Review Phase I and Appraisal Phase II of the UETCL-Statnett Twinning Arrangement for Capacity Development Uganda

Final Report

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Scanteam
Energidata Consulting

Commissioned by the Royal Norwegian Embassy, Kampala and Norad

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The report is presented in a series, compiled by Norad to disseminate and share analyses of development cooperation. The views and interpretations are those of the authors and do not necessarily represent those of the Norwegian Agency for Development Cooperation.

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Uganda

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and

Energidata Consulting

Oslo, 31 October 2008

Contents

Acronyms

ERA	Electricity Regulatory Authority
EUR	Euro (Currency)
GoU	Government of Uganda
ICT	Information & Communication Technology
IPP	Independent Power Producer
KPI	Key performance indicator
MEMD	Ministry of Energy and Mineral Development
MOFPED	Ministry of Finance, Planning and Economic Development
MoM	Minutes of Meeting
NOK	Norwegian Kroner (Currency)
Norad	Norwegian Directorate for Development Cooperation
PD	Project Document
PMA	Power Market Analyzer
POWEL	PMA Software trade mark
PPA	Power Purchase Agreement
REA	Rural Electrification Agency
RNE	Royal Norwegian Embassy, Kampala
SWOT	SWOT analysis: Strengths, Weaknesses, Opportunities and Threats
TOR	Terms of Reference
TSO	Transmission System Operator
UEDCL	Uganda Electricity Distribution Company Limited
UEGCL	Uganda Electricity Generation Company Limited
UETCL	Uganda Electricity Transmission Company Limited
UGX	Uganda Shilling (currency)
WB	World Bank

Exchange rates: (interbank rates as of 23 September 2008)

USD 1 = UGX 1656

USD 1 = NOK 5,62

EUR 1 = UGX 2414

NOK 1 = UGX 295

1 Executive Summary

The Uganda Electricity Transmission Company, UETCL, and Norway's Statnett SF entered into a Twinning arrangement at the beginning of 2006 aimed at Capacity Development in UETCL, financed by Norway. The overall objective of the cooperation is to contribute to a viable electricity sector in Uganda, and the project purpose is to make the national transmission company more efficient and fully competent to fulfil its role as the Ugandan Single Buyer and Transmission System Operator (TSO).

Phase I of the twinning agreement is to be completed at the end of 2008. The donor decided to carry out an end review and this was conducted by Scanteam in September 2008. The results will be used to feed into the appraisal of a proposed Phase II of the cooperation.

The review and appraisal is based on a study of all relevant documents, and stakeholder interviews in Norway and Uganda.

The present report has two main parts, review of Phase I including conclusions, and the appraisal of Phase II, including recommendations.

1.1 Review Findings

Organisational Setup and Participant's Qualifications

The teams engaged in the twinning agreement, both, from the side of UETCL and Statnett, have developed a pragmatic but very productive working relationship. The subjects and areas of work taken up by the various work groups make progress, and mostly results mature into key decisions that are put to the Board of the company for approval. This is a bottom up process fully integrated into the hierarchical structure of UETCL. It indicates that the project purpose is very much in line with the objectives of the company. The staff of UETCL who are in charge of the various work groups are line managers in the company. Project activities appear to be very well integrated into the everyday tasks of UETCL, and this gives the project a high level of ownership well embedded in the company structure. The work load is, however, considerable, and this puts a limit on what project results are achievable in a given time.

UETCL has provided the most qualified staff it has available, and the Statnett staff also has the required professional qualifications and experience, but has limited experience of conducting Capacity Development projects in a development cooperation context. Evidence of such limited experience, is the fact that state of the art monitoring tools have not been developed and used, negatively affecting progress reporting.

Based on the above, the first conclusion of the review is that the twinning arrangement has come up with a good and workable organisational setup, and both sides provide highly suitable staff to the exercise.

Twinning Objectives and Achievements

The high level Goal of the project is the Goal of Uganda's power sector: *"To meet the energy needs for the Ugandan population for social and economic development in an environmentally sustainable manner"* Naturally, it is expected that the project can make a significant contribution. To make progress towards that Goal possible all players in the sector need to

contribute. Due to the power crisis, the sector is today further away from the Goal than it was at the outset, but it is not fair to hold UETCL alone responsible for this.

The Purpose of the twinning arrangement is fully in line with the mandate of UETCL as the national Single Buyer and Transmission System Operator: *"To become more efficient in fulfilling public service obligations"* This is a commendable and appropriate purpose. It becomes operational by target setting.

Four outputs have been formulated in what seems at first separate areas of work, or concerns: *Strategy and Business development and Single Buyer role strengthened*, *Corporate efficiency and budgeting*, *Transmission system utilisation maximised* and *Information management*. Scrutiny of the planned and carried out activities in each of the work areas reveals that an organisational development project is actually being undertaken with a focus on the defined work areas, but activities are by no means limited to a narrow definition of these work areas. The twinning partners have managed to identify a broad range of activities in a general way conducive to achieving an output and the project purpose, and where Statnett has skills or rich experience to offer, or both.

Strategy and Business development, is not only about developing a business strategy in the strict sense, since UETCL's mandate is more about performing a public service obligation. The main activity was seen to implement the Corporate Business Plan (CBP) of 2005, but then was changed to revise this plan, and make it more relevant and realistic. The revised CBP is also a steering document as well as an organization manual, and it is a business plan at the margin. As is mentioned in the document itself, the CBP is regarded as *"an effective tool in the communication process between the owners, the Board and the management with regard to the implementation of government policy, company objectives, priorities, strategies, financial viability and corporate governance"*. This statement fully supports the findings above. The business areas sketched are: a) the Single Buyer business, b) the business of operating the transmission grid, and c) the business of planning and implementing transmission grid expansion and renewal, i.e. carrying out investments in infrastructure, and managing the assets. Important key documents here are the Grid Development Plan, and the Investment Plan. Twinning cooperation has had a significant influence on the elaboration of these documents, in the context described.

Corporate efficiency and budgets work started off with a workshop on the Single Buyer role (which is one of the business areas), and risk management, while the *strategy and business development* work group discussed the implementation of the CBP. The work group took on the calculation of transmission tariffs, and principles for the split of costs between single buyer and transmission system operation, and training was provided for the updating process of financial projections. An internal group for benchmarking was also established, and procedures for benchmarking were developed. But, in deviation from plans, benchmarking at the regional level could not be undertaken. All the activities fall nominally into the *business development* area, but were approached from a perspective of cost-efficiency. These are good examples of how the work areas overlap and how personnel of the work groups interact, and often work on the same subject but from different angles.

Transmission system utilization is the main technical subject in UETCL: The use, maintenance and further development of the physical backbone, not only of the company but of the country. Under the twinning agreement, emphasis was on planning of the transmission system and grid investment. This was extended to the question of simulation of various

scenarios, including hydrological and market modelling. Much effort went into the study of the feasibility of introducing complex simulation software. Demonstration models were built and presented, and these were part of the decision process. Decisions were taken, but later reversed, and the actual status appears uncertain. In the view of the review, this process was flawed, and perhaps represents a failure.

Information management ranges from human resource development aspects, such as conducting employee surveys, and using the results to further develop work performance at the section level, to the development of key performance indicators, other indicators than work group B was working on, to be sure, for reporting to the Board, thus making communication at the top meaningful. It also includes the conduct of external stakeholder surveys, and the use of results as an indicator reported to the Board. All of it under the output of *improved information management*.

The review finds the project to have incurred high costs, in other words it was not cost-efficient compared to other CD projects, but is assessed to be highly effective in achieving what was planned, highly relevant in the context of Uganda's power sector, and reasonably sustainable in view of apparent good project ownership of UETCL.

Based on the above, the review draws the second conclusion: The objectives, outputs and activities under the twinning arrangement have been marginally predetermined in the first place, but the "empty vessels" were then over time filled with a range of activities and initiatives that were for the most part conducive to achieving the project purpose, and were well adapted to the dramatic changes in the sector due to reduced hydro generating capacity. The project has matured into a comprehensive organisation development project that has contributed significantly to restructuring the company, to overhauling existing and developing new work processes and to raise the professional capacity of staff.

Monitoring and Reporting

"Improved efficiency" is acceptable as a project purpose, as long as targets are set, monitored and reported on. Target setting is synonymous with defining measurable indicators that allow to measure progress and achievements from various perspectives.

The project reported on activities mostly, and at higher levels such as for outputs and outcomes, reporting is marginal and indicators are not used. No reporting has been done on cross-cutting issues such as gender, HIV/AIDS and corruption. Hence, the third conclusion of the review is: Targets for the project purpose have not been set. Hence, considering the conclusion above, the project is by far better than its reporting. Poor reporting is unfortunate, as it means that good project achievements are actually not documented, and this may throw some shadow of doubt on the project and its positive assessment.

Formal Requirements, Administrative and Financial Procedures

There have been a few digressions from the bilateral agreement and the contract between the parties, in terms of audits not carried out frequently enough, and reporting provided late, and periodical meetings not conducted in the period intended. The review shares the view with the twinning partners, that this has not had a negative impact on project achievements.

The external audit carried out for the twinning cooperation has revealed invoicing and disbursement practices that were found in-acceptable from an auditor's point of view.

Briefly, this concerns the lack of providing third party receipts when invoicing travel costs, and the lack of time sheets from both sides to document actual time spent on various activities. As a result, on one hand, invoices for fees charged by Statnett could not be verified but were paid anyway. On the other hand, participation of UETCL staff in the various joint activities is not documented, which makes verification of the contractual agreement "to provide sufficient staff" impossible. The review finds these lapses most unfortunate, as transparency suffered, and by affecting transparency, not "everything to avoid and detect corruption", as agreed in the contract[1], was done.

Review Conclusion

Overall, UETCL-Statnett twinning is a successful capacity development project of high relevance for Uganda's power sector. The project purpose, *to make the company more efficient in fulfilling its public service obligations*, is considered achieved, although the project has failed to make such achievement measurable by developing and using suitable indicators at the results level, setting targets and measuring against such targets. As a consequence, reporting has been weak, and room for mandatory improvements in administrative and financial procedures has also been found. The project can build from a good working relationship and a workable organisational setup from Phase I, and it can learn from its shortcomings for the proposed Phase II of twinning cooperation. The review provides an input in this regard in the following appraisal in the form of recommendations.

Recommendations

A few recommendations are made for use in the completion of Phase I. Other recommendations relate to Phase II, and these are found in the appraisal part. Comments received from stakeholders to the recommendations are dealt with in the main text of the report.

With regard to monitoring the fulfilment of contract obligations

Introduce signed memoranda, in which one of the partners states a claim or fact relevant with regard to the contract and the other side acknowledges this with signature and date. The annual meeting between the twinning partners should then review all memoranda, and state in the agreed minutes how each has affected the contractual obligations.

With regard to measure results

Use of UETCL KPIs in the third annual project report at the end of the year, and in the project completion report, as far as it relates to project outcomes. This will compensate to an extent for the lack of project indicators. Also, the review suggests that baselines that have been established at the time of the mid-term review should be refined and used in end-of-project reporting.

With regard to verification of personnel provided and hours and costs invoiced

Make time sheets mandatory for both partners, giving dates and hours worked, structured according to the defined work areas, and annexed to invoices and annual reports, as appropriate. Also, provide documentation for at-cost reimbursable expenses that are invoiced.

[1] The "everything to avoid and detect corruption" refers to a number of measures listed under article IX – Audit of the bilateral agreement not as stated above the contract (between UETCL and Statnett.

1.2 Appraisal Findings

Overall, it is evident that the Project Document for Phase II has not been fully developed. The description of the overall aim, the rationale and justification, as well as the description and coherence of outputs, and how they will be achieved, are superficial at best.

Indicators have not been developed to measure outputs, outcomes and achievement of the purpose so that the basis for monitoring and reporting is weak.

The conclusive finding is that the project design process should be taken up once more, and the project document should be revised and considerably developed further.

1.3 Conclusion

From a holistic perspective, it is not conducive to equitable development in the East Africa region to maximize power generation on the Nile at the cost of decreasing water level in Lake Victoria. The latter affects negatively the economic and social welfare of about 30 million people, while power generation in Uganda benefits a mere 3 million consumers. Only if the fragile hydrological equilibrium of Lake Victoria is maintained will power generation on the Nile be sustainable. Even when large scale generation on the Nile is built out this means that in wet years Uganda may have a surplus from hydro generation for export, but in dry years Uganda will need power from other sources; most likely thermal either from domestic generation or imported. The unreliability of hydro capacity is likely to increase with climate change. These relatively simple but fundamental relationships may be worth taking into account when working towards the Goal of the Ugandan energy sector.

1.4 Recommendations

The appraisal recommends applying the recommendations that were made to be considered in the ongoing project phase also in Phase II.

It is further recommended to:

- Scrutinize the decision process that led to the decision on the PMA model selected, based on true and realistic needs of Uganda in the medium term future, as the main criteria.
- Consider the inclusion of project outputs that raise the project profile to include the corporate level, such as for instance on financial management, and on knowledge management.
- To revise the project document, taking the above into account, and to:
  - Provide improved background information, rationale and justification
  - Explain how outputs will contribute to achieving the purpose
  - Determine SMART indicators for all outputs and to measure purpose achievement, and on this basis improve output reporting
  - Address gender and HIV/AIDS
- To perform the bulk of PD revision and further development in a workshop with participation of key personnel from both partners, and using an external facilitator.

2 Introduction

Norway has previously supported the Uganda Electricity Transmission Company Limited (the UETCL) and its predecessor the Uganda Electricity Board (UEB) under the Power III and IV programmes.

The twinning arrangement between the UETCL and Statnett commenced at the beginning of 2006 (Phase I). The three-year project is organized as an institutional cooperation between the institutions in areas such as:

- Corporate strategy and business development, including the Single Buyer Role
- Technical expertise, through maximization of transmission system utilization
- Implementation and monitoring of the UETCL Corporate Business Plan
- Enhancement of information management
- Risk management and mitigation

The Royal Norwegian Embassy and Norad have commissioned an external end-review and a team of two has been appointed. This review has been conducted before the project has been completed to allow for a smooth transition to Phase II. The review team has addressed all issues found to be pertinent to meet the stated purpose, and an appraisal was done of the planned Phase II subsequently.

2.1 Objectives of the Review and Appraisal

The objective of the end review is to examine the extent to which the project is likely to achieve its purpose. The review has examined the efficiency, effectiveness, relevance, and sustainability of the project, and an attempt was made to identify lessons learned as an input to the appraisal of the new project proposal (Phase II).

2.2 Methodology

This review has been a short-term exercise, with field work in Uganda during 12-24 September 2008. The mission has relied on document review and interviews for generating the required information (see Annex B for list of informants and Annex C for list of documents). In conducting interviews, triangulation has been applied as far as possible, in an attempt at cross-checking and confirming relevant information from various sources. This has meant that stakeholders directly involved in the project and external stakeholders in Norway and Uganda have been included in the interviews. This report is therefore based on representative views of sector stakeholders, but analysis and conclusions as well as recommendations are the consultant's.

In assessing the project, the objectives framework of the Norwegian Development Cooperation manual is used, and what this relates to is illustrated in table 1 (next page).

The assessment criteria used are according to the DAC (Development Assistance Committee):

- Efficiency
- Effectiveness
- Relevance

- Sustainability
- Impact (is not included as impact is normally visible only after a number of years.

Objectives	Definition	The project….
Goal	at sector and national level	…should make a significant contribution
Purpose	at the project level	…must achieve the purpose
Results	changes due to the project at all levels	…measures changes with SMART[2] indicators
Outputs (Results chain)	immediate and direct results of the project	…carries out all activities necessary to achieve the outputs
Outcome	medium term results	…is the cause of the outcome but a conducive environment is needed
Impact	long term effect	…is the main cause of the impact. It happens after the project is complete

Table 1: Objectives and Results

2.3 Structure of Report

The report covers both review and appraisal, and has two substantive chapters and several annexes:

Chapter 3 presents the review of Phase I of the project. It has a descriptive part, and an analytical part that presents the findings and the consultant's assessment.

Chapter 4 presents the appraisal of Phase II of the project, based on the Project Document prepared by UETCL/Statnett, including conclusions and recommendations.

Annex A gives the full TOR, Annex B the list of informants, and Annex C the document list. Annex D contains information on the capacity development benchmarking done.

2.4 Acknowledgements and Disclaimer

This review and appraisal was conducted by Mr. Ueli Meier, of Scanteam/Norway, in collaboration with Mr. Erland Staal Eggen of Energidata Consulting/Norway. The team received full support from all project staff, government and donor offices and private sector stakeholders approached, for which sincere thanks are given.

Given the complex realities on the ground, this report no doubt contains its fair share of factual mistakes and misunderstandings. But there may also be conclusions and recommendations that actors may be less happy with, and which are not simply attributable to such background errors, but reflect differences of opinion and weighting of

[2] SMART: Simple, Measurable, Achievable, Realistic and Time-bound

factors when carrying out the analysis and reaching conclusions. This report and its findings is therefore the sole responsibility of the consultants, and do not necessarily reflect the views of the client, project staff, government officials or any other actors mentioned in this report.

Comments and views on the draft report were received from the major stakeholders, and these were addressed or included in the present final version of the report.

Where elaboration not yet contained in the draft report is substantial, this has been put in a frame identical to the present text, for easy reference.

3 Review of Phase I

3.1 Description of the Project

The original budget for 2006-2008 was NOK 15 million. The project was later expanded through an addendum amounting to NOK 4.7 million, to expand the scope of the programme to include the formulation of an ICT strategy and finance the preparation of the procurement and implementation of the Power Market Analyser and new activities beyond 2008. The addendum was agreed on in February 2008. Total project funding for the three year period is therefore budgeted at NOK 19.7 million. At the end of 2007, according to the audit report, accumulated expenditure amounted to NOK 10,416,422.

3.1.1 Goal

The project goal of the twinning arrangement is *"to meet the energy needs for the Ugandan population for social and economic development in an environmentally sustainable manner".*

3.1.2 Purpose

The project purpose (called "objective" in the agreement) is that "*the UETCL shall become more efficient in its function as transmission system operator and in maintaining public service obligations."*

3.1.3 Outputs and Activities

Planned project outputs, and the activities to achieve those outputs, are:

A. The UETCL strategy and business development including the Single Buyer Role strengthened. This output is to be achieved by carrying out the following activities:
   - Corporate business plan (CBP) implemented/revised/updated
   - SWOT analysis of the organization performed (several)
   - Program for market development implemented
   - Single Buyer risk management capacity and analytical framework strengthened

B. Corporate efficiency including budgeting strengthened
   - Grid ownership and Transmission System Operation (TSO) benchmarking evaluated
   - Budget process reviewed and updated
   - Action plans (programs) for corporate cost efficiency improved

C. Transmission system utilisation (TSU) maximised
   - Policy for TSU established
   - Steering committee for TSU established
   - Technical limits of transmission system examined and tested

D. Information Management enhanced
   - Key performance indicators (KPIs) developed at all levels
   - KPI reporting procedure revised and updated

The above outputs have been further developed by identifying development work and changes needed to be made, but a description of the desirable future situation is missing;

e.g. it is not clear what characterizes a stronger UETCL in a Single Buyer role, or what exactly determines corporate efficiency, and how it is planned to be enhanced. The Vision of UETCL is part of the corporate business plan (CBP), but is not mentioned in project plans.

3.2 Assessment of Performance and Achievements

The assessment is done using DAC (Development Assistance Committee of the OECD) criteria efficiency, effectiveness, relevance, and sustainability, but also includes other criteria, as stipulated in the TOR. The structure and answers to specific questions follow the terms of reference, but some of the questions are re-grouped for consistency. Questions from the TOR are reproduced as bullet points in smaller font.

3.2.1 Formal Criteria

Agreement and contract

- *Have the agreement partners (the Ministry of Planning, Finance and Economic Development and the Norwegian Embassy) fulfilled their obligations?*

In general terms, the twinning partners and superior authorities are of the opinion that the bilateral agreement and the contract between the partners have been fulfilled. No major breach of contract has been observed, but there is room for improved adherence in minor details. The latter however, are not felt to have negatively affected the spirit of cooperation between the partners.

Scrutiny reveals that the bilateral agreement may contain some ambiguous clauses which may be impossible to reconcile. On one hand, the agreement defines that UETCL is to enter into a contract with Statnett, as the cooperation is designed as a twinning arrangement. On the other hand, article VIII stipulates that Uganda shall effect all procurement in accordance with *"generally accepted procurement practices…. and procurement regulations of Uganda."* This specifically means open tendering, which however does not make sense, if a contract with Statnett is prescribed by the same agreement. Hence, both articles cannot be followed, and Uganda has not followed standard procurement practices in entering into a contract with Statnett.

In its comment to the draft report, the Norwegian Embassy/Norad state that the above may be a misunderstanding, as twinning with Statnett was a foregone conclusion, decided before entering into an agreement. The review agrees that under these circumstances it is indeed a misunderstanding. It could have been avoided if the agreement had clarified this in the first place. Such clarification may also be beneficial in the event of review of the agreement by the Auditor General, a parliamentary oversight commission, or similar official bodies.

According to the bilateral agreement between Uganda and Norway, Annual Meetings are to be held in the last quarter of the year. In 2007, the annual meeting did not take place in the last quarter, but was delayed till 31 January 2008.

The Embassy has explained that it was agreed among the partners, by an exchange of letters, that the annual meeting date would be moved. The above is therefore not a breach of the agreement.

- *Have the UETCL and Statnett fulfilled their obligations as stated in the contract between the UETCL and Statnett and, if applicable, in the agreement between Norway and Uganda?*

Article VII of the agreement states that project stakeholders are to provide the annual report, a complete financial statement, and next year work plan at least three weeks in advance. For the meeting 2006, the progress report was delayed by one week, but it was in time for the (delayed) meeting 2007. The meeting minutes state that UETCL was in the process of finalizing the annual accounts. This indicates that the accounts were not ready in time, as stipulated in the agreement. Also, the annual work plan and budget for 2008 was not ready in time for the meeting.

Article IX refers to required audits, and states that "audits of annual financial statements…." shall be performed by the Ugandan auditor general. One audit covering the period from January 2006 to the end of 2007, that is a full 24 months, was performed by an accredited auditor on behalf of the auditor general.

The stated facts indicate that the bilateral agreement has not been followed to the letter on various points.

With regard to the obligations entered into in the contract between UETCL and Statnett, the contract states that an annual meeting is to take place before the end of October. This dead line has not been adhered to strictly. The meeting 2007 was conducted in December. This is a slight and immaterial deviation from the contract.

With regard to invoicing Statnett input, it is agreed in the contract to invoice 7 hours per work day, for a maximum of 42 hours per week for work in Uganda, and 7 hrs. per international travel one way. However, travel time cannot be added to the 42 hrs. weekly maximum. According to Statnett accounts statements, invoicing has been done on the basis of hours. However, it is not transparent how many hours per day and week have been invoiced. As it was agreed in the contract that Statnett would not provide time sheets, it was not possible for UETCL to verify invoicing.

Also according to the contract, UETCL is to provide sufficient human resources, in accordance with the prepared plans to the project. There is no evidence to show that this was complied with, for example with time sheets for UETCL staff.

Recommendation: Introduce signed memoranda, in which one of the partners states a claim or fact relevant with regard to the contract and the other side acknowledges this with signature and date. The annual meeting between the twinning partners should then review all memoranda, and state in the agreed minutes how each has affected the contractual obligations.

In its comments to the draft report, Statnett explains that it has introduced and used a procedure similar to what is proposed above: for each work group meeting, a MoM (minutes of meeting) is produced, which states progress, etc. The annual report then reflects the content of the MoMs.

The review finds this commendable. It has not been made explicitly aware of the fact during the review.

In summary, minor breaches of the bilateral agreement have not been conducive to efficient planning and conduct of the Annual Meetings, and significant deficiencies in reporting and accounting procedures and routines have resulted, affecting transparency.

- *Have the UETCL's procedures for cost control, monitoring and disbursement been adequate?*

The lack of time sheets has been revealed by the audit carried out after two years project duration. This indicates that UETCL has not asked Statnett to provide the time sheets, as provided for in the contract, and hence it could not and did not apply effective methods for cost control. Also, with reference to the audit report[3], it was found that at-cost reimbursable expenses had been invoiced by Statnett without supporting documents (third party receipts). UETCL has apparently made disbursements without verifying at-cost items. Hence, the finding is that the procedures for cost control, monitoring and disbursement have not been adequate.

Overall, monitoring, reporting and administrative as well as accounting procedures leave room for improvement, and such improvement appears mandatory to achieve transparency.

The twinning partners agree (in their comments to the draft report) that improvements are possible, while at the same time implying that systems in place (at Statnett) are adequate, by giving information on such systems, and repeating the contractual procedures. Also, it is stated to be wrong that the review gives the impression that Statnett has not recorded time spent, and has not documented third party receipts. The review has not made such statements, and it has not intended to give that impression. What the review has done is to take up issues raised by the Ugandan auditor. What counts is the first-round assessment, as it documents the actual practices in place, and it was those that were commented. Later "repairs" in terms of supplying additional information and documentation are not really relevant in this context. In addition to findings of the auditor, the review has brought up the issue of maximum billable hours as agreed in the contract, and the need to make this transparent with specific time sheets. There is no cause for the review to change the initial findings and recommendation.

Recommendation: Make time sheets mandatory for both partners (and change the contract to that effect), giving dates and hours worked, structured according to the defined work areas, and annexed to invoices and annual reports, as appropriate. Also, provide documentation for at-cost reimbursable expenses that are invoiced.

3.2.2 Efficiency

- *Can project expenditure be justified when compared to the plans, progress and output of the programme?*

To assess the efficiency of capacity development measures is notoriously difficult, as a basis for valid comparison is usually missing, and the measurement of capacity building outcomes itself is elusive. The review has chosen two methods to shed light on project efficiency: a) an analysis of the cost structure with a view to determine productive and unproductive costs, and b) a benchmark with other similar projects.

[3] Report and Financial Statements for the 24 months ended 31 December 2007, BVL & Co, Certified Public Accountant, Kampala. The audit report contains more details than included here.

Cost structure

Fees invoiced by Statnett for substantive input to the four areas of assistance are regarded as productive costs. All other costs, such as for project preparation, management, travel and other expenses are regarded as unproductive or overhead costs. A high overhead reduces the efficiency. A complete cost breakdown is not available to the review, but an estimate is possible using data from annual reports and the audit report.

Cost item	Project expenditure 2006-07 (NOK)
Travel & related cost	2.230.000
Project preparation	685.000
Project management and coordination	1.276.000
UETCL cost	512.000
Total non-productive expenditure	4.703.000
Total cost of direct coaching/training input	5.713.000
Total project expenditure	10.416.000
Ratio of non-productive to productive expenditure	0.82

Table 2: Project Cost Structure

Finding: The project spends NOK 82 for each NOK 100 of direct capacity development input. In absolute terms, one hour of coaching/teaching/presenting or running of seminars and workshops costs in excess of NOK 1,500 per Statnett expert.

Benchmark

Benchmarking has been used for a comparative assessment of efficiency, and other criteria. Benchmarking attempts to put percentage points on performance for each criterion, and the average of all projects is then calculated as 100%, and each intervention is compared to this. For the DAC criteria, the following calculations and scoring/weighting were done.

- Efficiency: Intervention cost in relation to results in terms of training/coaching output (hours)
- Effectiveness: Level of fulfilment of objectives including cross cutting issues
- Relevance: Goal alignment with the needs of the target groups and national policy
- Sustainability: The continuation of benefits after the end of the intervention

The UETCL-Statnett twinning project has been compared to a number of capacity building assistance projects carried out by Norway in Mozambique and in Nepal. This was possible because such benchmarks were available from Scanteam's evaluation of the power sector in 2007. The result is shown as a graph. The ranking of the project reviewed is shown in relation to the available number of anonymous projects in Fig.1 below. 100% is defined as the arithmetic mean of all 17 projects both capacity development and infrastructure included in the benchmark, but in the diagram only the capacity development projects are shown. More information on the benchmarking process is found as annex D.

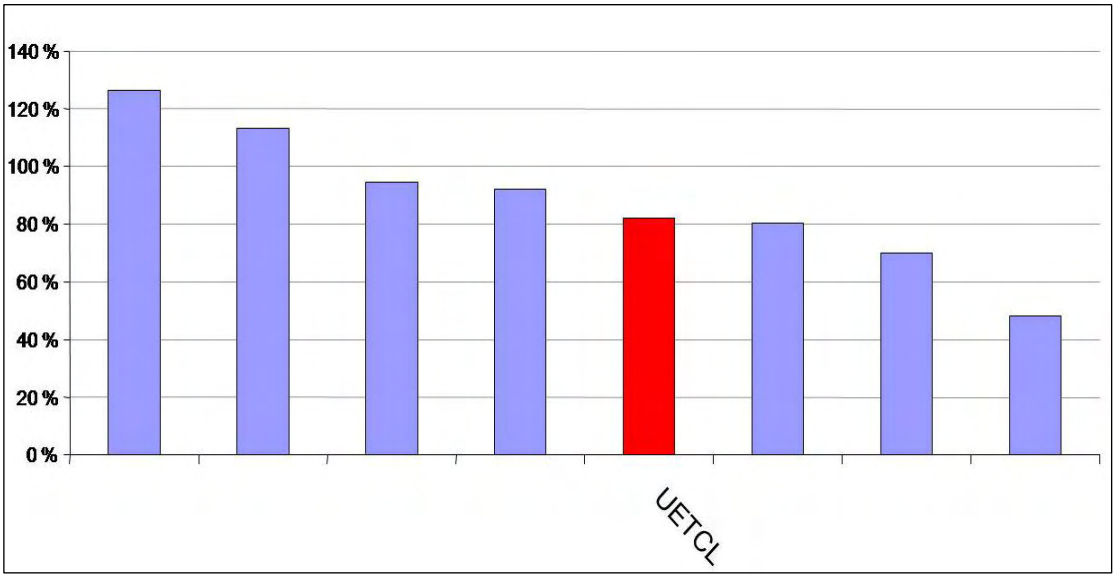


Figure 1: Efficiency Ranking of Capacity Development Projects

The result is that the project under review takes rank 5 of a total of 8 projects. It is about 20% below the calculated average efficiency for all 17 projects and 5% below the average of CD projects. This finding is supported by the previously used method, which found very high unit costs of input.

3.2.3 Effectiveness

Activities and outputs

- *Have activities been carried out as planned? If there are deviations, are they justified? Have activities been carried out efficiently? The quality of interaction between Statnett and UETCL team members should be assessed*

By and large, activities have been carried out as planned. There are some activities however, that have not been carried out, and it appears for good reason; such as:

- Benchmarking in a regional context was not carried out. It was realized that benchmarking involves the sharing of sensitive data, and therefore it is not easily introduced. Building of trust comes first, and this takes time. Therefore, it is reasonable that benchmarking could not be undertaken within a project period of less than three years, but the project could have anticipated the barriers to benchmarking, and it could have been more realistic in approaching the subject.
- The development of an ICT strategy was a planned sub-activity under the information management component. It was not developed as early as planned, but is in progress at present. The delay was caused by the realization that a status analysis needed to be carried out first. This was done as a health check exercise, followed by patching up the most obvious and critical needs. As such, the delay seems reasonable.
- "Transmission system utilization maximized" is an output that can be put to test in a situation where sufficient power supply is available to satisfy unconstrained demand. However, such a situation has not existed during the project period. UETCL management reports to the board of the company on supply reliability with the KPI *"energy not supplied due to faults"* which is useful, and deserves to be used also in project reporting.

- *How is the quality and ownership of documents prepared by or for the UETCL as part of the cooperation? Relevant documents to consider are the corporate business plan and the grid development plan.*

The produced key documents are of remarkable quality, and it is discernible that UETCL has full ownership to the documents. This is borne out by the fact that board approval has been obtained for the documents, and it has been decided to implement the strategies and plans.

- *Will the intended outputs be delivered by the project?*

Except for those activities not carried out for reasons explained, the project will achieve the planned outputs.

Monitoring progress

- *Was the baseline information comprehensive and of sufficient quality to monitor progress?*

The concept of monitoring progress in comparison to baseline values requires that measurable indicators are defined at the outset, and a baseline value is determined. The rate of progress has then to be determined in the same manner, and is to be compared with the baseline, and the planned targets. Indicators for the Goal and the Purpose (Objective) were defined in the Project document (PD), as shown in **Table 3** below. However, no baseline information was provided at the objective level. For the outputs, no measurable indicators and no baselines were established, and this has affected monitoring and reporting.

Objective hierarchy	Indicators
Goal: To meet the energy needs for the Ugandan population for social and economic development in an environmentally sustainable manner	• Power sector financially viable without subsidies • Growing power demand met • Area of coverage increased • Reliability and quality of supply improved • Private capital attracted to the sector • Export opportunities explored
Purpose: UETCL strengthened in its function as transmission system operator and in maintaining public service obligations	• System operation, expansion and return on assets • UETCL seen as regionally leading TSO on basis of benchmark • UETCL seen as fulfilling role as TSO and Single Buyer on basis of satisfaction surveys

Table 3: Results Level Indicators from the Project Document

To be meaningful, UETCL must show how and to what extent the project has contributed significantly to achieving the Goal by measuring the indicators, and comparing them to baseline and target values. An analysis would also attempt to identify to what degree the achievement of a result is attributable to the twinning project.

Also, UETCL is expected to demonstrate how and to what extent the purpose has been achieved by measuring and reporting on the purpose indicators, compared to baseline and targets.

As an apparent result of the project, UETCL has set targets for some key performance indicators that are identical to those defined for the twinning agreement, such as the degree of customer satisfaction and the reliability of supply. UETCL is reporting internally on

these, but does not use these results for regular project reporting to the donor. Hence, the finding is that the project has not monitored progress in a systematic manner. Comprehensive baseline information has not been available to effectively monitor progress and measurable indicators have not been used, except at a very rudimentary level, in reporting. This critical statement is made regarding monitoring and reporting of the twinning project to the donor.

The view of the twinning partners differs on this, as they stated: "We do not necessarily agree the project document of 2006 had a lack of project indicators based on what was available at that time."

Internal reporting at UETCL however, appears to be much better, as has become evident with the development of KPIs and their regular use on a quarterly basis (since January 2008), in reporting at all levels within the company and in particular in reporting from management to the board of the company. The development, consolidation and introduction of key performance indicators has taken more time than planned, and for this reason previous project reporting did not benefit from its use.

The mid-term review conducted by Norad in 2007 recommended that the partners prepare a baseline for outputs, and report progress against it. This was provided to be included in the mid-term review report. In the review's opinion, this has been a useful exercise, as it has helped in better showing progress. Having said this, it should also be stressed that if an effort had been made as a follow-up to the related recommendations of the appraisal 2005 of the project document, it would have been possible and useful for project monitoring and reporting over the entire period. Nevertheless, some elements of that baseline definition and progress reporting exercise are very useful, while other parts are less so. Done late in the project cycle, and in a somewhat superficial manner, the impression is of "too little too late": "Too little" in the sense that defined baselines are not really specific enough. For example, a baseline statement "business plan not reviewed" is not specific enough to report against, and single-word answers to questions posed are not very informative. What would be needed are the stated specific shortcomings of the existing business plan. This would make it clear what the output aims to achieve, and reporting could be specific against it. "Too late" naturally sums up the fact that it was not possible to cover the whole reporting period, and by failing to do so, baselines and indicators could not be used as a management tool.

Recommendations: a) Use of KPIs in the third annual project report at the end of the year, and in the project completion report, as far as it relates to project outcomes.

b) Use of a more elaborated baseline, with refined questions/issues, and answers in terms of results status, for use in the project completion report.

Activities leading to Outputs

- *To what extent have activities and outputs contributed to the purpose of the project? Have the intended outcomes been realised?*

In general, intended outcomes have been realised, but it is noted that one important outcome, "UETCL seen as a leading TSO in the region, as a result of an international benchmark", has not been achieved, as no international benchmarking took place. If benchmarking had taken place, the question remains open whether this would have shown

UETCL to be the leading TSO in the region. In retrospect it can be seen that this indicator is not specific enough to be useful.

- *How appropriate was the chosen implementation model, e.g. the organisation of the project and the mode of work (workshops, seminars, mutual visits etc.)*

It has become visible that in terms of effectiveness, the chosen implementation model has been appropriate and successful. However, this was at the cost of low efficiency, in other words, high unit costs have been incurred to be effective. Clearly, the project has not found it possible to reconcile the two somewhat opposite criteria of efficiency and effectiveness. Had the project spent less money on not directly productive items, efficiency ranking would have been better. But, it is not possible to say if it would then still have achieved full effectiveness, as a good part of the costs can be regarded as being in support of participant's motivation and reward for hard work performed.

One issue is whether it is appropriate to burden UETCL with the task of planning, leading and managing the cooperation entirely by itself as stipulated by the bilateral agreement between Uganda and Norway. Joint project development, both for Phase I and Phase II have been relatively weak in terms of developing the objectives hierarchy, the baseline and SMART[4] indicators. As a consequence, monitoring and reporting have been weak, and it has largely been limited to the activity level. In the annual meeting 2007, the Norwegian representative requested improved reporting on outcomes in general terms.

Finding: The project has failed to address better reporting. According to the PD, the UETCL project coordinator is responsible for reporting, among other tasks. There is no evidence to show that UETCL has received any help in improving the reporting at the output and outcome level, but there is a clear need for it. Being more informative on results vis-à-vis the Board and the donor is a challenge. *What have we done at what cost?* (activity reporting), should be balanced with *what are the cumulative results (outputs, outcomes)?* of the activities. The first, ideally, is brief and focussed, and includes a deviation analysis, while the second (the results) should be a description of change (or the reasons for the lack of it), and it should use measurable indicators, compared to baselines.

- *Are the four chosen areas of cooperation appropriate, and does Statnett have the necessary competence to assist the UETCL in all the areas (cf. the concerns raised in Scanteam's 2005 appraisal report)?*

According to the PD, the four areas of cooperation were in brief: A) strategy and business development, B) corporate efficiency and budgeting, C) maximized transmission system utilisation, and D) information management. The methods of work have been coaching of UETCL personnel, the formation of UETCL-Statnett work groups, and the conduct of workshops, seminars and meetings on the various topics, with one to five UETCL staff participating.

Finding: On the whole, the four areas of cooperation are conducive to achieving the purpose of the project, and good effectiveness has been achieved. Specific contributions of the four areas of cooperation to the project purpose are difficult to identify. This is because the project components overlap, and the work groups are not strictly functional units, but

[4] SMART = Simple, Measurable, Achievable, Realistic, and Time-bound

are cross-cutting to an extent. There are links between the themes, and reciprocal effects. For example, corporate strategy may determine what are efficiency targets, but the corporate efficiency work group will need to inform what is achievable with what means. Benchmarking is closely linked to KPI reporting, and both are needed to monitor corporate efficiency, but also technical efficiency of system operation. A communication strategy has to make sure that benchmarks are understood by the recipients. All this indicates that UETCL-Statnett Twinning is a complex undertaking. It started off with a basic project design which was expanded on in annual planning exercises, where changes in the sector environment were considered. The project scope has developed well over the period, and the review's impression is that a lot has been achieved. However, results reporting is weak, which is unfortunate.

Statnett personnel clearly have the professional qualifications and technical as well as corporate experience to assist UETCL across the four defined thematic areas. But, Statnett personnel have not been of sufficient help to UETCL to develop monitoring and reporting in terms of the donor's needs. The reason for this may be that Statnett personnel only have limited experience in running development cooperation projects, and have not sufficiently acquired the state-of-the-art tools and methods that exist, such as Results-based Management approaches, Logical Framework Analysis, and SMART indicators.

The following brief activity and outcome review underpins the above finding.

Activity reporting provided clarifies to an extent what has been the emphasis in achieving the various outputs. For example, output A) on *strategy and business development* was largely achieved by work on the CBP, regional cooperation discussion, and the drafting of a Board and management charter, but not any market development activities, as the latter apparently was not relevant in a situation of constrained supply, and an externally defined single buyer role. UETCL is the only buyer and seller of bulk power. The purchase prices are set in a number of agreements with the different suppliers (Power Purchase Agreements, PPAs), and the resulting average price per unit depends first and foremost on the water level in Lake Victoria, as this determines hydro capacity and the production mix at any one time. On the other hand, the bulk selling tariff is set by the regulator ERA, and approved by the MoFPED. Normally, the selling tariff would reflect the purchase price to UETCL, and the cost of operating the transmission grid. However, due to the power crisis since 2005, purchase prices have gone up, as more and more expensive thermal power was needed. A political decision has determined that the selling tariff was not to increase, and therefore total costs to UETCL are higher than revenues, and the gap needs to be filled with government subsidies. This situation had not been fully anticipated at the outset of the project, and adjustments needed to be made. There are only two business aspects in relation to the single buyer role: What power purchase price UETCL can negotiate with power producers, and how it can influence its own costs of operation of the transmission grid and its own overall administration and management.

The third area of business is the investment in grid renewal and expansion, in line with overall sector development. It is the mandate of UETCL to connect new generating facilities with the national grid in order to evacuate power and supply it to the distribution system, or for export if there is a surplus. The CBP of the company presents these business areas in brief, but is otherwise also an organisation manual for the company.

Outcomes:

- UETCL Corporate Business Plan revised, made operational and partly implemented. Improvements in the areas of mission/vision/values, strategic goals and objectives achieved. The current document appears to have a sufficient quality.
- Business planning process reviewed and updated and is now part of the Board Charter.
- Competencies on the long term market development acquired, based on updated long term power system plan, initial work on strategy for regional power exchange and development of capabilities to handle the power situation.
- Advise given to Government on market structure, which was accepted.
- Capability to manage the risks of a single buyer improved by evaluating alternate single buyer models and their associated risks and other features. PPA/PSA (power purchase agreement/power selling agreement) standardization finalized for smaller projects. The financial projection model partly updated.

Similar is the case for output B) that is concerned with corporate efficiency and budgeting processes. It is clear that planned activities were defined in very broad terms, while what was actually carried out is much more specific. For example, the main activity on TSO benchmarking involved the formation of an internal work group for benchmarking, the setting up of procedures for benchmarking, and the discussion of cost elements in the benchmarking. Statnett provided input from its own experience, and a board paper on bench marking was also produced as a means of communication between the company management and the Board, and finally, a concluding workshop on benchmarking was conducted. The other major activity to achieve the output was the *review and update of the budgeting process.* The term used to describe the activity is again rather general, while the work carried out was much more specific: the extent and scope of making financial projections in the CBP were discussed and agreed, reporting on the financial status was introduced, and training on a specific financial projections model was provided. Statnett also provided hands-on assistance in the implementation of the model, to an extent in departure from its pure coaching role.

Outcomes:

- KPIs for benchmarking of investment projects has been developed, but not used. A simpler pilot involving cost of lines is due to take place by the end of 2008. Progress has been made by removing fear and developing the idea of benchmarking as a corporate tool for improvement.
- The budget process is reviewed and updated concerning the need for external financial resources, the need for bulk purchase and supply and rate of return. The possibility for internal savings have not been addressed so far. UETCL appears to have limited capacity in this area, and perhaps insufficient management focus.
- Improvement achieved in corporate cost efficiency including socio-economic planning of grid investments, maintenance system, outsourcing and procurement. Socio-economic planning is part of the new grid development plan.

Transmission system utilisation is the topic of work area C). The activities performed here are again more elaborate and specific than outlined in the PD, and are in brief:

- Introduction of UETCL to the transmission capacity process in Statnett, licensing, TSU policy, investment planning, risks and priority setting, emergency planning and presentation of power market analyzer (PMA).
- Drafting of grid development plan, revision, and reporting on grid investments, and investment implementation status, through various rounds.
- Planning of PMA activities, formation of a task force, and elaborating TOR for a PMA feasibility study, establishment of a demonstration model, and finally preparation of a board paper to inform the UETCL decision process on PMA purchase, as early as week 19 in 2007, but actually so far, the PMA has not been procured. PMA specifications and TOR were updated in week 37, 2008.
- Project implementation plans Bujagali and TOR for Karuma connection feasibility, as well as the emergency planning update were discussed.

Outcomes:

- Study exposed problems with the load-flow model used, which have not been resolved. Losses in the transmission grid are reasonably low, but the line from Owen Falls has to be operated at below capacity for reasons still unknown.
- A first version of a grid development plan for Uganda has been approved with some missing elements; namely market- and hydrology scenarios and change in power production.
- A rudimentary emergency and crisis management plan addressing the supply situation was developed. Further development is needed, but has so far not been a priority of UETCL.
- Better utilisation of interconnections has been achieved by negotiating more flexible agreements involving both import and export

Enhanced information management, is the output of work area D). Analysis reveals that information management has also been named management information, and that both terms are actually far from doing justice to the work carried out.

In the opinion of the review, output D) would be more appropriately named *"Human Resource Management and Communication improved"*. Activities carried out include:

- Statnett provided input on human resources, employee satisfaction survey, remuneration, competence, job rotation and KPI reporting/IT in Statnett, as well as KPI reporting training
- Evaluation of the reporting process, and further KPI development at Board, management, department and section level, draft of a communication strategy.
- Conduct of internal stakeholder survey and follow up on results at corporate, department and section levels, involving 80 UETCL employees.
- Review of data gathering procedures (interviews) for internal and external surveys, conduct of first external stakeholder survey.
- Work on staff retainer and succession planning
- Several rounds of follow up on survey results, KPI reporting and communication strategy.

– Initial health check and risk assessment of ICT systems including urgent mitigation actions.

Outcomes:

- KPIs supporting vision and strategy at corporate and department level have been reviewed, improved and introduced. These are considered to be measurable, well defined, hierarchical and limited in number.
- Reporting procedures on quarterly basis introduced, and actually in use since January 2008, at all levels of the organisation. Highest level reporting seems to be functioning, while at lower levels, routines seem still fragile and not fully communicated.
- Development of an HR-process has been started with an employee survey. Internal satisfaction surveys have become a tool used annually. Results are used at the section level to discuss and introduce further improvements in work processes, in a continuous cycle.
- Results of external stakeholder satisfaction surveys are used in KPI reporting at board level. This appears still rudimentary, as a segmentation of response based on type of stakeholder appears to be missing.
- Development of an ICT strategy was a board level priority planned for phase 1, but deferred, after conducting an initial health check and risk assessment which revealed some gaping holes in the ICT systems. The status is that urgent action has been taken to fill the most obvious gaps. Elaboration of the ICT strategy is ongoing under an external consulting contract, and its implementation is planned for phase 2.

View of stakeholders

- *Stakeholder view of the progress of the UETCL performance within its areas of responsibilities should be examined. The professionalism of the UETCL to negotiate Grid Connection and Power Purchase Agreements should especially be considered*

A majority of external stakeholders[5] have expressed a favourable opinion on UETCL performance, in terms of their satisfaction, in the survey that was conducted. As responses from different stakeholder categories were "lumped together", the level of satisfaction found is a kind of cross-cutting index rather than giving specific performance information. Interviews conducted by the review, by and large confirmed a high level of satisfaction with UETCL performance. Only limited information on the questions of negotiations on grid connections and PPAs could be collected, since few negotiations took place, and not all participating stakeholders could be interviewed. The finding, which for reasons explained may not be totally representative, is that UETCL staff act professionally in negotiations. They know their business, and to what extent contract terms are actually negotiable, and where political decisions at a higher level set limits, or are pre-determined, such as in the large generation projects.

Stakeholders find that as a Single Buyer, action of UETCL is constrained by the political and regulatory framework, and within this UETCL does a professional job. As a transmission system operator, stakeholders recognize that UETCL has embarked on a path of improving

[5] The list of all stakeholders interviewed is found in annex B

performance, but it can so far not document cost efficiency. As a corporation of the government, UETCL is recognized as an important actor that is in the process of gearing up its organisational structure, its work processes and its communication. Stakeholders feel that positive results of these processes are already visible.

3.2.4 Relevance

- *Are the project's purpose and outputs still in compliance with Ugandan energy sector policy?*
- *What is the relevance of the UETCL's cooperation with Statnett for the Ugandan energy sector?*

Main goals and objectives are relevant and in line with government policy. Project goals are highly relevant in this context and the project appears to have improved UETCL's ability to handle the challenges it faces primarily as TSO but also as single buyer. The organisation has agreed on its mission, goals and main strategies. It has become more customer oriented and is developing a better transparency for all stakeholders. Key competencies in management, planning, procurement, risk assessment and ICT have been developed.

- *The relevance should be explained for each of the four areas of cooperation.*

The CBP including board charter, management charter and the KPIs all contribute to balance responsibility and authority and disseminate key information in the organisation. The indicators developed appears relevant and in line with what is used in similar organisation, but external references are (still) missing. The main challenge, however, will be to keep up accurate reporting, act on gaps between goals and results and to adjust the KPIs according to experience in a dynamic manner.

The areas of strategy development (A), corporate efficiency (B) and information management (D) appear equally relevant, as all are at the corporate management level, are complementary rather than duplicative, and contribute to the development required in an increasingly critical and complex sector. By comparison, transmission system utilization (C) may be regarded as somewhat less relevant, as there was no pressure to maximize system utilization in a situation of constrained supply and low transmission system utilisation. However, this situation is expected to change quickly, as more generating capacity is coming online. In this regard, the efforts going into this cooperation area is relevant, but not urgent.

- *Is the relevance the same for management issues as for technical issues?*

While the technical competence of UETCL employees is generally good, the strict hierarchical structure of the company is in general a major obstacle to make organisations work efficiently. The review finds that the twinning project has demonstrated to an extent how collaborative and team-oriented approaches can be effective. To be fully accepted by UETCL and favoured over the more hierarchical approach requires a profound change that takes time. This indicates that the management issues may be more relevant than the technical, and this has also guided the adjustment of project priorities.

- *What possible other areas of cooperation could have increased the success of the project?*

Important topics which have not been explicitly handled by the project include leadership development at all levels and general knowledge management to retain crucial knowledge in the organisation. A stronger emphasis on emergency planning and project implementation would also have increased relevance in light of the current supply situation and the fragile grid. The latter has clearly been recognized, and preparatory action was

taken by establishing a project implementation department, and the topic is a component in the proposed Phase 2.

The review has not identified any other area of cooperation that would have been essential to be included/added in the twinning agreement. The development of measurable indicators and their use to measure change in UETCL, not only internally, but for the purpose of the twinning project could have resulted in better reporting on the project.

- *To what extent has the project with Statnett contributed to making the UETCL more able to handle the challenges it faces as transmission system operator and single buyer?*

The twinning project has contributed significantly to making UETCL better able to handle its challenges. Even if the attribution question cannot be fully answered it seems clear that as a result of the cooperation , internal work processes have been improved, new tools have been introduced, the company was restructured to better focus on key areas, internal and external communication has been improved, and remaining challenges have been identified.

Judging from the areas addressed, worked on and discussed between the twinning partners, new departments created in the restructuring of UETCL are a result of the project, with the exception of the project implementation department. The latter appears to be a result of a World Bank recommendation.

All these changes have resulted in improved skills, methods and processes to function as a TSO and Single Buyer. However, while the TSO function appears to be left to UETCL to deal with entirely, the Single Buyer Role is much more political and exposed to diverging interests, and influence by others.

- *The relevance of the chosen Key Performance Indicators for reporting should be evaluated.*

A lot of effort has gone into the development, revision and consolidation of the KPIs used. It started off with a large number that was not easily understood, and ended with 15 KPIs that are reported to the board quarterly. The users of the KPIs appear to be happy with what they have, but the process of changing and revising is not regarded as complete. For the review, it is difficult to assign relevance to the indicators in a differentiated manner, as the detailed knowledge of UETCL work routines is lacking. It is obvious that some of the indicators are very relevant, such as on liquidity, income, system faults occurring. Others, may be more difficult to understand and more questionable. For example, the "*competent and satisfied employees"* KPI is a number (HCI score). The higher number the better, but it is not transparent what it means, and therefore perhaps questionable what the use for the board is. Another example is the *"number of Internal Audit reports presented and approved"*. The result of such audits in brief may be more relevant board information than the number of audits performed.

3.2.5 Sustainability

- *How well has the cooperation been anchored within the UETCL? Have top management and project officers been sufficiently involved to secure ownership of achieved results? How many members of staff from the UETCL have been involved in each of the areas of cooperation? Vulnerability to the loss of key staff should be assessed*

All areas of cooperation have involved a large number of UETCL employees in the work (A = 3, B = 5, C = 5, 11 in one workshop, D = 5, and 10 in several workshops, and 80 participants in discussing employee survey results). Also, the board of 5 has been involved. This secures widespread ownership to results and sustainability, as all the work area leaders are also

line managers. Sustainability is still vulnerable to the loss of key staff, but not much personnel change is experienced in UETCL, and the project has also worked on a retainer scheme and succession planning.

- *What is the expected long-term sustainability of support provided in the four areas of cooperation? Possible variations between the areas of cooperation should be examined and explained.*

The review believes that long-term sustainability is a function of continuing management focus on the respective work area. As no changes in the policy framework for the energy sector are foreseen, one may expect that no change will take place regarding management focus.

- *Has the choice of a twinning model, as opposed to the use of external consultants or expatriate experts, contributed positively to the sustainability of the project?*

The twinning model, with its emphasis on coaching, as opposed to providing management for hire functions, has been positive to sustainability, as ownership is very much embedded within UETCL.

- *Does the UETCL have the necessary financial and human resources to continue the activities initiated through the twinning arrangement? Are recurring activities which were already carried out before the cooperation now of a higher quality?*

The new plans, strategies, routines appear in general to be followed and some recurring activities which were already carried out before the cooperation appears to be of a higher quality. Sustainability is, however threatened by a possible lack of financial resources as UETCL is depending upon subsidies and foreign aid. This situation is compounded by the current supply situation and the need to buy expensive thermal power. There is a tendency that UETCL has to take all the financial risks associated with further sector development, on behalf of the government. Whether the political framework conditions will allow UETCL to build up a sustainable financial basis, before subsidies run out, is an open question. If it does not happen, systems and routines seen as costly may not be sustained.

Another threat to sustainability is that trained people will always have a tendency to leave for "greener pastures". To sustain advanced tools, methods and competence a dynamic organisation must have a strategy not only to retain key people, but also to retain their knowledge. UETCL has been assisted by Statnett in developing a retention and succession plan, but other elements, such as knowledge inventories, data models and systematic documentation of procedures as well as transactions may be missing.

of knowledge management may be missing.

- *Have external factors (e.g. changes in the political or regulatory framework, the power crisis, the financial situation of the UETCL) influenced sustainability?*

The power crisis, resulting from a decreasing level of Lake Victoria has been a blow to the sector. It has necessitated an increase of thermal generation at high cost, and subsidies were introduced with borrowed money to limit tariff increase. This situation is not sustainable, and it threatens the sustainability of all players in the sector. How much UETCL is affected depends mainly on the level of risk it is mandated to take when signing new PPAs (for Bujagali for example). *Take or pay* agreements, for example stipulate that the buyer (UETCL) pays for generating capacity even if the generator cannot deliver power for hydrological reasons. It means the buyer carries the hydrological risk, and if hydrology is poor, the financial impact on the buyer is ruinous but not necessarily on the seller/generator. As such

documents are not available for scrutiny, the question of risk sharing, and how UETCL is affected in each specific PPA cannot be answered here.

- *Which measures could increase the sustainability of the achieved results?*

The major threat to sustainability is loss of management focus for financial reasons. Hence, a solid financial situation is the best guarantee for sustainability. UETCL can contribute by further improving its capabilities in financial management at all levels. Seen in a broader context, financial management includes budgeting, accounting, cost control, cash management, investment planning and management, corporate finance, both in terms of capital investment decisions (long term) and working capital management (short term). One of the most critical aspects for UETCL is to understand the financial long-term consequences of the contracts it signs as a single buyer.

Overall, as a composite benchmark of effectiveness, relevance and sustainability, the present project takes rank 2 in the comparison of 8 capacity development projects (refer to Figure 2, see also annex D). Seven of these from Nepal and Mozambique were benchmarked during a larger evaluation in 2007. As noted earlier, 100% is defined as the average of all projects benchmarked, which was 17, including infrastructure projects. Shown in the graph are only the relevant capacity development projects.

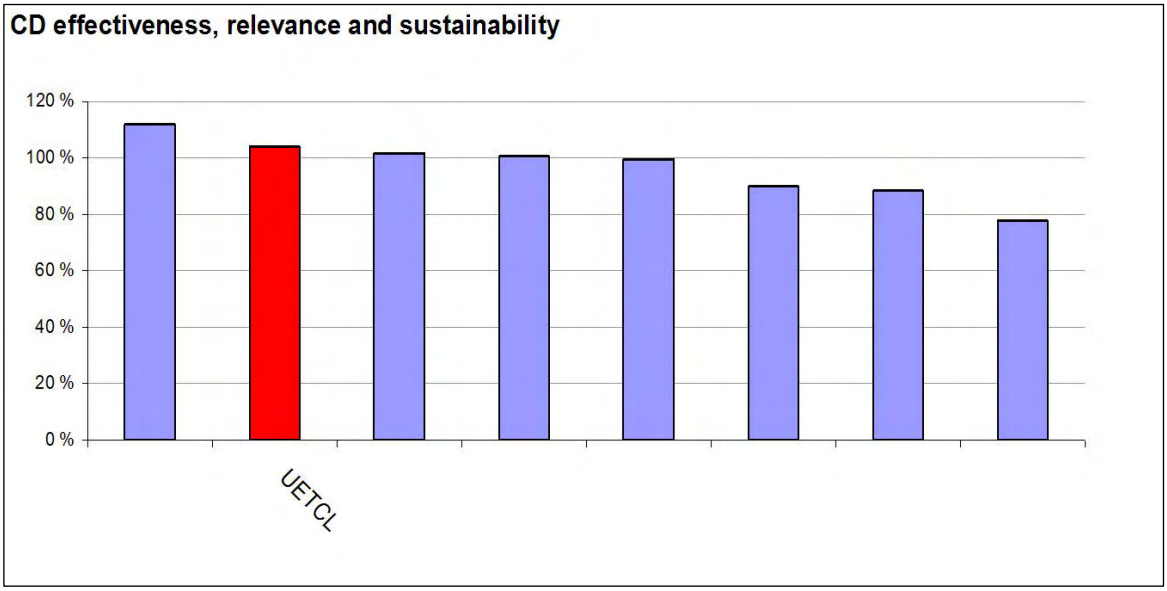


Figure 2: Ranking for Effectiveness, Relevance and Sustainability

3.2.6 Risk management

- *How appropriate was the project's risk management process?*

The main risks to project success and sustainability include:

- Lack of UETCL involvement
- Lack of management focus
- Lack of resources to sustain results
- Lack of UETCL influence in major decisions

All these risk have been identified during project planning and mitigated by project design, planning and execution, according to the project participants. However, this has not been reported on.

3.2.7 Particular concerns to be investigated

- *Were gender and HIV/Aids issues taken sufficiently well into account when designing and implementing the project?*

These concerns were not visibly addressed, as the project did not identify it as relevant.

- *To what extent have women been involved in the project?*

Women have been involved by coincidence, not by design, in the project, as some line managers who are engaged in the project happen to be women.

3.2.8 Audit and anti-corruption measures

- *Have the UETCL's internal project audit procedures been adequate?*

According to the auditor's findings, with regard to lacking third party receipts and time sheets when invoicing, but UETCL paying anyway, the internal procedures have not been adequate.

- *Have the Auditor General's audits of the twinning arrangement been adequate?*

The audit performed on behalf of the auditor general by an Ugandan accredited firm appears fully adequate with the limitation that it should, according to the bilateral agreement, have been performed for 12 month periods. However it was carried out for one single 24 months period.

- *Were satisfactory measures and management systems (incl. financial management systems) implemented to avoid and detect possible corruption attempts in the project?*

By not providing expense documentation with invoices in the first place, full transparency to detect possible corruption has not been achieved; regardless of whether or not such documentation was supplied when it was brought up by the auditor.

3.3 Conclusions

The conclusion draws on data collection and analyses undertaken, through a chain of arguments as contained in the previous paragraph:

- UETCL has definitely benefited from twinning with Statnett, and to an extent that has not become visible in reporting. Twinning has proven to be a successful model of cooperation, mainly for two identified reasons:
  a) Statnett and UETCL is a good match for twinning as the business of both companies is essentially the same. Hence, Statnett can draw from relevant own experience in advising UETCL, and Statnett understands UETCL's problems and is willing and able to assist in developing the tools and methods to solve these problems.
  b) The twinning partners see twinning as providing coaching, training and experience sharing from Statnett, rather than acting as a management consultant that delivers solutions. This entails that ownership is well embedded in UETCL, which has a positive impact on sustainability.
- The project has been high-cost but largely effective in addressing the target areas. Cost efficiency has been low due to frequent travel of a considerable number of participants on both sides, and other not directly productive costs. While not efficient, this has apparently been motivating to participants and has constituted an important motivational element in achieving effectiveness.

- Exception to the above is the area of regional benchmarking and delayed development of an ICT strategy. Reasons for failing to achieve targets here are plausible.
- The PMA decision process has been flawed. So far, analysis has not been provided as to what level of sophistication and complexity is actually needed and appropriate for Uganda.
- Relevance of the project outputs is high in the current situation, but the results on transmission system utilization are expected to be more important in the future, when supply meets demand, and when considerable consumption growth is expected.
- Reporting has been at the activity level. Measurable output indicators have not been developed and used. Outcomes, both in descriptive terms and in terms of measurable indicators are poorly documented.
- Administrative procedures with regard to invoicing documentation, and verification of invoices, have been lax and not acceptable from an auditor's point of view.

Recommendations based on experiences from the first phase are made in the appraisal in the next chapter.

4 Appraisal of Phase II

The purpose of the appraisal is to assess the quality of the proposal for a Phase II of the twinning arrangement between UETCL and Statnett, as described in the project document (PD) and based on the findings from the end review of Phase I. The appraisal shall assess the relevance, feasibility and potential risks and sustainability of the project prior to a funding decision. The appraisal has been undertaken with guidance from Norad's Development Cooperation Manual. The appraisal verifies and comments whether the information in the PD is sufficient and realistic, identifies any additional information needed, and advises on potential improvements to the programme design. Finally, the appraisal team expresses its opinion on whether Norwegian support should be provided to a Phase II, and other recommendations are made.

4.1 Background

For readers of the entire present report, i.e. review of Phase I and appraisal of Phase II, the first part provides detailed background information for the appraisal of Phase II. For those only reading the appraisal part, background information is provided here.

Norway provided assistance to the national transmission company UETCL in the form of twinning with Statnett of Norway. In earlier years, Norway had provided a twinning arrangement for ERA the Electricity Regulatory Authority, from its inception, for a period of five years.

UETCL-Statnett twinning started in 2006 for a period of 3 years to be concluded at the end of 2008. the purpose of the cooperation was broadly to strengthen the capacity of UETCL in fulfilling its role and mandate, both as a Single Buyer, and as a Transmission System Operator. Much has been achieved in this phase, and the cooperation was largely successful. Despite this, the power sector is not in good shape because of constrained supply due to poor hydrology, while demand rose steadily, and had to be suppressed to an extent, and supplied from new and expensive thermal sources for the rest. As the ability to pay for electricity is limited, the government maintained tariffs unchanged and provided subsidy with borrowed money to UETCL, which used it to pay for expensive thermal generation. While the hydrological situation has slightly recovered, hydro power supply is expected to remain insufficient for a number of years to come. Expensive thermal capacity will still be needed, and the Goal of a financially viable power sector cannot be expected to be reached anytime soon.

In this situation, a strong UETCL, squeezed between independent power producers on one hand, and the privatized distribution company UMEME on the other hand, appears particularly important, not in the least to represent legitimate national interests and counteract private interest and profit motives in a fair and transparent manner. In order to assure the required clout and competence, further development of capacity and operational efficiency, as well as corporate governance, and financial skills are required.

Areas of cooperation to work on in a second phase are seen in this light, and therefore the partners have submitted a proposal in the form of a Project Document for a Phase II to the Norwegian embassy through the official channels. As a part of the project cycle, Norway is required to carry out an appraisal, and the decision taken was to get an external appraisal carried out successive to an end review of Phase I.

4.2 Assessment of the Planning Process

Some elements of a Phase II actually originated early in Phase I, when it was realized that for various reasons priorities needed to be changed, and originally intended outputs postponed. Hence, Phase I was the platform for the planning of Phase II. Planning and project design are briefly characterized as follows:

- The planning process is based on the results and findings in Phase I including the UETCL Corporate Business Plan and the Power Market Analyzer evaluation, and has clearly involved relevant stakeholders in the process. The plan has an activity to assure the sustainability of Phase I and is following the recommendations of the UETCL board to focus on:
  - Information and Communication Technology Strategy with a Business plan for an ICT-Department.
  - Project Implementation Strategy with the clarification of external and internal interfaces
  - Strengthening of the Regional Cooperation between Neighbouring TSOs including benchmarking.
- The relevance of the programme with regard to chosen topics and the interests of the involved stakeholders is high. However, there are also project risks and perhaps other aspects to consider:
  - The Phase II can be seen as less relevant than Phase I since some of the most important topics were already dealt with, but it can be seen as more relevant in terms of sustainability: Phase II has high relevance in reducing the risk of losing some of the gains that improve sustainability. Continued coaching by Statnett is important on items that were uncovered through the insights given by Phase I.
  - It may be possible, and indeed desirable to raise the relevance of Phase II by adding corporate level components such as financial management and knowledge management, as argued in the paragraphs below:
    - In light of the crucial financial management competence that UETCL needs to improve its financial position, a project component on financial management and transparency appears meaningful.
    - Knowledge management to support the development of good leaders and to retain crucial competence in the organization in spite of personnel turn-over and the high level of outsourcing.
    - Performance benchmarking towards Statnett: Since Statnett is a role model in the twinning this would determine in a more systematic way what UETCL may have to gain by adopting Statnett practices.
  - One of the main challenges for the Ugandan energy sector is to make decisions based on competence and knowledge about the subject matter. The Phase II will further increase UETCL sector planning role and leverage when decisions are made, but it does not address the basic question of how decisions are made at the political level and the interaction between UECTL and the Government.
  - The planned interconnections mean that UETCL will face greater challenges in developing a regional market-place for power and dealing with border-tariffs and the increased complexity of grid operation. This task has to be carried out in a

multilateral environment of organizations and cooperating institutions which are at a developing stage, and this calls for new UETCL competencies which are already available in Statnett and will be the basis for twinning in Phase II.

- UETCL has at present very limited capacity for preparing tender documents, selection of contractors/consultants and implementation of projects. Due to the high level of outsourcing, competencies in this area is urgently needed to assure an efficient development of the national grid and the cross-border interconnections, and it is one of the main items in Phase II. An important element in this work will be the partly developed scheme for internal project benchmarking prepared in Phase I, which when fully developed in Phase II will give project managers a new tool to control proposed projects.
- Strengthening of the regional co-operation is of vital importance both for developing a stable and robust power market and the basis for creating external references through benchmarking. Phase II envisages to approach both subjects at a low profile level, by establishing technical work groups with the neighboring utilities, in particular Tanesco and KPLC. The appraisal finds this approach meaningful and realistic. However, the PD should include information on how the proposed regional cooperation differs from the Nile Basin Initiative, and whether there is a need to coordinate and avoid overlap. This will provide better transparency for the donor.
- Developing better methods and tools for analysing the power market (PMA) will enable UETCL as a single buyer to negotiate more correct prices for power bought from producers and to give more accurate signals to stakeholders. It will also be a vital part of budgeting, grid planning and risk management. However, the initial decision for the highly complex and overly expensive POWEL software appears flawed. This statement may require some elaboration, as follows:
  - A board paper (undated, but received by the Embassy on 15 May 2007), and provided to the review, proposed that the PMA from POWEL was recommended to be procured. The decision was based on a feasibility study that was clearly biased towards POWEL on the ground that Statnett had experience in using it.
  - An analysis of what is actually required in the Uganda situation – present and future – was not done and documented. It is not clear what level of complexity is actually involved when considering the single chief source of water for generation of power: Lake Victoria.
  - There is evidence that the full extent of personnel required to successfully operate and use the software has not been clearly communicated to the board: The board paper mentions a requirement of two staff during six to nine months, while the feasibility study estimated a full-time and permanent requirement of two staff, plus realistically another two staff that are involved part time.
  - It appears further, that what was presented to the Embassy more than a year ago as a board decision was either not formally taken, or it was reversed later. To the review it remains unclear. On one hand, further studies have been done that appear to have come up with the recommendation for another software package, and on the other hand, the budget in Phase II appears to accommodate the high cost of the POWEL package.

To the review and appraisal team, it remains uncertain whether a new evaluation process has already been or will be in the future sufficiently based on real needs. In the review's view, it appears most important that the needs of Uganda on this subject are carefully and realistically evaluated and that a software solution must satisfy those needs, no less, but also no more.

- It is important for a TSO to have an ICT strategy, especially when goals include development of telecommunication services using fibers on high voltage lines. But ICT-strategy development is costly and time-consuming. Assuming that the current effort of repairing the most gaping holes in the ICT systems will be completed in Phase I, it must then be made sure that the new ICT department acquires the competencies to lead such a project in Phase II, and handle the results.
- In terms of organizational setup, the twinning arrangement is considered quite successful by the parties involved and will be continued in approximately the same shape as in Phase I. The interface between Statnett and UETCL is functioning well. Topics where Statnett does not have specialist expertise may have to be outsourced, to a greater degree than in Phase I [6], Statnett appears to have many years' experience in using the PMA software package from POWEL, but limited experience with alternative models. Also UECTL's role as a single buyer may pose different requirements to the model and its use. Therefore, the extension of the Statnett team with persons with more hands-on experience in dealing with power markets should be considered. Other modes of co-operation such as the use of resident advisors is seen as less effective and has not been considered.

4.3 Assessment of the Programme Design

Degree of involvement of the twinning partners in PD development

The project document for Phase II has been a process that has taken considerable time. Progress of preparatory work was already discussed by UETCL's board in a meeting in December 2006, and UETCL management was instructed to continue work on it, in collaboration with Statnett, and management was later instructed to complete a project document and present it to the board by May 2008. Earlier work on studying the feasibility of a PMA, carried out and presented by Statnett, was considered a part of the preparations for a Phase II. It was also agreed that Statnett would write the draft document and present it to the UETCL board.

Regardless of who wrote the document, the appraisal finds that it s owned by UETCL. The areas of cooperation in a new Phase very discussed and agreed on by management and the board at an early stage, and there existed a process of continuous further elaboration within UETCL of some of the aspects of future cooperation. As a result, a Phase II in large part appears to serve the consolidation of UETCL restructuring that had been carried out, perhaps with the exception of the PMA implementation.

[6] It appears that other Statnett staff than the core team was engaged for tasks that required specialisation not available in the team. Actual outsourcing was not needed, except for engaging PMA software vendors to elaborate and make presentations.

Influence on Phase II development by the mid-term review of Norad

It is discernible that recommendations made by the mid-term review had an influence on shaping the contents of a Phase II, as the mid-term review report came at the right time. Stakeholders have requested the appraisal explicitly to provide comments regarding the recommendations. These are:

- It is agreed that ICT should be support, as the need has been previously identified, and a strategy is at present being developed at a cost. It is logical that after developing a strategy, it should be implemented.
- The appraisal finds that the whole discussion of a PMA has not started at the beginning, with the analysis what Uganda needs. Because this has been consistently lacking, all further discussion is actually not very well founded. In our view, the basis to be for POWEL-PMA or ECON-BID but against PoMo does not exist without such analysis. We agree however that in the choice of a software it is important to demonstrate the model (better) to specific planned projects, and to make very sure the company can afford the expense for personnel and software license fee and maintenance over time, and that it can draw value from using a software on a regular basis.
- The recommendation to extend the project to three years in the event of agreeing to a PMA assumes that this will be a sophisticated and complex exercise. In the view of the appraisal one cannot be sure about that at this stage.
- The mid-term review has not considered lessons learned form earlier experiences in Uganda regarding the use of advanced software packages. The appraisal also has not done this. However, informal information indicates that in particular simulation software for Lake Victoria exists, but that it is not found very useful, as the actual problem in this context is the draught and the falling water level, rather than a lack of hydrological simulation.
- Finally, the appraisal tends to disagree with importance of a simulation software for regional planning, thus building a case for needed complexity and sophistication. That UETCL would be given a mandate for regional hydrological and power market simulation is somewhat speculative and rather unlikely, and is therefore not a strong additional argument for a PMA.
- The appraisal agrees with the assessment of the programme design done by the mid-term review, but we take a somewhat more critical view of PMA with regard needed detail and complexity.
- The risks assessed are relevant as discussed, and the appraisal agrees that other project components could be of interest, and were considered by the stakeholders (refer also to other areas proposed in section 4.4).

The programme design envisages identical Goal and Purpose for Phase II as in Phase I. This is unusual, as it does not give the new phase at the objectives level its own identity and focus. As the overall policy and strategy for the power sector has not changed, it makes sense to retain the project Goal. However, the project could gain from a more specific Purpose. A consideration is for example to include a reference to regional cooperation in the

Purpose. As an output on regional cooperation has been formulated, and considerable importance is assigned to it, consistency would be improved.

The project complies with long-term sector policy, and is in line with UETCL's mission and strategy.

All design elements are in place, and include goal, purpose and outputs. A Log Frame is attached. Assessment reveals the following:

- The Log Frame defines "Deliverables", which, at the level of Goal and Purpose are actually indicators. All indicators require information how it can be measured and verified to be operational, and some are not relevant (at the Goal level) for what UETCL can realistically contribute.
- It is noted that in terms of coherence and completeness the Log Frame is less well developed than was the case in Phase I.
- Deliverables at the output level are in effect mostly activities, but also desired outcomes. Output indicators are lacking.
- One output "Market Analyzer Model procurement and implementation" is actually an activity, and what output this should achieve is unclear.
- Outputs appear to be both realistic and measurable if indicators are developed; an important exception being the PMA-part where more than two years of assistance may be needed in the case of the sophisticated models, to get the system into regular and stable use.
- Some efficiency indicators can only be measured through international benchmarking exercises and a comparison to Statnett could be a starting point.
- Cross-cutting issues (e.g. gender, environment, HIV/AIDS, anti-corruption measures) have not been reflected in the goal hierarchy. However, some of the planned activities will be very important in developing transparency and bringing environmental issues into consideration. Gender is considered of little relevance to this program, so this should be stated. HIV/AIDS could have an influence on turn-over and the ability to preserve competence within UETCL. The project document should provide information how it considers these and related issues.
- UETCL's monitoring system for documenting the outcome of the project appears adequate on condition that these tools (such as KPI processes) are also used for project reporting.

4.4 Additional Project Components

The project design includes one component that provides flexibility regarding what other component(s) could be included. This is the work area "Follow up of Phase I and support". This gives the project some flexibility to make last minute adjustments, once it is clear what will be the Phase I completion status.

The rationale for a possible "financial management" component is provided below:

The major threat to sustainability is loss of management focus for financial reasons. Hence, a solid financial situation is the best guarantee for sustainability. UETCL can contribute by further improving its capabilities in financial management at all levels. Seen in a broader context, financial management includes budgeting, accounting, cost control, cash

management, investment planning and management, corporate finance, both in terms of capital investment decisions (long term) and working capital management (short term). One of the most critical aspects for UETCL is to understand the financial long-term consequences of the contracts it signs as a single buyer. UETCL needs such knowledge, skills and analysis tools to be able to stand for fair agreements that sufficiently protect the interest of the public and the company.

An important area for UETCL and a possible cooperation component is *knowledge management*. Knowledge Management comprises a range of practices used in an organization to identify, create, represent, distribute and enable adoption of what it knows, and how it knows it. Many large companies have resources dedicated to Knowledge Management, often as a part of 'Information Technology', 'Human Resource Management' or 'Business strategy' departments. All these departments take part in the twinning project and considering UETCL's challenges of developing and retaining knowledge a knowledge management focus might improve sustainability of the project results.

4.5 Assessment of Sustainability and Risks

Most relevant risk factors have been assessed in the project document and mitigation actions are integrated in the programme design and seem adequate.

Sustainability issues and risks is assessed as follows:

- The PD prepared indicates that a capacity development project with substantial input is intended. It is understood that the same modus operandi as in Phase I will be used, where Statnett personnel provide coaching, training and advice, but not consulting services. This has proven to be an effective way of cooperation, but it means that considerable personnel input from UETCL is required to actually carry out the work that leads to achieving the outputs and the purpose. The project document lacks the information how much work input is planned to be provided from the side of UETCL, and an assessment whether, given the existing constraints, this is feasible and sustainable.
- Policy and framework conditions (incl. corruption): Some precautions are mentioned in the project document, and the project will improve UETCL's leverage and transparency, especially if a financial management component is included, and therefore its ability to reduce such risks.
- Socio-cultural and gender aspects (incl. HIV/AIDS): HIV/AIDS is something to consider when trying to preserving competence within UETCL, but is not mentioned in the project document.
- In economic and financial terms, cost efficiency of the required inputs is lower than in Phase I concerning consultancy and coaching, as analysis of the budget reveals. Cost efficiency is being dragged down by extensive travelling cost. Phase II contains a significant investment in the PMA and for this investment cost efficiency is determined by matching UETCL long-term needs to system abilities, whether it produces useful results, and the life cycle cost of the software and its use.
- The implementation timeframe appears realistic and UETCL will probably have the necessary capacity to absorb the proposed work volume. If this should not be the case, the appraisal does not see any reason why the project duration could not be stretched,

and a less dense programme be implemented. Whether the organization will have the capacity to absorb a power market analyser is not clear. It seems probable that a period of three years for this part is needed, if indeed the requirement is for a sophisticated and highly complex model.

- Institutional and organisational risks appear marginal. Based on the experience in Phase I it is most likely that all relevant UETCL departments/sections/resource persons will be involved to ensure adequate execution of the proposed activities. Available human resources are in line with the required needs concerning quality/competencies, but some departments have a work overload.
- Technical/technological risks appear considerable. The proposed investment in a PMA model is deemed necessary by UETCL, and it is clear from Norwegian experience that this type of tool is needed to mitigate volume/market/price risks in a complex power system with both hydro, thermal and import/export possibilities. Such a tool can be oversold, however: To consider the hydrology of Lake Victoria and market dynamics in the region to be of a complexity that requires extreme sophistication in simulation is perhaps an undue exaggeration. Simulation will not eliminate risks, and it takes considerable expertise and experience to use it in a successful way. It seems right for UETCL to start developing its expertise in this area with the limited Ugandan system to have a better basis for making the right decisions on investment and to be prepared for a more integrated international power market in the area. But this is a long-term objective, not short or medium term. With little relevance for the immediate future, there is a considerable risk that the PMA will be used too little and with too low frequency to sustain the necessary in-house competence. In such a case a better way of introducing a PMA is to outsource the analysis to a consultant if complexity is considerable, or to use a model that is relatively simple, and not more complex than absolutely needed in-house.
- The proposed programme does not have direct environmental aspects. Hence there is no environmental risk that the project ought to consider, except that at the level of project implementation, which is an investment project specific activity rather than one in the twinning project.

4.6 Budget

The budget for Phase II appears well prepared. It is based on unit costs and quantities, and is thus quite transparent.

Considerable funds are set aside for investments that are proposed in connection with defined project outputs.

- The first item is for the procurement of the PMA, and the budget amount stands at NOK 1.000.000. This would cover about the cost of the most expensive option, and if a different option is chosen, considerable savings will result as the prices for the various options are vastly different.
- The budget for investments in ICT stands at NOK 1.300.000. Only a lump sum amount is given. Hence, this part of the budget is not transparent.

The regional cooperation component bears a high cost and results in low cost-efficiency as travel costs are in excess of 60% of the budget for the component. This is due to the fact that travel cost are budgeted for all participants from three utilities for six meetings, in addition

to two Statnett staff participating in all meetings. It is unclear whether all possibilities to reduce overhead have been investigated.

A modest 1.2% of the total budget is foreseen for follow-up action on Phase I, which means not much input is possible. On the other hand, a contingency amount of 6.1% is included, which provides some flexibility for unforeseen activities.

Comparison of productive costs, defined as total fees for budgeted coaching, teaching and advisory time, and unproductive costs such as travel and administration, reveals that according to the budget, each NOK 100 spent on productive time will incur NOK 111 in unproductive costs. This indicates lower cost efficiency than Phase I.

4.7 Conclusion

Overall, it has become evident that the Project Document for Phase II has not been fully developed. The description of the overall aim, the rationale and justification, as well as the description and coherence of outputs, and how they will be achieved, are superficial at best.

The PD has not consistently been using the terminology used in Norway's development cooperation manual, and this introduces uncertainties how some of the terms are meant to be understood.

Indicators have not been developed to measure outputs, outcomes and achievement of the purpose so that the basis for monitoring and reporting is weak.

The conclusive finding is that the project design process should be taken up once more, and the project document should be revised and considerably developed further.

4.8 Recommendations

The appraisal recommends considering the recommendations for the ongoing project phase also in Phase II: With regard to monitoring, the fulfilment of contract obligations, and with regard to the verification of personnel provided, and hours and costs invoiced.

It is recommended to scrutinize the decision process that led to the decision on the PMA model selected, based on true and realistic needs of Uganda in the medium term future, as the main criteria.

The twinning partners have reacted to the above recommendations saying that "Scanteam has not obtained accurate information about the status for the above procurement" We agree, this is unfortunately the case. However, all the available data were meanwhile scrutinized. The conclusion is that the above recommendation stands, especially with regard to true and realistic needs of Uganda.

It is further recommended to consider the inclusion of project outputs that raise the project to include the corporate level, such as for instance on financial management, and on knowledge management.

Once the above points are clarified, it is recommended to revise the project document. In doing so, it is suggested to consider the following:

- Provide improved background information (what was achieved in Phase I, and what is the sector status)
- Improve Phase II rationale and justification

- Explain how outputs will contribute to achieving the purpose
- Determine SMART indicators for all outputs and to measure purpose achievement, and on this basis improve output reporting
- Address gender and HIV/AIDS

It is recommended to perform the bulk of PD revision and further development in a workshop with participation of key personnel from both partners, and using an external facilitator.

Stakeholders have commented the above recommendations, largely agreeing, but mentioning some finer points, such as what is "corporate level", and pointing out the need to finalise the PD as soon as possible.

Annexes

A Terms of Reference for the review and appraisal

B List of documents consulted

C List of persons contacted

D Information on benchmarking

Annex A: Terms of Reference

for the
UETCL-Statnett Twinning Arrangement
End-review of 2006 – 2008 project (phase I)

Appraisal of 2009-2010/11 project proposal (phase II)

1 BACKGROUND

Norway has previously supported the Uganda Electricity Transmission Company Limited (the UETCL) and its predecessor the Uganda Electricity Board (UEB) under the Power III and IV programmes.

The twinning arrangement between the UETCL and Statnett commenced at the beginning of 2006 (phase I). The three-year project is organized as an institutional cooperation between the institutions in areas such as:

- Corporate strategy and business development, including the Single Buyer Role
- Technical expertise, through maximization of transmission system utilization
- Implementation and monitoring of the UETCL Corporate Business Plan
- Enhancement of information management
- Risk management and mitigation

The original budget for 2006-2008 was 15 million NOK. The project was later expanded through an addendum amounting to 4.7 million NOK.

It is expected that GoU in June will request Norway to finance a new project proposal (phase II) under the twinning arrangement.

2 Purpose, context and intended use

The project goal of the twinning arrangement is *"to meet the energy needs for the Ugandan population for social and economic development in an environmentally sustainable manner"*. The project purpose (called "objective" in the agreement) is that "*the UETCL shall become more efficient in its function as transmission system operator and in maintaining public service obligations."*

Planned project outputs are:

A. The UETCL strategy and business development including the Single Buyer Role strengthened

B. Corporate efficiency including budgeting strengthened

C. Transmission system utilisation maximised

D. Information Management enhanced

The end review will be conducted before the project has been completed to allow for a smooth transition to phase II. The end review will also inform the appraisal of the new project proposal. The purpose of the **end review** is therefore to examine the extent to which the project is likely to achieve its purpose. The review shall examine the efficiency,

effectiveness, relevance, and sustainability of the project. In addition, the review should identify lessons learned.

The purpose of the **appraisal** is to assess the quality of the proposal for a phase II of the twinning arrangement between the UETCL and Statnett, as described in the project document (PD) and based on the findings from the end review of phase I. The appraisal shall assess the relevance, feasibility and potential risks and sustainability of the project prior to a funding decision. The appraisal shall be undertaken in accordance with Norad's Development Cooperation Manual. The appraisal shall verify that the information in the PD is sufficient and realistic, identify any additional information needed, and advise on potential improvements to the programme design. The appraisal team shall express its opinion on whether Norwegian support should be provided.

According to the Project Document for phase II the major issues will be i) Market Analyzer Model Procurement & Implementation, ii) Transmission Projects Implementation, iii) ICT Strategy Implementation and iv) Strengthened Regional Cooperation.

3 Scope of work

3.1 Scope of work for the end review

In general the review team shall address all issues found to be pertinent to meet the stated purpose, hereunder:

Efficiency

Agreement and contract

- Have the agreement partners (the Ministry of Planning, Finance and Economic Development and the Norwegian Embassy) fulfilled their obligations?
- Have the UETCL and Statnett fulfilled their obligations as stated in the contract between the UETCL and Statnett and, if applicable, in the agreement between Norway and Uganda?

Activities and outputs

- Have activities been carried out as planned? If there are deviations, are they justified? Have activities been carried out efficiently? The quality of interaction between Statnett and UETCL team members should be assessed
- How is the quality and ownership of documents prepared by or for the UETCL as part of the cooperation? Relevant documents to consider are the corporate business plan and the grid development plan.
- Will the intended outputs be delivered by the project?

Monitoring progress

- Was the baseline information comprehensive and of sufficient quality to monitor progress?
- Can project expenditure be justified when compared to the plans, progress and output of the programme?
- Have the UETCL's procedures for cost control, monitoring and disbursement been adequate?

Effectiveness

- To what extent have activities and outputs contributed to the purpose of the project? Have the intended outcomes been realised?
- Are the project's purpose and outputs still in compliance with Ugandan energy sector policy?
- How appropriate was the chosen implementation model, e.g. the organisation of the project and the mode of work (workshops, seminars, mutual visits etc.)
- Are the four chosen areas of cooperation appropriate, and does Statnett have the necessary competence to assist the UETCL in all the areas (cf. the concerns raised in Scanteam's 2005 appraisal report)?
- Stakeholder view of the progress of the UETCL performance within its areas of responsibilities should be examined. The professionalism of the UETCL to negotiate Grid Connection and Power Purchase Agreements should especially be considered

Relevance

- What is the relevance of the UETCL's cooperation with Statnett for the Ugandan energy sector?
- The relevance should be explained for each of the four areas of cooperation.
- Is the relevance the same for management issues as for technical issues?
- What possible other areas of cooperation could have increased the success of the project?
- To what extent has the project with Statnett contributed to making the UETCL more able to handle the challenges it faces as transmission system operator and single buyer?
- The relevance of the chosen Key Performance Indicators for reporting should be evaluated.

Sustainability

- How well has the cooperation been anchored within the UETCL? Have top management and project officers been sufficiently involved to secure ownership of achieved results? How many members of staff from the UETCL have been involved in each of the areas of cooperation? Vulnerability to the loss of key staff should be assessed
- What is the expected long-term sustainability of support provided in the four areas of cooperation? Possible variations between the areas of cooperation should be examined and explained.
- Has the choice of a twinning model, as opposed to the use of external consultants or expatriate experts, contributed positively to the sustainability of the project?
- Does the UETCL have the necessary financial and human resources to continue the activities initiated through the twinning arrangement? Are recurring activities which were already carried out before the cooperation now of a higher quality?

- Have external factors (e.g. changes in the political or regulatory framework, the power crisis, the financial situation of the UETCL) influenced sustainability?
- Which measures could increase the sustainability of the achieved results?

Risk management

- How appropriate was the project's risk management process?

Particular concerns to be investigated

- Were gender and HIV/Aids issues taken sufficiently well into account when designing and implementing the project?
- To what extent have women been involved in the project?

Audit

- Have the UETCL's internal project audit procedures been adequate?
- Have the Auditor General's audits of the twinning arrangement been adequate?

Anti-corruption measures

- Were satisfactory measures and management systems (incl. financial management systems) implemented to avoid and detect possible corruption attempts in the project?

3.2 Scope of work for the appraisal

Besides the findings from the end-review the consultant should focus on:

Assessment of the Partners' planning process

- The quality of the underlying analysis and planning process of the programme, including participation of relevant stakeholders in the process
- The relevance of the programme with regards to the problems that the programme should solve and the interests of the involved stakeholders
  - One of the main challenges for the Ugandan energy sector is the lack of overall planning and coordination. Does the proposed project strengthen the UETCL's sector planning role while keeping within its mandate? How is the relevance of phase II compared with phase I?
  - The impact of planned interconnections on the activities and business environment of the UETCL should be assessed.
  - Relevance should be assessed in light of the present status of regional cooperation and UETCL's contact with KPLC, Tanesco, East-African Power Pool, NBI)
  - Relevance should also be assessed in light of present UETCL capacity of preparing tender documents, selection of contractors/consultants and implementation of projects
  - Which areas of cooperation between UETCL and Statnett not included in the proposal could also be relevant in light of the purpose of the project?

- The use of lessons learned from earlier experience with similar programmes and/or the best available knowledge, including the appropriateness of a twinning arrangement compared with alternative models.
- Assessment of the degree of involvement of UETCL and Statnett in the preparation of the project document.
- Other planned or on-going programmes or initiatives within or outside UETCL that may influence the implementation or the effects of the planned programme. Interface between UETCL and other stakeholders regarding roles and responsibilities should be assessed

Assessment of the programme design

- The quality of the design elements, (goal, purpose, outcome, outputs, inputs), e.g. consistency and realism

– Are the goals/purpose/outcome/outputs realistic and measurable?

– Have cross-cutting issues (e.g. gender, environment, HIV/AIDS, anti-corruption measures) been reflected in the goal hierarchy? The relevance of each of these issues should be assessed.

– Does the project comply with long-term sector policy?

– Does the foreseen project serve to meet UETCL's mission and vision?

- The quality of the Indicators and Means of Verification (data sets) identified at all levels of the design elements. Are the indicators sufficient to give valid and reliable information on outcome and impact?
- Are relevant and relevant baseline data available and documented?
- Is the recipient's monitoring system for the programme adequate, especially with a view to documenting the outcome of the project?
- Are relevant risk factors identified, analysed and are mitigating actions integrated in the programme design

– Special attention should be given to possible new risk factors not described in phase

Assessment of sustainability and risks

- Policy and framework conditions (incl. corruption)
- Socio-cultural and gender aspects (incl. HIV/AIDS)
- Economic and financial aspects

– Are the required inputs justifiable in terms of the expected outputs (cost efficiency)?

– Is the implementation timeframe realistic and does the UETCL have the necessary capacity to absorb the proposed funding?

- Institutional and organisational aspects

– Will all relevant UETCL departments/sections/resource persons be involved to ensure adequate execution of the proposed activities? Have these been sufficiently

well consulted and how do they assess the project (capability, ability and willingness)?

- Are there gaps in administrative capacities necessary to implement the project? What are the available human resources compared to the required needs (volume/quantity and quality/competencies)?

- Environmental aspects of the proposed programme
- Technical/technological aspects

- What are the technological aspects related to the proposed investments and how does the proposal relate to regional development and international cooperation in the sector? Can the ICT investments be justified to be included in the project, and what is the sustainability of the investments?

- Any other significant risks that may prevent achievements of results

4 Implementation of the END review AND APPRAISAL

Source of information and methodology to be applied

The review and appraisal team shall make themselves familiar with all relevant and available background information, such as the project documents, the agreements, addendums, the appropriation documents, annual reports, minutes from the annual meetings, reports produced under the programmes etc.

In addition, the review and appraisal will be done through interviews with key informants and review of other relevant documents. The team is expected to have extensive meetings with the most relevant stakeholders, including the UETCL, Statnett, The Royal Norwegian Embassy, NORAD, other donors and relevant partners. Separate meetings should be held with UETCL staff for the four areas of cooperation of phase I.

Team composition and leadership

A team of one or two persons, both external to the project and nominated by Norway, will undertake the review. At least one of the persons, who will serve as team leader, shall be an international expert in the field. The team is expected to have in-depth knowledge of and experience from:

- The energy sector in Uganda/East Africa, regarding national context, organisational, management, financial and technical issues
- reviews and appraisals of development cooperation projects and programmes

Timetable for preparation, fieldwork reporting

The field work for the review and appraisal will preferably take place during September 2008. Before the field work the review team should meet with Norad to clarify issues in the TOR.

The team shall undertake a 2-week (depending on the number of persons: 84 hours to 168 hours including travel) fact-finding mission to Uganda. An additional 3 to 4 weeks (120 hours to 160 hours) shall be allowed for preparatory work and reporting, including start-up and wrap-up meetings in Kampala and Oslo.

5 Reporting

The combined review and appraisal report, with separate recommendations and conclusions, is to be written in English and should be delivered in electronic format and 5 hard copies. The report should follow the template for reviews and appraisals and use the terminology defined in the Development Cooperation Manual (DCM). List of documents consulted should be attached the report.

The team will submit and present the major findings in internal wrap-up meetings with the UETCL, Statnett, the Embassy and NORAD. The appraisal team shall present a draft report subject to comments from the UETCL, Statnett, Embassy and NORAD within 2 weeks upon return from Uganda). The final report is to be submitted within 1 week after the UETCL, Statnett, RNE and NORAD have delivered their comments to the draft report.

ANNEX

Documents

The following documents will be provided:

- Project documents (to be provided by Norad)
- Original Project Document (as of February 2nd, 2006)
- Amendment to the Project Document (May 15th 2007)
- Draft Project Document for Phase II (including appendixes)
- Platform for Dialogue for Phase II

Appraisals (to be provided by Norad)

- Appraisals, Norwegian Support to Activities in the Energy Sector, Uganda (June 2005)
- UGANDA – APPRAISAL OF AMENDMENT OF TWINNING ARRANGEMENT BETWEEN UETCL AND STATNETT (28th November 2007, 0701647-2)
- Mid-term review of twinning agreement between UETCL and Statnett, February 13th 2008, Sak: 0700889

Appropriation documents (to be provided by Norad)

- Programme UGA-3004 Uganda Electricity Transmission Capacity Building. Agreement: UGA-05/025 Twinning UETCL-Statnett (Archive 822.1 2005/02694)
- Amendment to agreement, UGA-06/057.

Agreements (to be provided by Norad)

- Agreement between the Government of the Kingdom of Norway and the Government of the Republic of Uganda regarding Capacity Building in the Uganda Electricity Transmission Company
- Contract between Statnett SF and Uganda Transmission Company Limited regarding institutional cooperation for capacity building in the UETCL (twinning arrangement)
- Annual reports, minutes from annual meetings, audit reports
- Statnett – UETCL twinning arrangement project. Report for period January-October 2006
- Statnett – UETCL twinning arrangement project. Report for period November 2006 – December 2007
- General audit reports for 2006 and 2007 (in press)

Documents recently prepared by the UETCL (to be provided by the UETCL)

- Original and revised corporate business plan

- Original and revised grid development plan
- Internal Stakeholder survey results (to be provided by the UETCL)
- External Stakeholder survey results
- Board-paper on Corporate Business Plan
- Board-paper on Financial Projections
- Board-paper on Employee Survey follow-up
- Board-paper on Expansion of Twinning Arrangement
- Board-paper on KPIs reporting structure and report format

Other documents of relevance (to be provided by Norad)

- UETCL board paper: Purchase and Implementation of a Power Market Analyzer Model (received at the Embassy on 15th May 2007)
- Nordic Consulting Group: Review of the Norwegian Support to the Energy Sector in Uganda (1997-2005), 13 June 2006
- NVE: Functional Analysis of the State Administration of the Electricity Sub-Sector in Uganda and Outline of a capacity building programme for the ministry of energy and mineral development, draft report – July 2007
- UETCL: Corporate Business Plan 2005-2010 & Financial Projections 2005-2020
- Uganda Electricity Transmission Company, Management Diagnostic Study, final report, March 2005)

Stakeholders and counterparts to be consulted

UETCL:	
Chairman of the Board:	Frank Katusiime
Chief Executive Officer:	Eriasi Kiyemba
Managing director:	William K. Kyriahika
Other UETCL staff:	Fred Zeesooli
	Florence Musoke
	Gerald Muganga
	Valentine Katabira
Statnett:	Svein Storstein Pedersen
	Lars Teigset
	Michael Steinfeld
	Nils Ole Kristensen
	Silje Vegarud
Ministry of Finance, Planning and Economic Development:	Oode-Obella
	Joe Willy Haguma
Ministry of Energy and Mineral development	Eng. Paul Mubiru
	Henry Bidasala
Electricity Regulatory Authority (ERA):	Patrick J. Mwesige
	Benon M. Mtambi
National Environment Management Authority (NEMA):	TBD
Rural Electrification Authority (REA):	Godfrey Turyahikayo
UMEME:	Paul Mare, CEO
Eskom Uganda:	Nokwand Mngen
The Aggreko Company:	Mike Nolan

Bujagali Energy Ltd	Kevin Kariuki
Tronder Power	Jon Einar Værnes
Tullow Oil	Brian Glover, MD
Norfund	Mark Davis
Jacobsen Electro:	Johan Svendsen
	Sverre Throndsen
World Bank	Paul Baringanire
AfDB	Daniel Rutabingwa
GTZ	Philippe Simonis
Allerbrandt	TBD
NVE	Kristian Løkke
Norwegian Embassy in Kampala	Gjermund Sæther
	Daniel Sandberg
NORAD, Dep. of Environment, Infrastructure and Energy:	Inge Harald Vognild
	Geir Hermansen

Oslo/Kampala, June 9 2008

Annex B: Document List

#	Document name
1.	Original Project Document (as of February 2nd, 2006)
2.	Amendment to the Project Document (May 15th 2007)
3.	Final Draft Project Document for Phase II (including appendixes)
4.	Platform for Dialogue for Phase II
5.	Appraisals, Norwegian Support to Activities in the Energy Sector, Uganda (June 2005)
6.	UGANDA – APPRAISAL OF AMENDMENT OF TWINNING ARRANGEMENT UETCL-STATNETT (28th November 2007, 0701647-2)
7.	Mid-term review of twinning agreement between UETCL and Statnett, February 13th 2008, Sak: 0700889
8.	Appropriation document: UGA-3004 UETCL Capacity Building UGA-05/025 Twinning UETCL-Statnett PAPER COPY ONLY
9.	Amendment to agreement, UGA-06/057 – Doc Identified is the request letter of the Ministry of Finance for additional funding
10.	Agreement between Norway and the Republic of Uganda regarding Capacity Building in the Uganda Electricity Transmission Company
11.	Contract between Statnett SF and Uganda Transmission Company Limited regarding institutional cooperation for the UETCL (twinning arrangement)
12.	MoM UETCL-Statnett from annual meetings 2006
13.	Statnett – UETCL twinning arrangement project Report for period January-October 2006
14.	Statnett – UETCL twinning arrangement project. Report for period November 2006 – December 2007
15.	General audit reports for 2006 and 2007
16.	UETCL: Original Corporate Business Plan 2005-2010 & Financial Projections 2005-2020
17.	Original and revised grid development plan
18.	Internal Stakeholder survey results (to be provided by the UETCL)
19.	External Stakeholder survey results
20.	Board-paper on Corporate Business Plan
21.	Board-paper on Financial Projections
22.	Board-paper on Employee Survey follow-up
23.	Board-paper on Expansion of Twinning Arrangement – and Appraisal of amendment of twinning arrangement by Norad

#	**Document name**
24.	Board-paper on KPIs reporting structure and report format
25.	Board paper: Purchase and Implementation of a Power Market Analyzer Model (received at the Embassy on 15th May 2007)
26.	Nordic Consulting Group: Review of the Norwegian Support to the Energy Sector in Uganda (1997-2005), 13 June 2006
27.	NVE: Functional Analysis of the State Administration of the Electricity Sub-Sector in Uganda and Outline of a capacity b.. draft report – July 2007
28.	Uganda Electricity Transmission Company, Management Diagnostic Study, DRAFT FINAL OCT 2004
29.	Uganda Electricity Transmission Company, Management Diagnostic Study, final report, March 2005
30.	Evaluation of Norwegian Power Related assistance
31.	Uganda-Visit MOEMD_171007 (SSP) .ppt
32.	Program week 44 2007_draft 121007.ppt
33.	Revised draft corporate business plan
34.	Board Paper – Twinning Arrangement phase 2_draft
35.	Official request letter-extension of twinning arrangement
36.	UETCL Allerbrandt comments-proposal
37.	ELECTRICITY GENERATION AND FINANCING PLAN (2008/09 – 2010/11) (confidential)
38.	Project Document UETCL-Statnett – Preliminary Draft October 2004
39	UETCL baseline and status of progress Nov. 2007 (this doc separated from 7)
40	Addendum no1 UETCL final
41	Budget 2007-draft
42	TF (Task Force) ICT-Project activity plan – 2088final
43	TF PI-Project activity plan – 2088final
44	WG (Work group) A Project Activity plan 2008final
45	WG B Project Activity plan 2008final
46	WG C Project Activity plan 2008final
47	MoM Projectgroup-May2008-draft
48	UETCL presentation of employee survey and external stakeholder survey – Internal Workshop 090508
49	WG A Project Activity plan 2007 draft
50	WG B Project Activity plan 2007 draft

#	**Document name**
51	WG C Project Activity plan 2007 draft
52	WG D Project Activity plan 2007 draft
53	Detailed Activity Plan 2006 rev 1
54	KPI reports to board UETCL – Jan.- June 2008
55	Agreed Minutes 8th bilateral meeting
56	Agreed Minutes 9th bilateral meeting
57	WG A Activity Status 2006-2008
58	WG B Activity Status 2006-2008
59	WG C Activity Status 2006-2008
60	WG D Activity Status 2006-2008
61	TF ICT Activity 2006-2008
62	TF PI (Project Implementation) Activity 2006-2008

Annex C: Persons contacted

Stakeholder	Function	Interviewee
AfDB	Project officer	Daniel Rutabingwa
El. Reg. Authority	Manager Financial Services	Patrick J. Mwesige
GTZ	Energy sector coordinator	Philippe Simonis
Jacobsen Elektro	Thermal power plant IPP	Johan Svendsen
Jacobsen Elektro	Thermal power plant IPP	Sverre Throndsen
Ministry of Energy…	Principal Energy officer	Henry Bidasala
Ministry of Finance	Assistant commissioner	Oode Obella
Ministry of Finance	Desk officer energy	James Tibenkana
National Environment Management Authority	Environmental Impact Assessment coordinator	Waiswa Ayazirka Arnold
Norfund	Adviser	Mark Davis
NVE	Functional sector analysis	Kristian Lökke
Royal Norwegian Embassy, RNE	Desk officer energy	Daniel Sandberg
RNE	Minister counsellor	Gjermund Sæther
RNE	Counsellor	Nils Daarflot
Rural Electrification Authority - REA	Manager project planning	Grania Rosette Rubomboras
Statnett	Project leader & strategy adviser	Svein S. Pedersen
Statnett	Financial adviser	Anders Sivertsgaard
Statnett	Benchmarking	Terje ..
Statnett	PMA adviser	Nils Ole Kristensen
Statnett	Senior adviser	Michael Steinfeld
Statnett	Department manager	Lars Martin Teigset
Tronder Power	Small hydro IPP	Jon Einar Vaernes
Tronder Power	Small hydro IPP	Gunnar Saleggen
Tullow Oil	Managing Director, Oil development and thermal IPP	Brian Glover
UECTL	Manager projects implementation	Dennis Makuba
UETCL	Project coordinator	William Kiryahika

Stakeholder	Function	Interviewee
UETCL	Responsible strategy	Margret M
UETCL	Responsible information mgt.	Fred Zeesooli
UETCL	Responsible transmission system	Gerald Muganga
UETCL	Responsible corporate efficiency	Florence Musoke
UETCL	Project Accountant	Henry Lwetabe
UETCL	Manager ICT department	Godfrey Kiseka
UETCL	Chairman of the Board	Frank Katusiime
UETCL	Manager O&M	Valentine Katabira
Utility reform unit, Ministry of Finance	UETCL board member	David Ssebabi
World Bank		Paul Baringanire

Annex D: Benchmarking - Method of Systematic Comparison

Introduction

Systematic comparison (benchmarking) is a method to improve objectivity by establishing a real standard for best practice within a group of development interventions. Historical expenditures are converted to USD using that year's PPP-exchange rate[7], which implies that all figures used are in USD-PPP. This is necessary for establishing a basis for comparison, but here it needs to be noted that the result is not perfect: PPP theory is valid in a perfect market, which in practice does not exist.

Benchmarking was used to compare

- efficiency: Intervention cost in relation to results
- effectiveness: Level of fulfilment of objectives including cross cutting issues
- relevance: Goal alignment with the needs of the target groups
- sustainability: The continuation of benefits after the end of the intervention
- impact: The sum effects of the intervention including direct and indirect, intended and unintended effects in the longer term

General approach

To compare different types of interventions into different parts of the electricity value chain under different external conditions in different countries it is necessary to:

1. quantify the input (IN) to the intervention in a common currency normalised for cost level difference
2. quantify the output (OP) from the intervention; considering also the external conditions under which those output where generated; for example topography, climate, access, political conditions etc
3. quantify the historic and estimated future outcome (OC) of the intervention
4. quantify the impact (IP) of the intervention based on the outcome
5. assess the practises (PR) used in the intervention to assess effectiveness, relevance and quality
6. deal with fuzzy data and uncertainties to reach a balance between cost and accuracy. Only if all five variables can be estimated is it possible to objectively compare the interventions

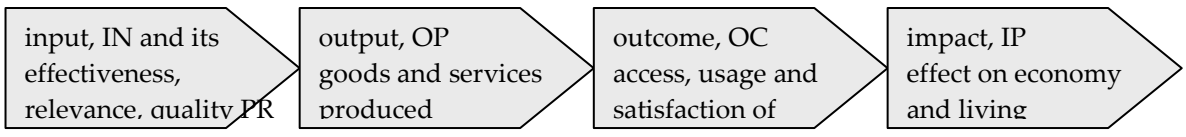


Fig. 1: Benchmarking Variables

[7] PPP (purchase power parity) refers to rates of changes of price levels, that is, inflation rates. USD-PPP is comparable over time and between different countries.

The input-output assessment quantifies the quality of the inputs (compared to best practice) and how financial resources are converted to goods and services. The outcome and impact assessment registers the intended effects of the delivered goods and services on the targeted groups and institutions.

For the different categories of intervention elements which are relevant within the power sector, we define the four variables to allow benchmarking (Fig. A2-3), within each category and across categories as defined in the following table. Definitions are chosen to achieve the maximum level of quantitative benchmarking with the available data.

Variable	Infrastructure development	Training	Capacity development
Input	The total cost of the project including cost of negative impacts, subsequent investments, O&M cost etc	The total cost of the training effort (not counting the working time lost by participants)	The total cost of all types of inputs (personnel, travel, expenses and goods)
Output	The volume of the infrastructure[8] and other services provided	The volume of the training services provided[9] (extent, level and participants)	The volume of support service[10] and other services provided (duration, level, extent)
Outcome	the electricity generation, - transport and - delivery facilitated by the intervention plus the transport volume facilitated by roads and agricultural production by irrigation	The capacity of trained people using their competence for the good of the country per year.	The volume of the useful changes/ improvements resulting from the support such as units reorganised, plans, regulations and legislation developed and adopted, institutes established, systems in operation, licences/ concessions awarded etc.
Impact	The net income from the intervention considering all costs and benefits over the infrastructure lifespan. Tangible and intangible social benefits to users and other stakeholders	The net benefits of improved quality and quantity of work over the competence lifespan	The benefits of the changes/ improvements due to reduced costs, improved services, or accelerated revenue

Fig. 2: Definition of Variables across Intervention Types

Using these five variables (IN, PR, OP, OC, IP) we may calculate the following factors to be used in systematic comparison (benchmarking) of different interventions:

[8] A weighted sum of goods, services and infrastructure using a common set of cost weights reflecting exogenous conditions as well as quality.

[9] The "output" from training and other CD is defined as the volume of training and of support provided (in terms of quantity and quality of personnel). The specific achievements are classified as outcome.

[10] The outcome and impact of training and other CD interventions can generally not be quantified

1. The efficiency-factor: VF = OP / IN – output / input tells us how financial resources were converted to goods and services; i.e. how much output was produced by one unit of input; for example km of line, MWh production, FTE of training per USD etc
2. The utilisation-factor: TF = OC / OP – outcome / output is a measure of how much outcome was produced by one unit of output; example: Amount of energy transported per unit of grid volume
3. The impact-factor: RF = IP / IN – impact / input tells us how much impact was generated by one unit of input (resources)
4. The normalised impact-factor: RFN = IP / OP = RF x TF – impact/ output tells us how much impact was generated by one unit of output; i.e. unit of economic benefit per output volume
5. The quality-factor: QF = Σ (practice score$_i$ vs objective practice$_i$) x weight$_i$ is the practice score added over all quality items I, is measure of effectiveness, relevance and what is/was believed to be best practice
6. The sustainability factor: SF = OC_{t2} / OC_{t1} - shows the rate of change in outcome between the start and now

The applicability of these factors is summarised in the table below.

Factor	Meaning	Use
efficiency - factor VF	output volume in relation to normalised cost	comparison of cost efficiency among projects over all categories
utilisation-factor UF	outcome per unit of output	intermediary factor to explain difference in efficiency (infrastructure)
Impact-factor IF	impact in relation to project cost	comparison of end-user efficiency (infrastructure)
Normalised impact-factor IFN	impact in relation to the output volume	comparison of end-user efficiency for infrastructure projects compensating for exogenous conditions (infrastructure)
Quality-factor QF	weighted practice score compared to best practice at the time	comparison of effectiveness, relevance and quality of inputs over all projects
sustainability-factor SF	outcome now compared to outcome initially	comparison of sustainability (infrastructure)

Fig. 3: Comparison Factors Used in Assessment

In the following sections the variables are discussed for the three elements of interventions in the power sector: Infrastructure development, training and capacity development.

Infrastructure development

Inputs: To get the total costs of an intervention the life-cycle cost over the technical lifetime of the project is calculated from

- initial project investments

- later investments: Calculated based on estimated infrastructure development and average cost per unit
- depreciation of investment (if relevant)
- operation and maintenance cost (O&M cost) for the infrastructure volume built in the project (originally and later): Calculated on the basis of number of units in operation and average cost per unit.
- cost of grid losses if relevant (in the calculations here only net energy was considered)
- indirect cost of negative impacts such as environmental impacts

Outputs: The output is the total grid volume being built in the project; also taking exogenous conditions (cost drivers) into consideration.

Example: A project resulting in increased hydro power production of 2 MW, a high voltage distribution line of 20 km, one high to low voltage station, 5 km of low voltage distribution and 500 customer connections gets a grid volume (GV) as follows:

$GV = 2MW * W_{HP} + 20km * W_{RDl} + 1station * W_{RDs} + 5km * W_{LDls} + 500connections * W_{LDc}$

Where:

W_{HP} = cost weight per MW of hydro production capacity
W_{RDl} = cost weight per km of RD line
W_{RDs} = cost weight per LD station
W_{LDls} = cost weight per km of LD line
W_{LDc} = cost weight per LD customer connection

To differentiate the grid volume according to exogenous conditions we also split the MW of production capacity and the km of lines into easy, average and difficult conditions. The relative cost weights can then be considered universal. The weights are adapted to show output in USD.

If correct, the cost weights make it possible to calculate the "grid volume" provided and compare the output of projects with different structures and contents. The weights used are based on a comprehensive database of more than 100 European electricity providers. The weights are averages so the weight per MW of generation would reflect both small and big stations. Cost weights from the utilities involved in the Nepal and Mozambican interventions were also collected. The accuracy of these figures are questionable so a, sensitivity analysis is included to check the robustness of results,.

The indicator for efficiency is then calculated as actual total cost divided by grid volume (normalised unit cost). We may expect a big station to appear more efficient than a micro station, due to economies of scale.

Outcome: The outcome of an electricity infrastructure intervention is ultimately the amount of electricity coming to good use for the intended end users. To differentiate this a little further we may distinguish between the following levels of outcome:

1. The amount of electricity produced from a generating plant, E_G
2. The amount of electricity being transported over a grid at transmission, regional distribution and local distribution level, E_{TR}, E_{RD}, E_{LD},
3. The amount of electricity consumed by private household, E_{PP}

4. The amount of electricity consumed by businesses and public institutions, E_{PB}

A measure for the outcome can then be:

- the electricity consumed
- the electricity transported
- the electricity produced
- the weighted sum of these; the weighting should be done according to the average cost of energy at the different grid levels.

In many cases grid development will continue after the project has finished to add new customers etc. The normalised cost of such development will be included in the life-cycle cost of the intervention (see input) as the total delivery/transport etc., is included in the outcome and impact. Additional outcomes include the transport volume of roads, additional farm production due to irrigation etc.

Impact: To quantify impacts the net benefits of the intervention are calculated and distributed among the beneficiaries. In infrastructure interventions the benefits of both the recipient country, the poor and the company owning and operating the infrastructure are considered.

- for the company, sales revenue from the electricity business and reduced cost of electricity generation
- for the country the grants given and the value added due to increased electricity use, irrigation and other infrastructure established as part of the intervention
- for the poor direct benefits are calculated based on their part of electricity consumption and indirect benefits as their part of GDP.

The income comes from electricity sold to the grid, electricity sold to local customers and in some cases wheeling income from electricity transport for third parties. In all cases the tariff revenue is the part of total revenue attributable to the infrastructure built in the project. Generation costs may be reduced when inefficient diesel plants or expensive imports are replaced by locally produced hydro power (see below).

The total revenue is found by adding annual revenue over the technical lifetime correcting for inflation.

The value added due to increased use of electricity is estimated as follows:

- savings for lighting and radio use: (price of kerosene per kWh, and cost of dry cell batteries – price of electricity per kWh) x GWhs used for lighting and other domestic use
- savings compared to diesel power: (price of diesel power per kWh – price of hydro power per kWh) x GWhs replaced diesel production
- indirect benefits
    - industry and agriculture – increased output and efficiency of production
    - education – increased earnings due to better education
    - health – reduced cost due to fewer fatalities
    - other (for example street lightning)

The following known benefits were not considered due to the lack of reliable data:

- benefits of other infrastructure elements such as roads, water and sewage
- indirect savings: Rural electrification also has indirect savings by facilitating economic development in rural areas and thereby stemming the costly movement of people to rural areas

The indirect benefits will be calculated as:

increased GWhs consumed x GDP per GWh x part of GDP-increase attributed to electricity.

The indirect economic benefits attributed to increased use of electricity was calculated by Mulder and Tembe in their 2006 study of rural electrification in Mozambique and found to be 0.98 USD-PPP/GWh. The present evaluation assumes that a conservative 30% of this GDP increase can be directly attributed to electricity, and the sensitivity of this value is analysed. This figure is also adapted to Nepal using the relationship between GDP per GWh for the two countries and giving the following estimates for indirect benefits:

Country	indirect economic benefits / electricity consumption mill USD/kWh	part indirect benefits assumed to be attributable to electricity	indirect benefit attributed to electricity use (mill USD-PPP/GWh)
Mozambique	0.98	30%	0.29
Nepal	0.97	30%	0.29

Fig. 4: Indirect Benefit of Electrification

The value added due to irrigation schemes is calculated as hectares of irrigated area x added production value per hectare.

The total net economic benefits are found by addition over the technical lifetime taking changing prices of energy as well as inflation into consideration.

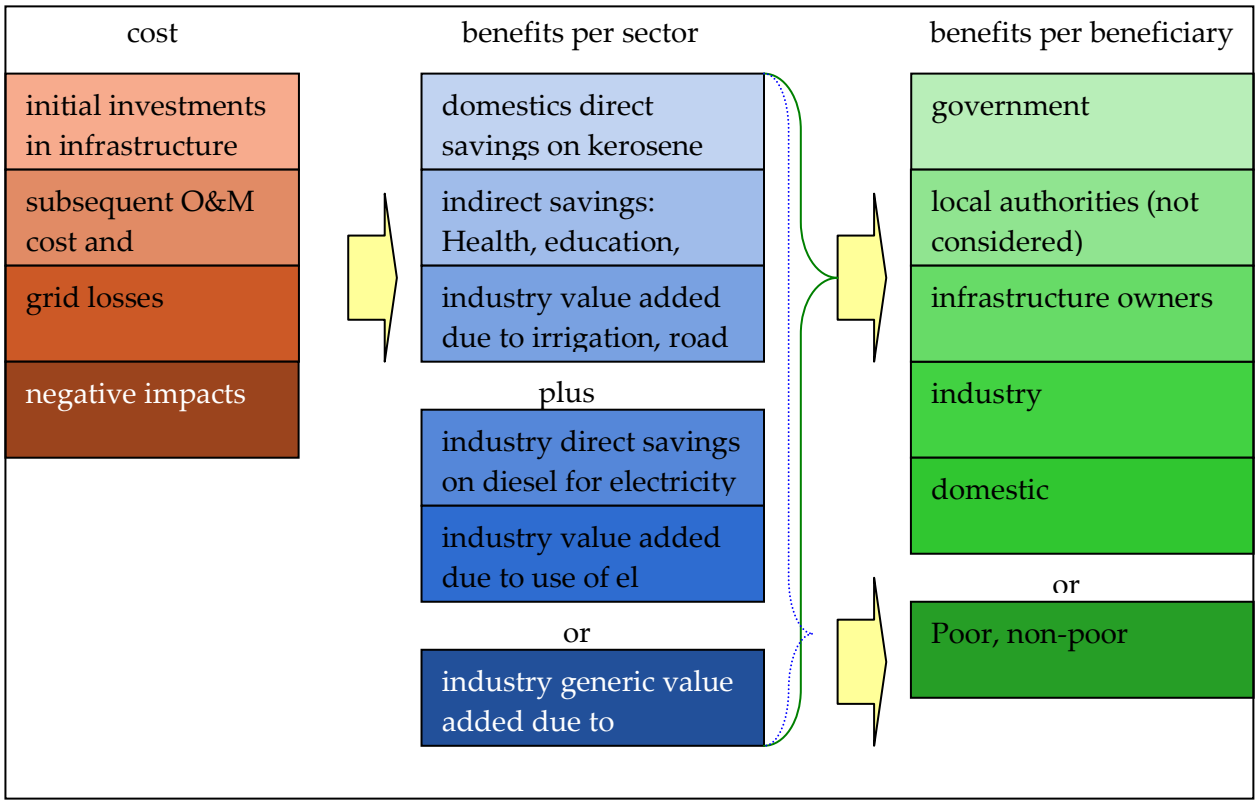
The economic benefits are attributed to beneficiaries as follows:

- government: the value of the infrastructure received (value of grant)
- owners of the infrastructure and the company: Net estimataswed result from el. sales as calculated above
- industry: value added from electricity use as calculated above
- non-poor:
  - + fraction of the value added for industry as calculated above
  - + fraction of consumption on regular domestic tariffs in local areas x sum savings on kerosene
  - + fraction of irrigated land for non-poor x sum added production value
  - + fraction of benefits from other initiatives for non-poor x sum added value from other initiatives
- poor:
  - + fraction of the value added for industry as calculated above
  - + fraction of consumption on social tariffs x sum savings on kerosene

+ fraction of irrigated land for poor x sum added production value
+ fraction of benefits from other initiatives for poor x sum added value from other initiatives

- the net impact for Norwegian stakeholders will only be evaluated in qualitative terms

1) The costs and benefits are summarised in figure Fig. A2-7.



2) Fig. 5: Generic Infrastructure Costs and Benefits

Sustainability: A measure of the sustainability/quality of the infrastructure established is the outcome as a function of time.

Quality: Quality is measured as the deviation of intervention practices from the best practice as seen today and the best practice as defined in project specifications. The latter is the value reflected throughout the evaluation, as it is deemed the fair procedure. The generic evaluation format for infrastructure interventions contains the following main parts:

- Selection, preparation and planning the intervention
- Implementation of the project
- Start-up and operation of the infrastructure provided
- Preparation for further development of the infrastructure
- Follow up work

Training

Inputs: Generally the input is defined as the total effort measured in expenses for an intervention. The Norad input may however be only part of this. To get the total costs of an

intervention project expenditures for each year is first converted to USD using that year's PPP-exchange rate and then brought up to the present by correcting for inflation.

Outputs: The output is the added competence resulting from the project, also taking exogenous conditions (cost drivers) into consideration. To illustrate this we consider a training project giving 10 engineers with a bachelor degree, a master in power engineering (the equivalent of two years of university level education): and two an additional phd (the equivalent of six years of university level education):

the output (OP) = $10 \times 2 \times W_{Um} + 2 \times 4 \times W_{Uphd}$

where:

W_{Um} = cost weight per year per person of University master level training

W_{Uphd} = cost weight per year per person of University phd level training

Outcome: The outcome of a training intervention is the added competence of companies, public administration institutions and training facilities/ schools aimed at the power sector. Possible indicators for measuring this may be:

1. The number of alumnae (FTEs) from the training effort working locally in the sector
2. The number of professionals of national origin working in the sector
3. The part of total value creation in the sector carried out by local companies

Outcomes of training are only assessed qualitatively.

Impact: Two types of impact are considered:

- savings compared to paying for the same education = the grant provided by Norad
- value added due to earlier increased revenue from the power business

The value added due to X years earlier revenue from the power business is found as:

- present value of current revenues - present value of revenues delayed by X years If the speed-up time can be assessed accurately the net income and value added may be attributed to beneficiaries as follows:
- government: the tax part of el. sector revenue difference calculated above
- owners of the infrastructure and the company: Dividend part of the difference calculated above
- industry: value added from earlier electricity use
- non-poor: fraction of el. consumption x difference in kerosene saving due to earlier use of electricity + fraction of industry added value
- non-poor: fraction of el. consumption x difference in kerosene saving due to earlier use of electricity + fraction of industry added value

If the speed-up time cannot be assessed accurately, the impact must be assessed in a more qualitative way. The calculation above may then be used to show how much impacts needs to be speeded up to cover expenses.

Sustainability: Sustainability of training interventions can only be assessed qualitatively

Quality: Quality is measured as the deviation of intervention practices from the best practice as seen today and the best practice as defined in project specifications. The generic evaluation format for training interventions contains the following main parts:

- Selection, preparation and planning the intervention
- Implementation of the project
- Preparation for further training efforts
- Follow up work

Capacity Development

Inputs: Generally, the input consists of consultancy services and administration support. It is defined as the total effort measured in expenses for an intervention. The Norad input may however be only part of this. To get the total costs of an intervention project expenditures for each year is first converted to USD using that year's PPP-exchange rate and then brought up to the present by correcting for inflation.

Outputs: The output is the capacity added to the recipient organisation, also taking the quality of the capacity into consideration. To illustrate this we consider a project aimed at improving the capacity of a government agency using one person with 18 years of relevant experience in 1 year, two persons of 12 years of relevant experience in 0.5 years and one person of 4 years of relevant experience in 1 year.

the output, $OP = [(1 \times 1 \times W_T) + (0.5 \times 2 \times W_H) + [(1 \times 1 \times W_A)] \times W_C$

where:

W_T = is the cost weight of top level advisors (relevant experience of more than 15 years)

W_H = is the cost weight of high level advisors (relevant experience of more than 10 years)

W_A = is the cost weight of average level advisors (relevant experience of more than 3 years)

W_C = is the utilisation factor of the competence provided given the limitations of the receivers

Outcome: The outcome of a competence building intervention is the added competence of the target organisation(s). Possible indicators for measuring this may be:

1. The efficiency and effectiveness of the target organisation; for example estimated by practise comparison to similar organisations elsewhere or by qualitative assessment
2. Concrete results of the assistance such as new laws, regulations, systems, management procedures etc
3. other?

Outcomes of capacity development interventions are only assessed qualitatively.

Impact: Three types of income are considered:

- savings compared to buying assistance from international consultants
- value added due to earlier revenue from (parts of) the power business
- in some cases also reduced cost may also be measurable (like for Hydrolab)

Savings compared to international consultants is found as:

- number of days assistance provided x daily rate of international consultants

The value added due to X years earlier revenue from the power business is found as:

- present value of current revenues - present value of revenues delayed by X years

If the speed-up time can be assessed accurately the net income and value added may be attributed to beneficiaries as follows:

- government: the tax part of el. sector revenue difference calculated above
- owners of the infrastructure and the company: Dividend part of the difference calculated above
- industry: value added from earlier electricity use
- non-poor: fraction of el. consumption x difference in kerosene saving due to earlier use of electricity + fraction of industry added value
- non-poor: fraction of el. consumption x difference in kerosene saving due to earlier use of electricity + fraction of industry added value

If the speed-up time cannot be assessed accurately the impact must be assessed in a more qualitative way. The calculation above can then be used to show how much impacts needs to be speeded up to cover expenses.

Sustainability of institutional support interventions can only be assessed qualitatively.

Quality is measured as the deviation of intervention practices from the best practice as seen today and the best practice as defined in project specifications. The generic evaluation format for training interventions contains the following main parts:

- Selection, preparation and planning the intervention
- Implementation of the project
- Start up and operation based on the support effort
- Preparation for further support efforts
- Follow up work

Combined interventions

Many interventions cover different aspects within all the three categories mentioned above, In such cases each dimension is assessed separately to derive at numerical figure for the five variables and are subsequently added to arrive at the sum figures for the intervention.

Model Uncertainties and Weaknesses

The main uncertainty in the systematic comparison is the quality of input data. It is noted that delivered inputs are not commonly reported in sufficient detail, clarity and accuracy in projects.

For infrastructure projects model uncertainty is also related to the weights per unit of infrastructure and the part of observed GDP growth to be assigned to the increase in electricity consumption. Neither of these problems have significant impact on the results.

Benefits calculated are comparable if the PPP-conversion is correct. Efficiency is comparable if the weights assigned to the various output items (km, MW production capacity, FTE expert assistance etc) is correct. Effectiveness is comparable if the same judgement is applied to all projects. The latter is done by scoring and weighting a large number of criteria throughout the project cycle, where an error of judgment of individual scoring has little impact on the total score.

The cost weights used for estimating the O&M cost and investments after the (initial) project are estimated on the basis of international averages. Comparability between countries would be improved, if national cost weights for the countries in question could be used, but the units costs collected from the local utilities were sometimes lacking and some times not of sufficient quality The impact of using the same weights for Nepal and Mozambique could lead to an overestimation of cost in Nepal and an underestimation in Mozambique, but significant errors may only appear in the two projects where most of the life-time is in the future; namely Jhankre and AMG.

Sensitivity analysis carried out attempted to put uncertainties into perspective. Variables, such as cost weights, values of direct and indirect benefits, and household electricity consumption data were altered, and the effect on the results is observed. The overall result is that "best estimates" used may be considered valid, and results are fairly robust.

A weakness of the benchmarking process is that the number of projects being benchmarked here is small. To improve the model and its cost weights more projects (with better inputs) should be added. This would lead to the following improvements:

- better cost weights per unit of infrastructure → more accurate comparison of efficiency and impact
- better figures to estimate indirect economic impacts → more accurate comparison of impact for society and for the poor.

The Data Entry and Calculation Tool

To enter all data, and carry out all calculations, a tool has been developed on the basis of Excel. This makes it possible to avoid manual calculation work, and results reports. The tool is used for the assessment of all interventions subject to evaluation, and it generates various results reports and comparison tables. It is not suitable for complete presentation in printed form, but is instead attached to the report in electronic form. For the purpose of illustration, some of the worksheets are pictured on following pages. The complete worksheets are made available in Excel in electronic form..

To enter all data, and carry out all calculations, a tool has been developed on the basis of Excel. This makes it possible to avoid manual calculation work, and results reports. The tool is used for the assessment of all interventions subject to evaluation and with sufficient evidence. It generates various results reports and comparison graphs, such as used in the text of the report. The tool is not suitable for presentation in printed form.