This chapter was sent to Sweco AB to review for factual errors. The company was not invited to make editorial comments but was given the opportunity to submit a statement responding to the points raised. The company’s reply is attached. No factual corrections were offered. The text of the chapter therefore remains as originally sent to the company.

UPDATES

This chapter was completed on 17th February 2003. As with any industry, however, the hydro sector is by no means static: companies get taken over or merge, and their management may decide to withdraw from projects in which they were involved at the time of writing. The authors would recommend the following web sites for updates: www.sweco.se, www.irn.org

SWECO’s experience in dam building started in 1897, with the founding of VBB, now a subsidiary of SWECO. Mainly through VBB, SWECO has been involved in more than 50% of the hydropower plants in Sweden.1 Today, SWECO describes itself as “Sweden’s leading consulting engineering company”2 and the group employs 2,300 people with 40 offices in Sweden and 10 others worldwide. In 2001, the company’s profit amounted to $16.6 million.3

The SWECO Group consists of nine fully owned companies:

- **SWECO FFNS** – urban planning and architectural services;
- **SWECO VBB VIAK** – water, environment and infrastructure engineering (the biggest company in the SWECO group, accounting for 40% of sales);
- **SWECO Projektledning** – project management and consulting services;
- **SWECO BLOCO** – structural engineering consultants;
- **SWECO THEORELLS** – mechanical and electrical engineering consultants;
- **SWECO Industriteknik** – consulting services for the manufacturing, processing and power industries;
- **SWECO Position** – consultant firm for geographic position systems;

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3 Ibid, p. 2.
Dams Inc. 2: SWECO AB

**SWECO Energuide** – consulting firm in the energy sector; and

**SWECO Connect** – information technology development and support.\(^4\)

Several of these companies are involved in the hydropower sector. According to Björn Corlin, of SWECO International, approximately 2.3% of SWECO’s turnover is generated through hydropower-related activities.\(^5\)

The company is quoted on the Stockholm stock exchange.\(^6\) The largest shareholders in SWECO AB in January 2002 were G. Nordström and family (16.7% of shares and 36.7% of votes); Investmenaktiebolaget Latour (36.3% of shares and 23.1% of votes); and J. Gust Richert Memorial Fund (2.2% of shares and 10.3% of votes).\(^7\)

The SWECO Group covers a wide range of work in addition to hydropower. For example, SWECO has worked on city planning in Shanghai, web-based telephone directories in Oslo, power generation supervision in the United Arab Emirates and pulp mill design in Germany.\(^8\)

The SWECO Group’s first international contract was in 1902, in St Petersburg.\(^9\) Today, SWECO VBB VIAK has overall responsibility for international operations, and coordinates the international activities of the other companies in the SWECO Group. The Group’s international activities are marketed under the name SWECO International,\(^10\) which was registered in Sweden in 1961. The SWECO web-site claims that “Our business involves carrying out worldwide assignments, based on Swedish know how and international experience of different conditions and cultures.”\(^11\) Internationally, the company focuses on eastern Europe, Asia, Africa, the Middle East and Latin America.\(^12\)

SWECO has designed more than 120 hydropower plants and dams in 60 countries, with a total capacity of about 16,000 MW.\(^13\)

SWECO sees “the environment” as a future source of income for the Group. SWECO’s Annual Report 2001 states: “The environment is one of the core areas for our future ambitions. Environmental engineering in a wider sense offers enormous potential with growth of up to 20 per cent annually in the global market”.\(^14\) SWECO acknowledges that “the activities of virtually all SWECO companies affect the environment in some way,” but claims that “SWECO’s consultants have greater scope than most people to really affect the environment and make a significant and lasting contribution to sustainable development.”\(^15\) The company also claims that respect for human rights are an “integral aspect of the company’s responsibility”.\(^16\) This

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\(^{4}\) Ibid, pp. 5 & 9.
\(^{5}\) Corlin (2002), op. cit. 1.
\(^{10}\) SWECO Annual Report 2001, op. cit. 2, p. 47.
\(^{11}\) “SWECO International”, op. cit. 6.
\(^{15}\) Ibid, p. 16.
\(^{16}\) Ibid, p. 19.
statement clashes with the reality of some of the hydropower projects that SWECO has been involved in, particularly in Vietnam and in Chile (see below).

The company’s web-site states that SWECO “subscribes to the code of practice of the International Federation of Consulting Engineers (FIDIC). Compliance with this code is an assurance of SWECO’s professional ethics, status, competence and independence.”\(^{17}\) In addition, the major companies in the SWECO Group are certified under the International Organisation for Standardisation (ISO) to ISO 9001 (for quality management) and ISO 14001 (for environmental management).

Conflicts of Interest?
SWECO’s Annual Report 2001 discusses the “rigorous demands on the integrity of both the company and the individual employees, who must be professional and highly competent, act in the client's interest and remain objective and independent.”\(^{18}\)

Like many consultancy firms, SWECO faces a potential conflict of interest when asked to provide advice on a project for which it could later win lucrative future contracts. As one consultant working for a Scandinavian consulting company put it to Ann Usher, a journalist who has investigated the relationship between the Nordic hydropower industry and Nordic aid:

> “Consulting firms have a conflict of interest as long as they themselves may benefit from one outcome over another. . . . For example, if they find that a certain project is feasible, they are often in a good position to undertake the subsequent studies, design work and construction supervision associated with further project phases (which is often more profitable than the initial feasibility study).”\(^{19}\)

The situation the anonymous consultant describes is highly relevant to SWECO’s current position in Vietnam:

- In November 1997, SWECO (in association with Statkraft – see section on Statkraft) produced a review of the Vietnamese government’s Master Plan for (Hydropower development of) the Se San River. The Se San 3 was among the dams that this study recommended building.
- In 1999, SWECO and Statkraft produced a feasibility study for the Se San 3 dam.
- SWECO and Statkraft are both involved in the National Hydropower Plan Study, which will produce a list of proposed dams for five of Vietnam’s major rivers.
- In 2001, SWECO submitted a proposal to Electricity of Vietnam to undertake a study of the hydrological impacts of the Yali Falls dam, constructed on the Se San River.
- And, in January 2002, SWECO won the contract as consultant on the construction of the Se San 3 dam, about 20 kilometres downstream of the Yali Falls dam.

Sten Palmer, SWECO International’s representative in Hanoi, dismisses any possibility of a conflict of interest: “Our engineers [give] good advice in the best interest of our Client without reflection whether this is advantageous for SWECO or not”.\(^ {20}\)

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\(^{17}\) “SWECO International AB”, op. cit. 9.


SWECO and the World Commission on Dams
Lennart Lundberg, who is currently team leader for SWECO on the Song Hinh dam in Vietnam (see below), told the Norwegian journal *Development Today* in March 2001, “Sweco has no official position on the [WCD report]. We haven’t really reviewed it in detail. We don’t know yet what it will imply. Though there are some new issues, many we’ve been acquainted with for the last ten years. Basically, we think it’s a very good document.”

Björn Corlin of SWECO International stated, “SWECO has, without being directly involved, closely followed the process of the World Commission on Dams and has distributed copies of the report to out technical units for dams and environmental matters. . . . Further, in the annual SIDA-financed international course on ‘Hydropower development’ for engineers from developing countries, SWECO participants give lectures that include information and discussions on these WCD guidelines.” Corlin added: “In line with out general environmental policy, we are of the opinion that the guidelines and recommendations of the WCD are good and useful. As a standard measure we inform our Clients for hydropower and dam commissions thereof, if they should not already know about them. We have discussions with our Clients on the application thereof in each upcoming case.”

However, when asked whether SWECO has attempted to apply the WCD guidelines and recommendations to its work on the Se San 3 dam in Vietnam, SWECO International’s Sten Palmer replied, that it is “not at all applicable on the Sesan 3 Project, since SWECO’s assignment only includes advisory services as sub-consultant on details for the technological equipment, and consequently SWECO has no influence on the referred issues.”

SWECO AND DAMS
PANGUE, CHILE
In 1979, Electrowatt Engineering produced a feasibility study for the two-stage development of the Ralco and Pangue dams, the first of a series of dams proposed for the Biobío River [see section on Electrowatt-Ekono]. In 1990, the Chilean government approved plans for hydropower development on the Biobío River by ENDESA, Chile’s largest private energy company. In December 1992, the International Finance Corporation (IFC), the World Bank’s private sector arm, approved a $170 million loan to ENDESA for the 450 MW Pangue dam, the first of the six proposed dams on the Biobío River. Sweden’s Board for Industrial and Technical Cooperation (BITS) provided a $28 million loan, and the Norwegian Agency for Development and Cooperation (NORAD) provided a further $14 million. Ten European banks lent $100 million. Voest-Alpine MCE supplied hydromechanical equipment to the Pangue dam [see section on VA TECH HYDRO].

22 Corlin (2002), op. cit. 1.
In 1993, SWECO was commissioned by the Swedish aid agency, SIDA, to produce a review of the IFC-funded environmental study for the Pangue dam. SWECO’s ten-page evaluation, written by Dick Johansson and Carl Anne Schmidt, was highly critical of the environmental study and documented a series of inadequacies. Johansson and Schmidt describe an overall “vagueness” in the environmental study, and point to “the absence of detailed data . . . no field studies . . . lack of facts . . . no quotation of the number of people directly or indirectly concerned . . . and [no] established program for mitigation.” Nonetheless, Johansson and Schmidt concluded that “the environmental impact can be regarded as manageable” and suggested there were no environmental reasons for Sweden to stop funding to the project. Instead, the SWECO consultants noted that Chile had ratified the Convention on Biodiversity and argued that the development of the Pangue dam was in any case already underway.\(^\text{25}\)

The impact of the dams on the Biobío River on the indigenous Pehuenche people who live there have been severe. The Pehuenche were not consulted before the Pangue dam was started – the first of the cascade of dams proposed for the Biobío. The Pehuen Foundation, set up by ENDESA in consultation with IFC, was supposed to mitigate the socio-economic impacts of the dam. But a report produced in 1995 for the IFC, by anthropologist Theodore Downing, detailed the Foundation’s failure to address the problems. Downing concluded that the dam violated the human and constitutional rights of the Pehuenche people. Yet in April 1997, IFC and ENDESA signed a new agreement – without involving the Pehuenche in any negotiations – which allowed the Pehuen Foundation to assist ENDESA in removing the Pehuenche from the reservoir of the Ralco dam, the second of the dams on the Biobío.

The Pangue dam was completed in 1997, but since then has produced only a fraction of its expected output because of low rainfall in the south of Chile. Opponents of the dam argued all along that the Pangue was designed to operate in conjunction with the Ralco dam, a large reservoir dam immediately upstream of Pangue. An important role of the IFC was to assure funders in Pangue that the dam was a stand-alone project. However, construction of the 570 MW Ralco dam started almost as soon as Pangue was completed. The 3,400 hectare reservoir requires the eviction of 600 people, 400 of them Pehuenche. In December 2002, after more than six years of litigation, 84 Pehuenche families accepted land elsewhere in compensation for the land they would lose to Ralco’s reservoir. A number of families, however, are still refusing to move.\(^\text{26}\)

SWECO’s review of the EIS on Pangue, for Sweden’s aid agency, SIDA, could have raised questions about whether the IFC was in breach of World Bank guidelines in failing to conduct a thorough environmental assessment of the project. SWECO could have concluded that the project was a dubious target for Swedish aid. Instead, at a key point in the damming of the Biobío, SWECO backed the Pangue project, leaving the Pehuenche to face the destruction of their river and the flooding of their lands.

**URI, INDIA**

SWECO was part of the URICO Group which won the $560 million civil works contract for the construction of the 480 MW Uri dam on the Jehlum River in Kashmir.\(^\text{27}\) The lead partner in the

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\(^{25}\) Usher (1997), op. cit. 19, p. 139.

\(^{26}\) “Resettlement proceeding at Ralco site”, *International Water Power & Dam Construction*, December 2002, p.2


URICO Group was Skanska (Sweden) and other members included ABB AB (electrical equipment suppliers) and Kvaerner Boving (mechanical equipment suppliers from the UK). The project was funded with a grant from Sweden’s SIDA (700 million SEK): Sweden’s Board for Investment and Technical Support – BITS (concessionary credits); the Swedish Export Credit Corporation; Nordic Investment Bank; UK Overseas Development Administration; and the Standard Chartered Bank. SWECO was responsible for basic and detailed design, construction supervision, commissioning and training on the Uri dam.

The project, which was completed in 1997, is in a disputed area which regularly experiences clashes between Indian security forces and groups fighting either for a Kashmiri annexation to Pakistan or for an independent Kashmiri state. Kidnappings and assassinations of project staff have occurred (see section on Skanska). In addition, the resettlement arrangements have been the subject official criticism, which has highlighted continuing problems with compensation for those affected by the project (see section on Skanska).

**MRICA, INDONESIA**

From 1982, SWECO and Engineering and Power Development Consultants (a state-owned Japanese power company, currently being privatised) acted as design consultants on the 180 MW Mrica hydropower dam on the Serayu River, on the island of Java. SWECO was responsible for tender documents, basic and detailed design, construction supervision, commissioning and training on the Mrica dam.

The reservoir behind the dam flooded an area of 47 square kilometres. The dam, which was built during the Suharto dictatorship, was inaugurated by Suharto himself in 1989. The project was temporarily abandoned by the Indonesian government due to cost overruns and fears over the quality of its engineering. However, it was revived following extra loans from Sweden.

**NAM THEUN, LAOS**

In 1992, SWECO produced an update of the pre-feasibility study of Phase I and II of the “Nam Theun Hydropower Project”.

**XESET, LAOS**

The 45 MW Xeset dam was funded by SIDA, NORAD and the Asian Development Bank (ADB). In 1988, SWECO produced a report on the environmental impacts of the Xeset dam, which pointed out that there was a need for further detailed information. Despite this lack of information, SWECO’s consultants concluded that the environmental impacts would be focussed immediately downstream of the diversion dam in the dewatered section of the river.
The dam was commissioned in 1991 and cost approximately 26% more than anticipated. The cost overrun was partly financed by the ADB. Almost all the electricity generated by Xeset is exported to Thailand via transmission and distribution facilities funded by the World Bank.

In a 1994 report, the ADB stated: “The Xeset Hydropower Project is meeting the energy requirements of the southern provinces particularly during the rainy season.” However, according to a 1996 report by Thomas Adams, a Senior Consultant with the Canadian Borealis Energy Research Association, Xeset “has virtually no electricity output during extended periods in the dry season, thereby necessitating electricity imports from Thailand to supply the Xeset grid.”

**HAMDAB, SUDAN**

In 1987, SWECO was involved in studies on the proposed 1,200 MW Hamdab dam on the Nile River. The first phase of the dam would cost $1.5 billion. In June 2001, the president of Sudan, General Omar Al-Bashir, announced that “considerable strides” had been made in negotiations to fund the Hamdab dam. As well as producing electricity, the water from the reservoir is supposed to irrigate farmland for wheat production, “not only for attaining self-sufficiency, but also for export,” according to Dr. Abdalla Ahmed Abdalla, Sudan’s former Minister of Agriculture, and Dr. Hassan Osman Abdel Nour, a forestry consultant.

In late 1999, the London-based Sudan Archaeological Research Society carried out a survey in the area that would be flooded by the dam. The survey was a response to an appeal by the Sudan National Corporation for Antiquities and Museums (NCAM) for assistance in recording the area. The survey found that “rock pictures were abundant as were cemeteries of tumuli of post-Meroitic date and box graves of the medieval period” and highlighted “the immense richness of the region in archaeological remains.”

**MTERA, TANZANIA**

SWECO produced conceptual design, feasibility study, tender documents, basic and detailed design and was responsible for construction supervision and commissioning for the 80 MW

Mtera hydropower plant. The Mtera dam was built between 1977 and 1981 as an upstream storage reservoir for the 204 MW Kidatu hydropower plant. Between 1984 and 1988, a power station was built at Mtera with funding from SIDA, World Bank, NORAD and others.

SWECO produced a series of studies on the Mtera Basin before the start of construction. In 1994 SWECO carried out an evaluation which compared the environmental situation before and after the reservoir was filled. SWECO’s report makes the following claims for the project:

- sedimentation rates were no higher than expected;
- release of floating debris into the reservoir was gradual and slow;
- the spread of water hyacinths was a concern;
- in 1992, 20,000 tons of fish were caught by 2,150 registered fishers;
- the reservoir increased the biodiversity of the area;
- Water-related diseases including bilharzia, malaria, filariasis and onchocerca worms were found, creating varying degrees of concern.

The reservoir behind the Mtera dam covers an area of 660 square kilometres. Since the dam was built, the water levels in the reservoir have steadily declined. A report produced by the World Bank and Danida in 1995 blames the low level of water on drought, increasing irrigation upstream and poor operation of the reservoir. In October 1997, low water levels in the reservoir led to electricity rationing. An official from the state-run Tanzania Electric Supply Company told the Tanzania News Online, “the water level at Mtera Dam is now only 0.63 metres above the minimum,” which was the lowest level since the dam was built. At the end of 2000, the Mtera dam power station was temporarily closed down again, due to shortage of water.

In heavy rains, when the Mtera reservoir fills up, water has to be released which leads to flooding of farmers’ fields along the edge of the river.

A report produced for a UN Food and Agriculture Organisation (FAO) project states that in 1993, 1,547 tons of fish was caught in the reservoir – considerably less than SWECO’s figure of 20,000 tons for the previous year. The FAO report also pointed out that the area of the reservoir was only 65% of its full area and “additional size reduction is caused by vegetation in the western and shallow part of the dam”. The Ministry of Natural Resources and Tourism in Tanzania reports that the reservoir behind the Mtera dam is silting up.

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NATIONAL HYDROPOWER PLAN STUDY, VIETNAM

SWECO International is part of the team carrying out a $3.24 million National Hydropower Plan Study in Vietnam, funded by SIDA and NORAD. Statkraft Engineering and Norplan are the other members of the team carrying out the study.

The consultants working on the National Hydropower Plan Study will produce a list of hydropower projects that are to be the subject of further study. SWECO has already won contracts to carry out these further studies, for example on the Se San 3 dam.

Critics point to what appears to be a conflict of interest – the more dams that consultants like SWECO recommend should go ahead, the more potential work there is for dam-building consultants. Similarly, sceptics question whether consultants are likely to recommend that a dam in which they have had an interest, such as the massive Son La dam, should not go ahead. SWECO International denies any such conflict of interest, however. (See above, “Conflicts of Interest?”)

SE SAN 3, VIETNAM

SWECO is involved in studies on the proposed $292 million, 260 MW Se San 3 dam, which is planned to be built 20 kilometres downstream of the Yali Falls dam (see below). When construction was completed on the Yali Falls dam, the impact on downstream communities of the dramatically changed waterflow in the river was severe.

SWECO has been involved in a series of studies relating to dams on the Se San River. In 1998, SWECO (in association with Statkraft) carried out a “Review of the Master Plan [for hydropower development] of the Se San River”, with funding from Sweden’s SIDA. In their review of the Se San master plan, SWECO and Statkraft admitted that “No study has yet been realized on the impacts of hydropower development related to the changing flow conditions in the lower part of the Se San River in Cambodia.” The consultants even admit “some are concerned that the migration up and down the river of many species of fish, especially in Rattanakiri province, Cambodia will be severely impacted.” However, SWECO and Statkraft’s report recommended building the Se San 3, but not until after another dam, the Se San 4 had been built.

In February 1999, before any detailed studies of Se San 4 had been carried out, SWECO completed a feasibility study for the Se San 3, again with funding from Sweden’s SIDA. The feasibility study states that the Se San 3 dam will “extend the prevailing impact of the Yali Falls dam 20 kilometres further downstream” and explains how operating the dam “will be serious for aquatic life, and the fishing potential for Tip inhabitants [a community downstream] will more or less disappear”. The study continues, “Rapidly rising water [levels] after a shut down period may also create a potential hazard to the inhabitants [of the downstream area] particularly the children.”Remarkably, SWECO’s consultants also state: “the proposed projects in the Se San

55 Ibid.
River will, especially during the dry season, have a positive and important impact on the flow in the Mekong River.”

In July 1999, the Asian Development Bank commissioned a Project Preparation Technical Assistance (PPTA) to prepare Se San 3 for construction by the end of 2000. However, in June 2000, the ADB deferred a proposed $80 million loan on Se San 3, and announced that “during the implementation of the PPTA, and as seen during the commissioning of the Ya Li project, it was found that the downstream impacts were much more severe than had been earlier predicted, and reached well over the border into Cambodia”. The ADB offered to lend a further $1.8 million for further studies to come up with “appropriate environmental and social mitigation programs”.

In October 2000, the Vietnamese government announced that “it no longer needs ADB’s assistance to proceed with the Se San 3 hydropower project”, according to ADB’s web-site. In a letter to Aviva Imhof of International Rivers Network, Preben Nielson, ADB’s Deputy Director Infrastructure, stated, “ADB was not formally advised of the reason for this decision. However, we believe that it is due to concerns that further studies would result in further delays and there was still no guarantee that ADB would be in a position to finance Se San 3 once the downstream studies had been completed.”

In July 2001, the Vietnam News announced that “Construction work is set to begin on a Se San hydro-electricity plant”. SWECO won another contract on the Se San 3 dam in January 2002, this time from the Vietnamese government, to act as consultant on the construction of the Se San 3 dam. SWECO’s contract covers design, construction drawings and tender documents for the dam. The contract is worth approximately $700,000. Sten Palmer, group leader at SWECO VBB VIAK, is the project leader on the 10 month-long contract.

SONG HINH, VIETNAM
SWECO was part of the Nordic consortium of companies that built the 70 MW Song Hinh dam in the 1990s. The rest of the consortium included ABB (Sweden), Kvaerner Turbin (Sweden), Kvaerner Energy (UK) and Norconsult (Norway). Funding for the $142 million project came from Sweden’s SIDA ($36.4 million), the Nordic Investment Bank ($15 million), the Nordic Development Fund ($20 million) and Electricity of Vietnam ($85.6 million). SWECO carried out conceptual and detailed design and construction supervision of the Song Hinh dam.

About 2,300 people, including people of the highland ethnic groups Ede and Bana, were moved to make way for the 45 square kilometre reservoir behind the dam. In an attempt to address the problems associated with resettlement, SIDA funded a series of studies and hired Interforest, a
subsidiary of Jaakko Poyry from 1996. However, the problems were not completely solved. As Eva Lindskog, a consultant with Interforest, noted in 2000: “The first two villages [to be resettled] were the two model villages. They got land levelled as they should have, they got electricity, they have a garden around the house and they also got land for cultivation. In two of the other villages, they have not enough land for long term cultivation. We pointed this out in 1996 and it has yet to be resolved. It is a major headache.”65 In August 2001, the *Vietnam Express News* reported that 650 people from Ede and Bana ethnic groups who were resettled still did not have enough land.66

In March 2001, SWECO won another contract from SIDA– this time to monitor the environmental and social impacts of the Song Hinh dam. SWECO’s team leader on Song Hinh, Lennart Lundberg, worked until 1998 for Swedpower, when that company had a separate SIDA contract to monitor the construction of Song Hinh.67 The three-year contract involves training staff at Electricity of Vietnam to manage and monitor environmental and social impacts. SIDA’s terms of reference specify that the project must comply with the guidelines and recommendations of the World Commission on Dams.

SON LA, VIETNAM

In 1994, SWECO won a $500,000 contract to produce an inception study on the 3,600 MW Son La dam. The $4 billion dam would be the largest in Southeast Asia outside of China and would involve evicting about 130,000 people. Many of the people to be evicted in Son La and Lai Chau provinces belong to indigenous groups, including Thai, Yao and Hmong. The reservoir behind the dam would flood most of the rice paddies in Lai Chau province.

According to the terms of reference, SWECO’s inception study was to be the first stage of an effort to seek funding from international aid agencies.68 The study was funded by the Swedish Board for Investment and Technical Support (BITS). The World Bank funded engineering studies on the Son La dam in 1995; two years later, the Vietnamese government awarded the contract for a feasibility study to a Russian company, the Designing Research and Production Shareholding Company. According to SWECO company documents, SWECO carried out a feasibility study on the proposed Son La dam in 1995.69

In 1999, a joint venture of Harza, SWECO International and PricewaterhouseCoopers won a $1.3 million contract from the Vietnamese government to upgrade the plans to build the 3,600 MW Son La dam.70 The joint venture commissioned a review of project documents on the project to evaluate socio-economic studies and resettlement plans.71 In 2000, Harza/SWECO hired consultant John R. Bizer “to review the feasibility level resettlement plan to assist in preparing the studies for financing by multilateral or bilateral financial organizations.”72 According to Bizer, SWECO’s responsibility “was to review the Feasibility Reports and provide

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65 Eva Lindskog (2000), Interview with Chris Lang, 10 April 2000.
recommendations for additional engineering, environmental and social studies, revision of the proposed development, and to provide recommendations regarding the project to the World Bank.”

Bizer added, “As I recall, the local communities were not involved in the planning process to any great extent.” In response to a question about whether he believed the project conformed with the guidelines and recommendations put forward by the World Commission on Dams, Bizer replied, “Most of the countries of South Asia and Southeast Asia have rejected the recommendations of the WCD primarily because they are not culturally sensitive. I am not sure what the attitude in Vietnam is but I do think they also rejected the recommendations. Some of these societies work differently than what we as Westerners are proposing.”

In May 2000, the Vietnamese National Assembly asked for more studies on seismic conditions in the area, more information on relocation and compensation and feasibility studies of a scaled-down version of the dam. Professor Nguyen Tri Vieng of Hanoi’s Water Resources University told the South China Morning Post: “The main reason that the National Assembly has halted the project is because Electricity of Vietnam has not done enough preparation on the relocation and rehabilitation of people affected by the dam and the difficulty that would create in raising foreign capital.”

In March 2002, the National Assembly once again postponed a decision on whether to go ahead with the dam until the end of the year. Mai Thuc Lan, the deputy chairman of the National Assembly, told the Tuoi Tre newspaper, “The preparation for the Son La hydropower project has not been done carefully.”

However, in August 2001 government officials approved $660 million for resettlement. On a visit to Lai Chau province, Deputy Prime Minister Nguyen Cong Tan told the provincial authorities “to start resettling residents so as to finish relocation work by 2005.” Construction of a road to the proposed dam site started in May 2002.

YALI FALLS, VIETNAM
The construction of the Yali Falls dam, on the Se San River in Vietnam has led to enormous problems for communities in Cambodia, downstream of the dam. The Se San River flows through Cambodia to meet the Mekong at Stung Treng. When the dam was nearing completion in late 1999 and early 2000, a series of flash floods on the Se San River led to at least 32 people drowning in Cambodia. Surges of water two metres high also caused loss of property and livestock. Health problems are widespread, caused by the changes in water quality in the river and fish catches have been severely affected. The Asian Development Bank, in a press release in May 2000, acknowledged that the floods were a result of the Yali Falls dam: “Recently,

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74 Ibid.
78 “Work begins on road leading to planned hydroelectric plant”, Saigon Times, 7 May 2002.
unexpected heavy discharges from the Yali project upstream resulted in the deaths of a number of local people and property destruction”.

SWECO has submitted a proposal to Electricity of Vietnam to undertake a study of the hydrological impacts of the Yali Falls dam, constructed on the Se San River. The proposed Hydrodynamic Modeling Study (HDM) is supposed to model the flow in the river under normal operations of the Yali Falls dam and to study the effects of spillway water releases from the dam.

When the Hydrodynamic Modelling Study is completed, Statkraft Grøner’s consultants are to carry out an Environmental and Social Impact Study “to determine possible downstream social and natural environmental impacts”, according to the Terms of Reference produced by Electricity of Vietnam. (See also sections on Statkraft and Skanska).

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SWECO: DAMS AT A GLANCE

ARGENTINA
SWECO was involved in the 1,000 MW Alicura Andes dam. In 1993, Southern Energy, a US-based company, paid $178 million for a 55% share in the company that owns the Alicura Andes dam.

DOMINICAN REPUBLIC
In 1989, SWECO produced a feasibility study on the 100 MW Palomino dam.

CHILE
Pangue and Ralco dams on the Biobío River [see main text].

ECUADOR
SWECO produced the feasibility study, conceptual, basic and detailed design for the 320 MW Sopladora-Cardenillo dam which is due to be completed in 2005. SWECO carried out the basic design of the 180 MW Paute Mazar dam.

In January 1998, a team from SWECO International gave a presentation to SIDA staff on a private sector-funded hydropower project in Ecuador.

EGYPT
SWECO Energuide won the contract as consultant on the refitting of the hydroelectric power station at the Aswan dam. The contract includes assessing the condition of the power station’s generators and designing a proposal for their refitting. SWECO Energuide will carry out the negotiations with contractors and oversee and inspect the refitting. Germany’s KfW is lending $76 million towards the project, which is to be completed in 2007.

In 1998, SWECO carried out design and feasibility studies on the proposed 2,100 MW Mount Ataqa pumped storage hydropower dam. Between 1987 and 1989, SWECO produced the feasibility study, conceptual design and tender documents on the 5 MW Naga Hammadi dam. The Naga Hammadi barrage was completed in the 1920s but when the Aswan dam was completed in 1963, the river regime was altered together with the flow and operating conditions. The $378 million project New Naga Hammadi dam was part-funded by Germany’s KfW and the European Investment Bank. The dam is planned to be completed in 2006.

GREENLAND
SWECO won a competition for the design of a 12 MW power plant at Tasersuaq.

INDIA
Uri dam [see main text]. In 1990, SWECO carried out a feasibility study and conceptual design for the 70 MW Dhamwari Sundra dam.

INDONESIA
Mrica dam [see main text].

JAMAICA
In 1991, SWECO produced a feasibility study and conceptual design for the proposed 50 MW Back Rio Grande dam.

LAOS
Xeset, Nam Theun dams [see main text].

LATVIA
SWECO was involved in the 150 MW Kegum dam on the Daugava River, completed in 1939.

MALAYSIA
In 1990, SWECO carried out a feasibility study and conceptual design for the 150 MW Upper Padas dam.

MOZAMBIQUE
In 1986, SWECO produced a report entitled “Options on Feasibility” for the 14.5 MW Corumana hydropower plant on the Sabie River. SWECO’s report was a review of an earlier feasibility study carried out by Norconsult. The Corumana irrigation dam was built in 1983 and in 1988, SIDA and NORAD agreed to finance a power station at the dam.

SWECO is also working on a $3 million project to develop a “strategy for how Mozambique and Zimbabwe will use and develop the Pungue River”, according to a February 2002 company press release.

NICARAGUA
SWECO carried out detailed design on the 2 MW Los Canoas and design and tender documents on the 2 MW Wabule hydropower plants which were completed in 1990. SWECO was
responsible for construction supervision on both projects. The Los Canaos power station was added to an existing irrigation dam and the Wabule plant replaced an existing power station destroyed by lightning in 1979. SIDA was the sole funder of both projects. In 1990, SWECO carried out a final report on the two dams. A 1997 SIDA evaluation report stated that the two projects were operating at only 31% of their operating capacity.

PAKISTAN
SWECO was involved in the 370 MW Mirkhani dam.

PANAMA
SWECO produced a feasibility study for the 120 MW Gualaca dam. It was also involved in the 112 MW Rio Esti, which is being developed by AES. IFC is part-funding the $120 million project. According to IFC, key environmental and social issues associated with the project include: “noise, soil contamination, loss of vegetation, deforestation, solid waste, water quality, potential impact on aquatic life, watershed preservation, minimum flows, potential impact on tourism (whitewater rafting), land acquisition and resettlement for project related facilities, cultural property, social impacts (positive and negative), community benefits, and public consultation and disclosure.” IFC released an environmental impact assessment in April 2000.

PHILIPPINES
In 1997, SWECO worked on conceptual design studies for the 130 MW Kanan B1 dam in Luzon. Berger Klohn Crippen, an affiliate of the Louis Berger Group, was responsible for structured finance, environmental impact assessment, design and construction management on the Kanan B1 dam. In 1994, the Kanan B1 dam was among a number of hydropower projects that the National Power Corporation (NPC) of the Philippines put out to tender in an attempt to find private sector financing for the dams. After two rounds, NPC declared the bidding a failure, either because they had not received enough bids or because the bids were too high.

SUDAN
Hamdab dam [see main text].

SWEDEN
SWECO was involved in the 120 MW Storfinnforsen dam on the Faxälven River, completed in 1953.

SWECO produced the design and tender documents for the 36 MW Höljebro, the 54 MW Långhag, the 50 MW Bullerforsen, the 59 MW Kvarnsveden, the 46 MW Mockfjärd and the 48 MW Forshuvudforsen hydropower plants, all for Stora Kraft AB. SWECO produced the feasibility design and tender documents for the 32 MW Alfta dam, and the feasibility study, design and tender documents for the 15 MW Gideåbacka hydropower plant. SWECO produced conceptual and detailed design documents for the 25 MW Hissmofors dam.

In 1991, SWECO produced design and tender documents for the 5 MW Bruksfallet, the 40 MW Sikfors and the 13 MW Forshult hydropower plants. SWECO produced the feasibility study, design and tender documents and was responsible for construction supervision on the 6 MW Klingerforsen dam. In 1990, SWECO did the feasibility study, design and tender documents for the 13 MW Brunnsberg, the 6 MW Loforsen, the 22 MW Krakerud, the 16 MW Nederede and the 24 MW Holmen hydropower plants.
SWECO produced the detailed design for the 115 MW Ålkarleby and feasibility study, design and tender documents for the 16 MW Hallstahammar hydropower plants for the Swedish State Power Board. In 1989, SWECO produced design and tender documents for the 7 MW Lövhöjden, the 6MW Ålviken and the 1 MW Östuna hydropower plants.

SWECO is also involved in an enquiry into the failure of the Högsjö dam on the Selånger River.

TANZANIA
Mtera dam [see main text].

THAILAND
SWECO produced conceptual design, feasibility study and tender documents for the 10 MW Klong Thung Phen dam. A 1998 evaluation of SIDA-funded projects in Thailand stated that SwedPower (a Swedish consulting firm, and competitor of SWECO) managed to secure SIDA’s support for producing the design drawings of the Klong Thung dam, even though SwedPower must have known that the dam would not be built.

USA
In 1989, SWECO produced the conceptual design for the 2,000 MW Mt. Hope hydropower plant in New Jersey.

VIETNAM
Se San 3, Song Hinh, Son La, Yali Falls dams and SWECO is one of the consultants on the National Hydropower Plan Study [see main text].

ZAMBIA
SWECO was involved in the 900 MW Kafue Gorge dam on the Kafue River, completed in 1978.

Sources:
Dams Inc. 2: SWECO AB

“SWECO to refit one of the largest power stations in the world”, SWECO press release, 18 December 2001,
“SWECO to plan water resources in southeast Africa”, SWECO press release, 25 February 2002, SWECO web-site:
12 February 2003

Dear Sirs,

With reference to your letter dated 12th January 2003 and the attached draft version of your report on European hydro industry companies, we would like to give the following response, to be fully included in your final report without amendments.

1. Integrity and Responsibility

SWECO is a consulting engineering company established more than 100 years ago and engaged in over 20,000 assignments every year. Many of the projects in which we participate will make great impact on the development of the society and of the environment. The Consulting Engineer has to act professionally and with great integrity.

The role of the Consultant is to as objectively as possible study and evaluate the benefits and the consequences of specific programmes and projects, as well as recommend the solutions that serve the best interest of the project, the client and the stakeholders. In the end it is the Client that makes the decision, according to the procedures and regulations applied in the respective countries.

SWECO subscribes to the Code of Practice of the International Federation of Consulting Engineers (Fidic), with guidelines on ethics and independent conduct. SWECO is further certified according to ISO 9001 and 14001, which means that we are continuously audited according to these quality standards.

SWECO strongly contests the argument that there should exist a conflict of interest in the role of the Consultant, and that the overruling objective of SWECO should be to look for new lucrative contracts, irrespective of the technical or environmental performance of the project. Such malpractice would seriously strike back on us and tarnish our professional integrity and reputation. In our assignments SWECO is acting in the best interest of our Clients, and our performance is closely monitored by Clients and funding agencies, and there are no such simple shortcuts to win new contracts.

2. Decision-Making on Large International Projects
The global debate on large dams has created an immense challenge to improve the decision-making on large international projects for the development of water and energy resources, achieving sustainable human development on equitable distribution of costs and benefits. The World Commission on Dams (WCD) has developed a new framework for decision-making requiring that, for each and every water and energy development project, a full knowledge and understanding of the benefits, impacts and risks shall be presented to all parties concerned, as well as processes developed, that will build consensus around decisions reached.

SWECO recognises the recommendations and guidelines of the World Commission of Dams and we subscribe to these recommendations and guidelines within our given mandate. SWECO is committed to contribute to the dissemination of the guidelines and applications in the countries of our assignments. However we also recognise that the full application of these guidelines rest on policies and principles applied by different countries and international funding agencies, which are normally formulating the Terms of Reference that SWECO is to follow.

3. Specific comments to Projects
SWECO likes to refrain from giving any specific comments to the different projects mentioned in your draft report as the results of our assignments belong to our Clients. We are sure that the Clients are prepared to give you any information you may ask for.

However we like to inform you, that our assignment to prepare a National Hydropower Plan for Vietnam is not made to “produce a list of hydropower projects that are to be subject of further study”. The NHP is much more to develop a new decision-making tool for the government of Vietnam in the spirit of the proposals from the World Commission on Dams. The NHP is the assessment of a great number of water and energy development options and based upon a multi-purpose and equitable utilisation of the water resources in Vietnam and comprehensive environmental and social impact assessments.

We also like to point out, that SWECO is well aware of the importance of preservation of cultural heritages, as we were actively involved in the Salvage of the Abu Simbel Temples in Egypt, when the famous temples were threatened to be submerged and destroyed by the Nile waters, which would rise due to the construction of the Aswan High Dam.

The great challenge for the future will be to assess opportunities to develop water and energy resources and to select alternatives acceptable to all parties. SWECO as an independent and professional Consulting Engineer will be part of that process.

Yours sincerely
SWECO AB

Wigon Thuresson
President and CEO

/ Richard Olsson
Senior Advisor

17th February 2003