

1. VII:D. ACTIVITIES RELATED TO TECHNOLOGY TRANSFER

Transfer of technology and know-how in order to promote development, availability and efficiency of energy constitutes an important element of Norwegian Official Development Assistance (ODA) and has significant environmental co-benefits that are consistent with the promotion of the Convention on Climate Change. Many of the elements already reported in Chapter 7 of the Fifth National Communication, which focused on ODA, will also facilitate transfer of technology. In addition, Norway supports a number of projects under the International Energy Agency, including the Climate Technology Initiative (CTI), that aim to provide information on, and transfer of, environmentally sound and climate friendly energy technologies. Reference is also made to reporting of petroleum related activities in the National Inventory Report for 2010 (resubmitted 25 June), including efforts related to carbon capture and storage and the programme Oil for Development, both having a considerable element of technology transfer.

At the end of 2008, Norway cooperated with more than 20 countries within the field of clean energy, through bilateral and multilateral co-operation. Assistance for capacity building and institutional development, with emphasis on legislation, resource mapping and national planning, remain among the most important areas for bilateral energy cooperation. Important areas are also to improve the framework for commercial investments, protection of vulnerable groups and the environment and to encourage partner countries' participation in regional energy cooperation. Responsiveness to recipient countries' wishes and needs is fundamental. Multilateral assistance complements the bilateral cooperation. The examples below show some of the work done in this regard.

In addition Norway has especially put an emphasis on how to leverage private investment to clean energy projects in developing partner countries. There has been a project analysing critical bottlenecks which currently hinder private clean energy investments in developing countries. This analysis 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 Norwegian Clean Energy for Development Initiative

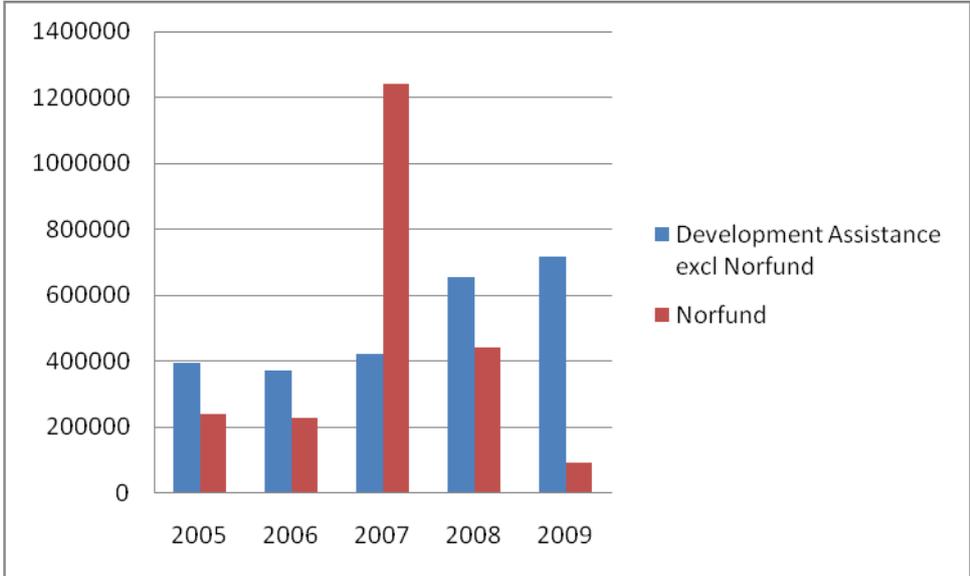
The government's Clean Energy for Development Initiative was launched in 2007 to coordinate and ensure the quality of an increased clean energy portfolio within Norway's development cooperation. Norway contributes to the international transfer of energy-related technology by supporting investment in infrastructure and production capacity in the energy sector of developing countries. Such investment support is frequently supplemented by institutional and human resource development measures that improve the technological expertise of the recipient country. Norway supports investments in energy technologies that are given political priority by the recipient country and that are economically viable and competitive. Activities include improvements of electricity grids, improved utilisation of petroleum resources and

other measures to improve energy efficiency. The intention is to make a positive contribution to sustainable development in fields where Norwegian technology and know-how have a comparative advantage. Norway supports investment and capacity building related to hydropower development in particular, but also to solar energy and other renewable energy technologies. This helps to reduce emissions of greenhouse gases.

There has been a steady increase in the budget allocated for clean energy related assistance the past 5-6 years, and in 2008 the amount of bilateral and multi-bi assistance to clean energy was more than NOK 600 million. Investments made through Norfund, which amounted to almost NOK 200 million in 2008, add to this. Non-earmarked funding through multilateral organisations brings the total government allocation to clean energy higher than NOK 800 million.

The following graph shows development of actual disbursed money to activities within the field of clean energy (bi-lateral and some multi-bi). The graph distinguishes between activities undertaken by the public sector (blue column) and investments made by Norfund (through their share of SNPower). Norfund is the development finance institution that serves as the commercial investment 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.

Graph 1: Development of assistance to clean energy in NOK 1000 in the period 2005-2009



Below follows a few examples of results of bilateral energy related development cooperation in the period 2005-2009, building on the technology and know-how referred

to earlier. These examples show some of the contributions made by Norway in assisting developing countries access environmentally sound technologies.

Laos:

Norad has been instrumental in the development of the Lao energy sector since ca 1990, through modernizing the water management and electricity legislation. Norad has also financed feasibility studies for Xeset 2 and Xeset 3 hydro power schemes, recommending the development of the former. The studies were conducted by Norconsult. A power exchange agreement with Thailand was reached and mainly through export credits from China the Xeset 2 has been constructed and commissioned. Xeset 2 has a capacity of 76 MW, annual mean production 281 GWh and also contributes an extra 20 GWh increased production in another plant. In the period 2006-2009 Norway gave financial support (NOK 9 million) to the construction of Xeset 2 hydro power project.

In the period 2005-2009 Norad, in co-operation with the World Bank, provided support to the 1st phase of a rural electrification project. An estimated 52 000 households (42 000 on-grid and 10 000 off-grid) in Southern rural provinces in Laos have been given access to electricity. Norad's support for this project was NOK 56 million.

Mozambique:

The Norwegian assistance in Mozambique aims at increasing the electricity access and supporting national goals of sustainable exploration of Mozambique's renewable energy resources through an improved legislative framework and an increased implementation capacity of governmental institutions. In 2008 bilateral energy assistance to Mozambique amounted to NOK 100 million. One example of rural electrification project supported by Norway is the Cabo Delgado Electrification Project, with the objective to contribute to socio-economic development in rural areas by promoting infrastructural improvements and stimulating economic and social activities in districts and local communities. The project period is 2006-2010 with a budget of NOK 200 million.

Nepal:

The bilateral energy assistance to Nepal includes i) Government to government cooperation, ii) Education and research and iii) NGOs/private sector. In 2009 the bilateral cooperation, including assistance through the NGO channel, amounted to approximately NOK 50 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 Energy Promotion Centre, which is a state agency under the Ministry of Environment. The project has been ongoing since 2007. The total project budget is NOK 125 million. Norway is financing about 43% of the total programme budget.

Norway is also financing small hydro feasibility studies. There is an ongoing project (2004-1011) and Norway contributes NOK 10 million.

Tanzania:

In August 2008, an agreement was signed between the Revolutionary Government of Zanzibar and Norway concerning financing the construction of a subsea cable from the mainland of Tanzania to Pemba Island. Norway contributes with NOK 300 million (the total project cost is NOK 400 million), being 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 be in operation in the second quarter of 2010. The cable replaces 3 old diesel generators and benefits economic and social development by improving electricity supply, meeting the demand for 20-25 years to come. The project started in 2008 and the cable was put in place in 2009.

Since 2007 Norway has been supporting Tanzania Traditional Energy Development and Environmental Organization (TaTEDO) to facilitate up-scaling of access to sustainable energy technologies and services. The total Norwegian support has been NOK 10 million.

Uganda:

Uganda is one of the core countries for bilateral cooperation within the Clean Energy for Development Initiative. 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 the period 2006-2009 Norway supported the realisation of the the 13 MW Bugoye Hydropower Plant which was commissioned in 2009.

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