



Independent Evaluation

SECO Development Cooperation in the Energy Sector in Eastern Europe and Central Asia

Economic Cooperation and Development Division
Evaluation and Controlling

Bern, July 2010



Independent Evaluation

« SECO Development Cooperation in the Energy Sector in Eastern Europe and Central Asia”

Commissioned by the Evaluation and Controlling Section (WECO),

*Economic Cooperation and Development Division at the State Secretariat for Economic
Affairs (SECO)*

Bern, July 2010

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Foreword

With the purpose of learning and accountability, the Economic Cooperation and Development Division at the State Secretariat for Economic Affairs (SECO) undertakes regular and systematic assessments of on-going and/or completed projects, programs or policies in order to identify and to disseminate results. The aim is to determine the relevance, the development effectiveness and fulfilment of objectives, the efficiency, the impact and the sustainability of its different modalities of interventions in partner countries. Based on credible and useful information, evaluations should also enable the incorporation of lessons learned into the decision-making process of both recipients and donors, in order to foster continuous improvements of development support.

The Economic Cooperation and Development Division distinguishes and undertakes three different types of evaluations, namely internal reviews, external evaluations and *independent evaluations*. While internal reviews and external evaluations are under the direct responsibility of the operational units, independent evaluations are commissioned and managed by the Evaluation Function – an independent unit from the operations - and are submitted for discussion to an external Committee on Evaluation, composed of 5 members external to SECO. Independent evaluations are focusing on assessment of sectors, programs, strategies, instruments, country assistance strategies, cross-cutting issues or themes and impact evaluations. On average, the Evaluation Function commissions one to three independent evaluations per year, which can be undertaken jointly with other donors or partner organizations, in line with our commitment to the Paris Declaration. SECO expects evaluations of its development interventions to adhere to the DAC/OECD standards and to the Swiss Evaluation Society (SEVAL) standards.

This report presents the results of the independent evaluation of *SECO Development Cooperation in the Energy Sector in Eastern Europe and Central Asia*. Between 1992 and 2008, SECO funded 41 interventions in 17 Central Asian and Eastern European countries, with a financial volume of CHF 319 million. Through its support in the energy sector, SECO aims at improving living conditions and economic development of its partner countries by contributing to better service quality and reliability, affordable access to electricity, reduction of technical and commercial losses, improved management and financial viability of energy companies, and better governance. The evaluation assesses 22 energy sector projects in 10 countries (representing CHF ~200 million), with a particular focus on 4 case study countries (Albania, Kyrgyzstan, Romania and Serbia). The report evaluates the relevance, effectiveness, efficiency, sustainability and, when feasible, impact of SECO's funding to partner countries. The ultimate purpose of the evaluation is to use lessons from previous SECO interventions to inform SECO's future interventions in the region, and in the sector.

The evaluation report was used as reference for the formulation of SECO management response. The results, recommendations of the report, as well as SECO management response were then presented to and discussed with the Evaluation Committee, who formulated its position. The management response and the position of the Evaluation Committee are published jointly with the final evaluators' report on SECO website and on the DAC/OECD Evaluation network.

Process:

<i>Conduct of the evaluation and elaboration of the Report</i>	<i>Sept.09 – June 10</i>
<i>Discussion of the Report with the Evaluation Committee</i>	<i>June 10</i>
<i>Management Response</i>	<i>June 10</i>
<i>Position of the Evaluation Committee</i>	<i>July 10</i>



Independent Evaluation of SECO Development Cooperation in the Energy Sector in Eastern Europe and Central Asia

Management response by SECO/WEIN

1 Overall statement regarding the evaluation report dated May 2010

We have been pleased that the process of this comprehensive evaluation was well prepared and clearly structured. The Evaluation Board created for this review and composed of external and internal experts provided valuable guidance at various stages e.g. for the terms of reference for the review, the inception report and the draft final report. The fact that WEIN was given the opportunity to regularly express its views during the process was appreciated.

In our view, the evaluation was conducted with high professionalism by the consultant, DH Infrastructure, on the basis of some 15 years of project documentation, numerous interviews with partners, beneficiaries, consultants and SECO staff as well as site visits in four countries. The “fresh” view of the consultant, which at the same time was very competent in the field of energy infrastructure, was highly appreciated. We realize that in spite of considerable efforts undertaken by WEIN to provide all information, the documentation did not always allow for a straightforward evaluation (e.g. due to the lack of predefined success indicators). It should be mentioned in this context that some of the reviewed projects were completed as early as the mid-nineties. We recognize the efforts made by the consultant to nonetheless provide a meaningful assessment, e.g. by reconstructing result chains and standard log-frames, which will also help to inform our future project designs.

We consider the evaluation report comprehensive and consistent. Evaluation results are substantiated and, in view of the large sample of projects evaluated, also representative. We particularly appreciate the fact that external and internal factors affecting the SECO program were clearly identified and separately dealt with. The identified lessons learnt and the recommendations, with which we agree to a large extent, are clear, realistic and useful.

In conclusion, we would like to state that we are overall pleased with the results. We feel comforted that our strategic approach, as outlined in the WEIN Energy Policy Paper, remains altogether relevant. Nevertheless, we will endeavour to further improve our work based on the results of this evaluation. Recommendations, on which we intend to follow up, include e.g. further developing our position on the Swiss Added Value requirement, more in-depth

project appraisals in countries with weak governance and integration of stakeholder feedback into project design and monitoring. However, we disagree with the recommendation to exclusively focus our interventions on the supply of equipment and related technical assistance. We will maintain our two other business lines of institutional strengthening and working on framework conditions as well, as they are in our view essential contributors to project and sector sustainability. Below please find our response to the main results, identified lessons learnt and recommendations.

The input required by WEIN for this evaluation was significant and tied considerable resources over the past few months. However, in view of the result, we are of the opinion that it was worth the effort.



2 Management response on results and lessons learnt

Results	Management response
<ul style="list-style-type: none"> - Relevance (HS). SECO staff clearly have done an excellent job understanding the needs of the partner countries, designing projects which meet those needs, and designing projects which complement other donors interventions. 	<p>Agreed.</p> <p>We are very satisfied with this result, which confirms the relevance and adequacy of the SECO country strategies in the energy sector and WEIN and COOF staff's capacity to convert strategic directions into meaningful and relevant projects and to develop programmes incorporating an evolving context and lessons learnt.</p>
<ul style="list-style-type: none"> - Effectiveness (S). The effectiveness of project outputs, outcomes and impacts has generally been satisfactory. SECO's interventions clearly helped to achieve better service quality and reduction of technical losses in energy systems of the partner countries. SECO interventions also met, to some extent, the objectives of improving management and financial viability of energy companies. However, the interventions we reviewed were limited to 	<p>Mostly agreed.</p> <p>We are pleased to note that the primary objectives of providing better service and reducing technical losses could be achieved. It is a sign that the appropriate resources (financing, technical expertise, equipment) could be mobilized by SECO (and the partners) for the projects.</p> <p>We also accept that the improvement of the management and financial viability of energy companies was only achieved to some extent. Earlier WEIN projects indeed typically focussed on equipment and associated training. However, as mentioned in</p>

<p>more technical, "on-the-job" training with hardware and software, than broader institutional changes. SECO's interventions did not succeed in meeting the objective of making energy supply more affordable.</p>	<p>the evaluation report, project design has evolved over the past years and now regularly includes institutional measures. Nevertheless, we have been very pleased to learn that the infrastructure we financed is still intact and operational, even in cases where the institutional objectives have not (yet) been attained.</p> <p>Affordability: We would like to state that it is rarely WEIN's goal to make energy more affordable, but rather to improve supply while keeping tariffs at <i>affordable</i> levels. Many of our partner countries keep tariffs at unsustainably low levels for political reasons, but without compensating the energy companies for the losses they therefore incur. WEIN is fully aware that sustainable energy supply often means increasing tariffs, which, however, need to be regulated carefully in order to ensure social sustainability.</p>
<ul style="list-style-type: none"> ▪ Efficiency (US). SECO's interventions were generally unsatisfactory in terms of efficiency. Slightly more SECO projects suffered from delays or cost overruns than did not. However, the delays and cost overruns were due to external factors that were largely beyond SECO's control. 	<p>Partially agreed.</p> <p>The method of efficiency measurement using the forecast project budget and duration as the benchmark for efficiency is a bit narrow and may say as much about the quality of the preparation work as about how economically resources/inputs are converted into results.</p> <p>Nevertheless, we agree that project durations of 10 years or more are a clear indicator of lacking efficiency. We also agree that project budgets and project risks need to be established more carefully and more accurately in order to avoid overruns and delays.</p> <p>An important reason for the poor score in efficiency is certainly also that when having the choice between more efficiency and more effectiveness and sustainability, WEIN has generally given the latter two criteria a higher priority. An analysis of this approach is indeed always the best solution would be of great interest to WEIN.</p>
<ul style="list-style-type: none"> ▪ Sustainability (S). We rated the sustainability of SECO's interventions as satisfactory, despite the fact that the financial sustainability of beneficiaries is threatened by poor governance, political interference, and regulation which prevents commercial management of utilities. Our assessment is that other aspects of sustainability (technical and insti- 	<p>Agreed.</p> <p>We appreciate the fact that the impact of the high quality of both the technical solutions and of the capacity building measures positively influenced the sustainability of the interventions, by creating ownership (even "pride") with the beneficiaries. This resulted in special care given to the equipment, in spite of an enduring lack of funds for operation and maintenance in some cases. This does not mean that the challenge of financial sustainability of beneficiaries shall not be tackled; it remains a very important</p>

<p>tional) outweigh the poor financial sustainability of beneficiaries.</p>	<p>aspect of infrastructure financing and economic cooperation.</p>
<ul style="list-style-type: none"> ▪ Catalytic role. SECO cooperation with other donors appears to have been complementary—fitting well with other donors' agendas, and synergistic—allowing donors to leverage SECO's work for their larger projects. 	<p>Agreed.</p> <p>Coordination of our programme with the activities of other donors will remain important as they have often greater means at their disposal and are thus in a position to scale up SECO's approaches and projects. We will furthermore continue to cofinance projects with other donors in order to make larger projects or even programmes possible.</p>
<p>Lessons learnt - program</p>	
<ul style="list-style-type: none"> ▪ SECO has had the most success with supply equipment and technical assistance. SECO's interventions successfully addressed many of the technical problems in the energy sectors of partner countries (technical losses, and reliability), but had less success in addressing non-technical challenges, for example, commercial losses. 	<p>Agreed.</p> <p>Projects implemented over almost 20 years were reviewed – over the period, the design of WEIN projects evolved from mostly technical interventions (equipment and associated training) to a larger scope including institutional measures. Many of the later projects were not completed at the time of the evaluation and could thus not be evaluated. It thus seems plausible that more success stories could be found for the technical measures implemented under earlier projects. The institutional components of only 2 projects were analysed (one satisfactory, one unsatisfactory), which indeed is a worse score than the one achieved for the technical projects, but the sample is rather small. It also should be mentioned in this context that institutional measures normally take more time to produce tangible outcomes than investments.</p>
<ul style="list-style-type: none"> ▪ SECO is a valued policy advisor. SECO is active in the donor dialogue on policy, regulatory and institutional challenges, even when projects do not have explicit policy advisory component. Donors and beneficiaries clearly view SECO as strong in policy discussions in the sector, and as a competent partner. 	<p>Agreed.</p> <p>The fact that we managed to play a role in policy discussions is in our view due to the presence of cooperation offices in the partner countries, which often play a prominent role in donor coordination and are well connected, the quality of the mobilized expertise and the relative independence of SECO, as a Swiss organization and smaller donor, with no major vested interests or hidden agendas. These advantages should be maintained.</p>

<p>▪ SECO's projects were less efficient in countries with weak legal, regulatory and institutional environments. The countries where SECO's projects were less satisfactory in terms of efficiency are the countries ranked worst in international measurements of corruption levels, governance, transparency and accountability, quality of regulation, rule of law, and political stability. SECO's projects were also generally less efficient in countries with lower GDP per capita.</p>	<p>Agreed.</p> <p>We are not surprised. As the report points out, delays and cost overruns were mostly due to external factors beyond the SECO's control, but which are very much influenced by the local conditions. In this context, we were pleased to learn that sustainability and effectiveness were not compromised by the difficult environment.</p> <p>While there is a general tendency of SECO-WE to focus on more advanced countries, SECO will still continue to be active in some countries with weak legal, regulatory and institutional environments. The challenge will be to improve efficiency of project implementation in such countries as well (cf. to responses to recommendations below).</p> <p>The link with GDP is an interesting remark – however, we would not be astonished if there were a correlation between weak legal, regulatory and institutional environments and GDP level.</p>
<p>▪ The Swiss Value Added requirement may limit the relevance and efficiency of SECO projects. Swiss Value Added has drawbacks as a method of delivering aid, both because it limits the types of projects SECO may choose to fund and because it can cause administrative delays.</p>	<p>Partially agreed.</p> <p>Thus far, the relevance of our projects does not seem to have been negatively affected by the SAV-requirement. It shall also be noticed, as mentioned in the report, that Swiss material and know-how is highly valued by the partners. But it is true that the SAV-requirement does limit our field of activities, tends to make cooperation with cofinanciers more complex, and has caused delays in some instances and possibly also higher costs.</p>
<p>Lessons learnt - project</p>	
<p>▪ The quality of a PMU and its director, were crucial to the efficiency of projects. The competence of PMU managers was one of the most important factors driving efficient and effective interventions. The principal problem of this approach is that the PMU has little independence from political decisions that can compromise leadership of the</p>	<p>Agreed</p> <p>We also see the professionalism and commitment of a PMU as a critical success factor for the project implementation and to ensure the ownership by the partner/beneficiary. The personality and the leverage of the PMU head within the beneficiary organization are also essential.</p> <p>We acknowledge the risk of political interference, particularly in the countries having a weaker governance structure. We also see a constraint in the sometimes limited absorption capacity of the beneficiary organisation. Nevertheless, we still prefer this type</p>

<p>PMU</p>	<p>of arrangement over an external PMU: Internal PMUs facilitate ownership and know-how transfer in the beneficiary organization and limit conflicts of interest. Furthermore, external PMUs – apart from creating unsustainable parallel structures - are subject to political interference as well.</p>
<p>Agreed.</p> <p>It is true that we were sometimes over-optimistic regarding time horizon and resources needed to reach the set goals. Risks and cost estimates should have been identified more carefully before approving the projects concerned. This was particularly the case when entering a new country or a new sector.</p> <p>A solution would be to allocate more funds for due diligence and feasibility study (e.g. including a preliminary project design) before taking a final decision on the project and before concluding a Project Agreement with the partner government. The risk is that more money would be lost in case the project finally does not materialize.</p>	<p>Agreed.</p> <p>SECO addressed this shortcoming about 2 years ago. Logframes (with a clear structure of objectives, outputs, outcomes) became mandatory for larger projects; they are available for the on-going projects, but most evaluated projects did indeed not have a logframe. We appreciate the fact that evaluation proposed reconstructed logframes for older projects, in order to be able to provide a meaningful assessment.</p>
<p>Agreed.</p> <p>The entry point has mostly been a discussion on concrete technical/commercial aspects, which may lead to develop pilot solutions, which, if successful, can be scaled up later. We have often found it easier to initiate reform discussions on a concrete and limited aspect of the problem before taking them to a more comprehensive and often abstract level. We intend to continue this approach, bearing in mind the risk that the technical solution may only be a necessary, but not a sufficient measure to attain the</p>	<p>Agreed.</p> <p>The entry point has mostly been a discussion on concrete technical/commercial aspects, which may lead to develop pilot solutions, which, if successful, can be scaled up later. We have often found it easier to initiate reform discussions on a concrete and limited aspect of the problem before taking them to a more comprehensive and often abstract level. We intend to continue this approach, bearing in mind the risk that the technical solution may only be a necessary, but not a sufficient measure to attain the</p>
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<ul style="list-style-type: none"> SECO took on an <i>ad hoc</i> leadership role on projects in trouble. In some parallel and co-financed projects SECO staff and consultants spent more time and resources than planned working to resolve project delays. SECO was not the lead donor on these projects, but ended up taking more of a leadership role to resolve problems preventing the projects from moving forward 	<p>objectives.</p> <p>Agreed.</p> <p>A very good illustration of the "Swiss quality" and proactive project management appreciated by our partners. We shall keep on going on this track, but may anticipate more the time and cost risk. Incidentally, the same comment was received from a group of consultants and suppliers involved in WEIN projects.</p>
<ul style="list-style-type: none"> SECO has a comparative advantage of being flexible and quick to respond. SECO can often move more quickly and flexibly than other, larger donors, to provide initial funds that donors can leverage for larger projects 	<p>Agreed</p> <p>Being comparatively small (but still with a good presence on site), flexible (shorter reaction times), Swiss (independence, fewer hidden agendas than others) and providing grant funds are indeed competitive advantages, which we will strive to maintain.</p>

3 Management response on recommendations made by the evaluation team

Recommendation on program	Management response	responsible	date
<p>Focus interventions on supply of equipment and technical assistance. We recommend that SECO focus its resources on the levels of operations that have been most effective, namely, services and supply of equipment, coupled with extensive on-the-job training. SECO's approach has been to lead with capital expenditure, but to remain active in the policy dialogue. This approach is refreshing given the slow progress made by</p>	<p>Not agreed.</p> <p>On the one hand, we understand and accept the recommendation to focus our activities on fields where results have been best and where our funds are spent in the most effective and efficient way. We will continue to fund such components. On the other hand, we find this recommendation a bit inconsistent with other findings of the report, since dropping the institutional level clearly</p>	<p>WEIN</p>	<p>ongoing</p>

<p>larger donors on sector reform in countries where. Many of SECO's interventions have been effective despite the slow pace of reform.</p>	<p>puts the financial sustainability of the supported utility at risk, which endangers the projects' sustainability. At the same time, it may be a missed opportunity since working on the level of equipment/TA may facilitate progress on the institutional level. We are convinced that we need to support our partners at this level as well, while having to admit it requires a long-term commitment, both from WEIN and the partner side and entails higher risks of failure. In some cases cooperation with other financiers may be an option, leaving certain project components to a like-minded donor having a good track record in the field.</p>		
<p>Decide whether Swiss Value Added is an objective or a method. The Swiss Value Added rule has drawbacks as a method of delivering aid, but may be a reasonable objective for SECO. Countries tie aid for domestic economic or political reasons, not for the benefit of aid recipients. As a national policy objective, this is understandable and defensible. As a method of delivering aid, it is not.</p>	<p>Partially agreed.</p> <p>WEIN is in the process of sharpening its position on the issue, analyzing experiences made with untying in the South and the Enlargement Contribution.</p> <p>The appropriate approach might be to select sectors or even niches where there is Swiss know-how with a competitive and recognized advantage. A demand-driven selection of such sectors would be optimal. While the aid would not be tied, the terms of reference/specifications of the projects should explicitly refer to high standards and requirements, thus increasing the chances of Swiss bidder to win the tender.</p>	<p>WE-MG, WEIN</p>	<p>2010 Q4</p>
<p>Continue the use of grants instead of loans. SECO's provision of grants instead of loans is preferable because:</p> <ul style="list-style-type: none"> • It avoids the administrative burden of determining creditworthiness for loans, negotiating conditions, 	<p>Agreed</p> <p>We perceive grants as an appropriate instrument to ease the financial cost of the infrastructure, but also to push innovative projects with a replication potential and as a catalytic element to mobilize additional resources,</p>	<p>WEIN</p>	<p>continued</p>

<p>and administering the loan</p> <ul style="list-style-type: none"> Many of SECO grant beneficiaries are not financially viable. Many state-owned utilities that benefit from SECO grant funding still fail to recover their full costs of service. 	<p>while keeping a relatively high level of flexibility. A financing mix (grant from SECO/loan from cofinancier) is in many cases a good approach.</p>	
<p>Know when to stop funding. Some project beneficiaries are commercially unviable because their government owners, or regulation, prevent them from operating on a commercial basis (for example, by prohibiting the disconnection of nonpaying customers, or preventing necessary tariff increases). Grant funding for a utility that—without political intervention—could operate on commercial terms is counterproductive to SECO's and other donors' efforts to reform the sector.</p>	<p>Agreed</p> <p>Certainly a key question, particularly in the energy sector, which has in many countries the potential to become commercially viable. Criteria we use when deciding on the grant amount include market failure (the beneficiary cannot access commercial funds, commercial financiers do not want to fund a certain technology), lacking commercial viability (a project may be economically viable, but not commercially) and affordability (the service would become too expensive for the population if the provider has to pay back loans – a refusal to raise tariffs is not always bad will by the Government in charge).</p>	<p>WEIN</p> <p>continued</p>
<p>Recommendation on projects</p> <p>Let the country context guide the design. The overall quality of governance in a country should guide SECO in thinking about how to implement projects. This means:</p> <ul style="list-style-type: none"> Working more in countries with better governance, and less in those with worse governance, or Taking different approaches in countries with worse governance. 	<p>Management response</p> <p>Agreed with 2nd option – under implementation</p> <p>The approach shall become more customized. Appraisals of projects in countries with weak governance shall be more in-depth in order to obtain a better idea of risks and costs.</p>	<p>responsible date</p> <p>WEIN</p> <p>ongoing</p>

<p>Reconsider the local counterpart contribution. Projects delays were often the result of local counterparts failing to contribute what they had promised (for example, civil work or co-funding). Requiring a local counterpart contribution may make more sense in countries with better overall governance indicators and higher levels of income, as there is a greater likelihood that the beneficiaries will have the resources and ability to provide their contribution.</p>	<p>Partially agreed</p> <p>We share the evaluator's assessment on how the non-effective implementation of the local contribution can affect WEIN projects and under which circumstances it occurs.</p> <p>At the same time, we consider a contribution of the partner/beneficiary an essential component of the economic cooperation, especially in terms of ownership. The appropriate approach shall be to request contributions, which are critical during the project implementation, only in countries having such capacities and a suitable environment. In other countries, the contribution shall be still requested, but mostly in terms of human resource and allocation of resources important at the beginning of the project (or just before its actual start), but not critical during the completion phase and/or directly affecting the progress of other components.</p> <p>These elements shall be carefully designed in project agreements.</p>	<p>WEIN</p> <p>2010 Q3 onwards</p>
<p>Expect the unexpected. It is our understanding that all SECO projects have a contingency, but differ in terms of the size of the contingency and project managers' willingness to use it. We recommend SECO consider allocating (and using, when necessary) larger contingencies to projects in countries with poorer governance indicators</p>	<p>Agreed – to be implemented.</p> <p>We need to establish the contingency amount more systematically than in the past, taking into account sector, country, partner and also the fact that SECO approves project budgets at a very early stage (i.e. after the Feasibility Study). As regards the approach, a decision will have to be taken together with WE Management if budgets shall tend to be low, but with a possibility</p>	<p>WEIN-WE</p> <p>2010 Q3</p>

	<p>ty to increase later (Aufstockung) or budgets shall be high, with the possibility that not all funds will be used (and will subsequently be lost to development cooperation due to rules of the Financial Administration).</p>		
<p>Use conditionalities to ensure the quality of the PMU. SECO's challenge is to protect competent PMU directors and staff from being replaced. As one possible solution, we recommend SECO consider integrating into its grant agreements:</p> <ul style="list-style-type: none"> • A minimum level of qualifications of the PMU director • Project implementation and reporting milestones, tied to the logframes that SECO now uses as part of its monitoring and evaluation procedures 	<p>Agreed – to be implemented</p> <p>We see setting minimum requirements and possibly a right of non-objection to key PMU staff changes as a good proposal to overcome some of the structural weakness observed with the PMUs, even if this will not eliminate political interference in all cases.</p> <p>Over the past few months, WEIN has already started to ensure more coherence between logframes and project agreements. We have encountered some resistance (as not all partners are used to or convinced of logframes), but we will continue to push in this direction.</p>	WEIN	2010 Q3 onwards / ongoing
<p>On co-financed projects, put SECO consultants in leadership positions. Co-financing projects were more efficient when SECO consultants provided project management assistance to the lead donor. SECO is therefore better able to keep track of the project's progress, and step-in if the project runs into difficulties</p>	<p>Agreed</p> <p>Our past experiences have indeed confirmed this. Thus far, such consultants have almost always been Swiss consultants, mostly with a long track record of WEIN projects. It will be interesting to see if this special relationship between the consultant and WEIN can be maintained in projects where the consultant is non-Swiss.</p>	WEIN	ongoing
<p>Create internal incentives for running effectively, as well as efficiently. Project delays hurt a project officer's disbursement targets, but may be necessary for good reasons (for example, if changing circumstances mean that the original project design is a poor fit for a beneficiaries needs). As SECO further develops its</p>	<p>Partially agreed</p> <p>While this recommendation makes sense from a development cooperation point of view, we do not agree to integrate project evaluation results into staff assessments for the following reasons:</p> <ul style="list-style-type: none"> • WEIN project managers stay in their positions for 	---	---

<p>monitoring and evaluation procedures, we recommend that assessments of project effectiveness be integrated into assessments of staff performance, as it is currently being integrated into project and portfolio performance. Project officers—and SECO in general—should be recognized for decisions that improve project effectiveness, even if efficiency is compromised</p>	<p>approximately 3-4 years</p> <ul style="list-style-type: none"> • Infrastructure projects typically last longer than 3-4 years • Effectiveness can only be established after completion, i.e. the person in charge at the end is most of the time not the person that designed the project. Judging his/her performance based to a large extent on someone else's work seems unfair. <p>However, the integration of effectiveness aspects by project managers in their work (following up on logframes, baselines, mid-term reviews etc.) will be taken into account in staff assessments. Efficiency will continue to be a criterion as well, but not limited to disbursement targets.</p>	
<p>Integrate stakeholder feedback into project design and monitoring. We recommend that SECO strive to maintain a record of highly relevant projects by building more formal stakeholder consultation processes into project design. We recommend, specifically, that SECO focus on collecting feedback from energy service customers of institutions it is funding. This will improve the relevance, visibility, and the monitoring of its projects.</p>	<p>Agreed – to be implemented</p> <p>The end client/user of the supported utilities should be better known and the relations between them should be better monitored. WEIN has already gathered respective (positive) experience in the water sector. These elements can be introduced in the ToRs of the feasibility study, inception reports and monitoring reports. However, this is limited to projects with utilities having a direct relation to end user/client-citizen. For the “up-stream” operations, which are also typical of the electrical sector (i.e. dispatch, transport, MV distribution), it is of less significance.</p>	<p>WEIN</p> <p>2010 Q3</p>
<p>Adopt standardized results chains. We recommend that SECO adopt standardized results chains for its different levels of operations, and standardized indicators</p>	<p>Agreed</p> <p>The introduction of standardized logframes is already a step in this direction. The elaboration of a standardized</p>	<p>WECO-WEIN</p> <p>2010 Q4</p>

<p>at each level of results. Standardization will enable aggregation of results and cross country comparisons, and eventually a complete management information system for evaluations</p>	<p>results chain shall be further developed in close cooperation with evaluation section (WECO): However, it should be kept realistic and user friendly.</p>	
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Christian Kellerhals
Head of Infrastructure Financing



Jean-Luc Bernasconi
Head of Operations

The External Committee on Evaluation
Bern, July 11, 2010

**Position of the External Committee on Evaluation on the
Independent Evaluation of SECO Development
Cooperation in the Energy Sector in Eastern
Europe and Central Asia
and SECO/WEIN Management Response**

1. During its fourth meeting on June 24, 2010 the External Committee on Evaluation (the Committee) discussed the independent evaluation of SECO Development Cooperation in the Energy Sector in Eastern Europe and Central Asia as well as the SECO/WEIN Management Response on its main findings, lessons learnt and specific recommendations. The main focus of the discussion was the high quality of the evaluation report and its potential value as a means to enhance the overall visibility and credibility of SECO/WE's activities; the pertinence of current and future SECO/WE involvement in both the supply of equipment and technical assistance areas as well as in supporting the institutional and policy strengthening of selected energy service providers; the relevance, effectiveness and efficiency of the Swiss Value-Added requirement; and, the high strategic relevance of SECO/WE involvement in the area of renewable energy and energy efficiency.

2. The Committee welcomed this excellent and very professional evaluation report, the use of an evidence-based methodology aimed at assessing according to clearly identified criteria the relevance, effectiveness, efficiency, sustainability as well as SECO/WE's catalytic role in 22 energy sector projects funded between 1992 and 2010 in 10 countries of Eastern Europe and Central Asia as well as the concise and clearly drafted Executive Summary. While the main findings, lessons learnt and recommendations are specific to the reality of the 10 selected partner countries and institutions, the report incorporates several recommendations that are valid and representative for other developing and transition countries where SECO/WE is involved or will likely be involved in the near future. Such recommendations could be easily internalized and adjusted by SECO/WE in its 2009 Energy Sector Strategy. The Committee's positive assessment on the report takes into consideration that data scarcity constrained the evaluation considerably. In particular, it prevented the rigorous analytical assessment of the extent to which SECO/WE's interventions helped (or did not help) achieve the overall outcomes of: better service quality and reliability; affordable access to electricity; reduction of technical and commercial losses; improved management and financial viability of energy companies; better governance in the energy sector. Data scarcity and methodology constraints due to the lack of predefined result indicators also prevented the evaluation report to focus at least selectively on an issue that the Committee considers of crucial importance: the assessment of the impact of SECO/WE's support in the energy sector with respect to poverty reduction. This shows how important it is to establish quickly an internal monitoring system to ensure regular reporting during implementation

on projects' achievement vs. their intended outcomes. All in all, the Committee considers nevertheless that this evaluation constitutes a robust-enough validation of the pertinence of SECO/WE long-term and continuous focus on the energy sector, both in developing and transition countries. The report should help increasing the overall visibility and credibility of SECO/WE's activities in this increasingly strategic sector.

3. The Committees emphasized the very positive assessment on the evaluation made by SECO/WEIN Management in its Response. The input required by WEIN for this evaluation was significant. Against this background and in view of the result achieved, the Committed was pleased to see that Management considers that it was worth the effort. The Committee welcomed the comprehensive and detailed Management Response. It stressed that WECO/WEIN agreed or mostly agreed with the most important findings, lessons learnt and recommendations.

4. With respect to Management disagreement with the recommendation to focus almost exclusively future SECO/WE's interventions on the supply of equipment and technical assistance the Committee shared Management's view. Supporting selectively some energy service providers at the policy and institutional levels continues to be strategically important and potentially highly relevant. In particular, it can complement effectively and efficiently working on the level of supply of equipment, including rehabilitation, and technical assistance, as past evidence shows.

5. With respect to the recommendation related to decide whether the requirement of Swiss Value Added (which currently requires at least 50% Swiss added value in the purchasing of equipment and services) should continue to be an objective in itself or a method, the Committee encouraged SECO/WE Management to analyze the feasibility of a more flexible, pragmatic and project-driven approach. In some countries this might imply to select sectors, sub-sectors or specific niches where the Swiss know-how has a recognized and competitive comparative advantage, not least in the area of rehabilitation of Swiss equipment. This would increase the legitimate chances of Swiss bidder to win the international tender. But in other countries and according to the local needs and circumstances the approach should be more flexible. SECO/WE analysis should include an assessment of the policies and practices of OECD- and most importantly non-OECD donor agencies (for instance China) that de facto tie their aid for political and domestic reasons, not necessarily for the benefit of aid recipients.

6. Ideally the Committee would have liked to see a chapter of the Report focusing on the pertinence and effectiveness of SECO/WE's support in the new strategic area of renewable energy and energy efficiency. Unfortunately this was not possible because SECO/WE's involvement in such areas is relatively recent and its initial results are not yet backed by strong enough evidence. The Committee is aware that according to the new SECO Energy Sector Strategy, 2009 renewable energy and energy efficiency will be increasingly at the core of SECO/WE activities. Sooner than later there should therefore be an opportunity to evaluate and discuss more in depth such innovative programs and approaches as well as their results.

7. SECO/WE is prepared to draft by September 2010 an article related to the main findings and implications of this evaluation that would be published by IHEID Geneva in its 2011 Yearbook covering energy policy issues.

8. In conclusion: The Committee recommends the disclosure of the evaluation report as well as the Management response and the Position of the External Committee on Evaluation on SECO's website. The Committee is ready to monitor the implementation of the Management Action Plan especially with respect to the areas that still require the definition of more concrete decisions and actions.



Pietro Veglio

Chairman of the External Evaluation Committee

The Committee Members:

Gilles Carbonnier

Susanne Grossmann

Christoph Stueckelberger

**Independent Evaluation of SECO Development
Cooperation in the Energy Sector in Eastern
Europe and Central Asia**
Final Report

May 2010



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List of Acronyms

Acronym	Definition
AAR	After Action Reviews
BiH	Bosnia and Herzegovina
CAREC	The Central Asia Regional Economic Cooperation
CET	Iasi District Heat and Electricity Company
CHF	Swiss Franc
CHP	Combined Heat and Power Plant
CIS	Commonwealth of Independent States
DAC	Development Assistance Committee
DRCP	Drin River Cascade Rehabilitation Project
EBRD	European Bank for Reconstruction and Development
EMS	Elektromreza Srbije (Serbian Transmission System and Market Operator)
EPS	Elektroprivreda Srbije (Electric Power Industry of Serbia)
ERE	Albanian Energy Regulatory Entity
EUR	Euro (currency)
FGD	Focus Group Discussion
Gcal	Gigacalorie
GWh	Gigawatt Hour
HPP	Hydropower Plant
HV	High-Voltage
IDA	The International Development Association
IMF	International Monetary Fund
KEK-CDC	KEK-CDC Consultants
KESH	Korporata Energjitike Shqiptare (Albanian Power Corporation)
KfW	Kreditanstalt für Wiederaufbau (German government development bank)
KII	Key Informant Interview
kV	Kilovolts
LQ	Learning Questions
M&E	Monitoring and Evaluation
mHz	Megahertz
MIS	Management Information System
MoU	Memorandum of Understanding
MW	Megawatt
MWh	Megawatt Hours
NATO	North Atlantic Treaty Organization
NCC	National Control Center
NESC	National Transmission Operator of Kyrgyzstan
NGO	Non-Government Organization
O&M	Operating and Maintenance
OCHA	Office for Coordination of Humanitarian Affairs
OECD	Organization for Economic Co-operation and Development
PEP SEI	Private Enterprise Partnership Southeast Europe - Infrastructure
PMU	Project Management Unit
PPP	Public Private Partnership

RON	Romanian Leu (Currency)
SCADA/EMS	Supervisory Control and Data Acquisition/Energy Management System
SDC	Swiss Agency for Cooperation and Development
SECO	State Secretariat for Economic Affairs
SMART	Simple, Measureable, Attainable, Realistic and Timely
STEP	Swiss Thermal Energy Project
T&D	Technology and Development
TOC	Theory of Change
TWh	Tera Watt Hours
UCTE	Union for the Co-ordination of Electricity Transmission
UN	United Nations
VoLL	Value of Lost Load

Executive Summary

What is the purpose of this report?

This report evaluates 22 energy sector projects funded by Switzerland's State Secretariat for Economic Affairs (SECO) in Eastern Europe and Central Asia between 1992 and 2010. The ultimate purpose of the evaluation is to use lessons from previous SECO interventions to inform SECO's future interventions in the region's energy sector. The report therefore also identifies the main factors affecting the results and the lessons that can guide future funding. DHInfrastructure conducted the evaluation during October 2009-May 2010. An Approach Paper, drafted by SECO, defines the objectives and possible methods to be used in the evaluation. The Approach Paper serves as our Terms of Reference for the evaluation, and is included in Appendix A.

How were projects evaluated?

We evaluated projects on the basis of four criteria defined in the Approach Paper: relevance, effectiveness, efficiency, and sustainability. We rated the projects as highly satisfactory, satisfactory, unsatisfactory, or highly unsatisfactory, depending on the extent to which they met each of the four criteria. We also evaluated, but did not rate, the quality of SECO's cooperation with other donors.

We evaluated the effectiveness of SECO's projects in terms of their outputs, outcomes and impacts. Outputs are the products or services delivered under a project. Impacts are the direct, long-term effects of SECO's interventions. Outcomes are the direct shorter-term effects of SECO's projects. Outcomes typically lie between outputs and impacts in terms of time and causality.

We evaluated SECO's effectiveness in achieving the impacts of improved living conditions and economic development. We evaluated SECO's effectiveness in achieving the overall outcomes of:

- Better service quality and reliability
- Affordable access to electricity
- Reduction of technical and commercial losses
- Improved management and financial viability of energy companies
- Better governance in the energy sector.

The objectives for impacts and outcomes were stated in the Approach Paper and agreed with SECO in our December 2009 Inception Report. Data scarcity constrained the evaluation considerably. A scarcity of data prevented us from evaluating, in an analytically rigorous way, the extent to which SECO's interventions helped achieve the outcomes named above.

How did SECO's projects rate?

Overall, we found SECO's energy sector assistance in Eastern Europe and Central Asia to be highly satisfactory in terms of relevance, satisfactory in terms of effectiveness and sustainability, and unsatisfactory in terms of efficiency. More specifically:

- **Relevance.** SECO staff clearly have done an excellent job understanding the needs of the partner countries, designing projects which meet those needs, and designing projects which complement other donors interventions

- **Effectiveness.** The effectiveness of project outputs, outcomes and impacts has generally been satisfactory. SECO’s interventions clearly helped to achieve better service quality and reduction of technical losses in energy systems of the partner countries. SECO interventions also met, to some extent, the objectives of improving management and financial viability of energy companies. However, the interventions we reviewed were limited to more technical, “on-the-job” training with hardware and software, than broader institutional changes. SECO’s interventions did not succeed in meeting the objective of making energy supply more affordable
- **Efficiency.** SECO’s interventions were generally unsatisfactory in terms of efficiency. Slightly more SECO projects suffered from delays or cost overruns than did not. However, the delays and cost overruns were due to external factors that were largely beyond SECO’s control
- **Sustainability.** We rated the sustainability of SECO’s interventions as satisfactory, despite the fact that the financial sustainability of beneficiaries is threatened by poor governance, political interference, and regulation which prevents commercial management of utilities. Our assessment is that other aspects of sustainability (technical and institutional) outweigh the poor financial sustainability of beneficiaries
- **Catalytic role.** SECO cooperation with other donors appears to have been complementary—fitting well with other donors’ agendas, and synergistic—allowing donors to leverage SECO’s work for their larger projects.

What internal factors positively affected SECO projects?

A mix of internal and external factors positively affected SECO’s projects. The most important positive factor affecting SECO’s projects is the flexible, accessible and attentive project management of SECO staff and consultants. SECO staff (national staff and international staff from headquarters) are perceived positively as being very “hands on”, in contrast with other donors. Beneficiaries and other donors consistently noted that SECO responded quickly and capably to project and beneficiaries’ needs. This factor positively affected project relevance, efficiency and outcomes.

SECO also consistently receives high marks from beneficiaries for the on-the-job training that its technical consultants provide in conjunction with the capital works.

What external factors positively affected SECO projects?

The most significant external factor that positively affected SECO projects was the ownership shown by beneficiaries.

Beneficiaries of SECO’s funding often take great pride in the infrastructure SECO funds, and this pride is shown in the way assets are maintained. We saw several examples of assets funded by SECO more than a decade earlier that were in excellent condition. In countries where funds for maintenance and a culture of maintenance often do not exist, SECO’s investments are remarkably well cared-for.

What external factors negatively affected SECO projects?

External factors negatively affected SECO projects more than internal factors. Different external factors affected DAC criteria differently:

affected SECO projects?

- **Outcomes** were affected most by corruption, poor governance, and politics. In Albania and Kyrgyzstan, in particular, corruption and poor governance in the electricity sectors negatively affected the ability of SECO's project to reduce commercial losses
- **Efficiency** was also negatively affected by corruption, poor governance and politics. Political interference in the appointment and dismissal of Heads of SECO Project Management Units (PMUs) was a factor that delayed projects in Albania
- **Sustainability** of projects was primarily affected by regulatory and political factors, and macroeconomics. For a mix of reasons related to politics and affordability, energy tariffs are often below the cost of providing service. When energy companies fail to recover their full costs of service, they skimp on proper maintenance. Without proper maintenance infrastructure provides lower levels of service, depreciates more quickly, and has to be rehabilitated or replaced more often.

What internal factors negatively affected SECO projects?

Internal factors also negatively affected some of SECO's projects but were less important than external factors. SECO's Swiss Value Added procurement requirement (which requires at least 50 percent Swiss added value in the purchasing of equipment and services) affected efficiency in a few projects. We saw some evidence that the Swiss Value Added requirement meant more expensive Swiss equipment was procured when cheaper alternatives were available that might have been as suitable. We also saw some evidence that coordinating Swiss Value Added requirements sometimes run into conflict with other donors' procurement rules, causing delays in the procurement process.

The use of co-financing arrangements, where SECO contributes funding to some component of a larger project managed by another donor, also affected the efficiency of some projects. Co-financing has significant advantages over other modes of financing in that it allows SECO (and other donors) to participate in larger projects. However, co-financing also negatively affected some SECO projects because of the complexities of coordinating multiple donors funding closely-related components, and because of management problems by lead donor agencies. The latter problem (management problems by the lead donor) is essentially an external factor, but co-financing exposes SECO's projects to it.

What are the lessons...

The results of the evaluation offer several lessons for how SECO identifies, designs and implements energy sector interventions in Eastern Europe and Central Asia in the future. We divide the lessons into two categories: Lessons related to the SECO's overall program of assistances, and lessons related to specific SECO projects.

... for SECO's overall programs

The lessons applicable to SECO's programs are:

- **SECO has had the most success with supply equipment and technical assistance.** SECO's interventions successfully addressed many of the technical problems in the energy sectors of partner countries (technical losses, and reliability), but had less success in addressing non-technical challenges, for example, commercial

losses.

- **SECO is a valued policy advisor.** SECO is active in the donor dialogue on policy, regulatory and institutional challenges, even when projects do not have explicit policy advisory component. Donors and beneficiaries clearly view SECO as strong in policy discussions in the sector, and as a competent partner.
- **SECO's projects were less efficient in countries with weak legal, regulatory and institutional environments.** The countries where SECO's projects were less satisfactory in terms of efficiency are the countries ranked worst in international measurements of corruption levels, governance, transparency and accountability, quality of regulation, rule of law, and political stability. SECO's projects were also generally less efficient in countries with lower GDP per capita.
- **The Swiss Value Added requirement may limit the relevance and efficiency of SECO projects.** Swiss Value Added has drawbacks as a method of delivering aid, both because it limits the types of projects SECO may choose to fund and because it can cause administrative delays.
- **The quality of a PMU and its director, were crucial to the efficiency of projects.** The competence of PMU managers was one of the most important factors driving efficient and effective interventions. The principal problem of this approach is that the PMU has little independence from political decisions that can compromise leadership of the PMU.
- **SECO staff and consultants underestimated the difficulty of working in some countries.** SECO staff and consultants said that some of SECO's interventions initially underestimated the challenge of working in some of these countries, and that better initial due diligence and feasibility studies would have improved project efficiency.
- **Project design did not clearly identify outcomes and impacts.** As noted above, SECO's project documentation did not always clearly specify the outcomes and impacts intended. When the documentation did specify outcomes, these outcomes were often a mix of outputs and medium- to long-term outcomes. SECO's project documentation rarely specified indicators and targets against which project effectiveness could be measured.
- **SECO's work to improve the institutional management of energy service providers is often more technical than institutional.** SECO's project components that focused on improving institutional management often leaned more toward very specific on-the-job training than broader institutional reform.
- **SECO took on an *ad hoc* leadership role on projects in trouble.** In some parallel and co-financed projects SECO staff and consultants spent more time and resources than planned working to resolve project delays. SECO was not the lead donor on these projects, but ended up taking more of a leadership role to resolve problems preventing the projects from moving forward.
- **SECO has a comparative advantage of being flexible and quick to**

...for SECO's projects?

respond. SECO can often move more quickly and flexibly than other, larger donors, to provide initial funds that donors can leverage for larger projects.

How can SECO use these lessons to improve...

The lessons identified above suggest a number of measures that can help SECO continue to implement effective, relevant and sustainable projects, while also improving their efficiency.

... programs...

We recommend that future funding for SECO programs:

- **Focus interventions on supply of equipment and technical assistance.** We recommend that SECO focus its resources on the levels of operations that have been most effective, namely, services and supply of equipment, coupled with extensive on-the-job training. SECO's approach has been to lead with capital expenditure, but to remain active in the policy dialogue. This approach is refreshing given the slow progress made by larger donors on sector reform in countries where. Many of SECO's interventions have been effective despite the slow pace of reform.
- **Decide whether Swiss Value Added is an objective or a method.** The Swiss Value Added rule has drawbacks as a method of delivering aid, but may be a reasonable objective for SECO. Countries tie aid for domestic economic or political reasons, not for the benefit of aid recipients. As a national policy objective, this is understandable and defensible. As a method of delivering aid, it is not.
- **Continue the use of grants instead of loans.** SECO's provision of grants instead of loans is preferable because:
 - It avoids the administrative burden of determining creditworthiness for loans, negotiating conditions, and administering the loan
 - Many of SECO grant beneficiaries are not financially viable. Many state-owned utilities that benefit from SECO grant funding still fail to recover their full costs of service.
- **Know when to stop funding.** Some project beneficiaries are commercially unviable because their government owners, or regulation, prevent them from operating on a commercial basis (for example, by prohibiting the disconnection of nonpaying customers, or preventing necessary tariff increases). Grant funding for a utility that—without political intervention—could operate on commercial terms is counterproductive to SECO's and other donors' efforts to reform the sector.

... and projects?

We recommend that, for future projects SECO:

- **Let the country context guide the design.** The overall quality of governance in a country should guide SECO in thinking about how to implement projects. This means:
 - Working more in countries with better governance, and less in those with worse governance, or
 - Taking different approaches in countries with worse governance.
- **Reconsider the local counterpart contribution.** Projects delays were often the result of local counterparts failing to contribute

what they had promised (for example, civil work or co-funding). Requiring a local counterpart contribution may make more sense in countries with better overall governance indicators and higher levels of income, as there is a greater likelihood that the beneficiaries will have the resources and ability to provide their contribution.

- **Expect the unexpected.** It is our understanding that all SECO projects have a contingency, but differ in terms of the size of the contingency and project managers' willingness to use it. We recommend SECO consider allocating (and using, when necessary) larger contingencies to projects in countries with poorer governance indicators.
- **Use conditionalities to ensure the quality of the PMU.** SECO's challenge is to protect competent PMU directors and staff from being replaced. As one possible solution, we recommend SECO consider integrating into its grant agreements:
 - A minimum level of qualifications of the PMU director
 - Project implementation and reporting milestones, tied to the logframes that SECO now uses as part of its monitoring and evaluation procedures.
- **On co-financed projects, put SECO consultants in leadership positions.** Co-financing projects were more efficient when SECO consultants provided project management assistance to the lead donor. SECO is therefore better able to keep track of the project's progress, and step-in if the project runs into difficulties.
- **Create internal incentives for running effectively, as well as efficiently.** Project delays hurt a project officer's disbursement targets, but may be necessary for good reasons (for example, if changing circumstances mean that the original project design is a poor fit for a beneficiaries needs). As SECO further develops its monitoring and evaluation procedures, we recommend that assessments of project effectiveness be integrated into assessments of staff performance, as it is currently being integrated into project and portfolio performance. Project officers—and SECO in general—should be recognized for decisions that improve project effectiveness, even if efficiency is compromised.
- **Integrate stakeholder feedback into project design and monitoring.** We recommend that SECO strive to maintain a record of highly relevant projects by building more formal stakeholder consultation processes into project design. We recommend, specifically, that SECO focus on collecting feedback from energy service customers of institutions it is funding. This will improve the relevance, visibility, and the monitoring of its projects.
- **Adopt standardized results chains.** We recommend that SECO adopt standardized results chains for its different levels of operations, and standardized indicators at each level of results. Standardization will enable aggregation of results and cross country comparisons, and eventually a complete management information system for evaluations.

1 Introduction

This report evaluates 22 energy sector projects (interventions) funded by Switzerland's State Secretariat for Economic Affairs (SECO) in 10 countries of Eastern Europe and Central Asia (the partner countries).¹ The report evaluates the relevance, effectiveness, efficiency, sustainability and, when feasible, impact of SECO's funding to partner countries from 1992 to 2008.

The ultimate purpose of the evaluation is to use lessons from previous SECO interventions to inform SECO's future interventions in the region, and in the sector. The report therefore also identifies the main factors—internal and external—affecting the relevance, effectiveness, efficiency, sustainability and impact of SECO's interventions, and lessons that can guide future interventions.

DHInfrastructure conducted the evaluation during October 2009-May 2010. An Approach Paper, drafted by SECO, defines the objectives and possible methods to be used in the evaluation. The Approach Paper serves as our Terms of Reference for the evaluation, and is included in Appendix A.

1.1 Background to SECO's Assistance in the Region's Energy Sector

Overall, SECO funded 41 interventions in 17 Central Asian and Eastern European countries between 1992 and 2008 (the evaluation period). The value of SECO's commitment during this period was CHF 319 million.

Context for SECO's interventions

The collapse of socialist regimes in Eastern Europe and Central Asia created problems for the region's energy infrastructure in the early 1990s. The political and economic changes created problems that were:

- **Physical.** Many of the newly independent countries' energy systems had been built as part of larger, regional energy systems. The new political borders fragmented electricity networks, fuel pipelines, and transportation routes for fuel and equipment. The fragmentation of energy systems caused interruptions to fuel supply which in turn caused interruptions to electricity and heating service.
- **Financial.** Industry had collapsed and the region and many governments were bankrupt. Governments could not cross-subsidize between industrial and residential energy customers as they had in the past, nor could they afford to provide direct subsidies. The financial condition of energy service providers deteriorated quickly, and the implicit or "quasi-fiscal" subsidies to the sector increased.² The energy service providers used what cash they

¹ SECO refers to the region as "the East".

² Tapio Saavalainen and Joy ten Berge have defined the quasi-fiscal deficit as "the value of implicit subsidy computed as the difference between the actual revenue charged and collected at regulated prices and the revenue required to fully cover the operating costs of production and capital depreciation." (Saavalainen, Taop and Joy ten Berge. "Quasi-Fiscal Deficits and Energy Conditionality in Selected CIS Countries". IMF Working Paper WP/06/43. February 2006).

had for day-to-day operating expenses (and when they had no cash, would barter), neglecting maintenance and rehabilitation of assets.

- **Operational.** The physical and financial problems created operational problems. Technical losses—electricity or heat lost as it travels over transmission and distribution networks—were high or increasing rapidly because of improper system operation and maintenance. Commercial losses—customers using electricity and heat without paying for it—also rose. Accustomed to highly subsidized energy prices, and themselves suffering financially, customers were unwilling or unable to pay the full cost of their energy consumption.

The operational problems fed back into a vicious cycle of deteriorating financial and operational problems. Higher technical and commercial losses meant lower revenues per unit of energy produced and delivered, further worsening the financial condition of energy sector entities, and depriving them of funds necessary to provide service.

As a consequence, by the early 1990s—when SECO first started working in the region—the energy systems in many of SECO’s partner countries had collapsed or were near to it. Outages and large voltage and frequency fluctuations were commonplace in many partner countries. Transmission and distribution losses (technical and commercial losses combined) were often well into the double digits by the mid-1990s.³

SECO’s Objectives

SECO’s general objectives are to:

- Improve living conditions in the partner countries, and
- Support economic development in the partner countries.⁴

SECO’s specific objectives in the region’s energy sector, as defined in the approach paper (and echoed in project documents) are:

- Better service quality and sustainability (availability and reliability) for electricity consumers (households and companies)
- Affordable access to electricity to households (incl. the poor) and to companies
- Reduction of technical and economical losses through higher efficiency
- Improved management/financial viability of energy companies
- Better governance in the energy sector.

³ In well-run electricity systems, frequency and voltage should not fluctuate more than 5 percent from a certain level. Technical transmission losses typically run in the range of 2-3 percent, distribution losses in the range of 3-5 percent. Commercial losses should be close to zero, and collections should be close to 100 percent.

⁴ Our understanding is based on our discussion with SECO, and SECO’s mandate as agreed with the Federal Assembly in the following document: “Communication on the Continuation of Cooperation with Eastern Europe and the CIS (06.099). December 15, 2006”. The document defines the following objectives for SECO: development of market economies, sustainable economic growth, providing incentives for private initiatives and investment, improving the participation of partner countries in international trade. The document also notes that the overall objective of these measures is to reduce poverty.

More recently (in 2009), SECO defined its future energy sector objectives in the partner countries in an energy sector strategy. According to the energy sector strategy, SECO's objectives in the energy sectors of the partner countries are to:⁵

- Increase energy efficiency
- Increase the share of renewable energy in the generation mix
- Secure energy supply at affordable costs
- Strengthen management and the financial and technical sustainability of utilities
- Strengthen policy coherence in the energy sector.

We used this list of objectives to guide our analysis of how SECO can use the lessons learned from the evaluation to inform future projects.

Nature of SECO's interventions

SECO provides grant funding through three different categories of interventions. SECO refers to these categories of interventions as "levels of operations". The levels of operations are:

- **Level 1: Public Policy**—SECO supports governments and energy ministries in developing sector strategy, with a focus on developing regulatory framework and increasing the level of electricity tariffs in order to achieve financial and technical sustainability of energy sector institutions
- **Level 2: Institutional Management**—SECO supports utility companies in the energy sector by providing consulting services and technical assistance to corporate governance, financial sustainability and transparency⁶
- **Level 3: Services/Supply of Equipment**—SECO assists with the procurement of new infrastructure and parts or the provision of services such as repair and consulting.

We refer throughout the paper to the different levels of operation as "Level 1", "Level 2", and "Level 3".

1.2 Overview of our Research Methodology

Our research methodology reflects the requirements of SECO's Approach Paper, and extensive discussions with SECO on a draft methodology proposed in a December 2009 Inception Report. We summarize the most important aspects of the methodology in the subsections below.⁷

Our evaluation covered 22 projects for which we had sufficient documentation or contact information for interviews. We visited four of the countries, Albania, Kyrgyzstan, Romania and Serbia (the "case study countries") to conduct more

⁵ SECO's 2009 energy sector strategy is contained in Appendix B.

⁶ SECO refers to this level of operations as "Institutional Sustainability". We have renamed it here to avoid confusion in this paper with the concept of "sustainability" of SECO projects that we have been asked to evaluate.

⁷ Appendix C contains a more detailed description of the methodology.

detailed evaluations of eleven projects. We describe our evaluation methodology in more detail in Appendix C. Appendix D summarizes which projects we evaluated and, if we did not evaluate a project, why we did not.

Rating criteria

As the Approach Paper required, we evaluated SECO's interventions against four criteria defined in the Approach Paper. The four criteria are:

- **Relevance.** The extent to which the objectives of a development intervention are consistent with beneficiaries' requirements, country needs, global priorities, and partners' and donors' policies.
- **Effectiveness.** The extent to which the development intervention's objectives were achieved, or are expected to be achieved, taking into account their relative importance. We evaluated effectiveness in terms of outputs, outcomes, and impacts.

The Approach Paper defines "impact" as the direct and long-term effects of Swiss supported actions in terms of: improved living conditions, increased economic opportunities and productivity, mobilisation of private sector investment or participation, and better environment. In discussions of our Inception Report with SECO we agreed that impacts should be measured more narrowly in terms of:

- Economic development
- Improved living conditions.

- **Efficiency.** A measure of how economically resource/inputs (funds, expertise, time, etc.) are converted into results. We evaluated projects in terms of their cost efficiency (benefits delivered given the project costs), and the efficiency of implementation.
- **Sustainability.** The continuation of benefits from a development intervention after major development assistance has been completed, the probability of continued long-term benefits, and the resilience to risk of the net benefit flows over time. We evaluated projects in terms of their technical, institutional, and financial sustainability.

Ratings

Projects were given scores or ratings that depended on the extent to which they met these criteria. We used the same ratings SECO uses for other evaluations, namely: Highly Satisfactory, Satisfactory, Unsatisfactory and Highly Unsatisfactory.

We rated projects in case study countries against as many criteria as we were able, given the information available. In the other countries, we only rated interventions' efficiency of implementation and effectiveness of outputs.

We rated interventions as "highly satisfactory" against each rating criteria if they fully met that criteria or exceeded it. We rated interventions as "satisfactory" if they largely met the criteria, "unsatisfactory" if they met the criteria only partially, and "highly unsatisfactory" if they largely failed to meet the criteria.

We aggregated ratings across countries and across interventions through a simple addition and averaging of ratings. The ratings were assigned scores as follows: Highly Unsatisfactory=1; Unsatisfactory=2; Satisfactory=3; Highly Satisfactory=4.

We also evaluated, but did not rate, the quality of SECO's cooperation with other donors. More specifically, we evaluated SECO's interventions in terms of their complementarities with projects supported by other donors, and the comparative advantage or value added by SECO interventions.

Outcomes and impacts

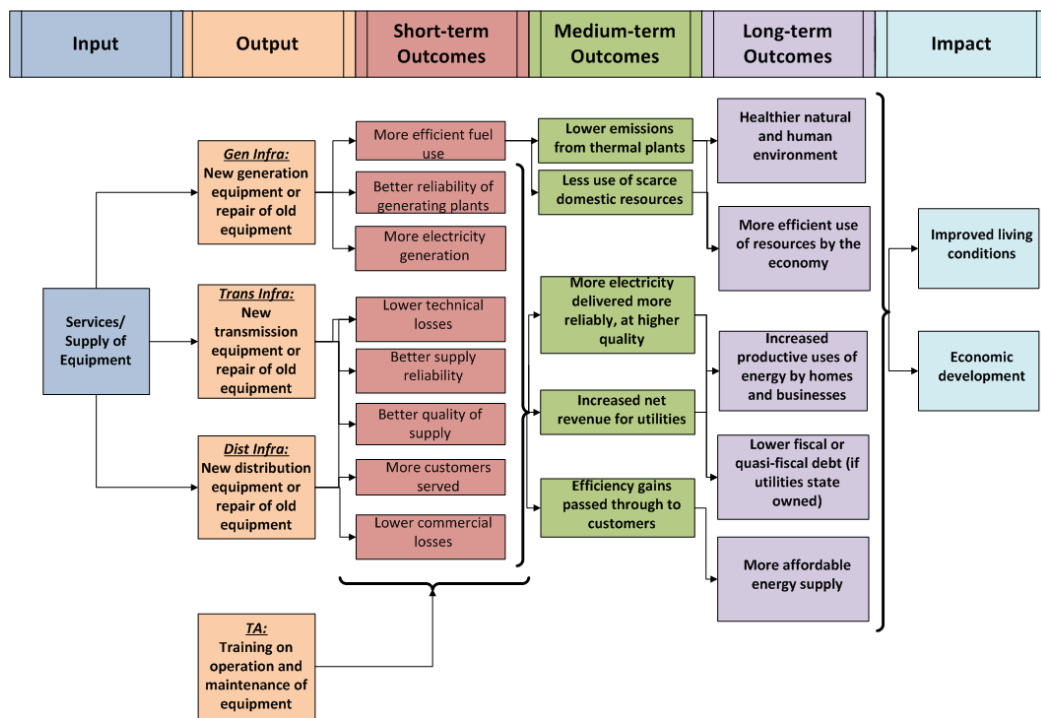
Ideally, our evaluation would have rated the effectiveness of SECO's interventions against the outcomes and impacts that were intended by a project. However, SECO project documents did not always clearly and consistently identify an intervention's objectives in terms of outcomes and impacts. The documents also rarely identified specific outcome indicators (to measure whether an outcome had been achieved) or targets for those indicators.

For this reason we developed standard sets of outcomes and impacts we thought were most consistent with each level of SECO operations, each type of output, and SECO's general objectives as defined in the Approach Paper. We also identified indicators for each standardized outcome. We evaluated the effectiveness of SECO outcomes and impacts against whether the project contributed to the achievement of these standard sets of outcomes and impacts.⁸

The detailed methodology in Appendix B illustrates standardized outcomes and impacts, and their links to inputs and outputs, in "results chains" for each level of SECO operations. Figure 1.1 shows the results chain for SECO's Level 3 Operations (Services and Supply of Equipment). We show this results chain as an example because Level 3 operations are the most common level of operations undertaken by SECO in the region's energy sector.

⁸ We did not set specific targets for the outcome indicators. We generally considered an outcome to have been achieved if there was any progress in the direction of a standard outcome.

Figure 1.1: Services/Supply of Equipment Results Chain



SECO generally aims to achieve its desired impacts by causing medium- and long-term outcomes that promote:

- On the supply side, a more efficient use of resources. The idea is that a more efficient use of resources should lead to greater productivity in the economy as a whole, and a healthier natural and human environment
- On the demand side:
 - Economic development through more productive use of energy
 - Better living standards because of more reliable and higher quality energy supply, and because of a healthier human and natural environment.

The different levels of SECO operations are designed to cause these medium- and long-term outcomes in different ways:

- **Short-term outcomes.** Improving energy supply infrastructure or infrastructure management should lead to fuel savings for generators, less energy lost on transmission and distribution lines, more revenue collection for energy companies, and better reliability and quality of supply for the customer.
- **Medium-term outcomes.** The short-term outcomes should lead to more energy served (because more customers are served, because more energy is delivered per customer, or both), higher quality supply, and higher revenues for energy service providers. Improvements in operating efficiency should lower operating costs for energy service providers and—assuming they also have higher revenues—higher net revenues. Energy

service providers' savings on fuel and other operating costs may also be passed through to customers, lowering energy tariffs. If the system has thermal generators who burn coal, gas, or other hydrocarbon fuels, the efficiency improvements will also lead to lower emissions of CO₂, SO₂, NO_x and other harmful pollutants associated with thermal generation.

- **Long-term outcomes.** The medium-term outcomes should in turn lead to more efficient and productive use of resources in the following ways:
 - Improvements in reliability avoid outages (whether planned or unplanned), meaning customers avoid the costs of using back-up generation, or the opportunity costs of not being able to do what they usually do when they have electricity. Customers will also have better quality energy supply. For electricity customers, better quality supply means less of the voltage and frequency fluctuations that damaged their energy intensive equipment and appliances. For gas and heating customers, this means warmer and more consistent temperatures.
 - To the extent that energy service providers are able to bridge the gap between their revenues and costs, they reduce their dependence on direct fiscal subsidies, which can help reduce the government's fiscal deficit. If direct subsidies did not fill the gap between revenues and costs (as it generally did not in most countries in the region), a narrowing gap between revenues and costs often also means a lower quasi-fiscal deficit. Lower quasi-fiscal deficits are good for the economy as a whole, and good for the technical and financial sustainability of an energy sector because the sector has more money to spend on maintenance and rehabilitation.⁹
 - A healthier human and natural environment, because of the reduction of harmful pollutants produced by thermal plants.

The results chains for other levels of operations (Level 1 and Level 2) have different inputs, outputs, and short-term outcomes than those shown in Figure 1.1, but have similar medium term outcomes, and identical long-term outcomes and impacts.

Limitations and Constraints to this Study

The most significant constraint to this evaluation was the scarcity of data showing outcomes and impacts of SECO's projects. Many of SECO's projects began more than a decade ago, when regular and accurate data collection and reporting was limited in most of the partner countries' energy sectors. Data collection and reporting has improved considerably over the past decade, but remains incomplete. Where data on outcome and impact indicators were available, they were not always reliable or consistent with other sources of data (or anecdotal information) we had collected.

⁹ Lower quasi-fiscal deficits represent: (a) debts between energy companies and their suppliers, and if some of the debtors are foreign suppliers, represent an ongoing source of external debt, (b) payment arrears to energy company employees, which over time can reduce a country's labor productivity and increase the potential for production disturbances, and (c) deferred maintenance and rehabilitation on assets. Power sector deficits are also more generally distortionary to price incentives in a way that misallocates resource use in the economy.

We were also not able to show in an analytically rigorous way that SECO's interventions caused the outcomes or impacts observed. In the language of evaluation specialists, we cannot show "attribution" of the outcomes and impacts we observed to SECO's interventions. Causation is best shown through experimental evaluation methods in which a random sample is taken before and after an intervention. This was obviously not possible in our evaluation. However, we did attempt to identify SECO's "contribution" to outcomes and impacts, based on the results of our interviews, data collection, focus group discussions.¹⁰

Because of the scarcity of data and because of the difficulty of showing attribution, we focused our analysis primarily on the short-term outcomes identified in Figure 1.1. Data were more widely available for short-term outcomes than for medium-term outcomes, long-term outcomes, and impacts. Also, the short-term outcomes were more closely linked to project outputs than medium-term outcomes, long-term outcomes and impacts (in other words, there were fewer factors that could interrupt the causal chain between project outputs and short-term outcomes).

1.3 Structure of this Report

The remainder of this report is structured as follows:

- Section 2 contains our analysis and ratings for projects in the case study countries.
- Section 3 aggregates ratings for all SECO projects in Eastern Europe and Central Asia, and summarizes our analysis of each of the four main evaluation criteria
- Section 4 analyzes the factors that made SECO's projects more or less successful
- Section 5 draws lessons for SECO programs and projects from the analysis in Sections 2 through 4
- Section 6 offers recommendations on how SECO can best those lessons in the future.

The Appendices contain a variety of supporting information referenced throughout the body of the report.

¹⁰ The difference between attribution and contribution is discussed more in Appendix C.

2 SECO Interventions in the Case Study Countries

We found the relevance of SECO’s projects in the case study countries to be highly satisfactory, and the effectiveness and sustainability of SECO’s projects to be satisfactory. We rated the efficiency of SECO projects as split between satisfactory and unsatisfactory. The efficiency of SECO projects in Romania and Serbia was satisfactory, but efficiency was unsatisfactory in Albania and Kyrgyzstan. Table 2.1 summarizes our ratings for projects in the case study countries.

Table 2.1: Case Study Country Project Evaluations—Aggregated by Country¹¹

Name	Relevance	Effectiveness		Efficiency	Sustainability	Impact ¹²
		Outputs	Outcomes			
Albania	HS	S	S	US	S	S
Kyrgyzstan	S	S	S	US	S	S
Romania	HS	S	S	S	S	S
Serbia	S	S	S	S	S	S
Overall Rating	HS	S	S	S/US	S	S

The following subsections provide individual ratings for each project in the case study countries, and explanations for why we rated the projects as we did.

2.1 Albania

Table 2.2 briefly describes SECO’s projects in Albania and summarizes our ratings. We found the relevance of SECO project to be highly satisfactory. The effectiveness of outputs and outcomes was satisfactory, except for the Power Loss Reduction Project in which the objectives of reducing commercial losses were not achieved. Sustainability of SECO’s projects was also satisfactory.

SECO’s projects in Albania ranked lowest in terms of efficiency. The Drin River Cascade Project and Power Transmission and Distribution Projects suffered substantial delays and went over budget because of a variety of external factors.

¹¹ HS=Highly Satisfactory; S=Satisfactory; US=Unsatisfactory; HUS=Highly Unsatisfactory; UA=Unable to assess because of lack of data or documentation; NA=Not assessed because not part of our methodology.

¹² We were not able to evaluate impact for all projects in all countries. These ratings refer only to projects in the case study countries that we were able to evaluate.

Table 2.2: Project Evaluations—Albania

Name	Description	Date	Amount (Million CHF)	Relevance	Effectiveness		Efficiency	Sustainability	Impact
					Outputs	Outcomes			
Critical Imports Project	Supplied equipment and spare parts for the transmission and distribution of electricity from the hydropower plants located in the north	1992-1993	4	HS	S	S	S	S	UA
Power Loss Reduction Project	Provided KESH with electricity meters, transformers, a workshop for meter testing and a new billing system. Parts were supplied and installed in the five largest states of Albania (Tirana, Shkoder, Elbasan, Vlore, Durrës). SECO also funded 12 TV commercials to increase public awareness of the new metering and billing system.	1994-1998	4.05	HS	S	US	S	S	UA
Power Transmission and Distribution Rehabilitation Project	Construction of a new electricity substation in Durrës and funding for the consultant in charge of the World Bank PMU, which also oversaw implementation of components funded by other donors	1996-2007	13.95	HS	S	S	US	S	HS
Drin River Cascade Project	Rehabilitation of all four units at the Fierza hydropower plant, and provision of other hydro-mechanical equipment at the plant	1994-2007	12.4	HS	S	S	HUS	S	S
Overall Rating				HS	S	S	US	S	S

The subsections that follow analyze SECO's interventions in Albania with respect to the rating criteria identified in Section 1.

2.1.1 Relevance

SECO projects were relevant in terms of:

- **Technical focus.** The focus on hydroelectricity, transmission and distribution losses was highly relevant in Albania given that:
 - Hydropower plants generate roughly 95 percent of Albania's electricity
 - Most of Albania's electricity sector infrastructure was built between 1950 to 1970, and until the early 1990s, had never been rehabilitated
 - Combined technical and non-technical (commercial) losses in transmission and distribution are estimated to have ranged between 40 and 65 percent (hitting a peak of 65 percent in 1995) during the 1993-2001.
- **Regional focus.** The focus on investments along the Drin River and in Durrës are relevant because:
 - The Drin River cascade generates roughly 90 percent of Albania's electricity. SECO's focus on the Fierza power plant, in particular, was also important. Fierza is the first hydro power plant on the cascade and the one that regulates generation at the two downstream plants in the cascade. The plant is therefore very relevant to reliability of the entire cascade
 - Tirana and Durrës have had the highest load growth in Albania since 1992, in part because of migration from rural areas.
- **Responsiveness to changing needs.** SECO's assistance to Albania's energy sector—as the assistance was originally planned—evolved as the needs of the electricity sector evolved. SECO's assistance evolved along the following lines:
 - SECO was the first donor to enter Albania after the fall of the communist party in the 1992 elections. SECO provided humanitarian assistance that included assistance to the power sector under the Critical Impact Project. In the power sector, provided emergency support aimed at avoiding collapse of the system
 - Under the Drin River Cascade Rehabilitation Project, investments aimed at improving reliability.
 - Under the Power Loss Reduction Project, investments aimed at reducing technical and commercial losses throughout the system
 - Under the Power Transmission and Distribution Rehabilitation Project, investments aimed at ensuring continued reliability in high load growth areas.

The sector's needs in 2010 are very different than they were when SECO first entered the sector in 1992, and SECO's interventions have kept pace

with the change. The events of winter 2010 highlighted the relevance of SECO's current intervention in Albania's energy sector, namely, a project to improve dam safety along the Drin River Cascade. Heavy rains forced the Fierza, Koman, and Vau i Dejës power plants to open their spillways repeatedly, jeopardizing the safety (and forcing temporary resettlement) of populations living downstream the Drin River Cascade.

How SECO's projects were less relevant

Delays to the Drin River Cascade Project disrupted the logical sequence of assistance as described above. SECO's assistance, as originally planned, therefore differed from the way it was implemented. The result was that investments, meant to improve reliability (by reducing outages), were made after investments meant to reduce commercial losses. The Power Loss Reduction Project ended up being out-of-sequence and arguably less relevant in 1994-1998 than if it had been done after the rehabilitation of the Drin River Cascade.

On the one hand, reducing losses reduces demands on generators, and can therefore reduce the probability of forced outages related to imbalances in supply and demand. On the other hand, poor reliability may make it more difficult to reduce losses. Brownouts and blackouts damage transmission and distribution equipment, which can cause more technical losses. Intermittent power supply may also make it more difficult to enforce measures that reduce commercial losses because politicians and regulators will be less likely to support utilities' efforts to enforce payment when service is bad (and customers may be less willing to pay for bad service).

On balance we feel that—given the extensive assistance needed at both the generation and distribution levels in Albania, the careful sequencing of assistance is less important than having the assistance delivered quickly. We therefore do not feel that relevance in either the Drin River or Power Loss Rehabilitation projects was compromised.

Factors that affected the relevance of SECO's projects

As noted in the previous section, we feel SECO's projects were as relevant as they could have been, given the needs in Albania's energy sector from 1992 to the present. The only factors, that threatened relevance, were the ones that caused delays to the Drin River Project. We describe those factors in more detail in Section 2.1.3.

2.1.2 Effectiveness

We found the effectiveness of SECO's interventions in Albania to be satisfactory.

Effectiveness of Outputs

In general, SECO's project outputs were delivered as intended, and were of high quality. The technical assistance provided was noted by several third party reports and interviewees as being of exceptionally high quality.

Effectiveness of Outcomes

Table 2.4 summarizes our assessment of the effectiveness of outcomes from SECO's interventions in Albania. SECO's interventions successfully contributed to improving

reliability and quality of electricity supply, as well as the efficiency of electricity production at Albania's largest hydro cascade.

Table 2.3: Effectiveness of Outcomes in Albania

Project	Outcome Rating	Intended and Actual Outcomes
Critical Imports Project (1992-1993)	S	Better supply reliability (transmission and distribution)? Serious blackouts were avoided in winter 1993
Power Loss Reduction Project (1994-1998)	US	Commercial (distribution) losses reduced? <ul style="list-style-type: none"> Losses were lower before the project (1993) than immediately after (1998). Prior to the project, distribution losses accounted for 43% of electricity produced. Losses in 1997 were 56%. Since 1998, distribution losses have fallen to 32% (2008), but not to the levels sought by the project. SECO's target was to reduce losses to 26% during the four years of the project. Figure 2.1 illustrates the fall in distribution losses shortly after SECO's intervention. For non-technical losses, data were not available for years before or after the project. In 2003, non-technical losses were 13.9%. As of 2008 non-technical losses have fallen to 5%.
	US	Increase KESH revenues? <ul style="list-style-type: none"> We were not able to assess whether KESH's revenues increased during the course of the project. Indicators suggest that it is not likely, for the following reasons: Electricity end-use consumption increased 27 percent during the course of the project, but losses increased 92 percent during the same time period and collections also decreased. Immediately following the project, collections decreased but have since increased by 11% (from 1996 to 2008). Collections decreased 14 percent from 1996 to 2000 (75% to 61%). Since 2000, however, collections have averaged 85 percent. Figure 2.2 illustrates the increase in collections since 1996.
	UA	Strengthened institutional management? The project funded 12 TV commercials. We were not able to assess the effectiveness of this component, however a World Bank report assessed these as innovative and effective ¹³
Power Transmission and Distribution Rehabilitation Project (1996-2007)	HS	Better supply reliability (transmission and distribution)? <ul style="list-style-type: none"> Since completion of the substation, there have not been any significant outages in Durrës Before the new Durrës substation was built, KESH had to shed load, on average, 3.7 hours per day in Tirana in order to serve Durrës. 2008 was the first year that load shedding was not scheduled by system operators. Following the completion of the project

¹³ World Bank. "Implementation Completion Report: Albania Power Loss Reduction Project (Loan 2677-AL)." May 1998,

Project	Outcome Rating	Intended and Actual Outcomes
		in 2007, load shedding dropped 83.2 % in 2008 (from 0.89 TWh to 0.15 TWh). Figure 2.3 illustrates the rapid decline.
	S	Technical (transmission and distribution) losses reduced? The new substation reduces electricity losses during peak periods by 7.5 MW (16.9%).
	S	Better quality of supply? The operation of the new substation has reduced voltage and frequency fluctuations
	US	Strengthened institutional management? Technical assistance was provided to KESH for engineering project implementation management. The technical assistance was mostly in the form of the on-the-job training. The effectiveness of the consultancy support was, however, negatively affected by frequent changes in the KESH management, and disagreements among donors and the utility about the most appropriate model for private sector participation ¹⁴
Drin River Cascade Rehabilitation Project (1994-2007)	S	Better reliability of generation? Forced outages declined following the completion of the project. From 2001 to 2008, the number of hours of forced outages went from 8,625 to 2.5. Figure 2.4 illustrates the change.
	S	More efficient fuel (water) use? <ul style="list-style-type: none"> ▪ Efficiency at the Fierza power plant improved 3-4 percent ▪ The expected lifespan of the Fierza power plant was extended up to 25 years
	S	More electricity generation and more revenues for KESH? The rehabilitation contributed to the Fierza Power Plant avoiding 1.077 million MWh in outages in 2008, compared to 2001.

¹⁴ World Bank. "Implementation and Completion Report on a Credit in the Amount of US\$ 29.5 Million to Albania for a Power Transmission and Distribution Project (IDA-28260)." Report number 25646. July 2003.

Figure 2.1: Total Distribution Losses (as % of electricity produced)

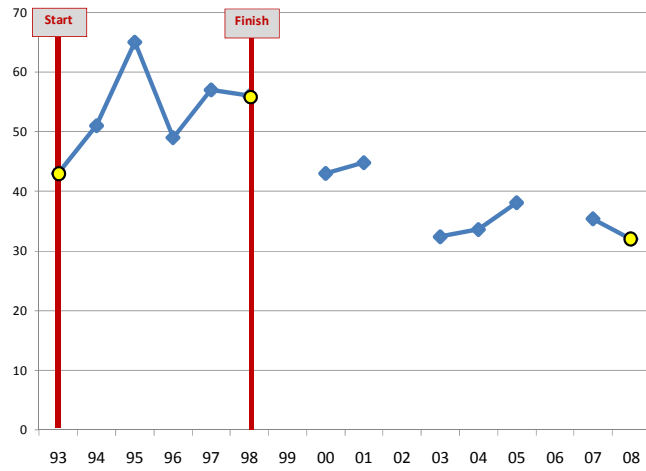


Figure 2.2: Collections (as percent of electricity billed)

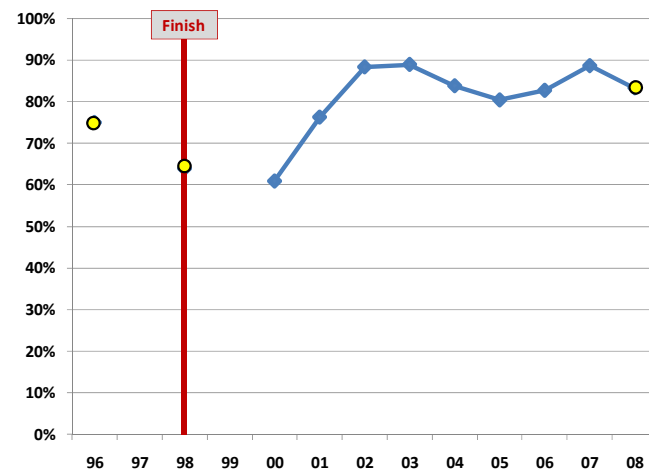


Figure 2.3: Load Shed During Outages

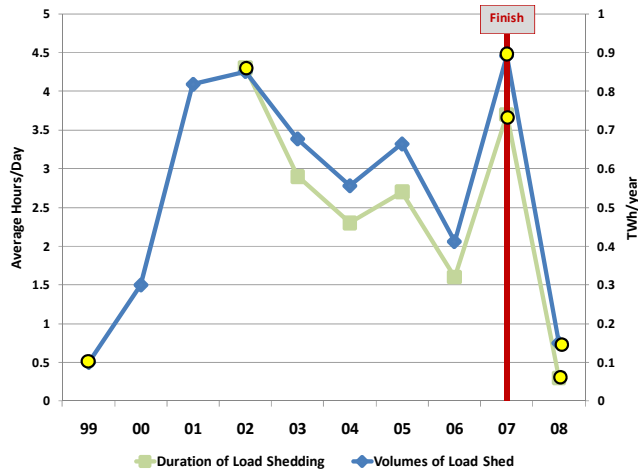


Figure 2.4: Hours of Forced Outages at Fierza Power Plant

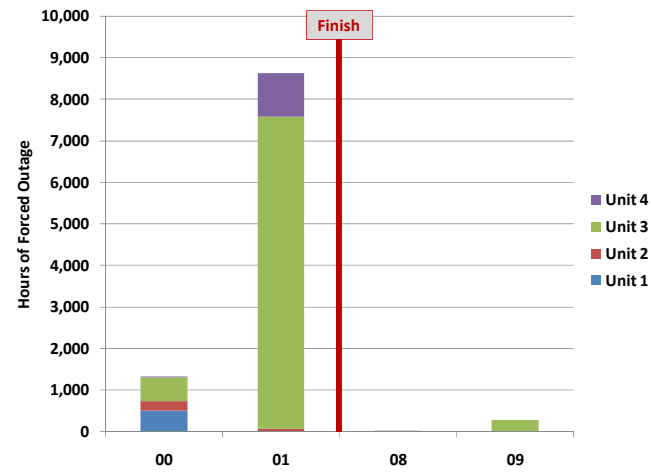
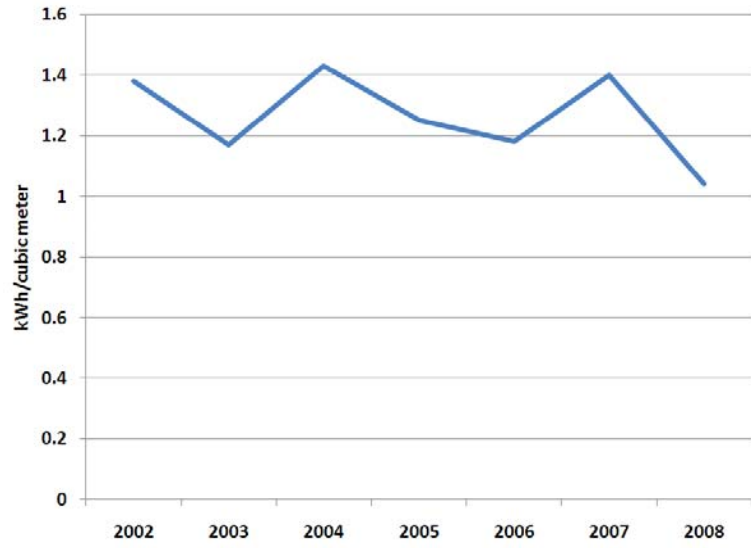


Figure 2.5: Specific Water Consumption at Hydropower Plants



Effectiveness of Impacts

As noted in Section 1, a rigorous attribution of impacts to SECO's interventions is not possible. However, it is possible, for two of SECO's interventions, to estimate the gains to Albania's economy of electricity outages avoided, assuming factors did not interfere with these gains being realized. We did this using an estimate of the Value of Lost Load (VoLL), multiplied by the number of kWh in electricity outages that were avoided.¹⁵ Our estimates are as follows for two projects:

- **The Power Transmission and Distribution Rehabilitation Project.** The project contributed to the end of load shedding in Tirana and Durrës. The average volume of load shed from 2003 through 2007 was, on average 640 million kWh per year. The value of lost load (VoLL, or the cost of electricity not served) during those years has been estimated at 1.1 Euro/kWh.¹⁶ In other words, the average Albanian forewent 1.1 Euro in income for every kWh they were not able to use during this time. SECO's intervention therefore can be seen as contributing to the savings of roughly 700 million Euros per year.

SECO's contribution was not likely the only reason for the improvement in reliability. SECO's intervention targeted a specific area, not the entire system, and therefore would have contributed only in a specific area to loss reductions and improved reliability. Moreover, there were many other improvements, financed by other donors that were made to the electricity system since 2002. However, SECO's intervention targeted the area with the highest demand in the country, and chronic problems meeting that demand. We therefore assess SECO's contribution to impact as highly satisfactory.

- **The Drin River Cascade Rehabilitation Project.** As noted in Table 2.4, the project contributed to the Fierza Power Plant avoiding 1.077 million MWh in outages in 2008, compared to 2001. The wholesale electricity price in Albania in 2008 was USD 89.4/MWh, meaning that the rehabilitation was worth roughly USD 96 million annually in electricity revenues to KESH, savings that could reduce the quasi-fiscal debt. This would be an underestimate to the extent that the wholesale market price is below the full cost of production.

As with the Power Transmission and Distribution Rehabilitation Project, SECO was not the only donor involved. Many donors contributed to the rehabilitation of the Fierza power plant.

¹⁵ Value of Lost Load (VoLL) takes into account direct costs to customers of outages (for example, fuel costs to run back-up generators) as well as indirect costs (the opportunity costs of not having electricity to use). VoLL is typically estimated through i) Willingness to Pay studies (in which respondents are asked what they would be willing to pay to avoid an outage), ii) production loss surveys (in which a sample of firms are asked to estimate sales lost due to a real or hypothetical outage), or iii) studies of the costs of captive generation (which analyzes the costs of firms who have invested in back-up electricity options as a proxy for willingness to pay).

¹⁶ ERE (Albanian Energy Regulatory Authority) Annual Reports. Another estimate for 2007 suggests a considerably lower value (0.5 Euro/kWh). than ERE estimated for 2007 (http://www.iccgov.org/iew2009/speakersdocs/Losa-et-al_paper_RegulationOfContinuityOfSupplyInTheElectricitySector.pdf). ERE estimated a VoLL of 1.36 Euro/kWh. We used ERE's estimates because they were available for a longer time period.

For many reasons discussed in the next subsection on “factors”, the gains from SECO’s interventions may not have been passed through to the economy as a whole. However, our estimates indicate the potential savings to KESH and to Albania of two of SECO’s projects.

Factors affecting effectiveness

The effectiveness of SECO outputs and outcomes was affected by a number of factors. Those factors were:

- **Political interference in KESH management.** Generally speaking, companies that are subject to political rather than commercial incentives are at risk of poor management. Poor management means poor human resource decisions and poor decisions about how to maintain and improve the company’s financial standing. For example, SECO’s installation of meters and a billing system during 1994-1998 had little immediate effect because KESH management did not take other measures to curtail commercial losses and improve collections.
- **Management problems at the Project Implementation Units (PMUs).** Throughout the history of SECO’s involvement in Albania, there have been several instances (one as recent as late 2009) of capable PMU directors being replaced with less competent directors. Such instances affected the institutional memory and efficiency of interventions because changing management delayed project implementation. The same trend is true at KESH generally, where general directors have been replaced primarily for political reasons.
- **Political and economic turmoil in 1997/98.** The 1997 collapse of the pyramid schemes, and civil unrest also caused delays. However, it is worth noting that SECO and its consultants continued to work in the country through these years, despite risks to their personal safety.
- **The physical attributes of the Albanian electricity system.** Several characteristics of Albania’s electricity system limited the effectiveness of SECO’s interventions:
 - KESH scheduled outages until 2008, regardless of the demand-supply balance. Improvements to reliability would therefore have been obscured by load shedding until recently
 - Nearly all of Albania’s electricity generation depends on a hydro cascade which is highly dependent on rainfall. A dry season will affect reliability in a way SECO’s interventions cannot easily help to avoid. Many improvements to electricity reliability and quality may therefore have been obscured by the dependence on a single fuel source from—primarily—a single cascade
 - Private individuals with new buildings in Albania frequently install their own transformers. These transformers put load on the system whether the end-user is consuming or not, and with that load comes losses. This works against achieving loss reduction outcomes.

2.1.3 Efficiency

We rate the efficiency of SECO’s projects in Albania as unsatisfactory.

Efficiency of implementation

The efficiency of SECO's interventions in Albania was affected by extensive delays. Significant delays occurred in the Drin River Cascade Rehabilitation Project and the Power Transmission and Distribution Rehabilitation Project.

The Drin River Cascade Rehabilitation Project took 14 years to complete (from project design to commissioning of the rehabilitated plant) rather than the 4 years that were planned. The project delays caused cost overruns of roughly CHF 300,000 for contractors (and subsequent claims by those contractors)¹⁷, and cost KESH in terms of revenue foregone from electricity sales. The Power Transmission and Distribution Rehabilitation Project was delayed three years, and ran over budget by CHF 960,000 (9.1 percent over planned budget) because of the 1998 financial and political crises, and because of poor cooperation from Government counterparts.

Cost efficiency of the intervention

We did not have sufficient information to assess the cost efficiency of the interventions (in other words, whether the choice of technologies and manner of intervention was the most cost effective).

Factors affecting efficiency

A number of factors caused delays in the Drin River Rehabilitation Project (and to a lesser extent, in other projects). The principal factors that affected, or threatened to effect efficiency were:

- **The unintended consequences of the parallel financing arrangement.** Parallel financing with multiple donors exposed the project to several factors that bilateral financing might have more easily avoided:
 - High turnover within other donor agencies that were also financing and leading the project. There was high turnover at EBRD, in particular, the donor responsible for leading the project.
 - The complexity of coordinating multiple donors who were separately funding technical components that needed to be tightly integrated. For the Drin River Project, in particular, the parallel financing arrangement caused delays, and made project management more difficult because the many different donor interventions needed to be well integrated and well sequenced, yet each donor's intervention was subject to its own procurement rules and administrative processes. As an evaluation report commissioned by the Austrian Development Agency remarked about the Drin River Project in general: "The combination of 6 funding sources with different loan conditions and the allocation of basically 8 contracts across 4 plants resulted in a multitude of interfaces and interdependence between the contracts. The result is that almost any delay or problem with one contract has negative implications on other contracts, in a kind

¹⁷ This refers to claims on the Swiss component only. Cost overruns on the entire project were roughly \$US 4 million.

of chain reaction, leading to repeated delays of work and claims from contractors. In turn dealing with these claims resulted in further delays.”¹⁸

We do not necessarily view this factor as an argument against parallel financing. In Section 0 we analyze the advantages and disadvantages of the different financing arrangements that SECO uses.

- **Competencies and commitments of local partners.** KESH initially failed to take responsibility for civil works required as part of the Drin River Rehabilitation Project. EBRD suspended its loan to the Drin River Project in 1997, because KESH was unable to fulfill requirements in its loan agreement. The loan was cancelled in 1999 and a new loan signed in July 2000.¹⁹ The World Bank suspended its assistance to the sector in 1999.

The efficiency of SECO’s interventions was also affected by some of the factors that affected the effectiveness of interventions, namely, management problems at PMUs, and the political and economic turmoil in 1997/98.

2.1.4 Sustainability

We rate the sustainability of SECO’s projects in Albania as satisfactory.

Technical, programmatic and financial sustainability

Our assessment of financial, technical and institutional sustainability is as follows:

- **Financial.** The financial situation of KESH is fragile, primarily because the dry 2008/2009 winter meant KESH had to purchase imported power at a much higher cost per kWh than they were allowed to charge the distribution company in the tariff. KESH is also highly indebted. KESH has roughly 500 million Euro in debt, and (in 2008) an annual turnover of roughly USD 250 million Euro. A small portion of KESH’s debt includes payments (roughly 1 million CHF per year) to the counterpart fund established under the Power Transmission and Distribution Rehabilitation Project. KESH is making payments to the counterpart fund, but according to some interviewees is delaying repayment of other loans as well as some other expenses.
- **Technical.** As we noted above, the SECO investments we saw appeared to be in excellent condition, and serving the purpose for which they were originally intended. Investment made as many as 13 years ago (under the Power Loss Reduction Project) appear to be useful and well maintained. However, KESH’s financial difficulties threaten the technical sustainability of all KESH infrastructure, including the infrastructure funded by SECO. Expenditures on fuel imports and debt service reduce what KESH is able to spend on proper maintenance and rehabilitation of its infrastructure. The result is more rapid depreciation, higher risk of failure, and ultimately higher life-cycle costs because of the need for earlier replacement.

¹⁸ KEK-CDC Consultants, “Evaluation of Austrian Cooperation with Albania, 1991/92-2004”. Report written for Austrian Energy Agency. December 2005.

¹⁹ KEK-CDC Consultants.

- **Institutional.** KESH is likely to survive as an institution, despite its financial difficulties. As the only provider of generation and transmission service in Albania, the Government cannot afford to let it stop providing service. Government will therefore need to continue subsidizing KESH, or will push for institutional and regulatory changes that allow KESH to operate as a commercially viable entity. The danger of the first scenario is that the subsidies may not be enough, and may come too late. KESH will need to continue to pay for its most urgent operating expenses by redirecting funds from maintenance and rehabilitation. The second option—government pushing for institutional and regulatory changes that allow KESH to operate as a commercially viable entity—is more hopeful but more difficult.

Either scenario leads to the possibility that the ownership of some of KESH’s business segments could change. Institutional and regulatory changes to make KESH more financially viable could attract private sector interest in buying or operating some of KESH’s assets.²⁰ On the other hand, if KESH’s current financial difficulties continue, the Government may have no option but to sell the assets (at a much lower value than under the first scenario) to a private owner, or risk collapse of the system. The private owner would, in turn, require the regulatory and institutional changes required to operate the company.

Factors affecting sustainability

A number of factors affected the sustainability of SECO’s projects, both positively and negatively. These factors primarily affected the financial sustainability of SECO’s projects, but it is important to note (as described above) the important link between financial and technical sustainability. The factors affecting sustainability were:

- **Regulatory.** KESH’s generation tariffs (and tariffs in Albania in general) are below the cost of service due to political interference. The energy regulatory entity (ERE) has also prohibited KESH from passing through to customers the debt (roughly US\$60 million) they took on when the distribution company was privatized. KESH now must service that debt.
- **Physical and Meteorological.** The dry 2008/2009 winter meant KESH had to purchase imported power at a much higher cost per kWh than they charged the distribution company in the tariff. Because the Drin River hydropower cascade depends largely on annual rainfall (80-90% of the water depends on annual rainfall; 10% on water levels at Lake Ohrid in Macedonia), KESH’s annual revenues will continue to vary as rainfall varies
- **Ownership by project beneficiaries.** The condition of equipment provided under the Power Loss Reduction Project is remarkable given the very difficult period in which that equipment was installed. The collapse of Albania’s pyramid schemes and subsequent civil unrest in 1997 prompted the destruction or theft of many public

²⁰ The government considers privatization or a public private partnership (PPP), such as a concession or lease agreement. Privatization or a PPP is most likely for the generation segment of KESH’s operations. Transmission service provision is likely to remain publicly owned.

assets.²¹ KESH employees took extraordinary measures to protect SECO's investments, posting a guard with a rifle in front of the metering laboratory (apparently not an employee whose usual duties included security), and taking the new computers (on which the new billing system would run) to their homes every night.

The technical assistance SECO provides seems to contribute to sustainability. Several interviewees praised the high quality of technical assistance SECO's consultants provided, and the large amount of time consultants spent training KESH on operation and maintenance of new equipment. In a country where—as one of our local consultants said—there is no culture of maintenance, SECO's investments seem to be especially well cared for. Also important seems to have been the continuity of consultants used on SECO projects in Albania. The same consulting firm (and often the same consultants) worked in Albania for more than a decade.

2.1.5 Quality of donor cooperation

SECO has actively coordinated with other donors since the 1992 Critical Impact Project, through parallel financing of projects, but also through the Private Enterprise Partnership Southeast Europe—Infrastructure (PEP SEI).

SECO's projects were highly complementary to those of other key donors in the energy sector. It would not have been possible to achieve the intended outcomes without pooling financial resources from a number of donors through parallel or co-financing arrangements.

SECO's projects were mostly directed towards improvements in infrastructure, but it contributed to the improved performance of these utilities and by that facilitated other projects aimed at sector reform. For the project components aimed at improved institutional management of utilities, SECO's investments in improved billing systems were leveraged by other donors' focus on technical assistance to these utilities, and capacity building loans.

Donors commented that they valued SECO's assistance because—as with the dam safety project—SECO can quickly fund feasibility studies that other donors can use as the basis for their future projects.

Interviewees also commented that SECO was better organized, less bureaucratic, more flexible, and perceived as more neutral than other donors working in Albania's energy sector.

SECO appears to have provided leadership in shaping donor involvement in the energy sector. In the Drin River Project in particular, SECO seems to have taken an ad hoc leadership role when other donors could not or did not want to.

2.2 Kyrgyzstan

Table 2.4 summarizes our ratings for SECO's projects in Kyrgyzstan. We found the relevance, effectiveness and sustainability of SECO's projects in Kyrgyzstan to be satisfactory. We found

²¹ For example, construction of a new industrial school in Durrës had been completed shortly before the crisis. The building was completely ransacked in 1997.

the efficiency of SECO's projects in Kyrgyzstan to be unsatisfactory, due primarily to external factors.

Table 2.4: Tier 2 Project Evaluations—Kyrgyzstan

Name	Description	Date	Amount (Million CHF)	Relevance	Effectiveness		Efficiency	Sustainability	Impact
					Outputs	Outcomes			
Tokmak, Ljermontovo and Orok	Construction of three 123 kV open-air substations near Bishkek	1994-1997	13.7	S	S	S	S	S	UA
Naryn II	Construction of the second phase of the 220 kV open-air Ak-Kyia substation in Naryn oblast	1997-2000	6.5	HS	S	S	US	S	S
Naryn III	<p>Various measures to reduce technical and commercial losses in the Kyrgyz electricity supply industry, namely:</p> <ul style="list-style-type: none"> ▪ Rehabilitation of transmission and distribution lines, substations, transformers and other equipment in Bishkek and Naryn, Osh, and Jalalabad oblasts ▪ Supply of electricity meters for 10 percent of consumers ▪ A computerized billing system (with technical assistance) ▪ Rehabilitation of infrastructure at the At Bashy Hydropower plant. 	2003-2010	12.5	S	S	S	US	S	S
Overall Rating				S	S	S	US	S	S

The subsections below analyze SECO's interventions in Kyrgyzstan with respect to the rating criteria identified in Section 1.

2.2.1 Relevance

We found the relevance of SECO's interventions in Kyrgyzstan to be satisfactory.

How SECO's projects were relevant

SECO's projects were relevant in terms of:

- **Technical focus.** SECO's choice of interventions—in transmission, distribution and hydro generation—was extremely relevant for Kyrgyzstan because:
 - Kyrgyzstan had extremely high transmission and distribution losses:
 - Transmission losses were estimated at roughly 10% in 1997 and 2001, roughly 7% higher than the standard in well-run and well maintained transmission systems²²
 - Distribution losses were around 30% between 1995 and 2003.
- **Regional focus.** SECO's focus on Naryn was particularly relevant because:
 - Naryn is the coldest oblast in the country. Moreover, the city of Naryn's central heating plant runs, in part, on electricity, meaning that even centralized heating service depends on reliable electricity supply
 - Naryn is the poorest oblast in the country. Vostokelektro could not have paid for new investment without substantial tariff increases, and the magnitude of tariff increases required to service loans on the investments (commercial or concessional) would not likely have been affordable for customers

Roughly 75 percent (19 million CHF) of SECO's energy sector assistance in Kyrgyzstan has focused on Naryn.

How SECO's projects were less relevant

One of SECO's projects was less relevant, in terms of its original design, than it could have been, because of delays in implementation. Component B of the Naryn III project was intended to reduce commercial losses through various measures, one of which was an improved billing system for Kyrgyzstan's four electricity distribution companies. By the time component B was implemented, most of the distribution companies had already implemented billing systems of their own, and had little interest in a new billing system.²³ SECO responded by redirecting its assistance on the billing systems to recommending modifications to the existing billing systems with the objective of making it more resistant to manipulation and fraud.

²² Electricity Sector in CAREC

²³ It is our understanding that the billing systems of each of the utilities were developed independently, by local staff or consultants, and that SECO's international consultants recommended some modifications. In Naryn's case, however, the billing system was purchased from another distribution company (Karakol).

A separate question is whether SECO's redirection of funds—to modifying existing, local billing systems, was relevant. On the one hand, it is clearly relevant to help the distribution companies improve on something they already knew how to use, wanted to use, and could maintain with local inputs. On the other hand, distribution companies may have objected to a new billing system because it would have made the utility's accounting more transparent. As described in Section 2.2.2, mismanagement and corruption in the electricity sector make it difficult to reduce commercial losses through purely technical measures. In this sense, SECO's adjustments to the billing system were not relevant to the underlying governance problems that cause commercial losses.

We think it is too early to judge whether SECO's work on billing systems was relevant because it remains to be seen how the distribution companies will use them. The modified billing systems can be used to improve transparency and make corruption more difficult or they can be used to perpetuate the mismanagement and corruption that has occurred to date. The political changes happening in Kyrgyzstan at the time of this evaluation's writing (May 2010) make it difficult to know what will happen to ownership and governance of the electricity companies.

Some individuals we interviewed for this evaluation also questioned the relevance of SECO's predominant focus on technical losses, rather than commercial losses. Commercial represent the majority of electricity losses (technical plus commercial) in Kyrgyzstan. Commercial losses range from roughly 11 percent (for Jalalabatelektro) to 30 percent (for Oshelektro) in 2006.²⁴ In contrast, only 20 percent of SECO's funding in Naryn III (Component B) targeted commercial losses.

Our view is the following: We do not think that the existence of high commercial losses makes a focus on technical losses less relevant. Reducing both technical and commercial losses was important for Kyrgyzstan's electricity system at the time of SECO's interventions.

Factors that affected the relevance of SECO's projects

The relevance of Naryn III's component B was limited by delays in procurement and implementation. Component B was delayed 21 months, in part, because of:

- A dispute over the adequate selection methodology for the billing services supplier, in particular, whether SECO or IDA procurement rules should be used for selection
- Severelektro's delay in signing the contract with the winning bidder. After Severelektro delayed 8 months in signing the contract, the winning bidder refused to execute the contract because the validity date of its offer had passed. As noted above and in Section 2.2.2, several interviewees suggested the delay was deliberate, because Severelektro did not want the new billing system
- Late entry into force, by two years, of a KfW loan.

As a consequence, by the time the project began, the distribution companies had already developed their own billing systems (or, in the case of Vostokelectro, purchased a system from another distribution company).

²⁴ Estimates by SECO's consultants

2.2.2 Effectiveness

We found the effectiveness of SECO's interventions in Kyrgyzstan to be Satisfactory.

Effectiveness of Outputs

In general, SECO's project outputs were delivered as intended, and were of high quality. Only the output for Component B) was different than intended. As noted in Section 2.2.1, the output was different than originally intended because of a deliberate decision by SECO to redirect funds to modifying an existing billing system, rather than installing a new one.

Effectiveness of Outcomes

Table 2.5 summarizes our assessment of the effectiveness of outcomes from SECO's interventions in Kyrgyzstan. SECO's interventions successfully contributed to improving reliability and quality of electricity supply in Naryn, reducing transmission losses overall, improving efficiency of electricity production at At Bashy, and reducing commercial losses.

Table 2.5: Effectiveness of Outcomes in Kyrgyzstan

Project	Outcome Achieved?	Description of Outcome
Tokmak, Ljermontovo and Orok (1994-1997)	S	<p>Better supply reliability (distribution)?</p> <ul style="list-style-type: none"> ▪ Interviewees confirms that outages were reduced ▪ Interviewees confirmed that voltage and frequency fluctuation were reduced
Naryn II (1997-2000)	S	<p>Better quality of supply (transmission)?</p> <ul style="list-style-type: none"> ▪ According to interviewees, voltage was within the range 85~112 kV before works were started. Since 2002, when works were completed, NESC is able to maintain voltage in the range of 105~112 kV. ▪ According to interviewees, frequency fluctuated within the range 46,70~50,0 Hz before works were started. Since 2002, when works were completed, interviewees is able to maintain voltage in the range of 49,98~50,0 Hz.
	S	<p>Lower technical losses (transmission)?</p> <ul style="list-style-type: none"> ▪ Technical losses on the high-voltage transmission line connected to the substation decreased from 8.75 % in 1997 to 5.19% in 2002. Transmission losses have remained at this lower level, around 5 percent since 2002 ▪ The efficiency improvement has saved roughly 457,000 MWh/year in production. In other words, this saves Kyrgyzstan’s generating companies the need to produce 457,000 MWh/year
Naryn III (2003-2010)	S	<p>Better supply reliability (distribution)?</p> <ul style="list-style-type: none"> ▪ Outages have decreased in Naryn city. From 2005 to 2009 the number of outages have decreased 55 percent (40 to 18). The fall in outages is depicted in Figure 2.6. ▪ The impact of SECO’s intervention is clearly evident when comparing outages in areas in Naryn affected by SECO investment, with areas not affected by SECO investment. In 2009 , the average outages per month in other areas— districts of Naryn not affected by SECO’s investment—was 7.67. Outages per month in an area affected by SECO investment were only 1.5 (see Figure 2.6 and Figure 2.8). ▪ Duration of outages has decreased in Naryn city. From 2005 to 2009 the average length of an outage has dropped 57.6% (from 4 hours to 1.7 hours). Figure 2.6 and Figure 2.8 depicts the drop in duration of outages.
	S	<p>Lower technical losses (distribution)?</p> <ul style="list-style-type: none"> ▪ Technical losses decreased from 18.2 percent (in 2005) to 16.4 percent (in 2009)
	S	<p>Lower commercial losses?</p> <ul style="list-style-type: none"> ▪ Commercial losses were reduced at the four distribution companies as follows: <ul style="list-style-type: none"> – Severelectro’s commercial losses decreased from 24.7% (in 2006) to 11.6% (in 2009) – Vostokelectro’s commercial losses decreased from 18.5% (in 2006) to 9.9% (in 2009) – Oshelectro’s commercial losses decreased from 11.7% (in 2006) to 8.7% (in 2009)

Project	Outcome Achieved?	Description of Outcome
		<ul style="list-style-type: none"> – Jalabatelectro’s commercial losses decreased from 10.4% (in 2006) to 8.3% (in 2009). ▪ The reduction in commercial losses reduced power production needs by roughly 1.086 million MWh
	S	<p>Better supply reliability (generation)?</p> <p>Forced outages at At-Bashy HPP have decreased. From 2005 to 2009 forced outages decreased 55.5% (from 11 to 5). Figure 2.9 depicts forced outages at the At-Bashy HPP from 2005 to 2009. ?</p>
	S	<p>Lower quasi-fiscal deficit?</p> <p>The quasi-fiscal deficit for the sector is estimated to have decreased from 9.4 percent of GDP in 2004 to 4.8 percent of GDP in 2008.</p>

Figure 2.6: Distribution System Outages and Duration in Areas Affected by Naryn III T&D

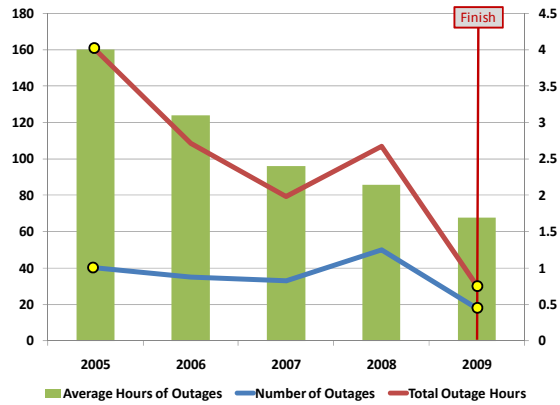


Figure 2.7: Outages and outage durations in districts affected by SECO funded investments, and districts not affected (2009 only)

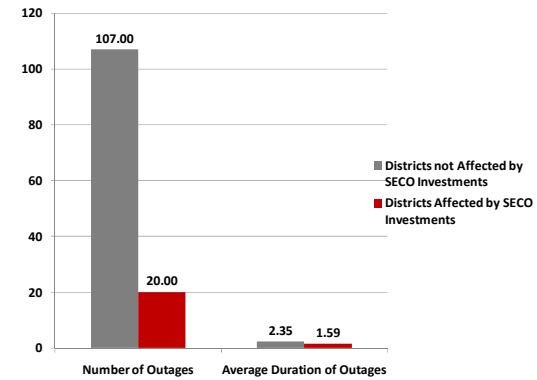


Figure 2.8: Distribution System Outages in Areas Affected by Naryn III

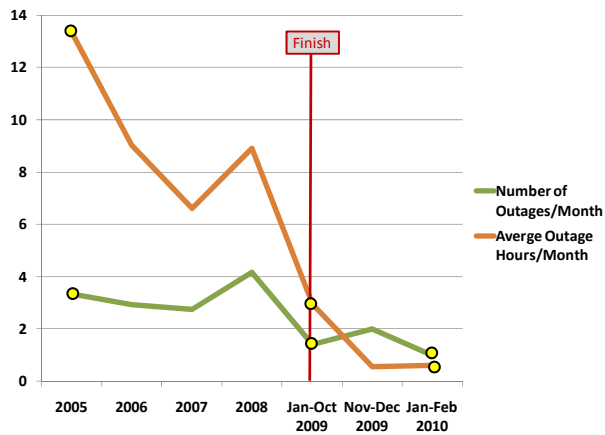


Figure 2.9: Number of Forced Outages at At-Bashy HPP

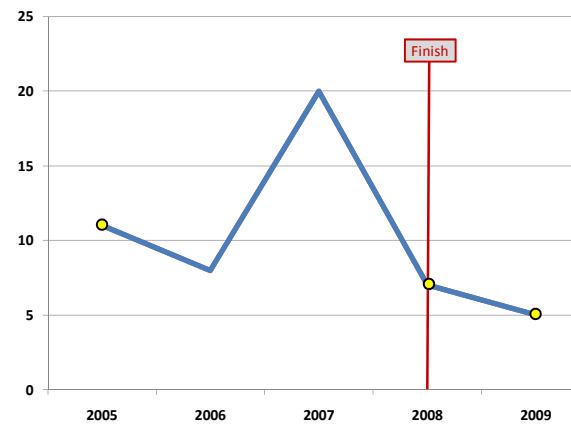
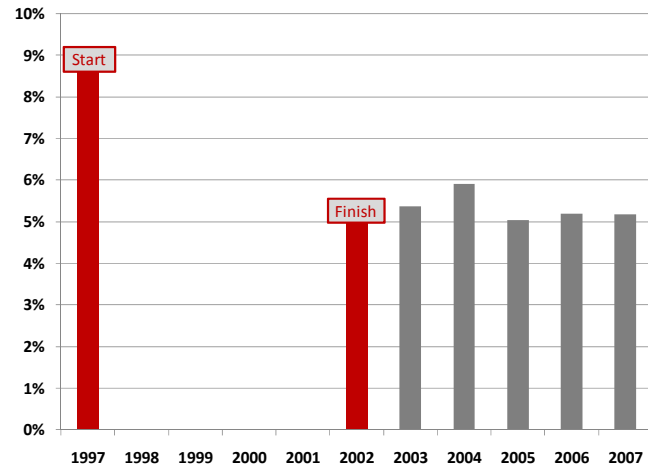


Figure 2.10: Transmission Losses Attributable to the Ak-Kyia Substation and 220kV Transmission Line Bystrovka-Ak Kyia



Effectiveness of impacts

As noted in Section 1, we cannot attribute impacts to SECO's projects. However, as we did in the discussion of projects in Albania, we can also estimate the potential economic impacts of some of SECO's interventions. The Naryn II project had as an outcome the reduction of technical losses; the Naryn III project has as an outcome the reduction of commercial losses. This reduction in losses means less electricity has to be produced by generating plants, and less electricity purchased by the transmission and distribution companies, saving on fuel costs at the generation level and power purchase costs at the transmission and distribution levels.

There is a scarcity of reliable electricity cost data in Kyrgyzstan, but experts familiar with the sector estimate the full costs of service to be in the range of 2-4 times the end-user tariff. Assuming that the full cost of service is at least 2 times the end user tariff, we can estimate the costs avoided by reducing technical and commercial losses under the Naryn II and Naryn III projects:

- The end-user tariff in 2002, at the end of the Naryn II project, was the equivalent of USD 0.0113/kWh. Assuming the full cost of electricity supply was twice the tariff, the savings of 568,000 MWh—attributable, at least in part—to technical losses reduced under the Naryn II project, has saved the sector at least USD 10.3 million per year.
- The end user tariff in 2009, at the end of the Naryn III project, was the equivalent of USD 0.0185/kWh. Again assuming the full cost of electricity supply was twice the tariff, the savings of the savings of 1.086 million MWh in commercial losses saved the sector at least USD 20 million/year.

Anecdotal evidence also suggests that SECO's interventions improved electricity reliability and quality in Naryn, the region where it focused most of its funding. We conducted a small and informal focus group discussion with nine local business owners and residents revealed the following about the Naryn III project. Box 1 summarizes the results of the focus group discussion.

Box 1: Focus Group Discussions on the Naryn III Project

We conducted a small and informal focus group discussion with nine local business owners and residents revealed the following about the Naryn III project. The focus group discussion found that:

- Customers were, in general very satisfied with the results of SECO's intervention, and reported fewer outages and fewer voltage problems
- The consequences outages for magazin (grocery store) had been food spoilage, because refrigerators and freezers shut down
- The consequences of voltage fluctuations and outages for the magazin and NGO workers were damaged computer equipment, including damaged computer equipment (uninterrupted power supplies and surge protectors) intended to protect against short outages and voltage fluctuations
- The consequences for students were:
 - Missed classes because classes were cancelled when outages occurred. The student we interviewed said that what should take one week takes a month and the missed classes are never repeated
 - Cold classroom conditions because the central heating plant also runs on electricity. According to the student, the cold classrooms in turn caused more illnesses during the winter.

Complicating the assessment of SECO's contribution to impacts in Naryn is the fact that in late 2009, the President had ordered that there be no more load shedding in Naryn oblast. As a consequence, we do not feel that we can assess SECO's contribution to improved reliability.

Factors affecting effectiveness

The effectiveness of SECO outputs and outcomes was affected by a number of factors. The most important factors were:

- **Mismanagement or corruption in the sector.** Several stakeholders suggested that Severelektro delayed in signing the contract for component B because some within management did not like the idea of better accuracy and transparency in billing and collections. It is difficult to judge whether this is true and impossible to say what motivated it (in other words, whether managers simply did not want to have sloppy management practices revealed, or whether they wished to preserve the ability to use their public offices for personal gain). However, we do know from interviews (and many other third party reports) that corruption and mismanagement in the sector includes many of the practices seen in other countries in the region. More specifically:
 - Collusion of meter readers with customers (offering lower bills in exchange for bribes), and payment by meter readers of a share of their collections to higher levels of managements (payments are passed up the chain of command)
 - Delivery of free or deeply discounted electricity to certain customers or areas (and this electricity may then be resold for a profit to other customers).

These practices all frustrate efforts to reduce commercial losses and improve the financial position of the utility.

- **Design decisions on coverage.** Interviewees involved in the Naryn III project largely agree that the component B (metering and billing) would have been more effective if it had been focused on a single utility, instead covering all four utilities.

2.2.3 Efficiency

The efficiency of SECO's interventions in Kyrgyzstan was affected by problems at the local level. We rate the efficiency of SECO projects in Kyrgyzstan as unsatisfactory. The delays occurred under the Naryn II and Naryn III projects.

Efficiency of implementation

Under the Naryn II project, Kyrgyzenergo did not supply the site material required (cement, gravel, sand, steel, diesel oil). This delayed the project's anticipated completion from October 1998 to August 1999.²⁵

Under the Naryn III project, Component A was delayed approximately 22 months. Reasons for the delay included:

- The inability of the Ministry of Finance and the beneficiaries to commit the financial and human resources to perform their share of works under the project
- Time lost during negotiations. The aluminium price had increased in the world market, requiring renegotiations with the supplier and a revision of the budget.

Component B was delayed 21 months for reasons described in Section 2.2.1.

Cost efficiency of the intervention

Some beneficiaries identified technical problems with the equipment at the Ak-Kyia substation (from the Naryn II project) that they attributed to a misspecification of needs (in particular, problems with the fire extinguishing system, 0.4 kV circuit breakers and busbar disconnectors). Beneficiaries thought that:

- Some of the equipment funded by SECO was poorly suited for Naryn's low winter temperatures (often as low as -35 centigrade) and high altitude
- Russian equipment might have been a better choice because of the Russian equipment already in use at the Ak-Kyia substation.

Whether the outputs that were delivered were truly the most cost-efficient is a question which we cannot answer without more detailed review. For the purpose of this evaluation, we therefore remain neutral as to whether the parts selected truly compromised the efficiency of the project.

Factors affecting efficiency

The factors that negatively affected the efficiency of SECO's projects were also those that affected effectiveness of outcomes and outputs, namely: mismanagement or corruption in the sector, and the performance of local counterparts.

²⁵ Elektrowatt Engineering. Quarterly Report 4 (January-March 1999).

2.2.4 Sustainability

There is historical evidence of the sustainability of SECO's projects in Kyrgyzstan, but worrying signs for future sustainability. We rate the sustainability of SECO's projects in Kyrgyzstan as satisfactory.

Financial, technical, and institutional sustainability

Our assessment of technical, programmatic and financial sustainability is as follows:

- **Financial.** We see in Kyrgyzstan similar threats to the future sustainability of SECO investments that we see in other countries. The utilities are not recovering their costs of service and are consequently not investing enough in maintenance and rehabilitation of assets.

A World Bank study estimated that tariffs would need to increase four-fold above 2009 levels to cover the system's long run marginal costs. This is not likely to happen soon. It was a 2.5 fold tariff increase, and the opaque privatization of Severelektro and Vostokelektro that ignited protests in Kyrgyzstan in April 2010, and led to President Kurmanbek Bakiyev's ouster. The interim government has returned tariffs to their 2009 levels and cancelled the privatization contracts. It remains to be seen what plans the new government has for improving governance in the electricity sector.

- **Technical.** SECO's investments in Kyrgyzstan appear to be in very good condition, and serving the purpose for which they were originally intended. Investments that were made more than 13 years ago (the substations at Tokmak, Orok and Ljermontovo) appeared to be well maintained and in good use. However, as in Albania, the financial state of the utilities threatens the technical sustainability of infrastructure by preventing proper maintenance and rehabilitation of assets.
- **Institutional.** Kyrgyzstan's generation, transmission and distribution companies will survive in some form, whether they remain in state hands or are sold to private owners.²⁶

Factors affecting sustainability

As noted above, the sustainability of SECO's projects in Kyrgyzstan will be affected primarily by the current political environment. We cannot say at this time what effect a change in government will have on the electricity sector.

2.2.5 Quality of donor cooperation

SECO has cooperated extensively and effectively with other donors since its first project in Kyrgyzstan. The projects in Naryn were developed within the framework of the World Bank Power and District Heating Rehabilitation Project. They followed on the EBRD-financed 220 kV overhead line between Naryn and Kemin. The aim of the EBRD, World Bank and SECO interventions were, collectively, to provide reliable electricity demand in the Issyk-Kul region, the Kumtor gold mine and eventually, Naryn oblast.

²⁶ It is possible that, in order to attract private interest, there may need to be some aggregation of the distribution companies.

Several interviewees (donors and beneficiaries) noted that SECO works well with other donors, and perceive that SECO takes an effort to align its interventions with the other donors' ongoing and planned activities. Interviewees said that they appreciated SECO's funding of capital works which often integrates well with other donors' institutional reform or technical support assistance.

2.3 Romania

Table 2.4 summarizes our rating for SECO's District Heating Project in Iasi, Romania. As we noted in Section 1, this was the only SECO projects in Romania which we evaluated in detail. Overall, we found the Iasi District Heating project to be highly satisfactory in terms of relevance and to have satisfactory ratings for the other criteria.

The subsections that follow Table 2.4 analyze SECO's interventions in Iasi with respect to the rating criteria identified in Section 1.

Table 2.6: Case Study Project Evaluations—Romania

Name	Description	Date	Amount (Million CHF)	Relevance	Effectiveness		Efficiency	Sustainability	Impact
					Outputs	Outcomes			
Iasi District Heating Project	Modernization of the district heating system in Iasi. SECO co-financed the project with EBRD. SECO specifically funded i) the rehabilitation of 59 thermal substations and thermal modules, ii) the installation of 47 new thermal modules, iii) the replacement of 241 km of distribution pipes, iv) consultants to support the Project Implementation Unit (PIU)	2006-2010	10	HS	S	S	S	S	S
Overall Rating				HS	S	S	S	S	S

2.3.1 Relevance

We found the relevance of SECO's intervention in Iasi to be Highly Satisfactory.

How SECO's projects were relevant

SECO's project was relevant in terms of:

- **Consistency with Government objectives.** District Heating is a priority for the government of Romania
- **Technical focus.** Until SECO's and EBRD's interventions in the sector, the district heating system in Romania was dilapidated and in need of rehabilitation. Heating tariffs were (and remain) too low to pay for major capital works, even with subsidized financing from EBRD. SECO's grant funding was therefore essential.

Moreover, district heating systems can use coal or mazut (heavy fuel oil) to provide heat, whereas gas heating systems cannot. This difference between the systems proved itself to be extremely relevant to customers during the unusually cold winter of 2009/10, when gas supplies to Romania were interrupted and consequently customers with individual gas boilers were left without service for several days

How SECO's projects were less relevant

We did not find any evidence that diminished the relevance of SECO's intervention in Iasi.

Factors that affected the relevance of SECO's projects

We did not find that any factors significantly limited the relevance of SECO's project in Iasi.

2.3.2 Effectiveness

We found the effectiveness of SECO's interventions in Iasi to be Satisfactory.

Effectiveness of Outputs

The equipment funded by SECO appears to be in use, and the exteriors of the assets generally appear to be in very good condition. Works on some of the heating substations we visited in Iasi had not yet been completed, but this is understandable given that the project itself is not due for completion until June 2010.

Effectiveness of Outcomes

Table 2.7 summarizes our assessment of the effectiveness of outcomes from SECO's interventions in Iasi. The intervention in Iasi improved reliability and quality of heating and hot water service for customers connected to the district heating system.

Table 2.7: Effectiveness of Outcomes in Iasi

Project	Outcomes Achieved?	Description of Outcome
Iasi District Heating Project	S	<p>More efficient fuel use?</p> <ul style="list-style-type: none"> ▪ Energy efficiency of thermal production has improved from 2007 to 2009. Heat production in 2007 used 4.30 MWh/GCal; in 2009 this decreased to 3.23 MWh/GCal ▪ Overall thermal pump station electricity consumption has decreased by 6.3% from 2006 to 2009. <p>Figure 2.14 illustrates the change in energy efficiency at select thermal substations (all rehabilitated with SECO funds) from 2007 to 2009. Figure 2.15 illustrates the overall trend in electricity consumption at all thermal pump stations in Iasi.</p>
	S	<p>Lower losses (transmission and distribution)?</p> <ul style="list-style-type: none"> ▪ Total thermal losses in Iasi have decreased 17.8% from 2007 to 2009. Figure 2.13 illustrates the trend in losses at thermal substations from 2007 to 2009. ▪ The reduction in losses has been greater at the thermal stations affected by SECO investments. Reduction of losses at stations rehabilitated using SECO funds was 22.38% (from 2007 to 2009), while reduction at other thermal stations has only been 17.38%. See Figure 2.12.
	S	<p>Lower operating expenses?</p> <ul style="list-style-type: none"> ▪ Distribution maintenance expenditure has decreased. From 2005 to 2009 expenditure on maintenance of the distribution system fell 69.1% (LEI 751,013 to LEI 232,209).
	S	<p>Better quality?</p> <ul style="list-style-type: none"> ▪ Focus group discussions showed that customers in areas benefiting from SECO's intervention had better heat quality ▪ Focus group discussions also showed that, in areas benefitting from the SECO project, hot water came to taps faster and with better pressure than in previous years (and faster and with better pressure in areas where the thermal stations were not rehabilitated).
	S	<p>More affordable tariffs?</p> <ul style="list-style-type: none"> ▪ Focus group discussions showed that customers heating bills were significantly higher in the winter of 2009/10 than in the previous winter. Participants in the focus group said their average monthly bills had increased in the range of 5-50% above last year. ▪ Affordability of heating, on a per unit basis (Lei/Gcal), was not affected, as tariffs did not change from 2009-2010.

Figure 2.11: Annual Distribution Maintenance Expenses

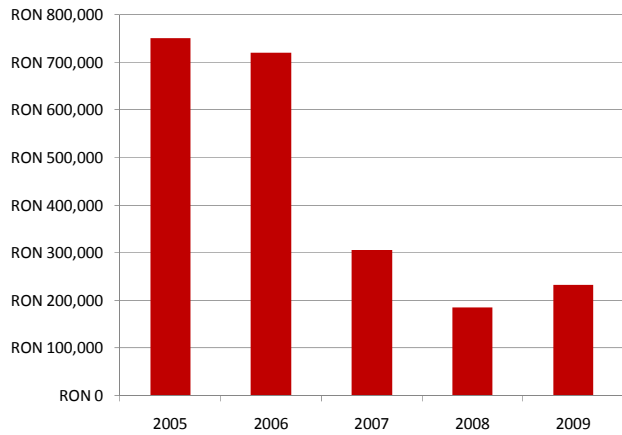


Figure 2.12: Comparison of Thermal Losses at Rehabilitated and Non-Rehabilitated Substations

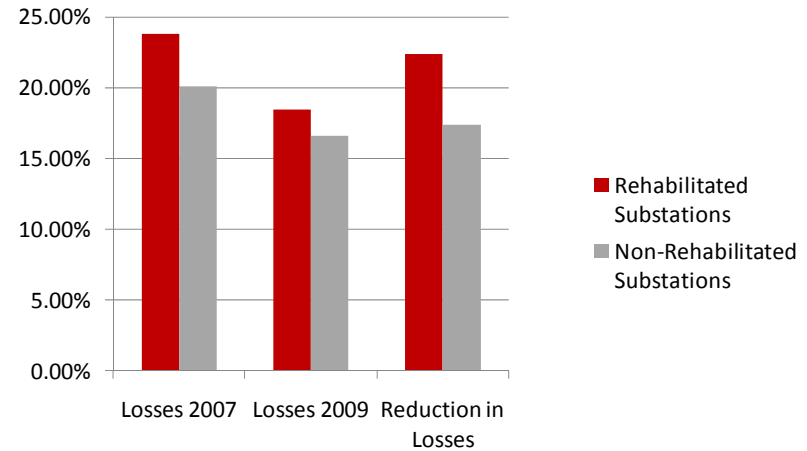


Figure 2.13: Thermal Losses at Select Substations Rehabilitated with SECO Funds (2007 to 2009)

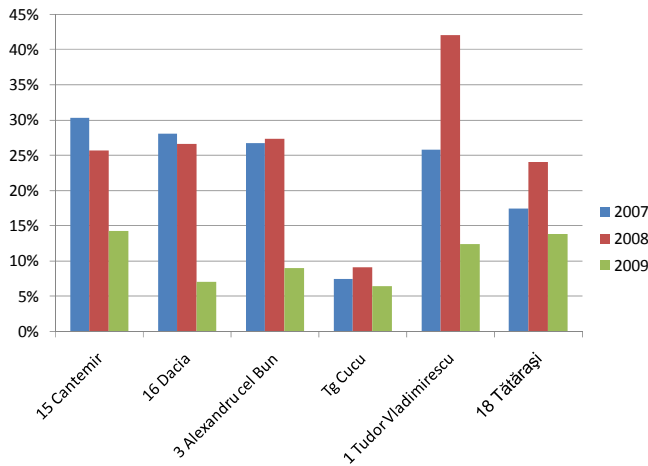


Figure 2.14: Energy Efficiency of Select Substations Rehabilitated with SECO Funds (2007 to 2009)

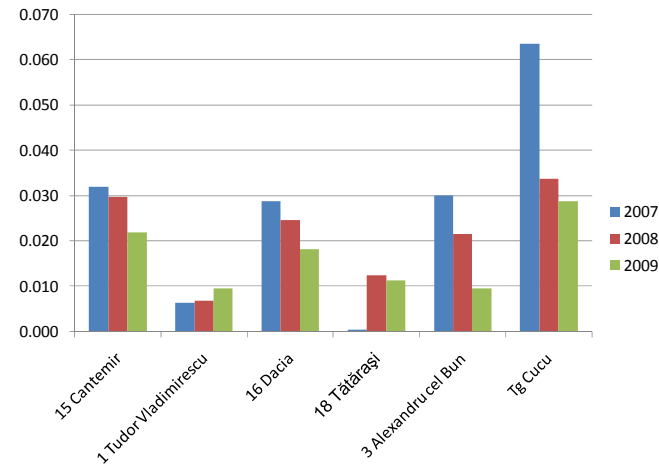
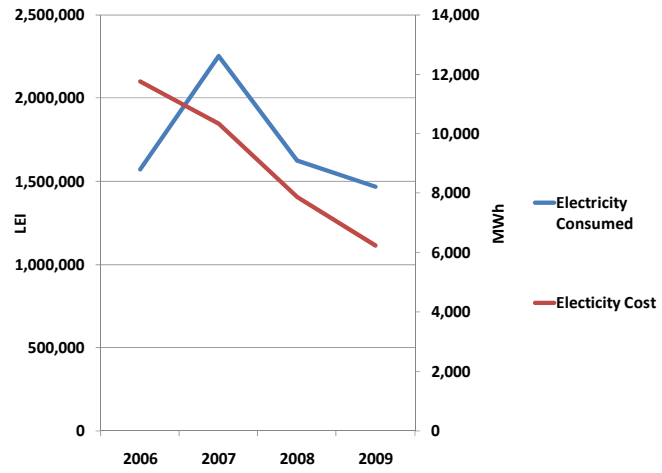


Figure 2.15: Electricity Consumption by Iasi (for pumping stations)



Effectiveness of impacts

Focus Group Discussions showed that the project in Iasi did indeed have an impact on customers. Unfortunately, the impact hasn't yet been entirely positive. The impact of better service is a higher level of comfort in homes, business and schools. However, the project also appears to have negatively impacted affordability of heating services.

It is important also to bear in mind that this winter was the first winter customers had experienced improved heating and hot water service. In the coming years, we expect that the impact on customer affordability and comfort may change as customers learn to adjust their usage behavior to the new system.

Box 2: Focus Group Discussions on the Iasi District Heating Project

Background: With SECO assistance, the district heating system in Iasi, Romania was improved prior to the winter 2009-2010 for roughly 35,000 households in selected parts of the city. From a total number of 88 thermal stations and thermal modules 49 were improved. These improved stations and modules supply warm water and heating services for roughly 3,560 block of flats, individual houses, institutions and economic agents. Last winter was a particularly cold one in Iasi, and according to anecdotal evidence, revealed a drastic difference between the living/heating conditions of the residents with improved district heating system with that of the residents with unimproved district heating system, many of whom had resorted to switching to local gas-fired boilers due to the unsatisfactory condition of unimproved district heating system.

Methodology: We held two focus group discussions (FGDs) to compare the impact of the project on direct beneficiaries of improvements to the district heating system, and households who have individual boilers or are connected to other thermal stations (not rehabilitated). The FGDs were carried out during April 16-18 and 18-20, 2010: first including customers connected to thermal points like Socola 11, Socola 5, Socola 2 from Podu Roș, a highly populated neighborhood of Iași, and the second including people from neighborhoods like Nicolina and C.U.G, areas that did not benefit from the project. The first FGD included 14 persons. The second FGD included 10 persons.

Summary of results:

There was clearly an improvement in the quality of services supplied: Hot water and heating (better temperature, faster arrival of hot water to taps, and better warm water pressure).

According to participants in the first FGD, apartment temperatures increased a few degrees in the areas affected by the rehabilitation. It cannot be deduced from the second FGD that people from areas not benefitting from the improvements had problems with temperature. However, they did have problems adjusting the temperatures in their apartments.

The impact of the project on hot water temperatures is evident. From the discussion passages extracted from FGD 1 and FGD 2 (Topic B and E) we can deduce this difference.

- The improved stations provide better water pressure
- When customers in the improved areas turn on the taps, they have hot water in few minutes (“5 minutes”), rather than tens of minutes (“30 minutes”), as before the rehabilitation project
- People from unimproved areas (FGD 2) stated that they have problems with hot water pressure and the speed with which hot water arrives at their taps.

Unfortunately, for most participants, average monthly payments have also increased. Participants from the first FGD are happy with quality but also say they are paying considerably more (as little as 5% and as much as 50% more than the previous winter) for their heat and hot water service. Participants attributed their higher payments to the better accuracy of thermal allocators that more accurately capture the caloric units they consume. Participants from the second FGD also said they paid more during the winter of 2009-2010 (10-20% more). These participants said that they also hoped to benefit in the near future from rehabilitations that benefited customers in FGD 1.

Factors affecting effectiveness

The effectiveness of outcomes in Iasi was most affected by the unusually cold temperatures experienced during the winter of 2009, in comparison to the winter of 2008. Customers' bills were higher because of the higher temperatures, but the cost per unit of heat consumed (Lei/Gcal) did not change between 2008-2009.

2.3.3 Efficiency

We found the efficiency of SECO's interventions in Iasi to be satisfactory.

Efficiency of implementation

The Iasi project was not completed along the timeline originally planned, but was completed under-budget so that savings were available to fund more thermal modules than had been planned.

Cost efficiency of the intervention

A 2005 feasibility study, funded by SECO, showed district heating to be the most economical solution for most areas in Iasi, in contrast with the alternative technical solutions, namely: individual gas boilers, or block-level boilers. There was one district in Iasi (M3) where block-level gas boilers were found to be comparable to rehabilitation of the district heating system. No rehabilitation of the district heating system was funded in these areas.

Factors affecting efficiency

We observed two factors that affected the efficiency of the Iasi project, one positively, and one negatively.

Two innovations by SECO positively affected the efficiency of the Iasi project:

- CET and their consultants decided to procure pre-assembled thermal modules. This approach avoided the need to run multiple tenders, and coordinate the bids and work of multiple vendors. In part because of this approach, bids for the thermal modules were more competitive than expected.²⁷ The approach used in IASI contrasts with SECO's experience in Bucharest, where a separate company was responsible for the heat exchangers.
- The project design used a two-pipe system for heating and hot water that SECO also used an earlier district heating project in Romania (instead of the 4-pipe system previously used throughout Romania). The two-pipe system is less expensive than the 4-pipe system.

Administrative delays related to EBRD funding and disbursement had a negative effect on project efficiency. EBRD, as co-financier and overall manager of the project appears to have caused a number of delays that necessitated the project extension. EBRD's loan was approved in 2007. SECO's grant had been approved in 2006 but Iasi's loan covenant with EBRD required that the SECO and EBRD funds be disbursed simultaneously. Some EBRD disbursements were

²⁷ It is also worth noting that interest accrued on the SECO grant has allowed for some additional works to be undertaken.

also delayed which in turn delayed payments to contractors, causing some contractors to stop works.

2.3.4 Sustainability

We found the sustainability of SECO's interventions in Iasi to be satisfactory.

Financial, technical, and institutional sustainability

The financial, technical, and institutional sustainability of the Iasi project is as follows:

- **Financial.** The biggest threats to sustainability of the Iasi project are financial. We see as the biggest threat to the sustainability of SECO's intervention in Iasi:
 - The possibility that tariffs may not increase sufficiently to allow CET to properly maintain its new equipment
 - The inability of CET to secure financing for a new turbine that would allow it to improve its efficiency and financial position by cross-subsidizing between its electricity generation and heat production operations.

However, it is our view that SECO's intervention in Iasi has likely helped to improve the potential for the district heating system to survive. According to CET, customer switching to individual natural gas boilers has slowed. In contrast, during the unusually cold winter of 2009/10 (during which service was interrupted to customers with individual gas boilers), customers with individual gas boilers reapplied for district heating connections.

- **Technical.** The investments SECO funded were new and in mint condition. To see how SECO's projects are likely to fare in the future, we also looked at the boiler and heating substations in nearby Pascani (funded under an earlier, Swiss Thermal Energy Project). The equipment in Pascani was in very good condition, nearly 10 years after SECO's work had been completed.
- **Institutional.** CET's survival as an institution will determine on whether it is able to provide good quality heating service at affordable prices. If it is not, customers will continue to disconnect from CET's system in favor of individual gas boilers. If CET can provide good quality heating service at affordable prices, customers will stop disconnecting from the system, and some of those that have switched may switch back. However, given the Romanian's government's prioritization of the district heating sector, we do not see much of a threat to the sustainability of CET.

Factors affecting sustainability

Government tariff policy is the most substantial factor affecting sustainability. As noted above, Government insistence at keeping tariffs below cost-recovery levels will continue to threaten the sustainability of SECO's investments.

Also, the extensive and careful involvement of consultants was highly appreciated by the beneficiaries at CET, and has clearly been important to ensuring sustainability of the project.

2.3.5 Quality of donor cooperation

SECO cooperated effectively with its partners on the Iasi project and is credited by project beneficiaries as having helped keep the project on track during some of the early administrative delays described in Section 2.3.3.

2.4 Serbia

Table 2.4 summarizes our ratings for SECO's projects in Serbia. Overall, we found SECO's interventions in Serbia to have satisfactory ratings for all criteria.

Table 2.8: Case Study Project Evaluations—Serbia

Name	Description	Date	Amount (Million CHF)	Relevance	Effectiveness		Efficiency	Sustainability	Impact
					Outputs	Outcomes			
Humanitarian Assistance in the Electricity Sector/ Electricity Sector Spare Parts Project	<ul style="list-style-type: none"> ▪ Humanitarian Assistance in the Electricity Sector. Provided equipment and services, to repair damages at high voltage transmission substations, a power plant, and coal mine ▪ Electricity Sector Spare Parts Project. Provided equipment and services for immediate repair and rehabilitation of electric generating stations and transmission network 	1999-2004	<ul style="list-style-type: none"> ▪ 3.2 ▪ 7.3 	S	S	S	S	S	UA
National Control Center Project	Installed a new SCADA/EMS system and system for remote acquisition and accounting of metering data	2002-2007	15.3	S	S	S	S	S	S
Overall Rating				S	S	S	S	S	S

The subsections that follow analyze SECO's interventions in Serbia with respect to the rating criteria identified in our methodology.

2.4.1 Relevance

We found the relevance of SECO's interventions in Serbia to be Satisfactory.

How SECO's projects were relevant

SECO projects in Serbia were relevant in terms of:

- **Technical focus.** In the Emergency Support and Spare Parts projects SECO replaced equipment that had been targeted by NATO in the 1999 bombings. By late 2000, roughly 8 percent of the 110 kV and 220 kV networks and more than 27 percent of the 400 kV network had been destroyed. By the end of 1999, the transmission system was operating at 40 percent of its total capacity. Moreover, much of the new equipment came from the same origin (Swiss) and manufacturer as the replaced equipment.

The new SCADA/EMS system (within the NCC project) improved grid reliability, power quality, and availability of energy and capacity in Serbia and—because of Serbia's importance as a regional trading hub—in the Balkans.

- **Responsiveness to stakeholders needs.** In the Emergency Support and Spare Parts projects, the beneficiary (EPS) created lists of the equipment they needed
- **Responsiveness to changing needs.** As in Albania, SECO's assistance has evolved as Serbia's needs have evolved. More specifically:
 - SECO first funded parts and services to restore continuous electricity service. The first spare parts project (19992001) focused on providing equipment that would allow Serbia to restore 24-hour electricity service
 - From 2001 to 2004 SECO funded parts and services to make the network sustainable. Once continuous service had been restored, SECO provided parts to replace equipment that had been damaged by years of neglected maintenance. These investments helped ensure that the network would avoid future collapse and a return to intermittent electricity supply
 - Between 2004 and 2007 SECO funded a new SCADA system for a National Control Center (NCC), to improve quality of supply and reliability and to integrate Serbia into regional networks
 - The current TENT B project (not evaluated) is an extension of SECO's work, in the NCC project, to improve quality of supply and reliability.

How SECO's projects were less relevant

We found no evidence to suggest that SECO's past projects were not as relevant as they could have been.

Factors affecting relevance

A factor that appears to have positively affected the relevance of the NCC project was the use of contingencies in the project budget. The contingencies were used for Change Orders as needed to adapt functionalities of the equipment as was determined necessary during the course of the project. The level of the contingencies, and the willingness of SECO staff to use the contingency therefore helped to avoid disruptions to the project's timeline and scope.

2.4.2 Effectiveness

We found the effectiveness of SECO's interventions in Serbia to be satisfactory.

Effectiveness of Outputs

The equipment funded by SECO appears to be in use, and the exteriors of the assets generally appear to be in very good condition.

Effectiveness of Outcomes

Table 2.9 summarizes our assessment of the effectiveness of outcomes from SECO's interventions in Serbia. The interventions helped to improved system reliability, reduce losses and integrate Serbia's electricity system into the Western European electricity system, establishing Serbia as an important regional trading hub.

Table 2.9: Effectives of Outcomes in Serbia

Project	Rating	Description of Outcome
Humanitarian Assistance in the Electricity Sector/ Electricity Spare Parts	S	<p>Better reliability (generation)?</p> <ul style="list-style-type: none"> ▪ EPS avoided outages during the winter of 2001 ▪ A total collapse of the power system was averted ▪ EPS estimated that in 2000 (before the rehabilitation) there were 9 outages at Obrenovac 3 for a total duration of 124 hours ▪ In year 2006 (some years after rehabilitation), there was 1 outage of 1.5 hours.
	S	<p>Better reliability (transmission and distribution)?</p> <ul style="list-style-type: none"> ▪ The average duration of disturbances on 400kV, 220kV, and 110kV lines decreased across each voltage level (see Figure 2.19): <ul style="list-style-type: none"> – 400kV fell from 9.6 (2001) to 1.51 minutes (2002) – 220kV fell from 5.9 (2001) to 3.11 minutes (2002) – 110kV fell from 5.9 (2001) to 4.45 minutes (2002)
	S	<p>Lower maintenance costs?</p> <ul style="list-style-type: none"> ▪ EPS estimated that it spent an average of roughly 31,000 Euro per year on maintenance of the bypass station at Obrenovac 3 before SECO's intervention; EPS now spends roughly 1,000 Euro per year on maintenance of the bypass station (both estimates based on a six year period before and after rehabilitation)
Rehabilitation of National Control Center	S	<p>Lower technical losses (transmission and distribution)</p> <ul style="list-style-type: none"> ▪ Transmission losses decreased. From 2001 to 2008 transmission losses decreased 28.9 % (3.53% to 2.51%). Losses continued the decline in 2009, falling to 2.35%. Figure 2.16 depicts the fall in transmission losses. ▪ The reduction in losses saved roughly 355,000 MWh per year in electricity.
	S	<p>Better reliability (transmission and distribution)</p> <ul style="list-style-type: none"> ▪ The standard deviation in frequency fluctuation has dropped significantly. From 2001 to 2008 the standard deviation fell 88% (102 mHz to 12 mHz). Figure 2.17 depicts how frequency fluctuation has remained relatively constant since 2005. ▪ The difference between the minimal standard Hertz level and the maximum Hertz level has also fallen. The standard frequency range was 0.83 Hz (49.54 to 50.36) in 2001 and fell to 0.11 in 2008 (49.96 to 50.10).
	S	<p>More electricity supplied?</p> <ul style="list-style-type: none"> ▪ Serbian electricity transmission system was resynchronized to the UCTE I grid on 10 Oct. 2004 ▪ Real Time operation system was first used by EMS/EPS staff in December 2006 ▪ EPS Power Trading unit (EMS now in charge of trading unit) became active in 2004; became recognized power trader in the region ▪ In 2007 EMS total volume of electricity traded was 17,653 GWh (Imports: 8,905 GWh, Exports: 8,658 GWh).

Project	Rating	Description of Outcome
		<ul style="list-style-type: none">▪ As of 2008, 9 companies have received EPS authorization to participate in national electricity trade▪ Figure 2.18 depicts electricity trade since October 2004.

Figure 2.16: Transmission Losses as % of Production

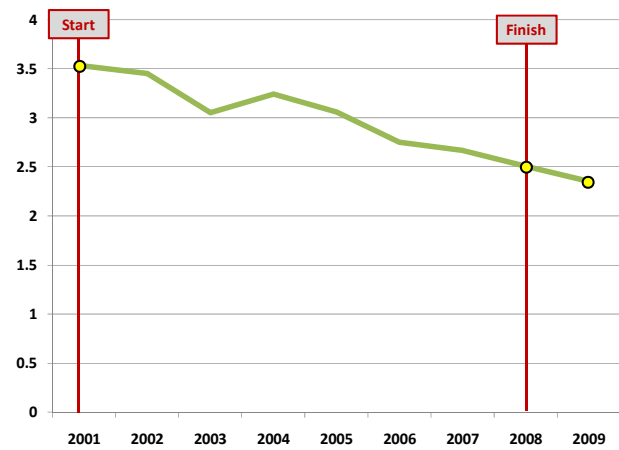


Figure 2.17: Standard Deviation of Frequency (mHz around 50 Hz)

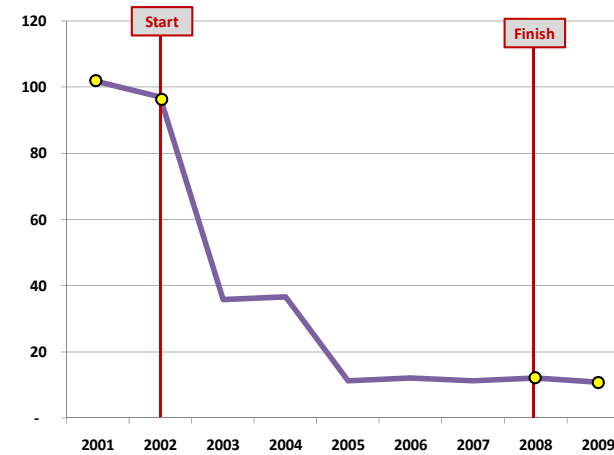
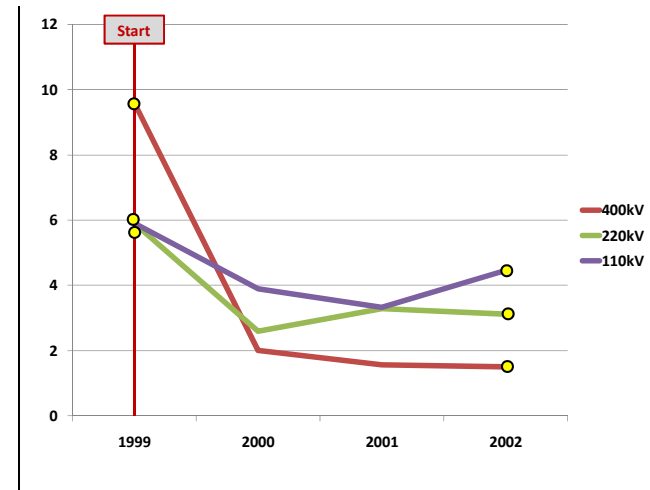
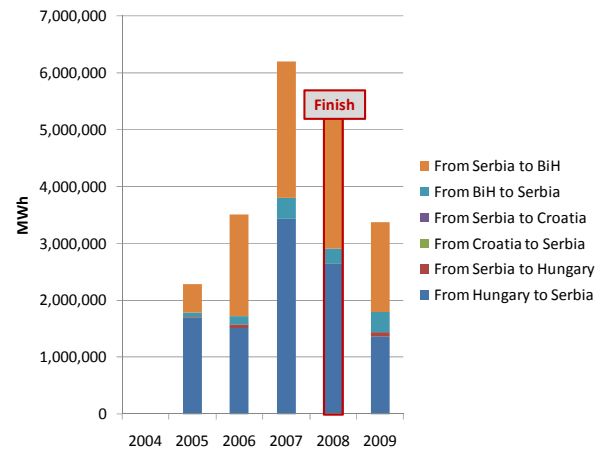


Figure 2.18: Volume of Electricity Flowing Before and After 10 Oct. 2004

Figure 2.19: Duration of System Interruptions (minutes)



Effectiveness of impact

As in the other case study countries, we can estimate some of the potential economic benefit of some of SECO's interventions. Unfortunately, though there were many clear outcomes from SECO's interventions in Serbia, we were not able to assess any other impacts. We note that this does not mean that there were not impacts, only that we did not have the data we felt were necessary to assess them.

In Serbia, we can estimate the potential value to the country of reduced technical losses. The NCC project reduced technical losses by 355,000 MWh/year. The average wholesale price for electricity during the 2009 and the second half of 2008 was roughly USD 0.04/kWh. Assuming the wholesale price accurately reflects the cost of generation (or the cost of replacement power in lieu of generation), the sector therefore saved at least USD 14 million/year as a result of the reduced losses.

As in Albania and Kyrgyzstan, there are clear benefits to customers of avoiding outages but we did not have data on end-user outages for the years 2000-2001, when an impact could have been shown from the Humanitarian Assistance Project. Later SECO interventions will likely have improved customer well-being by reducing voltage and frequency fluctuations, and from price reductions that the benefits of electricity trading can have (by reducing the wholesale price of electricity) but we have not been able to assess the impact on end-users.

Factors affecting effectiveness

One factor appears to have positively affected the effectiveness of outputs and outcomes in Serbia, namely, the commitment and quality of local staff on the recipient side. The technical capacity of the staff of EPS is very high. The NCC and spare parts projects were successful, in part, because of the excellent local counterparts SECO had at EPS.

2.4.3 Efficiency

We rate the efficiency of SECO's interventions in Serbia as satisfactory.

Efficiency of implementation

SECO's interventions in Serbia were implemented efficiently despite often challenging circumstances. More specifically:

- The National Control Center project was completed on time and 332 CHF below budget, despite the fact that the electric power sector was restructured mid-way through the project. EPS spun off its transmission operations in 2005, creating JP Elektromreža Srbije (EMS). With SECO and its consultants' assistance, EPS and EMS facilitated a smooth transition by signing a Memorandum of Understanding (MoU) regarding their contractual obligations to SECO
- The Emergency Support Project was also implemented highly efficiently and on budget. No equipment was lost or damaged during the project, and delivery of the parts was without delays.

Cost efficiency of the intervention

We were not able to assess the cost efficiency of SECO's interventions in Serbia.

Factors affecting efficiency

The most important factor affecting efficiency appears to have been an excellent working relationship between SECO, SECO's consultants and the beneficiaries. The efficiency of the NCC project implementation—in the midst of restructuring—is evidence of the quality of cooperation. The quality of cooperation is owed to SECO staff and consultants as the project beneficiaries.

Several interviewees (including donors and beneficiaries) commented that SECO and the local Swiss Cooperation Office respond quickly and decisively to communications. Stakeholders know that when they communicate with SECO or the Cooperation Office, they can easily identify and speak with decision-makers, and that action will be taken quickly. Interviewees commented further that SECO lacked the large bureaucracy (and slow movement that often accompanies bureaucracy) of other donors.

The ability to use contingencies (mentioned above) also appears to have positively affected efficiency of the projects. Valid supplier claims could be paid with contingencies, minimizing the risk that the project would be put into a critical financial situation by such claims.

2.4.4 Sustainability

We rate the sustainability of SECO's interventions in Serbia as satisfactory.

Financial, technical, and institutional sustainability

Our assessment of technical, programmatic and financial sustainability is as follows:

- **Financial.** The levels of electricity tariffs in Serbia are well below cost-recovery levels (37% below cost-recovery levels by the IMF's estimates). The Government raised tariffs 10 percent in 2010, but this fell short of a government promise in 2009 to raise tariffs 20 percent in 2010 and again in 2011 to bring them to cost recovery levels. When utilities fail to recover their costs, they survive financially in the short-term by neglecting maintenance and rehabilitation necessary to slow the depreciation of assets. The consequence for SECO's investments (and all investments) is more rapid depreciation, higher risk of failure, and ultimately higher life-cycle cost because of the need for earlier replacement.
- **Technical.** As noted in Section 2.4.2, SECO investments appeared to be in good condition, and serving the purpose for which they were originally intended. Interviewees viewed the few problems mentioned in Section 2.4.2 as typical of standard wear and tear on equipment, or (in the case of the lapsed warranty and expensive service contract) characteristic of all equipment generally—not the Swiss-funded equipment in particular.
- **Institutional.** Governments are not likely to let large public utilities fail. This is the case in Serbia as in the other case study countries. The Government may privatize (or allow for some type of private sector participation) in segments of the electricity sector, but the institutions themselves are not likely to change.

Factors affecting sustainability

We observed two factors that affected the sustainability of SECO projects in Serbia, one positive and one negative. The factors are:

- **Political interference in tariff-setting.** The Government's insistence on keeping EPS' tariff below cost-recovery levels could jeopardize the sustainability of SECO's interventions
- **Commitment and quality of local staff on the recipient side.** We discussed this factor in Section 2.4.2.
- **Quality on-the-job training.** Sustainability of the projects was strengthened by extensive on-the-job training. For the NCC project in particular, EMS staff were trained not only in technical operation of the new control center, but also commercial and management areas that would be important for NCC's future work. NCC staff received training in: preparing and evaluating tenders, project management and contract supervision and management.

2.4.5 Quality of donor cooperation

SECO has the reputation of working very well with other donors in Serbia, and our perception is that SECO takes careful effort to align its interventions with the other donors' ongoing and planned activities, in order to build on comparative advantages and ensure the value added by its projects. SECO is also recognized as an active participant in donor coordination meetings for the sector, and a serious partner for other donors active in the sector. More specifically:

- SECO's cooperation with EBRD on the NCC project was cited by several interviewees as very good, both in planning and implementation. The coordination with EBRD who was responsible for funding the telecommunications portion of the NCC project was excellent, and had a strong synergy element. There were no significant problems with the interfaces and dependencies between the two projects.
- In the Emergency Support and Spare Parts projects, SECO worked with other donors under the umbrella of the UN Office for Coordination of Humanitarian Affairs (OCHA) in Belgrade. The project succeeded in carefully coordinating the list of equipment to be supplied. As one example of the benefits of the cooperation, and SECO's role, the shipping of all parts was centralized under a forwarding company recommended by the Swiss Development Corporation. This helped save on shipping costs and reduced shipping risks.

3 Aggregation of Ratings for Energy Sector Portfolio in the East²⁸

Overall, we found SECO's energy sector assistance in Eastern Europe and Central Asia to be:

- Highly satisfactory in terms of relevance
- Satisfactory in terms of effectiveness and sustainability
- Unsatisfactory in terms of efficiency.

Our assessment is based on a comprehensive evaluation of interventions in case study countries presented in Section 2 and a much more limited review of projects in non-case study countries. Appendix E contains our ratings for projects in non-case study countries on efficiency, and effectiveness of outputs—the only two criteria we evaluated.

3.1 Relevance

The relevance of SECO's interventions in the energy sector was highly satisfactory. SECO staff have done an excellent job understanding the needs of the partner countries and designing project which meet those needs. SECO's interventions in the case study countries were:

- Technically relevant, recognizing which equipment was most in need of rehabilitation for the proper functioning of electricity and heating systems
- Relevant to the strategies and objectives of the partner countries. In Romania, for example, SECO's focus on district heating was consistent with the Romanian Government's prioritization of district heating
- Responsive and cognizant of stakeholders needs. SECO generally communicates well with project beneficiaries in deciding what to fund. Interviewees repeatedly emphasized that good communication and cooperation one of SECO's strong points
- Responsive to changing needs. SECO's assistance evolved as the needs of the partner countries evolved. For example, in Albania and Serbia, SECO's assistance evolved over time from emergency support, to improving reliability, and finally to improving efficiency of the existing electricity systems.

We did not evaluate the relevance of SECO's interventions in the non-case study countries, but stakeholders comments in all of the case study countries indicate to us that SECO's skill at designing and implementing highly relevant interventions is likely common across partner countries. Staff at SECO headquarters have a principal role in designing projects, and staff members have responsibility for interventions in multiple countries. We therefore expect that SECO's interventions in the non-case study countries were similarly highly relevant.

²⁸ We use "East" to describe the Eastern Europe and Central Asia region of SECO operations.

3.2 Effectiveness

The effectiveness of SECO's outputs, outcomes, and impacts was satisfactory. The outputs delivered were generally of the quality intended and served the purpose intended. The outcomes were generally consistent with the outcomes identified in our standardized results chains, and generally consistent with SECO's objectives in the energy sector.

Most of the outcomes we identified in Section 2 were "short-term" outcomes on our standard results chains, and were from SECO's Level 3 operations (services/supply of equipment). Showing results for medium- and long-term outcomes was often not possible because of the many factors (other than SECO interventions) that can affect medium- and long-term outcomes. Most outcomes were from Level 3 operations because of the predominance of that level of operations in SECO's energy portfolio in the region.

When outcomes were not achieved, the reasons were often external, rather than internal to SECO. As we described in more detail in Section 4 below, poor governance, regulation and macroeconomic conditions negatively affected the effectiveness of SECO's projects.

Effectiveness of outcomes by level of operations

Certain components of SECO projects were more effective than others in terms of achieving the desired outcomes. Components of SECO's interventions under the third level of SECO operations (services/supply of equipment) were generally more effective than interventions under the second level of operations (institutional management).

We reviewed the efficiency of outcomes for only two SECO projects with Level 2 (Institutional Management) components, the Power Loss Reduction Project in Albania and the Naryn III project in Kyrgyzstan. The results of the Power Loss Reduction Project were unsatisfactory (commercial losses were not reduced). The results of the Naryn III project were satisfactory.

We did not review any project in a case study country with a public policy level of operation. However, we know that SECO and its consultants are active in policy advisory through a number of projects (for example, advising on sector reform under the Naryn III project), and through multi-donor facilities like the Private Enterprise Partnership Southeast Europe—Infrastructure (PEP SEI) in Albania.²⁹ We also know that SECO's donor partners and beneficiaries see SECO staff—in headquarters and in local offices—as valuable advisors on matters of sector policy.

Overall effectiveness in meeting SECO objectives

Section 2 shows that SECO's interventions clearly helped to achieve two objectives stated in the Approach Paper:

- Better service quality and sustainability (availability and reliability) for electricity consumers (households and companies)

²⁹ The district heating project in Iasi also has a corporate management component, but it is our understanding that this work has not yet been completed. We therefore did not include it as part of our evaluation.

- Reduction of technical losses.

SECO's interventions also met, to some extent, the objectives of improving the management and financial viability of energy companies. However, as we noted in above, the interventions that we reviewed were generally limited to more technical, "on-the-job" training with hardware and software, than broader institutional changes. As we also noted in our discussion of sustainability, the financial sustainability of most of the beneficiaries of SECO interventions remains to some extent in question.

Only one objective seems to have eluded SECO's interventions. SECO's objective of making energy more affordable does not yet seem to have been realized. In theory, SECO's grant funding allows energy companies improve service quality and reliability more cheaply than if they were to have to borrow. SECO's projects also improve the efficiency of their operations, which reduces their costs. However, because energy supply was so highly subsidized in the partner countries, and because the beneficiaries are under pressure to wean themselves from subsidies by raising tariffs, the cost of energy supply has largely increased for customers.

This observation does not necessarily mean that affordability of energy supply has decreased. Increases in income may have kept affordability more or less constant, or perhaps improved it slightly. However, such improvements cannot be attributed to SECO's interventions, but to broader macroeconomic trends.

Effectiveness of outputs and outcomes in projects in non-case study countries

Our rating of the effectiveness of outputs includes an evaluation of the effectiveness of SECO's outputs in the non-case study countries. We found the effectiveness of SECO outputs to be satisfactory in the non-case study countries.

We did not evaluate the effectiveness of SECO outcomes in the non-case study countries. However, given the close link between project outputs and short-term outcomes, we expect that SECO's interventions in the non-case study countries were similarly effective, at least in terms of short-term outcomes.

Effectiveness of impacts

The projects for which we were able to evaluate impact rated as satisfactory. Showing impact for other projects was difficult, because of the nature of SECO's interventions, and because of the many factors that interfere between project inputs and the impact indicators we would like to measure.

Many of SECO's interventions in the partner countries' energy sectors targeted energy supply infrastructure. Impact is much easier to evaluate on the demand side than the supply side. It is easier to measure a direct affect on end-users than the effect on the overall economy of more efficient fuel use by a single generating plant.

However, the further upstream the intervention, the higher the risk that the chain of causality between energy production, transmission, distribution, and consumption will be interrupted by other factors, both technical and non-technical. The effects on customers of improvements to upstream energy supply infrastructure is therefore very difficult to evaluate in countries where so many political, regulatory, and technical challenges exist that can derail the intent of the intervention.

3.3 Efficiency

SECO's interventions were generally unsatisfactory in terms of efficiency. Section 2 contained our ratings for projects in the case study countries. Slightly more of the projects we evaluated suffered from delays or cost overruns than did not. Appendix E of this report contains our rating of the projects we evaluated in the non-case study countries.

In nearly all of the projects, the delays and cost overruns were due to external factors that were largely beyond SECO's control.

3.4 Sustainability

We rated the sustainability of SECO's interventions as satisfactory, despite the fact that, in all of the case study countries, financial sustainability is threatened by poor governance, political interference, and regulation which prevents commercial management of utilities.

We rated the sustainability of SECO interventions as satisfactory, instead of unsatisfactory, because:

- Governments generally cannot afford to let utilities fail as institutions. Ownership and management of energy production and delivery assets will change, but the institutions themselves survive in some form.
- Beneficiaries of SECO's projects seem to take excellent care of the equipment SECO funds than other infrastructure. Beneficiaries of SECO's projects show special pride and appreciation for the infrastructure SECO funds. We believe this is due to the factors that promote good programmatic sustainability, namely, good training and an exceptionally good working relationship with SECO.

In summary, positive technical and institutional sustainability offsets the negative financial sustainability of SECO's projects.

3.5 Quality of Donor Cooperation

SECO cooperation with other donors appears to have been complementary—fitting well with other donors' agendas, and synergistic—allowing donors to leverage SECO's work for their larger projects.

Beneficiaries and other donors appreciate that SECO is a competent and credible partner. In Albania and Romania, for example, SECO took on an ad hoc leadership role when co-financed or parallel financed projects ran into difficulties.

SECO's participation is also valued because it is flexible, can act quickly, and can provide grant funding. Other donors appreciate that SECO can quickly fund a study that serves as the basis for larger donor projects. The recent Dam Safety Feasibility Study in Albania, for example, will serve as the basis for a number of projects financed by other donors.

4 Cross-Country Analysis by Main Factors Identified

The analysis in Section 2 shows that there are both internal and external factors which affect SECO's interventions. The Approach Paper which serves as our terms of reference for this work also asks that we specifically consider a number of specific internal and external factors. This section therefore considers the most important internal and external factors that affected the relevance, efficiency, effectiveness or sustainability of SECO's interventions in the partner countries.

4.1 Internal Factors

Internal factors are characteristics of the way in which SECO identifies and implements projects. These are factors over which SECO has considerable influence and ability to change.

4.1.1 Swiss Value Added

SECO's procurement rules for infrastructure projects require at least 50 percent Swiss added value in the purchasing of equipment and services. We saw evidence of arguments for and against use of the Swiss Value Added rule.

Arguments for Swiss Value Added

On the one hand, beneficiaries often favor the Swiss Value Added requirement because of the high quality and durability of Swiss equipment. Swiss procurement rules are often viewed more favorably than the least-cost procurement rules used by the World Bank and other donors. In Serbia, in particular, where much of the equipment replaced by SECO's projects was also of Swiss origin, project beneficiaries viewed the Swiss Value Added rule favorably. In such cases, the Swiss Value Added rule can improve the relevance, efficiency and effectiveness of SECO's interventions.

Switzerland is not the only country imposing such a requirement. The Paris declaration has stressed the need to move away from so-called tied aid, but many countries use such an approach, and some require more than 50 percent value added. SECO recipients and donor partners are aware of this and generally do not view Swiss Value Added as an unusual requirement.

Arguments against Swiss Value Added

On the other hand, the Swiss Value Added requirement may limit the relevance and efficiency of SECO projects.

Swiss Value Added may limit the efficiency of SECO's projects in the following ways:

- Higher quality equipment is generally more expensive than lower quality equipment. Use of the Swiss Value Added rule raises the question of whether the same amount of financial resources could be used to purchase more inputs without significant loss in quality, or whether, in some cases, lower quality may be sufficient
- Swiss equipment may not always be best suited to beneficiaries' needs. For example, some beneficiaries in Kyrgyzstan questioned whether Russian equipment might not have been more appropriate for the Ak-Kyia substation project, and whether the choice of Swiss equipment might have

caused more costs in terms of time and resources taken to integrate the Swiss equipment into the older Russian equipment

- The Swiss Value Added increases the administrative burden on both recipients and donors. Since SECO often co-funds projects with other donor agencies, this is a particular concern.

Swiss Value Added may also limit SECO's flexibility in designing projects. The Swiss Value Added procurement rule means that SECO must fund projects where Swiss technologies or services are competitive. As a number of critics of tied aid have pointed out, tied aid tends to favor capital intensive imports or donor-based technical expertise rather than smaller, more poverty-focused programs.

As noted in Section 2, we found SECO's interventions to generally be highly relevant. The expertise of Swiss companies was particularly well suited to the needs of partner countries in the East. However, as the needs of the partner countries shift away from rehabilitation of large-scale energy production and distribution infrastructure (thanks, in part, to SECO's work), it may be harder for SECO to find a niche for Swiss Industry in the future.

Increasing globalization may further make Swiss Value Added more difficult to implement. As Swiss manufacturing shifts to other countries, it may be harder to design projects that comply with the Swiss Value Added rule. During the Drin River project, for example, a Swiss supplier identified at the design stage shut down operations in Switzerland. Equivalent parts had to be sought elsewhere.

4.1.2 Financing Mode

The mode of financing chosen does seem occasionally to be a factor in the efficiency of SECO projects. Most of the projects we evaluated in Section 2 were parallel or co-financed projects.

Each SECO project is funded through one of three types of financing arrangements. The definition of each of these arrangements is as follows:

- **Bilateral**—Funds used for a project that involves SECO's direct involvement with a recipient country. SECO acts as a manager on these projects
- **Parallel**—Funds used for a project that aligns with another project or sector plan being implemented by a partner donor agency. SECO controls the implementation of their specific project component
- **Co-Financing**—SECO shares funding obligations with either another donor agency or local beneficiary. Responsibility of project management can be shared or taken on solely by a partner.

The different modes of financing each have their advantages and disadvantages. Each seems better suited for different contexts. Table 4.1 summarizes the principal advantages and disadvantages for project efficiency.

Table 4.1: Advantages and Disadvantages of Modes of Financing

Financing Mode	Advantages	Disadvantages
Bilateral	<ul style="list-style-type: none"> ▪ Administratively simple; no coordination necessary ▪ No risk that SECO's project will be held up by problems with other donors' projects 	Less opportunity to leverage efforts of other donors, so projects are generally smaller
Parallel	<ul style="list-style-type: none"> ▪ Administratively simple; less coordination necessary ▪ Less risk that SECO's components will be held up by problems with other donors' projects 	<p>Beneficiary has burden of managing and coordinating multiple donors</p> <p>Projects cannot be as complex or as ambitious as under co-financing</p>
Co-financing	<ul style="list-style-type: none"> ▪ Best opportunities to leverage efforts of other donors, so projects can be larger ▪ Does not place as much of a burden on beneficiary to coordinate different donors 	Administratively difficult; lots of coordination necessary. SECO's components may be held up by lead donor agency responsible for managing the overall project

Co-financing is the most complex, and poses the greatest risks for efficiency. SECO has seen how difficult co-financing can be with its projects in Romania and Albania. However, co-financing also allows for much larger, more ambitious projects, and may be the only option when beneficiaries do not have enough capacity to manage multiple streams of work from different donors. Co-financed projects also raise unique (but not insurmountable) difficulties for SECO, where the Swiss Value Added rule conflicts with other donors least-cost procurement rules.

Albania offers a good example of how financing modes can progress as beneficiaries become better at managing donor projects. Co-financing may have been the only mode of financing possible in the early 1990s because KESH did not have the capacity to deal with multiple separate donors in parallel. However, as the KESH PMU's grew increasingly competent, SECO could consider moving to parallel financed projects.

4.1.3 Project Planning

In a few instances, the efficiency of SECO's interventions was affected by the low capacity of local counterparts. The low capacity of local counterparts is an external factor, but project planning is an internal factor. SECO staff and consultants noted that, in Kyrgyzstan and Albania, in particular, they had initially overestimated beneficiaries' abilities to manage projects, and finance and implement their own portions of the works or services.

4.1.4 Project Management

A positive factor affecting most of the SECO projects we reviewed is the flexible, accessible and attentive project management of SECO staff and consultants. SECO staff (local staff and staff from headquarters) are perceived positively as being very "hands on", in contrast with other donors. Beneficiaries and other donors

consistently noted that SECO was responded quickly and capably to project and beneficiaries' needs.

4.1.5 Counterpart funds

The use of counterpart funds in SECO projects was a factor that affected the efficiency of projects. Several of the projects we assessed made use of a counterpart fund.

With a counterpart fund, SECO makes a grant to the Government which is then on-lent, as a soft loan, to public or private companies. The loan is paid back into an account that government can use to fund other investments agreed with SECO. These investments may be in the energy sector, for the same beneficiary (as in Albania), or may be in other sectors (for example, social sectors) as is the intention in Kyrgyzstan.

Counterpart funds, in general, have a number of advantages which include:

- The leveraging of SECO's initial investment to allow for more investments in the energy or social sectors
- Effectively a loan instead of a grant, minimizing economic distortions while still allowing SECO to assist commercially viable enterprises.

However, in the projects we reviewed, counterpart funds also showed to the disadvantage of extending the length of projects and creating an additional administrative burden on SECO staff to monitor repayment and use of counterpart funds.

4.1.6 Institutional arrangements for implementation

SECO's PMUs are run from within the beneficiary, not—as with World Bank and Asian Development Bank PMU's—from separate institutions. On the one hand, this approach helps ensure that beneficiaries will take ownership of the project. On the other hand, this approach subjects the PMUs to internal management decisions that may not always be good for the project. This factor affected SECO projects in Albania and Kyrgyzstan, in particular.

Another difference between SECO PMUs and other donor PMUs is compensation. The multilateral donor PMUs pay their staff, and often pay better than the public institutions the assistance is meant to benefit. Managers and staff of SECO PMU's, in contrast receive no additional compensation for their role in the PMU. The issue of compensation appeared to be less of a factor than the location of the PMU. Some beneficiaries said that paying PMU managers might reduce turnover. However, our understanding is that turnover of PMU management is more often due to political or utility management factors than insufficient compensation.

4.2 External Factors

External factors are characteristics of the environments in which SECO operates. Section 2 showed that the most important external factors were related to:

- **Governance.** Corruption and poor governance in the energy sector affected project efficiency, effectiveness and sustainability in most partner

countries. In Kyrgyzstan and Albania, in particular, corruption hindered the effectiveness of SECO's objectives to reduce commercial losses

- **Politics.** In Albania and Kyrgyzstan, political turmoil has affected the efficiency of SECO projects (by delaying them), but does not yet seem to have affected sustainability. Politics also affects SECO's projects to the extent that it interferes with the appointment and retention of capable PMU management and staff
- **Regulatory.** Regulatory factors affected the effectiveness and sustainability of SECO's projects to the extent that they prevented or did not facilitate sound utility management practices (for example, full cost recovery, and disconnection of non-paying customers)
- **Macroeconomic.** Macroeconomic factors affect SECO project effectiveness and sustainability in two ways:
 - The condition of public finances limited the ability of beneficiaries to contribute co-funding to projects, and to properly maintain equipment funded by SECO projects
 - The relative poverty of the partner countries, the condition of public finances, and the absence of effective social support systems prevents utilities from charging cost-recovery tariffs
- **Capacity of beneficiaries.** The capacity of SECO's beneficiaries affected the efficiency and sustainability of projects, both positively and negatively. In Serbia and Romania, the high capacity of local counterparts positively affected the efficiency and sustainability of projects. In Kyrgyzstan and Albania, the low capacity of local counterparts was initially more of a challenge. In Albania, in particular, the capacity of local counterparts improved during the course of SECO assistance from a negative to a positive factor.

5 Lessons Learned

The analysis in Section 2 through Section 4 suggests several lessons for how SECO identifies, designs and implements energy sector interventions in Eastern Europe and Central Asia in the future. We describe these lessons below. We divide the lessons into two categories: Lessons related to the SECO program, and lessons related to SECO projects.

5.1 Lessons for SECO Programs

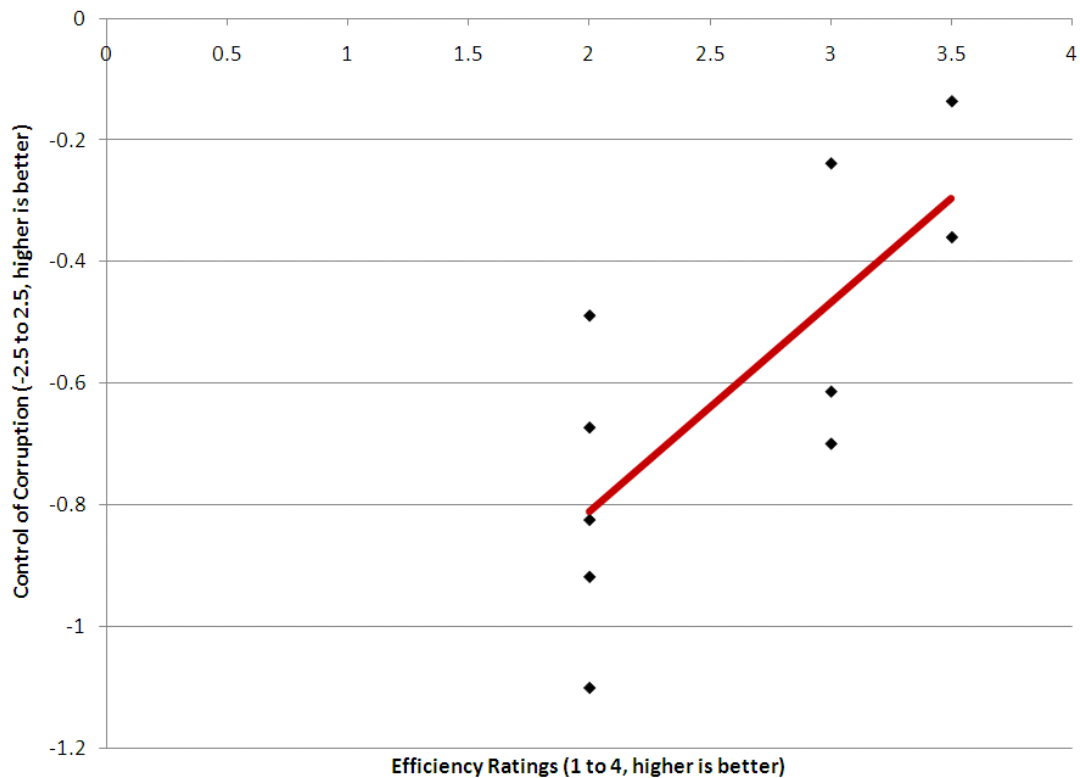
SECO's assistance in the energy sector in the East offers several lessons that are useful to SECO in thinking about its general programmatic approach:

- **SECO has had the most success with Level 3 operations (services/supply of equipment).** As noted in Section 3, SECO's interventions successfully addressed many of the technical problems in the energy sectors of partner countries (technical losses, and reliability), but had less success in addressing non-technical challenges, for example, commercial losses. SECO's specialty in the region, since the early 1990s—both in terms of its preference and major successes—are in supply of equipment and services.

It is worth noting also that SECO's Level 3 projects may have made it easier to implement sector reforms. For example, it is easier to raise tariffs, improve collections and reduce losses on good quality, continuous electricity supply than it is on intermittent, poor quality electricity supply.

- **SECO is a valued policy advisor.** Despite its concentration on Level 3 interventions (services/supply of equipment) SECO is active in the donor dialogue on policy, regulatory and institutional challenges, even when projects do not have explicit policy advisory component. Donors and beneficiaries we interviewed for this evaluation clearly view SECO as technically strong in policy discussions in the sector, and as a highly competent partner. Some also voiced the desire that SECO should take a more active role in policy discussions than it already has.
- **SECO's projects have been less efficient in countries with weak legal, regulatory and institutional environments.** Public institutions rarely transcend the problems of the governments that created them. This true for line ministries, publicly-owned utilities, and regulatory agencies in the partner countries. The countries where SECO's projects were less satisfactory in terms of efficiency are the countries which score worst against governance indicators. Not surprisingly, the countries where SECO's projects were less satisfactory in terms of efficiency (and ranked lower in terms of governance indicators) are also those where GDP per capita has tended to be lower. Appendix G shows correlations between the efficiency of SECO projects and other governance indicators, as well the correlation between the efficiency of SECO projects and GDP per capita in the partner countries.

Figure 5.1: Average Corruption Indicator (1996-2008) vs Efficiency of SECO Interventions



Source: World Bank. Worldwide Governance Indicators (1996-2008).

- **The Swiss Value Added requirement may limit the relevance and efficiency of SECO projects.** The analysis in Section 2 and 3 suggests that Swiss Value Added has drawbacks as a method of delivering aid, both because it limits the types of projects SECO may choose to fund and because it can cause administrative delays. There are other, more direct methods for ensuring delivery of high quality goods and services through procurement document specifications and innovative tender processes that focus on quality rather than origin. As we note in Section 6, Swiss Value Added may be justified as an objective, but not as a method for delivering aid.

5.2 Lessons for SECO Projects

SECO's assistance in the energy sector in the East also offers several lessons that are useful to SECO in thinking about how it implements projects:

- **The quality of a PMU and its director, were crucial to the efficiency of projects.** The competence of PMU managers was one of the most important factors driving efficient and effective interventions. As noted in Section 4, the organization of SECO's PMUs differ from other donors in that they are located within the beneficiary institution, and not created as separate project management entities. The principal problem of this

approach is that the PMU has little independence from political decisions that can compromise leadership of the PMU.

- **SECO staff and consultants underestimated the difficulty of working in some countries.** SECO interventions in Kyrgyzstan and Albania show how complex and difficult large infrastructure project can be in the partner countries of the East. SECO staff and consultants said that some of SECO's interventions initially underestimated the challenge of working in some of these countries, and that better initial due diligence and feasibility studies would have improved project efficiency.
- **Project design did not clearly identify outcomes and impacts.** As we noted in Section 1, it was not always possible to determine from SECO's project documents what objectives were intended by each component. In Appendix F, we map SECO's intended outcomes for each project to the outcomes we identified in the standardized results chains. The analysis shows that, when the project documentation did specify outcomes, these outcomes were often a mix of outputs and outcomes. The outcomes that were specified were more often medium- and long-term outcomes, instead of short-term outcomes.

SECO's project documentation rarely specified indicators and targets against which project effectiveness could be measured. For the case study countries, we found specific indicators and targets specified only for the Albania Power Loss Reduction and Naryn III projects. SECO has recently made changes to their project monitoring procedures in order to address this problem. Since 2007, projects with a value greater than CHF 1 million are required to develop a logframe with specified indicators and targets that will be used for project evaluation.

- **SECO's level 2 (Institutional Management) operations are often more technical than institutional.** SECO's project components that focused on improving institutional management often leaned more toward very specific on-the-job training than broader institutional reform. In the Power Loss Reduction Project in Albania, for example, the objectives of reducing commercial losses was mostly limited to training staff on the technical tasks of meter repair and operation of the billing system, rather than the broader (and much more intractable) governance problems that are the source of commercial losses.

The highly technical, on-the-job training that SECO provides was generally successful and appreciated by beneficiaries. However, reducing commercial losses and other institutional problems may require a more robust combination of technical and institutional reforms.

- **SECO took on an *ad hoc* leadership role on projects in trouble.** In parallel and co-financed projects in Albania and Romania, SECO staff and consultants spent more time and resources than planned working to resolve project delays. SECO was not the lead donor on these projects, but ended up taking more of a leadership role to resolve problems preventing the projects from moving forward.

- **SECO has a comparative advantage of being flexible and quick to respond.** As noted in Section 3, SECO can often move more quickly and flexibly than other, larger donors, to provide initial funds that donors can leverage for larger projects. We believe this flexibility is a function of SECO's small size, its use of grant funding instead of loans, and a general practice of not imposing many conditions on its grants (because conditions take time to negotiate). Larger donors appreciate the fact that SECO can move quickly and flexibly to fund work they can leverage to finance larger scale projects.

6 Recommendations

The lessons identified in Section 5 inform our recommendations. Our recommendations are intended to help SECO:

- Improve where it needs, primarily in the area of project efficiency
- Do more of what it already does well.

As in the discussion of lessons in Section 5, we distinguish between recommendations for SECO's programming and its project implementation.

6.1 Recommendations for SECO Programs

We recommend that future funding for SECO programs:

- **Focus interventions on Level 3 (services/supply of equipment) operations.** SECO's funding of services and equipment, coupled with extensive on-the-job training, has been the most effective. SECO's interventions at Level 2 (institutional management) have been effective to the extent that the intended outcomes are achievable through technical, rather than institutional inputs. SECO's approach has been to lead with capital expenditure, but to remain active in the policy dialogue. SECO's projects—even in countries like Albania and Kyrgyzstan—have had positive outcomes, despite the slow pace of reform.

SECO would need to devote considerably more resources if it wanted to have a larger role in policy advisory and institutional reform. A stronger policy advisory role would mean more time required of staff from SECO headquarters, but also additional local staff who specialize in the energy sector.

There is not much historical evidence to suggest that more money spent on policy advisory and institutional reform would be money well spent. As examples of performance indicators related to institutional reform:

- Total electricity losses (technical and commercial) **increased** between 1992 and 2007 in Albania and Kyrgyzstan, despite considerable resources devoted by many donors to institutional reform.³⁰
- Tariffs remain consistently below sustainable costs of service in all of the case study countries.

These examples to illustrate the difficulty other, larger donors have had in pushing institutional reform. A reallocation of resources to more policy advisory—without increases in staffing and budget—would detract from what SECO currently does very well, and would not likely be effective.

- **Continue to participate actively in dialogue on policy and institutional matters.** The recommendation above does not mean that SECO should stop providing funding and advice on policy and institutional matters. As noted throughout this paper, SECO receives high marks from beneficiaries

³⁰ World Bank. World Development Indicators Database.

and other donors for its informal advice on policy advisory, and work through facilities like PEP-SEI. The recommendation to focus on Level 3 operations applies only to components funded directly through bilateral, parallel, or co-financed projects.

- **Decide whether Swiss Value Added is an objective or a method.**³¹ The Swiss Value Added rule has drawbacks as a method of delivering aid, but may be a reasonable objective for SECO. Countries tie aid for domestic economic or political reasons, not for the benefit of aid recipients. As a policy objective, this is understandable and defensible. Tied aid is common and aid recipients rarely object to the procurement rules that come with grant funding. In Switzerland’s case there have perhaps been fewer objections because of the extremely high quality of Swiss goods and services.
- **Continue the use of grants instead of loans.** SECO asked us to specifically analyze whether it should continue providing grant funding, or, in some cases, consider providing loans. We recommend that SECO continue—as it has done—providing grant funding only and not loans.

Beneficiaries and other donors like the fact that SECO provides grants instead of loans. Beneficiaries like grants for obvious reasons. Other donors like it because they can leverage the grant funding for larger projects, or future projects. We think grant funding is more sensible than loans for SECO energy projects because of:

- The additional administrative burden of determining creditworthiness for loans, negotiating conditions, and administering the loan
- The fact that many of SECO grant beneficiaries are not yet financially viable. Many state-owned utilities that benefit from SECO grant funding still fail to recover their full costs of service.

- **If focusing on clean energy, focus on demonstration projects.** We understand that one of SECO’s renewable energy and energy efficiency projects (collectively “clean energy” projects) are strategic priorities for SECO. Because many donors with more resources than SECO also intend to focus their aid increasingly on clean energy, it will be important for SECO to identify areas where it can make an impact and complement other donor activities. Grant funding is well suited for clean energy projects because advancing clean energy is often about removing financial barriers (returns are too low, or payback periods too long) and informational barriers (potential investors and lenders do not understand clean energy projects and their potential returns). Demonstration projects are a good use of grant funding because other donors can build larger scale-up projects around the pilots. Larger donors may have more trouble mobilizing resources for small pilots.

³¹ For the purpose of this evaluation, we agreed with SECO to treat Swiss Value Added as a method and not an objective. We think SECO may wish to revisit this discussion internally following the completion of our evaluation.

- **Have a sustained presence, focus resources.** Having a sustained presence in a country can improve the efficiency and effectiveness of SECO’s interventions. As described in Section 5, SECO and its consultants initially underestimated the difficulty of working in these countries. A sustained presence in a country will lead—as it did in Albania and Kyrgyzstan—to more realistic assessments of the time and resources required to complete projects. A sustained presence also makes SECO more effective as a policy advisor and boosts its credibility with beneficiaries.

This recommendation implies a need to focus SECO’s limited resources on fewer, rather than more countries. SECO’s assistance will be more efficient and effective if it commits for the long-term, to a select group of countries, rather than dabbling in many.

- **Know when to stop funding.** A challenge for SECO, in the future, will be to determine when to cease grant funding. Some project beneficiaries are commercially unviable because their government owners, or regulation, prevent them from operating on a commercial basis (for example, by prohibiting the disconnection of nonpaying customers, or preventing necessary tariff increases). Household affordability and cost-of-service studies can help SECO know when this is the case. If other donors are not funding such studies, SECO should. Grant funding for a utility that—without political intervention—could operate on commercial terms is counterproductive to SECO’s and other donors’ efforts to reform the sector.

6.2 Recommendations for SECO Projects

We recommend that, for future projects SECO:

- **Let the country context guide the design.** The overall quality of governance in a country can help guide SECO in thinking about how to implement projects. As shown in Section 5 and Appendix G, quality of governance is a good rough guide to project efficiency. SECO can therefore improve its efficiency by:
 - Working more in countries with better governance, and less in those with worse governance, or
 - Taking different approaches in countries with worse governance. Several of the bullets below suggest how SECO’s approaches could be different in these countries.
- **Reconsider the local counterpart contribution.** Projects delays were often the result of local counterparts failing to contribute what they had promised (for example, civil work or co-funding). In theory, requiring contributions from local counterparts are meant to ensure “buy in” and “ownership”, but we think SECO’s practice of housing the PMU in the beneficiary institution (coupled with our recommendation below about conditionalities) also achieves this objective. Requiring a local counterpart contribution may make more sense in countries with better overall governance indicators and higher levels of income, as there is a greater

likelihood that the beneficiaries will have the resources and ability to provide their contribution.

- **Expect the unexpected.** Many of SECO's projects were implemented on time and within budget, but some showed the benefit of having a contingency that prevents valid supplier claims from disrupting the scope or pace of a project. It is our understanding that all SECO projects have a contingency, but differ in terms of the size of the contingency and project managers' willingness to use it. We recommend SECO consider allocating (and using, when necessary) larger contingencies to projects in countries with poorer governance indicators.
- **Use grant conditionalities which ensure the quality of the PMU.** The grant agreements we reviewed did not often impose policy or institutional management conditions on beneficiaries. We generally view this as positive. The success record of donors using conditionalities to bring about reform has been mixed, at best. We therefore do not recommend SECO begin imposing conditionalities related to policy or institutional reform.

However, SECO could consider imposing some conditionalities designed to improve the efficiency of its projects. As described in Section 4, one factor which undermined the efficiency of SECO's projects was the replacement of PMU directors. As one possible solution to this problem, we recommend SECO consider integrating into its grant agreements conditions which require:

- A minimum level of qualifications of the PMU director
- Project implementation and reporting milestones, tied to the logframes that SECO now uses as part of its monitoring and evaluation procedures.

SECO will not be able to insist on the hiring or retention of a specific person for the PMU, but can help better ensure that the person has the right qualifications for the job, and that, if they don't fulfill their duties, SECO has some leverage to require their replacement.

- **On co-financed projects, put SECO consultants in leadership positions.** In Romania and Albania, SECO staff and consultants fulfilled *ad hoc* project management roles when lead donors were unable. Co-financing projects seem to have been more successful overall when SECO consultants provided project management assistance to the lead donor. SECO is therefore better able to keep track of the project's progress, and step-in if the project runs into difficulties. We recognize, however, that this may be difficult to do systematically on every co-financed project.
- **Create internal incentives for running effectively, as well as efficiently.** Many donors gauge progress in terms of disbursement. Project delays hurt a project officer's disbursement targets, but may be necessary for good reasons (for example, if changing circumstances mean that the original project design is a poor fit for a beneficiaries needs). As SECO further develops its monitoring and evaluation procedures, we recommend that

assessments of project effectiveness be integrated into assessments of staff performance, as it is currently being integrated into project and portfolio performance. We are unfortunately not familiar enough with SECO's internal management procedures to give a more specific recommendation. However, we think it is important that project officers—and SECO in general—be recognized for decisions that improve project effectiveness (or other criteria), even if efficiency is compromised and disbursements are slower than had been anticipated.

- **Integrate stakeholder feedback into project design and monitoring.** SECO's interventions were generally highly relevant. We recommend that SECO strive to maintain a record of highly relevant projects by building more formal stakeholder consultation processes into project design. We recommend, specifically, that SECO focus on collecting feedback from energy service customers of institutions it is funding. This will improve the relevance, visibility, and the monitoring of its projects.
- **Adopt standardized results chains.** Related to the previous bullet, we recommend that SECO adopt standardized results chains for its different levels of operations, and standardized indicators at each level of results. Standardization, in turn will enable aggregation of results and cross country comparisons, and eventually a complete management information system for evaluations. We suggest results chains and standard indicators in this paper.

Appendix A: Approach Paper

Independent Evaluation

SECO development cooperation in the Energy sector in Eastern Europe and Central Asia

APPROACH PAPER

- 1) Background
 - 2) Purpose and rationale behind an independent evaluation
 - 3) Objectives and focus of evaluation
 - 4) Key evaluative questions
 - 5) Deliverables
 - 6) Process and methodology
 - 7) Evaluation team
 - 8) Reference materials
-

1-Background

1.1-Characteristics of the energy sector in Eastern Europe and Central Asia

Since the beginning of the nineties, the power sector in Eastern Europe and Central Asia has been severally affected by the disintegration of the Soviet Union and the consequent split of countries (Central Asia and Eastern Europe) or destroyed by wars (South Eastern Europe). Construction of energy plants has been halted, and maintenance of existing infrastructure has been neglected due to lack of funds and inappropriate tariff policies. In case of investments, those have been limited and mainly focusing on urgent repairs.

In those countries, the energy sector is characterised by:

- Severe underinvestment and lack of financial resources for the rehabilitation and modernisation of existing technologies and infrastructures;
- Institutional framework in the energy sector dominated by the State. Power utilities are in the majority of cases owned by public entities and are not economically sustainable;
- Involvement and investment from the private sector very limited, even nil;
- Pressure on the distribution networks to answer to high growth in electricity demand, with severe overloading of the distribution system during heating periods;

- Transmission and distribution networks characterised by high losses and lower reliability;
- Regular power cuts;
- Tariffs insufficient to cover the operational costs and therefore further deterioration of the infrastructure;
- Low levels of collection (non-payment of invoiced electricity) and thus accumulation of large payment arrears;
- High governance and corruption risks;
- Increased pressures on the environment and low awareness of energy efficiency;
- Production relies mainly on coal and gaz.

Against this background, many countries have embarked on reforming their power markets, but the risk of collapsing of the power sector still exists in many countries, putting at stake the safety of many plants but also the availability to the population of reliable electricity services. This serious energy situation does not only impair the quality of life, but also hampers any business activity.

1.2-Rationale of SECO interventions in the energy sector

As part of its support in the domain of infrastructure financing, the State Secretariat for Economic Affairs - SECO is providing financial and technical assistance in the energy sector. The overarching goal of SECO interventions is to improve the living conditions and to contribute to the economic development by ensuring reliable and financially sustainable supply of competitive and environmentally sound energy. To improve access to energy in developing countries is considered as a means of reducing poverty and is therefore a key pillar of SECO economic development cooperation.

SECO support is focusing on three main areas:

- *the provision and strengthening of energy infrastructures*: financial and technical assistance for physical rehabilitation of equipments;
- *the improvement of public utilities management*: capacity building to improve management performance of the energy utilities (corporate governance, financial sustainability and transparency) in order to attract potential private investor. The rationale for private sector participation is that the investment requirements of the sector are very high and far exceed Government's financing capacity;
- *the implementation of structural reforms through intensive policy dialogue with other donors*, in order to i) facilitate the development of a regulatory framework for efficient operations, and ii) increase the level of electricity tariffs toward full cost recovery, while at the same adopting measures to compensate for tariffs burden on the poor.

SECO interventions in the energy sector are characterised by the following modalities:

- *Loans vs. Grants*: while multilateral partners are usually providing loans to their borrowing countries, SECO support is being provided in the form of grants in Eastern Europe and Central Asia, taking into account the weak financial

capacities of these countries. The trade-off for deciding about a grant than a loan is that the project should be economically viable and commercially not profitable.

- *Social safety nets*: in order to ensure access to the poor to energy power and to limit the burden of tariffs increase, SECO is supporting social safety nets either through the establishment of counterpart funds, to be allocated to the social sector budget or through targeted subsidy mechanisms to low income consumers;
- Importance of *cofinancing/parallel support* and very limited bilateral intervention: due to difficult environments/context of intervention and also to the size/cost of the projects, SECO's infrastructure projects are mainly realised in form of cofinancing arrangements where international financial institutions (IFIs) bear the overall project responsibility;
- Importance of *donor coordination* to harmonise interventions and to acquire sufficient leverage in policy dialogue;
- SECO *procurement rules* for infrastructure projects impose (against the legal background of the framework credit) at least a 50% Swiss added value in the purchasing of equipment and services.
- When feasible, joint implementation under the *Kyoto mechanism*: revenue of the sale of achieved emission reduction units are shared between Switzerland and the beneficiary country.
- Promotion of *public-private-partnership* (PPP) as a means to mobilise private resources, know-how, new management methods and new technologies. PPP does not mean privatisation. Instead the State retains influence by continuing to own the facilities while clearly defining the obligations and the latitude accorded to its private partner. PPP models range very differently.

In addition, two major transversal themes are carefully monitored in the implementation of energy projects:

- *Good governance* in the energy sector: promotion of corporate governance in energy utilities and good practices in the sector. In a context of weak rule of law, tampering with meters, illegal connections, bribing of meter inspectors, corrupted practices for not paying the used services, weak management of energy utilities, etc. are flourishing activities which impair the proper functioning and image of the whole system, and therefore potential investors are highly reluctant to enter the energy market.
- *Environmental efficiency*: for several reasons, but incl. technical losses, the energy sector is often highly polluting and in critical need of modernisation. => need for more effective and energy-efficient technologies (supply side efficiency) and for increased public awareness of efficient energy use (demand side efficiency), in order to reduce adverse environmental and health effects. SECO interventions shall therefore aim at progressively addressing environmental issues/climate change while contributing to fulfil important rehabilitation needs.

Though the aim of SECO is clear in terms of development of a well functioning and sustainable electricity sector, no sectoral paper has been developed for external

dissemination to partners. However, some sectoral guidelines have been elaborated and discussed in internal workshops, and are now used as reference for any support in the energy sector.

2-Purpose and rationale behind an independent evaluation

The independent evaluation of SECO approaches and interventions in the energy sector in Eastern Europe and Central Asia will serve two main purposes:

- To *assess* the contribution of SECO interventions in the energy sector and
- To *learn* from past experiences in order to continuously improve SECO cooperation measures, instruments and approaches and to integrate the results into ongoing and new projects.

SECO infrastructure interventions in the energy sector started in the mid-nineties. The current portfolio (see document in Annex 1) in Eastern Europe and Central Asia is composed of **~11 ongoing projects**, with a value of more than **CHF 100 millions**. Several projects have already been finalised, however very few external evaluations have been carried out in the energy sector.

Taking into account the size of SECO portfolio in the energy sector in Eastern Europe and Central Asia, but also taking into account the long term experiences of SECO in this infrastructure domain, an independent evaluation is highly timely and content-wise appropriate. The outcome of an independent evaluation will not only contribute to the ongoing implementation of projects and to future development of the infrastructure portfolio, but shall also provide important accountability results and lessons learned in view of the new framework credit for SECO cooperation with Eastern and Central Asia countries (to be presented to Parliament and to the Federal Council in 2011). An independent evaluation should serve the purpose of analysing the relevance of SECO approach in the energy sector, of analysing the impact of SECO interventions at a larger level of economic development and of contributing to the institutional learning within SECO. The evaluation has therefore a dual purpose, summative and formative.

3-Objectives and focus of the evaluation

3.1-Objectives

The main objectives of the independent evaluation are to review the achievements of SECO approach in the energy sector and to provide findings, conclusions and recommendations on how:

- SECO interventions in the partner countries have contributed to the objectives of SECO approach in the energy sector, namely to contribute to the development of a well functioning, reliable and sustainable electricity sector and to achieve energy efficiency by reducing technical and commercial losses (high system losses and high operating costs), while reducing as well emissions of pollutants.

- SECO approach in the energy sector has contributed to SECO overall aims of supporting partner countries in their sustainable and environmentally friendly economic development;

The main objective of the independent evaluation is to analyse the results emanating from SECO support in the energy sector, when compared to its pre-defined objectives, and to draw out the key lessons in order to help improve the relevance, effectiveness, efficiency, and sustainability with regard to output, outcome and impact of the on-going projects as well as of future projects in the energy sector.

3.2-Focus and scope

The evaluation shall cover energy programmes and projects designed and implemented during the 1995-2008 period (see Annex 1). Although the geographical coverage of the evaluation includes all SECO priority countries in Eastern Europe and Central Asia where energy projects have been supported, the evaluation will give a special focus on ~3 countries, tentatively identified Kyrgyzstan, Serbia and Albania where field missions will be undertaken. Final selection will be done at the time of the inception report, while keeping in mind which country could be selected for an in-depth impact assessment depending on the availability of data. These countries are supposed to provide a fair sample of different type of interventions supported by SECO over the years, while not having been recently implicated in an external evaluation. If other countries are meant to be particularly interesting in terms of innovating approach (for e.g. Macedonia for the efficiency component), they will also be thoroughly analysed.

The areas to be reviewed should concentrate on

- On the *strategic intent* in order to assess the relevance of SECO strategic approach in the energy sector. This should include as well an analysis of the relevance of the mix of approaches (technical assistance, financial assistance, capacity building and policy dialogue) applied by SECO in the energy sector;
- On the *projects' output, outcome and impact* (whenever possible) in terms of economic, social and environmental development;

Taking into account that several of SECO interventions are either cofinanced or implemented in parallel to other donors' interventions, mainly multilateral, the evaluation will focus on SECO support while taking into account the complementarity and coherence with other donors' approaches.

4-Key evaluation questions

If possible, this independent evaluation shall contribute to efforts towards a results-oriented approach with a focus on outcome and impact and less on outputs, which are usually well-known. When considering the areas of intervention of SECO support, and using as reference the DAC/OECD evaluation criteria, the evaluation shall answer to the following preliminary questions. The list is not exhaustive and additional relevant questions might be identified by the evaluators, which will be mutually agreed upon:

Relevance:

- Are SECO projects addressing country needs/objectives in the context of the country's defined energy reform?
- What is the level of ownership/commitment by the country/government to sustain their political commitment to energy reforms?
- To what extent the political economy has been sufficiently assessed and taken into consideration when designing projects' objectives?
- What is the complementarity of SECO projects to other donors support?
- What is the comparative advantage and value added of SECO interventions?

Effectiveness:

In terms of outputs:

- What have been the levels of achievements of SECO projects with regard to
 - o **Provision of goods and consultancy services**
 - o **Rehabilitation**/Installation of energy infrastructure/systems
 - o **Training** of operational and maintenance staff
 - o **Advisory services** on institutional framework/reform
 - o **Awareness raising** on energy efficiency

In terms of outcomes:

- To what extent SECO contributions in the energy sector has contributed to:
 - o Better **service quality and sustainability** (availability and reliability) for electricity consumers (households and companies)
 - o **Affordable access** to electricity to households (incl. the poor) and to companies
 - o **Reduction of technical and economical losses** through higher efficiency
 - o **Improved management/financial viability** of energy companies
 - o **Better governance** in the energy sector

In terms of impact:

- What are the direct and long term effects of Swiss supported actions in terms of:
 - o improved **living conditions**
 - o increased **economic opportunities and productivity**
 - o mobilisation of **private sector investment/participation**
 - o **better environment**

Efficiency:

- What are the factors – in terms of efficiency – that have influenced the results at output, outcome and impact levels?
- In terms of project implementation modalities, to what extent funding, personnel, regulatory, administrative, procurement resources and procedures have contributed or hindered achievements of the intended results?
- With regard to the specific procurement rule applied in the infrastructure sector (50% of Swiss goods and services), what have been the potential consequences – positive and negative - for beneficiaries but also for the Swiss business sector? What has been the impact on the Swiss visibility?

- If feasible, a cost-benefit analysis should be conducted in order to identify the social and economic benefits of SECO investments.

Sustainability:

- The extent to which the results and impacts of the projects are being, or are likely to be maintained in the longer term? What are the main opportunities and threats with regard to sustainability of achievements?

Additional questions:

- What external factors (political, institutional, social and economic) have led to the success (failure) of projects with regard to outputs, outcomes and impact?
- What internal factors (project planning, approach and implementation) have led to the success (failure) of projects with regard to outputs, outcomes and impact?
- What have been the contributions of SECO projects to the transversal themes of environmental efficiency and good governance in the energy sector?
- What have been the experiences made and results achieved by other donors in the sector?

Based on the findings and conclusions, the evaluation should formulate recommendations to SECO approach in the energy sector and for the implementation of ongoing projects as well as for the design of any new project, in particular in Eastern Europe and Central Asia.

5-Deliverables

The evaluation team should provide the following documents in the course of the assignment and according to an agreed time schedule:

- i) an evaluation work plan at the beginning of the assignment
- ii) an inception report including:
 - a. a systematic overview of all projects' intended objectives in terms of inputs, outputs, outcomes and impacts including indicators and risks/constraints at each stage of the result chain (=reconstructing a logframe) against which the evaluation shall aim at assessing the results;
 - b. the methodology, data and countries' selection to be used for the case studies, which should provide a more detailed outcome and impact evaluation. The evaluation team should also clearly indicate which selection of indicators with regard to economic, social and environmental outcomes/impacts it plans to use and should refer to data availability and reliability;
 - c. a literature review of other theoretical and empirical papers on development aid in the energy sector and how this should be used for the case study evaluation, e.g. benchmarks for results achieved by SECO;
 - d. a list of remaining documents expected from the projects and an estimate of the support expected from SECO respectively its field offices in the organisation of the evaluation.
- iii) at the end of the assignment, a synthesis evaluation report containing the findings, conclusions and recommendations, not exceeding 40-50 pages (plus

annexes), including an executive summary, as well as for each evaluated case study country, a case study report, not exceeding 15-25 pages.

The report should be written in English, in a way that will facilitate their subsequent use for dissemination of the results and recommendations of the evaluation. It is intended that the outcome of this independent evaluation will be made available to any interested third parties. It will be as well published on SECO internet website and on the DAC Evaluation website.

6-Process and methodology

6.1-Methodology

For the inception report, the evaluation will review the relevant literature, projects' documents/reports/reviews, interviews at SECO/WE headquarter and telephone interviews with implementing partners and consultants, as well as with selected experts.

For each of the case study countries, which shall provide a qualitative but more importantly detailed quantitative analysis and should go beyond inputs and outputs, the evaluation team will also undertake interviews with local partners, suppliers, stakeholders and shareholders, other donors and beneficiaries (direct and indirect). Taking into account that many projects are implemented in parallel to projects financed by other donors (multilaterals or bilaterals), it is of utmost importance that those partners are consulted (on the field and with their headquarters) in order to ensure close interaction and to clearly identify and assess the complementarity of SECO support. Where necessary/feasible focus group surveys will be conducted. In addition, secondary data should be used whenever possible to evaluate outcomes and impacts quantitatively with regard to relevance, effectiveness, and efficiency.

A Steering Group will be established, comprising of SECO representatives (Mrs. C. Cudré-Mauroux: Deputy Head of Evaluation and Controlling Division, Mr. G. Bonvin: Deputy Head of Infrastructure Division, Mrs. M. Gysin: Program Officer Infrastructure Division, Mr. S. Denzler: Program Officer Trade promotion), of Prof. I. Guenther: NADEL/ETH, Chair of Development Economics, of Mr. S. Novak: Secretariat of REPIC Initiative and Managing Director NET Nowak Energy & Technology Ltd., and of Mr. J-C. Fueg: Deputy Head International Division of the Swiss Federal Office on Energy. Its main tasks will be to accompany and monitor the whole process as well as to provide consultation on the different deliverables. The Steering Group will ensure the quality of the whole process, by securing that consultants have access to all necessary information and that feedback on key outputs of the evaluation is consolidated among several actors

A discussion on the approach involving the evaluation team and the Steering Group will develop a common understanding of the evaluation process, scope and focus on the basis of the draft inception report. While a synthesis workshop will present the draft evaluation report for feedback and validation on the conclusions and recommendations.

At the very initial stage, it is preliminary identified that the evaluation process should start with a systematic overview of all the projects in terms of inputs, outputs, outcomes and impacts with a good balance of qualitative and quantitative indicators. Then, the case study countries should aim at deepening the identification of

outcomes, and if possible impact, of a limited number of projects. The further discussions on the methodology will take place with the evaluation team during the briefing meeting on the Approach Paper and when the Inception Report will be available.

6.2-Process

The main steps of the evaluation are *tentatively* depicted as follow, some flexibility remains in the agenda according to consultants' availability:

Activity	Tentative deadline	Responsibility
Draft Approach Paper	June 15 th	CUD in consultation with WEIN, Steering group and Evaluation Committee
Call for offers	June 20 th	CUD in consultation with WEIN
Selection of consultants	July 30 th	CUD in consultation with WEIN
Contract with Evaluation team	August 15 th	CUD
Discussion and clarifications on the Approach Paper with the Evaluation Team	August 30 th	Evaluation officer + Consultants + Steering Group
Drafting of the Evaluation Work Plan and discussion with Evaluation Officer	Sept. 15 th	Consultants and Evaluation officer
Submission of the Inception Report and discussion with SECO/WE	Nov. 6 th	Consultants + Evaluation officer + Steering Group
Missions in countries	Nov. – Jan.	Consultants
Draft Evaluation Report and discussion with SECO and partners	February-March	Consultants + Evaluation officer + Steering Group
Final Evaluation Report	March-April 2010	Consultants
Presentation of the Evaluation Conclusions and Recommendations to SECO/WE Independent Evaluation Committee	Spring 2010	Evaluation officer

6.3-Organisational arrangements

For any interaction on the conduct, scope, organisation, logistic and reporting, the evaluation team will interact with the SECO/WE Evaluation Officer, Mrs. Catherine Cudré-Mauroux.

To get access to all the background and necessary information, the evaluation team will refer to SECO/WE thematic division "Infrastructure financing", Mr. Guy Bonvin.

For the field visits, contact will be established with the relevant Swiss Cooperation Offices in the respective countries.

The evaluation team is contracted by SECO/WE Evaluation and Controlling Division, under the supervision of Mrs. Catherine Cudré-Mauroux. All the deliverables (see chapter 5) are submitted to the evaluation officer, Mrs Catherine Cudré-Mauroux, who is responsible to organise the appropriate consultation processes. Consolidated feedback to the Evaluation team on the deliverables will be as well organised and forwarded by SECO/WE Evaluation Officer.

7-Evaluation team

The Evaluation team consist of a team of international evaluators, and one national evaluator in each of the respective countries to be visited.

The *international evaluators* are expected to have the following profile:

- Professional evaluation experiences, familiar with DAC Evaluation guidelines;
- One of the consultant should have professional expertise in evaluation methodology (incl. qualitative and quantitative methods in impact assessment), while the other one should be specialised in the energy sector (incl. policy reforms);
- Field experiences in developing and/or transition countries;
- Strong analytical and editorial skills and ability to synthesise;
- Strong ability to interact with a multitude of partners and beneficiaries at government, donor and private sector levels
- Fluent in English

The international evaluators do not need to come from the same agency, a consortium can be established.

The *national evaluators* are expected to have:

- Specific in-country experiences in the energy sector in the respective country;
- Sound knowledge of the international donor community in their countries;
- Not to have been closely associated with SECO/WEIN energy projects in the respective country;
- Fluent in written and oral English.

8-Reference materials

- SECO/WE Development Cooperation Strategies
- SECO/WEIN projects' decision notes and projects' documents
- Projects' annual reports and review reports
- Any other relevant document.

All the reference materials will be made available on a CD. As well a list of resource persons will be prepared.

Appendix B: SECO Energy Sector Strategy, 2009

L'énergie, un pilier de l'instrument « Financement des infrastructures »

Note directrice (Policy paper)

B.1 Introduction

B.1.1 Pourquoi une note directrice WEIN sur « l'énergie »

L'énergie, sa nature et sa disponibilité auprès des utilisateurs, est un facteur essentiel, sinon critique, du développement économique. Le couplage entre disponibilité d'énergie et activité économique est un fait établi. En même temps, la production et l'utilisation de l'énergie sont une source majeure pour la pollution de l'environnement et le changement climatique. De surcroît, il existe de fortes disparités entre les pays en ce qui concerne l'intensité énergétique³² de leurs économies (énergie consommée rapportée au produit intérieur brut (PIB)) qui peut elle-même constituer un frein au développement économique. Ainsi, l'intensité énergétique est la plus haute dans la plus part des pays en développement. Elle est 6 à 8 fois supérieure dans les pays disposant d'une économie en transition, que dans les pays les plus avancés d'Europe³³.

Dans la coopération au développement et à la transition l'approvisionnement en énergie joue un rôle important. Le secteur de l'énergie est mentionné dans les trois messages relatifs aux crédits cadres en cours à l'Est (RK IV), au Sud (RK VII) et pour le financement de la contribution à l'élargissement de l'Union Européenne (EB), dans le rapport de la politique énergétique extérieure de la Suisse³⁴, dans la plupart des stratégies pays ainsi que dans la stratégie climat du domaine de prestation WE, comme un champs d'action important de la coopération économique au développement. C'est également un secteur, dans lequel WEIN peut recourir à une très grande expérience accumulée depuis de nombreuses années.

Il est aisé de comprendre pourquoi le secteur énergétique constitue un des deux piliers fondamentaux, à côté du secteur de l'eau, de l'instrument de financement des infrastructures (WEIN) au sein de la coopération économique du SECO.

Dans ce secteur plein de défis pour les pays partenaires du SECO, l'instrument WEIN entend ainsi apporter sa contribution originale et complémentaire, aux buts mentionnés dans les papiers stratégiques mentionnés ci-dessus. La présente Note Directrice a pour but d'accroître la cohérence, la pertinence ainsi que la visibilité de l'instrument WEIN dans le secteur énergétique. Elle sert de cadre de référence pour les opérations de la section WEIN ; elle l'aide ainsi à accomplir son mandat.

Le présent papier rappelle tout d'abord les buts généraux de l'instrument « Financement d'infrastructures » de la Coopération Economique du SECO et donne

³² Les définitions des termes clé sont données dans l'annexe 1

³³ Des valeurs clé pour une sélection de pays d'intervention de WEIN sont données dans l'annexe 2

³⁴ Voir en particulier le chapitre 8 du Rapport sur la politique énergétique extérieure de la Suisse d'octobre 2008.

un aperçu de l'approvisionnement en énergie. Une revue des défis du secteur énergétique et des expériences du secteur WEIN permet ensuite d'identifier les domaines où le financement des infrastructures de la coopération économique présente un avantage compétitif, de part son expérience et ses compétences. Sur cette base, l'approche « énergie durable », du point de vue économique, environnemental et social, choisie par l'instrument WEIN est abordée jusqu'à sa déclinaison opérationnelle et à l'inventaire des moyens et partenaires envisagés.

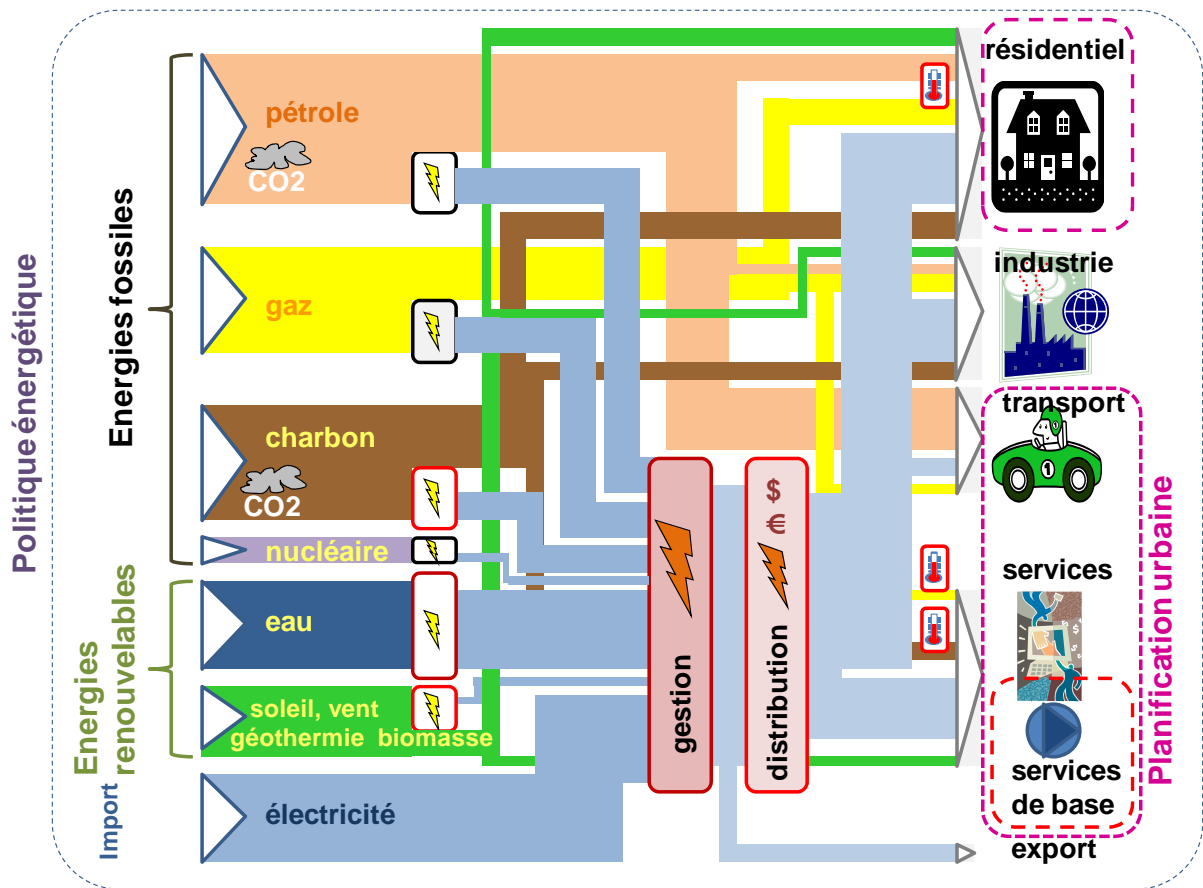
B.1.2 Buts généraux de WEIN

Le financement des infrastructures contribue à la croissance durable des pays partenaires en soutenant la fourniture, à la population et à l'économie, de service de base dans les secteurs de l'énergie (principalement l'électricité et chaleur) et de l'eau (et assainissement) qui sont durables d'un point de vue économique, environnemental et social (accès, tarifs).

La fiabilité et la qualité des infrastructures permet d'attirer des investissements, soit directement dans le secteur, par des partenariats public-privé, soit dans d'autres secteurs économiques recourant à ces infrastructures. Ainsi une empreinte réduite sur l'environnement (notamment par la réduction d'émission de gaz à effet de serre) des infrastructures constitue un pouvoir d'attraction supplémentaire de l'économie d'une région et facilite son intégration dans l'économie mondiale.

B.1.3 Aperçu : Secteur de l'énergie

Le secteur énergétique est caractérisé par un ensemble complexe de flux d'énergie : ceux-ci diffèrent par le combustible ou la source de production primaire utilisé, qui est soit fossile ou renouvelable. Chaque flux dispose de son propre système de gestion, de transport et de distribution. Ces énergies dites primaires sont transformées lors d'une étape plus ou moins proche du consommateur en électricité ou en chaleur pour satisfaire les besoins de ce dernier. La figure 1 illustre de façon schématique et simplifiée les caractéristiques du secteur énergétique.



Légende





-  Système de chauffage centralisé / à distance
-  Système de production d'énergie électrique
-  Système de gestion / transmission / distribution de l'énergie électrique
-  Objets principaux d'intervention pour le financement des infrastructures (WEIN), voir chapitre 4

Figure 1 : Schéma du secteur de l'énergie avec les flux énergétiques type et des objets d'intervention dans le domaine énergie du financement des infrastructures du SECO. Les flux ne sont pas représentés à l'échelle.

Cette grande complexité et la multiplicité des acteurs, à la fois partenaires et concurrents, est déjà un défi en soi, notamment pour ceux qui définissent une politique énergétique. Il est en effet loin d'être trivial d'avoir une vue d'ensemble et de maîtriser toutes les interfaces avec l'économie. Il s'agit alors d'agir d'une part sur la source de production et d'autre part sur l'efficacité du système et ceci à quatre niveaux :

- 1) au niveau du pays en agissant sur l'intensité énergétique de son économie (GJ/unité de PIB) ;
- 2) au niveau de la production en améliorant le taux de rendement de la transformation entre énergie primaire et secondaire ;

- 3) au niveau de la transmission/distribution en diminuant les pertes physique du réseau ; et
- 4) au niveau du consommateur en augmentant le rendement.de la conversion de l'énergie consommée et de la prestation obtenue (p.ex. chauffage, climatisation, voitures, système de transport, pompage, procédés de production).

La consommation énergétique globale est en constante augmentation, de manière particulièrement marquée, en termes absolus, dans les pays à moyen revenu. Le secteur énergétique dans son ensemble est confronté à quatre défi majeurs, qui sont décrits dans le chapitre suivant : la sécurité énergétique, l'efficacité énergétique, les énergies renouvelables ainsi que l'accès à leur financement.

B.2 Défis du secteur énergétique dans les pays en voie de développement ou de transition

B.2.1 Défi 1 : sécurité énergétique, croissance de la demande en énergie et pérennité environnementale

La priorité numéro un de chaque pays est la sécurité énergétique. Il s'agit donc pour les responsables des politiques énergétiques d'assurer que la quantité d'énergie qui entre à gauche sur le schéma de la figure 1 est suffisante. La compatibilité environnementale des sources énergétiques revêt généralement une priorité moindre dans les stratégies nationales. Pour beaucoup de pays partenaires la fluctuation des prix d'importation, les restrictions à la livraison et au transport ainsi que la raréfaction des énergies fossiles sont des défis majeurs.

A cela s'ajoute une demande croissante en énergie pour permettre la croissance économique et pour combattre la pauvreté. Par exemple, 1.6 milliards de personnes n'ont pas accès à un service de fourniture électrique stable et abordable, principalement en raison de capacité de production insuffisante. Il est en effet attendu que la demande globale en énergie va croître de 40% d'ici à 2030.

L'équilibre adéquat entre la sécurité et les besoins énergétiques et une approche qui atténue l'impact sur l'environnement et sur les changements climatiques est un très grand défi pour les pays en voie de développement et les économies émergentes. Les signaux sont à l'orange et nombreux sont les acteurs sur la plan international qui considèrent une expansion significative de l'accès abordable économiquement à une source fiable et propre d'énergie comme critique pour le futur. L'enjeu est planétaire et dépasse largement le cadre de la coopération économique de par son étendue et sa complexité. L'accroissement de la demande fait donc face à des limites et implique que la solution à la sécurité énergétique passe par la résolution des autres défis ci-dessous.

B.2.2 Défi 2 : efficacité énergétique de la transformation, du transport et de l'emploi de l'énergie.

Si accroître les capacités de production d'énergie coûte cher, prend du temps et peut être source de conflits politiques, faire mieux avec moins d'énergie semble être la réponse adéquate entre les mains d'un pays, d'un producteur ou d'un consommateur. Accroître l'efficacité énergétique des processus de production, transmission et de consommation de l'énergie apparaît comme l'évidence même : des gains d'efficacité sur l'ensemble de l'ordre de 30% sont attendus car la plus part des technologies modernes qui permettent d'atteindre cet effet sont bien établies et disponibles auprès des industries³⁵.

Toutefois les mesures pour accroître l'efficacité énergétique peinent à être mise en application, principalement en raison de certaines faiblesses récurrentes de la mise en œuvre d'une politique d'efficacité énergétique comme

- des incitations erronées (p.ex. subvention de l'énergie, tarifs forfaitaires ou tarifs trop bas), souvent motivées par des intérêts politiques contradictoires qui induisent une résistance au changement et contribue à rendre l'économie d'énergie peu ou pas attractive sur le plan individuel.
- le recours à des technologies désuètes car producteurs et distributeurs ont trop peu de moyens pour investir ou simplement par ignorance de meilleurs choix technologiques ou par habitude.
- l'absence de valorisation économiques incitatives des gains d'efficacité, les « négawatts ».

Il s'agit donc de minimiser les pertes le long du flux énergétique entre l'énergie primaire (pétrole, gaz, eau) et l'énergie utilisable (chaleur, lumière, mouvement) représentés sur la figure 1. Dans ce contexte, les centres urbains dont la population pourrait représenter 60% de la population mondiale en 2030, méritent une attention particulière car ils consomment actuellement 75% de l'ensemble de l'énergie produite et génèrent près de 90% des besoins énergétiques liés au transport³⁶, lui-même très grand consommateur de produits pétroliers.

B.2.3 Défi 3 : part des énergies renouvelables.

Dans la plupart des pays, les énergies renouvelables fossiles couvrent une minorité des besoins énergétiques, la majorité de la demande étant couverte par les énergies fossiles. Les principales raisons ce concernant sont l'existence de ressources fossiles et de centrales de production sur place ou à proximité, ainsi que la mise à disposition d'énergie à bas prix (souvent par manque d'internalisation des coûts externes dans les tarifs ou même par recours à des subventions). Beaucoup d'entre eux ont toutefois compris la nécessité, pour des raisons économiques, politiques et environnementales, de diversifier les sources d'approvisionnement et de production d'énergie

³⁵ Par exemple : moteurs industriels, pompes, éclairage, pompes à chaleur, isolation, récupération d'énergie, éléments de réseau électrique/thermique

³⁶ Source : Urban energy use and carbon mission, World Energy Outlook 2008 – Center for Integrative Environmental Research – University of Maryland.

Les énergies renouvelables sont alors généralement considérées comme une alternative valable à la dépendance énergétique extérieure et à la limitation des ressources fossiles, car leur production est souvent indigène et génère peu de pollution, en particulier de CO₂. Leur nature renouvelable est bien sûr un aspect central de leur attractivité : la source primaire, a priori « inépuisable », est soit l'énergie solaire (y compris pour la biomasse et le vent), soit l'énergie gravitationnelle (eau), soit l'énergie terrestre (géothermie). La conversion en électricité et chaleur fait soit l'objet de technologies bien établies (hydro-électrique, solaire thermique, bois), soit l'objet de technologies plus avancées (photovoltaïque, solaire à concentration, géothermie, valorisation de déchets) disponibles principalement dans les pays industrialisés. L'énergie hydro-électrique domine largement en terme de production les autres types de ces énergies, qui sont parfois qualifiées de « nouvelles » énergies renouvelables, en particulier dans les pays émergents.

L'augmentation de la part des énergies renouvelables dans le mix des flux d'énergie, largement souhaitable et désirée, implique la résolution d'un certain nombre de défis d'ordre technique, institutionnel et financier.

La disponibilité physique des énergies renouvelables, particulièrement pour l'hydro-électrique et le bois, est souvent limitée. En effet, même si l'énergie hydro-électrique est très souvent l'énergie dominante, ou à tout le moins joue un rôle clé, pour les pays possédant des massifs montagneux (p. ex : Albanie, Colombie, République Kirghize, Tadjikistan), la gestion de l'eau, ressource rare, est souvent source de conflits d'intérêts avec les pays situés à l'aval des bassins versants : les besoins de l'eau à des fins agricoles est anticyclique par rapport à ceux destinés à la production d'électricité (p.ex. Asie Centrale). Dans ce cas, la gestion professionnelle des bassins hydriques est essentielle ; elle repose sur de la qualité des données pluviométriques et des prévisions météorologiques.

La disponibilité technique et celle du savoir faire pour exploiter et gérer les installations modernes d'énergie éolienne, photovoltaïque, solaire à concentration est le défi majeur des pays à faible et moyen revenu. En outre leur intégration à un réseau électrique nécessite des compétences pointues, rarement disponibles dans ces pays, pour gérer ces sources intermittentes, notamment au travers d'un centre de contrôle du réseau. Ces compétences existent le plus souvent en Europe et en Suisse en particulier.

Le solaire thermique, de par sa simplicité, est la solution où les défis exposés ci-dessus sont les moins grands, aux conditions climatiques près, et dispose ainsi d'un très bon potentiel de développement, dans les pays d'intervention du SECO.

Finalement le coût élevé des investissements, surtout pour les nouvelles capacités hydro-électriques, et le coût de l'énergie produite, notamment en comparaison de ressources fossiles localement disponibles, est l'aspect qui ne peut être maîtrisé sans cadre institutionnel adéquat et généralement un soutien financier, démontrant au moins la viabilité de la solution. Il en résulte aussi que le recours à ces énergies est seulement approprié s'il est accompagné de mesure d'accroissement de l'efficacité énergétique et si leur exploitation et la maintenance peuvent être assurées avec une certaine pérennité.

Sur le schéma de la figure 1, cela revient à accroître la part des renouvelables, à travailler sur leur transformation en électricité ou leur livraison à l'utilisateur final. Cela concerne donc l'ensemble du diagramme.

B.2.4 Défi 4 : accès au financement et impact de la crise financière.

Le secteur énergétique fait face à un défi financier d'origine structurelle très important : des investissements massifs, dans un environnement politico-économique souvent très risqué, sont nécessaires pour développer une capacité efficace de production propre et rendre la transmission, la distribution ainsi que la consommation d'énergie plus efficiente. C'est une condition sine qua non pour assurer une croissance économique durable, de l'apport nécessaire d'énergie et de l'infléchissement de la croissance des émissions polluantes (surtout le CO₂) dans une majorité de pays, jusqu'au découplage de celle-ci avec la croissance économique.

De plus le développement des technologies ou d'approches innovatrices nécessaires à surmonter les défis du secteur de l'énergie présentés ci-dessus est caractérisé par un processus complexe et risqué, en plusieurs étapes, allant du laboratoire à la distribution large sur le marché, tel que représenté ci-contre. Les acteurs publics et privés apportent chacun dans des phases typiques du processus, où ils attendent leur plus grand retour sur investissement³⁷.

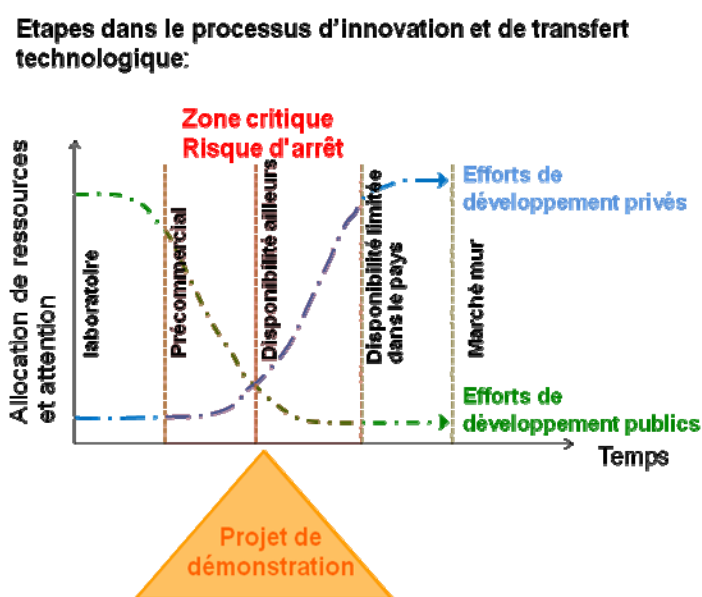


Figure 2 : Déroulement du processus d'innovation.

Cependant, il existe une zone critique où la technologie est établie, éventuellement disponible sur certains marchés, mais dont le déploiement à échelle significative ou dans certains pays en développement présentent simultanément un risque pour un acteur privé, qui est moins enclin de prendre en temps de crise qu'en temps de boom économique, et un coût probablement prohibitif pour un acteur public, particulièrement si son économie est fragile. Des conditions cadres défavorables sont une raison supplémentaire pour le manque d'investissements dans cette zone.

³⁷ En Suisse, le groupe REPIC prend bien en charge la phase laboratoire et pré-commerciale dans les pays en développement. La phase qui précède la disponibilité de fournisseurs adéquats dans un pays partenaire, dans une phase commercialement quasi viable, est bien couverte pour des organismes du type IFC ou EBRD, ils sont toutefois assez frileux en terme de risque technologique.

Le Secrétariat de la Convention des Nations Unies sur les changements climatiques (CCNUCC) estime qu'il faudrait plus de 200 milliards USD en investissements et en flux financiers en moyenne par an pour réduire les émissions de 25 % en 2030 par rapport à 1990³⁸. A long terme, le secteur privé pourrait couvrir une large part des besoins financiers pour les mesures d'atténuation (réduction des émissions) dans les pays en développement à travers le marché mondial du carbone (achat de certificats de réduction des émissions³⁹). A court et moyen terme, cependant, les transactions du marché du carbone s'avèreront probablement insuffisants et nécessiteront des actions parallèles et conjointes des secteurs publics et privés. Les défis à relever pour atteindre cet objectif de long terme, sont comme suit :

- Juxtaposition des priorités d'investissement dans le secteur de l'énergie des autorités publiques et des investisseurs et acheteurs de certificats privés. En effet, les objets visés par les uns et les autres ne sont pas forcément identiques: les premiers mettant l'accent sur les priorités macroéconomiques du pays (comme p.ex. la sécurité énergétique) qui représentent en général des investissements à long terme, tandis que les seconds privilégieront des investissements à rendements élevés propices à générer des crédits carbone de manière rapide et fiable.
- Réduction des risques liés à ces investissements qui peuvent générer des certificats de réduction des émissions dans les pays en développement.
- Diminution des coûts de certaines technologies novatrices.
- Diminution des coûts de transaction pour générer ces certificats.

Mis à part les mesures qui visent à développer et améliorer les conditions du marché du carbone lui-même, l'amélioration des conditions cadres d'investissement et d'opération dans les pays en développement ainsi que la mise en œuvre de projets de démonstration à l'échelle industrielle, avec un fort potentiel de réplification avec l'aide des fonds publics, mettant en jeu des approches innovatrices pour le pays partenaire, font partie des réponses pour relever les divers défis mentionnés plus haut.

B.3 Expériences du secteur WEIN

WEIN a une expérience de plus de 15 ans du secteur énergétique en Europe de l'Est, dans les Balkans et en Asie Centrale : durant cette période, 39 projets ont été développés pour un montant de 316 millions de CHF. Parmi ceux-ci 11 projets sont en cours correspondant à un engagement de plus de 100 millions de CHF. Une étude indépendante qui porte sur l'ensemble du programme « énergie » du secteur WEIN est actuellement en cours et livrera ses conclusions et recommandations au

³⁸ Investment and financial flows for addressing climate change: An update, FCCC/TP/2008/7.

³⁹ Les certificats de réduction des émissions (CERs) entrent dans le mécanisme de développement propre (MDP), un mécanisme de réduction des émissions de carbone au titre du Protocole de Kyoto de la Convention-cadre des Nations unies sur les changements climatiques (CCNUCC). Les unités de réduction certifiée des émissions (CER) équivalent chacune à une tonne de CO₂. Ces certificats de réduction des émissions (CERs) peuvent être échangées, vendues et utilisées par les pays industrialisés pour atteindre en partie leurs objectifs de réduction des émissions.

printemps 2010. La présente section présente les observations faites par le secteur, ainsi que celles résultant des évaluations des projets.

Dans le développement de ces projets, si l'objectif primaire a été la mise en place d'une infrastructure performante et fiable, la pérennité économique, environnementale et institutionnelle a été un objectif d'égale importance. Cela s'est traduit par un soin particulier accordé à l'efficacité énergétique, à la disponibilité d'une énergie propre, à la bonne gouvernance dans le secteur et les entreprises concernées, ainsi qu'aux réformes structurelles et tarifaires. Autant de thèmes qui jouent un rôle clé dans l'évolution du secteur énergétique aujourd'hui, en particulier en regard de son impact sur les changements climatiques et de sa contribution pérenne à l'économie en général.

L'expérience a aussi montré la nécessité de coupler un investissement qui permet d'améliorer la qualité du service pour le consommateur pour lui faire accepter les adaptations tarifaires qui résultent des réformes structurelles qui visent à assurer la pérennité financière des services industriels et qui supposent logiquement une tarification qui couvre au minimum les coûts opérationnels. Ce changement de paradigme n'est jamais une évidence dans les pays à économie planifiée ou dans ceux qui subventionnent fortement leur production indigène d'énergie fossile. Cependant, un soutien actif des compagnies de distribution d'énergie pour augmenter leur taux de couverture de comptage et d'encaissement⁴⁰, ainsi que la transparence de leur gestion, a souvent permis de déclencher un cercle vertueux qui les incite à investir, même modestement, pour améliorer leurs services et renforcer la maintenance. Nonobstant ceci, les coûts de l'énergie doivent rester socialement acceptables.

Les opérations en cours et passées ont majoritairement concerné l'énergie électrique, de la production hydro-électrique à la distribution en passant par la gestion des flux d'énergies électriques et la consommation au niveau des infrastructures de base. La raison en est double : d'une part la Suisse dispose d'un grand savoir-faire industriel en la matière, tant de conseil que de production, et d'autre part les pays de prédilection des opérations de WEIN à l'Est, originellement basé sur une économie planifiée, disposent d'une couverture électrique voisine de 100% réalisée par des installations vétustes. L'importance des systèmes de chauffage à distance et le rôle du charbon dans la production d'énergie a également motivé des interventions visant à accroître l'efficacité énergétique de ces systèmes tout en diminuant les émissions de CO₂. Le schéma de la figure 1 illustre clairement ces interventions par un trait rouge.

Finalement, le secteur énergétique, plus spécifiquement électrique, est caractérisé par le fait que la frontière de la rentabilité commerciale d'un projet est souvent rapidement atteinte, en particulier dans les pays en transition, permettant au secteur privé et au banque commerciale de s'intéresser à de tels projets. Les opérations WEIN ont ainsi fait plusieurs fois l'objet de calculs financiers élaborés pour déterminer si un projet dans ce secteur est économiquement viable mais commercialement non rentable, ce qui constitue le chemin étroit sur lequel évolue les projets d'infrastructures financés par des dons. Par ailleurs l'importance des montants en jeu appelle souvent à une action coordonnée entre bailleurs.

⁴⁰ Les seuils de déclenchement sont : taux de comptage > 50% ; taux d'encaissement > 85%

Ainsi, le riche savoir-faire accumulé dans ce domaine constitue une contribution capitale à l'approche stratégique pour le domaine énergie définie dans le présent papier

B.4 Approche et priorités de WEIN dans le secteur « énergie »

La force du lien entre le secteur énergétique et l'économie, entre la demande en énergie et la croissance économique est ainsi clairement mise en évidence. L'objectif de croissance économique durable, qui est au centre de la coopération économique, va donc nécessairement de paire avec le développement pérenne du secteur énergétique, en particulier pour ses infrastructures et leur gestion. La préservation de l'environnement et en particulier du climat est la clé de la pérennité du secteur et de sa viabilité économique sur le long terme ; elle vise à un découplage progressif de la croissance de la consommation énergétique et des émissions de la croissance économique. Cela implique en particulier un recours accru aux énergies renouvelables et une utilisation efficace de l'énergie disponible.

B.4.1 Objectifs et axes opérationnels

Dans le cadre de ses buts généraux, l'instrument de financement d'infrastructures WEIN applique une approche dans son action dans le secteur « énergie » qui entend répondre aux défis particuliers du secteur en tenant compte des capacités et ressources existantes, des expériences faites au passé et du savoir faire. Les objectifs et activités de WEIN dans le secteur sont ainsi :

Objectif 1 : Contribuer à la réduction de l'intensité énergétique de l'économie de ses pays partenaires par des mesures ciblées de renforcement de l'efficacité énergétique

WEIN envisage d'investir des fonds pour:

- rendre plus efficaces les procédés de production d'électricité et de chaleur par la rénovation ou la modernisation d'installations existantes,
- réduire les pertes techniques dans les réseaux de transmission et de distributions d'électricité et de chaleur par la rénovation, le remplacement de réseaux existants,
- réduire les pertes commerciales l'utilisation inefficace de l'énergie au moyen d'installation de compteurs et de systèmes pour une facturation des consommations réelles de l'énergie, et
- soutenir les institutions publiques pour réduire leur consommation d'énergie dans leurs bâtiments, par des mesures techniques ou organisationnelles.

Objectif 2 : Contribuer à l'accroissement de la part des énergies renouvelables dans les flux énergétiques de ses pays partenaires pour réduire la charge sur l'environnement et leur dépendance par rapport à des ressources fossiles.

WEIN envisage d'investir des fonds pour:

- favoriser le transfert technologique pour le développement de l'énergie d'origine solaire (voltaïque et thermique), géothermique, hydraulique et éolienne et de la valorisation énergétique de la biomasse et des déchets, au travers de projets de démonstration pour des infrastructures d'utilité publique et/ou servant le développement économique du pays. Le type de technologie choisie dépend du niveau économique et technique du partenaire, ainsi que de la viabilité économique et commerciale du projet, car il ne s'agit pas de substituer au marché (notamment dans le domaine éolien)⁴¹,
- utiliser le développement technologique comme catalyseur pour développer le cadre légal et stratégique dans le secteur de l'énergie (voir objectif 5), avec un focus sur l'électricité,
- développer le savoir faire technique et la mise en œuvre d'installation permettant l'intégration et la gestion d'équipement de production de « nouvelles » énergies renouvelables dans le réseau électrique
- soutenir le développement de projets basés sur des mécanismes de financement innovateur, plus particulièrement du segment de « petits projets » de quelques dizaines de millions pour qui ces mécanismes sont coûteux, et
- soutenir le renforcement des systèmes de surveillance de l'environnement (plus particulièrement de pluviométrie et de prédiction météorologique) en tant qu'outils d'aide à la décision pour gérer la ressource hydrique et pour mettre en œuvre des mesures d'atténuation ou d'adaptation vis-à-vis du nouvel environnement climatique.

Objectif 3: Contribution à l'amélioration de l'approvisionnement en énergie de l'économie et de la population dans nos pays partenaires.

WEIN envisage d'investir des fonds pour:

- étendre les réseaux d'énergie et augmenter l'accès à un service fiable de qualité, à un prix abordable,
- faciliter le négoce d'électricité pour renforcer la sécurité d'approvisionnement.

Objectif 4: Contribution au renforcement institutionnel et à la pérennité économique, environnementale et technique des entreprises publiques de l'énergie.

WEIN envisage de mettre à disposition de l'assistance technique pour:

- améliorer les processus de gestion des compagnies de services industriels au moyen de la promotion de leur commercialisation, le renforcement des

⁴¹ Le développement de production d'énergie basée sur le « carbone propre » (p.ex : capture de carbone, carbone super critique) est implicitement exclu. De même, le soutien de l'énergie nucléaire, en dépit des émissions de CO2 quasi nulle, est implicitement exclu en raison de son impact environnemental du au déchet radioactif.

capacités de gestion et des organes internes de contrôle, l'amélioration de la comptabilité, de la facturation et de l'encaissement, de l'établissement du budget, de la planification des investissements et d'une transparence accrue des coûts,

- développer les capacités de maintenance des compagnies de services industriels gérant la production et les réseaux de transmission et de distribution à fin de garantir une performance du réseau proche de l'optimal,
- réduire les pertes commerciales dans les réseaux de transmissions et de distributions d'électricité, de chaleur en améliorant les capacités institutionnelles et la qualité de la gouvernance d'entreprise des fournisseurs de ces services, et
- amélioration de l'orientation client des entreprises publiques de l'énergie.

Objectif 5 : Développer et renforcer la cohérence économique, environnementale et sociale des politiques énergétiques au niveau d'un pays, d'une région ou d'une ville, à travers des conditions cadres, l'assistance technique et le dialogue politique.

WEIN envisage de mettre à disposition de l'assistance technique, de soutenir la mise en place des conditions cadres pour le financement de projets et s'implique dans le dialogue politique pour :

- un cadre de régulations pour l'approvisionnement en énergie, y compris l'établissement du cadre légal, le renforcement de la surveillance du secteur, l'amélioration des structures tarifaires et la mise en place d'un filet social y relatif,
- soutenir le développement de cadre légal et stratégique favorisant l'intégration de production d'énergies renouvelables (eau, solaire, vent, géothermique), notamment par l'intégration de producteurs privés, de politiques de rachat de courant, la commercialisation de courant/énergie « vert »,
- soutenir le développement de cadre légal et normatif favorisant le développement de l'efficacité énergétique (ou la réduction des pertes) auprès des producteurs, distributeurs et consommateurs (publics, privés ou commerciaux),
- soutenir et développer les mesures visant à sensibiliser le public et les clients des services de base à la thématique de la consommation de l'énergie et à influencer le comportement de ceux-ci pour accroître l'efficacité globale du système et réduire l'impact sur l'environnement et le climat, et
- soutenir le développement de politique intégrée et de plans directeurs en matière d'énergie, d'eau et d'assainissement (ainsi que de déchets et de transport) dans les centres urbains, notamment en favorisant les partenariats entre villes.

Il est pertinent de rappeler que les axes opérationnels et interventions présentées ci-dessus s'inscrivent dans une complémentarité des instruments WEIN dans le secteur de l'eau, des déchets et du transport. Ces interventions fournissent également des contributions aux solutions des défis qui concernent les domaines de l'énergie, notamment dans le domaine de l'environnement et du climat. Par ailleurs, le poids relatif de chaque objectif peut varier sensiblement en fonction des besoins et du degré de développement du pays d'intervention, les objectifs ci-dessus et les modalités ci-dessous définissant un cadre d'intervention⁴².

B.5 Instruments et partenaires

Le secteur énergétique requiert de gros moyens financiers lorsqu'il s'agit des infrastructures de production ou de transmission d'un pays ou d'une région. Il est aussi caractérisé par la présence de grands acteurs financiers tels que le groupe de la Banque Mondiale ou les banques régionales de développement. Cependant, le développement de projets de démonstration, qui se situent typiquement dans la « zone critique » illustrée par la fig. 2 et qui peuvent servir de moteur pour des réformes structurelles ou le déploiement d'approches innovatrices, font appel à des ressources plus limitées, de l'ordre de 10 à 50 millions de CHF, voir moins si aucune composante physique n'est prévue : ces ressources financières peuvent être mise à disposition par un donateur ou un groupe de donateurs et de financiers.

Il est ainsi envisagé d'avoir recours aux instruments suivants:

1. les dons conditionnels pour financer des projets, soit de manière bilatérale, soit en financement parallèle ou en cofinancement d'une composante spécifique d'un grand projet. Les partenaires typiques de tels projets de financement parallèle et de cofinancement sont la BM, la BERD et la KfW,
2. les contributions à un programme ou un secteur au travers de facilités soutenant les axes opérationnels mentionnés ci-dessus, incluant aussi, mais pas obligatoirement, une participation du secteur privé. Les contributions sont normalement liés à une participation aux organes stratégiques et/ou décisionnels de ces fonds. Les exemples typiques de tels facilités sont la SEI-EBRD, le SREP-WB, le ESMAP-WB ; cela peut inclure aussi des participations à des programmes régionaux ou inter-municipaux (FEDRE, AIMF), et
3. les contributions, sous forme de dons ou garantie, destinées à catalyser des mécanismes de financement innovateurs, soutenant les axes opérationnels mentionnés ci-dessus, tels que des partenariats publics-privés (PPIAF, PIDG, PEP-SEI).

Les conditions liées à la contribution du SECO, outre celles de nature organisationnelle et structurelles, visent les politiques sectorielles en matière d'efficacité énergétique, de recours aux énergies renouvelables et des mesures incitatives afférentes, ainsi qu'en matière de tarifs des services proposés. Vu la taille des enjeux énergétiques dans un pays, le dialogue politique est normalement

⁴² Une vision prospective de l'importance de chaque objectif par crédit cadre est proposée dans l'annexe 3

conduit par un groupe de donateurs et financiers auquel la Suisse s'associe, via la participation de nos représentations locales.

Les autres sections du domaine de prestation WE ont recours à d'autres instruments relatifs au secteur de l'énergie, à savoir :

- le développement et la promotion du marché du carbone (WEHU)
- le développement et la promotion des standards dans le domaine de l'efficacité énergétique des processus de production (WEHU),
- le financement de projets pilotes dans le secteur des énergies renouvelables à travers la plateforme REPIC (WEHU),
- l'intégration des indicateurs de performance du secteur de l'énergie comme conditionnalité de l'aide budgétaire dans certains pays (WEMU), et
- le développement ou la participation aux lignes de crédits verts affectés aux domaines de l'efficacité énergétique et des énergies renouvelables (WEIF).

WEIN a pour objectif de rechercher des synergies entre ses propres activités et celles des sections susmentionnées.

Aussi, WEIN veillera à assurer le contact tant avec le responsable « énergie » du SECO (DPUE) qu'avec l'OFEN pour bénéficier de leur expertise.

Finalement, le savoir-faire et la technologie disponible auprès de l'industrie et des bureaux de consultants suisses dans le secteur énergétique comptent pour une part importante des ressources que WEIN entend mobiliser pour les projets « énergie ». La palette de compétences nécessaires varient évidemment sensiblement s'il s'agit d'un pays au tout début de sa transition économique, comme en Asie Centrale, ou d'un des pays orientaux de l'Union Européenne. Il existe en effet des compétences avérées dans le secteur électrique, plus particulièrement dans la production hydro-électrique et la sécurité des installations, la gestion des réseaux de transmission et de distribution, l'intégration des « nouvelles » énergies renouvelables dans le réseau électrique et le négoce d'électricité. Cela concerne l'ensemble du flux d'énergie électrique de la figure 1. Aux chapitres des énergies renouvelables, outre l'hydro-électrique, des expertises pointues sont disponibles dans le solaire, en géothermie ainsi que dans la valorisation des déchets. Finalement l'efficacité énergétique est un souci non seulement des services industriels et de leur client mais aussi des collectivités publiques suisses : c'est donc une expérience transférable, notamment en terme de planification urbaine globale, domaine dans lequel nombres de bureaux suisses ont une qualification internationalement reconnue. Les avantages compétitifs qui résultent de la mobilisation de ces ressources entrent dans les critères de sélection des projets « énergie » et dans le choix des modalités d'intervention ; il est cependant clair que la cohérence de l'intervention avec les priorités et stratégies du pays dans le domaine est un critère fondamental de sélection des projets.

Annexe 1 – Définitions des termes clé.

Energie	Chaleur ou électricité produite, transportée, disponible, consommée. C'est ce qui est utilisé pour chauffer, refroidir, mettre en mouvement, éclairer.
Energie fossile	Abus de langage pour énergie produite par des combustibles d'origine fossile (pétrole, charbon, gaz, uranium)
Energie renouvelable	Abus de langage pour énergie produite par des combustibles ou des fluides d'origine renouvelable (eau, soleil, vent, biomasse, géothermie)
Electricité	Energie portée par des électrons
Flux d'énergie	Quantité d'une énergie transférée entre deux étapes de production/transformation/consommation durant un temps donnée (par exemple durant une année pour un pays). Abus de langage fréquent pour un flux de produit énergétique.
Efficacité énergétique	<u>Au niveau d'un pays</u> : intensité énergétique de son économie (GJ/unité de PIB) <u>Au niveau de la production</u> : taux de rendement de la transformation entre énergie primaire et secondaire. <u>Au niveau de la transmission/distribution</u> : inverse du taux des pertes physiques de transmission. <u>Au niveau du consommateur</u> : taux de rendement de la conversion de l'énergie consommée et de la prestation obtenue (p.ex. pompes, réfrigérateurs, voitures).

Annexe 2 – Intensités énergétiques et CO₂ de pays choisis.

	Fourniture énergie/PIB GJ/kUSD	CO2 / PIB KG CO2 /USD		Fourniture énergie/PIB GJ/kUSD	CO2 / PIB KG CO2 /USD
Albanie	18.84	0.84	Azerbaïdjan	43.96	2.26
Bosnie	33.08	2.51	Tadjikistan	92.95	3.75
Macédoine	29.31	2.03	Kyrgistan	69.50	3.09
Serbie	58.62	4.37	Ouzbékistan	105.51	5.87
Lituanie	15.07	0.62	Colombie	12.14	0.56
Roumanie	31.82	1.80	Pérou	7.95	0.40
EC-Balkans	45.64	2.54	Suisse	4.19	0.16
Europe OCDE	7.95	0.41	Allemagne	7.12	0.41
Europe non OCDE	28.05	1.67			
Ex URSS	74.94	4.22			

Table 1 : intensité énergétique et intensité CO₂ de quelques pays partenaires du SECO et de référence (source AIE/IEA).

Annexe 3 – Les objectifs opérationnels par crédit cadre.

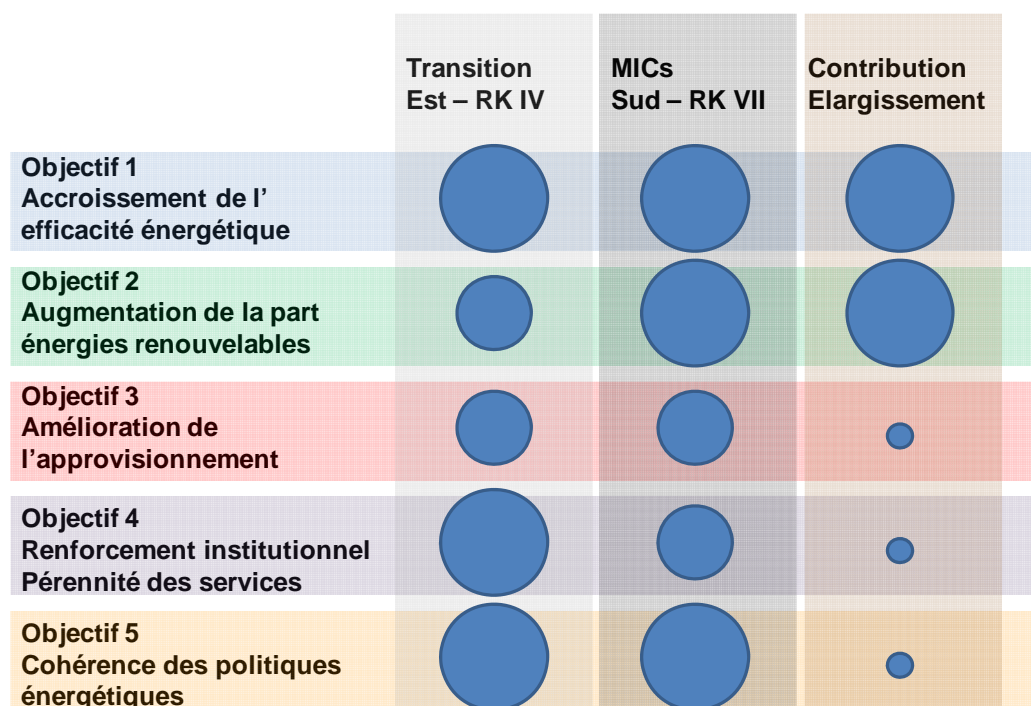


Figure 3 : Importance relative de chaque objectif (chapitre 4.1.) par crédit cadre. La taille du cercle est proportionnelle à l'importance.

Annexe 4 – Proposition d’indicateurs de suivi.

Les indicateurs proposés pour le suivi de la mise en œuvre de l’approche durable en matière d’énergie dans le financement des infrastructures sont :

- la part de projets consacrés aux énergies renouvelables (en volume financier)
- la part de projets consacrés aux mesures d’accroissement d’efficacité énergétique (en volume financier)
- la part de projets qui permettent de réduire les émissions de CO₂ (en volume financier)
- la quantité d’énergie épargnée (les « négawatts ») que les projets ont permis de réduire et le pourcentage de réduction des émissions que cela représente
- la quantité de tonne d’émissions de CO₂ que les projets ont permis de réduire et le pourcentage de réduction des émissions que cela représente

Au moment présent, la quantification d’objectifs pour ces indicateurs n’est pas retenue car, d’une part, il n’y a pas de ligne de base établie, et, d’autre part, les conditions diffèrent suffisamment d’un pays d’intervention à l’autre pour rendre la comparaison et l’agrégation des données illusoire. Il est toutefois attendu que l’évaluation indépendante des opérations de financement d’infrastructures dans le secteur de l’énergie, actuellement en cours, fournisse des indications plus concrètes qui pourront être intégrées ultérieurement comme annexe de la présente note.

Par ailleurs, cette liste est susceptible d’être révisée lors de l’établissement de la liste des indicateurs de suivi pour l’ensemble de SECO-WE en fonction des lignes d’activités par crédit cadre. La démarche est actuellement en cours sous la direction de la section de controlling (WECO) en collaboration avec les sections opérationnelles ; les conclusions sont attendues au premier trimestre 2010.

Appendix C: Overview of Our Research Methodology

C.1 How Criteria are Evaluated

Table 6.1 summarizes the methods we used to evaluate each of the rating criteria and additional questions.

Table 6.1: Mapping of Methodology to Evaluation Questions in the Approach Paper

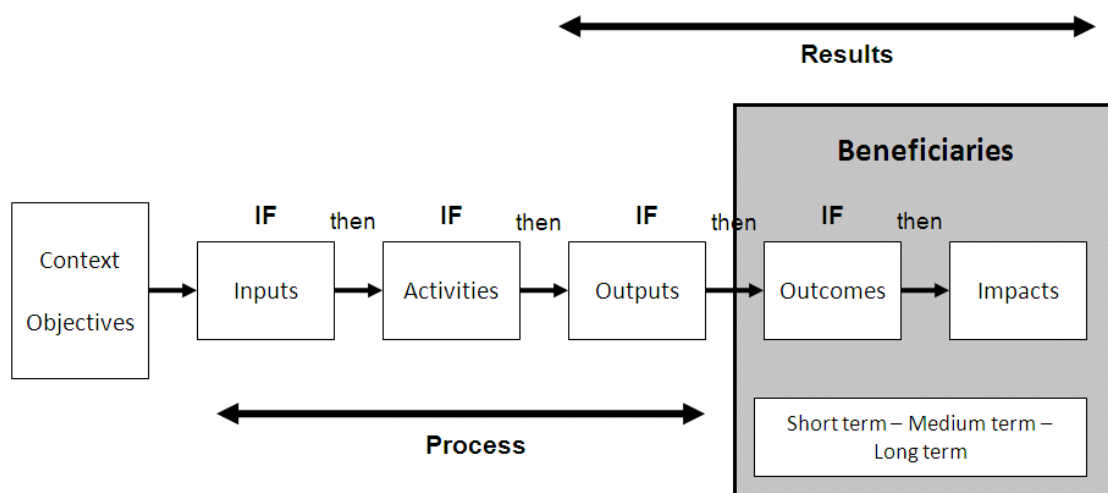
Questions from Approach Paper Related to...	How we evaluated the criteria...
<ul style="list-style-type: none"> ▪ Relevance ▪ Effectiveness in terms of outputs 	<ul style="list-style-type: none"> ▪ Key informant interviews ▪ Review of SECO and 3rd party documents ▪ Focus Group Discussions
<ul style="list-style-type: none"> ▪ Efficiency 	<ul style="list-style-type: none"> ▪ Key informant interviews ▪ Review of SECO and 3rd party documents
<ul style="list-style-type: none"> ▪ Effectiveness in terms of outcomes ▪ Effectiveness in terms of impact 	<ul style="list-style-type: none"> ▪ Key informant interviews ▪ Review of SECO and 3rd party documents ▪ Analysis of data time series and comparison groups⁴³ ▪ Focus Group Discussions
<ul style="list-style-type: none"> ▪ Catalytic role 	<ul style="list-style-type: none"> ▪ Key informant interviews ▪ Review of SECO and 3rd party documents ▪ Focus Group Discussions
<ul style="list-style-type: none"> ▪ Sustainability 	<ul style="list-style-type: none"> ▪ Key informant interviews ▪ Review of SECO and 3rd party documents ▪ Focus Group Discussions
<ul style="list-style-type: none"> ▪ External Factors ▪ Internal 	<ul style="list-style-type: none"> ▪ Key informant interview ▪ Review of SECO and 3rd party documents ▪ Focus Group Discussions

C.2 Logframes and results chains

We apply the Theory of change (TOC) approach to our evaluation. In line with it we use not only logical framework (LogFrame) approach, but go a step further and develop results chains to analyze the causal links between inputs, processes, outputs, outcomes, and impacts of SECO's interventions.

⁴³ We used the term "interrupted time series" in our inception report. We have chosen not to use the term here for reasons explained in Section C.3.

Figure 6.1: Generic Log Frame



SECO now uses LogFrames to plan and monitor its ongoing projects, but LogFrames were not consistently created for projects in the past (they were systematically introduced in 2007).

Results chains take the concept of LogFrames a step further: they recognize that there are often many cause and effect relationships between inputs, outputs, outcomes and impacts. Results chains are therefore well suited to our analysis of SECO's projects.

We propose below results chains for the three "levels of operation" of SECO projects referenced in Section 1. The results chain for each level of operations differs in terms of inputs, activities, outputs, desired outcomes and desired impacts. We present each of the results chains in the figures that follow.

We wish to emphasize that:

- These results chains contain more outputs and outcomes than typically found in any single project—we include outputs and outcomes that are applicable to a range of different interventions within each level of operation.
- Any single project may need to consider multiple results chains (if it has components representative of different levels of operation).

Figure 6.2: Services/Supply of Equipment Results Chain

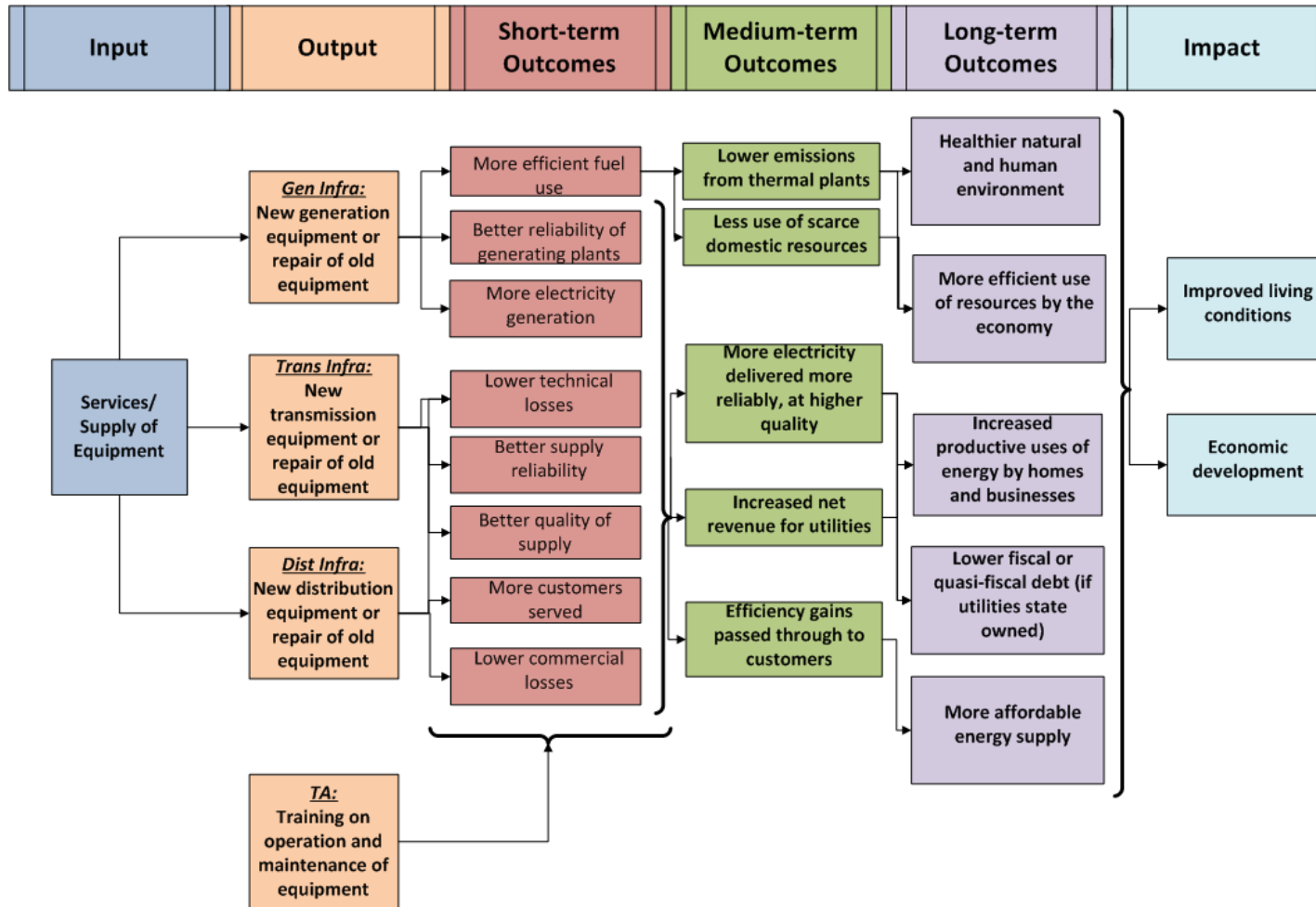


Figure 6.3: Institutional Management Results Chain

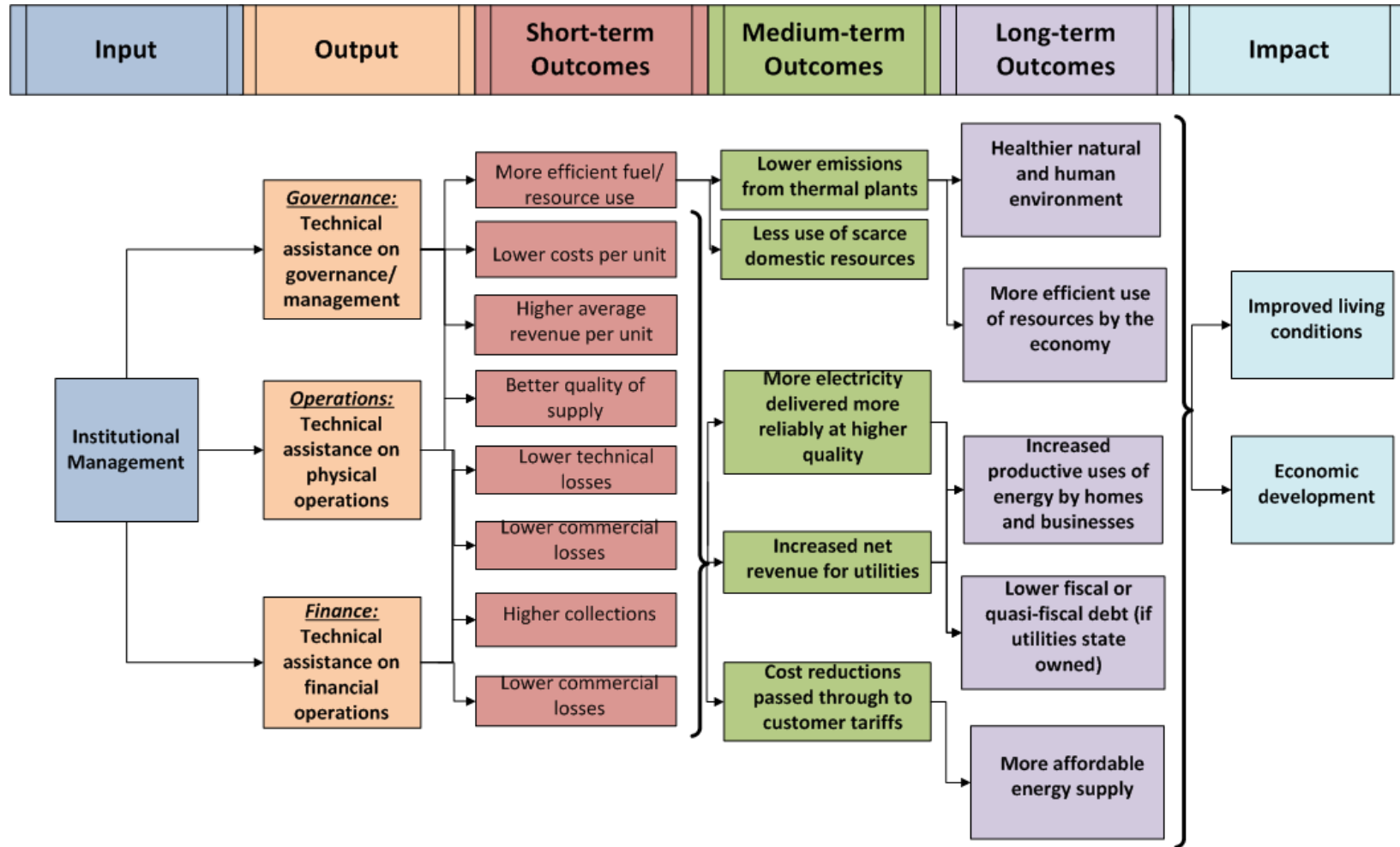
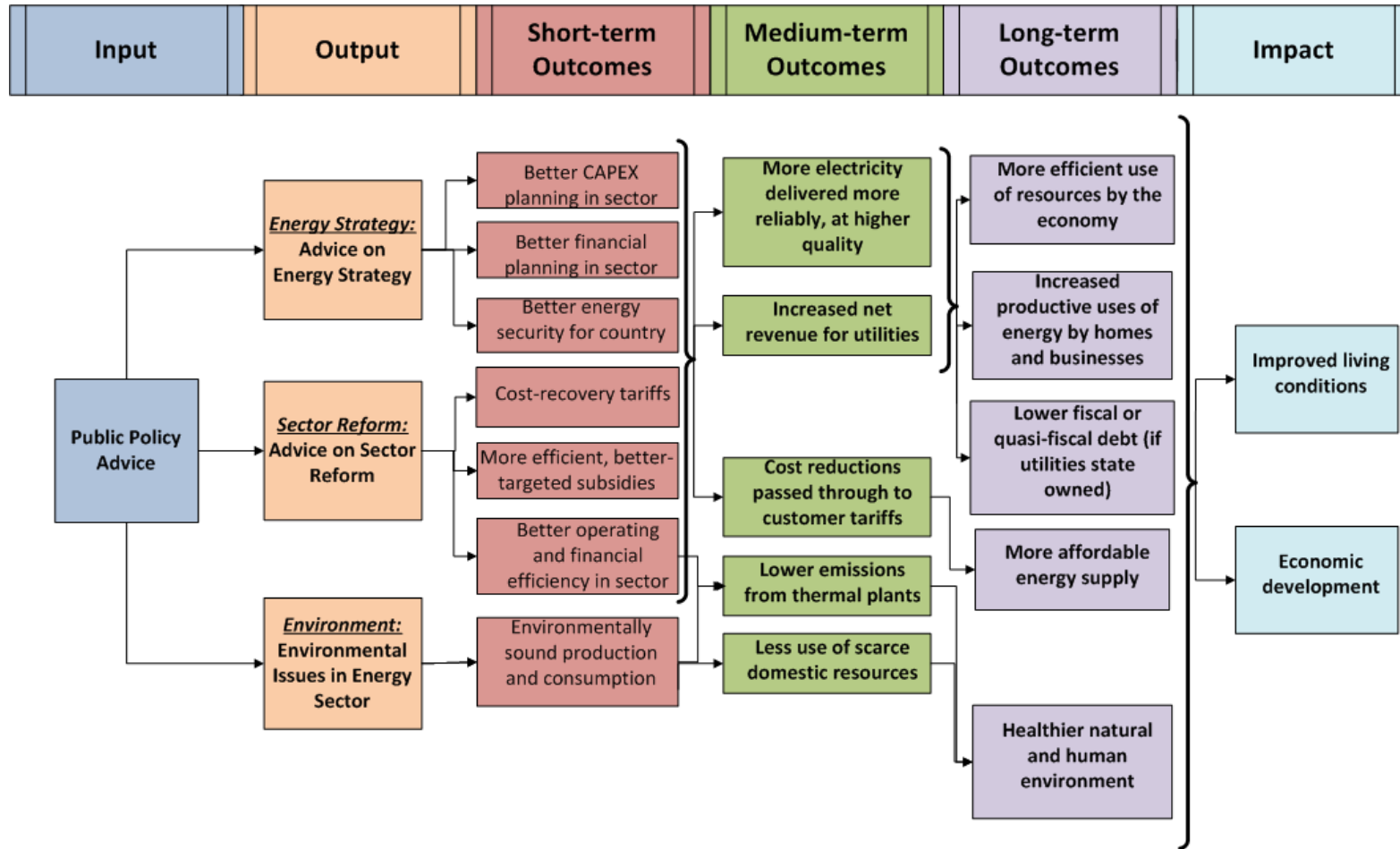


Figure 6.4: Public Policy Results Chain



As we describe in more detail in Section C.4, and as we discussed with SECO when preparing our inception report, a rigorous impact evaluation calls for the attribution of the observed results (outcomes and impact) to particular intervention, as opposed to other factors. Because of the challenges posed by addressing attribution issues, we used “contribution analysis” to assess SECO’s contribution to outcomes and impacts. Contribution analysis suggests a 6 step approach. Box 3 shows a methodology for “contribution analysis”, which is consistent with the approach we used.

Box 3: Contribution Analysis	
Step 1. Develop the results chain	Develop the program theory model/program logic/results chain describing how the program is supposed to work. Identify as well the main external factors at play that might account for the outcomes observed. This program theory should lead to plausible association between the activities of the program and the results sought. Some links in the results chain will be fairly well understood or accepted. Others will be less well understood or subject to explanations other than that the program was the “cause”. In this way you acknowledge that attribution is indeed a problem.
Step 2. Assess the existing evidence on results.	The results chain should provide a good idea of which intended results (outputs, intermediate and end outcomes) could be measured. What evidence (information from performance measures and evaluations) is currently available on the occurrence of these various results? The links in the results chain also need to be assessed. Which are strong (good evidence available, strong link or wide acceptance) and which are weak (little evidence available, weak logic or little agreement among stakeholders)?
Step 3. Assess the alternative explanations	Outcomes by definition are influenced by the action of the program but also by external factors- other programs, as well as social and economic factors. In addition to assessing the existing evidence on results, there is a need to explicitly consider the extent of influence these external factors might have. Evidence or logical argument might suggest that some have only a small influence and that others may have a more significant influence on the intended results
Step 4. Assemble the performance story	With this information you will be able to set out the performance story of why it is reasonable to assume that the actions of the program have contributed (in some fashion, which you may want to try and characterize) to the observed outcomes. How credible is the story? Do reasonable people agree with the story? Does the pattern of results observed validate the results’ chain? Where are the main weaknesses in the story? There always will be weaknesses. These point to where additional data or information would be useful In getting additional evidence it is not possible (at least for now), that this is the most you can say about the extent to which the program has made a difference.
Step 5 Seek out the additional evidence	To improve your performance story you will need additional evidence. This could involve information on both the extent of occurrence of both specific results in the results chain and the strength of certain links in the chain.
Step 6 Revise and strengthen the performance story	With the new evidence you should be able to build a more credible story, one that a reasonable person will be more likely to agree with. It will probably not be foolproof, but will be stringer and more credible.
Source: John Mayne, “Addressing Attribution Through Contribution Analysis: Using Performance Measures Sensibly”, The Canadian Journal of Program Evaluation Vol. 16 No. 1 Canadian Evaluation Society, 2001	

C.3 Categorization of SECO Projects

We differentiated SECO’s projects in three tiers:

- **Tier 1 Projects.** All projects for which we had contact information of SECO staff who were involved in, or who have good knowledge of the project and sufficient documentation from SECO. We also limited ourselves to project for which we could verify that all or most of the project outputs had been delivered
- **Tier 2 Projects.** All Tier 1 projects in the case study countries that we identified in conjunction with SECO in our Inception Report
- **Tier 3 Projects.** One or two Tier 2 projects, decided in conjunction with SECO staff, where the information available permitted a deeper evaluation.

We used different sources of information, different evaluation tools, and considered different evaluation criteria for the different tiers of SECO projects. Our approaches differed in terms of how much information we collected, how we collected it, and the number of ratings criteria we evaluated.

Table 6.2: Comparison of Levels of Evaluation by Tier

	Tier 3	All Tier 2	All Tier 1
Site visits?	Y	N (not required, but sites were visited in many cases)	N
Information collected/analyzed	<ul style="list-style-type: none"> ▪ Telephone interviews ▪ Document reviews ▪ Data collection and analysis ▪ FGDs 	<ul style="list-style-type: none"> ▪ Telephone interviews ▪ Document reviews ▪ Data collection and analysis 	<ul style="list-style-type: none"> ▪ Telephone interviews ▪ Document reviews
Evaluation Criteria			
Relevance	✓	✓	
Efficiency	✓	✓	✓
Effectiveness of outcomes	✓	✓	✓ (of outputs only, not outcomes)
Effectiveness of impacts	✓ (where possible)		
Sustainability	✓	✓	
Catalytic role	✓	✓	
Factors (influencing success or failure)	✓	✓	✓

In summary, we analyzed the effectiveness of project outputs and efficiency of all completed projects (Tier 1). For completed Tier 2 projects, we also analyzed the relevance, sustainability, effectiveness of outcomes, and the catalytic role. We analyzed relevance for all Tier 2 projects, both those that had been completed and those that were ongoing. For completed Tier 3 projects, when possible, we also evaluated the effectiveness of impact.

C.4 Limitations and Constraints to this Study

We think it is important for the reader to understand the results of this evaluation in the context of the data and resources available:

- The Approach Paper required that we evaluate the impacts of the projects, but impact evaluation was feasible only for a few projects in Tier 2 and tier 3 countries because of the scarcity of data. Where data were available, the data were not always reliable or consistent with other sources of data (or anecdotal information) we had collected
- Rigorous assessments of causality were not possible. The evaluation therefore does not show *attribution* in the way the term is used in rigorous impact evaluations. We are not able to show statistically significant causation because:
 - Causation is best shown through experimental and/or quasi-experimental evaluation methods. Experimental methods require random assignment of beneficiaries of an intervention. Random assignment typically requires that the evaluation begin before (or simultaneous to) the intervention. This was obviously not possible in our evaluation. Quasi-experimental approaches (for example, matching) in turn require much more availability of data than we had
 - The scarcity of data did not allow for meaningful econometric analysis that would help assess attribution. Quasi-experimental methods can be conducted without an evaluator’s involvement before the intervention, and strengthened with econometric analysis. One quasi-experimental evaluation technique is the “Interrupted Time Series” approach. The scarcity of data did not allow us to conduct a formal Interrupted Time Series evaluation. In most cases, fewer than 10 data points were available for any particular outcome or impact indicator.

We do, however, attempt to identify SECO’s *contribution* to outcomes and impacts, based on the results of our interviews, data collection, focus group discussions. Our evaluation does include basic time series and comparative data analysis as well as basic descriptive statistics. We complement this analysis with the qualitative information collected through our interviews, focus group discussions and review of background documents.

- We were not able to assess in detail the physical and operating condition of infrastructure funded by SECO because:

- The scope of the study did not allow for in-depth inspection or testing of the infrastructure
- The core evaluation team did not include energy sector engineering specialists. Several of the local consultants we employed were energy sector engineering specialists, and advised us whenever possible on engineering matters relevant to the evaluation. However, our evaluation of the condition of physical infrastructure is based primarily on a basic visual inspection of the infrastructure, interviews with beneficiaries (or others familiar with the projects), and information contained in the reports we reviewed.

Our approach was generally sufficient for the purpose of this evaluation. However, in a few cases we found disagreement between various sources of information, and were unable to resolve the disagreement. In such cases, we report on the disagreement but do not factor it into our ratings.

Appendix D: List of Projects Evaluated

In total we know of 41 projects SECO has completed in Eastern Europe and Central Asia. SECO sent us documentation on 32 of these 41 projects. The 9 projects for which we did not receive documentation were all categorized as countries that ascended to the European Union. Our analysis done in the inception report was completed on the 32 projects for which we received documentation. Since submission of the inception report we have further reviewed SECO documents in order to judge whether an evaluation was possible for each project. From this more extensive review of SECO documents, and through discussion with in-country SECO personnel, we decided that an evaluation was not possible for 9 projects. In addition, we also chose to combine the evaluation of two projects in Serbia because we viewed them as continuous initiatives with the same primary objective.

The final decision on project evaluations is as follows:

- 11 projects evaluated as Tier 1
- 8 projects evaluated as Tier 2
- 3 projects evaluated as Tier 3
- 5 projects not evaluated because they are in early stages of development
- 2 projects not evaluated due to insufficient documentation
- 2 projects not evaluated due to project cancellation
- 1 project (Electricity Sector Spare Parts) grouped with a similar project (Humanitarian Assistance in the Electricity Sector)

A description of why we chose to not evaluate certain projects is provided in the table below.

Project	Country	Tier 1	Tier 2	Tier 3	Not Included/Explanation
Dam Safety Study	Albania		✓		
Drin River Cascade Rehabilitation Project	Albania		✓		
Power Transmission and Distribution Project	Albania			✓	
Power Loss Reduction Project	Albania		✓		
Critical Import Project	Albania		✓		
Substation Tzarevetz	Bulgaria	✓			
Batak & Aleko HPP Rehabilitation	Bulgaria	✓			
Rehabilitation of the Jablanica HPP (Phase II, II, extension)	Bosnia & Herzegovina	✓			
Electricity Sector Masterplan	Bosnia & Herzegovina	✓			
Inguri Dam Emergency Project	Georgia	✓			
Naryn III	Kyrgyzstan			✓	
Tokmak, Orok and Ljermontovo	Kyrgyzstan		✓		
Naryn II	Kyrgyzstan		✓		
Gjilani V Electrical Substation	Kosovo				The project is too early in development to be evaluated.
Electricity Supply Giljani	Kosovo				The project is too early in development to be evaluated.
Efficient Energy Distribution Program	Macedonia	✓			
Hydropower Rehabilitation Project	Macedonia	✓			
Bucharest District Heating Project	Romania				We did not have enough information on the completion and results of this project.
Iasi District Heating Project	Romania			✓	
Swiss Thermal Energy Project (STEP)	Romania	✓			

Gheorgheni District Heating Project	Romania				The project was cancelled. Cancelled due to lack of co-financing, GTZ of Germany was a potential co-financier but never reached an agreement despite more than a year of negotiations.
Lotru HPP Rehabilitation Project.	Romania				We did not have enough information on the completion and results of the project.
Territorial Dispatch System Project	Romania	✓			
Nikolas Tesla Thermal Plant	Serbia				The project is too early in development to be evaluated.
FRY Electricity III – National Control Center	Serbia		✓		
Humanitarian Assistance in the Electricity Sector/ Electricity Sector Spare Parts Project	Serbia		✓		Projects were grouped together due to similar objectives. Both projects aim to support emergency rehabilitation efforts in the Serbian electricity system post-conflict.
Power Rehabilitation Project	Tajikistan				The project was recently completed (in 2009) but we were not provided with any completion or final reports in order to assess project results.
Pamir Private Power Project	Tajikistan	✓			
Energy Loss Reduction Project	Tajikistan				The project is too early in development to be evaluated.
Hydropower Rehabilitation and System Control Project	Ukraine	✓			
Andijan District Heating	Uzbekistan				The project was cancelled. The project was co-financed with EBRD. The Government of Uzbekistan was in charge of establishing a PPP to operate a local company that would run the project. Disagreements over tariffs and subsidies caused the Government to terminate the agreement between EBRD and SECO.

Appendix E: Ratings for Projects in Non-Case Study Countries (Tier 1)

The table below summarizes the ratings for projects in non-case study countries on efficiency and effectiveness of outputs. The table also summarizes the reasons for any ratings other than satisfactory.

Tier 1 Project Ratings of Efficiency and Effectiveness of Outputs⁴⁴

Country	Project	Effectiveness of Outputs	Efficiency	Reason for Rating other than Satisfactory
Bosnia and Herzegovina	Electricity Sector Master Plan	S	US	There were delays in the implementation of the study due to disagreements among the utilities and the consultants over the demand scenarios.
Bosnia and Herzegovina	Rehabilitation of the Jablanica HPP (Phase II, III, extension)	S	HS	Phases II and III were completed under budget. The remaining budget (approximately CHF 2.5 million) was used for an extension of Phase III. Cost savings were reached by: tendering the equipment in individual lots (instead of awarding the contract to a contractor), greater procurement from local suppliers, and the provision of several services were provided well under expected budget.
Bulgaria	Batek and Aleco HPP Rehabilitation	S	HUS	The completion of the project was delayed five years due to numerous technical and contractual problems.
Bulgaria	Substation Tzarevetz	S	US	Project was over budget only CHF 18,969, delay was 1.5 years due to problems with local contractors
Georgia	Inguri Dam Technical Assistance	S	US	Budget spillover was only CHF 5,861.30; delays were due to technical issues and civil works problems (working equipment was not provided at beginning of project)
Macedonia	Energy Efficient Distribution Program	S	S	
Macedonia	Hydropower Rehabilitation	S	S	

⁴⁴ HS=Highly Satisfactory; S=Satisfactory; US=Unsatisfactory; HUS=Highly Unsatisfactory; UA=Unable to assess because of lack of data or documentation; NA=Not assessed because not part of our methodology.

Country	Project	Effectiveness of Outputs	Efficiency	Reason for Rating other than Satisfactory
	Project			
Romania	Swiss Thermal Energy Project	S	S	
Romania	Territorial Dispatch System Project	S	S	
Tajikistan	Pamir Private Power Project	S	S	
Ukraine	Hydropower Rehabilitation and Systems	UA	S	

Appendix F: Mapping Intended Outcomes to Standardized Outcomes in Results Chains

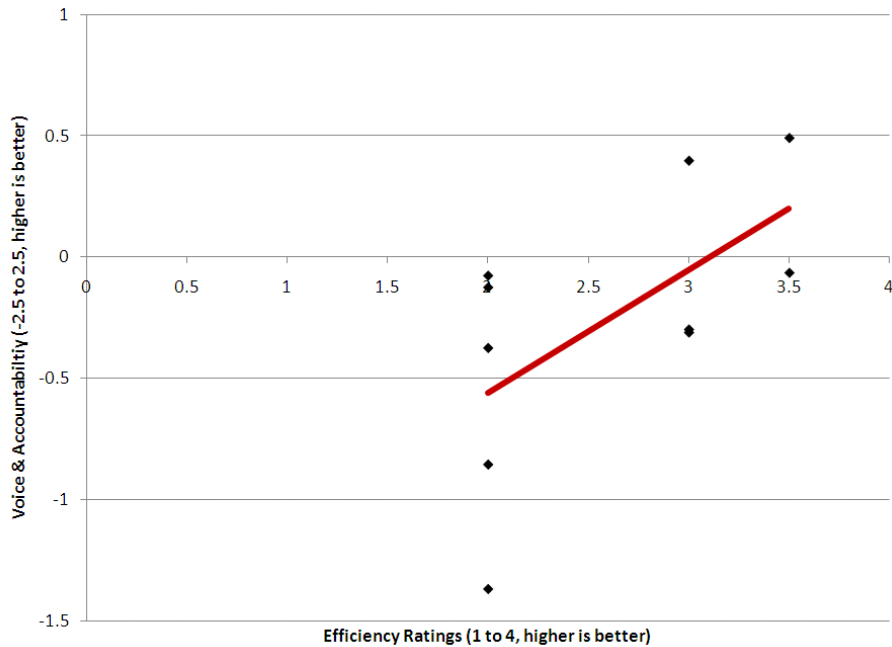
Project	Intended Outcomes	Anticipated Outcomes		
Albania		Short-Term	Medium-Term	Long-Term
Power Loss Reduction	Reduction of non-technical losses to 26% in four years (a reduction of 80-90%)	✓ Lower commercial losses		
	Increase revenues for KESH		✓ Increased net revenues for utilities	
Critical Impact Project	Increase reliability of electricity system	✓ Better supply reliability		
Drin River Cascade Rehabilitation Project	Increase production	✓ More electricity generation		
	Reduce electricity losses	✓ Lower technical losses		
	Lower maintenance costs			
	Optimize water use	✓ More efficient fuel use		
	Improve safety conditions at plant			
Power Transmission and Distribution Project	Efficient delivery and installation of equipment funded by other donors			
	Reduce outages due to overloaded resources	✓ Better supply reliability		
	Reduce outages due to obsolete resources		✓ More electricity delivered more reliability, at higher quality	
	Reduce of technical losses	✓ Lower technical losses		
	Increase transformer capacity in transmission systems			
Kyrgyzstan		Short-Term	Medium-Term	Long-Term

Tokmak, Ljermontovo	Orok,	No outcomes directly stated, the description of the project in the decision note says it will improve electricity reliability.	✓ Better supply reliability		
Naryn II		No objectives stated in Decision Note			
Naryn III		Increase transformer capacity			
		Reduce technical losses	✓ Lower technical losses		
		Reduce system outages	✓ Better supply reliability		
		Reduce commercial losses	✓ Lower commercial losses		
		Improve overall reliability and efficiency of electricity supply		✓ More electricity delivered more reliably, at higher quality	
		Maintain high supply standard to gold mines near Kazerman in order to sell at market tariff			
Romania			Short-Term	Medium-Term	Long-Term
Iasi District Heat		Reduce heat losses	✓ Lower technical losses		
		Lower maintenance costs			
		Increase customer control over heat use			
		Enhance financial sustainability of CET, allowing it to operate without relying on subsidies			✓ Lower fiscal or quasi-fiscal debt (if utilities state owned)
		Improve commercial performance and standards of corporate governance of CET		✓ Increased net revenue for utilities	
		Increase reliability of heat and hot water service	✓ Better supply reliability		
Serbia			Short-Term	Medium-Term	Long-Term

Emergency Sector Projects	Electricity Support Improved reliability of electricity supply	✓ Better supply reliability		
Rehabilitation of National Center	Increased and reliable regional power trade			
	EPS and EMS to become recognized as leading electricity utilities in the region and to establish EMS as reliable member of the UCTE			
	Reduction of the losses within the power system.	✓ Lower technical and commercial losses		

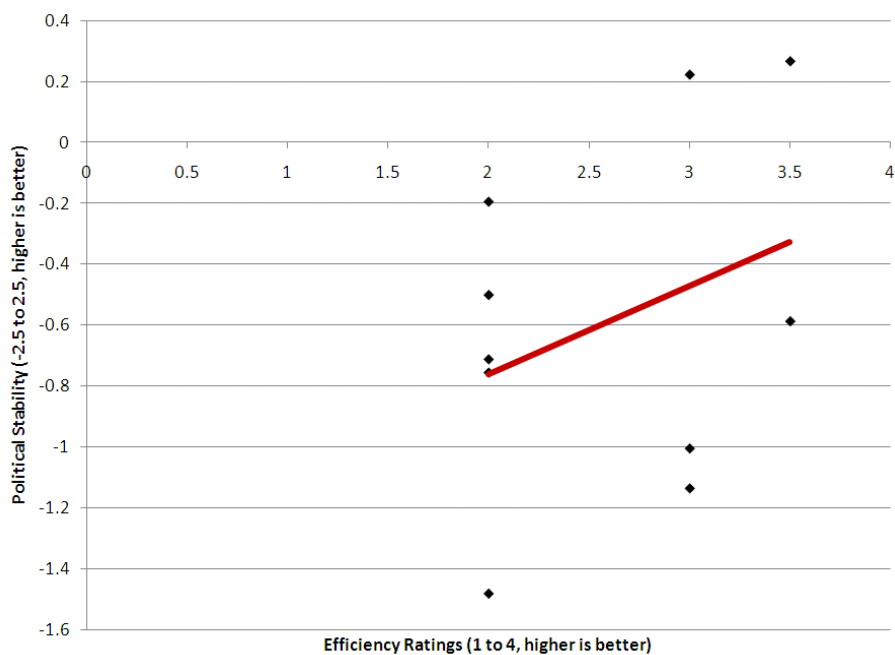
Appendix G: Correlations between Efficiency, Governance and GDP per Capita

Average Voice and Accountability Indicator (1996-2008) vs Efficiency of SECO Interventions



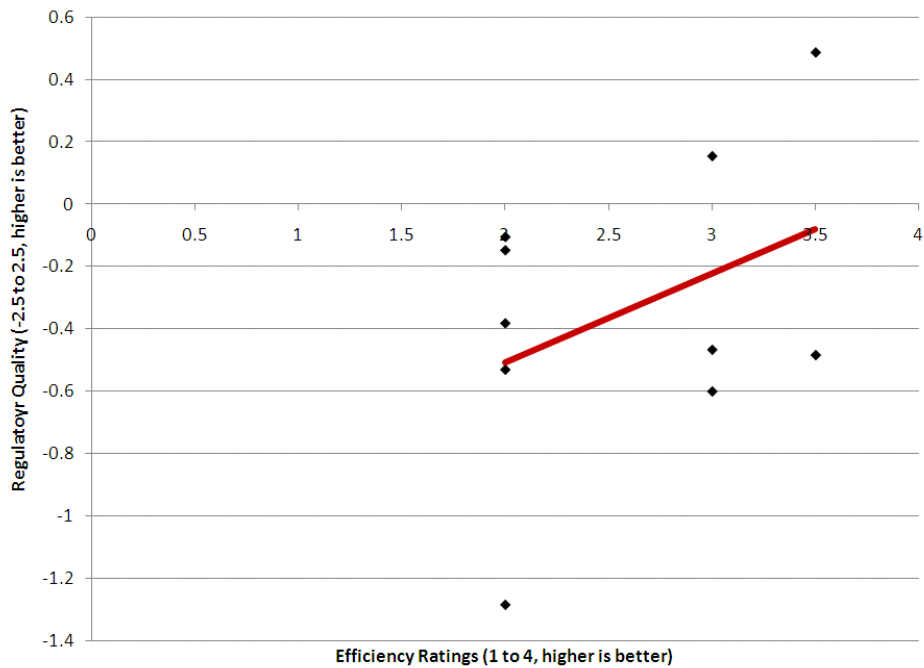
Source: World Bank. Worldwide Governance Indicators (1996-2008).

Average Political Stability Indicator (1996-2008) vs Efficiency of SECO Interventions



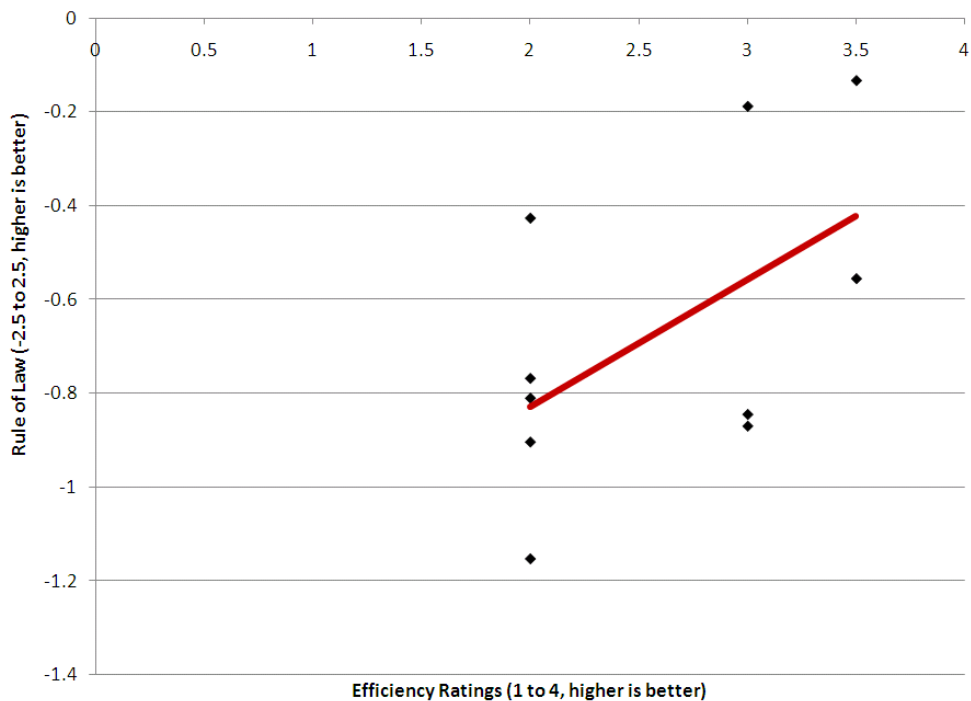
Source: World Bank. Worldwide Governance Indicators (1996-2008).

Average Regulatory Quality Indicator (1996-2008) vs Efficiency of SECO Interventions



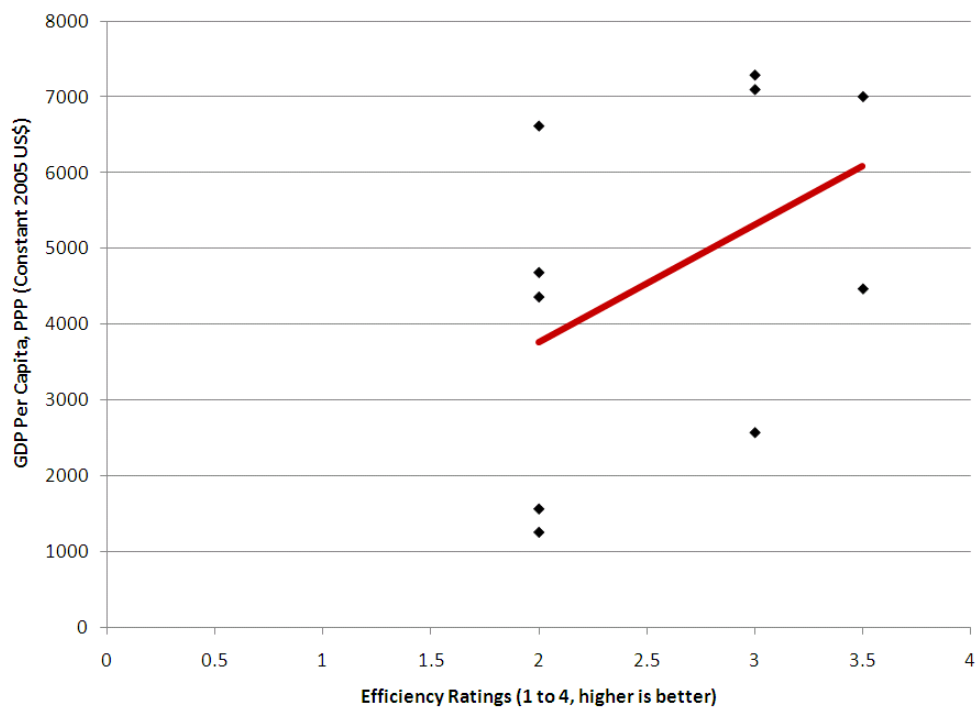
Source: World Bank. Worldwide Governance Indicators (1996-2008).

Average Rule of Law Indicator (1996-2008) vs Efficiency of SECO Interventions



Source: World Bank. Worldwide Governance Indicators (1996-2008).

Average Rule of Law Indicator (1996-2008) vs Efficiency of SECO Interventions



Source: World Bank. World Development Indicators (1992-2007).
