Annual Report 2001

The Cooperation between the Norwegian Agency for Development Cooperation (NORAD) and the Norwegian Water Resources and Energy Directorate (NVE)

NVE, April 2002
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1. Summary

1.1 Background
The current Cooperation Agreement between NORAD and NVE is dated 14 April 2000. NVE’s commitments according to the agreement are to assist and advice NORAD and the Ministry of Foreign Affairs within the framework of NVE’s competence in management of water and energy resources. The agreement primarily covers assignments from NORAD or Ministry of Foreign Affairs to NVE directly, but also gives the framework for institutional agreements between NVE and institutions in cooperating countries. According to the agreement, NVE shall present an annual report to NORAD in connection with the annual meeting to be held between the two parties.

1.2 Staff and Participants
In NVE, the International Section coordinates the work under the Cooperation Agreement. By March 2002, the staff includes four full time professionals and one administrative officer. However, a total staff of about seven is required to fulfil the contractual obligations and meet the increasing number of institutional agreements, and the number of staff is therefore expected to increase in the course of the year.

In March 2002 the staff also includes three full time resident advisers, working permanently in cooperating institutions as part of the institutional agreements. The three advisers are posted at the Ministry of Mines and Energy in Namibia, the Electricity Regulator Agency of Uganda, and the National Energy Directorate in Mozambique. In part of 2001, resident advisers were also working for the Palestinian Water Authority in Palestine, and Electricity of Vietnam.

The services of NVE under the Agreement cover a wide range of activities, and the International Section draws on the full staff of NVE in order to carry out the assignments. 43 professionals from other NVE departments have been engaged in 2001, producing about 40% of the man-hours recorded. In addition, several private consultants and professionals from other directorates, research institutions and consultants have been sub-contracted in certain specific areas, and to compensate for lack of NVE capacity in certain periods.

1.3 Activity Level and Time Consumption
The volume of activities in 2001 was recorded at more than 11 man-years, which is approximately the same as in 2000. The time spent on direct assignments for NORAD is somewhat reduced and the institutional cooperation has increased with nearly one man-year.

The expected time consumption for 2002 is 13 man-years, and is based on existing commitments laid down in the running institutional agreements, and activities discussed with NORAD in a planning meeting 14 February 2002. The expected increase of activities is mainly a consequence of new agreements signed in 2001 and other reallocated activities for 2002.

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1 Excluding the hours recorded for long-term resident advisers.
One man-year = 1400 net hours
Experience from previous years indicates that the planning routine gives a higher estimation of future work than what is actually recorded during the year.

1.4 Achievements

The majority of the institutional cooperation in 2001 has been running broadly according to plans. In Ethiopia the activity has been restarted for the hydrology project after the peace agreement between Ethiopia and Eritrea was signed, and the activity is now on schedule.

Both with Bhutan and Angola new institutional cooperation within the water sector, as well as with Uganda in the energy sector, started in 2001. The institutional cooperation in Laos, Bosnia and Palestine has been completed.

The ongoing institutional cooperation in Angola is delayed, mainly due to external factors, but activities are carried out as the effects of these factors decrease. The project for strengthening of the electricity distributor in Luanda, "Empresa de Distribuição de Electricidade", started in 2001.

In Mozambique the strengthening of National Energy Directorate included practical improvement of the daily routines as well as capacity building in different subjects, and improvement of the English language skill. A Project Document for a possible new period of cooperation has been prepared. Evaluations of projects (Rural Electrification, Namacurra, etc) are carried out.

A seminar on "Hydropower and Environment" was arranged in Maputo, February 2001, with 59 participants. Seminars concerning rural electrification have also been conducted.

In Uganda the cooperation with Ministry of Energy and Mineral Development was completed in January, and a cooperation between NVE and the Electricity Regulator was agreed to continue for two more years. Seminars on rural electrification have been conducted, and key professionals have been employed and training of staff is ongoing. Several new guidelines concerning licensing, tariff structure, and reporting procedures are worked out. The Electricity Regulator and NVE have prepared Terms of Reference and Letter of Invitation for proposals for consulting services as Transaction Advisers for supply of electricity to the West-Nile. A contract with the successful company has been signed.

The first stage of the National Hydropower Plan Study is completed in Vietnam. Stage 1 comprises 5 priority river basins with respect to hydropower potential– Da, Lo-Gam, Ca, Se San, and Dong Nai – accounting for about 70-75% of the estimated total exploitable hydropower in Vietnam. Integrated basin planning studies and preliminary basin water resources plans have been completed for the five river basins. From a total of 47 identified hydropower projects, 29 project alternatives have been examined in detail. Stage 2 is expected to start in 2002.

The first course in "Integrated Water Management in Developing countries" was successfully completed and preparation for a new course started up. The cooperation and relevance of the assistance to developing countries from the three Norwegian water institutions, Norwegian Pollution Control Authority, Directorate for Nature Management, and NVE were very fruitful in developing the course.
NVE assisted in the preparation of the Norwegian statements on international water policy, as well as the comments on the report of the World Commission on Dams.

Several examples of the activity within the framework of the Cooperation Agreement between NORAD and NVE have been presented in articles in NVE’s intranet and web site in order to disseminate information about NVE’s international activities.

High-risk activity, Kilombero, Tanzania
2. Overview of Activities and Time Consumption 2001

The development of NVE’s international cooperation over the last six years.

The distribution on countries of NVE’s recorded man-hours (including long-term advisers) under the Cooperation Agreement in 2001:

- Administration: 902.5
- Coord. of Norwegian water institutions: 95
- Course Water Res. Manag.: 394
- Angola: 1304
- Bosnia: 218
- Bhutan: 1421
- Ethiopia: 80
- Mozambique: 2491.5
- Bolivia: 789
- South-Africa: 559.5
- Misc. projects (NORAD): 30
- Palestine: 1245
- The Nile Basin Initiative: 60
- Nepal: 306
- Namibia: 1470.5
- Vietnam: 1617
- Uganda: 3381
- Vietnam: 1617
- Uganda: 3381
3. Assignments for NORAD

An overview of the time consumption and costs for all engagements for NORAD is given in Appendix A, Table A-1. It shows that a total of NOK 1,5 mill. was invoiced NORAD in 2001.

A considerable number of assignments have been carried out, either on direct request from NORAD, or on request from institutions via NORAD. Only the more time consuming assignments are reported in the following.

3.1 Lower Kihansi Hydropower Project, Tanzania

This is a high head hydropower project located around 440 km southwest of Dar es Salaam. The project utilises a net head of 853 m, up to now the highest head in Africa for hydropower projects. The first phase was completed first half of 2000 and included 3 turbines with a total capacity of 180 MW.

The project was completed at a time when the demand for electricity was critical, and the project saved costs for expensive imported diesel. This also gained the environment in reducing the emission from the thermal units.

Achievements

In December, NVE attended a site visit to Kihansi to inspect the completed project, and also to see how the system for sprinkling the area of the Kihansi Spray Toad functioned. NVE was content with the overall quality of the project, and the sprinkler system functioned as planned.

The project is now completed from the technical side. Some of the environmental- and healthprogrammes continue. The quality of the work carried out by the consultant and contractors is of a very high standard.

3.2 Conference on Hydropower and Environment, Mozambique


From the Mozambique the following ministries/institutions were represented: Ministry of Mineral Resources and Energy, National Directorate of Energy, Ministry of Environment, National Directorate for fuel and hydrocarbons, Electricidade de Mozambique, Energy Fund, Unit for Implementation of Hydropower Projects, Hidroelectrica de Cahora Bassa, University of Edmund Mondlane, and several NGO’s and consulting companies. From Norway, representatives from the Norwegian Embassy in Maputo, the Norwegian Ministry of Environment, and NVE were present.

The participants were informed of the licensing procedures in different countries, and the legal framework for the process. Special effort was given to the EIA process, and how to introduce a system of licensing in Mozambique.

The conference was carried out as planned, and the Proceedings were prepared and sent the participants shortly after the conference.
3.3 Namacurra Electrification Project, Mozambique

1: Evaluation of the Project Document for the Namacurra Electrification project.

NVE was in May requested by NORAD to carry out an evaluation of the existing Project Document for the Namacurra Electrification Project. The document should be evaluated on the basis of its technical solution, estimated electricity demand, and cost estimates. Also the operation and maintenance, the spare-part situation, availability for local employment, and the economic sustainability should be examined.

Achievements

The evaluation was submitted to NORAD in July 2001 concluding that the project seemed to be economically sustainable with a good margin. Some more information should be collected before further processing of the project proposal.

2: Assistance from NVE to Electricidade de Mozambique (EDM) on the Namacurra electrification Project

NVE was in October requested to assist EDM to prepare Letter of Invitation and Terms of Reference for the project, propose a shortlist of consulting companies, submit the documents to the companies, and participate in the evaluation of the proposals and contract negotiations.

Achievements

The Letter of Invitation with all relevant documents was mailed to the companies in November, with deadline 15 January 2002. Contract with the successful company was signed in January 2002.

3.4 Proposed Institutional Cooperation between NVE and Ministry of Agriculture and Rural Development (MARD), Vietnam

Norway financially assisted MARD to organise a Workshop on Licensing Procedures for Hydropower Development in Hanoi in December 2000. The Workshop was accomplished with professional assistance from representatives of NVE, and the Workshop Proceedings were issued by MARD in early 2001.

A request by MARD for further assistance from Norway was forwarded in a letter dated 13 March 2001 to the Royal Norwegian Embassy in Hanoi. The request proposed assistance by NVE to establish procedures for the assessment of applications for licenses. As a response, NORAD financed a NVE-mission to Vietnam in September 2001 to assist MARD in preparing a project document. Representatives from the Directorate for Natural Management and Norwegian Pollution Control Authority participated in the mission.

The Law on Water Resources is regulating both water quantity and water quality and is a good foundation for development of an integrated water resources management in Vietnam. Therefore, licensing for both water exploitation and wastewater discharge is planned to be included in the project.
Achievements

The first Draft Project Document for establishing procedures for the assessment of applications for licenses was prepared in late September 2001, and a revised version was agreed on in early 2002. It is proposed that the cooperation between MARD and NVE is formalised as an institutional contract.

3.5 Course in Water Resources Management in Developing Countries, Norway

NORAD has initiated a discussion with NVE on how Norwegian water institutions could improve the relevance and quality of their assistance to developing countries. This has been followed up by NVE, the State Pollution Control Authority (SFT) and the Directorate for Nature Management (DN) with the objective of identifying means to better cooperate and thus increase the relevance and quality of the contributions to water resources management in cooperating countries. The cooperation has been very successful with very positive approach from all three institutions.

Achievements

The cooperation with SFT, DN and NORAD was successful in the development of the course on Integrated Water Management in Developing countries. NVE had the responsibility in developing and implementing the course. The first part of course was arranged in December 2000, and completed in January 2001. Participants from different private and public water institutions met and gave important and relevant input to the course. Another similar course will be organised in 2002.

3.6 Evaluation of the Bujagali hydropower project, Uganda

NVE was in August requested to assess whether Bujagali Hydropower Project would contribute to the economic development in Uganda. Bujagali is a run of the river project in the river Nile, with capacity 200 (250) MW, and is situated just downstream the Owen Falls Extension project at Jinja.

Achievements

The report was handed over to NORAD in November. NVE considered Bujagali to be a positive contribution to development in Uganda provided the detected risk factors are properly mitigated. NVE also recommended that commitments for mitigations are included as conditions in the license for the construction.

3.7 International Conference on Freshwater, Germany

The International Conference on Freshwater in Bonn 2001 was a preparatory meeting within the water sector for the World Summit on Sustainable Development in Johannesburg 2002. NVE contributed in developing conference documents and was member of the Norwegian delegation at the Conference in Bonn.
3.8 World Commission on Dams (WCD)
NVE has prepared comments on the final report of the World Commission on Dams to the Ministry of Petroleum and Energy, as part of several inputs to the Ministry of Foreign Affairs. The comments were divided into two parts, (1) the report’s possible influence on the Norwegian procedures, and (2) aspects relating to dams in developing countries.

3.9 Nile Basin Initiative
The Nile Basin Initiative is a cooperation between the ten countries in the Nile Basin with the vision of a cooperation leading to a sustainable development based on creation of win-win projects in the sharing of the resources of the Nile. The activities from 2000 confirmed that the Nile countries and the World Bank would like to see Norway involved, in particular within the Power Forum Project and Water Resources Project. NVE has in 2001 continued the cooperation as technical adviser to NORAD.
4. Institutional Cooperation

The following institutional contracts have been in force in 2001:

<table>
<thead>
<tr>
<th>Country</th>
<th>Cooperating institution</th>
<th>Period</th>
<th>Total budget NOK (1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>Ministry of Energy and Water Affairs, National Directorate of Energy</td>
<td>2000-2002</td>
<td>52,000$^1$</td>
</tr>
<tr>
<td>Angola</td>
<td>Ministry of Energy and Water Affairs, National Directorate of Water</td>
<td>2001-2003</td>
<td>15,000$^1$</td>
</tr>
<tr>
<td>Bhutan</td>
<td>Department of Power</td>
<td>2001-2003</td>
<td>6,500</td>
</tr>
<tr>
<td>Bosnia</td>
<td>Federal Ministry of Energy, Mining and Industry/Ministry of Energy and Mining</td>
<td>1999-2001</td>
<td>2,000</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>Ministry of Water Resources</td>
<td>1996-1999</td>
<td>6,300</td>
</tr>
<tr>
<td>Mozambique</td>
<td>National Directorate of Energy</td>
<td>1998-2001</td>
<td>16,700$^1$</td>
</tr>
<tr>
<td>Namibia</td>
<td>Ministry of Mines and Energy</td>
<td>1999-2002</td>
<td>13,600$^1$</td>
</tr>
<tr>
<td>Palestine</td>
<td>Palestinian Water Authority</td>
<td>1998-2001</td>
<td>9,600$^1$</td>
</tr>
<tr>
<td>South Africa</td>
<td>National Electricity Regulator</td>
<td>2001-2003</td>
<td>9,371</td>
</tr>
<tr>
<td>Uganda</td>
<td>Electricity Regulatory Authority</td>
<td>2001-2003</td>
<td>14,500</td>
</tr>
<tr>
<td>Vietnam</td>
<td>Electricity of Vietnam</td>
<td>1999-2001</td>
<td>4,000</td>
</tr>
</tbody>
</table>

$^1$ Including sub-projects implemented by consulting companies.
4.1 Angola

Institutional cooperation with Ministry of Energy and Water Affairs (MINEA), the Energy Programme

The Institutional cooperation between MINEA by National Directorate of Energy (DNE) and NVE was in August 2000 extended by a new contract. The Contract covers an Energy Programme planned for the period 2000-2002 with a total budget of NOK 52 million. The goal is to promote economic development of the country through sustainable and efficient use of the country’s energy resources. In order to strengthen the competence and decisionmaking capacity at MINEA and Luanda Electric Utility (EDEL), transfer of know-how to the staff in technical, economic and administrative fields is included. To improve the reliability of electricity supply, a fund is made available for purchase of spare parts. The Energy Programme includes six projects:

1. Follow-up of the National Energy Sector Management (NESMA) process, including follow-up of the MINEA Management Information System.
2. Institutional strengthening of EDEL, phase 2, implementation.
3. Provision of spare parts to Angolan power utilities.
4. English language courses for key personnel in the energy sector.
5. Programme administration and coordination, NVE.

The cooperation during 2001 included attention to the observed gap between plans and achievements, clarifying the risks, and how to avoid apparent success. A gradual approach was chosen in order to reduce some of the negative external factors. NVE personnel conducted short-term missions to Angola, and the Minister of Energy and Water visited Norway. Activities included assistance in follow-up the projects, documentation for the Annual Meeting in March and work on a strategy plan for institutional strengthening of MINEA/DNE. The Strategy Plan includes a recruiting and training plan for MINEA personnel as well as the creation of a Regulating Agency.

Achievements

Two of the DNE department directors will undergo training programmes during the first quarter of 2002 at Government institutions in Lisboa that have similar responsibilities. Terms of Reference for the training programme and time schedule are agreed upon between the parties. The Human Resources Department at MINEA has prepared plans for improving the professional capacity of MINEA/DNE.

Implementation of a scholarship programme is part of the NESMA project and recruiting for the programme has started.

The Minister of Energy and Water visited Norway in December 2001 for discussions with Norwegian authorities.
The institutional strengthening of EDEL is started up and a project office is established. Seminars were held in both Luanda and Oslo, and the English language training for the personnel in Luanda was started.

The Angolan power utilities have purchased maintenance trucks and spare parts like cables and transformers within the spare parts project in 2001.

English training of personnel in MINEA have started up in Luanda.

The progress of several activities in the project is delayed compared to the planned goals and milestones. The reasons for this are connected to both parties and also caused by external factors beyond any of the parties’ control. The war situation had a negative effect on the implementation of the programme since resources and initiatives of the Government were diverted to the war effort. However, all the activities have taken place in Luanda where security so far has been satisfactory. There are reasons to believe that the war has now come to an end and that this new situation will increase the possibility of implementing more of the planned activities on schedule.

Lack of qualified personnel to follow up the Programme on the Angolan side is a major problem.

**Institutional Cooperation with Ministry of Energy and Water Affairs (MINEA), the Water Programme**

A separate agreement between MINEA by the National Directorate of Water (DNA), and NVE will be implemented through a new programme. The agreement was signed in December 2001, and the programme will start the 1 quarter of 2002.

**Achievements**

The Project Document for the new cooperation programme in the water sector has been completed and the contract between the two cooperating institutions has been signed.

**4.2 Bosnia**

**Institutional Cooperation with Ministry of Energy and Mining/Federal Ministry of Energy, Mining and Industry**

The Institutional Cooperation ended in 2001 at the end of the contract period. Since July 1999 NVE has been involved in cooperation on the development of new energy legislation for Bosnia Herzegovina. NVE’s contracts for the cooperation have been with the Ministry of Energy and Mining in Republic Srpska, and the Ministry of Energy, Mining and Industry in the Federation of Bosnia and Herzegovina. In 2001 NVE arranged workshops and had a close cooperation with each of the two Task Forces counterparts in Republic Srpska and the Federation of Bosnia and Herzegovina. The NVE team had meetings and discussed the drafting of a state act on energy with the state law committee.
Achievements

The first preliminary draft of the state law and the final draft of the electricity acts for the Republic Srpska and the Federation of Bosnia and Herzegovina were completed.

4.3 Bhutan

Institutional cooperation with Department of Power (DoP)

A new contract on institutional cooperation with the Department of Power became effective in July 2001. The contract includes assistance in contracting and the follow up of the work of a Consultant to prepare an Integrated Water Resources Management Plan and an updated Power System Master Plan - and institutional development activities. Within institutional development the main activities include:

- Formulation of a national water policy
- Preparation of a water resources act
- New institutional structure for water resources management and distribution of tasks and responsibilities
- Regulations to the new electricity act
- Electricity tariffs and international power trade
- International water cooperation and agreements

Before the summer holidays, the Terms of Reference for the consultancy work had been prepared and approved, and a Consulting Company contracted - based on competition among Norwegian firms. By the end of the year most of the data and information for the study had been collected and the Inception Report submitted.

In August, the Bhutan Water Partnership was formally formed as a government supported stakeholder forum for the handling of water resources issues. While the DoP is the formal Client, all matters of importance related to water resources are since discussed within the Bhutan Water Partnership umbrella. Within 2001, one workshop on water policy with broad participation has been held.

**Achievements**

Terms of Reference, Letter of Invitation for the consultancy project, evaluation of proposals, and contract negotiations were completed. Comments to the consultant’s Inception report have been prepared.

The first draft of water policy was prepared and discussed in a workshop.

### 4.4 Ethiopia

**Institutional Cooperation with the Ministry of Water Resources (MWR)**

The Institutional Contract between the Ministry of Water Resources of Ethiopia and NVE was signed 22nd May 1996, with an Addendum of 24th February 1997. Another Addendum to prolong the Contract to the end of 2002 was signed in April/May 2001. The objective of the project is to improve quality and efficiency of data collection, handling and analysis, in the hydrology sector. The project had more or less been at a standstill from 2000, when the Norwegian Ministry of Foreign Affairs froze all bilateral aid to Ethiopia due to the conflicts at the border with Eritrea. From 6th April 2001 this ban was lifted, and the project was restarted. NVE attended restart meetings in April just after the ban was lifted, and participated in meetings in November the same year.

**Achievements**

The project is now in progress after the economic ban was lifted. An internal computer network is purchased and installed, training is carried out, and the network functions as expected. All new equipment is bought in Ethiopia and the installation and an Ethiopian company carries out training. Agreement is made with Danish Hydraulic Institute in Denmark to install, update and carry out training on the selected flood forecasting model early 2002. Preparation for the installation and training on a data-storing model from next year is going on. The project will be terminated in 2002.
Finally, a lasting peace. From Ankober, Ethiopia.

4.5 Mozambique

Institutional Cooperation with the National Energy Directorate (DNE)

A contract on institutional cooperation between the National Energy Directorate and NVE was signed in March 1998. The project period is extended to the end of May 2002, when a new contract may be signed to continue the cooperation for another period. Through this cooperation, NVE will assist DNE in strengthening its administrative routines, effectiveness and skills connected to regulation of the Mozambican energy sector. The following main areas of support have been identified:

- Organisational set-up and staffing of DNE.
- Management procedures and routines.
- Training of DNE-personnel.
- Regulations and guidelines adapted to the existing Electricity Law.
- Rural electrification strategy planning.

**Achievements**

Short-term advisers have been recruited for the remaining period of the project. A position for a long-term adviser for the possible new period (2-3 years) will be advertised early 2002.

Implementation of parts of the short-term training programme has taken place. DNE-personnel have participated in seminars in Mozambique and abroad, both in Norway and other countries. In Norway, DNE personnel has participated in courses on “Hydropower and Environment” and “Hydropower Resources Development and Management”, organised by the International Centre for Hydropower in Trondheim, and also at the International Summer School’s course “Energy Planning and Sustainable Development”. In South Africa and China, courses on new and renewable resources, and English language have been attended.

An evaluation of proposals and contract negotiation for the Consulting Services for the Rural Electrification Action Plan was carried out in Norway in June 2001, with participants from DNE and NVE in the evaluation committee. The project is now in progress, and a seminar where the findings were presented, has been arranged.

Detailed workplans for activities connected to organisation and management procedures and routines were prepared in July. Work with the regulations for the Electricity Supply Industry in Mozambique is now being carried out.

A Project Document for a possible prolongation of the institutional contract with NVE was drafted by DNE/NVE in 2001, and forwarded to the Norwegian Embassy in September. The budget is estimated to NOK 20 mill. A formal approval from NORAD is expected during the first quarter of 2002.

The extent of activities carried out in the project is lagging somewhat behind what was intended according to the plans, due to different reasons connected to both parties, and partly reasons beyond any of the parties control. Due to lack of manning of DNE, it has not been regarded as appropriate to implement long-term training. Further, due to lack of appropriate office facilities, it is difficult to increase the staff at present.

**4.6 Namibia**

**Institutional Cooperation with the Ministry of Mines and Energy (MME)**

The cooperation between MME and NVE has been going on since 1994. A new 3-year contract was signed in June 1999. NVE has had a resident energy adviser in Namibia since 1997.

The present contract includes altogether 10 activities covering a wide variety of topics. The last year much emphasis has been given to the restructuring of the electricity sector in Namibia and the establishment of the Electricity Control Board (ECB); the independent regulator for the Namibian Electricity Industry.
Achievements

As a result of the restructuring process generation, transmission, and distribution are regarded as different functions. A decision has been made to plan for a Single Buyer to be responsible for selling and buying of bulk electricity. The Single Buyer is expected to be established in 2002 and is seen as a first step towards a competitive electricity market.

The ECB has established a licensing regime and licenses have been issued. New tariff principles for transmission and distribution based on cost plus methodology have been developed and will be implemented during 2002 and 2003.

Both Economic and Technical Regulations to the Electricity Act have been developed.

Emphasis has also been given to promotion of bio energy though development of more efficient stoves.

The cooperation between MME and NVE has also included:

- a hydropower resource study
- competence building and training
- cooperation on legal issues
- development of media skills for the top management though media training seminar

Namibia is in a process of a significant restructuring of the electricity sector. It is a major challenge to get governance structures, systems and tariff principles in place. This is necessary for a successful finalization of the restructuring, and promotion of investment to meet Namibia’s growth in power requirements.

The Himba people will be highly affected if the hydropower potential on the Cunene River is developed.
4.7 Nepal

**Institutional Cooperation with Melamchi Water Supply Development Board (MWSDB)**

Melamchi Diversion Scheme is the first of altogether four components in the project for a new water supply to Kathmandu. The Melamchi Diversion Scheme will divert water from the Melamchi River through a 27 km long tunnel to the north-eastern edge of Kathmandu.

NVE continued in 2001 the institutional assistance to the Melamchi Water Supply Development Board. NVE has assessed and commented on the tender documents for the Melamchi Diversion Scheme, where the tunnels are the dominant components. Furthermore, NVE has commented upon the tender documents and evaluation procedures for the construction supervision contracts.

**Achievements**

A report was prepared with assessment of tender documents for tunnel contracts.

Comments were prepared on the tender documents and evaluation procedures for construction supervision contract.

4.8 Palestine

**Institutional Cooperation with the Palestinian Water Authority (PWA)**

The Institutional Agreement between the Palestinian Water Authority and NVE came to an end on 3 September 2001. The ultimate goal of the assistance was to enable the PWA to be fully operational within the Palestinian territory. This has not been possible, mainly due to severe Israeli restrictions.

NVE has been involved in the following activities in 2001:

- Following up on use of a Management System for the sections and departments (objectives, strategies, actions, annual plans including result documentation and performance indicators)

- Contributed in the Strategic Planning Study (Development of the Water sector, including defining priorities for investments)

- Commenting on draft Technical Guidelines and Specifications

- Preparation of and commenting on Terms of reference for various projects

- Commenting on drafts and advising on the elaboration of the draft Palestinian Water Law and advising on the development of regulations

- Advice to the departments on management issues

- Initiation and development of a leadership and management development process

- Development of a special PWA leadership handbook
Achievements

- A Management System for all the sections is implemented
- The Water Law was passed in the Palestinian Legislative Council
- The leadership and management development process was successfully implemented in Ramallah as well as in Gaza.
- A draft of the “WATER LEADERSHIP HANDBOOK – An actionbook for and by the leaders of the Palestinian Water Authority” was finalized.

The work has been heavily hampered by the Intifada, which made it impossible for people to come to work for long periods and very difficult to plan and implement work with foreign assistance. Several planned activities had to be postponed or cancelled due to the political situation.

4.9 South Africa

Institutional Cooperation with the National Electricity Regulator (NER)

NVE has had a cooperation agreement with the National Electricity Regulator in South Africa since February 1999. The cooperation has focused on development of a regulatory framework to accommodate a future restructured Electricity Supply Industry in South Africa.

NER and NVE entered into a contract for second phase of the cooperation in June 2001. The objective of the cooperation is to provide technical assistance to NER and transfer of skills and between the two organisations.

Achievements

The cooperation has focused on contact between the two organisations on professional issues and exchange and training of personnel. In August/September 2001 it was arranged a seminar in NVE for 15 persons from NER from the following departments: Legal Counsel Division, Market Operation and Monitoring, Licensing and Compliance Division, and Corporate a Service division. The seminar was a platform for cooperation of professionals from the two institutions and the programme included presentations for the whole group, specialized presentations for different Divisions, and bilateral contacts.

The project has also supported a Scenario Study where consequences of a liberalization of the South African market have been highlighted.

4.10 Uganda

Ministry of Energy and Mineral Development (MEMD)

Since July 1997 NVE has assisted the Ministry of Energy and Mineral Development preparing an Electricity Act through the Institutional and Legislative Reform Project.

A second phase of the cooperation was initiated with the scope to:
• Prepare a Project Document for cooperation between NVE and the Electricity Regulatory Authority in Uganda

• Prepare draft regulations (codes and standards license) in connection to the Electricity Act.

• Conduct seminars on rural electrification

Achievements

The new Electricity Act was approved by the parliament in 1999, and regulations to the Act were worked out later during the period.

The Project Document was completed, and the contract for the ERA – NVE cooperation was signed in February/March 2001. A consulting company was subcontracted to prepare a regulatory framework for isolated systems. The report was released in January 2001. Seminars on rural electrification have been conducted through 2001, and only a winding up and formally closing of this project is left.

Electricity Regulatory Authority (ERA)

NVE and ERA initiated in 2001 an institutional cooperation to establish ERA as an efficient and credible Regulator. The cooperation shall last for 3 years and will involve substantial assistance from NVE and subcontracted consultants.

Achievements

A resident NVE adviser to be stationed in Uganda under the project was appointed and the first five staff members and the Chief Executive Officer for ERA were employed in 2001. Training programmes are prepared and field visits to South Africa and Namibia are carried out. Some licences to Uganda Electricity Board successor companies have been granted. ERA has drafted a standard reporting format to monitor compliance with licence conditions. Also some guidelines for licensing procedures have been worked out. Regulatory framework applying to the main grid is assessed and determined, and a report on Lighthanded Regulatory Framework for Rural Electrification is prepared. The tariff structure and level have been reviewed. Statkraft SF has reviewed the current tariff structure for generators in Uganda, and report was submitted in July 2001. Proposals for a consulting study on financial and technical reporting were invited in November 2001.

ERA and NVE have prepared the Terms of Reference and Letter of Invitation for the proposals for consulting services as Transaction Adviser for the supply of electricity to the West Nile. The proposals have been evaluated, and a contract with the successful company was signed. The project commenced in October 2001.
4.11 Vietnam

Institutional Cooperation with Electricity of Vietnam (EVN)

In the context of the new Water Resources Law (1998) and increased emphasis on environment and social issues, the Government of Vietnam wishes to examine alternative strategies for meeting projected power demand, in which other factors than technical/economic are given full consideration. This objective of the Government has, among others, resulted in the National Hydropower Plan (NHP) Study. It is considered important to integrate the hydropower development in the multipurpose water resources management, and to assess the economic benefits of hydropower and non-power water development options to contribute to socio-economic development and poverty alleviation in the river basins. Thus, the development objective of the NHP Study is to contribute to a sustainable, environmentally as well as socially sound management of the water resources of Vietnam.

Based on a carefully selected methodology, and with due consideration of environmental and social concerns - and other users of water resources - the NHP will rank potential hydropower projects which should be brought forward first for a license, when justified by power demand forecasts. Stakeholders’ participation is emphasised.

Funded by Norway and Sweden, the Stage 1 of the NHP Study was launched in April 1999 and will be concluded in April 2002. EVN is the Executing Agency, representing the Client. Technical assistance as institutional support to the Client is provided through a contract between EVN and NVE.

Achievements

The Consultant's Draft Final report was presented 21 December 2001. After a review period to obtain the final comments from the Client, the Consultant will make the required corrections and present the Final Report in April 2002. Based on the reporting already available, however, the Client considers the objectives of Stage 1 to be fully met.

Stage 1 comprises 5 priority river basins with respect to hydropower potential - Da, Lo-Gam, Ca, Se San, and Dong Nai - accounting for about 70-75% of the estimated total exploitable hydropower in Vietnam. Integrated basin planning studies and preliminary basin water resources plans have been completed for the five river basins. From a total of 47 identified hydropower projects, 29 project alternatives have been examined in detail.

In the Consultant’s Draft Final Report from Stage 1, the main conclusions can be summarized as follows:

- The results of the final power system simulations show that all strategies based on a mix of hydropower and thermal power are superior to a pure thermal expansion strategy. In general, the considered hydropower plants prove to be very competitive in comparison with thermal power plants. To obtain an optimal, reliable, and efficient generation system, the hydropower development will be most beneficial when done in combination with existing and new thermal power plants.

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Based on the results from studies on various power development strategies, the order of priorities of projects is given for all five river basins. The timing of implementation has also been recommended, in the short-term (2007 – 2008), medium term (2009 – 2012), medium/long-term (2013 – 2015) and long-term (after 2015).

The main activities connected to the institutional cooperation between EVN and NVE have been the day-to-day services by a resident NVE long-term adviser, various training activities, study tours to Norway and Sweden, and review of reports presented by the Consultant. In 2001 the preparation of a Project Document for Stage 2 has been completed. The NVE long-term adviser terminated his contract in December 2001, and further EVN/NVE cooperation will be organised through short-term visits by NVE professionals.

Representative of an ethnic minority group in a remote mountaineous area in Northern Vietnam.
5. Comments on NVE’s Cooperation with NORAD and Partner Institutions

5.1 Cooperation with NORAD and Ministry of Foreign Affairs

The cooperation between NORAD and NVE has been carried out without any major difficulties. The experiences from previous years on the different roles and responsibilities of the parties within the development assistance have helped NVE to carry out the services with the desired quality and without any conflict between the partners.

The general assistance to NORAD in 2001 was recorded at about 1000 hours (see Appendix A, Table A-1). The hours spent are for reporting accounts to NORAD, preparing for new projects, visits of delegations, and part of the administration of the International Section. In addition to this were advices to NORAD and Ministry of Foreign Affairs for preparation of papers on energy and water policy for sustainable development.

In addition to the Annual Meeting, a semi-annual meeting was arranged between NORAD and NVE in order to revise the budget and the activity plan.

5.2 Cooperation with Partner Institutions

Substantial results have been achieved with our partner institutions in cooperating countries, but also some problems have occurred. The most common problem is that planned activities have been delayed for different reasons. Some times our partners have problems to fulfil the obligations of the contracts because of the working condition and available human resources. The reason for this may be connected to both parties and also negative external factors beyond any of the parties control. Changes of plans may cause reallocation of human resources, and unrealistic expectations of how fast NVE can be able to provide services, may also cause delay.

5.3 Cooperation with other Institutions

On a case by case basis, NVE has frequent contacts with other Norwegian directorates, research institutions, and universities. These contacts are also strengthened through the network established by NORAD.

The cooperation between Norwegian water institutions on assistance to developing countries continued in 2001. This has been very successful with a positive approach from all three institutions NORAD, SFT and DN. Several means to improve the cooperation and the quality and relevance of our services have been identified. Both the course on Water Management in Developing Countries and the project document for the MARD project in Vietnam were implemented as a cooperation between the institutions, though the main responsibility for the implementation was by NVE.

NVE is a member of the board for the International Centre for Hydropower and is actively contributing to ICH’s initiatives towards developing countries. NVE participated in four meetings of the Steering Committee in 2001.
Professionals from NVE gave several presentations during the two courses, each of three weeks duration, on “Hydropower Resources Development and Management” and “Hydropower and the Environment”, organised by ICH in 2001.

NVE is a member of International Energy Agency, IEA, and NVE is Operating Agent for the programme concerning Hydropower and Environment, Annex III, phase 1.

Cooperation with University of Trondheim (NTNU) and University of Oslo (UiO) as part-time lecturers.

5.4 Information Dissemination

During 2001 the following articles have been published in NVE’s Intranet “Kontakt”:

- Halvor Kr. Halvorsen: "Internasjonalt utviklingsarbeid i NVE", Nr. 2
- Rolv Bjelland: "NVE i Uganda", Nr. 2
- Redaksjonen: om Palestina: "Nyter godt av norske erfaringer", Nr. 2
- Tor Morten Sneve: "Energi i Namibia", Nr 3.
- Bjørn Wold: "Ett år i midtøsten", Nr. 4
- Alf Adeler: "NVE i Uganda", Nr. 5

At NVE’s Internet site it is possibly to see:

- Namibia – institusjonsutvikling
- Bujagali – kraftverket i Uganda
6. Planned Activities 2002

The planning of activities for 2001 was discussed with NORAD in a meeting 14 February 2002. The tentatively agreed activities and budgeted use of personnel are shown in Appendix B.

The expected time consumption for 2002 is 14,6 man-years\(^1\) (including long-time advisers) and is based on existing commitments laid down in the running institutional contracts and other information provided by NORAD.

Experience from previous years does, however, indicate that the planning often is too optimistic and needs to be revised after six month.

The distribution of planned activities between countries compared to 2001 is illustrated on the figure below.

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\(^{1}\) One man-year = 1400 net hours
Some of the new activities are described below:

6.1 **Continued Institutional Cooperation with Electricity of Vietnam**

The main objectives for the National Hydropower Plan (NHP) Study as defined for Stage 1 (see chapter 4.11.) will also apply for Stage 2 proposed to start in 2002. Furthermore, as a specific objective for Stage 2, "the NHP Study shall be completed to cover the whole country by examining remaining river basins, as identified by the Client, having attractive hydropower potential with a threshold value to be defined by the Client". Base on experience from Stage 1, much more emphasis has been placed on making Stage 2 highly participatory to build Vietnamese capacity for future updating and implementation of the NHP. It is anticipated that after completion of Stage 2, the Client will be fully competent to further update the National Hydropower Plan as found required.

6.2 **Proposed Institutional Cooperation between NVE and Ministry of Agriculture and Rural Development (MARD), Vietnam**

As described in chapter 3, the first Draft Project Document for establishing procedures for the assessment of applications for licenses was prepared in late September 2001, and a revised version was agreed on in early 2002. It is proposed that the cooperation between MARD and NVE is formalised as an institutional contract.

MARD will be responsible for implementing the project and it will be established a Task Force of 4-5 experts who will be responsible for the actual writing of the documents. The Task Force members will be appointed from the staff who will be involved in the practical implementation of the outputs. MARD will appoint a coordinator for the project.

NVE will play an advisory role through a similar Task Force in Norway. Because of the wide scope of the work, the NVE-team will include representatives from SFT and DN. In case of capacity constraints NVE will contract external consultants. The mode of work will be through meetings, workshops, courses, study tours and direct consultation.

It is expected that Vietnam will request Norway to finance the project in 2002 for a duration of three years.

6.3 **Institutional Cooperation with the Department of Minerals and Energy (DME) in South Africa.**

NVE entered into a contract with DME in South Africa in February 2002. The contract focuses on capacity building of DME to meet the challenges of the foreseen restructuring process in South Africa.

6.4 **East Timor**

NVE has in 2001 participated in several meetings concerning possible assistance to East Timor within the energy sector. In February/March 2002 NVE will participate in a fact finding delegation to Eastern Timor, and it is anticipated that this may result in an institutional contract between the authorities in Eastern Timor and NVE.
6.5 Tanzania

A seminar on preparation of Letter of Invitation, Terms of Reference and the conduct of contract negotiations is requested from both Uganda and Tanzania. NVE will look into the possibilities to arrange such a seminar with participants from both countries in Tanzania in 2002.
## 7. Appendices

### 7.1 Appendix A, Table A-1: Total invoiced, NORAD assignments

**TOTAL INVOICED, NORAD ASSIGNMENTS**  
Based on invoiced expenses 1 - 4 quarter 2001

<table>
<thead>
<tr>
<th>Proj.no</th>
<th>Activity</th>
<th>NVE hours</th>
<th>Fee (charged)</th>
<th>NVE exp.</th>
<th>Consultants</th>
<th>TOTAL</th>
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<td>12 180.00</td>
<td>12 180.00</td>
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7.2 Appendix A, Table A-2: Total invoiced, institutional agreements

TOTAL INVOICED, INSTITUTIONAL AGREEMENTS
Based on invoiced expenses 1 - 4 quarter 2001

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<tr>
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<th>NVE exp.</th>
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### 7.3 Appendix B – Estimated activity volume in manhors for planned activities 2002

(including long-time advisers)

<table>
<thead>
<tr>
<th>NORAD ASSIGNMENTS</th>
<th>Sector</th>
<th>Hours</th>
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<tr>
<td>General assistance</td>
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<td>900</td>
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<tr>
<td>Nile Basin Initiative</td>
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<td>Course in Water Resources Management in Development Cooperation</td>
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<td>East Timor</td>
<td>Energy</td>
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<tr>
<td>Mozambique, Namacurra Electrification Project</td>
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<td>Course on Terms of Reference /Letter of Invitation/ contracts</td>
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<td>Unallocated</td>
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<td><strong>Sub-total</strong></td>
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<th>COUNTRY SPECIFIC ASSIGNMENTS</th>
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<th>Sector</th>
<th>Hours</th>
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<td>Ministry of Energy and Water Affairs</td>
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<td>Bosnia</td>
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<td>Butan</td>
<td>Department of Power</td>
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<td>Energy/Water</td>
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<td>Department of Minerals and Energy</td>
<td>Energy</td>
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<td><strong>Sub-total</strong></td>
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**TOTAL PLANNED TIME CONSUMPTION** 20 502