



Annual Report 1998

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



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1. INTRODUCTION

The Cooperation Agreement between NORAD and NVE is dated 2 November 1994. It is expected to be revised in 1999. The Agreement covers both assignments for NORAD directly, and activities connected to Institutional Agreements between NVE and institutions in the cooperating countries.

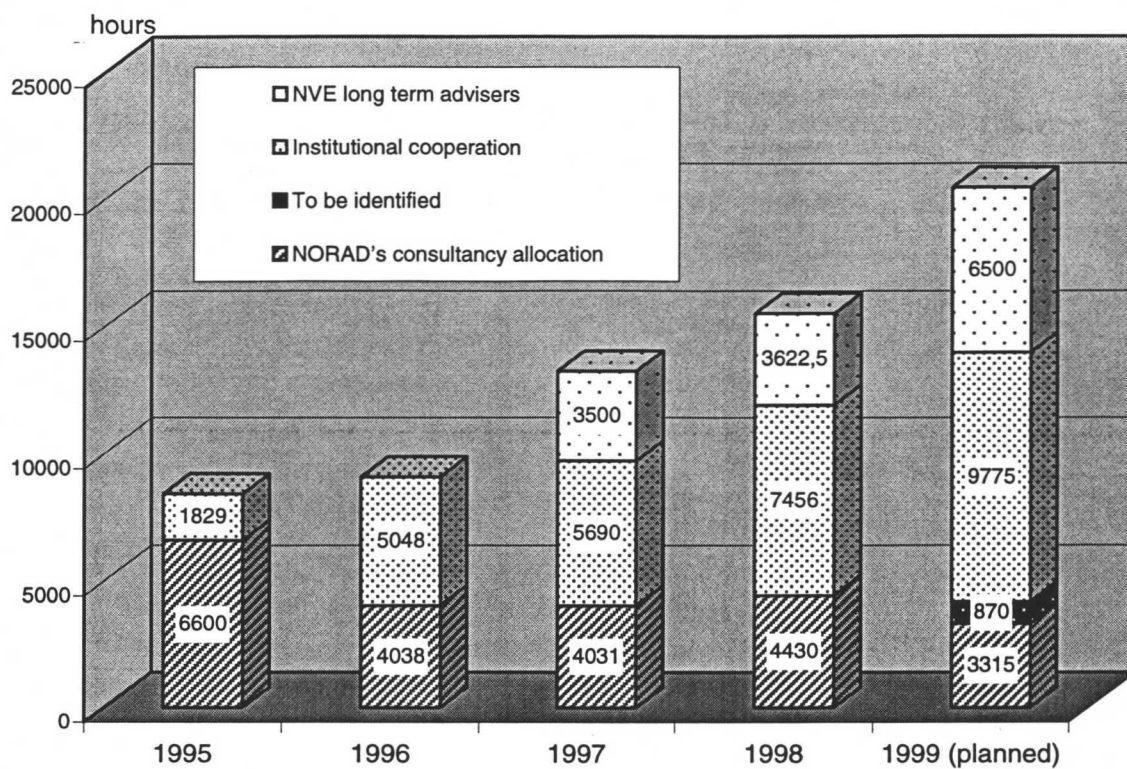
In NVE, the work under the Cooperation Agreement is coordinated by the International Office. By January 1999, six full time professionals and one administration officer staff this office. A staff of this size has been found necessary to meet the steadily increasing number of assignments, especially the increasing number of institutional agreements. The services of NVE under the Agreement cover a wide range of activities, and the International Office draws on the full staff of NVE to carry out the assignments. More than 25 professionals from other NVE departments have been engaged in 1998, producing about 34% of the man-hours recorded¹. In addition, several private consultants and professionals from other directorates and research institutions have been sub-contracted in certain speciality areas, and to compensate for lack of capacity of NVE in certain periods.

A condition for Norwegian development cooperation is integration of environmental considerations, including socio-economic and cultural aspects in all projects. This is in full accordance with the routines NVE follows in Norwegian water resource management and hydropower development. In Norway, the responsibility for integrating environmental considerations is delegated to the governmental body in charge of the different sectors. For the major part of the water resource management and all kind of hydropower development, NVE is the responsible governmental body. In NORAD sponsored developing programmes within these sectors, NVE follows the same routine. The environmental considerations are regarded as an integrated part of the projects, and the environmental assessments are performed by NVE's own environmental staff or experts from other institutions if NVE lacks capacity or competence. Based on Norwegian routines and standards, NVE makes environmental recommendations adjusted to the environmental policies of the different countries involved.

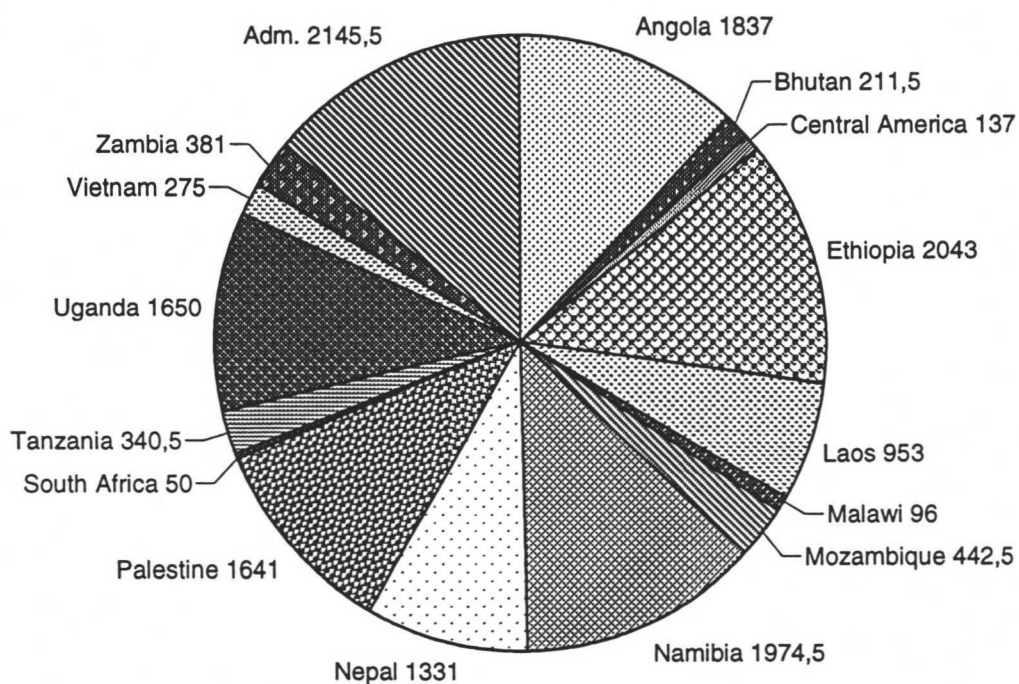
The increased volume of activities since 1996 is illustrated by the following figure. In 1996, a total of 5.9 man-years were recorded, increasing to 10.1 man-years in 1998, of which 71% was used on institutional cooperation. The man-hours spent on direct assignments for NORAD have stabilised at the low edge of 3 man-years.

The tentative time consumption for 1999 is 13.5 man-years, and is based on existing commitments laid down in the running Institutional Agreements, and information provided by NORAD in a meeting 18 January 1999. The figure also shows that the expected further increase of activities is mainly a consequence of an increased use of long term resident advisers posted at the cooperating institutions.

¹Excluding the hours recorded for long-term resident advisers



The following figure shows the distribution on countries of NVE's recorded man-hours (including long term advisers) under the Cooperation Agreement in 1998.



Total time consumption 1998
Total: 15508,5 hours = 10,1 man-years

2. ASSIGNMENTS FOR NORAD

Time consumption and costs for all engagements for NORAD are given in Appendix A, Table A-1. It shows that a total of NOK 3.3 mill. was invoiced NORAD.

A considerable number of assignments have been carried out in 1998, either on direct request from NORAD, or on request from institutions via NORAD. Only the more time consuming assignments are reported in the following.

Admi-01/26 Rural Electrification

NORAD requested NVE for input to Terms of Reference for a rural electrification desk study initiated by NORAD. The objective of the study is to give NORAD advice regarding relevant approaches concerning the issue. NVE was also requested to participate in the evaluation process to select Consultant Company for the assignment.

Achievement

A draft Terms of Reference for the study was submitted NORAD in July and Nordic Consulting Group was selected for the assignment after an evaluation process in October.

ETHIOPIA

Ethi-09 Power Distribution Master Plan for Addis Ababa, Nazareth, Dire Dawa and Bahir Dar

NVE was in September requested to assist the Ethiopian Electric Power Corporation (EEPCO) in preparing the Project Document for a Power Distribution Master Plan for Addis Ababa, Nazareth, Dire Dawa and Bahir Dar.

A team from NVE was in Ethiopia 25 October – 15 November to collect information for the Project Document.

Achievements

The Project Document will be completed early 1999.

LAO PDR

Laos-04 Conference on Hydropower, Development and Environment

NVE was in December 1997 requested to assist the Ministry of Industry and Handicraft in arranging a Conference on Hydropower, Development and Environment. The conference was a follow-up of the *Conference on Hydropower and Environment* arranged in Norway in 1994. The aim of the new conference was to focus on environmental aspects of hydropower in a development perspective, and with a view to the new legal framework in Lao PDR. This included the Electricity Law (promulgated in May 1997), the Water and Water Resources Law (promulgated in November 1996), and the draft Environmental Law.

A similar conference is planned to be held in Tanzania in 1999.

Achievements

The conference was successfully arranged in Vientiane 8-10 December with 80 participants, whereof half were representatives from the different provinces in Lao PDR. Licensing procedures were discussed and Norwegian experiences were presented. A Conference Report will be completed early 1999.

Laos-05 Xeset-2. Assistance to EdL in bidding procedures

NVE was in April requested to assist Electricite du Laos in evaluation of scope of work and terms of reference for the feasibility study for new hydropower developments upstream the existing Xeset hydropower station. As a follow-up, NVE was requested to assist with the bidding procedure. A NVE mission visited Lao PDR in October - November for a site visit and evaluation of proposals, and an EdL delegation visited Norway in November for the following contract negotiations.

Achievements

The bidding process regarding the feasibility study for new hydropower developments upstream of the existing Xeset hydropower station proceeded successfully and a contract with Norconsult International A.S. was signed in November.

MALAWI

Mala-01 Malawi. Negotiation Assistance

In November, NVE was requested to evaluate an offer from ABB regarding delivery of five substations to Lilongwe in Malawi. NVE also assisted the national energy company, ESCOM in the following contract negotiations with ABB.

Oslo Energi Konsult was subcontracted by NVE and provided assistance to the NVE team.

Achievements

A contract between ESCOM and ABB was signed. A mission report was prepared and submitted to NORAD.

NEPAL

Nepa-05 National Hydraulic Research Laboratory

An informal cooperation between the National Hydraulic Research Laboratory in Nepal and the Norwegian University of Science and Technology (NTNU), has been in operation for many years and a more formal cooperation was desired. In 1997, draft proposals for an Appropriation Document and a Bilateral Agreement were prepared by NVE. Through an agreement between the laboratory and NTNU, funds would be made available to develop the laboratory by human resources development, and by supply of better equipment.

Achievements

The draft Appropriation Document and draft Bilateral Agreement were completed and submitted to NORAD in August.

Nepa-08 Assistance to Ministry of Population and Environment

In 1997, Nepal sent a request to Norway for technical assistance to the Ministry of Population and Environment (MOPE). The main objective of the assistance should be to assist MOPE in attaining and maintaining a high standard for supervising environmental impact assessment and management. Emphasis should be on MOPE's role as regulatory body for assuring that power and water resources development projects adequately incorporate environmental and social considerations. A draft project document had been prepared by the World Bank.

NORAD considered the project to be in coherence with priorities for the development cooperation between Norway and Nepal, but also that several issues needed to be further analysed. It was, therefore, decided that a team comprised of representatives of possible Norwegian institutional partners to MOPE should visit Nepal. The two Norwegian institutions selected were the Directorate for Nature (DN), and NVE. The visit took place in June.

Achievements

The findings and recommendations of the NVE/DN mission to Nepal are presented in a report dated 9 July 1998. It was the main conclusion that the project is given very high priority by the relevant authorities in Nepal to be able to handle several new projects coming up very soon. It was also agreed that the existing draft project document contained all major components to be included in such a project. However, it was recommended that the document be revised to make it comply with the setting of an institutional cooperation between MOPE and a Norwegian partner, including the posting at MOPE of a Norwegian long-term adviser. A detailed follow-up plan was agreed upon, including a visit of a MOPE-team to Norway in August/September.

In the draft project document, NVE was proposed to be MOPE's institutional partner in Norway. However, DN expressed strong interest in launching DN as the most appropriate Norwegian institutional partner, thus replacing NVE. This can be justified by the fact that DN is a directorate under the Ministry of Environment in Norway, and MOPE is the corresponding Ministry in Nepal. NORAD, therefore, selected DN as MOPE's institutional partner in Norway. NVE will not be part of the institutional contract, but may on request be sub-contracted on specific tasks as required.

The further project preparations came to a virtual stand still after the NVE/DN mission in June, and this is very much regretted by NVE.

SOUTH AFRICA

S.Afr-05 Preparation of Institutional Cooperation with the National Electricity Regulator (NER)

In November, NORAD approved a Business Plan with the Ministry for Minerals and Energy implying a 2 ½-year cooperation between NER and NVE. The objective of the cooperation is to give the NER specialised input in the development of a regulatory framework for the electricity Supply Industry to comply with its role as the national electricity regulation authority. Through the cooperation, NER will be able to utilise specific Norwegian expertise on various issues in the electricity supply industry, which require international expertise.

Achievements

The cooperation contract between NER and NVE is prepared and the contract is expected to be signed February 1999.

TANZANIA

Tanz-04 Pangani Falls Redevelopment Project

This is a hydropower project with installed capacity of 60 MW, located on the Pangani River at Hale, approximately 200 km north-west of Dar Es Salaam. NVE has assisted the project from the first preparations in the late 1980s. The project is now completed and transferred to Tanzania Electric Supply Company Ltd (Tanesco). In March 1998, NVE attended a field visit to the project.

Achievements

The project is completed as planned, and is now operated and maintained satisfactorily by Tanesco.

Tanz-05 Lower Kihansi Hydropower Project

This is a high head hydropower project located 440 km south-west of Dar Es Salaam. The project will utilise a net head of 850m, and the first phase currently under construction will include 3 turbines with a total capacity of 180 MW. The progress of the project is slightly delayed. According to the new plans, the first turbine will start operating 5 February 2000, and the next two turbines after another 2 and 4 months.

In March and September respectively, NVE attended the semi-annual meetings. NVE also assisted in preparation of documents regarding the meetings and participated in site visits. In September, NVE participated in a field visit to the Kihansi Gorge to observe the newly discovered Kihansi Spray Toad. Several toads were observed. Advisory services were provided during the discussions and the site visits. NVE also participated in other meetings with the World Bank, Ministry of Mines and Energy, and Tanesco in Dar Es Salaam concerning this project.

Achievements

All the necessary documents for the meetings and site visits were prepared in due time before the semi-annual meetings, and all documents for the follow up were prepared. Necessary contact with institutions involved in the energy sector was maintained.

A section of the Pangani River downstream Nyumba ya Mungu reservoir (NYM) was anticipated to suffer from significant water losses during high release of water from NYM. A Feasibility Study of a proposed river training project to reduce water losses and increase the inflow to the downstream hydropower stations at Hale and Pangani Falls was prepared by Tanesco and their Consultant.

In April, NVE was requested by NORAD to evaluate the Feasibility Study report.

Achievements

In May, NVE presented its comments to the Feasibility Study in a report to NORAD. The background information was not found adequate and needs upgrading before a correct conclusion can be drawn. However, if the assumptions on which the conclusions are drawn are correct, the project seems feasible.

VIETNAM

After preparatory work by the World Bank, Norway and Sweden agreed to provide financial support to Vietnam for the development of a National Hydropower Plan Study under Agreements signed in July. The Norwegian and Swedish grants are NOK 14 mill. and SEK 16 mill., respectively, which totals NOK 28 mill. Of the Norwegian grant, NOK 4 mill. is earmarked a two years institutional cooperation between Electricity of Vietnam (EVN) and NVE, including the posting of a NVE long-term adviser at EVN in Hanoi.

The ultimate goal of the institutional cooperation is to strengthen the administrative and technical capacity of EVN in its role as implementing agency for the National Hydropower Plan.

In the period June-December, NVE assisted EVN in preparing revised Terms of Reference for the consultancy component of the Study preparing revised Letter of Invitation submittal of Letter of Invitation to qualified Norwegian and Swedish consulting firms preparation for, and organising a project meeting with NORAD and Sida in Hanoi organising a site visit for the invited consulting firms.

Achievements

In December, proposals from two Norwegian/Swedish consortiums were evaluated by an EVN/NVE evaluation committee in Oslo. A Sweco/Statkraft Eng./Norplan consortium was given the highest score and was invited for contract negotiations. The negotiations were successfully concluded 12 December and the contract was submitted to NORAD and

Ministry of Planning and Investment (MPI) in Vietnam for approval. The duration of the consultancy was proposed to be two years.

A contract on institutional cooperation between EVN and NVE was signed by the two parties on 7 December 1998, and submitted to NORAD and MPI for approval.

ZAMBIA:

Zamb-09 Power Sector Rehabilitation: Transmission Component. Evaluation of Tender for Consultancy Services.

NVE was requested to participate in evaluation of proposals for consultancy services for the transmission component regarding the power sector rehabilitation in Zambia.

Achievements

The evaluation was carried out in Oslo in August/September together with ZESCO personnel. Norconsult was selected for the assignment and the NVE team assisted during the contract negotiations during the second week of September.

CENTRAL AMERICA:

Ceam-03 Consejo de Electrificación de America Central (CEAC)

On request from NORAD, NVE evaluated Terms of Reference for a training programme for load flow analyses and tariff principles in Central America. A NVE team visited Costa Rica and had meetings with the CEAC secretariat and representatives from CEAC member countries.

Achievements

A mission report was prepared and submitted to NORAD. The report concluded that the Central American transmission utilities have a great need for training in transmission system planning and for financial support in purchasing the necessary hardware and software, and CEAC wishes to gain financial support from NORAD for a transmission system planning project. The transmission project seems important for the future coordination and cooperation within the power system sector in Central America, and a coordination with the ongoing system simulations in the SIEPAC (Interconnection system for Central America) project was strongly recommended. The report also recommended an appraisal of different power system simulation applications.

3. INSTITUTIONAL COOPERATION

Time consumption and costs connected to the institutional cooperating agreements in 1998 are given in Appendix A, Table A-2, showing a total close to NOK 10 mill.

The following institutional agreements have been in force in 1998:

Country	Cooperating institution	Period	Budget NOK
Angola	Ministry of Energy and Water Affairs, Energy Sector	1996-1998	13,800,000 ¹
Bhutan	Ministry of Trade and Industry, Division of Power	1997-1999	1,000,000
Ethiopia	Ministry of Mines and Energy, Energy Department	1996-1998	3,780,000
Ethiopia	Ministry of Water Resources	1996-1999	6,300,000
Laos	Ministry of Industry and Handicraft	1997-1999	2,000,000
Mozambique	National Directorate of Energy	1998-2000	16,700,000 ¹
Mozambique	Electricidade de Mozambique (Alto Molocue - Gurue)	1998-1999	155,000
Mozambique	Electricidade de Mozambique (Gurue-Lichinga)	1998-1999	170,000
Namibia	Ministry of Mines and Energy	1996-1998	4,000,000
Nepal	Ministry of Housing and Physical Planning	1998	455,000
Nepal	Melamchi Water Supply Development Board	1998-1999	2,500,000
Palestine	Palestinian Water Authority	1995-1998	14,000,000 ¹
Uganda	Ministry of Natural Resources	1997-1998	5,600,000
Zambia	Zambia Electricity Supply Corporation	1997-1999	300,000

Furthermore, three new institutional agreements have been under preparation:

Country	Cooperating institution	Period	Budget NOK
Angola	Ministry of Energy and Water Affairs, National Directorate of Water	1999-2000	14,950,000 ¹
South Africa	National Electricity Regulator	1999-2000	4,500,000
Vietnam	Electricity of Vietnam	1999-2001	4,000,000

¹Including sub-projects implemented by consulting firms.

ANGOLA:

Ango-06 Institutional Cooperation with the Ministry of Energy and Water Affairs (MINEA)

NVE offers technical support to the electricity sector in Angola with a goal to promote economic development of the country through sustainable and efficient use of the country's energy resources. The purpose is to strengthen the competence and decision making basis at MINEA and Luanda Electric Utility (EDEL) through transfer of know-how to the staff in technical, economic and administrative fields and to assist in the development of legislation for the sector.

- National Energy Sector Management (NESMA)

NVE personnel conducted three short-term missions to Angola. Activities included assistance in editing and printing transactions of the Symposium on Energy Policy, held in Luanda in October 1997 and work on a strategy plan for institutional strengthening of MINEA/DNE, based on its proposed new statutes.

- Institutional strengthening of Luanda Electric Utility (EDEL)

The Consultant's final report was completed in the first quarter. It contains a diagnostic study of EDEL and a strategy and action plan for strengthening of the utility. EDEL and MINEA have approved the action plan (total budget NOK 25 mill.) and financing is now being sought from the World Bank and others.

- Management Information System (MIS)

The Consultant presented an action plan for a MIS system at MINEA in a phase 1 final report. Budget estimate for implementation of the plan exceeded the allocated funds by NOK 1.3 mill. MINEA and NORAD agreed to go ahead with implementation and to cover the deficit by available funds from other projects and from the contingency fund. The implementation phase will be completed in the third quarter 1999.

- Rural electrification

The project was completed with the Consultant's final report in the third quarter. The report discusses principles and options for implementation strategies for rural electrification in Angola. Pilot- and demonstration projects are suggested. The report is expected to be a valuable basis for policy and technical discussions on rural electrification in Angola.

The Programme period 1996-98 was completed according to plans and within budgets.

- New projects

MINEA requested an extension of the institutional cooperation with NVE to include assistance to nine new projects:

1. Institutional strengthening of Empresa Nacional da Electricidade (ENE)
2. National Water Sector Management (NAWASMA)
3. Rehabilitation of Cunene Dam
4. Assistance to plan and implement a workshop on use of common water resources (Angola and Namibia)
5. Pre-investment planning of projects in the Rehabilitation Programme for the Electricity Sector
6. Engineering and supervision connected to the rehabilitation of the Cazenga sub-station in Luanda
7. Provision of spare parts to Angolan electric utilities
8. Continued follow-up of the NESMA process,
9. English language courses for key personnel in the energy sector

NVE has assisted MINEA in project definition and documentation. Financing of the new activities is being sought from NORAD. If approved, the new Programme for assistance to the electricity sector 1999-2001 will be implemented through an extension of the current Agreement on institutional cooperation between MINEA and NVE.

The NAWASMA programme will be implemented through a separate Agreement between the National Directorate of Water and NVE. NVE paid a visit to Luanda in September and discussed the program. A visit by DNA to Oslo is planned for first quarter 1999 to finalise the Project Document.

Achievements

Final transactions of the symposium on energy policy, held in Luanda in October 1997, were distributed to the approximately 100 participants in the first quarter of 1998. The Symposium recommended that a national commission be appointed by the Council of Ministers to supervise the drafting of a white paper on energy policy for Angola. The Minister of Energy and Water has followed up on the recommendation, but the Commission has not yet been appointed.

The legal framework and institutional structure in the electricity sector in Angola are now largely decided.

The final report on EDEL strengthening strategy is completed in English and Portuguese. The conclusions of the study have been formulated following discussions and several

workshops on important issues between the top management of EDEL, MINEA and the Consultant. A tentative budget for the implementation strategy plan is estimated at approximately NOK 25 mill. The plan forms a rational basis for seeking financing for implementation.

A final report on MIS project, phase 1 (strategy plan) is completed and the decision has been taken by MINEA for implementation. Angolan companies will deliver hardware and software for a computer network implementation.

The final report on the Rural Electrification project, in English and Portuguese version, was approved by MINEA in the third quarter. The main conclusions of the study have been discussed in workshops conducted by the Consultant and attended by key officials of MINEA, other ministries concerned as well as of the electric utilities.

Project documents for the proposed new programme involving the energy and water sectors have been drafted.

BHUTAN:

Bhut-01 Institutional Cooperation with the Division of Power, Ministry of Trade and Industry

A contract between Division of Power (DOP) of the Ministry of Trade & Industry, Bhutan, and NVE was signed in Thimphu 25 August 1997. The goal of this institutional cooperation is to assist DOP in its role as the client for the feasibility study of the Mangde Chhu hydropower project. Norway has provided a grant of NOK 20 mill. to finance the actual feasibility study, and an additional grant of NOK 1 mill to finance the DOP/NVE institutional cooperation.

NORAD made it a condition that the Environmental and Social Impact Assessment should be carried out by an independent consultant sub-contracted to the main consultant carrying out the technical and economic part of the study. After competitive bidding in Norway, Norconsult Int. in association with Norplan was awarded the contract as the main consultant in December 1997.

Achievements

After competitive bidding in Norway, two accepted proposals for the environmental and social impact part of the study were evaluated by a DOP/NVE committee in Thimphu in February. A joint venture of Statkraft Eng./NODE/NIVA was awarded the contract.

The date of commencement for the consultants was set to 1 February.

The work of both consultants has progressed very well throughout 1998. According to the time schedule, the feasibility study will be completed in mid 1999. Preliminary results indicate that the Mangde Chhu project is feasible and that the environmental and social

impacts are very limited. In the pre-feasibility study (1993), the installed capacity was estimated to 265 MW. The feasibility study shows that by moving the intake upstream and the outlet downstream, the increased head may justify an installation of about 440 MW.

Due to lack of capacity at DOP, a planned seminar in Norway and a study tour to countries in Asia were postponed to 1999.

ETHIOPIA:

Ethi-07 Institutional Cooperation with the Ministry of Water Resources

The Institutional Agreement between the Ministry of Water Resources of Ethiopia (MoWR) and NVE was signed 22 May 1996, with an Addendum of 24 February 1997. The objective of the project is to improve quality and efficiency of data collection, handling and analysis in hydrology sector.

The long-term NVE Adviser commenced his activities in Addis Ababa in April 1997, and terminated his activities in September 1998, with 3 months of planned break from April to August. His activities were performed according to the plans, but some problems occurred due to delayed delivery of equipment.

From 20 April – 2 May, NVE carried out a mission to Ethiopia to prepare for mathematical modelling of the ground water flow system in the Lake Beseka area. A report was prepared, and the mission will result in a workshop in Ethiopia in 1999.

A workshop on Discharge Measurement by Salt Dilution Method was successfully executed 14 – 30 September by assistance from NVE. A report from the workshop was prepared. Equipment to carry out such measurements by the Department of Hydrology itself is at site.

Delays in purchase and delivery of equipment have created problems for the project. By the end of 1998 most new equipment was at site, and the rest will be delivered and installed early 1999. Because of the delays the project is behind schedule, but will be terminated within the end of 1999.

Achievements

Standards and procedures for collecting hydrological data have been completed.

Training of more than 20 people for discharge measurement by salt dilution method has been completed.

About 50 new gauging stations have been constructed and approximately 50 damaged stations repaired. Operation and maintenance programmes for the mentioned stations have been developed.

Manuals on Procedures in Operational Hydrology have been supplied to the project.

**Ethi – 08 Institutional Cooperation with the Energy Department (ED) of
Ministry of Mines and Energy (MME)**

The Institutional Agreement between ED and NVE was signed in June 1996 with the ultimate objective to strengthen the institutional capability of ED, and to transfer knowledge and experience to the Ethiopian electricity subsector through the preparation of an enabling legislation, appropriate regulations, and licensing procedures.

The Ethiopian authorities have requested Norway to fund a study of Energy Sector Perspective, based on a Project Document prepared with assistance of NVE. The Energy Sector Perspective project will be prepared as a separate project, independent of this project.

Achievements

In May 1998, NVE participated in an Energy Regulation Workshop in Ethiopia in relation to the new Electricity Act. 17 persons from the energy sector in Ethiopia participated. Considerable efforts are made to prepare the regulations for the Act, and a new workshop in spring 1999 is planned to terminate the project.

The Head of Energy Department attended the course: "Energy Planning and Sustainable Development" at the International Summer School, University of Oslo, 27 June – 7 August 1998.

LAOS

**Laos-02 Institutional Cooperation with the Ministry of Industry and
Handicraft (MIH)**

The present agreement between Norway and Lao PDR on phase II of the legal framework project for the hydropower sector was signed in April 1997. The following four aspects are to be given priority:

1. Regulations for a licensing system according to the new laws on water and electricity
2. Education and training of personnel to understand the implications of a licensing system
3. Training for commercial negotiations
4. Consulting work for the Ministry of Industry and Handicraft on the commercial and legal aspects of new hydropower projects

In February, a NVE team visited Vientiane. Workshops on licensing regulations were held and a first draft was presented and discussed. A two-day seminar on contract law and commercial negotiations for the Foreign Investment Management Committee (FIMC) and other ministries was arranged. A one-day seminar on negotiations and licensing for senior officials in MIH was arranged.

In April, a NVE team visited MIH and participated in workshops and seminars on negotiations of commercial contracts, and provided general advisory services to MIH.

In June, the Lao Task Force made a study tour to Norway.

In connection to the Conference on Hydropower, Development and Environment in Vientiane in December, consultations were held with the Laos Task Force, MIH and FIMC on the continuation of the project.

Achievements

During workshops and seminars a better understanding and knowledge of commercial negotiations and the implications of a licensing system have been developed.

In work with concrete projects, a better understanding and consciousness have been reached among senior officials.

Discussions between the involved ministries on the content of the regulations for hydropower development and electricity have been an important process that has taken place during 1998. The Government decided to establish a water resource coordination committee where all the relevant ministries and agencies participate.

A final draft Regulations for a licensing system was prepared. In the beginning of 1999, an English translation was presented for final comments.

MOZAMBIQUE

Moza-09 Institutional Cooperation with the National Energy Directorate

An institutional cooperation between the National Energy Directorate (DNE) and NVE was signed in March 1998. Through institutional cooperation, NVE will assist DNE in strengthening its administrative routines and effectiveness in regulating the energy sector. Four main areas for support are identified:

1. Improvement of the DNE structure, including regulations and guidelines adapted to the new electricity law
2. Training

3. Energy master planning
4. Rural electrification strategy planning

Achievements

In March 1998, DNE visited NVE and a 3-year contract with scope of work for institutional cooperation between DNE and NVE was signed. DNE also visited Norwegian electricity industry, the International Centre for Hydropower, and NVE's Regional Office in Trondheim.

In April NVE, attended a seminar in Maputo on the Energy Strategy of Mozambique.

NVE has given short-term legal assistance with evaluation of contracts.

In 1998, a long-term NVE-Adviser was recruited to be posted at DNE for a period of two years, with possible prolongation. The long-term adviser will be assisted by short-term NVE-advisers, and will also assist DNE in coordinating and supervise other private consultants to be contracted.

In November, NVE visited Maputo to discuss the workplan for 1999 and introducing the long-term Adviser who will take up his position in Maputo in March 1999.

Moza-10 Assistance to Electricidade de Mozambique (EDM) Alto Molocue - Gurue Transmission Line Contracting of "The Engineer"

The project concerns the construction of a 110 kV transmission line from Alto Molocue to Gurue (length 72 km) and a 33 kV line in the Gurue area (length 25 km) and a 110/33 kV substation in Gurue. At the end of the year, NVE was contracted by EDM to assist in contracting a Norwegian firm to supervise the implementation of the project.

Achievements

By the end of the year the following was completed:

- Identification of firms to submit proposal
- Letter of invitation and Terms of Reference completed.

**Moza-11 Assistance to Electricidade de Mozambique (EDM)
Gurue – Lichinga Transmission Line
Preparation of Terms of Reference and Assistance in
Contracting of Consultant**

The project involves construction of a 110 kV transmission line from Gurue via Cuamba to Lichinga, a length of 230 km plus distribution branches to 8-10 villages along the route.

In late 1998, NVE was contracted by EDM to assist in contracting a Consultant to prepare a feasibility study for the project with option to increase the contract to include detailed design and construction supervision.

Achievements

By the end of the year, only some initial work on the Terms of Reference had been carried out.

NAMIBIA

**Nami-05 Institutional Cooperation with the Ministry of Mines and
Energy (MME)**

The cooperation between MME and NVE has been going on since 1994. An addendum for extension of the cooperation from 1.1 to 31.3.99 has been signed and a new 3-year agreement is under preparation. An adviser from NVE has been posted to MME since March 1997. He is expected to be replaced by a new resident adviser from the middle of 1999.

A study tour to Norway for key personnel of MME and other central persons in the electricity industry was arranged in June 1998. This visit concentrated on contacts with government agencies, power companies and research institutions on energy conservation and new and renewable energy (bio, wind, solar, and wave energy).

Achievements

Policy Document on energy (by Consultant): Completed, ready for parliament

Restructuring study: Ongoing, second workshop held

Electricity Master Plan: Draft report by consultant commented upon

Electricity act: Completed, ready for approval by parliament

Regulations to Electricity Act: Ongoing, harmonisation of technical, economic and administrative parts remains

Feasibility study Epupa and Baynes hydropower project: Comments prepared on draft final report

Geographical Information System (GIS): Workshop held, report with recommendations prepared

Project Document for new 3-year period: Participated with inputs and as discussion partner

Waste to energy project: Prepared Terms of Reference, assisted in contracting of Consultant and commented on report

NEPAL

Nepa-09 Melamchi Water Supply Project

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 30 km long tunnel to the north-eastern edge of Kathmandu. Before delivering the water to the treatment plant (component no. 2), the available head of about 300m will be utilised for production of electricity. Installed capacity of the station will be approx. 15 MW.

NVE was in early 1998 engaged to conduct a fact finding mission with the purpose to clarify issues to address before the implementation of the project could start, to recommend an organisational arrangement for planning and construction of the project, and to prepare a Project Document in cooperation with the government of Nepal. The work was carried out under contract with the Ministry of Housing and Physical Planning (MHPP). The project as defined in the Project Document, consists of 4 components:

1. Melamchi diversion scheme
2. Water treatment plant
3. Bulk distribution system
4. Water supply management and system rehabilitation

NORAD agreed to finance the study on component no. 1 that was necessary before final decision regarding implementation could be taken. NVE was engaged in an institutional cooperation agreement with the newly created Melamchi Water Supply development Board (MWSDB) under MHPP to assist in the engagement of Consultant and to provide advisory service afterwards. NVE has subsequently assisted in preparing Terms of Reference and Letter of Invitation specifying the terms and conditions for the prospective Consultants in the preparation of their bids. The Consultancy contract is scheduled to be signed February 1999.

Achievements

A report from the fact-finding mission has been prepared and accepted by the involved parties.

The project document has been prepared, discussed in Donor's meeting, modified according to comments and adopted by the Government of Nepal.

Terms of Reference and Letter of Invitation has been prepared and adjusted following comments received.

Preparation of proposal by Consultants is in progress.

PALESTINE:

Pale-01 Institutional Cooperation with the Palestinian Water Authority

The former Institutional Agreement between the Palestinian Water Authority (PWA) and the NVE was replaced by a new agreement signed by the parties on 3 September 1998. The ultimate goal of the assistance is to enable the PWA to be fully operational within the Palestinian territory.

NVE has been involved in the following activities:

- Development and drafting of the Strategy for Water Management in Palestine in cooperation with the PWA coordinator and the project leader
- Commenting on draft Technical Guidelines and Specifications and advising on contract issues
- Commenting on drafts and advising on the elaboration of the draft Palestinian Water Law. Contribution to the drafting of the law and advising on organisation of work and contract issues
- Drafting of terms of reference and contract for the project Water Master Planning and commenting on draft report
- Advising on contract issues and commenting on draft reports regarding Water Tariff Study and plans of training in Norway
- Drafting in close collaboration with the Technical Department and the Regulatory Department in PWA, a manual for the day-to-day management of the departments
- Practical advice to the departments on management issues

Achievements

The Strategy for Water Management in Palestine has been completed, but will need further elaboration.

The first report on Water Master Planning has been completed, but further action is necessary.

The Water Tariff Study has been completed, but remains to be implemented.

This Manual for the day-to-day management of the departments in PWA has been completed, but need further revisions.

PWA and NVE signed a new agreement on 3 September 1998, and a new adviser for PWA was employed for 1999.

UGANDA

Ugan-08 Institutional Cooperation with the Ministry for Energy and Mineral Development

Ministry of Energy and Mineral Development (ME & MD) and NVE signed at contract in July 1997 for assistance in the energy sector through the preparation of an enabling legislation, appropriate regulations, and recommendation of a suitable institutional set-up. A Government Task Force (GTF) with members from relevant Ministries and institutions has been established for the project. An important element in the legislative work has been to balance between attracting foreign investment in the energy sector and at the same time taking care of Uganda's interests.

The NVE input has mostly been channelled through a Government Task Force. The drafting process for the new Act has continued throughout the year.

In the first phase of the project, focus has been given to capacity building of the GTF team by learning from other developing countries in Africa and Asia that have gained experience in developing a legislative framework for the sector. The GTF visited Zambia, Namibia and South Africa for meetings and discussions with relevant authorities with experience from policy making and legislation in the Energy sector. In March, a study trip was arranged to Malaysia, Thailand and Nepal. Especially the Nepal experience was of great value for the GTF. The trip was very much used for discussion and commenting of the first draft of the new Energy Act for Uganda, and the GTF was able to complete a second draft of the Act during the trip.

Achievements

In the beginning of August, a hearing seminar for the new Act was held for stakeholders. In the same month, a workshop was arranged in Oslo with the aim to arrive consensus on important issues of the Act. The Minister for Energy and Mineral Development in Uganda participated in the Oslo workshop.

A study on future tariff structure was initiated September and a Consultant Company for the study was selected after an evaluation process in November. The tariff study will be terminated in March 1999, and the new Act is scheduled for Parliament the second quarter of 1999.

ZAMBIA

Zamb-08 Institutional Cooperation with Zambia Electricity Supply Corporation (ZESCO): Financial Management and Accounting System (AFMIS)

Norconsult has been selected to implement a new Financial Management and Accounting System for ZESCO. ZESCO requested NVE to advise during the implementing process for the system. According to the ZESCO – NVE agreement of October 1997 NVE is committed to make a quarterly follow up on the project implementation.

Achievements

NVE has made follow up visits to ZESCO January 1998, June 1998 and September 1998. During each visit, NVE has made a Status Report for the project together with ZESCO personnel. The report focuses on discrepancy from workplans agreed upon and critical point for progress. During each visit, the NVE team has in addition made a separate report to ZESCO management with advice on project progress.

4. COMMENTS ON OUR COOPERATION WITH NORAD AND PARTNER INSTITUTIONS

Also in 1998, the cooperation with NORAD and partner public institutions in cooperating countries was, in general, running smoothly without major problems.

The discussions in 1998 on the different roles and responsibilities of the various actors in development assistance have been very useful. NVE fully supports the recommendations put forward in the report from Statskonsult: “Direktorater i institusjonelt samarbeid “ (Directorates in Institutional Cooperation). In this report it is - in brief - recommended that the partner institution in the cooperating country has the main responsibility for the implementation of the project, assisted by the Norwegian directorate; the directorate has a delivery and advisory role, being professionally responsible for its contributions; and NORAD has a management role with the responsibility to control that funds are used in accordance with given conditions.

This understanding of roles and responsibilities is already basic in NVE's contracts with partner institutions, and reflected in the given obligations for each institution.

As seen from App. A, Table A-1, 2005,5 man-hours have been recorded as "general assistance". This relatively high number of man-hours, equivalent to 1,3 man-years, covers the time spent on general assistance, reporting, and accounts to NORAD, visits of delegations from an increasing number of developing countries, and also parts of the general administration of the International Office. Some of the general administration connected to the institutional agreements has been charged under "general assistance, but this is now changed. In 1998, the introduction of a new accounts system caused a considerably extra workload, which is reflected in the time sheets, and adding to "general assistance".

As previously (January 1999 preparatory meeting) commented by NORAD - and agreed by NVE – the number of man-hours recorded as "general assistance" is too high and should be split into more defined activities. For example, a fixed monthly amount is now introduced in the budget for institutional agreements to cover the costs (man-hours) spent on administration of long term advisers. In the planning figure for 1999 it has, therefore, been reduced to 1535 hours, or 1 man-year, and a further reduction is foreseen. However, the principle of cost recovery for all NVE's assistance under the Cooperation Agreement should be kept unchanged.

A still unsolved problem for NVE is the considerable outstanding claims throughout the year. It is expected that a solution to this problem be found in 1999.

5. COOPERATION WITH OTHER NORWEGIAN INSTITUTIONS

On a case to 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.

NVE is member of the board for the International Centre for Hydropower (ICH), and is actively contributing to centre's initiatives towards developing countries. Professionals from NVE gave several presentations during a 3-week course on hydropower and development, organised by ICH twice in 1998.

6. OTHER INTERNATIONAL ASSIGNMENTS IN COOPERATING COUNTRIES

CROATIA

An Institutional Cooperation Agreement between NVE and the “Energetski Institut (Hrvoje Pozar)” in Croatia on electricity market development was signed 16 November, funded by Croatia. A meeting was held in Zagreb on issues connected to the electricity supply industry, legal and institutional framework, de-regulations, tariffs, etc.

INTERNATIONAL ENERGY AGENCY (IEA)

NVE participates in IEA's "Implementing Agreement for Hydropower Technologies and Programmes" and are Operating Agent for Annex III on “Hydropower and Environment”. A draft report from Annex III was presented in October.

ZAMBIA

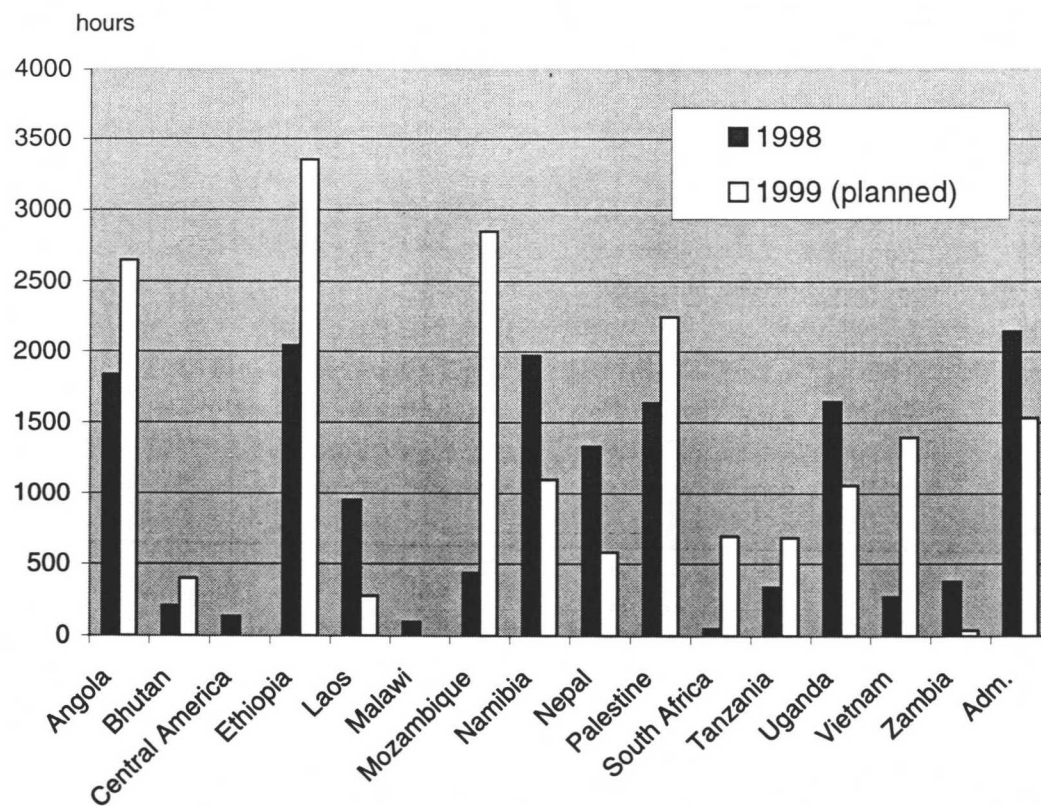
Kafue Gorge Regional Training Centre (KGRTC)

NVE assisted in December 1997 KGRTC in negotiating a contract with ABB Generation of Sweden for the supply of a hydropower simulator to the centre. During 1998, the supplier wanted to change the manufacture from Sweden to South Africa, which caused a contractual dispute between the two parties. NVE analysed the contractual situation and provided advice to KGRTC on how to proceed, and the matter has now been resolved.

7. PLANNED ACTIVITIES 1999

The planning of activities for 1999 was discussed with NORAD in a meeting 18 January 1999. The tentatively agreed activities and budgeted use of personnel are shown in Appendix B. The distribution between countries compared to 1998 is illustrated on the figure below.

A total of 13,5 man-years are anticipated for 1999, of which 10,6 man-years will be on institutional cooperation, including assigned long term advisers stationed in the cooperating institutions.



It should be noted that the relatively high planning figures for projects in Angola and Ethiopia, including the posting of resident long-term advisers, might be considerably reduced due to the war situation in both countries.

APPENDIX A
TABLE A-1

TOTAL COSTS - NORAD'S CONSULTANCY ALLOCATION 1998

Proj.no	Activity	NVE hours	Fee (charged	NVE exp.	Consultants	TOTAL
Admi-01	General assistance	2005,5	891 542,50			891 542,50
Admi-01/26	Rural Electrification/NORAD	66	30 690,00			30 690,00
Admi-01/27	Evaluation, Power System, Bosnia and Herzegovina	60	27 900,00			27 900,00
Admi-01/28	Seminar NORAD/SIDA	14	6 510,00			6 510,00
Ceam-03	CAM 0020-Assistance to CEAC	137	63 705,00	77 445,80		141 150,80
Ethi-09	Distribution Master Plan, Project Document	224	104 160,00	43 974,80	19 354,00	167 488,80
Laos-04	Conference hydropower and environment	292,5	133 315,00	1 797,50	166 508,85	301 621,35
Laos-05	Xeset Hydropower Station	336,5	156 472,50	80 076,21		236 548,71
Mala-01	Lilongwe Distribution and Rehabilitation Project, Malawi	96	44 640,00			44 640,00
Moza-08	Sector Progr. Energy, EDM. Alto Molocue-Gurue	10	4 000,00	60 331,50	116 665,00	180 996,50
Moza-09	Institutional cooperation, DNE			67 807,00		67 807,00
Nepa-05	National Hydraulic Research Lab.	41,5	18 127,50			18 127,50
Nepa-06	Melamchi fact-finding mission	182,5	73 000,00	64 874,00		137 874,00
Nepa-07	Indrawati III, fact-finding mission	13	5 330,00			5 330,00
Nepa-08	Assistance to MOPE	202	93 930,00	62 990,11		156 920,11
S.Afr.-05	Preparation for institutional agreement, NER-NVE	50	22 145,00			22 145,00
Tanz-04	Pangani Hydropower. Follow-up	18	7 850,00	1 240,00		9 090,00
Tanz-05	Kihansi Water Power Project	238,5	103 752,50	59 009,93		162 762,43
Tanz-11	Pangani River Training Project	84	39 060,00			39 060,00
Viet-03	National Hydropower Plan. Project preparation	275	127 875,00	263 443,25	160 741,27	552 059,52
Zamb-09	Evaluation, Power Transmission Rehabilitation Project	84	39 060,00		58 000,00	97 060,00
TOTAL		4430	1 993 065,00	782 990,10	521 269,12	3 297 324,22

APPENDIX A
TABLE A-2

TOTAL COSTS - INSTITUTIONAL COOPERATION 1998

Proj.no	Activity	NVE hours	Fee (charged	NVE exp.	Consultants	TOTAL
Ango-06	Ministry of Energy and Water Affairs, Energy Sector, Institutional cooperation	1 837,00	822 290,00	447 973,43	584 790,16	1 855 053,59
Bhut-02	Ministry of Trade and Industry, Division of Power, Mangde Chhuu	211,50	89 377,50	47 603,00	57 575,00	194 555,50
Ethi-07	Ministry of Mines and Energy, Energy Department, Institutional cooperation	644,00	492 700,83	698 062,29		1 190 763,12
Ethi-08	Ministry of Water Resources, Institutional cooperation	370,00	166 135,00	114 580,66	67 138,00	347 853,66
Laos-02	Ministry of Industry and Handicraft , Legal framework phase II	324,00	144 615,00	365 889,50	427 325,80	937 830,30
Mosa-09	National Directorate of Energy, Institutional cooperation	397,50	174 762,50	94 450,64		269 213,14
Mosa-10	Electricidade de Mozambique , Alto-Molocue-Gurue transm. line	29,00	13 775,00			13 775,00
Mosa-11	Electricidade de Mozambique, Gurue-Lichinga transm. line	6,00	2 850,00			2 850,00
Nami-04	Ministry of Mines and Energy, Institutional cooperation	364,50	571 726,00	443 585,66	249 723,18	1 265 034,84
Nepa-06	Ministry of Housing and Physical Planning, Project Document Melamchi.	551,50	133 920,90	232 356,60	39 056,00	405 333,50
Nepa-09	Melamchi Water Supply Development Board	340,50	161 737,50	113 069,20	136 505,00	411 311,70
Pale-01	Palestinian Water Authority, Institutional cooperation	433,50	503 588,00	545 926,65	42 172,39	1 091 687,04
Ugan-08	Ministry of Natural Resources, Institutional cooperation	1 650,00	737 480,00	695 461,24	168 386,00	1 601 327,24
Zamb-08	Zambia Electricity Supply Corporation, Financial Management and Accounting System	297,00	135 830,00	97 379,15		233 209,15
	TOTAL	7 456,00	4 150 788,23	5 669 009,55	1 772 671,53	9 819 797,78

APPENDIX B
TABLE B-1

COOPERATION AGREEMENT NVE – NORAD,
PLANNED ACTIVITIES 1999.

Project code		PROJECTS / ACTIVITIES 1999	Client		
NORAD	NVE		FAG	AMB eller I&N	Cooperating institutions
	Admi-01	General assistance, accounts, gen. secr. ass. Prep. of visits.	1535		
GLO 403.221	Admi- 01/26	Rural energy	** 80		
		World Commission on Dams	150		
		SIDA-NORAD seminar 20. januar 99	** 65		
		Legal work. - memo on Licencing Procedures - revision of report on Legal Framework - English translation of NVE "Veileder 1/98 – Konsesjonsbehandling av vannkraftsaker" (appr. NOK 40.000)	** 200		
		Small scale assignments to be identified	200		
Country specific assignments					
AGO 013	Ango-06	Energy cooperation			1600
	Ango-08	Water resource cooperation with DNA. Preparatory work		250	800*
BGD ***	Bang-	Rural electrification. Phase V-B. (?)			
	Bhut-02	Mangde Chuu			400
BSA 036	S.Afr	Institutional cooperation			700
CAM 020	Ceam- 03	CEAC – depends on further requests from CEAC			
ETH 016	Ethi-08	Energy Sector – institutional cooperation			1975*
ETH 017	Ethi-	Power distribution plan – 4 towns		150	350
ETH 018	Ethi-07	Institutional cooperation – Hydrology			600
ETH 019	Ethi-08	Institutional cooperation – Energy. Finalisation.			200
ETH 024	Ethi-	Finchaa penstock. Review.			
ETH ***	Ethi-	Mekanissa. Pending.			

ETH ***		Hydropower. Follow-up of feasibility studies – 4 catchments. Pending.	80		
LAO***	Laos-02	Laos - Legal framework, Phase II			100
	Laos-04	Conference hydropower & environment			60
	Laos-05	Xeset, follow-up?		(I&N): 80	
LAO ***		Hydropower	40		
MOZ ***	Moza-09	Energy sector – Institutional coop. DNE			2500*
	Moza-10	Alto Moloque Gurue.			150
	Moza-	Gurue-Lichinga			200
	Moza-	UTIP			
MWI	Malawi				
NAM 002	Nami-04	Energy sector. Energy legislation, institutional cooperation			1100*
NPL 004	Nepa-08	MOPE – DN, Coop./advise to DN.		40	
NPL 021	Nepa-09	Melamchi hydropower / Water supply.			500
NPL ***	Nepa-	Hydropower strategy	** 45		
	Paki-08	Satpara Dam Project			
PAL 004	PALE-01	Institutional coop. NVE – Palestinian Water Authority			2250*
PAL 120		Energy sector. I&N.			
SRV 030	Viet-03	National hydropower plan			1400*
TAN 101	Tanz-05	Kihansi Hydropower project	** 240		
TAN ***	Tanz-11	Conference/seminar on licensing systems			450
UGA 011	Ugan-08	Institutional cooperation, energy, MNR.			900
UGA ***	Ugan-	Rural electrification		160	
ZAM	Zamb-08	Zambia. Financial Management and Accounting System, Zesco			40
		Activities to be identified during 1999, Energy	200	600	
		Activities to be identified during 1999, Water Resources	70		
		Total	2905 /1535 = 1.9 m-y	1280 /1535 = 0.8 m-y	16275 /1535 = 10.6 m-y

* Including hours of expatriate long-term Advisers

** Assignments ordered by NORAD in the meeting.



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