

ANNEX 10

Evaluation

**SUSTAINABILITY DIMENSION IN ADDRESSING POVERTY
REDUCTION
SUB-EVALUATION: FINNISH SUPPORT TO ENERGY SECTOR**

VIETNAM FIELD VISIT REPORT

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ACRONYMS

ACVIO	A Finland based company
ADB	Asian Development Bank
AFD	Agence Française de Développement
AFI	A Vietnam based company
CC	Concessional Credit
CDM	Clean development mechanism
CEMMA	Committee for Ethnic Minorities and Mountainous Area affairs
CIA	Central Intelligence Agency
CPRGS	Comprehensive Poverty Reduction and Growth Strategy
CSO	Civil Society Organisation
DANIDA	Danish International Development Agency
PD	Project document
EE	Energy-Efficiency
EE&C Office	Energy-Efficiency and Conservation Office (also called EE&Co)
EEP	Energy and Environmental Partnership
EIA	Environmental impact assessment
ENERFISH	A project name
ERAV	Electricity Regulatory Authority of Vietnam
ESCO	Energy service company
EU	European Union
EUR	Euros
EVN	Electricity of Vietnam
EXIM	Export Import bank
GCM	Generation Competitive Market
GHG	greenhouse gas
GOV	Government of Vietnam
GDP	Gross Domestic Product
HIV/AIDS	Human Immunodeficiency virus/Acquired immune deficiency syndrome
IBDR	International Bank for Reconstruction and Development
ICI	Institutional Cooperation Instrument
IDA	International Development Association
IEAP	Internal Energy Audit Program
JICA	Japanese International Cooperation Agency
KFW	German government-owned development bank
kV	kilovolt
kWh	Kilowatt per hour
LDU	Local distribution utility
LV	Low voltage
MDG	Millennium Development Goals
MFA	Ministry of foreign affairs
MoC	Ministry of Construction

MOIT	Ministry of Industry and Trade
MPI	Ministry of Planning and Investment
MV	Medium voltage
MW	Mega Watt
NAPS	A Finland based company
NGO	Non-governmental organization
NH ₃ /CO ₂	Ammonia/carbon dioxide
ODA	Overseas Development Aid
OECD	Organization for Economic Co-operation and Development
PC	Power Company
PDR	People's Democratic Republic
PPC	Provincial Peoples' Committee
PPP	Purchasing Power Parity
PRSP	Poverty Reduction Strategy Paper
PV	Photovoltaic
RCEE	A Vietnam based organisation
SEDP	Socio-Economic Development Plan
SME	Small and Medium Enterprises
T&D	Transmission and Distribution (of electricity)
TUV	A German based company
UN	United Nation
UNDP	United Nations Development Program
US	United States
VNEEP	Vietnam National Energy Efficiency Program
VTT	Technical Research Centre of Finland
WB	World Bank
Wp	Watt-peak
WTO	World Trade Organization

COUNTRY CASE STUDIES – BUILDING ON EVIDENCE FROM FIELD VISITS

VIETNAM

1 INTRODUCTION – OBJECTIVE & PURPOSE OF THE FIELD VISITS

The energy subsector evaluation aims at identifying specific results and achievements towards poverty reduction, stemming from the application of the sustainability concept to energy-related activities.

Of the four different mechanisms of intervention that the Ministry of foreign affairs (MFA) supports, the evaluation considers projects where the intervention is centred on the energy sector, particularly non-governmental organization (NGO) and bilateral projects. The analysis assesses the objectives and results of interventions at the global, thematic (cross-cutting issues such as gender, conflict resolution, adaptation, and disaster risk management), and implementation levels. Concessional credit mechanisms are also considered in depicting the context for and the articulation and the scope of MFA efforts in the energy sector, but are not evaluated as part of this mandate, as this mechanism is covered by another evaluation.

The extensive gaps remaining after the desk study phase underlined the necessity for the field visits in order to verify and supplement the findings of the desk review (phase 1). Field visits (phase 2) were conducted in four selected countries – El Salvador, Kenya, Nicaragua, and Vietnam. In order to answer the evaluation questions in a thorough manner and to make informed conclusions and recommendations, additional information was collected from local stakeholders with a priority focus on results, sustainability, ownership and Finnish value-added. Complementarity with other development partners involved in the client countries was also investigated.

2 BACKGROUND – ENERGY SECTOR IN VIETNAM

2.1 Country overview; development goals [Sources World Bank (WB), United Nations Development Program (UNDP)]

Vietnam has seen dramatic reductions in poverty rates and remarkable economic growth over the past two decades. It is projected to be one of the few countries to attain its Millennium Development Goals (MDG)s by 2015. The population was estimated to be about 86 million in 2007, with a growth of 1% in 2010. The country's real Gross Domestic Product (GDP) has grown at the average rate of 7.3% over the past ten years (EIA 2007), and remains at this level in 2010 despite the 2008-2009 worldwide economic recession. Vietnam joined the World Trade Organization (WTO) in 2007, “graduated” from an International Development Association (IDA) to an In-

ternational Bank for Reconstruction and Development (IBRD) country in 2009, and aims to be a developed, industrialized country by 2020.

The 2010 Vietnam Development Report describes improvements in moving towards decentralizing and devolving responsibilities to local institutions which has led to more efficient administrative services and increased accountability. Recent economic growth has placed pressures on government services and other institutions, such as the legal and court systems (largely over land rights disputes) and public services (sanitation, waste management, etc.), but also has increased the need for improved means of public involvement in policy and decision-making.

As Vietnam moves towards becoming a middle-income country, it still has a relatively low purchasing power parity (PPP) of \$3,300 per capita (2009). Nevertheless, Vietnam has moved from a 58% poverty rate in 1993, to about 20% in 2004 (Ahn Tuan 2009). Poverty is most concentrated among ethnic minorities of the mountainous regions, especially in the North, and is least prevalent surrounding the Southern economic urban center of Ho Chi Minh. The average rate of absolute poverty (<\$1.25/day), however, has rapidly declined to 12.3% (2009), which is currently lower than in China, India and the Philippines. In terms of wealth distribution, Vietnam has a Gini index of 37, and is ranked 78 out of 134 countries (CIA 2010).

The Vietnamese government has developed several policies to reduce rates of poverty, including the Comprehensive Poverty Reduction and Growth Strategy, or CPRGS (similar to a Poverty Reduction Strategy Paper (PRSP)). Also, at least two programs have a focus on long-term, or chronic poverty, and impoverished regions, namely: the National Targeted Programme on Hunger Eradication and Poverty Reduction; and the Programme on Socio-economic Development for Communes faced with Extreme Difficulties in mountainous and remote areas (also called Programme 135).

2.2 Energy sector overview, [Source WB]

Vietnam is a producer of oil and natural gas and was ranked sixth in 2006 among the Asia-Pacific oil producers. At the same time, it continues to import petroleum products due to a lack of refining capacity. Vietnam's most promising energy source is natural gas, with proven reserves of 600 bcm, which is expected to increase with the discovery of additional reserves.

Vietnam's electric power system caters to the country's resource endowment and geographic configuration. With water resources available in all three of the country's main regions, hydroelectric power has been the dominant source of power generation from the late 1980s. Thermal generation from coal adds base load capacity in the north and thermal generation from offshore natural gas has been developed in the south since the late 1990s, adding to small amounts of oil-fired thermal capacity. By the end of 2008, the total generating capacity on the system was 15,864 MW. A 500 kV backbone transmission line connects the regions and generation sources, enhancing the optimal use of resources during different seasons and as the generation mix and demand evolve. This basic configuration of the system is expected to stay the

same over the long-term as the overall system expands. Although the mix will continue to vary from year to year, as new large plants are added, hydro and gas are each expected to contribute about 40 percent of power generation, and coal about 20 percent, over the medium-term. Losses (technical and non-technical losses plus electricity for Electricity of Vietnam (EVN)'s own consumption) fell to an estimated 11 percent in 2008, down from over 20 percent ten years earlier.

The Government of Vietnam (GOV) recognizes the potential for renewable energy to contribute to the sustainable development of the electricity sector while also helping to close the crucial supply-demand gap, particularly in rural areas. In the past few years, developers (mostly private companies) have also shown increasing interest in exploiting renewable energy resources to sell electricity to the national grid.

The central task now for the power sector in Vietnam is to meet demands for electricity in sufficient quantity and of an acceptable quality, in ways that are as commercially and financially efficient as possible. Several issues arise if this task is to be accomplished in the short- and medium-term. They are:

- Optimizing power investments - particularly for generation;
- Financing the investments that must be made;
- Implementing the reforms in the power industry and restructuring EVN;
- Improving access and service quality; and,
- Addressing shortcomings in pricing and tariffs.

The economic growth of over 7 percent over the past several years is at the root of many of the issues in the energy sector; in particular, the growth of the GDP is creating increased demand while simultaneously meeting that demand enables the GDP to continue to grow. The electricity sector has met this challenge well. Between 1995 and 2008, household access increased from 50 percent to nearly 94 percent and annual per capita consumption increased from 156 kilowatt per hour (kWh) to about 800 kWh. In recent years, a supply shortage has become more visible though it decreased in 2008 as demand reduced during the economic downturn.

Industrial electricity use has now overtaken residential consumption, and accounts for nearly 50 percent of the total. Although the service sector has played a role, industry and household use have been primarily responsible for the growth in demand, and this trend is expected to continue. The share of agriculture in electricity demand, which is not an electricity-intensive sector, has fallen sharply. Rapid increases in industrial electricity use are following rapid growth in the manufacturing sector. Light industries, that have grown rapidly often tend to increase power use per unit value added as development proceeds, due to increasing automation, packaging and (for food, beverages and textiles) increased use of cooling. Also very influential on demand growth has been the growth in household appliance ownership in urban areas as disposable incomes have grown from since the mid-1990s.

In line with Vietnam's socialist market economy, public ownership dominates the energy sector, but increasingly, market forces are becoming more prevalent and private sector participation is expanding. The GOV passed a market-oriented Electricity Law in November 2004 followed by the establishment of the Electricity Regulatory Authority of Vietnam (ERAV) in 2005. The implementation of a roadmap for reform includes the establishment of a Generation Competitive Market (GCM) and unbun-

ding of the sector, with separation of ownership of generation, transmission and distribution.

Key players in the sector are:

- Vietnam Electricity (EVN), the main electricity provider, which owns about two-thirds of all generation in Vietnam and owns and operates the transmission and distribution networks through Power Companies (PCs).
- The PCs are in charge of power distribution from 110kV downwards, primarily in the medium voltage (MV) distribution systems, the low voltage (LV) distribution to the main urban areas, and LV distribution in some rural areas.
- The local distribution utilities (LDUs) handle the low voltage network in many rural areas, created from the need to share costs between the central budget and provinces, communes and electricity consumers.
- The Ministry of Industry and Trade (MOIT) has first-line policy and supervisory responsibilities for the energy sector, both as the “line ministry” and as the ministry with oversight responsibility for state-owned companies. MOIT is responsible for supervising implementation of government policy, and recommending and drafting major policy reforms for government adoption.
- The electricity regulator (ERAV) is responsible for the regulation of the sector.
- The Ministry of Planning and Investment (MPI), is responsible for the preparation of the country’s overall economic development plans, and review and provision of recommendations to the Prime Minister for all projects using public funds or other resources.
- Provincial Peoples’ Committees (PPCs), which have responsibility for local government, including all government functions delegated by the central government.

3 MFA INVOLVEMENT; HISTORY OF MFA INVOLVEMENT IN COUNTRY, SECTOR

3.1 Overall Finnish presence in Vietnam [Source MFA]

Vietnam is considered to be one of Finland’s eight long-term partner countries. Recent cooperation has focused on the forest sector, water management, rural development, the support to poverty programmes, and on Vietnam’s contribution to the United Nations One United Nation (UN) initiative where Vietnam is among eight test countries for the streamlining and coordination of the engagement and response of all UN agencies. Local cooperation funds have been aimed at developing good governance, strengthening human rights, and supporting the environment and the private sector. Bilateral and programme-specific funding totalled about € 15.6 million in 2008 (MFA 2010).

The main frameworks guiding Finnish support are Vietnam’s Socio-Economic Development Plan (SEDP), 2006-2010), and the Development Policy Programme of the Finnish Government (2007). Vietnam will soon begin implementing the SEDP for 2011-2020, having industrialization (by 2020) as one of its targets. Finland’s Develop-

ment Policy Program (2007) emphasizes the attainment of MDGs and eradicating poverty through economically, ecologically and socially sustainable means. This includes activities in greenhouse gas emissions (GHG) mitigation, as well as adaptation to climate change. Also, in preparation of aid potentially diminishing with time, Finland is committed to developing the knowledge-base of Vietnam, thereby enabling full ownership of development activities and a transition to long-term intergovernmental cooperation (MFA 2008).

As of May 2008, there were 22 concessional credit projects under implementation or in the planning stages.

3.2 Finnish support to the energy sector in the last 10 years

The Finnish energy interventions in 2000-2009 that have been reviewed in this evaluation, included two bilateral projects, one global/multilateral pilot project, and five concessional credit projects (See table below). Another regional project involving Vietnam, Thailand, Lao People's Democratic Republic (PDR) and Cambodia, the Energy and Environment Partnership programme for the Mekong was designed during 2009 and is in the very early stages of implementation. Vietnam comprises 87.5 per cent, or € 4,212,783, of total Finnish disbursements towards energy sector projects in Asia (excluding China which is at a different scale of intervention) or € 4,815,332, from 2000-2009.

Project Title	OECD Code	Modality	Technology/Type (OECD category)	Disb. Period (2000-2009)	Total Disb. € (2000-2009)
Internal Energy Audit Program (IEAP)	89843901	Bilateral	Energy policy and management	2007 - 2009	€ 636,498
ENERFISH (biodiesel from fish waste)	76908001	Bilateral	Power generation/renewable sources	2009 -	€ 533,500
Application of solar energy to mountainous and ethnic minorities areas of Vietnam	76907001	CC	Solar energy	n/a	-

Mekong Energy and Environment Partnership	-	Bilateral	Renewable / Energy Efficiency	n/a	-
Transformer station to Power Company (PC) 3	76902901	Concessional Credit (CC)	Electrical Transmission and Distribution (T&D)	2000-2003	€ 144,400
Electricity station	76903801	CC	Electrical T&D	2000-2008	€ 1,474,534
Renovation and enlargement of distribution network	76906401	CC	Electrical T&D	2004-2009	€ 840,451
Electricity distribution system	76907401	CC	Electrical T&D	2007-2009	€ 583,401
				TOTAL	€ 4,212,783

Table 1 *List of Projects funded by MFA in Support of Vietnam's energy sector, 2000-2009.*

At the time of the writing of this report (with data from December 2009), there were three new concessional credit energy projects in the pipeline, with a total commitment of € 22.6 million (Embassy of Finland in Hanoi). These projects consist of electrical supply network upgrading (€ 11 million), solar energy to mountainous villages (€ 5.3 million), and rural power network rehabilitation (€ 6.3 million).

The following section will provide a brief background on each project, a basic project evaluation review and when relevant, the key project-related findings. The findings across all projects will be developed later on in part 4 of this country report, following the 10 MFA questions outline.

The review focuses on the first 4 projects listed in the table, but cross-referencing and joint stakeholder visits related to the other four projects were also done in cooperation with the Concessional Credit evaluation team.

3.3 Projects background and project-related findings

This section reviews project-related elements and conclusions in order to provide background information on issues that are specific to a given project. The next section also provides the analysis common to all project reviews in Vietnam following the 10 question format provided by EVA11.

Internal Energy Audit Program (IEAP also called “Vietaudit” – Bilateral 89843901)

Project design. This project is one the two projects for which site visits were done by the mission in Vietnam. It is a bilateral project although different in design from classical bilateral projects in that the Embassy was not involved in its delivery and the work was directly contracted to the project sponsors under the coordination of VTT, the Technical Research Center of Finland, with key support from Motiva Oy, a Finnish expert company promoting efficient and sustainable use of energy and materials and RCEE, a Vietnam based organisation working on research, consultancy and technology transfer activities for energy and environment. The project represented an early test or example of what has later developed into the Institutional Cooperation Instrument, currently used in Laos and Cambodia, for example.

The final project report, dated January 2010, provided self-reported information on the project implementation and its intended impacts. The stated key objective of the Vietaudit project was to support the Vietnam National Energy Efficiency Program (VNEEP) by strengthening the institutional build-up of the Vietnam Energy-Efficiency and Conservation Office (EE&C Office) and enhancing the Vietnamese capacity for energy auditing and by providing technological advice on cost-effective measures or opportunities to be implemented. The final report states that the project was designed in such a way as to offer the whole pallet of energy audit expertise – from general, to simple, to ever more complicated cases – mimicking (and hopefully accelerating) the ‘natural’ development of audit capacity expertise in Vietnam. It also states that special attention was paid to follow-up activities such as evaluation, business opportunities and possible carbon financing in order to turn the project into a sustainable process. In addition, it claims that the design is transferable, in the sense that it could also be applied in other countries.

The Project was composed of nine work packages centered on two main areas of expertise: auditing and a technology-transfer. Audit capacity building and technological advice were performed or given in the different sectors in close cooperation with the Vietnamese MOIT and the Ministry of Construction (MoC) through co-ordination of the EE&C Office. In general, the report states that the technology transfer component followed the audit components based on audit recommendations but that sometimes technology transfer was based on opportunities found in locally available technologies. The target groups listed by the Project were managerial personnel of the Vietnamese ministries involved, especially selected persons from the EE&C Office, supplemented by personnel of the regional offices and plant management. Another important target group was the personnel of Small and Medium Enterprises (SME)’s who wanted to increase their auditing expertise (e.g. AFI, a Vietnam based company) and/or wanted to develop into an Energy service company (ESCO)’s (e.g. RCEE). Last but not least, and with a particular view to sustainability, high level technology transfer was to be targeted at the Hanoi University of Technology. It should be noted that the selection of participant trainees and audited industries was made by the Vietnamese counterparts of the EE&C Office, thus ensuring ownership. Yet the lack of involvement from the part of the Finnish side might have resulted in some of the problems to be described later.

In addition, the report comments on intra-Finnish co-operation and states that co-operation between VTT, Motiva and Syke within this project was excellent. It goes on to say that the roles of the different institutes were at the same time 'additional' and 'synergetic' and quotes senior staff of the EE&C Office of Vietnam as saying that 'the Finnish auditing method is unique because it combines the basic Motiva approach with real hands-on VTT technology transfer advice'. The report concludes by recommending further investigation of such cooperation opportunities in the future and provides a list of 15 possible activities that could be developed further for Vietnamese-Finnish cooperation in energy and environment.

Site visit and project impact. The final report provided good insight and explanation of the activities undertaken and is complemented by 12 highly technical reports that were not reviewed in this evaluation as this is not a project evaluation. However, the final report remains a self-evaluation report with no independent evaluation provided and there was a need to cross-check some of the statements made by the implementing entities, namely VTT, Motiva on the Finnish side and RCEE on the Vietnamese side. Interviews took place with government, the EE&C Office, and people trained under the project. The sites of two audit recipients, Tisco steel company and Hiep Thanh seafood, were visited.

All stakeholders met lauded the high quality of expertise brought by the Finnish entities, both from a technical standpoint (best practices and state-of-the-art technology) and from a coordination and managerial standpoint. In addition to the high level of technical knowledge brought, the transfer of project planning and management skills was actually mentioned by many "trainees" as a major value-added to their own set of skills and as something not readily available elsewhere. It was even mentioned to be a competitive edge by some in the burgeoning auditing market. All entities who were met and who benefitted from "on the job" training, stated that they are still using skills learned and that they have reproduced the methodology into new audits, either in the private sector or as tools in further training sessions. It should be noted that the sample of "trainees" was provided by the EE&C Office and that the Hanoi University of Technology declined the meeting, considering it as irrelevant, therefore, some bias may exist in these results. However, training sessions took place, audits were done, reports provided as contracted, and Clean development mechanism (CDM) proposals were written. The wrap-up workshop was well known and appreciated by key stakeholders, including international donors. Thus the energy auditing and training part of the work can be considered as delivered and as a success.

There was however some reservations stated on (i) the cost-effectiveness of the whole exercise (noted to be 1.1M€ in the inception report), as key government officials stated that with other untied funding sources, about 3 times the same amount of audits could have been done. It was also reported that another bilateral donor, with approximately the same budget as Vietaudit, was launching a 3 year-long training program in the same field of Energy-Efficiency (EE), with repeated training sessions and a long-term in-field presence, unlike the one-off training sessions of Vietaudit.

More problematic are the statements by the sample of end-users or audit recipients who were met directly (two large industries) or heard indirectly (hotel and one industry), regarding the final use and value of the audit recommendations. In fact, while all

lauded the high technical knowledge of the Finnish auditors, they all stated that few of the recommendations were or would be implemented. This is not because these recommendations were not valid (albeit the adaptation to highly complex technology in the Vietnamese context was mentioned as an issue), but rather the means, knowledge and will to implement all but the most simple ones were missing. In fact, two years after the initial audits (in 2008/2009) little more than the most basic recommendations had been implemented, namely: improved lighting in hotels (a rather standard action now where many high-end hotels implement auto-switch keys in order to save fuel during blackouts), and the simple repair of the loading dock/truck door seals for the seafood company.

Of the nine recommendations listed for the Tisco steel company, only two were implemented. The decision to implement both was made before the audit took place. In fact, for one, the equipment imported (from China) did not function well and the energy consumption has increased rather than decreased. It is highly likely that Finnish equipment would have worked better, but the damage is nonetheless done from the perspective of company management. They have seen highly trained Finnish consultants confirm the value of an action that backfired (even if through no fault of Vietaudit). Tisco management feels that they had tried a particular energy efficiency initiative, which resulted in wasted investment, leaving them in doubt of the value-added to their bottom line of such energy efficiency measures. These results seem to be confirmed by another large industry, the Pha Lai power plant, (that was not visited but for which a key stakeholder in the Vietnam National Energy Efficiency Program (VNEEP) provided the information) where it had been requested that the audit be redone by another auditor in order to provide relevant recommendations directly to the recipient.

In such cases, audit recommendations and their related CDM proposals, without indications or links to financing mechanisms and to companies that can accompany the implementation of such recommendations, amount to little more than another shelved report.

This raises the question of effective impact and sustainability of the intervention, which seems to be limited to building the capacity of auditors with little effective technology transfer beyond the early capacity building phase. This proves to be a rather narrow definition of technology transfer, which would in fact mostly happen in the implementation phase of the audit recommendations, a phase not covered by the project and to which little to no reference was found. In such a case, there are few answers to provide to the Tisco (steel) management company's question: "What is in this for us? We spent time and resource for these visits and have little actionable outcome." They went on to say that partnering and collaborating with an actual Finnish steel company and recommendations backed by effective investment capacities would be more useful.

It seems that the problem behind the value-added of Vietaudit to Vietnamese end-recipients can be summarized from the following extract from the Vietaudit report: "The main idea behind an energy audit performed abroad is to provide information about the real (local) situation. This information can then be used for focused marketing, and thus it benefits the Finnish companies who are working in the fields of en-

ergy efficiency improvement, consulting and/or energy and process equipment. (p141).” Framed this way, the project may have reached some of its additional objectives as a potential export mechanism but the development aspect is therefore blurred. Additionally, without further funding from donors or other sources to implement the recommendations, very few energy savings will occur as a result of this project. In this, the Vietaudit meets the classical limits of the development of an energy efficiency market, limits for which entities such as the WB, Asian Development Bank (ADB), Japanese International Cooperation Agency (JICA) or Danish International Development Agency (DANIDA) seem to be working with more efficiently today. DANIDA representatives who were met also deny the claims by VTT that their new project be inspired, derived or resulting from Vietaudit, thus removing the related claim of continuity and sustainability made by a VTT representative.

Lessons learned. There are several lessons to keep from the mitigated results of this project.

- The Embassy stated that it was involved very little in the design, approval and implementation of the project. This likely contributed to the misunderstandings noted by the evaluation team between the EE&C Office and the Finnish entities as the cultural and economic backgrounds are very different between the two countries. The Finnish partners evidently did not have sufficient experience or comprehension of these differences.
- The project seems to be self-reported and self-evaluated. Since the key implementing partners are state-owned, this may not pose procurement issues but since several of the impacts claimed were found to be unsubstantiated by the evaluation team (which only did a sample check, not a thorough review as it is not a project evaluation), an independent evaluation is needed.
- The project was implemented over a long period of time but the actual training and auditing components were very limited in duration to a few one-week intensive activities. A longer term commitment by the Finnish counterpart to a repeated presence and evolving capacity building would be more likely to have an effective impact. In addition, it would be beneficial if the local institutions such as the Hanoi University of Technology would receive special, more tailor-made training modules for selected teachers, who would be used as trainers and focal points in future auditing activities.
- The value added to the end-recipient is unclear. A more positive outcome could have been reached had this project been a part of a concerted program, possibly identifying Finnish concessional credit that would be directed towards actual implementation of audit recommendations in coordination with the EE&C Office. At the least, some follow-up support should be provided to recipients who would be interested in looking into implementation, both from the technical and financial standpoint.
- The activity should be clearly labelled as an export mechanism or as a development mechanism. Either one has its value but mixing the two the way it was done in this project is problematic. When the final report, shared with the recipients, states the potential benefit to Finnish companies of each measure proposed, one wonders whose economy is being targeted for development. Furthermore, when both aims

are mixed this way, it leads to claiming social or environmental outputs so as to be able to “check the box” rather than actually pursuing them as a core impact.

- The adequacy of the technical solutions proposed (not of the technical analysis) is questioned. While Vietnam is now considered to be a middle-income country, the level of development of its economic sectors varies dramatically and many advanced solutions that are standard in Finland may not be adequate in a country that sees many hours of load shedding on a weekly basis. This would require a more detailed assessment when project level evaluation is carried out, as recommended above.

Biodiesel from fish waste (ENERFISH-Bilateral: 76908001)

Project design and early implementation. Fish farming and processing plants in Vietnam produce frozen fish fillets for export to Europe and United States (US). Approximately one third of the fish is produced in fillet, the rest being treated as fish waste. The Hiep Thanh Seafood Company, a key player in the market produced 12,000 tons of catfish fillet in 2007 and has roughly doubled its capacity since then. Currently, the waste is sold to other companies that use them as input for production of fish oil and animal feedstock. In addition, the Vietaudit analysis of energy consumption, in which Hiep Thanh seafood was one case-study, showed that over 80% of the energy used was going towards the freezing of the fish products. It should be noted that unlike many other plants seen under Vietaudit, Hiep Thanh seafood is a Joint stock company, running under classic private-sector rules, a point that influences decision-making and choices.

The initial contacts with Hiep Thanh seafood started in April 2008 under Vietaudit, discussed earlier. This led into the Enerfish EU-funded proposal for the Enerfish project that officially started in October 2008 for a 36 month duration. The ENERFISH project aims at developing and demonstrating integrated renewable energy solutions for the fish-processing plant, based on (i) the use of fish-waste to derive high efficiency poly-generation fuel that can be used in generators in place of mineral oil; and (ii) the installation of new environmentally safe cascade cooling/freezing system using combined ammonia/carbon dioxide (NH_3/CO_2) rather than the current R404A that has a very high global warming potential. The transformation of fish into oil is supposed to demonstrate the value of limited use of electricity (in normal operation) or mineral oil (in load shedding situation), while the NH_3/CO_2 cooling system is supposed to demonstrate the value of environmentally safer systems and the reduction of the energy consumption for cooling by 13 to 18%.

The Finnish subsidy to ENERFISH was requested as co-funding by Finland of 533k€ towards a 2.9 M€ European Union grant for the Enerfish project that had been won by a Finland-led consortium of companies under the “energy and useful waste” financing window of the 7th European Union (EU)-Framework Program 7. The demonstration project included studies, assembly and operation of the fish oil processing and burning plant, followed by dissemination of the newly tested technology in Europe and possibly in other Asian countries.

Site Visit and potential project impact. At the time of the visit, in June 2010, two years into the project, the only thing that could be seen was a new building that will house the

Enerfish/biodiesel equipment in the fish processing plant extension that will also house another 1,000 workers. It should be noted that, although the evaluation team has no technical knowledge on this type of system, with no more than a light low wall separating the workers from the new and untested fish-oil plant, the safety of the workers is an issue that could be raised. The fish-oil equipment was being home-tested before being shipped at the moment of the visit and the plant representative stated that it was expected by year-end. This is at least 6 to 8 months behind schedule and less than a year before project end leaving little room for error or trouble-shooting. This may affect the needs and means to build up human capacity for maintenance and repair of the equipment during and after the project cycle.

A key stakeholder involved in the project stated that this late shipment of the fish-oil system was due to slowdowns caused by delay of a final co-financing decision on the part of MFA. It was clarified that lawyers at MFA were adamant about applying an open Finnish tender for activities/demonstration equipment in addition to the open call competition undertaken (under the regular EU rules) under which the EU partners were already selected in an open bidding through the EU-Framework Program 7 to deliver the project. This additional tender, with a known outcome, was said to be responsible for delaying the project and even endangering it as EU-FP7 informed the partners that the timetable had become critical and further delays would result in the expiration of funding before the project completion.

The new NH_3/CO_2 cooling system was also expected, with no clear delivery date known to the plant representative. In fact, the fish plant management had already installed a conventional system to the plant extension which was intended to use the new cooling system in order to ensure both (i) on-time start of their new plant extension in case of other delays in this component and (ii) redundancy of the new and untested system in case of failure.

The plant management openness to the proposed systems, partly based on the load shedding problem explained further below, and partly based on a stated will to do good for the environment, was also clearly reinforced by the fact that the investment cost of the two systems would be supported by the EU. While this seems fair, as they should not support the cost of untested technologies, it will however limit the replication aspect of the project as the investment risk has been transferred to a donor. As stated by plant management, the systems are very interesting and they are cautiously optimistic about their use, but it is still a system on paper. When asked if based on the paper information they (plant management) would consider financing a second phase using their own funding, they politely provided no answer. Under the plant management's current understanding, the two systems are to be run for 3 years as a type of Own Operate and Transfer scheme with operation by Vietnamese partners AFI and with bi-annual meetings with Finnish Vahterus and German TUV to deal with any problems. It should be noted that following this understanding, the Enerfish consortium would provide "after-installation" follow-up and maintenance for at least two years after the exit date stated in the EU project, a point that does not appear clearly in the documentation both in terms of write-up and budgeting. Indeed, most problems typically occur after the project cycle when warranties have expired. In order to meet the future requirements of maintenance and repair, there should be sufficient

time allocated for testing and learning the characteristics of the equipment as well as for training not only of users but also of supportive problem-solving experts. This needs to be included in post project cycle maintenance and repair topics as well as in the agreements. These actions are particularly important when new and demonstration types of technologies are introduced, such as in this case.

With constant power load shedding or brownouts from the grid (a situation witnessed all across the country by during the mission), with a frequency of about 2-4 times a week for 2-6 hours each time, this has a direct impact on the operation of the fish-plant. In this context, the plant management was very keen on the fish-oil plant that could provide a solution to the current added costs of fuel purchase that is necessary to run the back-up generators. This seems to reinforce the logic behind the fish-oil project, however there are alternatives to the fish-oil plants (such as the current diesel generators even if they are more polluting) and the economic logic is therefore dependant on electricity and oil prices, frequency and duration of load shedding, and on alternative uses and prices of fish waste. It should be noted that the initial economic analysis (provided in October 2009 by the project proponents) was very prudent on the economic validity of the fish-oil project, an indication that it was not an obvious choice for Vietnam but rather a project justified by the potential value-added to the EU partners. Also, seemingly not well grasped by the plant management, is the potential impact of the internalisation of the treatment of fish waste. In the current situation, the fish waste is sent out immediately by truckload, and therefore 2/3 of the inputs are externalised within hours so that the responsibility no longer rests with the plant. With the new arrangement, the waste will have to be stocked before it becomes fuel, or after it has been transformed into fuel, and even possibly in both phases. Hence, the storage of 20,000 tons of fish waste, in one form or another will become the plant's responsibility, with potential ripples into the fish fillet production chain. The economic logic behind the NH_3/CO_2 cooling system is more simple and once the investment cost is removed it is merely dependant on reliability and effective materialisation of the claimed energy savings. Of course, in either case, when considering scale-up potential, the equations need to be revised to include the delta of investment costs, for which the evaluation team did not have any information.

The environmental and social potential impacts are also unclear and according to EU and Finnish project document (PD) guidelines, they should be studied at such a scale that they could be used in actual planning of introduction of new systems and technologies.

In the case of the NH_3/CO_2 cooling system, the environmental impact is expected to be positive. It is due, in part, to the lower consumption (to be verified) as well as to the lower greenhouse gas impact in case of leakages during operation or during commissioning/decommissioning. The environmental impacts will depend largely on the replication in other cooling plants which in turn will depend in large part on the demonstration of the system viability over a period of time and on the investment costs. It should be noted that in the case of Hiep Thanh seafood, since a back-up conventional system will be in place that will normally not operate, the potential risk of leakage of harmful greenhouse gas could actually be increased by the project since eventual leakages in the back-up system are less likely to be discovered in a non-function-

ing system. No social impact is expected from this component.

In the case of the fish-oil system, as mentioned, the environmental impact could be positive depending on the amount of fossil fuel saved during load shedding and on the CO₂ content of the grid electricity (which is primarily based on hydro-generation and gas – see energy system intro). The key issue is that the fish waste is currently valued both economically and physically, therefore transforming it into oil for burning does not “value a lost resource” but merely adds a different use to it. Unless the current valorisation of fish waste is particularly polluting or wasteful, no environmental benefit can be expected from the change of use. And if the fish waste is currently valued into food-stock of any type, one can wonder what the implications are in terms of the key debate on “fuel versus food” held for similar biofuels (it should be noted that fish are “renewable” only as long as they are not overfished). Similarly, the question of the social impacts of the project seems not to have been mentioned/discussed in the documentation provided. For instance, one can wonder what would happen to the downstream industry that uses the fish waste if they are transformed into fuel-oil. While the change in the use of the fish waste may be neutral to Hiep Thanh seafood (with the caveat of the newfound responsibility for fish waste mentioned earlier) it may not be the case for the industries that depend on such waste for their inputs. Since this is not a project evaluation, this issue has not been studied further but given that (i) Hiep Thanh is said to be a key market player in the country, (ii) Vietnam industries are very labour intensive (1,800 people to treat the 40 kg of tons of fish as input for example) and (iii) European technologies tend to be much less labour intensive, there is a high likelihood of very negative social impacts in terms of a resource price increase and job losses in the sub-region of the plant.

Lessons to be learned. The project is still under implementation and there was little information available for review, therefore, lessons are tentative.

- In terms of project design, the value of coupling a purely new technology EE measure (NH₃/CO₂ cooling system) with a renewable/waste use one is not self-evident. These are two independent systems that can (and may very well be) be installed and function separately.
- There are questions on the relevance of funding for such a project from the development cooperation standpoint. The downstream impact on the existing value chain of transforming fish waste into fuel-oil was not studied; waste management was not well taken into account; and the review of economic and environmental validity were very tentative. If the justification is purely for the benefit of EU companies, then this should be clear and should not be included in cooperation, and the wisdom of testing new technologies for EU-use in a developing country should be thoroughly explained.
- Expectation of a 3 year follow-up on use and maintenance may be funded or could be based on misunderstandings on the meaning of a 3 year duration of the Enerfish project (i.e. 3 years from start of EU project not from installation of the systems in Hiep Thanh). However, likelihood of use of the systems is directly linked to follow-up for trouble shooting and maintenance. So far there are no signs that these factors have been considered seriously.
- Delays were created by Helsinki imposing its own rules on top of EU rules, albeit

the latter are not known to be lax. This is a common problem found during field visits, namely, the complaint by governments and project proponents about the duplication and non-alignment of Finnish rules to national or other ones.

In conclusion, in consideration of all the points exposed earlier, the evaluation team sees a high risk that at least one system, the fish-oil one, will be abandoned within a couple of years after the end of the project, if not earlier. It is highly unlikely that the foreseen impacts and particularly the projected sustainability of the activities will materialize under the present approach.

Mekong Energy and Environmental Partnership (EEP) (Bilateral: number unknown)

Project design and early implementation. The Mekong EEP was launched in 2010 in a format similar to the Central America EEP. The key contributors to the EEP are Finland (5M€) and the Nordic Development Fund (3M€) and the countries covered are Cambodia, Laos, Thailand, and Vietnam. Due to civil unrest, the plan to go to Bangkok to discuss the EEP in its entirety was cancelled and therefore the analysis is focused on the Vietnamese side of the EEP. The stated objectives of the EEP are to (i) improve access to energy and energy services in the Mekong region and to (ii) reduce greenhouse gas emissions. This is to be done by the development of the use of renewable energy and renewable energy technologies as well as improved energy efficiency. The overall organisation of the EEP is similar in design to other ones and will not be re-stated here.

At the time of the field visit, the EEP had just finished its first round of selection of proposals in May 2010. This provided an opportunity for participants' feedback on the process, but precluded any impact analysis since the start of the project. There were 160 applications for projects, with the size of projects varying, on average, from 200 to 300k€ which is somewhat larger than in Central America. Over one third of the proposals dealt with private sector development and roughly two thirds dealt with technical research and development, mainly in the public sector. Close to half of the proposals were coming from Vietnam, with 8 Vietnamese proposals pre-selected, and finally only 2 that were selected. This generated a serious frustration on the part of the Vietnamese counterparts that felt that the considerable amount of time spent preparing, coordinating and reviewing the national proposals was largely time wasted. One key complaint, related by both Vietnamese and Finnish stakeholders, was related to the lack of clear criteria both in terms of eligibility and for the selection process – this may have just been a preparation glitch but it needed adjustment and there was hope that it would be clarified by the second round of proposals which were due in July.

The two projects selected in Vietnam during the first round are as follows: (i) Development and Demonstration of Multi-Fuel Supply Chain for Power Plants and Industrial Boilers, with a requested funding of 175,000 Euros (EUR) (80% of total project costs). It was proposed by the Energy Institute of MOIT to conduct an assessment of biomass availability and appropriate technologies and supply chain development for use by power plants and industrial boilers. And (ii) Renewable Energy-Powered Cooling for Livelihood Enhancement, with a requested funding of 297,000 EUR

(90% of total project costs). This project was proposed by ACVIO Corp., a Finnish Company. The project develops pilots to be implemented in Vietnam using an air cooling technology, developed by ACVIO, that is said to be innovative and that is powered by renewable energy.

Without prior knowledge of the quality of work or the technologies proposed, a few remarks already come to mind, that have been pointed out by several of the stakeholders who were met. First, the partner's cash contribution is low, which is not unusual when the implementing entity is from the recipient country (proposal i) but it is more problematic when a private international company is the implementing entity (proposal ii). In this second case, it is promoting its own technology for which – independently from any judgments on use, value, efficiency or relevance to Vietnam – a pure transfer of technology is unlikely and therefore the lack of investment on its part resembles more export support than development cooperation. The second issue is also linked to the ACVIO proposal – once again independently from its likely own qualities that are not contested here – that illustrates a problem seen several times during the field missions, i.e. the high risk that externally proposed projects do not meet or answer to local conditions and issues, especially when they are pushed externally only by Finnish companies that do not know the actual conditions in the field and assume there will be similarities with those in their country. For example, the lack of involvement from local authorities is worrisome as in Vietnam it is difficult to carry out anything more than very small-scale pilot projects without government buy-in. Once again, providing export support to companies to better learn a new field of the market is not a problem but it does not amount to development cooperation.

Lessons to be learned. As mentioned earlier, the lessons are limited only because Vietnam has been discussed and because the EEP is only at its early stage.

- The main issue seen has been in the criteria used in comparison of applications. The scope of applications should be more focused, by varying foci per application round, and the guidelines for appraisal of applications should be clear and concise. Also, Vietnam, as Kenya did in another mission, contested the fact that there is the same number of applications selected for each country, independently of quality and country of origin of the lead proponent. While this seems fair in some ways, it is also a handicap to countries with higher human resources, and the competition with better prepared Finnish companies discourages local stakeholders. Possible criteria could be: 60% of the funds available under the call for proposals could be allocated evenly amongst implementation countries and independently of the country of origin of the proposal lead; and the remaining 40% could be allocated to best proposals, independently of country of implementation but only to projects where the lead proponent is one of the implementation countries.
- Another issue of the call for proposals was that proposals did not sufficiently reflect local conditions, nor were they focused on problem solving in such conditions. Also, they were very seldom aimed at or have linkages with national or provincial policy or strategies. This could be improved by clarifying the eligibility criteria and ensuring the local authorities' early involvement in proposals.
- No conclusion was possible at the level of stakeholder involvement. While an identification confusion was noted among many stakeholders who were met, as EEP in

Vietnam is referring primarily to the national Energy Efficiency Program, it was not possible, for lack of preparation time, to identify and meet with stakeholders such as civil society organisations (CSOs) or project non-government proponents to hear their feedback. However, the high number of proposals received for Vietnam (close to a 100 with about half locally prepared ones), pre-supposes that wide and efficient communication was initiated by the national focal point.

Application of solar energy to mountainous and ethnic minorities areas of Vietnam (Concessional Credit: 76902901)

While this project is formally in the Concessional Credit portfolio of review, a basic description and discussion will nonetheless be done as the energy evaluation team provided technical support to the CC mission on this and other energy-related CC projects in Vietnam.

Key element of project design. The objective of the project, as stated in the 2004 appraisal mission report, involves the provision of solar energy supply to 70 communes, 36 communes in the Central Highlands and central part of Vietnam, and 34 communes in the mountainous areas of North Vietnam. These communes were not supposed to be included in the 2010 Master Plan of the National Electricity Network. The state Committee for Ethnic Minorities and Mountainous Area affairs (CEMMA) is the project owner and NAPS Systems Group, headquartered in Finland, is the project promoter. The target communities are mainly ethnic minorities, characterized by a low education level, with limited access to health services and poor economic conditions. The ratio of households classified to be poor is in the 40-60% range.

In targeted communes the objective of the project was to install six solar photovoltaic (PV) systems in the following locations for a: Communal House, Cultural House, Health Centre, Battery Charging Station, TV re-broadcasting station, and Vaccination Refrigerator. In each case, the PV systems were dimensioned to the expected level of needs of these locations varying from 200 to 800 Watt-peak (Wp). The total cost of the project was estimated to be 6.3 M€ in the project proposal with the proposed concessional credit at 5.3 M€. A pilot project was implemented in a Lang Song Province commune in 2002 and the systems were deemed technically sound and working as planned. The products proposed by NAPS were qualified in the inception report as state-of-the-art technology. They are said to provide efficient and durable material, with tubular type gel batteries, said to last longer than ordinary lead-acid batteries (usually the weak link in such a system), and are supposed to require only minimal maintenance. The basic design idea was to limit the number of different components and units to a minimum in order to simplify maintenance training. This however limits the flexibility to tailor the systems to the needs and conditions of different villages but the gain in likely improvement in sustainability was deemed to be worth the limitation.

Implementation issues and early lessons to be learned. Implementation issues were evident: while the project was started in 2003 (with pilot in 2002), not a single system was yet installed at the date of the evaluation mission, in June 2010.

Given the high potential of such a project for poverty reduction or alleviation, the evaluation team initially intended to make site visits to this project, but had to cancel

them as it learned at the last minute that no system was yet installed. It should be noted that nobody at MFA or the Embassy seems to have had prior knowledge of these delays and it was only when pressed for the organisation of an actual site visit that CEMMA, the implementing agency, finally explained that there was nothing to visit as equipment was actually “being shipped or in customs.”

An actual project evaluation is highly recommended but following is a basic timeline and reasons for delays as stated by the project owner and proponents. In 2001, the Prime Minister issued program 135 (see country overview) and requested CEMMA to look into providing electricity to communities not likely to be reached by the grid in the next 10-15 years. In 2001-2002, CEMMA had meetings with donors and the supplier and decided to go solar and selected NAPS Oy as contractor under a sole source selection. In 2002, a test pilot was implemented with 80k€ funded by the Embassy’s own resources, equivalent to today’s Funds for Local Cooperation. In 2003, the CC request was deposited by NAPS to Finnvera. The project was appraised twice in 2004 and the survey for the selection of communes was done in 2005. In 2005, the delivery agreement between NAPS and CEMMA was signed but had to be changed in 2006 because of the new rules that were just established for Overseas Development Aid (ODA)(it is unclear if the change was on the Vietnamese or Finnish side). Following renegotiations under the new ODA rules, the contract was signed in 2007 but the Finnish source of funding had ended that year and the project had to be re-negotiated six months later, in 2008, under a new funding window. Late 2008, a new survey of recipient communes was done that ended early 2010 and mid-2010 the shipment of goods was said to be taking place. Installation of systems may however be delayed to 2011 since the rainy season started in the summer. In all, there has been 7 years from inception to effective start of delivery, likely at least 8 years before effective installation and it will be 10 years from concept (and initial selection of NAPS by the Vietnamese) to project completion. This project is well known to other key players in the energy sector as a failure and an example of what not to do. It was referred to jokingly by another major donor in the field and while Finland was not mentioned, the lack of judgment in not involving entities other than CEMMA in the implementation was noted multiple times.

More worrisome is the fact that the project design still seems to suffer from major weaknesses, many of which were noted in the appraisal report but do not seem to have been corrected.

- First of all, there is the weakness in the choice of communes that would benefit. In the second survey (2009), it was found that 59 out of the 70 communes that were selected to receive the PV systems following the 2004 survey had in fact received grid electricity by 2009. This means that, had the project proceeded on schedule and been delivered by April 2005 as planned, 85% of the PV systems installed would have been useless and only used as occasional back-up systems during power outages – and even this (weak) justification would not be relevant as the power capacity of PV systems is not sufficient to provide the same level of services as those provided by the grid (such as use of fans, rice cookers or TVs, the most commonly used appliances with grid electricity). As a weak defence, it should be noted that the pace of completion of the rural electrification program in Vietnam was ex-

emplary among worldwide programs. It is somewhat ironic that the project's delays and inefficiencies have saved it from being wasteful. However, the defence becomes weaker when one is reminded that there was a clear warning provided by the fact that the PV pilot project, set-up in 2002, was grid-electrified in 2004 when the Finnish appraisal mission came to visit the project site. This was mentioned as a major issue in the appraisal report yet, as was made clear by the results of the 2009 survey, this lesson was not learned during the 2005 survey and identification of communes. The evaluation mission was not able to check the validity of the choice of communes under the 2009 survey, but there was no real indication given that the lesson was integrated by CEMMA and NAPS. There seems to be no contingency plan to relocate the systems from a newly electrified commune to another, in the likely case of such occurrence.

- Whether training of local staff will occur and be sustained remains unlikely. This was clearly noted as an issue in the 2004 appraisal, however the budget for initial training was not modified and the responsibility for long-term training and maintenance remains with CEMMA, that is not referred to by other stakeholders as being very qualified in this field. When pushed on this question, only vague assurances were provided linked to simplicity of the system, existence of an operation manual that would be left after the departure of NAPS staff, and of the idea of one technical center to be created for maintenance. It does seem very optimistic however that one single center would be able to cover the whole country and provide services efficiently to remote places not easily accessible (otherwise they would be reached by the grid). NAPS assurance was that all depends on the quality of the installation, thus dismissing the question of training maintenance that was cited as the main reason by a senior WB staff, who was met during the mission, for the lack of sustainability of just about any solar project he visited in rural Vietnam. The key problem remaining in most cases is the lack of adequate maintenance or use of the batteries, a problem dismissed on technical grounds but that do not take into consideration education and cultural matters.
- Involvement of the local recipients is uncertain. There were claims by other stakeholders that CEMMA is not in sufficient contact with the PPCs, that are absolutely central to project success in Vietnam (a claim the mission could not check) and doubts were raised on the sustainability of a project that lacks minimal cost recovery on the PV systems. While the systems are due to be installed on communal buildings, not being for private use, the mechanism for payment of maintenance is very vague. The scheme is basically that two people would be trained and responsible for maintenance in each commune, but who, how and with what incentives for continuing to do it over time, were factors left to the decision of each commune. Even in the case of battery charging, that provides a service to individual households, there was no decision made on the establishment of a fee for the service. While this may seem to be a good example of decentralisation, i.e. leaving each commune to decide what to do goes contrary to the national trend in rural electrification of the last 5 years (re-organizing and standardizing local distribution utilities) and leaves solely the community with the burden of understanding the value of PV systems (a new technology that provides new services) and of determining

the best pricing for its services. Furthermore, experience has shown that donated equipment – where the users have little vested interest in long-term functioning even if a minimal share of costs is in line with users' revenues – has a much higher level of abandonment after a few years when a malfunction has happened. In general, collecting money, even small sums, for a service provides incentives to be able to keep providing it. In addition, the act of collection generates an occasion for the user to raise issues related to the availability or the quality of the service provided.

- Finally, a question remains on the effective incentive for NAPS to ensure long-term functioning of such PV systems. As such, it acts as a normal equipment supplier (e.g. supplier of cars, appliances or basic goods) with a limited 1 to 2 year warranty on parts that should last a minimum of 8-10 years for batteries or 20 years for panels. However, this project is not just a simple goods delivery project. It is meant to deliver major poverty alleviation impacts that can only materialise if the equipment remains functional over time. In general, the impact of a project bringing an improvement in the quality of life followed by the removal of such improvement due to malfunction is negative and worse than a no-change alternative. It is understood that no company would like the counter-reference of non-functioning systems but the fault is often easily placed on the users not performing the maintenance tasks rather than holding the manufacturer liable for providing equipment, training and follow-up that are adequate to the needs of recipients. NAPS responsibility for the long-term functioning of its systems is passed-on to CEMMA that passes it on to the communities. While holding the communities responsible for their equipment is positive, they ought to be given the means to do maintain equipment and services, and this is more likely to happen if the supplier has joint responsibility. A scheme with either deferred or additional payment contingent on actual functioning of equipment could be created or at least an obligation to provide minimal check-up visits within 3, 5 or 10 years after commissioning of the systems. This may not be standard procedure for sales of equipment, but yet again, this project is not just a standard sale of equipment.

In conclusion, while this project is the one with the most relevant link and potential for poverty alleviation amongst those reviewed by the evaluation mission, significant delays and worrisome design flaws cast a serious doubt on whether they will actually materialise.

4 FINDINGS & ANALYSIS FROM FIELD VISITS

The response to the following questions will focus on the four projects described in part 3 but will also include feedback from the other energy-related concessional credit projects as well as the global portfolio of the MFA in Vietnam, when relevant.

4.1 Evaluation Question 1

Did the respective budgetary appropriations, overall policy measures, sector policies and their implementation plans adequately reflect the development commitments of the partner countries, and those of Finland, as well as the global development agenda in general, and in particular, the major goal of poverty reduction?

There is no clear trend that can answer this question as all projects provided contradictory elements. For example, the solar CC project is the only project reviewed with a clear linkage to poverty reduction. However its implementation is clearly weak and its capacity to adapt to the overall sector policy changes is unclear (it was well focused at inception but ten years later it seems not to have evolved as the overall sector context did). Similarly, while Vietaudit goals fell well within the goals of Finland and Vietnam and the sector goals of improved energy efficiency, implementation limited the impacts. There were additional questions on the effectiveness of the allocated budget related to very high costs for value of the foreign experts' intervention. Enerfish seems irrelevant to poverty reduction with the present approach and lack of social impact assessments, within the sector priorities and the needs of Vietnam. The project's link to Finland and the global development agenda is based weakly on the assumption that industrially caught and transformed fish are a renewable source that once transformed can qualify as renewable energy. The EEP seems more relevant but still only in writing and there were questions raised as to the adequacy of its early processes and resource allocation for Vietnam.

The four additional CC projects, not reviewed in detail by the energy evaluation team, seem to be an appropriate use of budgetary support to reinforce the medium and low distribution voltage networks of EVN. Even if these projects did not directly support poverty reduction, they provided a necessary step in supporting the extension of the grid to most households, a goal deemed to be a national priority.

In all, for the projects reviewed in Vietnam, the budgetary appropriation and implementation plans failed to reflect an optimal use of funds to serve the global development agenda and the goal of poverty reduction.

4.2 Evaluation question 2

Are the interventions responding to the priorities and strategic objectives of the cooperating party; are they additional or complementary to those done by others, or are they completely detached and stand-alone? In other words, what is the particular Finnish value-added in terms of quality or quantity or presence or absence of benefits, in terms of sustainability of the benefits, and in terms of filling a gap in the development Endeavour of the partner country?

Except for the EEP for which no judgment can yet be provided, when the interventions fall within national priorities, the complementarities with other players are weak (Vietaudit) or inexistent (Solar CC). Enerfish is neither relevant nor complementary to others activities, except for internal project proponent complementarities at the

EU level that are only benefiting themselves rather than the cooperating party. No specific “Finnish value-added” was identified in Vietnam. While technical knowledge of consultants and quality of goods was acknowledged, there were questions raised as to their cost and to whether they were adequate to the needs expressed in Vietnam in opposition to those of Finnish companies.

4.3 Evaluation question 3

How have the three dimensions of sustainability been addressed in the intervention documents, and were the aid modalities and instruments conducive to optimal materialization of the objectives of the aid intervention?

The sustainability aspects have been addressed in the documents and are central to the EEP and Solar CC projects but it remains to be seen whether they materialize in reality. For Enerfish, while economic and environmental sustainability are referred to, they are unlikely to materialize in a robust non-subsidized way, at least for the Vietnamese cooperating partner. In an indirect food-to-fuel project and because of a lack of social assessments, social sustainability is unlikely. For Vietaudit, environmental and economic sustainability are central to the theoretical design but the implementation limitations have made their occurrence unlikely. Other CC projects are likely to be sustainable, not by design but because they provide technical tools and goods to EVN, a technically competent entity.

In all, the inherent sustainability of the projects reviewed in Vietnam is low. While the aid modalities may not be responsible for these weak results, they have not helped the situation. This is discussed further in question 5 but there seems to be insufficient involvement from the Embassies which could help ensure adequacy of aid intervention to the effective local needs. In early correspondence, the Embassy stated not being directly involved in Vietaudit, Enerfish and solar CC. In addition, whether because of instruments or modalities, it remains rather frequent that project proponents implement their project with insufficient local input (Enerfish, Vietaudit, new EEP funded Acvio project) and with control and evaluation based on administrative-focused procedures rather than on desirability, value and relevance of the design or implementation of its intervention. Little is to be said about procedures that delay project implementation for 7 years (solar CC), even if it is partly compounded by the lack of effectiveness on the part of the partner country’s implementing agency. One notable counterpoint to the overall complaint feedback on modalities is that of an EVN power company director who reported being satisfied with the overall CC system and who was a repeat user. The director went on to state that Finnish rules were clear and not complicated, procedures were simple and easy to meet, and this provided access to good quality of goods and technologies. He also noted that the linked component at 50% was not an issue and was easy enough to lower to 30%. The only issue noted was the level of prices of these goods that were above usual international prices, thus shutting-out the Finnish companies for the non-linked part.

In all, a highly capable entity, such as EVN, is well able to take advantage of the CC instrument but this is in part because the business aspect is very clear and export sub-

sidies to a Finnish company provide high quality goods to a competent client who knows the value of what he/she gets. The same cannot be said of the other instruments such as NGOs funding, bilateral support and institution cooperation instruments. For these, the optimal materialization of the objectives of the aid intervention is lessened when the frontier between aid and export/internationalisation support becomes blurred. The case for financing Enerfish under an aid instrument is very weak. Similarly, the case for Vietaudit is also weakened by the lack of long-term commitment on the part of the proponents. If the aim of an intervention is to test a new technology in a developing country because of the lower cost of development or the security requirements or because once adapted there could be a market in that country, then this is understandable. But it should be developed under a separate category and not classified as development cooperation. Similarly, no false expectations in terms of economic social or environmental impacts should be raised.

4.4 Evaluation question 4

What are the major discernible changes (positive or negative, intended or unintended, direct or indirect) and are these changes likely to be sustained, and to what extent these sustainable changes may be attributed to the Finnish aid interventions, or to interventions in which Finnish aid has been a significant contributing factor?

No major discernible changes have been found by the evaluation team. Three projects out of four are being implemented but are still at the paper stage, with one project 7 years behind schedule. One, Vietaudit, is completed but while some changes were seen, they were of a very small-scale relative to both the level of funding and issues dealt with in regarding to energy efficiency. In this project, training of auditors who value the technical and business competencies learned has occurred and they are using them in their work. It was not possible to check whether the training of trainers had materialized in the intended cascade effect which would result in the adding of new auditors after project completion. However, the competencies seem rather limited to diagnosis and implementation of basic solutions only (lighting primarily) at a time when the needs in EE are enormous with constant load shedding as demand exceeds generation capabilities.

Elsewhere, through other energy CC projects, Finland contributed to the overall extension of the grid and the related benefits but only as a very small player supporting the use of Finnish products among all the other products purchased by EVN. No attribution can be made, beyond the rather small related percentage of CC value, to the overall investment value.

4.5 Evaluation question 5

Have the financial and human resources, as well as the modalities of management and administration of aid been enabling or hindering the achievement of the set objectives in the form of outputs, outcomes, results, or effects?

The lack of energy experts involved in project administration at the Embassy and MFA was noted. This leads to low technical overseeing of projects, reliance on self-reporting by project proponents and sometimes a rather simplified evaluation/appraisal by Rambol consulting. This also seems to lead to very administration-focused overseeing of projects with constant meddling from Helsinki, sometimes seemingly in opposition with the Embassy's statements. As was told by a key stakeholder, the Finnish are largely preoccupied and move slowly while the Germans are decisive and move actions along, making corrections on the way.

One serious aggravation noted by multiple stakeholders, be they government representatives or project proponents, were the complex procedures and procurement conditions, often running counter to or at least in addition to other procedures involved. A government representative stated that harmonization of procedures with the six-bank partnership (that includes WB, ADB, Agence Française de Développement (AFD), KfW (German government-owned development bank), JICA, and (Export Import (EXIM) Bank) would greatly increase the relevance of the Finnish CC instrument and that similar steps should be considered in the bilateral elements. Another disappointment noted by stakeholders are the seemingly arbitrary cancellations of funding (bilateral or CC) even when it was agreed to be a priority by the Prime Minister and even when there had been positive reviews from Rambol and the Embassy. Only cursory reasons or explanations were provided and they are sometimes veiled as unsubstantiated accusations or suspicions of corruption or mismanagement. Once again, it was stated that following the procedures of the six-bank partnership would be deemed more professional and much appreciated. It was also stated that Finland, overall, was putting insufficient focus and funding into capacity building and training to generate sufficient local capacity during and after the project duration. This is developed further in question 6.

Overall, most stakeholders met hold the opinion that while Finland development aid is very appreciated, its modalities of management and administration have been a hindrance and not a tool for enhancing the achievement of its set objectives.

4.6 Evaluation question 6

What are the discernible factors, such as exit strategies, local budgetary appropriations, capacity development of local counterpart organizations or personnel, which can be considered necessary for the sustainability of results and continuance of benefits after the closure of a development intervention?

The key factors for sustainability, as they appear from the lessons learned of this evaluation mission in Vietnam, include the following:

Ensure involvement of entities and people aware of local needs in design and imple-

mentation; this includes both local stakeholders and the local embassy that may be accustomed to both Finnish proponents and local counterparts' specific frame of reference. This would help ensure the adequacy of the technical solutions proposed as many advanced solutions that are standard in Finland may not be adequate in a very populated and southern developing country.

Diminish the reliance on self-reported and self-evaluated projects, include an independent evaluation at several key steps of the project cycle, and include local staff in the evaluation teams.

Clarify the key end-goal of the project. It should be clearly labelled as an export mechanism or as a development mechanism; both have a value but mixing them is problematic.

Favour long-term involvement, not necessarily through expatriation but through commitment to a repeated presence of the Finnish counterpart, rather than short periods of intense work in the case of projects delivering services and "delivery and leave" for projects that deliver goods. A sustained commitment would be more likely to have an effective sustained impact. Project mechanisms should favour incentives to keep communication open and maintain responsibilities on the Finnish counterpart side after the immediate delivery of goods or services. This could possibly be done through deferred or additional payment contingent on actual functioning of equipment or implementation and sustainability of services rendered over a period of time and after the end of the project (could vary according to the type of instrument – 1 or 2 years in bilateral and NGO; 3 or 5 years in CC and Institutional Cooperation Instrument (ICI)).

Finally, a point of major importance is linked to capacity building and long-term training, a major area of weakness in all projects reviewed, including the one (Viet-audit) that was aimed at providing such training. This is a major developmental problem as it is well known that in many countries all donors, the private sector and NGOs tend to rely on the same few people with capacity in each sector. Therefore, to get out of the trap posed by relying on just a few local people overworked because they are in high demand, each project should contribute to the fostering and extension of local capacities and institutions. Ideally, some projects should even be targeting such extension of capacities, as the upcoming ICI is aiming to do, but institutional capacity building typically requires a much longer period of time than the basic technical projects. Today, training needs assessments, including analyses of gaps in skills and knowledge of human resources in the units/sites and local institutions supporting these activities are not all standard. Therefore, the likelihood that ad-hoc projects training would be successful is rather low. Ideally, short-term projects should be able to rely on services provided by professional ICI with long-term capacity building while providing a building block that contributes to such long-term capacity building.

4.7 Evaluation question 7

What has been the role of considering the cross-cutting issues of Finnish development policy in terms of contributing to the sustainability of development

results and poverty reduction; has there been any particular value-added in the promotion of environmentally sustainable development?

HIV/AIDS and gender are not even remotely included in the projects reviewed and probably should not be as their relevance to these two cross-cutting themes is unclear. Poverty alleviation of marginalised groups, in this case both indigenous groups and ethnic minorities, is core to the solar CC project. However, since it has not yet delivered and its design and implementation seem quite flawed, there remain questions as to its final contribution to sustainable impacts. Furthermore, one could consider that a project that fails to deliver to minorities for over 7 years does them a disservice as other, more efficient sources, are prevented from intervening by the mere existence of failed projects and the lack of desire to duplicate efforts.

Sustainable development is claimed to be key to the four projects reviewed, but two have not yet delivered (Solar CC and EEP); one claim to sustainability is questionable (ENERFISH) and the last one, Vietaudit, is completed but while some changes were seen, they were of a very small-scale relative to both the level of funding and issues dealt with regarding energy efficiency. Overall, little to no value-added in the promotion of environmentally sustainable development was identified.

4.8 Evaluation question 8

Are there any concrete identifiable examples of interventions, which may be classified to be environmentally, economically and socially sustainable, which have lead to poverty reduction or alleviation of consequences of poverty?

None of the interventions are economically sustainable. ENERFISH's output as an export technology could possibly be considered so, but this does not seem likely today. One intervention, solar CC, could possibly be socially sustainable, but reasons for doubting this outcome have been described in the related section.

As stated in Q7, all interventions claim environmental sustainability but only one can justify minimal results.

The other energy-related CC projects can be identified as economically viable as they were targeting an economically viable entity. Their environmental and social sustainability as well as poverty reduction or alleviation of consequences of poverty can only be considered indirectly through the grid they contributed to, extended and made more reliable. No impact on poverty reduction or alleviation of consequences of poverty has been identified in the four projects reviewed.

4.9 Evaluation question 9

Have interventions that support economic development or private sector, been able to contribute towards sustainable economic results, let alone, raising people from poverty?

As mentioned before, no impact on poverty reduction or alleviation of consequences of poverty has been identified in the four projects reviewed. Besides the energy-relat-

ed CC projects, only two projects among those sufficiently advanced for judgment, supported the private sector, i.e. Enerfish and Vietaudit. For Enerfish, the support to the Vietnamese private company is only a means to an end, the end being new technology development benefitting EU companies. As noted in the related section, this project may very well have negative social impacts thus increasing poverty rather than the other way round. For Vietaudit, the principal private sector beneficiaries were two small Vietnamese consulting companies whose key staff capacities were reinforced; and indeed, this has improved their viability and competitiveness. However, this is limited to two SMEs and the wisdom of supporting two specific companies in a burgeoning field where a new market is being established can be questioned. Little to no poverty alleviation impact can be related to this project as well.

4.10 Evaluation question 10

How is the society affected by the development interventions taken into account in the strategic and project/programme plans, and what have been the major modalities for the society to influence and affect the development interventions and the decision-making on them?

Several interlocutors questioned whether Finland respected country ownership in project identification and choice. Government representatives have also noted that during implementation, Vietnamese ownership of these projects was limited by micro-management from Helsinki and at times by the overbearing influence of Finnish stakeholders.

Given the specific structure of the Vietnamese society and the nature of the projects reviewed, it has been difficult to estimate the level of involvement of the civil society, let alone the recipient populations. However, for both Enerfish and Vietaudit, the meetings with end-recipients (not local project partners) showed that there was little involvement on their part and that this explained their caution and sometimes frustration as to the outputs of the projects. Given the lack of advancement of the Solar CC project and the lack of an actual PV system installed, the visit to the recipient villages was cancelled and therefore no focus group could be organized to check either individual or community involvement in decision-making.

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SUB-ANNEX 1 AGENDA AND PEOPLE INTERVIEWED

	Energy evaluation
Monday 14 June	<p><u>7.30: Team meetings at Hotel Sofitel Metropol</u> <u>8.30 - 9.30: Embassy of Finland</u> 31 Hai Ba Trung, Hanoi, Vietnam</p> <p>Ambassador &/or Development Head: - Mr. Pekka Hyvönen, Ambassador; - Mr. Max von Bonsdorff, Head of Development Cooperation. - Mr. Oscar Kass, counsellor; - Ms. Le Thi Thu Huong Programme Coordinator - Le Dai Nghia, Programme Coordinator</p> <p><u>9.30-10.15: Embassy of Finland</u> - Ms. Mac Le Thu Hong, acting Energy advisor</p> <p><u>10.30-11.30 Ministry of Planning and Investment (MPI)</u> - Mr. Nguyen Huy Hoang – expert in charge - Foreign economic relation Dept - Mr. Ho Quang Minh – Director - Environment Officer</p> <p><u>13.30-14.30 RCEE</u> Research Center for Energy and Environment - Mr Ha Dang Son, Director, project manager; - Mr. Nguyen Thanh Ha, energy officer; - Ms. Pham Thi Minh Thao, vice director</p> <p><u>15.00 – 16.00 World Bank (WB)</u> - Mr. Ky Hong Tran Energy Specialist - Mr Richard Spencer, Lead energy Sector Coordinator</p> <p><u>16.30-17.30: Asian Development Bank (ADB)</u> 23 Phan Chu Trinh str. - Xavier Humbert – senior energy specialist (- Mr Januar Hakim – Portfolio manager</p>
Tuesday 15 June	<p><u>8.00-10.00: Ministry of Industry & Trade, MOIT,</u> - Mr. Le Tuan Phong, Deputy Director General, Board on Rural Electrification and Renewable Energy; Energy-Environment Partnership Program EIPP; - Ms. Pham Huong Giang</p>

	<p><u>10.00-11.00: MOIT</u></p> <ul style="list-style-type: none"> - Mr. Phuong Hoang Kim director of the Energy Efficiency and Conservation (EE&C) Office of Vietnam - Phong Nang Luong, .Dir.Gen. S&T depart. of MoIT, Vice-Director <p><u>11.00-12.00 MOIT</u></p> <p>People trained under Vietaudit (contact Mr. Phuong Hoang Kim)</p> <ul style="list-style-type: none"> - Mr. Nguyen Thanh Ha, RCEE - Mr. Nguyen Hong Phuc, Institute of Ferrous Metallurgy; - Mr. Hoang Anh, AFI company; <p><u>13.40-14.30: UNDP,</u></p> <p>Mr. Le Van Hung; program officer, “Promoting Energy Conservation in Small and Medium Enterprises” project</p> <p><u>15.30 – 16.45. EVN</u></p> <p>20 Tran Nguyen Han street, Hanoi</p> <ul style="list-style-type: none"> - Mr. Du Cao Minh – Vice Director of Power Company 3; - Ms. Hue officer in charge <p>17.00 – 18.00. Energy Efficiency Center of Hanoi EEC</p> <ul style="list-style-type: none"> - Mr. Thai, director - Mr. Viet expert,
Wednesday 16 June	<p><u>8.30 – 9.30:</u></p> <p><u>9.45-10.30 DANIDA. Embassy of Denmark</u></p> <ul style="list-style-type: none"> - Ms. Nguyen Trang ,Program officer for climate change - Ms. Kirstine Schelde Dahl, <p><u>10.45-11.30 Hanoi University of Technology</u></p> <p>Mr. Pham Hoang Luong, Vice Director. Declined meeting as not relevant.</p>
	<p><u>Travel to Thai Nguyen</u></p> <p><u>15.00-17.00: Thai Nguyen Iron and Steel Company.</u></p> <p>Internal Energy Audit Program IEAP</p> <ul style="list-style-type: none"> - Mr. Pham Hong Quan, vice director. - Mr. Giao, head of Technical division - Mr. Tam; head of equipment division <p>17.00 return to Hanoi</p>

Thursday 17 June	<p>9.00 - 11.00 Committee for Ethnic Minorities.</p> <ul style="list-style-type: none"> - Mr. Nguyen Van Thanh – Manager – solar energy project - Mr. Duong, project vice director - Mr. Diep, officer, - Mr. Harri, solar expert from supplier NAPS company <p>Go to Can Tho city Flight Vietnam airline Hanoi-Cantho VN0297 Departure 13.20 arrive 15.30</p> <p>16:45-17:30 Meet Hiep Thanh Seafood company</p> <ul style="list-style-type: none"> - Mr. Trai, officer, mobile 0902540540 - Ms. Ha, officer, tel 0710. 3854888
Friday 18 June	<p>9:30-11:00 Meet Hiep Thanh Seafood company</p> <ul style="list-style-type: none"> - Mr. Nguyen Van Phan, director <p>& Site visit</p> <p>Return Hanoi Vietnam airline VN0296 Cantho-Hanoi Departure 16.20 Arrive 18.30</p> <p>Departure Vietnam</p>