. The project will also assist with the implementation of the identified options. The lessons learned will be used for demonstration and information dissemination across the mining industry in Southern Africa.

The funding from Norway is USD 1 million.

Implementation commenced in 2009 with the completion of research and regional and sectoral consultations. Potential and strategies for renewable development in the region have been assessed, and renewable energy project targets refined.

#### ENVIRONMENTAL AND SOCIAL CAPACITY BUILDING FOR SUSTAINABLE FUND AUREOS (AFRICA)

The Environmental and Social Capacity Building for Sustainable Fund "Aureos" is managed by the International Finance Corporation (IFC) with the objective of increasing private investment into renewable and clean energy. This is done by assisting Aureos as a private equity fund manager to identify renewable and clean energy improvements and investment opportunities in its portfolio companies in Africa.

The project will address market failures through the following activities:

- Building environmental and social capacity at Aureos with a particular focus on climate change
- Disbursing grants and loans to strategically selected Small and Medium Enterprises (i.e. sectors/projects) to carry out clean and renewable energy improvements
- Establishing and communicating the business case for E&S improvements at Fund and Small and Medium Enterprise level

The project is expected to deliver very high sustainability and replicability through a multiplier effect across the business and financial community. This it will do by demonstrating to other private equity investment funds the benefits of incorporating sustainability into their operations.

Norway is providing USD 2.25 million in support of the project.

#### INTEGRATED WATER AND HYDROPOWER RESOURCE MANAGEMENT IN THE VRBAS RIVER BASIN (BOSNIA)

The Integrated Water and Hydropower Resource Management in the Vrbas River Basin project is managed by The Energy Sector Management Assistance Program (ESMAP). The total budget of USD 1.5 million is for pre-investment work on the rehabilitation of the existing Jajce I and Jajce II hydropower stations, and also for development of new hydropower plants at Han Skela, Ivik, Ugar Usce and Vrelna Kosa.

Main project activities include:

- Developing an updated report on the hydrological balance of the river basin.
- Review of the legislative and regulatory framework for the development of hydropower facilities, including guidance for the by-law on environmental flows and harmonization of the various applicable laws.
- A strategy ranking the development of water infrastructure based on the water prioritization principles and benefits to be derived from water allocations across the water-utilising sectors.
- Detailed feasibility studies for prioritized small and medium sized run-of-the river hydropower infrastructure.

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## SCALING-UP RENEWABLE ENERGY IN LOW INCOME COUNTRIES (SREP)

Scaling-up renewable energy in low income countries (SREP) is one of the sub-funds under the Strategic Climate Fund (SCF), and is part of the Climate Investment Funds (CIF), based at the World Bank. The Fund also cooperates with other multilateral development Banks.

Norway will provide NOK 150 million over three years in support for the programme, which will focus on a small number of low income countries to promote alternatives to traditional fossil fuels, by demonstrating that renewable energy sources like solar-, wind-, geothermal-, bio fuel and hydro power up to 10 MW can meet energy needs. SREP has reached more than its target funding level of USD 250 million and will start operations in 2010.

The Steering committee of SREP has equal representation of donors and partners, which is a new set up for the climate trust funds. Norway has a seat in the SREP Steering Committee.

## CARBON CAPTURE AND STORAGE CAPACITY BUILDING (CCS)

A new World Bank trust fund for carbon capture and storage was set up in December 2009 as a result of cooperation between Norway, the World Bank and the Global CCS Institute in Australia. Norway is the largest donor with a contribution of NOK 35 million. The Global CCS Institute in Australia is also a supporter to the fund.

The trust fund will facilitate the inclusion of CCS options into low-carbon growth strategies and policies developed by national institutions and supported by the World Bank Group in developing countries.

The fund has so far received requests from 12 developing countries.

## CARBON FUNDS

The World Bank has pioneered carbon finance, and this area of operations has multiplied into a number of special purpose funds. Norway is currently participating in the Prototype Carbon Fund (PCF) and the Forest Carbon Partnership Facility.

As of 31 December 2008, these World Bank-managed carbon funds and facilities have 186 projects in their portfolio with an estimated carbon asset value of more than USD 2.3 billion. 119 of the projects have signed emission reductions purchase agreements with a value of over USD 1.8 billion, and the participants have approved another 21 projects that are at an advanced carbon finance document stage.

## THE PROTOTYPE CARBON FUND (PCF)

The Prototype Carbon Fund (PCF) became operational in April 2000. As the first carbon fund, its mission is to pioneer the market for project-based greenhouse gas emission reductions while promoting sustainable development and offering a learning-by-doing opportunity to its stakeholders.

The PCF has been structured as a public-private partnership of six governments and 17 companies.

From its inception, the PCF has followed three primary strategic objectives:

- High-quality emission reductions to show how project-based greenhouse gas emission reduction transactions can promote and contribute to sustainable development and lower the cost of compliance with Kyoto Protocol.
- Knowledge dissemination to provide the parties to the United Nations Framework Convention on Climate Change (UNFCCC), the private sector, and other interested parties with an opportunity

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for “learning-by-doing” in the development of policies, rules, and business processes for the achievement of emission reductions under CDM and joint implementation.

- Public-Private Partnerships to demonstrate how the World Bank can work in partnership with the public and private sectors to mobilize new resources for its borrowing member countries while addressing global environmental problems through market-based mechanisms.

The PCF now has 19 out of 24 projects delivering emission reductions. In 2008, the PCF agreed to accept USD 39.8 million in additional capital, so the total capital of the fund is USD 219.8 million, allowing the PCF to secure possibilities of late vintage emission reductions from projects in the portfolio, also benefiting project entities.

#### PPIAF – INTEGRATING CLIMATE CHANGE AGEN- DA WITH PUBLIC PRIVATE PARTNERSHIPS

The mission of the Public-Private Infrastructure Advisory Facility (PPIAF) is to help eliminate poverty and achieve sustainable development through public-private partnerships in infrastructure.

PPIAF is a global, multi-donor, technical assistance programme helping developing countries improve their infrastructure through two main mechanisms:

- It offers governments technical assistance on strategies and measures they can use to tap the full potential of partnerships between the public and private sector.
- It identifies, disseminates, and shares best practices relating to public-private infrastructure

partnerships in developing countries.

In 2009 Norway contributed USD 0.9 million, or approximately 4.2 % of the PPIAF’s total USD 22 million contributions (cash receipts). The Norwegian funding is targeted at countries in Sub-Saharan Africa and focused on integrating the climate change agenda in policy and transaction work. Infrastructure services eligible for this non-core PPIAF support include energy and transport.

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## Asian Development Bank (AsDB)

The Asian Development Bank's (AsDB) Strategy 2020 identifies energy as a core operational sector for poverty reduction. The aim of AsDB is to invest USD 2 billion in clean energy annually by 2013. In 2009 USD 1.26 billion was invested in clean energy.

AsDB uses various financing instruments to support clean energy projects – including grant funding for studies and project preparation, lending and risk enhancement, up-front purchase of certified emission reduction credits, regional private equity funds and donor-funded grant components of investments to buy down the cost of projects. Like the World Bank – the AsDB has created carbon funds: The Asia Pacific Carbon Fund and Future Carbon Fund.

The Clean Energy Financing Partnership Facility (CEFPPF) was established in 2007 with the core goals of increasing energy security among AsDB's developing member countries and assisting them in the ongoing transformation off their economies to low carbon development. The facility supports projects that deploy new clean energy technology, lower barriers to adopting clean energy technologies and increase access to clean and efficient energy for the poor, and technical capacity programs for clean energy. From 2009 the facility will also support carbon capture and storage (CCS).

So far projects supported by the CEFPPF have contributed to leveraging 528 million USD in clean energy investments over and above the AsDB's ordinary financing mechanisms.

Norway has supported the CEFPPF with 30 million NOK (2007-2009).

### Key activities and results in 2009:

- Support to 37 projects in 23 developing member countries, which are estimated to mitigate 3.8 million tonnes CO<sub>2</sub>/year and generate 1.1 terawatt-hours (TWh) of energy savings.
- The CEFPPF's total project allocations of USD 28.5 million have leveraged USD 528 million of clean energy investments, achieving a leverage ratio of 1:19.
- An evaluation of CEFPPF is foreseen to be carried out in 2010.

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## African Development Bank

The African Development Bank (AfDB) was established in 1964 to help development efforts on the African Continent. In 2009, Norway supported the African Development Bank with NOK 167.6 million, NOK 105 million of which went to the Congo Basin Forest Fund. The African Development Bank has amongst other things been assigned a leadership role in the provision of advisory and technical support to The New Partnership for Africa's Development (NEPAD) and prepared an infrastructure short term action plan, which provided the basis for Canada's support for the establishment of the NEPAD Infrastructure Project Preparation Facility (NEPAD- IPPF). In 2004, Denmark also contributed on the same terms as the grant from Canada. The NEPAD-IPPF was transformed into a multi-donor facility in September 2005.

In 2006, when Norway was co-chair of the Africa Partnership Forum, Norway agreed to consider the funding of mechanisms for infrastructure development and the NEPAD- IPPF was seen as particularly interesting. A Norwegian assessment of the facility was carried out in March 2007, which recommended that Norway should become a funding partner of the NEPAD- IPPF. In September 2007, Norway signed a letter of commitment to support the administration of the NEPAD- IPPF by the African Development Bank in accordance with the Instrument which established NEPAD- IPPF. In 2009, Norway contributed with NOK 15 million to this project.

The NEPAD-IPPF assists African countries, the regional economic communities and other relevant institutions to prepare high quality and viable regional/continental infrastructure projects and programmes and

in-country projects with a regional/continental outlook, to develop consensus and broker partnerships for their implementation with the long term goal of reducing Africa's marginalisation by ensuring sustainable regional economic development and integration through cooperation between African countries, donors and the private sector.

The objectives of the project have been to contribute through the IPPF to:

- Developing high quality and viable infrastructure projects in energy, transport, ICT and water sector.
- Providing technical advisory services for national and regional institutions responsible for developing the sectors.

The project has been running since 2007.

### Key activities and results in 2009:

- The NEPAD-IPPF supported activities have accelerated the preparation of regional infrastructure projects across different sectors. Emphasis has also been put on projects that can assist in building the capacity of countries and regions to develop and implement infrastructure projects and programmes as illustrated by the EAPP Master Plan and capacity building project, EAC master plan review and update and capacity building programme for regional economic communities under preparation.
- Public Private Partnerships (PPP) have been emphasized in programs under consideration within the reporting period through the SAPP projects (Ithezi-Thezi and the Kariba North Bank power projects) in SADC region.

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## MULTILATERAL ORGANISATIONS

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### Global Environmental Facility (GEF)

Established in 1991, the Global Environmental Facility (GEF) is today the largest funder of projects to improve the global environment. As an independent financial organisation, the GEF provides grants to developing countries and countries with economies in transition for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.

The GEF covers the incremental costs of achieving global environmental benefits. Biodiversity and climate change each receive approximately one third of GEF funds.

The GEF has allocated USD 8.8 billion, supplemented by more than USD 38.7 billion in co-financing, to more than 2 400 projects in more than 165 developing countries and countries with economies in transition. Through its Small Grants Programme (SGP), the GEF has also made more than 10 000 small grants directly to nongovernmental and community organisations.

Norway has contributed an annual sum of NOK 57 million to the GEF-4 (2006-10), representing 1.4% per cent of contributions to the GEF Trust Fund. In addition, NOK 40 million is allocated to the Least Developed Countries Fund and the Special Climate Change Fund. Both these funds were created in 2001 as GEF-managed funds under the Climate Convention with a particular focus on adaptation.

As an operating entity of the United Nations Framework Convention on Climate Change's (UNFCCC) financial mechanism, the GEF has supported climate change mitigation efforts in developing countries during the past 18 years in close cooperation with recipient countries and the ten

GEF agencies. The GEF's work on climate change has maintained a strong focus on the transfer of environmentally sound technologies, closely allied with the UNFCCC's technology transfer framework.

Currently the GEF is committed to two strategic programmes on renewable energy: one that promotes market approaches to supply of and demand for renewable electricity in grid-based systems, and one that promotes sustainable energy production from biomass. In addition, the GEF has a strategic programme for the promotion of energy efficiency that support projects that not only promote the transfer of energy-efficient technologies but also enable work with regulatory institutions on reforming policies and regulations across all relevant sectors.

#### Key achievements in 2009:

- In 2009 the GEF supported a total of 700 climate change mitigation projects in more than 150 developing countries, by providing USD 2.7 billion in direct financing and USD 17 billion in co-financing.
- GEF-funded climate change projects are on track to avoid more than 2.5 billion tonnes of CO<sub>2</sub> emissions.
- More than 70 % of climate change investments are linked to projects that promote energy efficiency, renewable energies, and sustainable urban transport.
- The GEF has been the platform for more than 30 environmentally sound technologies including efficient lighting and appliances; building materials; motors, boilers, chillers; cogeneration; solar water heaters; photovoltaic; small hydro; wind turbines; biomass gasifiers; concentrating solar power and fuel-cell buses.

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## The Renewable Energy and Energy Efficiency Partnership (REEEP)

The Renewable Energy and Energy Efficiency Partnership (REEEP) was established alongside the 2002 world summit on sustainable development in Johannesburg. Since 2004 the International Secretariat has been situated in Vienna, Austria. REEEP partners are governments, private companies and international organisations.

REEEP's overarching goals are to:

- Reduce greenhouse gas emissions.
- Deliver social improvements to developing countries and countries in transition, by improving the access to reliable clean energy services, and by making renewable energy and energy efficiency more affordable.
- Bring economic benefits to nations that use energy in a more efficient way and increase the share of indigenous renewable resources within their energy mix.

REEEP works to achieve these goals by:

- Initiating and funding projects that:
  - assist governments in creating favourable regulatory and policy frameworks
  - promote innovative finance and business models to activate the private sector
- Facilitating networking through specific sub-networks
- Disseminating and replicating learning

Norway is REEEP's 2nd largest donor. Since 2006, Norway has supported REEEP with a total of NOK 30 million. 32 new projects announced by REEEP in 2009 are funded or co-funded by Norway.

Examples of REEEP projects funded by Norway include:

### COMBINED LEGISLATIVE AND FINANCIAL MECHANISMS FOR SOLAR WATER HEATER MASS ROLLOUT IN SOUTH AFRICA.

#### Project purpose:

To support South African provincial and local governments in moving solar water heater legislation forward, and to continue the development of a combined framework of legislation, sound business models and additional government support to promote the large-scale rollout of solar water heaters in South Africa.

#### Cooperating Institutions:

- Sustainable Energy Africa  
Funded by Norway and United Kingdom.

### CARBON FINANCING FOR ENERGY EFFICIENCY IN INDIAN SMALL AND MEDIUM ENTERPRISE (SME) CLUSTERS.

#### Project purpose:

To work with one SME cluster as a pilot, to explore options for financing energy efficiency equipment by pooling the cluster's demand and using a carbon financing mechanism, and then to disseminate this model to other nearby clusters.

#### Cooperating Institutions:

- Alliance to Save Energy  
Funded by Norway and United Kingdom

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## Global Energy Efficiency and Renewable Energy Fund (GEEREF)

(primarily with wind, small hydro and solar energy).

The Evolution One Fund invests in sustainable energy projects in Africa.

Together with the EU and Germany, Norway has contributed to the establishment of an innovative fund for energy efficiency and renewable energy known as the Global Energy Efficiency and Renewable Energy Fund (GEEREF).

The GEEREF is a Public Private Partnership (PPP) and aims to accelerate the transfer, development, use and enforcement of environmentally sound technologies for the world's poorer regions, helping to bring secure, clean and affordable energy to local people.

Norway has committed NOK 80 million over 4 years. In 2009 Norway paid NOK 20 million into the fund. The GEEREF is structured as a Fund-of-Fund, and invests in private equity funds that specialise in providing equity finance to small and medium-sized project developers and enterprises.

The GEEREF will typically make investments of below GBP 10 million, a market niche usually ignored by private investors and international finance institutions. Geographically, the GEEREF targets funds in the African, Caribbean and Pacific region, non-EU Eastern Europe, Latin America and Asia. The GEEREF is advised by the European Investment Bank Group (European Investment Bank and the European Investment Fund).

In 2009 the GEEREF invested in the Renewable Energy Asia Fund and The Evolution One Fund.

The Renewable Energy Asia Fund aims to invest in renewable energy projects in their development stage and help them transform into operating projects. The fund specifically focuses on operationally and economically mature technologies that are best placed to help Asia bridge its current electricity supply and demand gap

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## Hydropower sustainability assessment forum, International Hydropower Association (IHA)

The hydropower sustainability assessment forum (the Forum) is a collaboration of representatives from different sectors who aim to develop a broadly endorsed sustainability assessment tool to measure and guide performance in the hydropower sector.

The Forum's work centres on the International Hydropower Association's (IHA) Sustainability Assessment Protocol (2006). It is determining the relevant issues to be included in the assessment protocol and the measurement approach for each of these issues. Its planned work involves input from experts on key hydropower sustainability themes, on-ground assessments of schemes, workshop sessions focused on the protocol, and input from key stakeholder reference groups. The Forum seeks at all times to operate with transparency, good will and by consensus.

The governments of Germany, Iceland and Norway are the main sponsors of the Forum, with financial contributions also coming from the IHA, The Nature Conservancy, WWF and the World Bank.

The aspiration of the Forum is that a revised hydropower sustainability assessment protocol will reflect a broadly endorsed view of what sustainability means in practice for the hydropower sector, and will provide a practical measurement tool that can be implemented across a range of contexts.

It is also the aspiration of the Forum that the protocol will be adopted and used by the hydropower industry. In addition it is an aim that the protocol will be more widely used by companies, governments, financial institutions and other stakeholders to improve decision-making relating to proposed hydropower developments;

identify, manage and mitigate risks; guide development of new projects in a sustainable way, taking environmental impacts into consideration; and assess and improve the performance of existing operations.

### Key achievements of the IHA in 2009:

- Preliminary consultations with a range of stakeholders carried out.
- Draft revised protocol produced.
- Comprehensive consultation and trialling soliciting views and inputs from non-industry sectors as well as the hydropower industry to the draft initiated at the end of 2009.

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# KEY NORWEGIAN PARTNERS AND PROGRAMMES IN THE CLEAN ENERGY FOR DEVELOPMENT INITIATIVE

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## NORFUND

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Norfund is a development finance institution that serves as an instrument of Norway's development policy. Through investment in profitable companies and the transfer of knowledge and technology, it contributes to reducing poverty and to economic progress in poor countries.

Norfund wishes to contribute to the realisation of renewable energy projects to create a basis for growth and improved living conditions in developing countries.

In Uganda, the Bugoye hydropower plant was opened in October 2009. The plant has an installed capacity of 13 MW and estimated annual production of 82 GWh. This equals 5-7 % of Uganda's annual electricity consumption. Trønder Energi and Norfund are the main actors in the project. The Norwegian Ministry of Foreign Affairs (MFA) has also contributed directly with financial support to the project. When in full production, and through the Clean Development Mechanism (CDM), it is estimated that the power plant will result in an annual emissions reduction of 54 300 tonnes of CO<sub>2</sub> from 2010 onwards.

In December 2009, Norfund signed a loan-agreement with E+Co. E+Co will offer loans, equity and business development support for small and medium-sized energy entrepreneurs in developing countries. The loan of NOK 45 million from Norfund to E+Co will contribute to an increase in E+Co's investments in end-user oriented clean energy solutions within solar power, biomass, mini-hydro and energy efficiency in Africa and Central America.

The establishment of SN Power AfriCA was completed in 2009. The company, which will focus on Africa and Central America, is fully operational. Many possibilities for engagement in the regions have been analyzed and it is expected that the first investments will be done in the near future. Norfund has sold 35 % of its ownership stake to BKK and Trønder Energi. After

the transaction, Norfund owns 19 % of the shares in SNPower AfriCa in addition to the share that it owns indirectly through SN Power, in which Norfund holds a 40 % ownership interest.

In October 2009, SN Power entered into a cooperation agreement with Tata Power, India, with the goal of developing common hydropower projects in India and Nepal. This is the first time Tata Power has entered into a partnership agreement with another hydropower company. Together the companies expect to develop projects with a total capacity of 4 000 MW by 2020.

Successful safety measures have been implemented at SN Power's Allain Duhangan project in India. Since 2006, a total of 15 deaths have occurred in conjunction with the development of the project. SN Power is a minority shareholder. Four of the accidents occurred in the first quarter of 2009. Over the remainder of the year, the number of accidents was reduced, reaching a figure that is in line with international levels. There were no further fatal accidents.

SN Power's first wind power project, Totoral in Chile started generating electricity. Estimated annual production from the wind park is 110 GWh, enough to cover the needs of about 50 000 Chilean households. Totoral is a CDM certified project and is expected to reduce annual CO<sub>2</sub> emissions by 65 000 tonnes. 60 % of the employees are native to the region. The project was finished on time and below budget.

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**THE NORWEGIAN  
WATER RESOURCES  
AND ENERGY  
DIRECTORATE (NVE)**

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The Norwegian Water Resources and Energy Directorate (NVE) is responsible for ensuring an integrated and environmentally sound management of Norway's water and energy resources. In addition to its domestic responsibilities, NVE has more than 30 years of experience in cooperating with developing countries, both through the United Nations but also directly as part of Norway's bilateral development cooperation within the field of clean energy.

NVE's development cooperation work is managed by the International Section. Their main tasks are project preparation and cost and quality controls on projects and programmes during implementation. Most of the professional work is carried out by staff from the various technical departments and sections of NVE.

Due to NVE's extensive knowledge and expertise in the field of water and energy resources, they are sought-after partners for institutional cooperation. NVE's work within the Clean Energy for Development Initiative in 2009 is documented under each country they are involved in.

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**THE NORWEGIAN  
NATIONAL TRANSMIS-  
SION SYSTEM OPERA-  
TOR (STATNETT)**

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Statnett is responsible for coordinating electricity generation and consumption, offering access to the power transmission grid on equal terms to all market participants, developing and maintaining the Norwegian main transmission grid.

Because of Statnett's expertise from long-term, hands-on experience as a Transmission System Operator they offer advisory and consultancy services related to all important aspects of running a modern utility and grid operator.

Statnett has expertise on technical, organisational and market-oriented solutions as well as all training aspects necessary for both domestic and regional grid development and system operation.

Due to Statnett's extensive knowledge and expertise in this field, they are sought-after partners for institutional cooperation. Statnett's work within the Clean Energy for Development Initiative in 2009 is documented under each country they are involved in.

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## GUARANTEE INSTITUTE FOR EXPORT CREDITS (GIEK)

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The Norwegian Guarantee Institute for Export Credits (GIEK) is the central governmental agency responsible for providing guarantees and insurance for export credits. GIEK's goals are to promote Norwegian export and investments abroad by offering guarantees that cover commercial and political risk. GIEK also offer credit insurance through its wholly owned subsidiary, GIEK Credit Insurance.

GIEK has three different active guarantees schemes

- General guarantee scheme with a ceiling of NOK 110 billion.
- Building loan guarantee scheme with a ceiling of NOK 6.5 billion.
- Guarantee scheme for developing countries with a ceiling of NOK 3.15 billion.

GIEK's guarantee ceiling includes issued and pledged guarantees. As of 31.12.2009, the following was committed within the total limit of the guarantee schemes: general guarantee scheme NOK 61.6 billion, building loan guarantee scheme NOK 3.6 billion, guarantee scheme for developing countries NOK 0.8 billion.

GIEK has several guarantee products. The most used are:

- Buyer credit (export credit)
- Supplier credit guarantees
- Building loan guarantees
- Bond guarantees
- Investment guarantees

### GIEK and clean energy projects in developing countries

There has been little demand for GIEK's guarantees from Norwegian companies involved in clean energy projects in developing countries. The projects in which GIEK has been involved have mainly been within hydropower. In these cases GIEK has provided investment guarantees that cover political risk on equity/loan from Norwegian companies to the project

or on loan from bank/financial institution to the project. In cases where there are substantial Norwegian exports to the project, GIEK may provide export guarantees. This type of guarantee can cover both political and commercial risk.

In 2009 GIEK provided two guarantees for hydropower projects in low and lower-middle income countries. In Uganda GIEK provided guarantees for a 13 MW run-of-the-river power plant in Bugoye and in Indonesia guarantees were provided for a new 10 MW hydropower plant in southern Sulawesi. GIEK also has a running guarantee dating back to 1996 for a 60 MW run-of-the-river power plant in Nepal.

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## EKSPORTFINANS

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Eksportfinans offers government-backed financing for energy projects in accordance with international rules and regulations set by the OECD and the EU. Eksportfinans also offers financing on standard international commercial terms against satisfactory security and guarantees.

### Long-term financing – government-backed terms

Financing of energy projects can be offered on government backed terms in the same way as financing of goods and services. Such arrangements are made in accordance with OECD' Consensus Agreement. The scheme entails rules for interest, repayment schedule and re-payment structure.

Loans are given on Commercial Interest Reference Rate (CIRR) terms, where the interest rate is fixed and the re-payment period is from 2 to 15 years. CIRR is a free of charge interest rate option for the borrower in the period from acceptance of the loan until the disbursement of the loan, normally at delivery of the project. The loan can be drawn down in most convertible currencies related to the project as requested by borrower, and for up to 85 per cent of the contract amount. Local costs can be financed up to 30 % of the export contract value. Security for the loan must be provided by The Norwegian Institute for Export Credits (GIEK) and/or a commercial bank approved by Eksportfinans.

### LONGTERM FINANCING - COMMERCIAL TERMS

As an alternative to CIRR financing, Eksportfinans offers loans on commercial terms. These loans are given with GIEK and/or Norwegian and international banks as guarantors. Loans can be offered in most convertible currencies and at competitive fixed or floating interest rates. It is also possible to combine CIRR and commercial loans, for example by using a fixed or floating commercial loan during construction,

and converting it into a fixed CIRR on delivery of the project. Eksportfinans' financing for energy projects the past years have been limited, and represents only about 1 % of Eksportfinans' total financing. In 2009 there was no financing for energy projects in developing countries. There is however a growing interest for renewable energy projects, and Eksportfinans has established a new business area dealing with long-term financing for companies/projects within the renewable energy, environment and infrastructure sectors.

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## NON-GOVERNMENTAL ORGANISATIONS

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Non-Governmental Organisations (NGOs) play an important part in Norway's development assistance, including within the field of clean energy.

There are various NGO's that receive support from Norway both in our partner countries and Norwegian organisations for their work abroad.

The following are examples of organisations that received Norwegian funding in 2009.

TaTEDO in Tanzania receive support for the work they do on developing modern energy technologies for poverty reduction. They received NOK 4.5 million in 2009. The Royal Norwegian Society for Development received NOK 3.2 million for their work in the field of renewable energy in Kosovo. Friends of the Earth Norway's Educational Project on Energy Saving in Schools SPARE received NOK 1.7 million.

In 2009 the Norwegian Missions in Development (Bistandsnemnda) received NOK 143 million, which it distributed amongst its members. The Norwegian Missions in Development is an umbrella organisation which, on behalf of its members, enters into and administers a cooperation agreement with Norad. The Norwegian Missions in Development also acts as a resource centre for missions and development assistance for its members and contributes to interaction within competence building, information/lobbying, exchange of experiences and network building.

An example of a member of the Norwegian Missions in Development that has projects running in the field of clean energy is the Norwegian Mission Alliance (NMA).

By the end of 2009 the Norwegian Mission Alliance had contributed to the financing of about 230 biogas systems in China in Liangshan County. In addition to financial support, NMA gives technical assistance with the use and maintenance of the systems and the decomposition of the waste.

An evaluation of the biogas investments was completed in December 2009. Some of the report's conclusions were that:

- The project activities, including bio-gas and water system, have a very positive impact on women since the hard labour of collecting firewood, cooking and water carrying were traditionally done by women. The project has greatly reduced the amount of hard labour that they must do, as well as giving young girls more opportunity of study.

Another organisation that is engaged in the clean energy sector is the Norwegian Church Aid (NCA). The Norwegian Church Aid has an ongoing project in electrifying villages in Afghanistan. During the years 2005-2009, 118 villages and 7805 households have been fully electrified. The project has also provided women and their families with new livelihood opportunities, educational and health benefits. Moreover, women have slowly been given space in decision making processes and their role has changed in the rural communities involved.

The Norwegian Church Aid has a similar project in Mali, where they cooperate with AMADE – Association Malienne pour le Développement, Antenne de Tombouctou on a Solar Energy Project. AMADE has shown its ability to mobilize and has organized the projects in the local communities. The technical equipment has been provided by the Barefoot College with which the project has been connected.

Both the projects' goals are to educate women in the production and maintenance of solar panels. The women get education at the Barefoot College in India and their local communities get assistance in the use of solar panels.

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## INTERNATIONAL CENTRE FOR HYDROPOWER (ICH)

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Norad has since 1997 supported the International Centre for Hydropower (ICH) courses on hydropower development and management and issues related to environmental and social aspects, economics and financing, legal frameworks, dam safety and other areas, including conferences and workshops. Norad is in process of entering into a new long-term cooperation agreement with ICH on providing support for its courses. The ICH is considered to play an important role in Norway's Clean Energy for Development Initiative.

The International Centre for Hydropower (ICH) is a non-profit organisation based on institutional membership among international companies and organisations that are active in all aspects of hydropower generation and supply. The purpose of ICH is to raise the standards of competence of industry personnel, promote the industry and work for a sustainable development.

The ICH offers training in order to contribute in sustainable development of hydropower resources. The courses are built around the overarching concepts of the planning, construction and operation of hydropower facilities as part of a mixed energy system as well as multipurpose projects. The courses deal with questions related to current international trends in the restructuring of the power sector focusing on economic and financial questions, climate change and environmental and social issues.

The ICH is based in Norway, but an increasing proportion of its course activities are taking place in the South through cooperation with local actors. The ICH runs core courses (normally one week or three weeks) and tailored courses for a specific region (normally one to two weeks).

The overall goal of the ICH's activities covered by the cooperation agreement with Norad is to raise the competence of personnel involved in the hydropower sector and increase

awareness of social and environmental impacts to ensure sustainable development.

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## HIGHER EDUCATION AND RESEARCH

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### EnPe Master Programme

developmental perspectives in  
their professional work.

Norad's Master's programme for energy and petroleum was launched in 2009. This is, as the name suggests, a joint higher education programme for petroleum and renewable energy. The programme aims to contribute to the education of staff in the energy and petroleum sectors by building capacity at the Master's level in higher education institutions in the South.

The programme is managed by the Norwegian University of Science and Technology (NTNU) and a separate programme board. A higher education institution in the South and in Norway submits joint projects proposals to the programme board, which decides on project funding. The first allocations were made in December 2009.

#### The objectives of the EnPe programme are:

- To support the development of master's programmes at higher education institutions in the South through close collaboration with higher education institutions in Norway in accordance with national needs.
- To build up, over the longer term, the sustainable capacity of institutions in the South to provide the national workforce with adequate qualifications within selected academic fields of study of relevance to the energy and petroleum sectors.
- To stimulate South-North cooperation through support to the development of regional Master's programmes.
- To enhance gender equality in all programme activities.
- To strengthen and further develop the competence of Norwegian higher education institutions by integrating global as well as

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### Norad's programme for master studies (NOMA)

Norad's programme for master studies was established to support the development and operation of Master's programmes in the South through cooperation between higher education institutions in Norway and in our partner countries. The programme's goal is to educate employees in the public and private sectors and in non-governmental organisations in our partner countries.

Energy is one of the priority areas of the programme. An example of a Master's programme selected for funding for the programme cycle 2010-2013 is the Master's programme in renewable energy systems at Makerere University in Uganda in cooperation with the Norwegian University of Science and Technology.

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### The Norwegian programme for development, research and education (NUFU)

The Norwegian Programme for Development, Research and Education's (NUFU) goals are to support the development of sustainable capacity and competence for research and research-based higher education in developing countries relevant to national development and poverty reduction, and to contribute to enhanced academic collaboration in the South and between the South and North.

In the current programme cycle (2007-2011) a few projects within the field of clean energy are receiving funding from NUFU. One project example is the cooperation between The Eduardo Mondlane University in Mozambique and the Norwegian University for Science and Technology on small scale concentrating solar energy systems.

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# FINANCIAL OVERVIEW

## 2009

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## FINANCIAL OVERVIEW 2009

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Clean Energy for Development Initiative's activities are financed from several different items of the development assistance budget. The most important funding sources for the programme are the allocations from the Ministry of Foreign Affairs to the embassies.

Funds allocated to the Clean Energy for Development Initiative's activities show a steady increase from 2005. The figures includes bilateral and multi-bi funding. Funding through multilateral channels that are not earmarked as energy is not included. Total spending in 2009 was approximately NOK 700 million. In addition there are the investments made by Norfund, which in 2009 totalled NOK 91 million. Figure 1 shows assistance to clean energy over the period 2005-2009. As the figure shows, investments made through Norfund play an important role in the Norwegian contribution to the deployment of clean energy in developing countries. During the 5 year period (2005-2009) a total of NOK 4.8 billion was allocated to development cooperation on clean energy. It is worth noting that the majority of funds channelled through multilateral channels are not covered by the statistics, which implies that the figures mentioned above are an underestimate of Norwegian allocations to clean energy within development cooperation.

Figure 1  
Assistance to clean energy in NOK million over the period 2005-2009

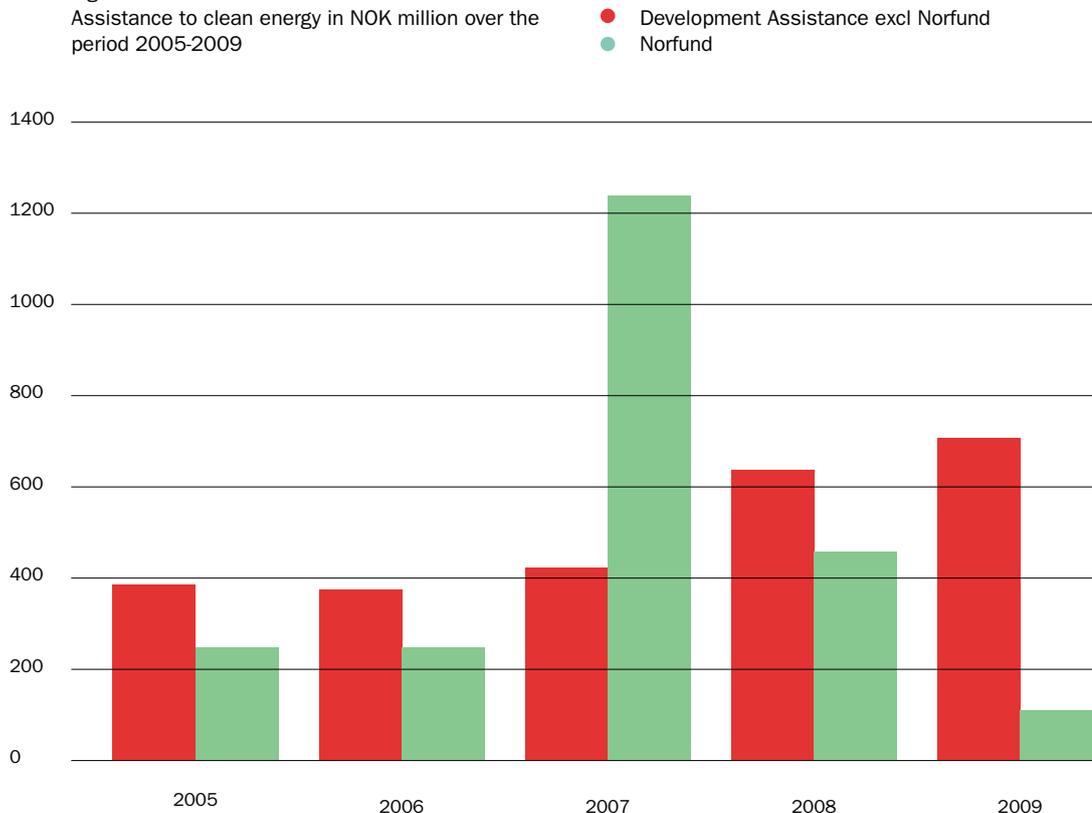


Figure 2 shows development assistance to clean energy by type of assistance. Much of Norway's assistance is directed towards energy policy and administrative planning and electricity transmission and distribution. This reflects Norway's expertise within the field.

Figure 2.  
Assistance to clean energy in 2009 by type of assistance  
(excluding investments made through Norfund)

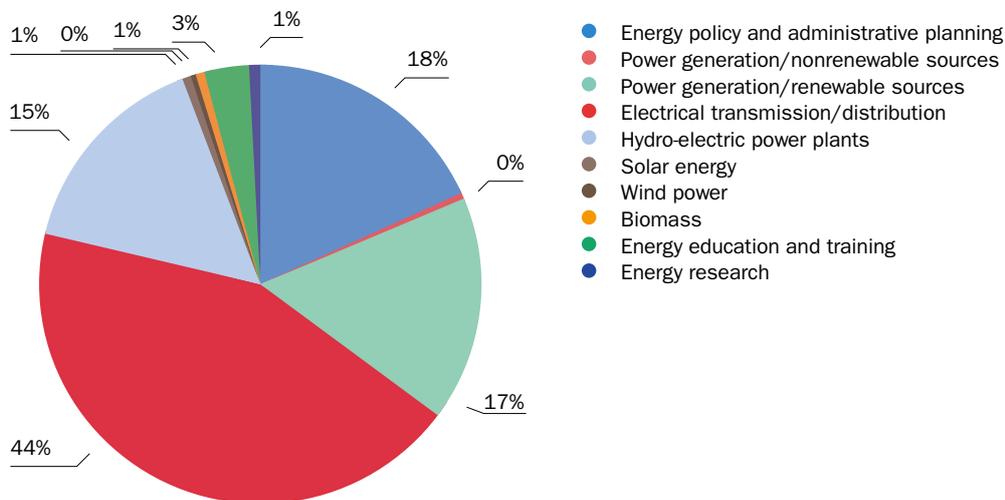
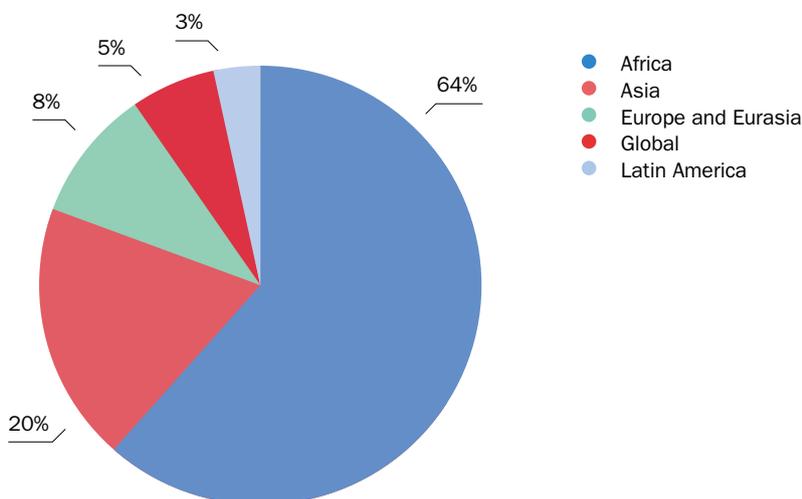


Figure 3 shows how assistance to clean energy is distributed between regions covered by the Clean Energy for Development Initiative. Remaining allocations are shown as "global". As the figure shows, Africa is the main recipient of Norway's energy related development assistance.

Figure 3.  
Assistance to clean energy by region, in percent 2009



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**Figure 4 shows how much money has been spent in priority countries in 2009. Tanzania is the country which received the largest amount of money in 2009.**

Figure 4.  
Assistance to Clean Energy in priority countries in 2009,  
in NOK million (excluding investments made through Norfund)

