

EVALUATION OF EC SUPPORT
TO PARTNER COUNTRIES
IN THE AREA OF ENERGY

Final Report

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List of Acronyms

3Cs	Co-ordination, Complementarity, Coherence
ACP	Africa, Caribbean and Pacific (countries)
ASEAN	Association of South East Asian Nations
BASREC	Baltic Sea Region Energy Co-operation
BTC	Baku-Tbilissi-Ceyhan
CILSS	Comité Inter-Etats de Lutte contre la sécheresse au Sahel
CIS	Community of Independent States
Coopener	Co-operation Energy
DAC	Development Assistance Committee
DG DEV	Directorate General for Development
DG ENV	Directorate General for Environment
DG RELEX	Directorate General for External Relations
DG TREN	Directorate General for Transport and Energy
EAEF	EC-ASEAN Energy Facility
EBRD	European Bank for Reconstruction and Development
EC	European Commission
ECOWAS	Economic Community Of West African States
EDF	European Development Fund
EIB	European Investment Bank
EQ	Evaluation Questions
EU	European Union
EUEI	European Union Energy Initiative
FDI	Foreign Direct Investment
FSDP	Full Scale Demonstration Projects
GCC	Gulf Co-operation Council
IAEA	International Atomic Energy Agency
IFI	International Financial Institutions
INOGATE	Interstate Oil and Gas Transport to Europe
ISPC	Institute for the Protection and the Security of the Citizen
JMU	Joint Management Unit
JRC	Joint Research Center
JSO	Joint Support Organisation
LA	Latin America

LLW	Low-level waste
LNG	Liquefied Natural Gas
M&EED	Monitoring and Evaluation for Energy and Development International Working Group
MDGs	Millennium Development Goals
MEDA	Mediterranean countries covered by the MEDA regulations
MOU	Memorandum Of Understanding
MS	Member States
NDEP	Northern Dimension Environmental Partnership
NESCO	Network of Energy Security Correspondents
NPP	Nuclear Power Plant
NS	Nuclear Safety
OPEC	Organisation of the Petroleum Exporting Countries
OSA	On-Site Assistance
PAD	World Bank Project Appraisal Document
PDF	Partnership Dialogue Facility
PRSP	Poverty Reduction Strategy Paper
RA	Regulatory Authorities
RAM.G	Regulatory Authority Management Group
RBMK	Reactor Bolshoi Moschnosti Kanalnyi
RELEX	External Relations of the European Commission
RES	Renewable Energy Source
RESAL	Réseau Européen de Sécurité Alimentaire
ROM	Results Oriented Monitoring
SWAp	Sector Wide Approach
TA	Technical assistance
TACIS	Technical Assistance to the Commonwealth of Independent States
TSO	Technical Support Organisation
USAID	United States Agency for International Development
VVER	Voda-Vodyanoi Energetichesky Reaktor
WB	World Bank
WEC	World Environment Center
WSSD	World Summit on Sustainable Development

Executive Summary

A very heterogeneous evaluation scope

This evaluation assesses the relevance, efficiency, effectiveness, impact and sustainability of the European Commission's support to its partner countries in the energy sector. It covers interventions designed or implemented during the 1996-2007 period in all the external cooperation partner countries.

This scope of the evaluation is extremely broad and heterogeneous for three major reasons.

First, the European Commission's communications analysis¹ shows that the Commission's interventions in the energy sector have aimed to contribute to three very different goals:

- § Improving access to energy in developing countries as a means of reducing poverty;
- § Securing energy supplies to the EU;
- § Improving nuclear safety in the Former Soviet Union (FSU).

The first goal is increasingly perceived as an important dimension of the fight against poverty; the two others address vital stakes for European citizens. Ranking these different goals by order of importance has no real meaning. The order in which they are presented in the report has no specific significance and has deliberately been varied.

Second, at the end of the period under review, the main political stakes related to energy were totally different from those applicable at the start. In 1996 energy was cheap and the greenhouse effect was largely unknown to decision-makers. The importance of facilitating access to energy for the poor was still widely overlooked.

¹ Presented in § 2.1 and Annex 2.

However there was less of a problem in this regard in the area of nuclear safety, where the policy objectives appeared to have been more stable over the period under review.

Third, the concept of "partner country" covers countries in which the energy-related challenges to be addressed are as diverse as Russia and Burkina Faso. This evaluation had neither the mandate nor the resources to carry out three separate evaluations on each of these three goals of the Commission's interventions, even though individual treatment was (and still is) arguably merited. The resources available only allowed a limited number of field missions, and consequently the choice of countries to be visited was absolutely crucial to a balanced overall perception of the Commission's policy and to the related conclusions.

A scope that required a prudent approach

From a methodological point of view, applying the same evaluation activities to such different goals was a real challenge. The activities carried out in relation to the three goals in very specific national contexts have been analysed with the aim of drawing out overall conclusions and recommendations relevant to the evaluation mandate as a whole, notwithstanding the heterogeneity over time. The era of cheap energy now seems to be history and our better understanding of its environmental impact is now a matter of fact. Only conclusions and recommendations relevant to the most recent context have been taken into consideration.

The evaluation consisted of four phases:

1. Rebuilding of the intervention logic of the European policy to support the energy sector in third countries² and

² Sources listed in Annex 2.

formulation of Evaluation Questions. This was a crucial first step in the process, as the overall objectives (goals) against which activities' effectiveness had to be evaluated had to be made as clear as possible. This analysis, which helped identify the three above-mentioned goals and the corresponding Evaluation Questions, was validated with the Evaluation Reference Group.

2. The second step was to draw up an inventory of the interventions to be considered within the scope of the evaluation. Over 1,200 interventions were identified from four different databases³. They were earmarked on the basis of the kind of activity carried out, the energy source and the region in which they were implemented⁴. This allowed (a) presentation of the resource distribution between different regions and objectives, and (b) selection of a sample of 34 interventions reflecting the main activities in the most important fields⁵. Draft project fiches were produced on the basis of a common grid⁶. Out of the 34 interventions, 24 were selected for field visits in seven countries.⁷
3. Field missions allowed completion of the analysis of the selected interventions. The aim of these missions was not to provide a balanced assessment of country programmes in the energy sector, but rather to focus on the specific interventions selected with a view to providing a balanced sample at global level.
4. The synthesis phase permitted a cross-cutting analysis of the findings to facilitate drawing of conclusions and

recommendations relevant to the whole evaluation scope.

What is at stake?

Energy is a vital political issue⁸ in Europe, for each of its Member States and for its partner countries. A nuclear accident is one of government's worst fears. Disruptions of supply or sharp price variations may have daunting economic, social and political consequences. Widespread access to energy is a key condition for social and economic development. When addressing such a vital topic, "policy dialogue" mostly takes the form of very tough negotiations.

The time frame plays a key role in the sector:

- § The short term is extremely short: in extreme cases just a few seconds. Delayed reactions or wrong decisions taken in an emergency may have daunting consequences for millions of citizens. Effective information circulation, effective co-ordination and clear decision-making chains are critical for timely and accurate reactions.
- § The long term is very long, yet constantly in evidence in daily life. In Europe most decisions on energy issues are now taken with an increasing concern for their long-term consequences. This raises two challenges:
 - i) Interests and values change over time, but not for all stakeholders at the same time... The energy challenge divides the Member States and even more so the rest of the world, where competition for access to resources as well as for the right to pollute increases sharply. Talking with a single voice in an increasingly competitive world is a challenging objective for Europe.

³ The list is given in annex 5.

⁴ Annex 5.

⁵ Annex 4, p. 6.

⁶ Annex 3.

⁷ Ethiopia, Indonesia, Ghana, Mali, Syria, Russia and Ukraine.

⁸ See § 5.1.

ii) Technological and institutional evolution takes new directions and accelerates, with consequences that remain to be seen (bio-fuels and biodiversity, new role of nuclear power, tariff policies). Effective knowledge management is an increasingly critical asset needed for playing a leading role in these developments.

What was done between 1996 and 2006?

One has to bear in mind that, except for nuclear safety which was identified from the early 1990s as requiring emergency attention, energy only became an important topic for EC external policy around 2002-2003, if not later. Energy-related budgets were indeed decreasing in many institutions, including the EIB and the World Bank, up to the beginning of the decade from 2000. This may explain why the resources dedicated to the energy sector and the results obtained appear rather limited so far, except in nuclear safety where the Commission has played a leading role for more than a decade.

Overall, €1,8bn (€180m/year on average) was spent in the sector during the period.⁹ 53% of this total was dedicated to nuclear safety, and 20% to non-nuclear power generation and transport, much of which was financed by the EIB¹⁰. The remaining 27% (€50m/year) were shared between several other activities. The FSU benefited from 60% of the overall budget, most of which was dedicated to nuclear safety, leaving about €13,5m/year for other purposes in that region, such as support for policy dialogue. The ACP¹¹ region received €538m (29%) of the total, a large part dedicated to power generation. Asia, the Mediterranean region, and Latin America benefited respectively from 5%, 4% and 2% of the total.

⁹ See § 2.2 and annex 5

¹⁰ European Investment Bank

¹¹ Grouping Africa, Caribbean and Pacific countries

How well was it done?

INTERVENTIONS ARE OFTEN RELEVANT, BUT DO NOT RESULT FROM A SYSTEMATIC APPROACH¹² AIMED AT MAXIMIZING THEIR CONTRIBUTION TO EU GOALS.

The Commission has only recently taken into consideration access to energy for the poor. Energy is not yet considered a focal sector in EDF10, which limits the possibility of developing strategic approaches. Most interventions in that field are funded through demand-led instruments which do not allow optimisation of resource allocation. Large EIB-financed supply and transport infrastructures are highly relevant for improving access to energy¹³.

Resources dedicated to improving Europe's security of energy supply are far below what one might expect for such an important issue. Moreover, they have been distributed between investments which were not always relevant¹⁴.

Interventions in nuclear safety were launched in a context of emergency. They correctly addressed needs at the start of the programme; but now that the context has evolved, resource allocation in that field is less focused than it should be¹⁵.

Energy tariffs, market regulations and subsidisation of the power sector have impact on all dimensions of the energy sector. Sound policies at these levels are central to improving access to energy, energy efficiency, market liberalisation and integration and, therefore, on security of supply for Europe. Yet the Commission has so far paid only very limited attention to those issues¹⁶.

¹² Detailed in § 3.1.

¹³ P. 33-34

¹⁴ P. 28-29

¹⁵ P. 27

¹⁶ P. 32

EFFECTIVENESS AND SUSTAINABILITY: MIXED RESULTS OFTEN HARD TO ASSESS

The EIB and the Commission have provided effective support to rehabilitation or development of power generation and transport infrastructure. This has contributed to improving the reliability and outreach of energy supply. In contrast only a very limited number of interventions contributed effectively to facilitating access for the poor. The Commission has not measured the impact of its energy-related activities on living conditions and growth. Only limited efforts were made to draw out and share lessons in that regard¹⁷.

A large part of the limited resources dedicated to activities aimed at supporting security of EU energy supplies was spent on investments, the effects and impact of which have yet to be demonstrated¹⁸.

Bearing in mind the historical context in which the nuclear safety programme was launched and implemented, the effectiveness of many of its on-site assistance interventions was highly appreciated by the partners. The support to nuclear regulators and their TSOs¹⁹ also delivered important results. But the impact of these contributions on overall safety is hard to assess owing to the limited transparency of partners about overall risk assessment. The sustainability of many interventions aimed at enhancing the safety culture remains unknown²⁰.

Only a few Commission interventions have directly contributed to reducing carbon emissions. They were mainly pilot projects, with limited dissemination effect. No support was provided for tariff policy reforms, which are critical for stimulating energy efficiency²¹.

THE COMMISSION IS A LEADING PLAYER IN NUCLEAR SAFETY, BUT A MINOR ONE IN OTHER AREAS OF THE ENERGY SECTOR.

The European Commission was among the first international donors to invest in nuclear safety. Its experience of collaboration with international bodies and networks in that field allowed the Commission to access and accumulate information and know-how which invested it with credibility when co-operating with other donors²². The European Commission's position in the debate with the partners in this sector is however weakened by diverging views on nuclear power between EU Member States²³.

European energy market integration is still far from complete and Member States are in competition with each other for ensuring the security of their supplies of fossil fuel energy. Many of them do not rely on the European Commission to defend a common EU position. This affects co-ordination and dialogue in the energy sector as a whole²⁴.

In ACP countries, improved access to energy has not been central to successive EDFs, which has not encouraged EC Delegations to participate in sector dialogue. Demand-led interventions were mainly decided from Brussels without much co-ordination either with the partners or with other donors.²⁵

Progress is suggested in two major areas

The challenges to be addressed are as follows²⁶:

§ Energy is vital for Europe but also for its partners. Dialogue is therefore often difficult.

¹⁷ See 3.2.1 Evaluation question 2

¹⁸ 3.2.4 Evaluation question 5

¹⁹ Technical Support Organisations

²⁰ 3.2.2 Evaluation question 3

²¹ 3.2.3 Evaluation question 4

²² P 67

²³ P 69

²⁴ P 68

²⁵ P 65-66 and 70

§ Competition for fossil energy and conflicting views on nuclear power and market integration divide the Member States. The European Institutions have no mandate to represent the EU in that field.

§ The sector is complex and volatile.

§ Resources under the Commission's control to finance its external policy in the sector are extremely scarce.

The Commission is therefore facing two main challenges:

- Ø maximizing the relevance of its interventions for all parties (optimisation of resource allocation).
- Ø enhancing its credibility so as to take a progressively leading role in these fields.

Two major areas of progress are therefore recommended:

1. For all three intervention sectors (access to energy for poverty reduction, security of supply and nuclear safety) the Commission should adopt a more formal co-operation cycle with the aim of optimising resource allocation for all parties, taking account of their respective policies. This implies being very selective, focusing resources on the countries which are (i) the most important from the point of view of the EU's policies, interests and priorities, and (ii) ready to co-operate²⁷.
2. For each of the three intervention sectors, the Commission should develop up-to-date knowledge management systems, in order better to understand the specificities of the sector in each of its partner countries and to promote its leadership with the aim of progressively gaining the right to guide external policy of Europe in each field²⁸.

Energy is a critical subject for the EU and for its partners. Dialogue is difficult and resources are scarce.

Ä Apply a formal co-operation cycle aimed at optimising resource allocation for all parties.

Energy is a complex and volatile issue, liable to divergences between the EU Member States

Ä Build a knowledge-based leadership.

1. Implementing a more formal co-operation cycle to optimise resource allocation²⁹

There is often a missing link between the Commission's policy statements and its practical energy-related interventions. Values and interests regarding energy evolve and are not necessarily uniform among the parties involved. Sound co-operation implies expressing European priorities while recognising partners' own priorities and constraints; identifying specific areas where both sides have an interest in co-operating; and on that basis negotiating co-operation programmes. The evaluation team recommends following more systematically a 10-stage co-operation cycle which would favour a) optimisation of resource allocation and b) ownership of support by the partner. The evaluation's main conclusions and recommendations are framed along the stages of this cycle.

Stage 1 - Formulation of EC energy policy

Important improvements have been achieved in energy policy definition at central level, but the reasons why the EC wishes to co-operate in that field with a given country, and what results it expects from the co-operation, are often unclear.

²⁷ Overarching recommendations p.90

²⁸ P. 91

²⁹ The proposed cooperation cycle is presented in § 3.1, p.25

Ä R1³⁰: EC expectations from its co-operation with each partner country should be made more explicit.

The Commission should explain why, in each of the intervention countries, it has decided to support access to energy as a way of contributing to poverty reduction.

Continuity between general policy statements and bilateral negotiations relating to ensuring security of supply could be assured by attaching to the general policy statement a list of countries where dialogue is needed, stating why these countries have been selected.

Now that nuclear safety support represents a much smaller share of total investment of the partners in the sector, the question of why the EU supports the nuclear sector in each relevant partner country is crucial to resource allocation. Choices have to be made, and new challenges such as power market integration open new perspectives for cooperation, which may require clarification of Member States' positions on nuclear power.

Stage 2 - Mutual understanding

The Commission does not invest enough in analysing the partner's political priorities and the constraints impacting on its sectoral policy. The partner has an insufficiently clear view of European expectations.

Ä R2: For each country of intervention, the partner's and other donors' sectoral policy choices should be analysed, in order to understand their rationale. The Commission should also ensure that its own priorities are clearly understood.

In a limited set of countries, more systematic analysis would facilitate an understanding of the political motives driving energy pricing policies, and thereby help identify areas for co-operation in these fields, notably to facilitate access to energy.

Promoting independent and powerful Regulatory Authorities in charge of nuclear

safety is a priority for Europe. A key question is to what extent this approach is supported locally, and much more needs to be invested in exploring such questions at political level. At a more technical level, the Commission should seek a systematic internationally-accepted update of nuclear risk assessment to help draw lessons from the past and focus its strategy.

Stage 3 - Delineation of a co-operation area

Identification of common objectives has sometimes relied on assumptions which were not based on sufficiently accurate analyses.

Ä R4: A co-operation area (set of policy objectives of common interest) should be defined with the partner and the other donors involved. The assumptions that bear on effectiveness should be carefully and regularly checked.

Supporting enhanced market transparency and better public governance in the sector relies on the assumption that there is sufficient political will to make progress in that direction. Such an assumption needs to be checked, especially when designing the institutional settings for activities (ensuring that partner institutions will be supportive).

Stage 4 - Prioritisation of co-operation objectives

Operational objectives are not prioritised. There is insufficient focus on regulatory framework and pricing policy aspects, which are prerequisites for enhanced access to energy for the poor, energy efficiency and market liberalisation. Demand-driven approaches to addressing poverty are not grounded sufficiently in explicit co-operation strategies.

Ä R6: Within the co-operation area, the operational objectives should be prioritised jointly with the partner. Priorities should reflect the constraints to be addressed.

Ä R9: In order to improve access to energy as a means to poverty reduction, a limited number of developing countries should be selected to test a SWAp for the energy sector. To this end re-focus demand-driven initiatives so that they generate

³⁰ For easier reference, the recommendations are here given the number they have in the main text. They are presented in a slightly different order in the summary.

the capacities and means needed to support sectoral dialogue.

Development Bank participation in joint programming exercises would help coordinate policy support, institutional reforms and investments. Requests for financing energy projects in countries where there is no energy dialogue should be given low priority. Demand-driven projects should be instrumental to the sectoral cooperation programme and the selection criteria for these projects should be adapted accordingly.

Ä R7: Reform of tariff policy is often a necessary condition for effectiveness and sustainability of interventions; it should be at the top of the agenda of sectoral dialogue.

Unless the Commission clarifies its objectives and, for instance, agrees to adapt the cooperation area to facilitate a broader scope of nuclear cooperation, it is suggested that resource allocation be focused on activities most likely to contribute to the safety of EU citizens. Since the risks likely to impact on EU citizens primarily threaten partner countries, this broadly leaves room for finding objectives of common interest.

Ä R8: In support for nuclear safety, select interventions aimed at promoting safety culture and transfer of know-how, based on an updated risk assessment.

Stage 5 - Resource allocation

Technical capacities within the Commission remain insufficient. As regards grants there is a mismatch between limited financial resources and ambitious objectives and, furthermore, resources are too dispersed. As regards loans, co-ordination between the Commission, EIB and EBRD is strengthening, albeit unevenly.

Ä R11: More human and financial resources should be dedicated to the energy sector. The benefits of closer co-operation with EIB and EBRD should be further analysed.

The future transfer to the Delegations of management of the Energy Facility projects may accentuate a qualitative mismatch between the Delegations' mission and their

human resources in that sector. In countries where sectoral approaches will be undertaken in the energy sector, the Delegations should enhance the respective human capacities.

Stages 6 and 7 - Programming and Implementation

Despite recent improvements, the provision of public works and equipment in the framework of a programme designed for technical assistance has proved difficult. Limited human capacities and cumbersome procedures have affected the Commission's response capacity. The ability to adapt interventions to a swiftly changing environment has proved limited. The effectiveness and efficiency of regional programmes have often not been convincing. This has often been due to the weakness of the partner regional institution.

Ä R12: A volatile energy sector requires flexible design and implementation mechanisms based on a regular flow of information.

Ä R13: The choice of the regional approach should only be made where the corresponding regional institution exhibits an ability and willingness to cooperate and is also sufficiently recognised by its member states.

Stage 8 - Monitoring

Outputs are measured, outcomes are not.

Ä R14: Project and policy monitoring should be systematised and conducted with the partner.

Outcome and impact indicators should be systematically defined at the design stage of the intervention. The current ROM should be reoriented to provide more factual information on implementation outputs and outcomes and fewer judgments or assessments on such aspects as relevance or effectiveness, which should be left to the evaluation process. Overall effects at sectoral level should also be monitored.

Stages 9 and 10 - Evaluation and Lessons Learned

Very few evaluations have been carried out in the energy sector. There is also limited

institutional capacity in Brussels to learn from experience, except to some extent in the nuclear safety sector.

Ä R15: Regularly evaluate each co-operation activity, with attention to results and impacts.

Ä R17: In the design process, include in-depth analysis of the national and global contexts and of lessons learned from past experiences.

Far more needs to be done to evaluate the co-operation programme on energy in each country so as to provide the Commission with the basis for drawing the lessons from experience and reviewing its policy formulation in each country. Energy dialogue with Russia and Ukraine should be of high priority in country programme evaluations.

Ä R16: In nuclear safety, evaluating the effectiveness of the RA/TSO programme ³¹ deserves high priority.

Although this kind of activity seems highly relevant, the effectiveness and sustainability of RA/TSO programmes in building strong and independent regulatory authorities is not really known.

“Pilot” projects are aimed at enhancing knowledge. Adequate monitoring, evaluation and dissemination tools should be built to help assess their dissemination performance.

Ä R18: Refocus the demand-driven initiatives to incorporate a pilot dimension, in support of sectoral dialogues

Stages 8 to 10 of the co-operation cycle also address the objective of strengthening the Commission’s knowledge management, which is necessary for enhancing the its credibility and sectoral leadership. This is the second main message from this evaluation.

2. Strengthening knowledge management to raise the Commission’s leadership

The resources made available to support the EU’s external policy in the sector remain extremely limited. Furthermore, new challenges are arising (climate change, fossil fuels price rises, etc.) which require investment and innovative techniques.

The Commission has built up leadership in nuclear safety by using the knowledge accumulated by its Services and the European networks on which they rely. In contrast, it has not developed comparable leadership in improving security of energy supply for Europe, and its visibility is low in the area of promoting access to energy as a means to reducing poverty.

Ä R19: In order to lead the policy agenda for improving Europe’s security of energy supplies, the Commission needs to gain much more credibility among the EU Member States, in international fora and in the field. In that perspective the Commission should rely more systematically on the information and analytical capacities available in the EU, with the aim of building a network capable of (i) collecting general and country-specific data on the sector, (ii) accumulating data and analyses so as to develop genuine “cutting-edge” knowledge, (iii) mobilising flexible resources to focus analysis on the most relevant topics, (iv) developing a well-informed medium term policy for the main partner countries, and (v) being able to react quickly in unstable or crisis contexts.

In this regard, Europe has many capacities which are currently much more used by the Member States than by the Commission. These capacities could be mobilised through a network of European research institutions and consulting firms represented in the main partner countries, with expertise both locally and across Europe and with a permanent link to the European Institutions.

A network similar to the one proposed above and called the Réseau Européen de Sécurité Alimentaire (RESAL) already existed in the late 1990s and early 2000s. Such a

³¹ Support to Regulatory Authorities and Technical Support Organisations

system, could become a major asset for European Institutions, especially on themes as demanding in terms of information management as the security of energy supplies to Europe.

Ä R20 Support for poverty reduction: the Commission should join the group of leading donors which are investing in improved access to energy in the interests of poverty reduction. Such an approach will require reinforcement of staffing capacities in Brussels and the Delegations. Demand-driven activities should be seen as complementary to, instead of substitutes for, consistent strategies.

In this field there is less need for the Commission to take a lead than for it to join networks of donors contributing to development of know-how on the link between access to energy and poverty reduction. Contributing to sectoral policies in some pilot cases could provide opportunities for multi-donor co-ordination and exchanges of experience in that field. This dissemination should be more explicitly targeted on EC Delegations, which have extremely little awareness of what the EUEI is or of what the Commission's headquarters supports locally.

Ä R21 Nuclear safety: it is recommended that attention be given to reinforcing knowledge diffusion and the ability to address crises. Maintaining close links with the regulatory authorities of the FSU countries should be a major priority, so as to provide the means for overall and local risk assessments.

In this field, the Commission is already the main player in the European donor community. The challenge is now to maintain and reinforce this leading position. Indeed, it is likely that the progress of negotiations on electricity grid interconnections and the renewed interest in nuclear energy throughout the world will demand a broader approach to the dialogue on nuclear power production.

Keeping a close link with the regulatory authorities of the FSU countries appears to be one of the major priorities in the support for overall nuclear safety. Overall and local risk assessments would give access to the information necessary to prioritise co-operation objectives.

Information management could be broadened to non-technical information such as the political and economic elements influencing nuclear safety policies in the different countries..

1. The Evaluation

1.1 Mandate and Scope

This evaluation of the European Commission (EC) support to partner countries in the area of energy is part of the 2002-2006 multi-annual evaluation programme of the Joint Evaluation Unit of the EuropeAid Co-operation Office (AidCo), Directorate-General (DG) for Development (DEV) and the Directorate-General for External Relations (DG RELEX).

The main target audiences for this evaluation are the Commissioners with responsibilities for External Relations, the European Parliament and the Member States. Other main users of the evaluation will be the Commission's Services of "the RELEX Family", as well as other Services involved in energy dialogue with partner countries including the respective DGs for Transport and Energy (TREN), Environment (ENV) and Research.

MANDATE:

The purpose of the present evaluation is to analyse the results emanating from EC-supported actions and strategies in the energy sector compared with the general and specific objectives defined for those actions and the over-arching programme (including those set out in the programming documents); and to draw out the key lessons in order to help improve the relevance, efficiency, effectiveness, impact and sustainability of the current range of actions in the energy sector.

Terms of Reference, p.5.

This evaluation is a component of the European Commission's efforts towards a results-oriented approach with a focus on impacts. In particular the following aspects are addressed:

- § The relevance of Commission-supported actions in the energy sector to the strategic objectives and policy of the Union in the sector as defined by international commitments (e.g. the Kyoto Protocol, Johannesburg Energy & Poverty Initiative), by the European Council's documents (e.g. joint paper from Commission/Secretary-General/High Representative "An external policy to serve Europe's energy interest") and by the European Commission's Communications (e.g. Green paper 2006 "A European Strategy for Sustainable, Competitive and Secure Energy").
- § The direct and long-term effects of Commission-supported actions in the energy sector, compared with the general and specific objectives defined for these actions (assessment of effectiveness and impact).

- § The sustainability of the effects achieved, that is the extent to which their results and impacts are being, or are likely to be, maintained over the longer term.
- § The efficiency of support for the energy sector, in terms of the extent to which funding, personnel, regulatory, administrative, time and other resources and procedures contributed to or hindered achievement of the intended results.
- § The degree to which interventions took account of “3Cs” aspects, (co-ordination, complementarity and coherence), as mentioned in Article 177 of the Maastricht Treaty.

SCOPE:

The evaluation covers energy programmes and projects designed or implemented during the 1996-2005 period.

The geographical coverage of the evaluation includes the TACIS (Technical Assistance to the Commonwealth of Independent States), ACP (African, Caribbean, and Pacific), ALA (Asia and Latin America) and MEDA (Mediterranean area covered by the MEDA regulations) countries.

For the purpose of assessing the 3Cs, the approaches and practices of other major donors are taken into account, such as the EIB (European Investment Bank) and both multilateral and bilateral donors (especially the Member States of the European Union (EU)).

All dimensions of energy policy are included in the scope, including the EC contribution to improving nuclear safety in the TACIS countries. However, emergency interventions carried out in the context of the Chernobyl accident are excluded from the evaluation.

Terms of Reference, p.6.

This evaluation has a dual purpose, summative and formative: summative in that it addresses interventions implemented or agreed during the 1996-2005 period in terms of their effects and of whether they have achieved their intended objectives and reached the target beneficiaries; formative insofar as it should help decision-makers improve future strategies and interventions. To the latter end the most useful assessments are those made on the basis of the most recent policies. This aspect has been taken into account in the reconstruction of the Commission's intervention logic: the reference policy documents are the most recent, even if issued after the 1996-2005 period.

1.2 Approach

This evaluation entails three consecutive phases.

1.2.1 The structuring phase

This first phase aimed to define with the Reference Group a common reference for the evaluation, which included the following:

- § reconstruction of the Commission's external strategy in energy (presented in Annex 2);
- § definition of Evaluation Questions to make the evaluation mandate operational;
- § definition of Judgment Criteria and related Indicators for each of the Evaluation Questions, and selection of instruments to inform these indicators (see Annex 3).

These elements were presented in the Inception Note. The Desk Phase Report further analysed the context and policy framework of the evaluation (further detailed in Annexes 6 and 7). It was a bridging step between the structuring phase and the assessment process. In particular it presented the process for selecting case studies for further analysis (see Annex 4), as well as suitable countries for field visits. To that end the Commission's intervention portfolio for the sector was reconstructed, in order to reach a certain level of representativity. This

approach had its limits, due in particular to the poor comparability of the various databases available in Brussels (data collection process and outcome presented in Annex 5).

1.2.2 The fact-finding phase

This phase consisted of data collection to inform and substantiate indicators. The very broad scope of the evaluation and the limited resources available to address it entailed building the analysis on a rather limited set of observations.

Tools used for collection were the case studies presented in Annex 4 (documentary analysis and interviews in headquarters) and field visits in a selection of countries (Russia, Ukraine, Syria, Indonesia, Ethiopia, Ghana, Mali). This collection process was prepared and tested at the structuring stage.

For each indicator, the sources of information included documents such as:

At country level:

- § Poverty reduction Strategy Paper (PRSP) or National Development Strategy;
- § Country Strategy Paper (CSP);
- § Mid-term Evaluation of Country Strategy Paper;
- § Country Strategy Evaluation;
- § Energy Policy Dialogue documents;
- § National strategy for the development of the energy sector;
- § EC sectoral policy documents (Energy, Environment, Trade, Development, Neighbourhood Policy);
- § Other major donor documents (World Bank, EU Member States, OECD, etc.).

At intervention level:

- § Descriptive data: project synopsis, financing agreement, logical framework.
- § Analytical data: information for the 34 case studies was initially gathered through extensive use of the available ROM monitoring reports. Analytical data was further complemented by the project evaluation reports, whenever available, and field visits.

A detailed list of the documents consulted is presented in Annex 10. The other source of information was the series of interviews held with experts and officials of the Commission and other institutions involved in the energy sector. Due to the limited budget available for this evaluation vis-à-vis its vast scope, contacts with the final beneficiaries were limited; meetings were mainly held with representatives of the Commission, the EIB, the partner institutions and other donors active in the field (list of interviewees in Annex 9).

The key findings collected from the field visits were presented at a debriefing meeting with the Reference Group and are attached to this report (Annex 8).

1.2.3 The final report writing phase

This final phase aggregated information collected from the case studies and field visits. For each Evaluation Question a reading grid setting out the judgement criteria (JC) and indicators (I) was prepared along with a list of the documents from which the relevant information was retrieved. All information collected was analysed in accordance with this grid (intended for internal use only). The final set of judgment criteria used for the synthesis was further refined and therefore went beyond this initial structure.

Information was cross-referenced and cross-checked, as illustrated below:

Evaluation Question 1		Source of information	Case study 1	Case study 2
JC 1.1	I.1.1.1				
	I.1.1.2				
JC 1.2	I.1.2.1				
...					

Regular consultations were held between team members to ensure coherence in filling the grids and potential further adjustment to some indicators.

Finally, a workshop was held during which the different team members brought together the information retrieved on each particular indicator.

The answers to each Evaluation Question are the result of that process (chapter 3) and leading on to identification of the conclusions and recommendations presented in chapters 4 and 5.

1.3 Limits of the evaluation

The main feature of the evaluation of the Commission's support to partner countries in the area of energy is the extreme heterogeneity of its scope. Indeed, the team had to evaluate activities contributing to objectives as diverse as:

- a) ensuring security of supply of fossil fuel for Europe,
- b) facilitating access to energy for the poor, mainly in ACP countries, and
- c) enhancing nuclear safety in Former Soviet Union (FSU) countries.

The first goal (security of supply for Europe) typically relates to European strategic interests, the second to the main goal of European development aid policy, while the third aims to address a major potential risk for Europe and for its partners. It is hard to find common ground between these three different objectives against which overall performance can be assessed. The Commission's teams in charge of these three sets of activities are different and report to different hierarchies. The stakeholders involved and the sources have little in common. For the evaluation team, the sectoral experts necessary to evaluate these activities needed very different skills and experience.

Temporal heterogeneity is also much more important than for other sectoral evaluations. Indeed, during the period 1996-2006³², and especially at the end of this period, major changes have been evident. At the beginning of the period, energy was cheap and relatively easy to access. The environmental impact of its use was known only to a small group of scientists. Energy was not considered an important political issue and was a low priority for public financing institutions. At the end of the period, the picture was totally different and this change induced major shifts in the objectives of European interventions. This implies that from an evaluation standpoint - except in nuclear safety where objectives have been relatively more stable during the period - most of the projects relevant to addressing current priorities are fairly recent, and their impacts still hard to evaluate.

Spatial heterogeneity is also important, since the evaluation covers all regions except the EU and accession countries. This includes countries which variously are energy suppliers, transit countries, rich net importers, emerging and poor net importers. The nature of the dialogue between these groups of countries and Europe is in consequence very different.

The broad and heterogeneous scope of the evaluation entailed maintaining a very broad field of view for the analysis and selection of conclusions and recommendation relevant to the three fields of intervention. This can be considered a limitation but also an asset of the evaluation, as it allowed a focus on issues common to the three areas.

It is important to note that this evaluation had neither the mandate nor the resources to make three independent evaluations of the Commission's interventions in each of these subsectors - nuclear safety, security of supply and improving access to energy for the poor - and therefore does not replace specific evaluations for each of them.

³² The formal scope of the evaluation, as defined in the Terms of References covers the ten years period 1996-2005. However, owing to the extremely rapid evolution of the main features of the energy sector, the evaluation team has tried to take the most recent information into account, including 2006 as much as possible in the scope of the evaluation.

2. The Commission support for energy

2.1 The EC Strategy

The Green Paper II of 2006 “A European Strategy for Sustainable, Competitive and Secure Energy” defines Community energy policy, the international components of which are encompassed by the following documents:

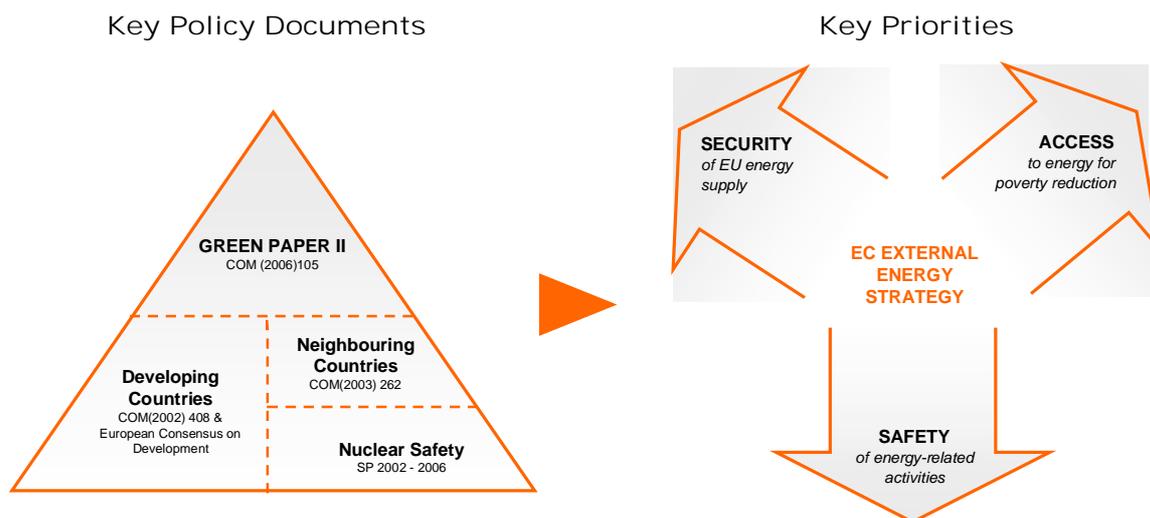
- § The European Consensus on Development and Communication 408 of 2002 “Energy co-operation with the developing countries” which defines a co-operation strategy with developing countries in which improving access to energy is presented as a way of contributing to poverty reduction.
- § Communication 262 of 2003 “Development of energy policy for the enlarged European Union, its Neighbours and Partner Countries” which defines a strategy for securing and diversifying the Community’s energy supplies on the one hand, and on the other the basic principles underlying the safety of energy-related activities in neighbouring countries. The Union’s energy dialogue with neighbouring countries addresses both issues. The first has been dramatically re-evaluated by the Union since the 2005 energy supply crisis. The second represents a major part of the Union’s activities in relation to TACIS countries, especially in terms of nuclear safety.
- § This nuclear safety component is further developed in the Union’s Nuclear Safety Strategy Paper 2002-2006 which has recently been updated in the 2007-2013 Nuclear Safety Strategy Paper. This document supports the development of an effective nuclear safety culture, as well as effective management of spent fuel, decommissioning and nuclear waste, and support for international initiatives including mitigation of the consequences of the Chernobyl accident.

The intervention logics presented in annex 2 depict the content of and interaction between these documents. From them it can be concluded that the goals of the European Union’s cooperation with partner countries in the energy sector are as follows:

- § Improving Access to energy for poverty eradication, which is the core theme of the Commission’s energy-related interventions for developing countries;
- § Enhancing the Security of the Community’s energy supplies; and
- § Improving the Safety of energy-related installations, especially nuclear safety.

These two last objectives are at the core of the Commission’s dialogue with neighbouring countries.

The External Dimension of the European Energy Strategy



2.1.1 The 2006 Green Paper and consecutive actions

The year 2005 and the beginning of the year 2006 revealed extreme instability in the geopolitical context of energy supplies. This situation highlighted insufficient integration of the political dimension of energy supply into the 2000 Green Paper³³: this paper recognised that although the Union is a key player on the world market, it has no influence on world energy pricing, has ineffective demand management and has no satisfactory policies for preventing supply crises. In response the 2000 Green Paper put forward strategies for reducing energy dependence. However its focus on European strategic stocks only provided a partial answer to the instability of the energy market.

In order to address this weakness and in parallel with structured energy dialogues with major energy partners³⁴, the Commission launched in 2006 its new Green Paper: "A European Strategy for Sustainable, Competitive and Secure Energy"³⁵. The initiative was driven by the aim of developing a single European energy strategy³⁶. Three major objectives were pursued: security of supply, sustainable development and competitiveness of the Union.

³³ COM(2000) 769 final, Green Paper "Towards a European strategy for the security of energy supply", Brussels, 29.11.2000.

³⁴ EU-Russia Energy Dialogue launched in October 2000; Free trade agreement with the Gulf Co-operation Council (GCC) States negotiated in 2001, including oil dialogue; India-EU Strategic Partnership Joint Action Plan launched in September 2005; 1st meeting of the EU-OPEC Energy Dialogue in June 2005; 6th EU-China Energy Conference in February 2006 (also see section 2.1.3).

³⁵ COM(2006) 105 final, Green Paper "A European Strategy for Sustainable, Competitive and Secure Energy", Brussels, 8.3.2006.

³⁶ The external aspects of energy policy remain a matter of EU Member States' sovereignty and within the competence of their Foreign Affairs Ministries.

The 2006 Green Paper developed an external dimension for the energy policy. The following arguments are advanced:

- § The use of energy to promote development is at the core of the Community energy policy with developing countries (see section 2.1.2).
- § Security and diversification of supplies requires advanced dialogue with the EU's neighbouring countries, as key suppliers to the Union or partners in the development of energy networks (see section 2.1.3).
- § Nuclear safety is a major issue for energy dialogue with neighbouring countries, especially the Former Soviet Union countries (see section 2.1.4).

The EU Spring Summit of April 2006 confirmed a strategy aimed primarily at increasing the EU's security of energy supply through increased co-operation with the main supplying countries such as the members of the Organisation of the Petroleum Exporting Countries (OPEC) and Russia, as well as with major transit and consumer countries; diversification of energy sources (external, 'indigenous' and transport routes, including investment in new Liquefied Natural Gas terminals); and a common approach to addressing crisis situations "in a spirit of solidarity".

On 12 October 2006 the Commission adopted a concept paper "External Energy Relations – from principles to action"³⁷ for the Informal European Council in Finland (20 October 2006). The document encouraged the Member States to develop closer contractual relations with the Union's neighbours and major energy suppliers, to open up the EU's internal market for energy to neighbouring countries, or to sign up to agreements such as Memoranda of Understanding.

The creation of a Network of Energy Security Correspondents (NESCO) was endorsed by the December 2006 European Council with the aim of enhancing the EU's capacity to respond to external threats to the EU's security of supply. The first meeting of NESCO, launching its activities, was held on 10 May 2007.

On 10 January 2007 the Commission proposed an energy and climate change package named "A New Energy Policy for Europe"³⁸ which states a threefold objective: combating climate change, limiting the EU's external vulnerability to fluctuations in supply of imported hydrocarbons, and promoting growth and jobs, thereby providing secure and affordable energy to consumers.

In response, the European Council adopted on 8-9 March 2007 a two-year (2007-2009) action plan for expanding and strengthening the EU's international energy relations³⁹. The international dimension of the Action Plan includes the development of an EU approach to external energy policy, involving dialogues and partnerships with producer, consumer and transit countries. The Council also supports the use of international negotiations to encourage sustainable methods of production and to promote international trade in environmental and energy-efficient goods and services.

³⁷ COM(2006) 590 final, Communication from the Commission to the European Council, External energy relations – from principles to action, Brussels, 12.10.2006

³⁸ COM(2007) 1 final, Communication from the Commission to the European Council and the European Parliament, An Energy Policy for Europe, Brussels, 10.1.2007.

³⁹ Council of the European Union, Brussels European Council 8/9 March 2007, Presidency Conclusions.

Finally, the Council invited the Commission to put forward an updated Strategic Energy Review in early 2009 (as a basis for the new Energy Action Plan from 2010 onwards to be adopted by the Spring 2010 European Council).

2.1.2 Energy and poverty reduction

The Framework Programme for actions in the energy sector⁴⁰ for 1998-2002 seeks co-ordination of the Union's activities in the energy sector, with three main objectives: security of energy supplies, competitiveness, and environmental protection. To that end the Community had defined specific actions of which only the SYNERGY programme was devoted to developing countries. It supported third countries in the formulation and implementation of their energy policy.

Explicit reference to energy and poverty reduction appears in the Communication from the Commission "Energy Co-operation with the Developing Countries"⁴¹ of 2002. It promotes access to reliable and affordable energy services as a key precondition for sustainable development and for achieving the Millennium Development Goals. It insists on focusing actions in favour of the so-called "energy poor". It also refers to the EU Energy Initiative for Poverty Eradication and Sustainable Development (EUEI).

The EUEI was launched at the 2002 World Summit for Sustainable Development in Johannesburg, as a joint commitment by the EU Member States and the Commission. Its key words are: "access to energy" for all, including poor people; "ownership" of activities by the beneficiaries to ensure the long term success of the Initiative; "inter-sector approach" as energy is not the final end; "integration of energy in strategy documents" by country and by region into strategy documents on poverty reduction. Under the framework of the EUEI, the Member States and the Commission launched a series of dialogues and instruments, including the following:

§ Within the 2003-2006 multi-annual programme "Intelligent Energy for Europe"⁴², COOPENER is the main Community instrument for non-technological support in the field of energy. It is a demand-led instrument for supporting the promotion of Renewable Energy Sources (RES) and energy efficiency in developing countries, mainly through capacity-building and support for pro-poor energy policies. An aspect of COOPENER actions which displays originality is their collaborative approach: most involve several EU partners and several ACP countries.⁴³

⁴⁰ "Framework Programme for actions in the energy sector (1998-2002)" adopted by the Council Decision 1999/21/EC, of 14 December 1998, and connected measures [Official Journal L 7 of 13.01.1999].

⁴¹ COM(2002) 408 final, Communication from the Commission to the Council and the European Parliament - Energy co-operation with the developing countries, Brussels, 17.7.2002.

⁴² "New Framework Programme for action in the field of energy: "Intelligent Energy for Europe" Programme (2003-2006)", adopted by Decision No 1230/2003/EC of the European Parliament and of the Council of 26 June 2003 [Official Journal L 176 of 15.07.2003].

⁴³ Note that COOPENER has not been renewed under the Intelligent Energy – Europe programme II (2007-2013). It is now part of the European Community's External Actions and will be managed by the Commission's Co-operation Office "EuropeAid" within the ENRTP (Thematic programme "Environment and Sustainable Management of Natural Resources including Energy"), under priority 5.

- § The Partnership Dialogue Facility (PDF)⁴⁴ is an instrument developed in the context of the EU Energy Initiative (EUEI). It aims at placing comprehensive energy policies within sectoral development strategies, and thereby assisting partner countries in the formulation and implementation of energy access policies. The PDF also aims at integrating access to energy services into national and regional policy and development strategy papers.
- § ACP-EU Energy Facility⁴⁵, which contributes to the financing of projects that deliver energy services to poor rural areas, and thereby to attracting additional financing. In addition the Facility is also capable of supporting better governance and management in the energy area and facilitating large-scale investment in cross-border energy infrastructure. A large part of the Facility is to be implemented via a 'call for proposals' system. The Facility is implemented under the 9th European Development Fund (EDF) (budget: €220m).

Annex 7, §2.2 gives further information on these facilities and on other initiatives, including the 'Energy for Africa' Conference, the Forum of African Energy Ministers, the partnership with the Pacific Island Countries, the dialogue with the Caribbean Island Countries, the Energy and Environment Partnership with Central America, and others.

The 2005 European Consensus on Development⁴⁶ and the EU Council Conclusions on Energy and Development (April 2006) insist on the overarching objective of "integrating energy interventions into development co-operation" as a key objective in support for the Millennium Development Goals (MDGs), the World Summit on Sustainable Development (WSSD) and the Kyoto objectives. The new architecture of instruments for external actions 2007-2013 pointed to the need to set up two energy-related programmes with close links to the EUEI:

- § A thematic programme on "Environment and Sustainable Management of Natural Resources Including Energy" (ENTRP).
- § An EU-Africa Partnership on Infrastructure to support and initiate programmes that facilitate interconnectivity at continental level. The Partnership will be supported by a new EU Infrastructure Trust Fund for Africa, set up together with the EIB. The grant part of the Trust Fund will be provided by the Commission and any EU Member State willing to contribute. EU grants will attract and leverage additional funds by other donors and private investment. The Trust Fund will receive €60m from EDF 9, which could be supplemented by EIB loans up to €260m, or by funds from other EU financiers.

⁴⁴ The PDF is funded by Austria, France, Germany, the Netherlands, Sweden and UK (budget: €4m).

⁴⁵ The ACP-EU Energy Facility is financed on EDF 9 (€ 220m).

⁴⁶ Joint statement by the Council and the Representatives of the Governments of the Member States meeting within the Council, the European Parliament and the Commission on the European Union Development Policy, adopted on 20 December 2005.

2.1.3 Security of supply for Europe: Energy dialogue with supplying, transit and main consumer countries

The main stake: the energy dialogue with Russia⁴⁷

An Energy Dialogue between the EU and the Russian Federation was launched in 2000 at the initiative of the European Commission. The European Commission has no exclusive mandate to represent the EU Member States in negotiations with Russia. Parallel negotiations with Russia are held by several Member States.

The Road Map for the Common Economic Space was adopted at the EU-Russia Summit of May 2005. A key objective is the intensification of co-operation in the energy area, with particular emphasis on addressing issues related to the sustainability and continued reliability of the production, distribution, transportation and efficient use of energy. This Road Map is oriented to the following objectives:

- § increased security for suppliers and consumers through the progressive establishment of a pan-European energy market;
- § interconnection of electricity networks;
- § enhanced investment climate;
- § increased co-operation on energy efficiency and climate-change-related issues;
- § setting up of a EU-Russia Energy Technology Centre;
- § enhanced co-operation in the field of nuclear safety.

The last bilateral summit in May 2007 addressed the renewal of the partnership agreement on energy issues. A plan to develop a joint early warning system for energy bottlenecks was agreed.

Russia has not yet ratified the Energy Charter, which aims notably at promoting open and competitive markets for products and investment opportunities. Recent developments suggest that the dialogue remains difficult. So far, no agreement with the Russian Federation on a text for a transit protocol has been reached. Issues such as internal gas prices in Russia, access to gas transport networks, protection of foreign investments in the energy sector remain difficult areas of discussion.

Energy dialogue with other supply or transit countries

This section gives an overview of the agreements concluded between the EU and its supply and transit countries. Those elements are further detailed in Annex 7.

- § A Memorandum of Understanding on energy was signed between the EU and Ukraine in December 2005. It establishes a joint strategy for the progressive integration of the Ukrainian energy market with that of the EU and consists of road maps covering four specific areas⁴⁸. It also anticipates development of a roadmap on energy efficiency,

⁴⁷ Annex 7 gives further information on the status of Russia as major exporter of oil and gas.

⁴⁸ Nuclear safety; integration of electricity and gas markets; enhancement of the security of energy supplies and the transit of hydrocarbons; improving effectiveness, safety and environmental standards in the coal sector.

renewables and measures to tackle climate change.

- § The Black Sea Synergy initiative was launched in April 2007. This dialogue on energy security aims at promoting legal and regulatory harmonisation through the Baku Initiative and in the framework of the ENP and the EU-Russia Energy Dialogue.
- § The Baltic Sea Region Energy Co-operation (BASREC) was launched in 1999⁴⁹. Issues discussed include security of energy supply in the context of growing dependency on Russia, gas transit routes in the region, and progress on electricity and gas interconnections. Environmental issues on the agenda include energy efficiency, climate change, and renewable energies such as bio-energy.
- § The “Interstate Oil and Gas Transport to Europe” (INOGATE) aims at enhancing regional co-operation between countries from Central Asia, the Caucasus and Eastern Europe. The goal is to open channels for the transport of oil and gas from Central Asia to Europe without transiting through Russia. The INOGATE Umbrella Agreement signed by most concerned countries is the instrument for co-operation in the region. This agreement was taken further through the “Baku Initiative” which was launched on the occasion of the Energy Ministerial Conference held in Baku on 13 November 2004 with the participation of the European Commission and the Black Sea and the Caspian Littoral States and their neighbours⁵⁰. The “Baku Initiative” aims to facilitate the progressive integration of the energy markets of this region into the EU market as well as the transportation of the extensive Caspian oil and gas resources towards Europe.
- § The EU and Azerbaijan signed an Memorandum of Understanding (MoU) on strategic partnership in the field of energy in November 2006 which outlines four areas of co-operation: convergence of electricity and gas markets between EU and Azerbaijan; enhancing safety and security; development of comprehensive energy demand policy in Azerbaijan; and development of renewable energy sources, technical co-operation and exchange of expertise.
- § The Arctic Energy Agenda brings together political and industrial decision-makers from Norway, Russia, the United States (US) and the EU (first meeting in July 2005). The Arctic region is believed to be one of the most important remaining petroleum sources. Environmental vulnerability and the technical challenges of developing Arctic regions are at the core of the Agenda.
- § In the Caspian region, the Baku-Tbilisi-Ceyhan (BTC) oil pipeline was opened on 25 May 2005, connecting the Azerbaijan capital on the Caspian Sea to Turkey’s east Mediterranean coast. Bilateral trade relations as well as extension to Turkey form part of the wider geopolitical context of the BTC pipeline.
- § Such as BTC, the Nabucco pipeline (from Turkey across Romania, Bulgaria and Hungary into Austria) should bypass Russia. It is expected to be completed by 2013, provided that financing problems are solved.

⁴⁹ Participating countries: the Energy Ministers of Denmark, Estonia, Finland, Germany, Iceland, Latvia, Lithuania, Norway, Poland, Russia and Sweden, and the European Commission.

⁵⁰ Namely Azerbaijan, Armenia, Bulgaria, Georgia, Iran (observer), Kazakhstan, Kyrgyz Republic, Moldova, Russian Federation (observer), Romania, Tajikistan, Turkey, Ukraine and Uzbekistan.

- § Kazakhstan and the EU signed on December 2006 a MoU for co-operation in energy. It defines two road maps on energy security and industrial co-operation. Both parties have also initiated an Agreement for Co-operation in the Peaceful Uses of Nuclear Energy.
- § The treaty establishing the Energy Community of South East Europe (ECSEE) was signed in 2005. It covers the electricity and natural gas sectors and aims at satisfying the political and economic goal of stabilisation and development of SE Europe through an integrated market.
- § The EU held its first bilateral meeting with the Organisation of Petroleum Exporting Countries (OPEC) on 9 June 2005 “in the interest of producers and consumers”. Discussions focused on oil prices, greater data transparency, investment needs, especially for refineries, and environmental issues. A follow-up programme was defined. Complementarily, the Commission has bilateral co-operation agreements with the six members of the Gulf Co-operation Council (GCC).
- § Angola and Nigeria are now major global oil suppliers. Other countries in the Gulf of Guinea are seeking to emulate their success. EU relations with the region are at the moment centred on development co-operation with the Economic Community of West African States (ECOWAS). Relations focus on peace, security and good governance with a strong emphasis on economic and trade integration.
- § The Euro-Mediterranean Partnership, the Barcelona Ministerial Conference agreed in 1995 to strengthen co-operation in the field of energy. The focus was on liberalisation and deregulation of the sector. In 1998 co-operation on security of supply and the competitiveness of the energy industry was launched, with a view to a free trade area. In 2006 the objective of integrating the electricity and gas markets was clearly emphasised.

*Energy dialogue with major consumer countries*⁵¹

§ The USA

The EU-US Presidential Summits were created by the November 1990 Transatlantic Declaration. At the 2005 Summit in Washington, the EU and the US committed themselves to “work together to enhance trade and transport security while facilitating the movement of people and goods and to develop and help disseminate energy efficiency technologies”. They agreed to continue co-operation on the development of the hydrogen economy.

At the meeting in Vienna in June 2006 they agreed to reinforce strategic energy co-operation⁵². The objective is to ensure sufficient, reliable and environmentally responsible supplies of energy at prices reflecting market fundamentals, facilitating sustained global economic growth as well as expanding access to energy by developing countries. Specific actions have been defined and are monitored with annual strategic reviews of EU-US energy co-operation.

⁵¹ Also see Annex 7 § 3.3 for detailed information.

⁵² Presented in a joint declaration at the EU-US Vienna Presidential Summit on 21st June 2006.

While the most recent EU-US Summit in April 2007 falls outside of the timeframe of this evaluation, it is important to note for the separate statement on energy security, efficiency and climate change that was issued. In addition to reaffirming the principles agreed to during the previous meetings, the statement insisted on the goals of ensuring secure and affordable supplies of energy, tackling climate change, and putting forward a detailed work programme in the energy and climate change domain to be achieved by the next Summit.

§ China

Since 1994 policy dialogue has been structured mainly by the EU-China Energy Conference and the EU-China High Level Working Group on Energy. The Conference brings together high-level European and Chinese representatives from industry and the administration every two years, alternating between China and Brussels.

Other EU-China initiatives have been launched:

- § The EU-China Action Plan on Clean Coal aims to provide reliable information to decision-makers at political, ministerial and corporate levels on how to develop policies and to implement in China clean coal technologies that are available or are currently being developed in Europe. A MoU on this issue was signed in February 2006 ("Co-operation on Near-Zero Emissions Power Generation Technology through Carbon Capture and Storage"). It explores the feasibility of near-zero emissions coal technology in China through carbon dioxide capture and storage.
- § The Action Plan on Industrial Co-operation Energy Efficiency and Renewable Energies targets closer contacts and support for efforts in China to promote industrial co-operation, with the aim of promoting increased energy efficiency and use of renewable energies.

The European Commission and China resolved to enhance co-operation after the last talks on Energy and Climate Change held in Beijing in January 2007. The EU committed itself to:

- § strengthening of its co-operation on energy efficiency and renewable energy as well as near-zero emissions coal technologies;
- § expansion of the "Clean Development Mechanism" that allows countries and companies with binding emission target to earn credits for investment in emission reducing projects;
- § co-operation on energy efficiency through international agreement on energy efficiency standards; China will be invited to the next round-table on international co-operation on energy efficiency;
- § co-operation on secure and sustainable energy supplies through improving transparency and reliability of energy data, strengthening technical and regulatory expertise, and enhancing stability through a market-based approach.

§ India

In recent years, India's relationship with the EU has developed exponentially. The India-EU Strategic Partnership Joint Action Plan was signed in September 2005. It is the formal instrument of overall EU-India co-operation and includes an ambitious fiche on co-operation in the energy sector. It aims at achieving safe, secure, affordable and

sustainable energy supplies on both sides. This is supported by the development of more efficient, cleaner and alternative energy chains.

In June 2005 three working groups were created in Brussels, respectively addressing: (i) renewable energy and energy efficiency, (ii) coal and clean coal technology, (iii) India's participation in the International Thermonuclear Experimental Reactor (ITER) project on fusion. In 2006 it was decided to establish a fourth working group on oil and natural gas. The first EU-India business conference on energy (6 April 2006) as well as the second meeting of the India-EU energy panel (7 April 2006) were both organised in New Delhi. Concrete studies in the energy field will be financed by the EU-India Action Plan Support Facility. The third panel meeting took place in June 2007. Further, energy and climate change featured prominently in the agenda of the 8th EU-India Summit held on 30 November 2007.

2.1.4 The Community strategy for improving nuclear safety in the Former Soviet Union

The London and Munich G7 summits held in 1991 and 1992 offered Former Soviet Union countries multilateral assistance for improving the safety of their Nuclear Power Plants (NPPs). An Action Plan was adopted that included (i) short term recommendations aimed at mitigating the most urgent safety weaknesses and (ii) long term recommendations for increasing the safety level of the existing modern units.

Under the TACIS programme the EC has over the last 13 years contributed more than €1bn to improving nuclear safety in Former Soviet Union countries. The EC is by far the most important donor in the sector. Support for nuclear safety under TACIS covered five domains:

- § OSA (On Site Assistance) with two components: (i) the permanent presence in most Former Soviet Union NPPs of an expert team from a West European NPP; and (ii) procurement of safety-related pieces of equipment (supply projects) with the OSA team acting as a facilitator.
- § Design: aimed at carrying out comprehensive assessments of safety-related issues such as reactor vessel embrittlement, primary circuit integrity, etc..
- § Waste: focusing on participation in international programmes, such as NDEP (Northern Dimension Environmental Partnership) and Chernobyl (several programmes).
- § Regulatory framework: supporting nuclear regulators and their TSOs (Technical Support Organisation) in completing their regulatory framework; establishing and implementing a modern licensing regime; and promoting effective inspection and enforcement practices.
- § Safeguards: a small programme, implemented by the Institute for the Protection and the Security of the Citizen (ISPC) of Ispra, was launched mainly in Russia in response to the increased risk of smuggling of nuclear materials.

TACIS first supported basic studies on specific technologies, safety evaluation and the possibilities for increasing safety levels (1991). From 1992 direct support was given to the NPPs to improve their operational safety systems and transfer European safety know-how.

Equipment supply was made available by TACIS from 1993. Strengthening RAs in partner countries was also one of the objectives of the G7 (now G8 after inclusion of the Russian Federation) Action Plan. From 1995 onwards support was given to fuel cycle management and to radioactive waste storage and management.

From 1999 onwards the approach to improving safety culture as set out in the TACIS Regulation has been the main driving force behind EC actions. This will be further emphasised in the context of the Instrument for Nuclear Safety decided on by the Council in early 2007 (see page 81 of annex 8 on Nuclear Safety for a brief presentation of that decision).

During its first years the management of nuclear safety programmes by the Commission was largely understaffed, which resulted in a huge backlog of projects already approved by the Council of Ministers and the partner countries but not yet contracted. Moreover misunderstandings between contractual authorities and partners in dealing with nuclear issues resulted in often protracted negotiations prior to the launch of new projects. Many improvements were made to the Project Management Cycle, notably as a result of careful analysis of the lessons from experience. New concepts such as Preliminary Project Planning /Plant Improvement Projects were developed to overcome previous difficulties; partner countries are now involved in the selection of OSA teams.

Nevertheless the safety culture in partner countries is still considered insufficient and the Council of Ministers recommended that "The focus of Community assistance will shift progressively toward support for development of safety management capability, in particular the human factor and motivational skills". RAM.G, the group of European regulators that advises the EC, recently recommended "supporting the regulator(s) in order to protect him from unjustified external pressure, which could affect its operation, its independent status or even its existence." Regulators need appropriate financing and the necessary competence and means to perform their regulatory duties.

As customers now pay their electricity bills, the financial situation of NPPs has dramatically improved. However, the issue of the first generation NPPs⁵³ has not found a satisfactory solution, and Russia is extending their lifetime.

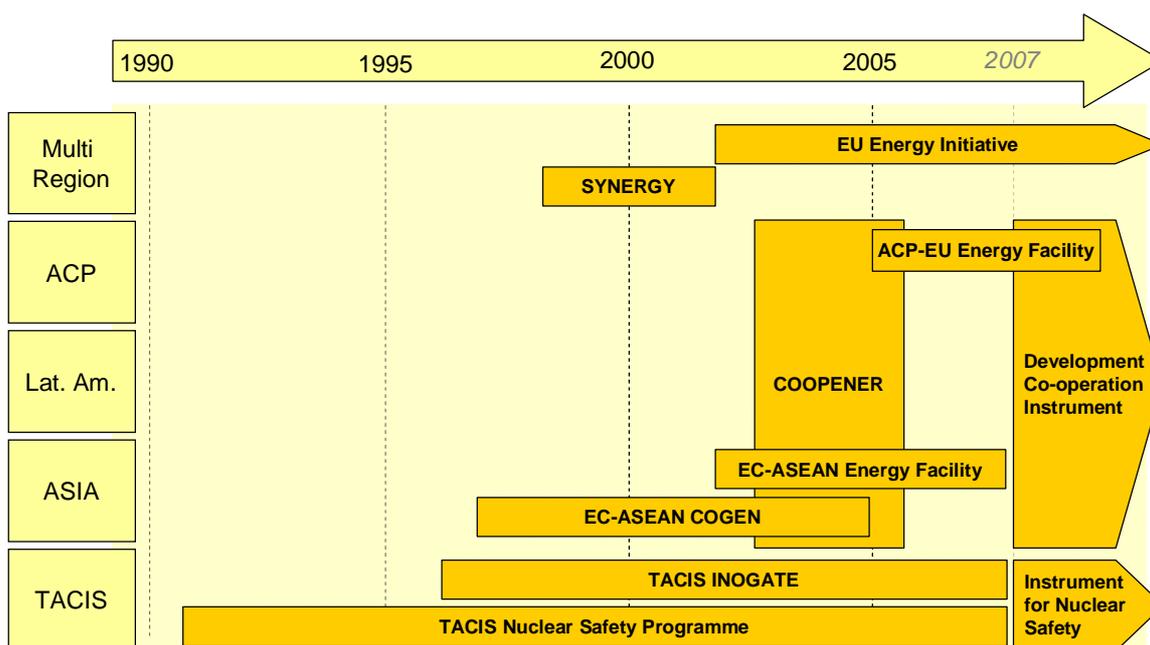
The TACIS programme was terminated at the end of 2006; it has been replaced by a New Financial Instrument adopted by the Council in 2007. Funds are earmarked for nuclear safety but probably in lesser amounts than in the past, owing to the increasing support for other third countries outside the Former Soviet Union. The next phase will therefore entail equivalent resources but with enlarged geographical priorities.

⁵³ RBMKs and VVER 440/230.

2.2 The Commission's intervention portfolio in energy

The following schema summarises the main energy programmes supported by the EC over the period 1990-present day.

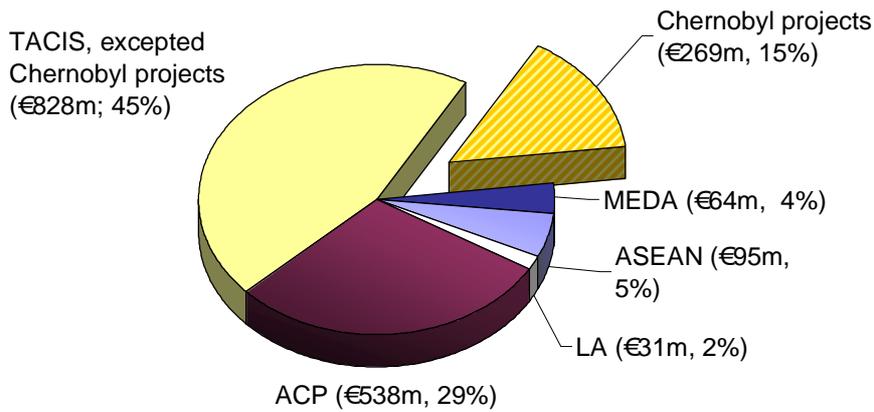
Chronology of the main EC programmes in the energy sector



Worldwide Commission support for energy encompassed 1,267 interventions⁵⁴ and a total contracted amount of approximately €1,826m during the period 1996-2006. The average value of individual interventions is about €1.5m.

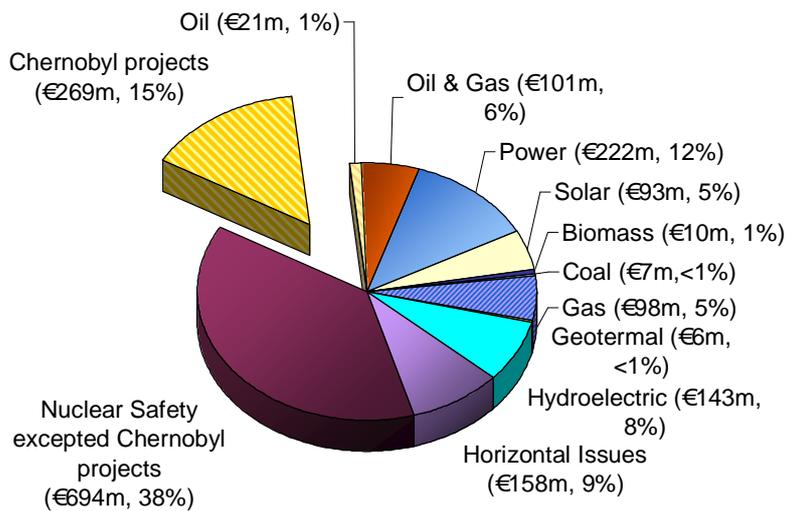
⁵⁴ In this evaluation, "intervention" has an operational definition. It goes beyond financial classification such as financial commitment. For the purposes of analysis, it encompasses interrelated measures pursuing a unity of actions. A regional programme and related measures implemented at national or sub-regional level are together considered as a single intervention. Similarly, a project implemented autonomously (that is outside the programmatic framework) will be considered as a single intervention.

Commission-supported projects in the energy area (1996-2006)
Distribution by region
 (€m; % of contracted amounts)



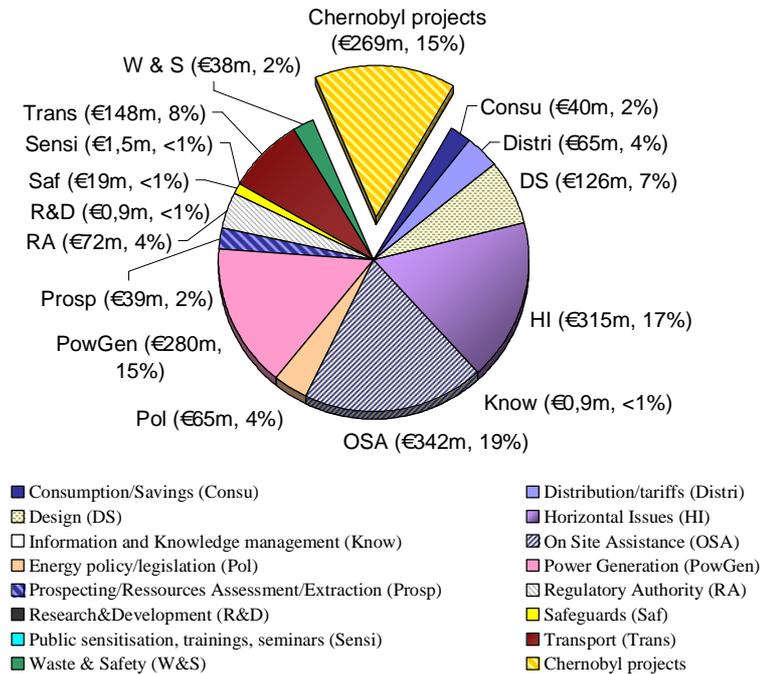
The European Commission has intervened in the energy sector in the ACP, Latin American (LA), ASEAN (Association of South East Asian Nations), MEDA and TACIS regions. The total contracted amount for each region varied from €828m in the TACIS region (Chernobyl projects excepted) down to €31m in the LA region. TACIS and ACP have been the main beneficiaries of the Commission's support and receive three-quarters of the funds allocated to energy – respectively 45% and 29% of the total.

Commission-supported projects in the energy area (1996-2006)
Distribution by field
 (€m; % of contracted amounts)



Commission-supported projects in the energy area (1996-2006)

Distribution by activity (€m; % of contracted amounts)



Interventions on nuclear safety - Chernobyl projects excepted - received 38% of the support, followed at some distance by power (12%) and hydroelectric interventions (8%). Oil, biomass, coal and geothermal were of minor importance, each receiving 1% or less of the funds. "On-site assistance", at €342m representing 19% of the total contracted amount (Chernobyl projects excepted), was by far the most important activity in the nuclear sector, followed by NPP design safety assessment. €72m was dedicated to supporting the Regulatory Authorities (RA) in the nuclear sector.

In the other energy-related fields, "horizontal issues"⁵⁵ accounted for 17% of the total contracted amount, followed by support for transport of energy (8%). Support for public sensitisation, training and seminars, safeguards, research and development, information and knowledge management, each accounted for less than 1% of the total contracted amount.

Most interventions were implemented at national level; 188 were regional or transnational including 12 programmes co-financed by the EIB and the EC.

Comparisons between regions, fields and activities have to be considered with caution given the heterogeneity of EC support. Nevertheless elements can be drawn from a regional analysis. In each region, the distribution of interventions by field⁵⁶ gives the following picture:

⁵⁵ "Horizontal issues" address all interventions supporting multiple activities or fields.

⁵⁶ See Annex 5 for the detailed typology of the "activity" and "field" components used to classify interventions.

- § In the ASEAN region, energy support was concentrated on horizontal issues which received 80% of the total contracted amount. Next came support for electric power generation which received 15% of the funding at €14m.
- § The distribution of funds is similar in the LA region where horizontal issues and electric power generation represented respectively 67% and 27% of the total contracted amount. However, in contrast with the ASEAN region, limited support for solar energy has been provided in LA.
- § In the MEDA region, support was concentrated on four fields: electric power generation received 54% of the funds, horizontal issues 28%, support for hydroelectric and solar systems 16% and 2% respectively.
- § Support for the energy sector in the ACP region was more diversified: contracts were allocated for electric power generation (31%), and for hydroelectric (24%), gas (18%) and solar (17%) systems. Six other fields were also supported (horizontal issues and oil 4%, biomass and geothermal 1%, coal and oil and gas <1%).
- § In the TACIS countries nuclear safety was the main field of intervention (69% of the amounts contracted in the region). Oil and gas in the INOGATE programme represented only 9% of the contracted amounts.

The regional analysis of interventions by activity shows that:

- § Support for the energy sector in the ASEAN and LA regions addressed mainly consumption and savings activities (20% and 57% in ASEAN and LA respectively), as well as horizontal issues (69% and 36%).
- § Power generation represented 49% of the total amounts contracted in the ACP countries, while horizontal issues were the second main activity (24% of contracted amounts).
- § In the TACIS region 77% of the financed activities addressed nuclear projects, principally on-site assistance projects (34% of total contracted funds). Chernobyl projects excepted, the second most supported activity was design safety with 13% of the funds.
- § The EC's energy resources for the MEDA region are mainly allocated to supporting development of an energy policy (32%), horizontal issues (25%), transport of energy (18%), and power generation (16%).

3. Answers to Evaluation Questions

As stated in the previous chapter, the Community's external energy policy has three major dimensions:

- § Facilitating Access to energy, as a contribution to poverty reduction, especially in developing countries.
- § Improving the security of the Union's energy supply.
- § Improving the Safety of nuclear power activities in the Community of Independent States (CIS).

These three components frame the ten Evaluation Questions (EQs) proposed by the evaluation team for addressing the fields of interest listed in the Terms of Reference. Access to energy as a contribution to poverty reduction is accorded increasing importance in the Community's energy-related interventions for developing countries, while the security of the Community's energy supplies and the safety of nuclear power activities are at the core of its dialogue with neighbouring countries.

The table below illustrates how each EQ addresses issues specific or common to the Commission's energy dialogue with developing and neighbouring countries.

EVALUATION QUESTIONS	DEVELOPING COUNTRIES	NEIGHBOURING COUNTRIES
Relevance and internal Consistency		
EQ1 To what extent are the Commission's external energy policies addressing European needs and commitments? To what extent are they supporting the priorities and objectives of partner countries?	X	X
Effectiveness and Sustainability		
EQ2 To what extent have the Commission's interventions improved sustainable access to energy services for the most vulnerable groups in developing countries?	X	
EQ3 To what extent have the Commission's interventions contributed to enhancing nuclear safety?		X
EQ4 To what extent have the Commission's interventions contributed to mitigating the environmental impacts of energy-related activities?	X	X
EQ5 To what extent have the Commission's interventions enhanced security of energy supplies for Europe?		X

EVALUATION QUESTIONS	DEVELOPING COUNTRIES	NEIGHBOURING COUNTRIES
Impact		
EQ6 To what extent is better access to energy improving living conditions and income generation in developing countries?	X	
EQ7 To what extent are the Commission's interventions in the energy sector contributing to better governance in the sector?	X	X
Efficiency		
EQ8 To what extent are the implementation modalities ensuring the success of the Commission-supported interventions?	X	X
Co-ordination and Complementarity		
EQ9 To what extent are the Commission's programmes co-ordinated with those of the EU Member States and other donors, and to what extent are the Commission's and EU Member States' interventions complementary?	X	X
Coherence		
EQ10 To what extent are the Commission's interventions in the energy sector coherent with other EU policies?	X	X

3.1 Relevance and internal consistency

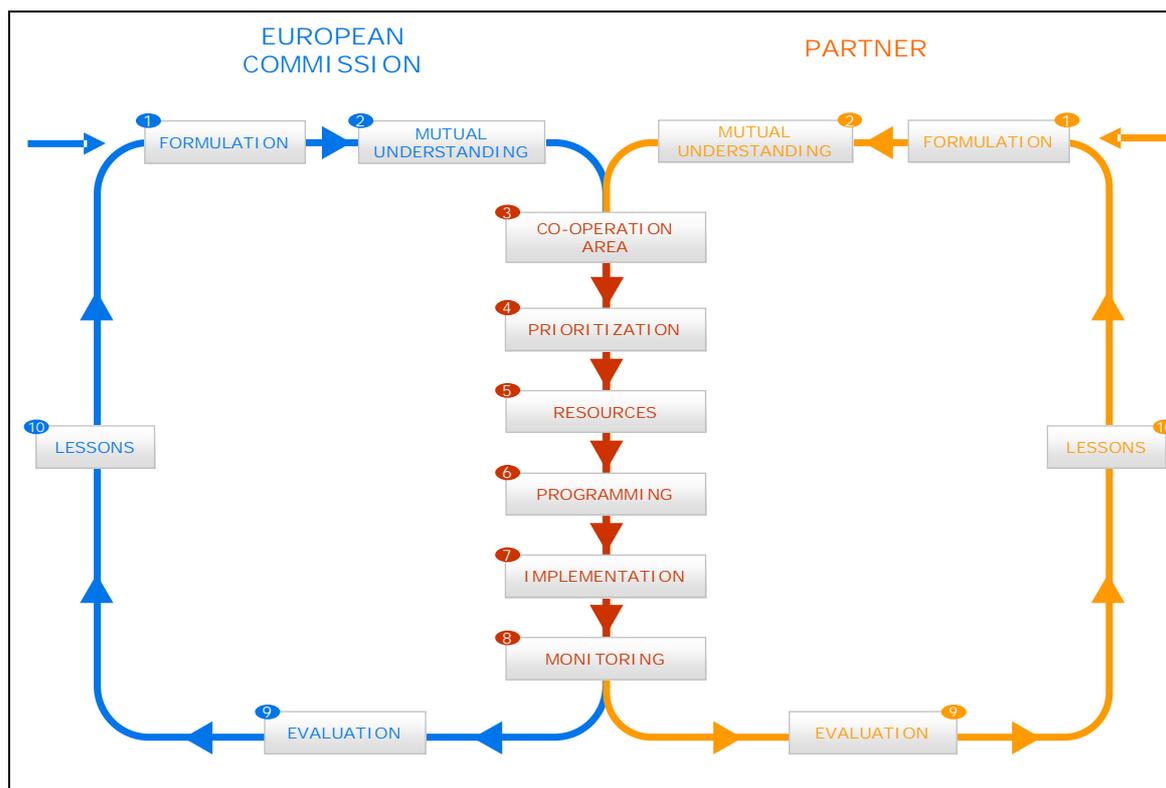
Evaluation Question 1
<p>To what extent are the Commission's external energy policies addressing European priorities and commitments?</p> <p>To what extent are they supporting the objectives and priorities of partner countries?</p>
Answer
<ul style="list-style-type: none"> - TACIS interventions in nuclear safety were launched in a context of emergency. They properly addressed the needs at the beginning of the programme. Now that the context has evolved, resource allocation in that field is losing its focus. - The EIB support for large supply and transport infrastructures is highly relevant for improving access to energy. The Commission has only recently taken into consideration access to energy for the poor, mainly through the ACP-EU Energy Facility and not yet as a focal sector. - The major issues of energy tariffs, market regulations, and subsidisation of the power sector are central; but the Commission has paid limited attention to those issues so far. - Improved security of energy supply is a major issue for Europe. Resources dedicated to that goal are extremely limited and dispersed - In general terms, the current approach and procedures in the energy sector do not allow real prioritisation of interventions on the basis of accurate country co-operation strategies. As a consequence, while individual interventions may be considered as "relevant", overall resource allocation is far from being optimal for addressing the identified problems of the partner countries.

Justification for the Evaluation Question

A co-operation programme is relevant if it contributes to objectives that are common to the different parties involved – in this case the EU and the partner country.

Usually the resources available to address priorities identified as of common interest are far from meeting the needs. Prioritisation of interventions to be carried out within that "area of common interest" is therefore critical. In that perspective, the policy dialogue should in principle comprise the ten following stages.

The 10 stages of a co-operation cycle

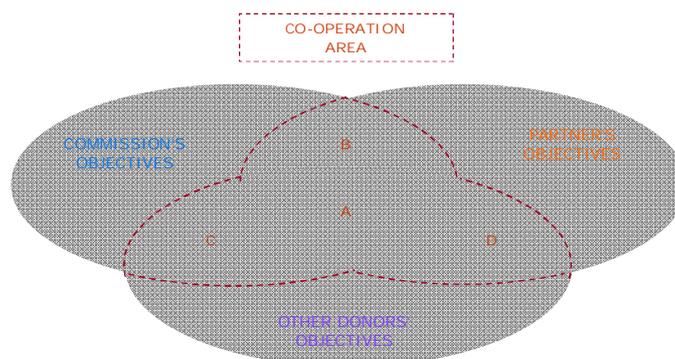


1. Clear formulation of the policy of each party.
2. Mutual understanding: presentation of the donor's policy and analysis of the partner's and other donors'.
3. Delineation of the set of objectives of common interest (co-operation area). These objectives provide the framework for the country co-operation strategy which is part of a broader policy dialogue.
4. Prioritisation of specific objectives within the co-operation area.
5. Resource allocation: inventory of available resources and other donor interventions.
6. Programming (country programme, sectoral country programme, etc.).
7. Implementation.
8. Monitoring.
9. Evaluation.
10. Each stage entails drawing out of lessons and takes account of contextual changes and evolution of priorities, new policy formulation being adapted accordingly.

In the context of the Paris Declaration, stages 2 to 8 imply that a certain level of co-ordination is pursued by the Commission, the partner and the other donors active in the sector, with the aim of optimising the complementarity and coherence of their interventions.

First, it should be recognised that these three actors are not necessarily willing to align all their objectives; only some of their main interests converge. The common objectives in the cooperation area can be depicted as follows.

The co-operation area: where distinct actors have common interests



The three actors have an interest in co-operating where their specific objectives are in line; that is the "A area". In some cases, only the specific objectives of the donors may converge whereas they do not correspond to the partner's priorities; that is the "C area". It can also be that only the Commission and the partner have common interests; that is the "B area". Finally, the partner and other donors may share priorities which are not those of the Commission; that is the "D area".

These 3Cs considerations are further developed in Evaluation Questions 9 (co-ordination and complementarity) and 10 (coherence). With regard to the evaluation mandate, the "D area" is outside the evaluation mandate, while Evaluation Question 9 addresses the "A, B and C areas".

In this perspective, questioning the relevance of a given intervention is asking "whether this intervention was the most appropriate for addressing the objectives identified as contributing to common interest".

For addressing this question, the main criteria would therefore be the following:

- § The policies of each party have been clearly stated and understood by the other parties.
- § The policy dialogue has led to a commonly-agreed country strategy for the sector, defining the co-operation area and priorities within that area.
- § The Commission resource allocation addresses these priorities.

Naturally priorities change over time, as has been especially evident in the energy sector during the last decade. Thus policy dialogue is an evolving process within which priorities are updated as often as needed.

Findings and analysis

In nuclear safety (NS), each OSA intervention can be considered as relevant since it meets the EC's as well as the partners' objectives. Common priorities have recently been updated (the ISNC programme and the related strategy for 2007-2009 adopted early 2007) but lack focus. Therefore the EC's resource allocation is unlikely to be optimal.

- § Nuclear safety⁵⁷ interventions have followed the classical pattern of a programme that has to evolve from emergency interventions – within which the donors and partners could easily agree on priorities – to rehabilitation and then a development programme. In the latter case, the donor loses influence for two reasons: a) its influence over the supported interventions decreases owing to a demand-led and more participative approach, and b) the relative importance of its contribution to the overall investment flow is diminishing. Both can be considered as evidence of the success of the intervention and of good prospects for sustainability. However, this evolution poses a challenging problem: during the whole process the donor has to narrow the scope of its intervention in order to remain relevant and to avoid redundancy and unproductive dispersion of its resources. This necessitates frequent redefinition of the “co-operation area”, and of the operational priorities within that area.
- § The NS programme started in the early 1990s as an emergency programme aimed at addressing the major risk of accidents in civil nuclear power plants. After the Chernobyl catastrophe, the EU’s strategy aimed at reducing such risks by addressing financial, technical and institutional shortages, which were the major risk factors. The CIS countries shared the view that these risks urgently needed to be tackled and, despite decades of a culture of secrecy, agreed to co-operate in the most important international NS programme ever launched. The risk assessment carried out under the aegis of the International Atomic Energy Agency (IAEA) in 1994 provided a broadly accepted basis for prioritising the interventions and, as already mentioned, from 1999 onwards the TACIS Regulation was the main driving force for improving nuclear safety in Former Soviet Union countries. On-site assistance interventions were primarily focused on issues rated in categories IV and III of the IAEA Green Book. The share of the Commission’s total investment dedicated to nuclear safety was very high⁵⁸ and indeed it addressed what were considered the main issues by both parties, based on an assessment meeting international standards. This assessment was moreover carried out by a team of nuclear safety experts from the main nuclear countries, including some experts from the country of which the nuclear system was being assessed).
- § From then on, however, the power sector’s financial situation improved rapidly and access to international knowledge and equipments is now much easier for most NPPs of the CIS. The Commission’s share in the overall investment in NPP is currently about 5%⁵⁹ and recent projects have been launched on an increasingly demand-driven basis. In the context of such a rapid evolution, the risk of the programme losing its focus was very high. The “cooperation area” now seems too broad, in comparison with the resources available, to allow for consistent prioritisation and therefore for maximising the impact from Commission interventions. Important questions remain unanswered such as the kind of risks that should be addressed as priorities: for instance, should one focus on major global risks likely to have a direct impact on EU citizens or also include local risks with only limited consequences for the EU? If the latter option, then on what basis should one prioritise? Some projects address category

⁵⁷ Annex 8 provides further information on nuclear safety.

⁵⁸ The Commission financed up to more than 50% of the investments in the mid-90s (information provided by Kaliningradskaja). For Armenia the relative contribution of Tacis remains much higher than in Russia or in Ukraine.

⁵⁹ From interviews, notably in LNPP and Aidco 4.

I and II issues; others address low radioactivity waste management, which only have a local impact and no consequences for the health of the European citizen.

- § The IAEA Green Book has not been updated since 1994 and no recent overall risk assessment is available for the CIS NPPs. Other projects – such as low radioactivity waste management – have a limited impact on the risk of radioactivity fallout on European territory.
- § The focus of OSA is now on the more recent and safer VVER 1000 NPPs and VVER 440/213.
- § In 1992 the G7 asked for closure of the first generation NPPs at the earliest possible date (that is before the end of their design lifetimes)⁶⁰. The EBRD (European Bank for Reconstruction and Development), and to a lesser degree the Commission, supported “short term improvements”. The Commission no longer supports NPPs that should already have been closed down for safety reasons⁶¹. Although the safety of those plants has significantly improved, the risk they now represent has not been assessed; Russia has not asked the IAEA for independent international expertise.
- § It is broadly recognised⁶² that, in the supported NPPs, the evolution of OSA interventions, from a focus on equipment procurement and installation to one on soft assistance aimed at promoting a safety culture through improved institutional settings and human behaviour, fits in with the trend in needs.
- § Dedicating Commission resources to strengthening Regulatory Authorities seems highly relevant from an EU point of view. The contribution to enhancing the technical and institutional strength of the Regulatory Authorities is an increasingly important aspect of the Commission’s NS programme⁶³. A technically and institutionally powerful and reliable Regulatory Authority is the keystone of a sustainable process focused on increased safety of nuclear power production. The extent to which this priority is shared by the partner countries is less clear but it is a critical condition for the effectiveness of such support.

Security of energy supply is a major issue for Europe. Several initiatives are being taken in that perspective. However they are over-ambitious insofar as they receive only limited resources spread between too many objectives (also see EQ8).

Securing energy supplies for Europe is a major issue, clearly formulated as a priority for the external policy of the Union in this sector (see chapter 2). The RELEX DGs and DG TREN contribute to that goal. The main issues at stake are the following:

- § the energy dialogue with Russia;
- § the relations with Ukraine as a major transit country and the attempt to open an alternative route for oil and gas between Central Asia and Europe which does not have

⁶⁰ Among which RBMKs and VVER 440/230 which still provide more than 40% of the nuclear electricity of Russia.

⁶¹ The main problem with RBMKs is the reactivity coefficient that remains positive; the main problem with the first generation VVER was the fragility of the vessel due to the presence of impurities in the steel (the importance has been reassessed and it has been said that the consequences of the problem have been mitigated).

⁶² Sources: interviews in Russia and Ukraine.

⁶³ €60m in Russia and €80m in Ukraine.

to rely on Russian transport infrastructure;

§ dialogue with and interventions in Mediterranean countries;

§ dialogue with other major energy consumers, notably on energy efficiency.

Energy dialogue with Russia

§ The Commission has no exclusive mandate to negotiate with Russia in the name of the EU. Parallel and often competing negotiations are carried out by the main EU Member States. The human and financial resources dedicated by the Commission to these negotiations are very limited.

§ Energy dialogue with Russia is carried out by DG TREN and as such is not part of the scope of this evaluation. However, a project such as “Harmonisation of the energy policies” was financed by TACIS as a way of supporting this dialogue and is therefore covered by this evaluation. The dialogue was also supported by joint thematic working groups and by a “Technology Center” employing Russian and EU experts initially financed and managed by DG TREN⁶⁴.

§ The “Harmonisation project” aimed at “contributing to the development of a common approach between the EU and the Federation of Russia on priorities for sustainable development of energy supply and demand”, was designed to meet the above criterion of relevance. Focusing resources on helping EU negotiators, in co-operation with the different working groups, to understand better the Russian situation and policies would indeed have been very relevant. The reports produced by the working groups of the policy dialogue suggest that there is room for enhancing the capacity of the “think tank” required to support such important negotiations. However, the purpose and expected results of the project outlined a long list of activities aiming at supporting the dialogue, improving the climate for attracting foreign direct investments (FDI), and enhancing the security of energy transport infrastructure. While exploring each of these fields of research could be considered as relevant in the Russian context, the relevance of spreading extremely limited resources between them is questionable. Moreover the design of this project relied inter alia on the following assumptions that should have been more carefully checked:

- Russia and the EU Member States (MS) were ready to share the necessary information to allow joint EU-Russian teams to produce studies that could not have been produced by existing research centres;
- there is a demand at the level of the different target groups (negotiators, private sector enterprises and institutions in charge of network maintenance) for the kind of studies produced by the project.

Both assumptions proved wrong. The study teams had to build all their analysis on publicly available information⁶⁵ and none of the target groups seemed to use the outputs of these teams since the information and analyses provided by the project added little to their knowledge. The reports produced by the project are general information documents, but

⁶⁴ These institutions are described in Annex 8, TACIS Non Nuclear, Russia.

⁶⁵ The references of the documents published by the project are given in Annex 8, TACIS Non Nuclear, Ukraine.

have not been designed to provide the above mentioned "target groups" with the information they need to improve the quality of their decisions.

- § Altogether the support provided by this project to "policies harmonisation" was extremely limited in view of the importance of the EU-Russia Energy Dialogue⁶⁶. A much clearer identification of the priorities for addressing this process would have been necessary to ensuring relevant use of these scarce resources.
- § Support for improving energy efficiency is now presented as the main dimension of future Commission's interventions in Russia. While this indeed has a certain contribution for enhancing the security of supply to Europe, since the energy saved could be exported, short-term energy market- related issues will remain central for the EU and the keystone of the policy dialogue. The resources dedicated by the Commission to contributing to this process seem to be diminishing from an already very low level and the design of this support remains very unclear.

Dialogue and intervention in Ukraine and in the Caucasian region

- § Ukraine is a major transit country. Its role is critical for the security of energy supply in Europe. During a large part of the period under review, Ukraine was keen to be associated as closely as possible with the EU and this was a major driver of its policy.
- § The Memorandum of Understanding (MoU) between the EU and Ukraine clearly states the positions of both parties in five different fields for which "roadmaps⁶⁷" have been drafted – namely nuclear safety, electricity and gas markets, transit and security of supply, structural reforms including safety and environmental standards in the coal sector, and energy efficiency. These roadmaps provide for each of these sub-sectors the area of common interest, and, if there is divergence, the respective positions of the EU and Ukraine. During 2006 specific working groups made some progress in line with the content of the different roadmaps:
 - a. The electricity and gas market group has developed a work programme identifying as priorities the strengthening of the institutional structures and in particular the independence of the regulator and the Transmission System Operator. For this specific purpose, a Twinning project on electricity regulation is ongoing and a Twinning on gas regulation is in the pipeline. Experience of the EC-supported energy market reform projects suggests that these objectives are difficult to achieve, especially in the gas sector.
 - b. The hydrocarbons and transit group has developed a document with "priority projects in the field of energy for 2007-2008" (oil, gas and electricity).
 - c. The nuclear safety group has recently managed to come to an agreement on the Terms of Reference and Technical Guidelines for the Joint Project between the Commission, the IAEA and Ukraine on the evaluation of the

⁶⁶ At the time of the mission, the harmonisation project was closed and the contract with the consultant team in charge of supporting the re-launching of the activities of the Technology Centre activities was blocked for several months for procedural reasons. The actual contribution of the Technology Centre to the policy dialogue did not fall within the scope of this evaluation, since the TC was until recently a DG TREN instrument. It is said to suffer from very much the same limitations as the Harmonisation project (limited resources, lack of focus, access only to publicly available information, , working groups producing general information documents)

⁶⁷ See Annex 8, TACIS Non Nuclear, Ukraine § 1.2.

nuclear safety of the Ukrainian Nuclear Power Plants. This was the main purpose of the MoU in this field but also a major source of disagreement since Ukraine's position was that it had already made a self-assessment of the safety of its NPPs. This self-assessment was not accepted by the EU as meeting the requirement. Implementation strategies for Ukraine and Armenia have recently been decided in co-ordination with the IAEA and are being carried out, according to recent information provided by the Commission.

- d. The coal group is in the final stage of developing an all-embracing project (as well as a few supporting projects) in support of its sectoral priorities.
- e. Finally, the energy efficiency and renewable group is at the final stage of developing a roadmap for future work.

§ The support provided by the EC to the Energy Market Reform aiming at improving regulations and standards, in the context of integration of power and gas markets with Europe, was directly in line with the corresponding roadmap. Insufficient prioritisation was the weak point of this project. The same project had to address electricity and gas markets and report to the Ministry of Fuel and Energy, to the main operator on the gas market, and to the electricity market regulator. The range of results (outcomes) expected from the project was far too broad in relation to the resources and time available⁶⁸.

§ INOGATE (Interstate Oil and Gas Transport to Europe) is a regional programme based in Kiev, which aims at developing an alternative route to channelling oil and gas from Central Asia to Europe through promoting more regionally-integrated management of oil and gas transport networks. This programme included institutional support as well as "small scale investments" mainly dedicated to assessing the situation of the pipelines network and building gas metering stations. The INOGATE concept relied on several assumptions⁶⁹ notably related to:

- the will of the partner countries to lessen their dependence on transportation networks owned by Russian companies for their supplies or exports of oil and gas;
- their willingness to share information on gas pipeline safety and management;
- their willingness to have and to share more reliable gas flow metering data;
- their readiness to harmonise their regulatory frameworks;
- the interest of International Financial Institutions (IFIs) in TACIS-financed studies to pave the way for their investments.

§ Most of these assumptions would have deserved careful checking before and during implementation of the programme.

§ INOGATE had very ambitious objectives and its budget was around €10m per year. Within that limited envelope, a large share of the programme was dedicated to investing in works and equipments. Within that limited budget, both optimisation and

⁶⁸ The energy market reform had to report to four different institutions. See details in Annex 8, TACIS Non Nuclear.

⁶⁹ Details in Annex 8, TACIS Non Nuclear, Ukraine § 1.3.

systematic prioritisation of resource allocation would probably have led to a focus not on those investments, but rather on studies and institutional support.

- § Some specific studies - such as the feasibility study on reversing the use of the Odessa-Brody oil pipeline in order to supply the North of Europe - proved highly relevant to the analysis of means of improving the EU's security of supply.

Interventions in other areas

- § In MEDA and the ASEAN countries, most activities were intended to contribute to improved energy supply and energy efficiency. None of the observed activities were justified by the objective of facilitating access to energy for the poor.
- § In Syria, energy is not identified as a focal sector. The EIB invests in improving production and transport capacities⁷⁰. The Commission supports national and regional programmes to improve grid interconnections, energy-efficient building and so on. Unsustainable price-subsidisation policies are widespread in the region and the tariff issue has never been adequately addressed. Interventions are generally relevant from the EU's and partners' points of view, but do not result from systematic identification of the main challenges to be addressed.
- § In the ASEAN countries, the Commission pursued two main objectives in the field of energy:
- promoting European technologies and facilitating access by European firms to the ASEAN market;
 - supporting institutional development, notably through the ASEAN Centres for Energy.
- § In the ASEAN region the Commission has funded major projects that foster regional integration (e.g. APRIS), although not with a major focus on the energy sector. Some of the initiatives funded under the EC-ASEAN Energy Facility (EAEF) serve that purpose⁷¹. It also contributed to building the capacity of the ASEAN Centre for Energy, and therefore indirectly to supporting regional integration in the energy sector. However, the Commission support for regional integration through the energy sector had only a limited impact, given both the size of the market and also that energy in the region remains a matter of national interest, if not of international tension. It could be added that at the time of the mission the ASEAN partners had the feeling that their wish to pursue a policy dialogue on energy issues with the Commission and to benefit

⁷⁰ The EIB-funded Facility for Euro-Mediterranean Investment and Partnership (FEMIP) has provided loans, investment capital and grant aid for technical assistance since October 2002. Energy and transport infrastructure projects have been supported under the FEMIP. Examples of projects include the Deir Ali Power Plant (construction of a 750 MW natural gas-fired power plant; €200m support = 50% of budget) and the Deir Azour Power Plant (construction of a 750 MW natural gas-fired power plant; €200m support = 50% of budget).

⁷¹ For instance, under the EC-ASEAN Energy Facility (EAEF), the Commission has supported the Trans-Borneo power grid development concept and an energy trading study involving Malaysia, Indonesia and Brunei.

from European know-how and experience, for instance in organising energy markets, had received a lukewarm response⁷².

- § Most interventions were in line with European energy policy objectives and with those of EU economic co-operation in the energy sector, notably the programmes to promote co-generation and the European enterprises. However, since energy was not considered a focal sector, these interventions do not result from systematic analysis of the “cooperation area”. The absence of a formal strategy did not allow for systematic prioritisation of the EC investments in that area.
- § The themes supported by the EU in its bilateral dialogues with the main energy consumers such as the US, China and India are consistent with European priorities. All these economies are less energy-efficient than the EU. The priorities are therefore energy efficiency, renewable energy, clean coal technology, and, interestingly, biodiversity⁷³ (with the USA).

In ACP countries, facilitating access to energy for the poor has only recently been taken into consideration, but not yet as a focal sector of the co-operation.

- § Despite some progress in the Commission’s participation in conceptual networks at central level⁷⁴, so far energy has in only very few cases been integrated into country strategy documents. The 2005 European Consensus on Development puts more emphasis on energy, which could make possible increased support to the sector under EDF 10. Moreover, the current programming exercise for EDF 10 (2007-2013) shows that the number of countries requesting support in the energy sector is increasing.
- § For the Commission, support is very much based on demand-driven approaches⁷⁵. Such an approach allows at best checking whether interventions are in line with policy guidelines. But, as partner countries are not involved in the project selection process, the potential contribution of proposals to their sectoral policies is not given strong emphasis. This does not lead to optimisation of resource allocation.
- § At central level, the Commission does not systematically disseminate and use lessons from its own experience or from activities supported by demand-driven approaches⁷⁶.
- § The Intelligent Energy Executive Agency (IEEA) was set up in 2003 through a Commission decision in order to carry out tasks linked to the implementation of the “Intelligent Energy – Europe” Programme, including COOPENER. Its mission is to effectively manage the programme including the evaluation, negotiation, management

⁷² After the evaluators’ mission in Asean and outside the scope of this evaluation, several important contacts were made between the Commission and the Asean partners to change that vision (e.g. the participation of Commissioners in the 3d ASEM Environment Minister’s Meeting on 3/4/07, visit of President Barroso to the ASEAN Summit in Singapore in November 2007 to lobby for EU-ASEAN Co-operation in the field of energy).

⁷³ Climate change is becoming a very high priority in the negotiation agenda. But surprisingly, how to directly address the risk of massive biodiversity losses attributable to the rapid evolution of the climate is very seldom part of the debate. Overlooking what is in fact the most threatening effect of global warming may lead to questionable decisions such as dedicating to bio-fuel production very large areas that could better be dedicated to protecting biodiversity. Burning life is a solution that should be considered with care, especially in the current context.

⁷⁴ See Annex 7 § 2.2 about the EUEI.

⁷⁵ The ACP-EU Energy Facility supports infrastructure projects. Support to “soft” projects is made through ACP-EU COOPENER or the Partnership Dialogue Facility (PDF).

⁷⁶ Limited knowledge management within the Commission further developed in section 3.4 on efficiency.

and technical follow-up of the projects in close co-operation with and reporting to its parent DG TREN.⁷⁷ It was very much used as an administrative support and had limited influence on the relevance of EC-supported initiatives.

- § Deconcentration is another issue since very few Delegations have energy specialists among their staff and therefore cannot play an important role in the sector. Major issues such as tariff policies and in some cases energy crises⁷⁸ cannot be tackled by the EC Delegation teams.
- § The EIB has much stronger analytical and project design capacities in the sector. Its field of intervention is support for the development of supply and transport infrastructure through loans (often supported by a Commission contribution to loan interests). The relevance of its interventions has been considered very high in most cases since it is financing the development, and in some cases rehabilitation, of critically needed infrastructures. When relevant, the EIB raises issues of tariff subsidies and poor debt recovery as the basis for special conditionality attached to its loans. The EIB's loan conditions relating to tariffs increasingly imply a more complex tariff structure that allows cross-subsidisation between different consumer groups, in order to address at one and the same time the economic profitability of its investments, their sustainability and affordability for the population.

⁷⁷ Since May 2007, the Agency is transformed into the Executive Agency for Competitiveness & Innovation (EACI)

⁷⁸ The example of the current energy crisis in Ghana (see EQ 2) is an illustration of this issue.

3.2 Effectiveness & Sustainability

3.2.1 On access to energy for poverty reduction

Evaluation Question 2
To what extent have the Community's interventions improved sustainable access to energy services for the most vulnerable groups in developing countries?
Answer
<ul style="list-style-type: none"> - The Commission and the EIB have provided effective support for the supply side of the energy sector (infrastructure, procurements, regulatory aspects of power generation). This approach has contributed to improving reliability and to extending the provision of energy to the population. - By contrast, a very limited number of interventions have targeted the consumer side, in particular where the poor are concerned. - Interventions addressing the crucial issues of energy pricing and subsidy are limited (EIB special conditions for loans). - The preferred use of calls for proposals (Energy Facility, Coopener) limits the political visibility and means of action of the Commission in the field. Its sectoral dialogue with the partner is weak, which hampers its capacity to influence a sustainable pro-poor energy policy on the part of the partner. - This affects in particular the capacity to negotiate the partner's tariff policy, which impacts on affordability of energy for the poor, macroeconomic stability, and the sustainability of the sector as a whole.

Justification for the Evaluation Question

The Johannesburg World Summit on Sustainable Development (WSSD) insists on access to reliable and affordable energy services as a key precondition for sustainable development and for achieving the Millennium Development Goals, including poverty eradication. The Commission's Communication of 2002 "Energy co-operation with the developing countries" makes the first reference to access to energy, in favour of the so-called "energy poor" (i.e. those who do not have access to energy owing to financial or geographical barriers).

EQ2 addresses sustainable access to energy in its four dimensions:

- § availability of energy,
- § reliability of energy supply,
- § affordability of energy for consumers,
- § sustainability of supply.

Findings and analysis

The Commission's support has improved the availability of energy, but has not specifically targeted the consumer side.

- § Community interventions have contributed to the improvement of electricity utilities. For instance, interventions in ASEAN have contributed to improved interconnection, as well as production and distribution at local level. In Africa, the ACP-EU Energy Facility supports the delivery of modern energy services in rural areas, as well as four continental power pools aimed at developing and optimising the regional electricity networks and power markets. Also in the ACP area, the EIB has addressed production, transport and connection (rehabilitation or settlement of new infrastructures) in partnership with other IFIs (World Bank, African Development Bank) and donors (including the EU Member States).
- § However, support for the supply side is seldom complemented by actions on the consumer side, especially when addressing vulnerable groups. In the MEDA and ASEAN regions, priority for poor areas is not a specific objective of regional energy interventions. In the ACP region the EIB has no specific vulnerability-oriented approach. Before 2002, the Commission's interventions in the ACP did not address access to energy for the most vulnerable groups; since 2002 support on the consumer side has focused on soft or pilot projects, using COOPENER. Access to energy for the most vulnerable had not been identified as a priority until the 2005 European Consensus on Development. Since then, the ACP-EU Energy Facility has supported infrastructure projects aimed at rural access to modern energy services. Further, it is expected that EDF 10 will put more emphasis on that dimension⁷⁹. However, although the Commission has adjusted its policy, the actual effects on access to energy for the most vulnerable have remained limited so far.
- § The new generation of PRSPs (Poverty Reduction Strategy Papers) mainly addresses the contribution of energy to poverty reduction through the supply side (infrastructures, regulation). The PRSPs assume that improved energy supply will also benefit the poor. This assumption has not yet been validated, and neither the Commission nor the EIB have conducted an analysis of the impact of improved electricity utilities on the most vulnerable groups (also see EQ 6)⁸⁰.

⁷⁹ Source: DG DEV.

⁸⁰ AIDCO envisages including analyses of the impact of energy on poverty reduction in the evaluation of the ACP-EU Energy Facility.

Other donors and IFI address the issue through Output-Based Aid (OBA). It is a mechanism for supporting the delivery of basic infrastructure and social services where policy concerns justify the use of explicit, performance-based subsidies. The World Bank gave this mechanism a boost in 2002, in order to reach the poorest segments of the population, while increasing accountability for results. At the core of the OBA approach is the contracting out of service provision to a third party (private operator, community-based organization, NGO, public service provider) with payments made after the delivery of specified outputs. In rural electrification for example, subsidies are allocated in proportion to the clients actually connected, and not in proportion to inputs (km of grid extension, etc.).

When the Commission has supported electricity market reforms, this has contributed to increasing the reliability of energy services. Again, this support was not specifically targeted on the most vulnerable groups, and its impact on these groups is not assessed.

- § Whenever the Commission has supported electricity market reforms, the support was focused on liberalisation and settlement of regulatory authorities. The aim was to pave the way for competition and private involvement in the sector. For example in MEDA (ESSP - Electricity Sector Support Program- and PSPA), the Commission programmes have contributed to significant technical and professional improvements in the operation of power generation plants. This contributed to improving (or maintaining) the reliability of power supply and to extending the grid. It thus contributed to improving service to consumers. The EIB support for large scale infrastructures has also contributed to meeting current and future demand for energy.
- § Market reform was not directly tailored to addressing the specific constraints of the most vulnerable groups. The field visits have highlighted the partners' lack of pro-poor energy policies including any emphasis on political targets in terms of grid coverage rather than grid connections, and also the destructive competition between grid extension projects and existing autonomous off-grid systems⁸¹.
- § Owing to the absence of focus on the energy sector in EDF 9, the Commission Delegations are not involved in sector dialogue with partner countries or regions. As a result they have no technical expertise to identify and monitor energy access programmes. The focus on soft pilot projects and the use of calls for proposals do not enable the Commission to address those issues in the field.

Inadequate pricing policies affect (i) the affordability of access to energy, and (ii) the sustainability of the energy sector as a whole. This issue was not addressed by the Commission.

- § Energy prices play a crucial economic role, given the importance of energy as the major input of all productive activities and for the basic welfare of the populations. Political interventions are required either to create a competitive market that would not emerge naturally, or to regulate prices and tariffs if such a market cannot be established. The latter situation is the most frequent, particularly in developing and transition countries. Energy prices are often regulated with a view to providing cheap energy to domestic producers and to consumers.
- § The assumption that subsidisation of energy would favour competitiveness of the productive sector and welfare of the populations, including the poor, is incorrect. Since (i) this subsidisation has an important fiscal cost, that is it is supported by taxes hampering competitiveness and, (ii) the rich get more benefit from it than the poor as they use more energy, pricing policies that do not correctly reflect economic costs have major consequences:
 - Public finance has to bear the financial burden. Given the economic weight of the sector, energy subsidies often become a major source of financial imbalance and

⁸¹ See Annex 8, ACP Countries.

economic instability. The paradox is that it creates inflation, whereas the aim was to keep prices down.

- Allowing enterprises and consumers to acquire energy at artificially low prices encourages waste, and reduces the incentive to rationalise energy use or increase efficiency.
- The poor are particularly affected by inadequate pricing policy. On the one hand they benefit from cheap regulated prices (bearing in mind that in absolute terms the main beneficiaries are the larger consumers), but on the other hand economically-inefficient energy prices are reflected in power cuts, lack of extension and maintenance of the networks, limited number of selling points, and so on.
- Finally, as price subsidisation does not reflect economic costs, it prevents private producers and distributors from entering the market. They cannot invoice real economic costs. Thus, in contrast with national electricity companies, they cannot benefit from cross-subsidies (compensation for losses in non-recoverable networks – mainly in rural areas – with incomes from cost-recoverable networks in industrial or dense urban areas).

§ The EIB addresses pricing policy in the framework of the infrastructure projects it supports. Tariff reforms are part of its “special conditions” for loans, agreed with the other IFIs involved in the project. The aim here is to ensure that investments are recovered. The EIB also presents itself as the initiator of tariff reforms (in Syria it promoted the first study on tariffs). EIB’s concern is to ensure that overall tariffs reflect the long-run marginal cost of supplying energy. As said above, the EIB is not necessarily opposed to cross-subsidisation between different consumer groups to protect the poor’s purchasing power provided that average prices actually cover costs⁸².

§ The Commission seldom enters into dialogue on tariffs with the partner. When it does so, it is within the context of macroeconomic policies, rather than in the framework of energy sector dialogue⁸³.

§ The Commission has also difficulties determining tariffs in the case of its own pro-poor energy projects. For example, the Programme Régional Solaire in the countries of CILSS (Comité Inter-Etats de Lutte contre la Sécheresse au Sahel) – which aims to provide drinkable water through solar pumps – is ten years old now. No decision has been reached yet on what should be an adequate tariff level to ensure access to water for the beneficiaries, as well as management, maintenance and renewal of equipment. Each member country is conducting studies on that aspect, while the renewal of the first generation of solar equipment is becoming a necessity.

§ In Russia and in Ukraine, internal energy prices are heavily subsidised. This is a major issue notably hampering the market liberalisation process as well as all programmes

⁸² EIB energy specialist’s declaration.

⁸³ For example, in 2006 Ghana acknowledged an “energy crisis” (the deficient supply capacity of the Akosombo hydro-power plant has led to power cuts and use of expensive crude oil-generated plants). An IMF review has stressed the linkage between this energy crisis and the national budget deficit. In parallel, the EIB-World Bank joint mission of January 2007 recommended increasing tariffs and removing subsidies. The EC Delegation was not involved in an energy sector dialogue and it recognised that it did not have technical capacities or experience to discuss that issue with sectoral authorities. It had to rely on the technical support of the World Bank to define a dialogue strategy, discussed under the budget aid framework.

aiming at raising the energy efficiency of the economy. The Commission is well aware of this and has drawn the attention of the concerned governments to this issue. However the Commission has never invested adequately either in analysing the socio-political challenge of increasing energy prices in those countries, or in assisting them in the implementation of tariff adaptation policies.

3.2.2 On nuclear safety

Evaluation Question 3
To what extent have the Commission's interventions contributed to enhancing nuclear safety?
Answer
<ul style="list-style-type: none"> - Tacis has contributed to transferring Nuclear Safety technologies meeting international standards. - The safety of the first generation reactors (RBMKs and VVER⁸⁴ 440/230) has improved, owing to the support from EBRD, TACIS and others donors. This improvement has encouraged the Russian authorities to extend their lifetime, while the G7 had asked in 1992 for their closure at the earliest possible date. - The partner governments seem less convinced than the EU of the necessity of promoting the independence and the technical and institutional strength of Regulatory Authorities. - Sustainability is still in doubt despite the commitments made by the partners when they signed and ratified the International Convention on Nuclear Safety. - Overall progress in nuclear safety is very hard to evaluate, as no overall risk assessment has been conducted recently.

Justification for the Evaluation Question

The Commission is addressing nuclear safety in five countries: Russia, Ukraine, Armenia, and, to a lesser degree, Kazakhstan and Kyrgyzstan. The Commission has concluded high level agreements with three of these countries:

- § Russia: the road map, agreed in May 2005, details policy commitments adopted in May 2003 at the St. Petersburg Summit.
- § Ukraine: The MoU on Energy was signed in December 2005 at the EU Ukraine Summit.
- § Armenia: an agreement between Armenia and the Commission was signed in 2001.

⁸⁴ RBMKs: Reactors Bolshoi Moschnosti Kanalnyi. VVER: Voda-Vodyanoi Energetichesky Reaktor.

It is worth noting here that Nuclear Safety includes “design safety” and “operational safety”. Operational safety is difficult to evaluate⁸⁵. Reliable quantified indicators are scarce.

Findings and analysis

The TACIS contribution to improving NPP safety through equipment improvements has been effective. Progress in promoting a genuine safety culture is harder to assess.

- § Most supply projects achieved their planned output, namely installation of the contracted equipment. Few failures were noted but many projects were delayed for several years after the completion date stipulated at the time of signature of the contract. The main reasons explaining these difficulties are further detailed in EQ8 on efficiency.
- § Through TACIS, both the safety and reliability of VVER1000 and VVER440/230 have improved. The OSA programme demonstrated that, for most safety issues in categories IV, III and II (as identified in the Green Book), a solution exists that meets international standards. This solution has been implemented in at least one unit through the installation of equipment financed by the EC.
- § Little is known about the extent to which safety improvements introduced into one or several units as a result of a particular OSA action (soft or hard) are replicated in other similar units; or in other words, of how the partners tried to maximise the impact of the TA. This relates, among other reasons, to the large degree of autonomy given to each NPP in both Russia and Ukraine.
- § In 1992 the international community (G7) requested the closure of first generation nuclear power plants⁸⁶ before their design lifetime was completed. A large programme of safety improvement was then financed by partners with the assistance of the EBRD and more limited assistance from TACIS (“short term improvements”). Russia recently extended the lifetime of those plants. Armenia accepted the objective set by the G7 but stated that it cannot propose a specific date for the closure of Medzamor.
- § No international assessment of the overall safety of those plants has been conducted under the aegis of the IAEA since 1994. The EC does not intend to provide further equipment to improve the safety of first generation VVERs and RBMKs until an updated overall safety analysis meeting international standards has been implemented. Small supply could support soft assistance if properly justified⁸⁷.
- § The only exception is Armenia which will benefit from more supply projects.

⁸⁵ See Annex 8 TACIS Nuclear Safety, § 2.1. The evaluation could not build on the 2006 evaluation of the TACIS Regulation, from which the energy sector (nuclear and non-nuclear) was excluded (Evaluation of Council Regulation 99/2000 TACIS and its implementation – ref. 728 ; available on the EuropeAid Evaluation Unit website).

⁸⁶ First generation nuclear power plants: RBMK and old VVER 440/230.

⁸⁷ Soft support addresses the human element of safety that is at the core of operational safety (i.e. enhancement of a safety culture). Hard support addresses the supply of safety-related equipments and constitutes a platform from which to transfer Western safety standards and technology.

International nuclear safety regulatory knowledge is being effectively transferred to national Regulatory Authorities and Technical Support Organisations. The effectiveness of assistance to promote institutionally independent and powerful Regulatory Authorities is harder to assess.

- § Structural, organisational and co-operation systems between EU and TACIS TSOs have been established. The measures necessary to accommodate industrial project timetables have been implemented. The effects of these measures are visible in the programmes currently being implemented. The initial learning difficulties have been overcome.
- § Results are difficult to assess. Over the period, successive ToRs aimed at capacity-building include the same activities, training, regulatory pyramids, documentation and workshops. Only outputs were measured (number of training sessions, workshops, etc), which did not allow the study team to assess effectiveness.
- § The “2+2 concept” proved to be relevant as well as effective⁸⁸. It meets the real needs of the utilities and RA/TSOs in partner countries. Its achievements can be summarised as follows:
 - Enhanced understanding of safety issues related to the modernisation of plants.
 - Transfer of experience to the partners through highly effective on-the-job training, supplemented with training in EU facilities.
 - Approaches to safety evaluation harmonised with those practised in the EU. New regulations are being developed; co-operation between Russia, Ukraine and the EU regulatory support organisations has made an indirect contribution to the development of new standards in Russia and Ukraine.
 - All these features contribute to improving the effectiveness of OSA projects that allowed NPPs to gain access to the leading EU technology, and attain safety levels compatible with international standards.
 - This concept was implemented on the occasion of the licensing of items of equipment provided by the EC (and EBRD).

It is up to the Regulatory Authority to widen the impact of the 2+2 methodology. The evaluation team could not obtain further information on dissemination during its mission.

- § The results of Tareg 01/01 do not meet initial expectations and it is not clear how it contributed to improving the quality of the new assistance projects:
 - The beneficiaries highly appreciate what they consider as the main result of the project, that is identifying the projects to be supported by the Commission in the future. The Ukrainian regulatory authority declares, however, that the list of future projects would not have been very different without Tareg 01/01.
 - The project failed to address some of the major issues raised by RAM.G, which advised that the new assistance should be linked to the establishment of a “regulator’s strategy plan”. The issue of financing was not addressed.

⁸⁸ See description in Annex 8, TACIS Nuclear § 3.1.

- Gaps are not clearly identified. The list of priorities is not sufficiently focused, and therefore the establishment of priorities for future activities has not been comprehensively justified. Design projects addressed generic issues, that is issues of common interest for all VVER. As of today, the main safety issues relating to VVERs have been analysed.

§ In terms of waste management, TACIS funds were mainly used to contribute to initiatives taken by the G7 (now G8). Usually the Commission funds studies and EBRD and other donors provide loans. The project R4.04/04, which mainly addresses NPP waste, started in December 2005 and was completed in June 2007. The main conclusion drawn at the end of this project is that further assistance is needed.

The sustainability of TACIS NS – i.e. sound NS Regulatory system in place – is still in doubt, despite the ratification of the International Convention on Nuclear Safety by partner countries.

§ The sustainability of the results of OSA specific supply projects is good: they are consistent with the long-term modernisation programme of the NPPs as approved by REA or Energoatom. The sustainability of the results of soft OSA project components is more difficult to assess.

§ The NS licensing methodology in EU countries is much more demanding on the whole system than the national procedures, which are being implemented in respect of plant modifications financed by sources other than TACIS or EBRD. The Commission therefore agreed to compensate local TSOs for this extra cost. This practice puts TSOs in a state of dependence, which in turn puts in doubt the “ownership” of the new methodologies transferred.

§ For evident reasons the scope of the assistance provided by West European experts is limited in both time and extension. Therefore the key issue is to make sure that the partners have a policy for maximising the impact of the TA programme on the safety of the nuclear system as a whole. This assumes that partners are ready to provide the relevant information.

§ Despite major implementation difficulties, one can conclude that the co-operation cycle is being properly carried out at the level of some NPPs, with positive results in terms of effectiveness and sustainability. However at a higher level, nuclear safety policies of the partners are not transparent enough⁸⁹ to ensure mutual understanding. Therefore they do not allow for real co-operation in carrying out stages 3 to 8 of the above mentioned cooperation cycle. At this level, despite very interesting and innovative institutional approaches (such as the 2+2 concept, or the role of RAM.G), effectiveness and sustainability are much harder to assess.

⁸⁹ The absence of a regularly updated independent risk assessment is a major issue (see Annex 8, p.64).

3.2.3 On environment

Evaluation Question 4
To what extent have the Commission's interventions contributed to mitigating the environmental impacts of energy related activities?
Answer
<ul style="list-style-type: none"> - On the production side, few Commission interventions have directly contributed to reducing carbon emissions. A significant part of the Commission's interventions in that area were pilot projects. Their effectiveness should not only be assessed in terms of their direct environmental effect (which is limited due to their size), but more importantly in terms of their demonstrative effects: that is to say, to what extent did these models actually influence decisions and behaviour in the partner countries, as well as the Commission's practices? Monitoring information does not allow an answer to that question. Direct observations suggest that, so far, dissemination is limited. - On the demand side, the Commission has carried out interventions to reduce oil and gas transport losses, notably within the framework of INOGATE. Both their size and their actual contribution to loss reduction are limited. Promotion of more efficient use of energy is a very recent activity, the effect of which cannot yet be assessed. - Except for some extent in Ukraine, the Commission has not invested in supporting tariff policy reforms, which is a critical condition for stimulating sustainable progress towards more efficient use of energy.

Justification for the Evaluation Question

Environmental concerns are at the core of the EU energy policy dialogue with Russia, the United States, China, India and others. Global warming has become a recognised international issue and the Commission is committed to reducing carbon emissions. The challenge for emerging markets such as India and China is to develop low carbon economies, yet based on competitive and reliable energy sources (China has recently overtaken the US as the world's biggest CO₂ emitter).

Mitigating the environmental impact of energy activities has two main components:

§ Direct support for developing low carbon energy activities :

- energy production (renewable energies or clean coal technology).
- energy consumption (support for energy efficiency initiatives).

§ Indirect support for developing environmental standards via:

- development and implementation of adequate regulatory frameworks, including establishment of Environmental Impact Assessments as the norm for energy-related activities;
- development and enforcement of adequate tariff and pricing policies.

Findings and analysis

Reduction of carbon emissions can be achieved through developing carbon-clean energy production capacities (renewables, nuclear energy or clean coal technology) or through reducing consumption and fostering efficient transport and use of energy. The EC has supported interventions at both levels, but with limited impact due to the limited size and insufficient demonstration effect of pilot projects.

Production

§ Producing clean energy is rarely an explicit objective of Commission interventions in third countries⁹⁰. When it is stated as an objective, it is part of pilot actions aimed at demonstrating the technical feasibility of clean energy technologies and promoting European technologies on partner markets⁹¹. The limited size of these initiatives and their inadequate visibility have put the objective of increasing the share of Renewable Energy Sources (RES) in the target countries⁹² out of reach. In the ASEAN region for instance, RES account for a very small proportion of the total despite a political objective of 10% by 2010 at regional level. While some local improvements might have been observed in the COGEN (Cogeneration) recipient countries, the share of RES in total regional energy supplies has fallen, as a result of the high rate of growth of energy supply based predominantly on fossil fuels.

§ Clean coal refers to coal chemically washed to remove minerals and impurities. The coal industry uses the term “clean coal” to describe technologies designed to enhance both the efficiency and the environmental acceptability of coal extraction, preparation and use. There are currently no coal-fired power stations in commercial production which capture all carbon dioxide emissions. This technology is still experimental. It could provide a major contribution to the diversification of energy sources by giving access to large reserves of fossil fuel without increasing greenhouse gas emissions. No EC interventions supporting these technologies have been observed.

Commission support for RES activities lacked synergy and capitalisation; these interventions did not meet the required leverage effect to develop competitive RES.

§ The multiplicity of RES pilot projects in the ACP and South East Asia regions has not been accompanied by clear exit strategies aimed at ensuring that these projects are

⁹⁰ The 2005 European Consensus on Development only makes a short reference to improving “access to modern energy services through [...] the Johannesburg Renewable Energy Coalition.” p.20.

⁹¹ E.g. COGEN programme in South-East Asia in Annex 8, ASEAN § 2.1.

⁹² Quotation of this objective and source.

effectively the starting-point for new production methods and not just demonstrations without follow-up.⁹³

- § Support for developing clean energy was not defined as a priority for the MEDA region. However, some successful initiatives have been carried on at both national and regional levels. The Commission has focused its support on building the capacity of national institutions more than on infrastructure, with the aim of stimulating awareness of RES and energy efficiency⁹⁴.
- § Besides RES and energy efficiency, the Commission has effectively supported the development of safe nuclear energy. In the Former Soviet Union republics, interventions have aimed primarily at enhancing the safety of existing nuclear power plants. To some extent they contribute to reducing the potential environmental impacts of this energy source. For instance the Commission contributes as the largest donor (€60m) to the Nuclear Window of the NDEP (Northern Dimension Environmental Protection). This initiative, co-ordinated by the EBRD, involves several international donors⁹⁵ and has brought together a total of €142m in grants for financing nuclear safety projects in the Kola Peninsula. The NDEP provides an international framework, backed by adequate financial resources, for State authorities, international financial institutions and private investors to support a pipeline of projects in water, wastewater, solid waste, energy efficiency and nuclear waste management.

Transport and Consumption

- § Improved energy efficiency is considered the largest potential contributor to carbon emissions reduction. It also contributes significantly to the objective of security of supply for Europe. The EC has supported energy efficiency in most of its geographical areas of co-operation.
- § In ASEAN some interventions focusing on energy efficiency have proved effective. But again they have lacked the critical mass to contribute significantly to mitigating environmental impacts in the energy sector.
- § In the TACIS region, the effectiveness of Commission-supported energy efficiency interventions is limited by the current tariff structure and the related lack of national and foreign investment in that field. Gas flaring remains a problem: low internal gas prices give no incentive to oil producers who extract gas as a by-product to sell it to Gasprom. Despite some achievements on the political co-operation front, the INOGATE programme had no significant impact on the quality of oil and gas transport infrastructure. As a result, gas losses due to poor quality pipelines remain an important issue.
- § In the MEDA region, the Commission has favoured the emergence of new efficiency technology such as combined power generation cycle, but with limited scope and impact.

⁹³ See for instance the lack of follow-up for the COGEN and EAEF in ASEAN.

⁹⁴ Details on Syria's National Energy Research Centre in Annex 8, MEDA § 2.1.

⁹⁵ The European Commission, the Russian Federation, EBRD, EIB, NIB and the World Bank.

§ Finally, in the ACP region there has been limited support for energy efficiency. Projects are submitted and implemented under the Energy Facility and the IEE COOPENER strand. A number of interventions have targeted solar energy, with the aim of taking advantage of existing climatic conditions to provide basic services for the poor (e.g. provision of drinkable water). This use of RES also had potentially favourable side-effects on the environment such as reducing the use of firewood in certain regions. However, as indicated under question 2, the Commission's interventions have generally not addressed the crucial issues of pricing and tariffs, and have thus failed to contribute to more efficient use of RES.

The Commission interventions had no significant influence on tariffs and the regulatory frameworks in partner countries, which are currently inadequate to provide incentives for clean energy production and consumption.

§ Some important work has been done in the field of market reform, notably in Ukraine, but without actual effect on the regulatory framework so far⁹⁶. However, the regulatory aspects and in particular the pricing and subsidisation issues do not form part of a substantial effort from the Commission.

Regulatory framework

§ Appropriate regulatory frameworks that enforce the polluter-payer principle are crucial for the development of renewable and efficient technologies. Different types of regulatory activity can be supported: legal requirements for mitigating environmental impacts, appropriate waste management regulations, and the set up of institutions able to enforce these regulations effectively.

§ The Clean Development Mechanism and Joint Implementation instruments of the Kyoto Protocol are tailored to support development of clean energies in third countries. These market-based instruments are still underdeveloped or unknown in partner countries. The regulatory authorities (Designated National Authorities) are non-existent or ill-equipped to function properly. There is a growing demand for EU expertise to help build the necessary capacity to reap the benefit from such initiatives, but so far the Commission has hardly implemented any intervention in that regard⁹⁷.

§ As part of the regulatory framework, Environmental Impact Assessments (EIA) are mandatory prior to undertaking any large EC-supported infrastructure. In the ACP region, all EIB projects have been preceded by impact assessments and have produced recommendations for alleviating the environmental impact. The EIB tends to promote joint evaluations with the other financing institutions involved. Environmental covenants are included in EIB Finance Contracts and non-compliance with agreed

⁹⁶ The Energy Market Reform programme carried out in Ukraine proposed improvements to the electricity market's legal framework. However the proposed reforms have not yet been adopted and have so far had no impact on prices and efficiency. Energy efficiency has become an important priority in the most recent programmes.

⁹⁷ On 18 September 2007 the Commission proposed a new partnership on climate change between the European Union and the poor developing countries most affected by, and with the least capacity to deal with, climate change. Through this Global Climate Change Alliance (GCCA), it is proposed that the EU and these countries work jointly to integrate climate change into poverty reduction strategies. Measures should include better preparedness for natural disasters.

environmental measures may lead to suspension of EIB loan disbursements or ultimately to the recall of a loan.

- § On the consumption side, waste management policy can play a leverage role for proven technologies. In Singapore biomass waste is strictly regulated. This has led to the creation of a market for electricity production based on public and private biomass waste. The problem remains linkage of these autonomous producers to the national grid, which is currently refused by the government because of the instability of such electricity sources. The EC has supported the development of these technologies, especially via the COGEN programme. In relation to nuclear energy, despite its general statement within the ASEAN, Singapore is opposed to having a NPP built in its vicinity. This can be explained by the fear of a Chernobyl-like accident in neighbouring countries which would, by reason of its small geographical area, jeopardise its survival or at least increase considerably its vulnerability and dependence on other ASEAN countries. There are however indications that this hard-line position might be changing, along with the emergence of new constraints such as the current tension in world energy markets and the threat of climate change.

Pricing Policy

- § The EC has raised awareness of the technical feasibility of renewable and efficient energy technologies. While there is strong demand for furtherance of these efforts, the pilot projects have rarely been replicated: incentives are lacking in partner countries to take on board these new technologies, while conventional consumption and production sources, besides being well-known, are often cheaper. To be competitive and replicated on a large scale, low-carbon energy technologies and efficient consumption patterns need indeed to be adequately supported by sound pricing policies and appropriate tariff structures. For instance competition between the national grid and autonomous RES is a crucial issue. It has rarely been addressed by EC interventions.

3.2.4 On security of EU energy supply

Evaluation Question 5
To what extent have Commission interventions enhanced the security of energy supply for Europe?
Answer
<ul style="list-style-type: none"> - The quality of the energy dialogue with Russia is the most important factor in the issue of security of supply. Projects aimed at supporting this process have attracted surprisingly limited resources which were dispersed across several objectives. They have had no visible effect so far. - The attempt to promote an alternative route to accessing Central Asian resources has led to better knowledge of the area but not to any direct benefits to Europe's security. A large part of the resources of the programme has been spent on investments, the contribution of which to EU security of supply has yet to be demonstrated.

Justification for the Evaluation Question

The 2006 Green Paper presents a strategy aimed primarily at increasing the EU's security of energy supply through:

- § increased co-operation in external policy with the main suppliers such as OPEC and Russia, as well as with major transit and consumer countries;
- § diversification of energy sources - both external and indigenous - and transport routes, including investment in new Liquefied Natural Gas (LNG) terminals;
- § a common approach to addressing crisis situations "in a spirit of solidarity".

Increasing the security of affordable energy supplies to the EU and to each of its individual MS is also one of the main arguments justifying the integration of the EU energy market. This issue is beyond the scope of the present evaluation, while the evolution of this internal debate on market integration impacts directly on negotiations between the EU and its partners, especially in the gas market.

Security of energy supply is indeed a major issue for Europe. Oil production and stocks are mostly concentrated in unstable countries. Oil reserves are currently considered much more limited than gas and coal reserves. Gas reserves are more widely distributed, but technical constraints on efficient gas transport and storage, as well as the nature of gas contracts, mean that Europe's main current concern is its increasing dependency on Russia for this commodity.

To reach Europe Russian gas has to transit through Belarus and particularly Ukraine. Relations between Russia and these two countries directly impact on European supplies. These relations are difficult as Russia wishes progressively to align the price of the gas sold

to these countries with international price levels. Some steps were made in that direction in 2006 but led to tensions and supply disruptions. This was perceived in Europe as an important signal which damaged the image of Russia, considered up until then as a very reliable supplier.

Insufficient investment in Russian productive and transport capacities, as well as the need to supply a rapidly growing and highly energy-intensive internal market, raises questions about the ability of Russia to meet its contractual supply commitments.

The energy efficiency of Europe's partners and European security of supply are therefore inter-related, since a more energy-efficient Russia will have more oil and gas to export. To that end the main issue is that of internal energy tariffs, which provide no incentive for enterprises and households to save energy. This is also true for transit countries such as Ukraine and the energy-producing countries of the Middle East.

If other major energy importers improve their efficiency the pressure on natural resources will be partly alleviated, leaving more room for Europe, the most energy-efficient area in the world, to find the resources it needs. The US, China and India are the main targets for this policy.

Coal is a widespread resource but mining is often done in very unsafe conditions and the carbon efficiency of coal combustion is lower than for other fuels, not to mention other forms of pollution generated by coal. For most of these other sources of pollution, technical solutions are available but often have yet to be applied outside Europe. The feasibility and cost of capturing and storing carbon dioxide is a critical condition for increasing the use of coal while continuing to improve the overall carbon efficiency of the economy. Significant progress in that field would be key to enhancing the security of Europe's energy supplies and also those of China and other large economies.

Findings and analysis

The list of AidCo interventions outside the EU from which one could expect a direct impact on the EU's security of supply is surprisingly short. Total financial resources dedicated by the Commission to that goal amount to less than €20m per year;

Commission projects aiming at supporting the EU-Russia policy dialogue only provided general information and analysis based exclusively on public information, which in consequence added little to the negotiators' personal knowledge.

§ The EU-Russia energy dialogue is by far the main issue in terms of contributing to the security of energy supply to Europe. The "Energy Policies Harmonisation Project"⁹⁸ and the EU-Russia Energy Technology Centre are two initiatives aimed at supporting this process. The Energy Policies Harmonisation Project has invested in publications and workshops of general interest and was based exclusively on public information, and therefore it did not in practice contribute to improved understanding of the Russian situation by the European negotiation teams. The dispersion of study themes has not allowed any adding of value to what Russian or other EU research centres

⁹⁸ See Annex 8, TACIS Non-Nuclear, Russia.

would have done. For instance no research was conducted on critical issues such as the political and socio-economical constraints driving the energy tariff policy in Russia

- § The private sector was another target of the project. Facilitating EU investment in gas or oil production and transport would have contributed to enhancing the EU's security of supply. However there has been no identifiable enhancement of private investors' knowledge.
- § The third objective of the Energy Policies Harmonisation Project was the assessment of Russian energy transport capacities. Information provided by the project was of general interest.

In Ukraine, the energy market reform programme financed by the EC had no effect on the overall efficiency or transparency of the Ukrainian gas market, which is critical for EU energy supplies.

- § The TA team of the energy market reform programme mainly invested in the electricity market where it has been able to propose institutional reforms⁹⁹ (still to be adopted). But the team has not been in position to do the same on the gas market; collaboration with Naftagas was difficult and precluded similar outputs.
- § INOGATE was an ambitious attempt to diversify the origins of energy supplies for the EU. It aimed at diversifying the routes for channelling oil and gas from the Caspian Sea and Central Asia to Europe. The resources dedicated to the programme were very limited and its impact on the EU market cannot yet be observed. However it might have stimulated useful moves towards more regional co-operation. In particular:
 - The programme's main achievement was the signature of an "Umbrella Agreement" providing a rather open institutional framework for a regional approach to trade in oil and gas between Central Asia and Europe. The use of the umbrella agreement has however been quite limited.
 - Studies have been financed notably to assess pipeline maintenance needs. The results of most of these studies have been disappointing. However the feasibility study for reversing the flow in the Odessa Brody oil pipeline might have an important effect on supply diversification, since it could allow channelling oil from the Caspian Sea to the north of Europe through Poland.
 - Gas metering equipment and stations have been provided at the borders of member countries. But their actual role in improving the efficiency and transparency of the market is still limited, owing to the lack of commitment and capacity of the administrations concerned.
 - Many partner governments are not convinced of the need to co-operate in creating more transparent and efficient gas markets. They are ready to participate in the process, but are often reluctant to share the necessary information. The "Baku Initiative" provides a framework for a policy dialogue aimed at enhancing energy co-operation between the European Union and the countries of the Black Sea, the

⁹⁹ See Annex 8, TACIS Non-Nuclear, Ukraine.

Caspian Basin and their neighbours. It builds on the results of the INOGATE programme.

- INOGATE had also a mission to facilitate mobilisation of IFI and private sector investment in oil and gas transport, but achieved no significant results in that field.

Other regions

- § Dialogue takes place with OPEC and large energy-importing countries such as the USA, China and India¹⁰⁰. In China and India some minor programmes are being undertaken on promotion of energy efficiency, renewable energy or clean coal technology. At this stage, however, no impact of these initiatives on EU energy security can be observed.
- § In the MEDA region, the Commission supports the institutional developments for the creation of a Euro-Mashreq gas market. The project aims at contributing to the integration of the gas markets of Egypt, Jordan, Lebanon and Syria, with a view to creating a regional internal gas market which in turn would be integrated with the EU's internal gas market. The project supports the reform and modernisation of the gas industry with emphasis on market and network development, legal and regulatory frameworks, and transfer of know-how and expertise to partner administrations, institutions and companies. Given the decreasing production capacity of the countries involved¹⁰¹, its potential impact on European markets in terms of gas supplies depends on the capacity of Iraq to be involved as a supplier.
- § Moreover, in June 2006 the programme entitled "Support for enhanced integration and improved security of the Euro-Mediterranean energy market" was approved by the MED Committee, with a budget of €4.6m. Its objectives are to address Mediterranean Partners' energy sector reform needs and their concerns relating to safety and security of energy supply, as well as the barriers to interconnection and market integration. The project was due to start during the course of 2007, and is expected to enhance energy policy dialogue within the region.

¹⁰⁰ See Annex 7 § 3.3 for more information about these dialogues.

¹⁰¹ Except maybe in Egypt, where recent exploration results have yet to be confirmed

3.3 Impact

3.3.1 On living conditions & income generation

Evaluation Question 6
To what extent is better access to energy improving living conditions and income generation in developing countries?
Answer
<ul style="list-style-type: none"> - The Commission has not measured the impact of its energy-related activities on living conditions and growth. Monitoring tools are currently being elaborated at field level (individual projects) but efforts in respect of drawing out and sharing lessons are limited. - Sensitisation to the productive use of energy has helped create economic activity. - Once access to energy has been ensured, disruption may have severe consequence on living standards and economic conditions. Continuity and reliability of supply are paramount requirements. - The demand-driven initiatives lack visibility and political ownership in the field. In consequence, where they aim at a synergy between the partner's energy policy and its poverty reduction strategy, their effectiveness is often limited.

Justification for the Evaluation Question

The underlying assumption of the Commission strategy is that access to energy has direct impacts (i) on living conditions at household level (heat, food, light, water, sanitation); (ii) on access to better public services (health, education, security); and (iii) on income generation opportunities (development and creation of economic activity).

Prior to 2002, the Commission's investments in the energy sector were not explicitly driven by the objective of poverty reduction. No assessment of the impact of these projects on poverty has been made. However when addressing effectiveness, studies carried out by other donors¹⁰² show that improved energy supply – notably through the setting up of infrastructure such as electricity grids – is a necessary but not sufficient condition for ensuring that access to energy for the poor contributes in practice to enhancing their livelihoods.

¹⁰² E.g. study commissioned by the Electricity Company of Ghana from the KITE consultancy on the impact of its activities on development. See also Annex 8, ACP, Ghana.

Findings and analysis

The Commission has not systematically measured the contribution of access to energy to household living conditions.

§ Measuring the actual role of energy in improved living conditions is a difficult task: adequate impact indicators and targets have to be defined, and in-depth studies launched. Up to now, information has been scarce on the actual contribution of the Commission's energy-related activities to household living conditions and growth. The Commission has only recently addressed this issue, at two levels:

- In the field, the Commission has recently attempted to design impact indicators for its past energy-related interventions. For instance, in the case of the Regional Solaire II Programme each participating country is currently being asked to define and measure indicators relating to the impact of the provision of drinkable water on living conditions.
- At its Headquarters the Commission supports the definition of impact indicators through the M&E - EED Group (Monitoring and Evaluation for Energy and Development International Working Group)¹⁰³; it has also financed a COOPENER project (the Development and Energy in Africa project¹⁰⁴) to develop an Assessment Framework for identifying and quantifying the outcomes and impacts of energy projects in collaboration with six African countries. AIDCO also envisages including analyses of the impact of energy on poverty reduction in the evaluation of the ACP-EU Energy Facility.

§ However there is only a limited interface so far between these two levels of action; and information does not circulate between projects. Field operators face extreme difficulties in designing such impact indicators, and they do not benefit from the results of the research programmes supported at headquarters. Lessons learned from the pilot and soft activities supported under COOPENER are not disseminated to the field. Information is shared on administrative and contractual matters, but it seldom addresses technical aspects. This finding constitutes a general observation that the Commission's investment in knowledge management on energy and development issues is extremely weak (a point further developed under EQ8).

§ Other donors or IFIs put increasing emphasis on assessing impact on poverty as a key component of each of their programmes and as a component of policy dialogue in the field. The design of the World Bank's interventions has to include a methodology for

¹⁰³ The M&EED Group works on concepts and instruments for assessing aid effectiveness in the energy sector. It was created through an initiative of the Global Village Energy Partnership and Electricité de France, joined by the EUEI. The World Bank/ESMAP(Energy Sector Management Assistance Program), the United Nation Development Program (UNDP), the United Nation Environment Program (UNEP), the United Nations Industrial Development Organisation (UNIDO), IAEA, UN Foundation, ADEME (Agence de l'Environnement et de la Maîtrise de l'Energie), Deutsche Gesellschaft für technische Zusammenarbeit (GTZ), IT Power, Future Energy Solutions, SenterNovem, Fraunhofer ISE, GNESD, Mott MacDonald, Energia, United States Agency for International Development (USAid), Risø, World Environment Center (WEC), ECN (Energy Centre for the Netherlands), CiRED-CNRS (Centre National de la Recherche Scientifique) and CIDA (Canadian International Development Agency) have participated in the group. Electricité de France is currently acting as the project coordinator.

¹⁰⁴ DEA website: <http://deafrica.net>

monitoring impacts¹⁰⁵. In Guinea, the African Development Bank has defined performance criteria for a rural electrification project; these criteria are applied on a regular basis and are used to monitor impact on poverty.

In ACP countries, the activities supported by Coopener and the PDF have provided valuable input to public services for identification of their energy needs.

§ COOPENER and the Partnership Dialogue Facility have supported multi-sectoral initiatives to develop poverty-oriented energy strategies. They have addressed the identification of the specific energy needs of public services (including health and education). This has resulted in the production of valuable strategies: the linkage between energy and poverty reduction strategies has been analysed, and subsequent multi-sectoral strategies have been defined.

However, despite valuable support from COOPENER and the PDF, synergies between energy policy and PRSPs are lacking or are not yet evident.

§ In the three ACP countries visited (Mali, Ethiopia, Ghana) the poverty-oriented energy strategies supported by COOPENER or the PDF were not taken into account in the latest generation of PRSPs. The main reasons are the following:

- In the three countries, the energy strategy papers supported were defined by experts external to the partner institutions and EC Delegations. In consequence, while valuable documents were produced, their ownership by the partners or by the EC Delegations was extremely limited.
- Further, multi-donor sectoral dialogue with the partner is rarely institutionalised. Thus it was difficult for these supported strategies to take their place within the local institutional framework. A consequence was that none of the donors interviewed was involved in or informed of these strategies (including the EC Delegations). Therefore there was no way in which they could be integrated into the PRSP.
- The drafting of these poverty-oriented energy strategies was finalised in early 2007. There was thus only a limited possibility of taking them into account in the latest generation of PRSPs which were finalised in 2007.

§ The most recent PRSP maintains a rather instrumental approach to energy, with limited synergy between energy and development. The focus is on establishing large-scale infrastructure. Targets, when defined, are limited to grid extension rather than grid connection¹⁰⁶.

¹⁰⁵ Every World Bank Project Appraisal Document (PAD) has to refer to "lessons learned and reflected in the project design" and identify indicators for the monitoring and evaluation of the project's impacts.

¹⁰⁶ In Ethiopia, the Universal Electricity Access Programme (UEAP) is the main programming paper for rural electrification over the period 2006-2010. It is a grid-extension programme of which the objectives are defined as "an average access to electricity from 17% now to 50% over the next five years". 6 000 more villages and towns should be covered. The 50% target is not further defined in the UEAP paper. However, the field visit made it clear that this target does not address actual household connection, but should be interpreted as areas where a connection to the grid is made possible. The UEAP does not include further provision for supporting household connection to the grid.

Improvements in access to energy have not always created economic activity. When complemented by sensitisation, positive results have been observed.

- § In ACP countries productive use of electricity is limited once infrastructures are available. This is particularly true when there has been no sensitisation to the new income-generation opportunities arising from better access to energy. On the other hand an analysis of the actual use of energy by local populations directly affected by the Rural Electrification Project in the Western Region in Ghana (7th EDF) demonstrated that the training programmes provided for beneficiaries during and after the project led to development of local economic activities.
- § In the ASEAN countries, Full Scale Demonstration Projects implemented under the COGEN programme have contributed to enhancing local business. They have created direct employment for construction and management of the plants, indirect employment in agriculture and transportation, and additional sales of biomass products locally. However, these impacts can be considered as marginal, given the limited scope of the interventions and their demonstrable purpose.

Continuity and reliability of energy supply is a paramount requirement once provision is ensured. By addressing energy pricing policy, the Commission could have exerted leverage effect in that regard. However, it has put little emphasis on that issue so far (also see EQ 4).

3.3.2 On governance

Evaluation Question 7
To what extent are the Commission's interventions in energy contributing to better governance in the sector?
Answer
<ul style="list-style-type: none"> - The Commission has given some support to market-oriented policies in all partner regions except in the ACP region where it had no institutional intervention prior to COOPENER and the PDF. Resources dedicated to that end were extremely limited, as also were the effects. - In terms of transparency of the sector, the Commission has contributed to the establishment of regulatory authorities and metering infrastructures. In both cases impacts are difficult to assess but unlikely to be significant; political ownership by the partner remains a major constraint. - In nuclear safety the Commission has provided effective support for nuclear regulators and their TSOs in completion of their regulatory framework, as well as for the establishment and implementation of a modern licensing regime, and for effective inspection and enforcement practices.

Justification for the Evaluation Question

Governance is a sensitive issue in the energy sector.

The financial benefits generated from energy-related activities (extraction, production, transit, distribution) potentially represent an important engine for national economic growth in both EU and partner countries. However, the energy sector is not often managed in such a way that it contributes to the general public interest as much as it could. Problems of mismanagement include:

- § Lack of transparency and bias in decision-making processes;
- § Corruption at various levels;
- § Insufficient commitment to comply with safety regulations (nuclear, coal mining...); ;
- § Lack of compliance with environmental regulations, notably in nuclear and non nuclear waste management ;
- § Flawed tendering procedures;
- § Loose management of transit gas flows;
- § Imprecise invoicing practices.

Some EC-supported activities directly focus on governance issues in partner countries' energy sectors. They support notably the establishment or strengthening of regulatory institutions. In particular, the EC has supported Ukraine in drafting more market-oriented electricity market regulations and it has also attempted to do the same for gas. In the field of nuclear safety, the EC support for strengthening autonomous regulatory authorities through organising direct co-operation with EU Member States' regulatory bodies can be seen as a major attempt to contribute to improved governance. The Nuclear Safety programme includes an important aspect of procurement for which strict rules have to be applied.

The EC also indirectly supports institutional reforms through attaching conditionalities to its interventions, such as those applying to EIB loans. These conditionalities generally address tariff enforcement, reform of the institutional and regulatory framework, and support for competition in terms of transport, market power, and so on.

Findings and analysis

No evidence of misinterpretation of the Commission's procedures was observed in the projects analysed, but implementation of those procedures led to delays.

- § In MEDA countries, the Commission support has contributed to improved procurement as well as better management practices (inclusion in every new project of conditionalities related to maintenance). However only limited improvements in revenue collection were observed.
- § In the ASEAN region strict implementation of rules was applied, in particular for procurement and management of partnership operations; good practice in managerial governance was observed.
- § In the TACIS Nuclear Safety programme, procurement procedures have been strictly applied along with, in many cases, lengthy checks; an example is control of the

neutrality of technical specifications for equipment. The Commission's procedures requiring open competition between suppliers were applied to TACIS-financed projects but have not been adopted more generally as standard practice for the partner countries.

The Commission has supported a market-oriented energy sector in every partner region except in the ACP region, where it had no institutional intervention prior to COOPENER and the PDF. Political ownership remains a major constraint.

- § In Ukraine, the Energy Market Reform (EMR) was aimed at improving regulations and standards in the context of integration of power and gas markets with the EU. Apart from informative workshops, the project had no results in the gas sector. Upstream progress has been observed in power tariff design (albeit not yet implemented¹⁰⁷). In electricity, activities such as debt recovery, promotion of an independent regulatory body and clearer tariff policy should contribute to improving governance if and when they are taken on board by the government. Overall effectiveness is hampered by the inadequate focus of the project scope and by insufficient clarification of the respective roles and duties of the National Electricity Regulation Commission of Ukraine (NERC) and the Ministry of Fuels and Energy (MFE).
- § In the MEDA region a tariff study is currently being conducted under the ISMF. The project had raised awareness of the inefficiencies of the current tariff scale and pricing system. There is a willingness to adapt prices. The decision, however, rests not with the Ministry of Energy but with the political authorities (with a consequently high probability that subsidies to the sector will remain in place).
- § An observation similar to that for MEDA applies also to ACP countries where tariff subsidies remain high, variously affecting the affordability of access to energy, the sustainability of the energy sector and macroeconomic stability (see EQ2). This issue has not yet been addressed by the Commission.
- § In the three ACP countries visited, the absence of a co-ordinated supply strategy between the grid and off-grid rural electrification strategies was a major constraint to involvement of donors and the private sector in the off-grid system. Where grid systems are set up, off-grid systems cannot compete. Experience shows that the clients of the off-grid systems generally switch to grid when their village is connected. Therefore, when there is no clear definition of the respective areas covered by the grid and off-grid systems, investors have no incentive to engage with the off-grid system (the risk being that the grid will attract their customers). This could be resolved either by a delegation of off-grid electricity distributors to private operators, licensed by the national electricity agency in a limited area and over a limited period; or else by a delegation to the co-operatives to which a licence would be delivered by the national electricity agency.

¹⁰⁷ See Annex 8, TACIS Non-Nuclear, Ukraine § 1.3.

The Commission has supported the setting up of regulatory authorities and of metering infrastructures. Effects on transparency are difficult to assess, and dependent on the partner's ownership of the projects.

- § In the ASEAN region the Commission interventions have not focused on improving the governance of the energy sector. Despite real needs, no impact on transparency and corruption levels could therefore be observed.
- § In nuclear safety the Commission has supported nuclear regulators and their TSOs in completion of their regulatory framework and establishment and implementation of a modern licensing regime and of effective inspection and enforcement practices. The nuclear regulators need the means (financing, competence etc.) to perform their regulatory duties.
 - The implementation of the 2+2 concept¹⁰⁸ proved very effective: it enhanced understanding of safety issues arising from the modernisation of plants, and facilitated transfer of experience and standardised approaches to safety evaluation.
 - But the transfer of international licensing methodology led to the EC paying a financial contribution to the beneficiaries in compensation for the supplementary cost incurred as a result of the methodology's being more demanding of time than the national approach. This has had consequences that might affect impact and sustainability: it creates a culture of dependency, while the probability of the international approach being implemented without external support is low.
- § INOGATE provided support for promoting a regional approach, the construction of nine cross-border gas metering stations and a major gas metering calibration and training centre in Boyarka, close to Kiev. Overall, regional meetings are organised, equipment is provided and staff is trained, but so far no effects can be measured in terms of the overall transparency of gas transit operations.

¹⁰⁸ The 2+2 concept is associated with the hard component of On-Side Assistance (supply of safety-related pieces of equipment; a platform from which to transfer Western safety standards and technology). The 2+2 concept aims at developing safety procedures similar to those enforced in the West. That means that plant modifications have to be submitted to the Regulatory Authority (RA) for licensing. For most hard components, a Western RA/TSO advises the local RA, and a Western utility advises the local NPP management.

3.4 Efficiency

Evaluation Question 8
To what extent are the implementation modalities ensuring the success of the Commission-supported interventions?
Answer
<ul style="list-style-type: none"> - Energy was not a focal sector of the Commission's support for third countries up to 2007. Support has mainly been channelled through specific projects which were seldom integrated into a sectoral approach with strategic objectives. In particular, calls for proposals have not contributed to building a sectoral dialogue with the partner. - Energy interventions are provided at bilateral and regional levels; the degree of coherence and complementarity between these levels varies. In some cases the absence of a regional institution impacts on ownership and on co-ordination with bilateral actors. The technical capacity of the regional counterpart was also a key to optimising the regional approach. - Implementation of interventions is constrained by rigidity of procedures. Delays and lack of transparency were reported when decisions come from headquarters level. - In some cases the absence of an exit strategy affects sustainability. Continuity in interventions proved a success factor. - Synergies between interventions in the same area are limited. Knowledge management is neither formally structured nor systematised. - In ACP countries Delegations are not always equipped to manage energy-related interventions or to conduct sectoral dialogue with the partner and donors.

Justification for the Evaluation Question

Efficient implementation of Commission's interventions encompasses four different aspects:

- n The adequacy of aid modalities and the flexibility of administrative procedures
- n The balance between costs and results
- n The adequacy of the beneficiary institutions and regulatory framework
- n Appropriate feedback and application of the lessons drawn from completed projects – including the use of audit, monitoring, knowledge accumulation and diffusion tools.

Findings and analysis

Commission interventions are implemented through various sets of modalities, differing by regions but essentially responding to a project approach. No example of a truly sectoral approach has been observed.

§ Energy was not a focal sector of the Commission's support for third countries prior to 2007¹⁰⁹. Support was predominantly channelled through projects or programmes. No example of a sector-wide approach has been observed. This lack is in turn reflected in weak Commission capacity to engage in political dialogue with partner countries in the energy sector. While it reflects the politically sensitive nature of the sector, it results in an absence of the comprehensive and holistic strategies which are so necessary for tackling the long-term economic, social and environmental challenges posed by the sector. In the field, no evidence suggesting that the Commission is building capacity to change this situation has come to light.

- Commission projects and programmes are funded at both national and regional levels. Among other modalities, energy projects are funded through calls for proposals. The overall budget of the ACP-EU Energy Facility is €220m. The design of each project is left to the agency or private entity submitting a proposal. The EC Delegations are supposed to follow up implementation of the Facility activities, while their involvement in the selection process was limited¹¹⁰.
- Such a modality has also been used in the ASEAN region. The EC-ASEAN Energy Facility (EAEF) aimed at stimulating regional energy projects and initiatives proposed by the energy industries of the EU and ASEAN¹¹¹. The management unit has reported that it faces considerable challenges and often lacks the resources to manage the Facility effectively.

§ As regards the EIB, besides managing the EDF Investment Facility¹¹², it also grants loans in the ACP countries from its own resources. In this latter case the EIB is conscious that the long-term viability and utility of these investments heavily depends on conditions beyond the control of the infrastructure operators, such as tariff and subsidisation policies, and require interventions from the beneficiary government. Syria offers an example of such a situation and, in that instance, constructive co-operation between the EIB and the Delegation has permitted use of the Institutional Sector Modernisation Facility (ISMF) – a Commission capacity-building project supporting

¹⁰⁹ The reference made to the sector by the 2005 Consensus on Development should help increase visibility of the sector under EDF 10.

¹¹⁰ Following the launch of the ACP-EU Energy Facility in 2006, 307 projects were submitted by applicants, out of which 230 were validated after administrative screening. Detailed proposals were very much "broad concept notes" rather than contractual documents. 169 proposals were eligible for further analysis and finally 91 were supported by the Commission. These 91 accepted proposals require resources totalling €231m, whereas the Facility has budgeted for € 198m.

¹¹¹ With a total budget of €21.5m the EAEF funded 77 projects classified into four distinct Facilities (increasing market awareness, adapting institutional frameworks, conducting feasibility studies, implementing demonstration projects) and spread across eight ASEAN countries (Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand and Vietnam). The EAEF closed in February 2007.

¹¹² The European Investment Bank supports the European Union's co-operation and development policies in the African, Caribbean and Pacific regions in the framework of the Cotonou Partnership Agreement. It manages the Investment Facility, a EUR 2 037m risk bearing instrument funded from the European Development Fund.

the Syrian State Planning Commission – to conduct an in-depth analysis of the electricity tariff structure. This study identified the major discrepancies between current tariffs and efficient pricing levels and is part of the dialogue taking place between the EIB and the Syrian authorities regarding the conditions attached to EIB loans to the sector.

The project or programme approach faces constraints of inappropriate design, lack of resources and cumbersome procedures which sometimes hinder the timely and sustainable achievement of the objectives pursued.

- § Commission interventions have faced similar design and implementation constraints across the various partner regions, although the origins of the constraints differed.
- § In the ACP region there is a strong sense of a lack of the human resources needed by the EC Delegations (time and expertise) to manage the Energy Facility projects. The procedures are perceived by the operators and local administrations as heavy and difficult to manage. As a result, delays in selecting and negotiating the projects have been considerable. In many cases these delays had a negative impact on the relevance and effectiveness of the projects.
- § In the TACIS region, nuclear safety management started with very few staff and a large number of projects launched in a short period of time and, at the time, in an unknown territory. This resulted in massive implementation delays and misunderstandings with the partners. Lessons had been drawn by the end of 1990s: the Commission reorganised and subsequently increased its capacity for managing NS projects (creation of Joint Management Unit in Moscow, the Joint Support Organisation in Kiev, support given by the Joint Research Centres in Petten and Ispra, etc.). While management improved in consequence, the improvements had little impact at the decision-making level in some partner countries¹¹³.
- § INOGATE procurement systems were beset with many difficulties with tendering and awarding procedures, notably with local suppliers¹¹⁴. The cost of the procedures is reported to be disproportionate to the size of the markets. Furthermore, owing to the absence of a regional counterpart these procedures involve too many levels of decision-making. INOGATE activities also faced implementation problems: in three cases out of five, technical assistance (TA) teams were replaced. ToRs do not identify the needs for experts appropriately. Furthermore energy markets in INOGATE recipient countries are dynamic: political contexts change, market reforms occur, project orientations are modified and in consequence new expertise profiles are sought. The initial teams have often failed to adapt and therefore have needed to be replaced. These

¹¹³ The procedures necessary to contract works and purchase equipment remain very heavy, notably due to the willingness of the EC to ensure sufficiently open and neutral tendering procedures or to the necessity to meet the national licensing conditions (see examples in the Leningrad NPP in Annex 8). Further, the 2006 evaluation of TACIS already stressed the limited efficiency of interventions due to inadequate delivery mechanisms focused on projects rather than programmes: “The project approach has too often led to limited dialogue, ownership and flexibility as well as to stand-alone projects, unlikely to produce the broader and longer term objectives set out in the PCAs.” (2006 Evaluation of Council Regulation 99/2000 TACIS and its implementation – ref. 728 ; available on the EuropeAid Evaluation Unit website).

¹¹⁴ These difficulties related (i) to the fact that INOGATE used TACIS resources to finance equipment and works, part of which was locally contracted, (ii) to a lack of knowledge of EC procurement rules, and (iii) to the narrow nature of local service supply markets and the equipment provision linkages (synchronisation of supplies from local and international markets). See Annex 8.

shortcomings have been reflected in long implementation delays.

- § In MEDA countries, weak design and poor information on multi-country project resources and activities have been major obstacles to partner ownership. Cases of unclear regional project design were observed: the absence of a legal status for the institutions created and supported impeded the sustainability of the whole intervention (e.g. as in the case of the EU-Mashreq Gas Centre¹¹⁵).
- § Moreover, there is generally weak linkage between regional and bilateral interventions. This problem is specifically aggravated in the case of the MEDA region since no regional institution pre-existed that could be a counterpart of the EC. Some of the regional projects are therefore conceived in Brussels, with only limited dialogue with partners (e.g. the Energy Efficiency in the construction sector programme in the Mediterranean region – the MED-ENEC programme).
- § In the ACP countries a limited number of interventions targeted access to energy through regional programmes. The benefits of the regional approach such as increased bargaining power with the suppliers or accumulation of broad-based knowledge, could have been better appreciated¹¹⁶.
- § Similarly, in the ASEAN region the rigidity and inadequacy of some EC procedures has created delays. In some cases these delays have prevented implementation of additional projects. For instance, within the EAEF, while the share of co-funding (15% for Full Scale Demonstration Projects {FSDP} investments and 50% for other co-funders) proved adequate, the payment procedures based on monthly analytical financial reports was perceived as excessively heavy and could not be met by several local partners. Furthermore the decision chain on the EC side was viewed as non-transparent by the beneficiaries.

At partner level, insufficient regulatory frameworks and administrative rigidities have led to implementation delays and hampered project implementation.

- § In the MEDA region, the difficult institutional context and the administrative rigidities of the beneficiary countries have been reported as an obstacle to swift implementation of Commission interventions, sometimes leading to delays. Project management teams have however managed to adapt.
- § In the ASEAN countries, the inadequate regulatory framework and poor governance at local level proved major impediments. In the case of the EAEF, management problems due to the inadequate resources of the ASEAN Centre for Energy (hosting

¹¹⁵ The EU-Mashreq Gas Centre acts as the co-ordination unit of the EC-supported Euro-Arab Mashreq Gas Market project. It has no legal status or institutional basis. The EC hypothesis is that it will be sustained after the end of external support, while the beneficiary government (Syria) considers the Centre as an EC initiative that should continue to be financed by the EC.

¹¹⁶ In the case of the Régional Solaire Programme, for instance, there is a rationale for a regional intervention, as the issue is common to the countries involved, but the value added of the regional intervention is not optimized. First, the regional managing authority (the CILSS) is handling the administrative arrangements of the project, but has no specific technical capacity to interact with and support the national counterparts. Furthermore, no specific provision was included during the tendering processes for sharing ToR templates, synchronising technical specifications, or defining common impact indicators among the national counterparts. The results of the various tendering processes were not shared, and the technical lessons of the implementation were seldom discussed at regional level.

institutions), were reported, and co-ordination mismatches were identified between project requirements and the local legal and regulatory frameworks¹¹⁷.

The effectiveness and sustainability of interventions is often jeopardised by inadequate management, insufficient sharing and capitalisation of information, and limited use of M&E instruments.

- § In ACP countries, the current approach to knowledge management does not enable lessons to be drawn from experience. The answer to EQ9 on co-ordination and complementarity outlines the lack of interaction between the various demand-driven actions supported (ACP-EU Energy Facility, COOPENER, PDF), and between these actions and EDF interventions. This has resulted in missed complementarities and duplication of effort, especially in two areas where more synergies could have been achieved: definition of energy and poverty impact indicators, and experimentation on renewable energy systems¹¹⁸.
- § In the ASEAN region, concerns were raised about the effectiveness of monitoring and evaluation (M&E) systems. M&E was carried out for most of the interventions analysed, but assessments were focused on outputs rather than the results or impacts of the interventions. Such assessment was neither included in project design nor conducted ex post. At an aggregated level, the Cogen programme stands as an exception: the results of the programme were monitored through a follow-up service contract under the EAEF programme and an ex post evaluation was completed for Cogen with major findings conveniently summarised in a popular report format. Another concern relates to the capacity to transfer the M&E procedures and instruments to the partner: for example, the COGEN programme did not include any provision for the maintenance and the transfer of its energy database¹¹⁹, although this database is viewed as a major programme asset. No agreement was reached on its future, and its sustainability and long-term use have therefore been compromised.
- § In the context of the TACIS support for nuclear activities, similar weaknesses in information management were observed. Three databases were set up: one in the Moscow JMU, one in the Kiev JSO and one in the Joint Research Centre in Petten. The first two databases aim at disseminating the results to a broader public; the third targets technicians and engineers. However, none has been used since their inception. This raises questions about the extent to which careful and realistic assessments of needs for such information, and how to address them, have been made.
- § Limited capacity to support the partner during energy crises: in very different contexts, the energy crises in Ukraine in 2006 (see EQ5) and currently in Ghana (see EQ2), have

¹¹⁷ In the COGEN programme for instance, the implementation of some successful proposals that involved new plant has been hindered by the absence of legal frameworks to regulate their access to the grid. However, in the COGEN case the positive role of the country co-ordinators in countries where projects were implemented has to be acknowledged.

¹¹⁸ Another effect of a weak knowledge management system is again illustrated by the Regional Solaire Programme, composed of two consecutive phases. The first phase suffered from major weaknesses (unspecified tariff policy, weak maintenance, ill-adapted management structures at user level...). The second phase was launched at a time when most of these issues were still unresolved, which definitely affected the sustainability of the whole intervention.

¹¹⁹ This COGEN database includes the inventory of potential actors in co-generation and RES development in the relevant countries.

illustrated the Commission's difficulties in providing appropriate and timely answers to the partners. There were even difficulties relating to clear and timely perceptions of how to protect European interests in crisis conditions.

- § This situation relates to the lack of horizontal (exchanges between personnel with similar responsibilities) or vertical (institutional memory, reporting and accountability tools) transfers of information, and to external communication weaknesses. An insufficiently proactive institutional culture in the context of information management might be part of the explanation¹²⁰.

3.5 Co-ordination & Complementarity

Evaluation Question 9
To what extent are the Commission's programmes co-ordinated with those of the EU Member States and other donors, and to what extent are the Commission's and the EU Member States' interventions complementary?
Answer
<ul style="list-style-type: none"> - The respective EIB, EBRD and Commission mandates and policy papers call for co-ordination and complementarity. Major infrastructures are funded by the two Banks, whereas "soft" interventions are implemented by the Commission. - The Commission is a major actor in nuclear safety, where it has extensive co-operation with the other active donors. - Member States can be in competition for security of supply, which affects dialogue and co-ordination in the energy sector as a whole. - Energy has not been a focal sector of successive EDFs. This discouraged the EC Delegations from participating in sector dialogue or co-ordinating with the partner and other donors. When dialogue took place, it was conducted at project level. - The EUEI was launched by the Member States and the Commission to support complementarity of EU donor interventions in the sector. In the field, several interventions analysed were not co-ordinated either between themselves or with those of the EC Delegations and Member States representations. This lack of co-ordination jeopardised their effectiveness.

¹²⁰ « We provide the information. The extent to which 'they' use it is not our responsibility » was a comment made more than once to the evaluators.

Justification for the Evaluation Question

In 2003, the European Union's Heads of Evaluation Taskforce defined co-ordination and complementarity as follows:

- § Co-ordination refers to "activities of two or more development partners that are intended to mobilise aid resources or to harmonise their policies, programmes, procedures and practices so as to maximise the development effectiveness of aid resources".
- § Complementarity is intended to ensure that Community development policy "shall be complementary to the policies pursued by the Member States". Development co-operation is a shared competence between the Community and the Member States which can be jointly exercised. The Community has specific but not exclusive competence in the field of development co-operation. In this sense complementarity differs from the concept of subsidiarity.

This Evaluation Question assesses:

- § the complementarity between the various instruments used by the Commission to support energy in a given geographic area;
- § the extent to which the Commission, EU Member States, other donors and financing institutions dedicate efforts to structuring dialogue on their respective strategies, activities and experience;
- § the concrete outcomes of the co-ordination process, from a basic level (exchange of information on activities) to an advanced level (for example implementation of common programmes and use of common guidelines);
- § the extent to which this dialogue contributes to improving complementarity of donors' and financing institutions' interventions in the sector in terms of coverage of partners' needs, non-duplication of activities, and scheduling of interventions (focusing on complementarity between EU actors).

Findings and analysis

In ACP countries internal co-ordination between the Commission's instruments (EDF and demand-driven initiatives) has been limited. Potential synergies have not been developed.

- § At headquarters level the EUEI and related initiatives are examples of effective co-ordination between the Commission and Member States. The Commission and the EU Member States strive to achieve structured dialogue on their respective strategies.
- § In relation to the EUEI, the objective of COOPENER and the PDF is to promote partners' pro-poor energy policies and their integration into PRSPs. However, the Commission has not developed sector dialogues with partner countries and is not closely involved in energy sector co-ordination processes with other donors. This is explained by the fact that under successive EDFs energy has not been a focal sector. The ambitions of COOPENER and the PDF therefore seem jeopardised by a lack of commitment to endorsing policy dialogue with the partner and other donors.

The message sent by the Commission to the partner and donors on its commitment to the sector is therefore unclear.

§ The Commission has supported various demand-driven initiatives, which are potentially complementary to each other, as well as to EDF-funded activities. However these initiatives operate separately and do not foster any complementarity with other Commission-led interventions¹²¹. This is due both to limited knowledge management at headquarters level and to weak communication of these initiatives to institutional actors in the field.

The Member States would value more involvement of the EC Delegations in the sector, but limited technical expertise and the limited time available are considered as constraints by Delegations.

§ In ACP countries, the EC Delegations have not institutionalised co-ordination with the EU Member States in the energy sector. However, the MS would value such an initiative. In Ethiopia the representations of Austria, Italy and France support the sector. They have individually striven to influence a national pricing policy and to have barriers to private involvement in the sector removed, but without much success up to now. They see institutionalisation of donor co-ordination as a potential solution and are encouraging the Commission Delegation to become involved in a co-ordination process, ideally as donor *chef de file*. The Delegation has not endorsed that role so far, arguing that energy is not a focal sector for its co-operation programme. Even if EDF 10 brings energy up the agenda, Delegations often perceive their limited technical capacity as a constraint on more in-depth sectoral dialogue.

§ The Delegations have demonstrated only limited technical capacity to deal with energy-related issues, and perceive this as a constraint on further involvement. Moreover Delegation staff claim that they have larger amounts of aid to manage per staffing unit than other donor representations, and that this impacts on their willingness and ability to dedicate time to slow-disbursing institutional and pilot programmes.

§ In the ASEAN region the Commission has so far been the only operator in the field covered by COGEN and EAEEF. Other donors (the African Development Bank, the World Bank, the Japan International Co-operation) are openly interested in building expertise on what has been initiated and developed by the Commission. There is virtually no dialogue between donors in the sector. In sharp contrast, the issues of supply security and commercial interests are hindering the co-ordination process.

¹²¹ Examples of missed interactions: the Programme Regional Solaire II and COOPENER DEA project in Mali (EQ6), or the missed synergy between the various Coopener-supported pilot projects in biofuel (EQ5).

Policy papers as well as the respective mandates of the EIB, EBRD and Commission call for co-ordination and complementarity between these institutions. Major infrastructures are funded by the above-mentioned international banks, whereas “soft” projects go to the Commission.

- § The EIB and the EBRD are presented in the recent EU policy documents¹²² as major instruments of the external dimension of energy policy. On the other hand EIB and EBRD strategy papers¹²³ explicitly refer to the Commission’s Green Papers.
- § Field observations in the MEDA region show that the respective interventions of the Commission and the EIB were complementary and closely linked, with a clear distribution of tasks: the Commission provides “soft” support through grants (interest rates subsidies, technical assistance, etc.) and the EIB provides “hard” support (infrastructure and equipment) through loans.
- § The ACP-EU Energy Facility aside, a similar distribution of tasks has been observable in the ACP region since the creation of the EUEI. This complementarity has been achieved despite limited co-ordination in the field between the EIB missions and the EC Delegations. For the EIB, other IFIs are also privileged partners (the World Bank in particular, and EIB-EBRD collaboration in Eastern countries). This low level of co-ordination is explained by the limited involvement of the EC Delegations in the sector. When the Delegation needs technical advice for negotiations with the partner on sectoral issues (such as electricity tariffs in Ghana), it co-ordinates with the IFI represented in the field, namely the World Bank. In that regard the absence of a permanent EIB representation in most ACP countries is regretted by some Delegations; the EIB has recently opened regional representations in the ACP countries and in North Africa, which could strengthen communication with the Delegations.

The Commission is a major actor in nuclear safety, in which it has extensive co-operation with the other active donors.

- § The EU participates in large projects co-ordinated and managed internationally at G7-G8 level. It also funds large international projects managed by EBRD; for example:
 - Chernobyl shelter;
 - The Northern Dimension of Environmental Protection (Nuclear Window of the NDEP);
 - The Nuclear Safety Account, managed by the EBRD and funded by donors including the Commission.

¹²² “The priorities to be pursued by an effective external EU Energy Policy during the next three years are [the development of] the use of financial instruments, via enhanced co-operation with the EIB and EBRD and the establishment of a Neighbourhood Investment Fund, to enhance the EU’s energy security”, COM (2007) 1 final, Communication from the Commission to the European Council and the European Parliament, An Energy Policy for Europe, Brussels, 10.1.2007

¹²³ See in Annex 6, section 3, references to the EIB Action Plan for EU energy policy 2007-2009 (published in March 2007) and to the EBRD’s Energy Operations Policy (July 2006).

- § To support the regulatory authorities in the CIS, the Commission relies on a network of MS national regulatory authorities, which can be considered as a very effective way of ensuring co-ordination between the MS and the Commission in that field.
- § In the area of safeguards, evidence of co-ordination is less clear. The USA finances a very large project to improve safeguards in Former Soviet Union countries. The funds allocated totalled \$296m in 2006, funded by the Department of Energy “in the interest of the USA”. In the same area the Commission has provided €13.8m since 1996. Its action was not co-ordinated with the USA because of differing procedures.
- § The co-operation with the IAEA is of the utmost importance. The IAEA provides guidelines and recommendations on safety issues that are commonly accepted as the basis for the International Standards. The IAEA may also send an international team of experts to meet a demand for expertise by a member state of the organisation. The EC is a major contributor to those extra-budgetary “projects”. The IAEA offers short-term seminars and workshops to NS experts from the CIS countries.
- § Co-ordination with initiatives from other donors is less effective and can lead to duplication of effort.

Security of supply is an area in which the EU Member States are in competition. Co-ordination is not systematised and is dependent on the willingness of actors to define common lines.

- § Co-ordination of actions in the field of security of supply for Europe is highly dependent on the willingness of the Member States to share information and a common strategy and position when negotiating with the main partners such as Russia and the Middle East countries. The incentives for doing so are limited as long as the EU energy market is not fully integrated. The Commission has no mandate to negotiate in the name of the EU. Parallel and often competing bilateral dialogues exist between Russia and individual EU Member States.
- § In Ukraine the Energy Market reform was initiated by the USA, is now led by the Commission, and will probably involve the World Bank. But there was no evidence of co-ordination between these three donors.
- § INOGATE was designed to support the building-up of a regional approach, and to facilitate IFIs' investments. But only very limited co-ordination has been observed with IFIs, Member States or the private sector.
- § In the MEDA region, the Commission supports regional projects for integrating gas and electricity markets in the perspective of the creation of an EU-MEDA free trade area. While the Commission defends common MS interests (security of gas supply and integration of electricity markets) no evidence of Commission-MS co-ordination was found.

3.6 Coherence

Evaluation Question 10
To what extent are the Commission's interventions in the energy sector coherent with other EU policies?
Answer
<ul style="list-style-type: none"> - Some of the difficulties faced by the Commission teams in charge of implementing the EU's external energy policy are due to major divergences between the EU Member States on EU energy policy. - The credibility of the Commission as a leading player in the energy dialogue with major suppliers partly depends on its ability to achieve genuine integration of Europe's energy markets. - EU Member States have very different sensitivities regarding nuclear power production. This has an impact on the ability of the Commission to support nuclear safety in the CIS countries. - Energy was not a focal sector of the last EDFs (including EDF 9). This has hampered the ability of the Commission to play a major role in that sector in the ACP countries. - Energy efficiency is a major dimension of EU energy policy. However the Commission has not so far invested time and resources in addressing major obstacles to energy efficiency abroad, such as tariff and subsidisation policies.

Justification for the Evaluation Question

Some of the difficulties faced by the Commission teams in charge of implementing the EU's external energy policy find their roots in major divergences between the EU Member States on the energy policy itself. During the period under review, energy policy was still very much the responsibility of the EU Member States. Despite recent efforts to formulate a common policy, many of the most important Member States have not yet made a clear choice between competing and co-operating with each other.

Moreover the EU is still very far from having been able to build a common foreign policy. In that context, implementing a credible and effective foreign policy in such a sensitive sector as energy remains a real challenge. Some of the practical consequences of the lack of coherence caused by internal divisions and by failed attempts to "speak with a single voice" to foreign partners are analysed here.

Europe has supported the Johannesburg process, but the importance given to energy in the recently-negotiated EDF 10 remained very low. Energy is not a focal sector in this Convention, which deeply hampers the capacity of the EC to act in that field.

Findings and analysis

Security of supply: the Member States' individual policies and the Commission's role

- § The process of EU energy market integration and liberalisation is challenged by some of the major Member States. As long as genuine market integration is not achieved, Member States will conduct their own foreign policies to ensure their own individual security of supply. In this context, seeing the EU "speaking with a single voice" in negotiations with major suppliers will remain a remote prospect.
- § This may explain the difficulties which the Commission has experienced in building internal (within the EU) and external (with the partners) credibility in negotiations for the supply of fossil fuels. The Commission representatives in these negotiations do not seem to obtain much support from certain major Member States and these States do not show much transparency about their parallel negotiations. Nevertheless, smaller Member States with less analytical and negotiating capacities could expect the Commission to take "knowledge-based leadership", helping them to raise their level of understanding of the situation and their bargaining power.
- § In summary, the Commission has to respond to a need to see the European institutions playing a role in analysis and negotiations aimed at securing European energy supplies. At the same time, some Member States with the capacity to provide major contributions to the process are far less co-operative than they could be.

Nuclear energy: a debated issue

- § Nuclear power production is a highly sensitive issue in Europe. Some countries such as France have built their security of supply policy on this basis. Others, for example Austria, have never accepted a technology which they consider as bearing unacceptable risks. A third group, an example being Germany, are committed to withdrawing from that form of electricity production. Moreover, some new Member States had to accept the closure, at their own expense, of first-generation NPPs built during Soviet domination, owing to risks related to their design. More recently concerns related to CO₂ emissions have revived interest in nuclear power production. The views of the different Member States on the contribution that nuclear energy can be expected to make to addressing climate change are strongly contrasting.
- § The Chernobyl accident and the economic and political disturbances related to the end of the Soviet Union convinced all the Member States of the necessity to provide urgent support for improving nuclear safety in the Former Soviet Union. However, now that the emergency dimension of interventions is less relevant, it is much harder for the Commission to obtain a clear signal from the Council on what to do next. In particular, uncertainties remain about what to do with the first generation power plants which Russia (where they represent 40% of the nuclear power production) and Armenia (100% of nuclear power production) have not agreed to close down despite repeated demands from G8 members, and which are the likely to be main source of civil nuclear risks. In this context it is particularly difficult for the Commission to propose a strategy which optimises resource allocation in such a way as to maximise the reduction of the overall nuclear risk.

Energy for poverty reduction: still not a focal sector

- § Access to energy has recently been recognised as a major precondition for helping people to overcome deep poverty. Most donors, including some EU Member States, have developed analytical tools and sectoral approaches for addressing this new challenge of not only providing access to energy for the poor but also helping them to make efficient use of it to improve their living conditions and productive capacities.
- § The main area where reducing poverty remains a daunting challenge is the ACP region. The main instrument for channelling aid to ACP countries is the EDF, governed by successive five-year Conventions. At the time of the negotiation of the last Convention, energy was not considered a focal sector for Commission-funded co-operation, which has prevented the Commission from devoting significant resources to that sector.
- § The Commission has therefore no incentive to invest much in analytical work or to develop internal human resources to the sector. In consequence, although many within the Commission recognise the importance of access to energy, its action in this sector remains very limited. However the 2005 Consensus on Development leaves a door open for EDF 10 to place more emphasis on energy.

Energy and environment: a major concern within the EU, limited interventions outside the EU

- § Promoting a low-carbon economy is at the top of the agenda of the internal EU energy policy. However it appears to be less of a priority in external energy policy documents¹²⁴.
- § The interventions identified as part of the co-operation policy in the energy sector only include a few pilot projects in that field¹²⁵. Major challenges for improving global energy efficiency, such as tariff policies and regulatory frameworks, are not addressed.
- § Despite many potential avenues of mutual strengthening, little integration has been observed between the EC's climate change policy and the imperative of improved access to energy in the interests of poverty reduction. So far the EC has not (or has barely) used its external energy policy for the attainment of environmental objectives. Similarly and despite a growing demand from partner countries, measures such as the Kyoto Protocol market-based instrument (Clean Development Mechanism and Joint Implementation) have not - or have only marginally - been used to promote access to energy for the poor. This is partly due to the novelty of these instruments as well as to the lack of a Commission mandate to implement the Kyoto Protocol commitments. Indeed, while the Commission represents the MS in the Kyoto Protocol international negotiations, it does not bear the responsibility for implementing the decisions and targets of the Burden Sharing Agreement, which remains a prerogative of the Member States. This could possibly change in the future, for example in the context of the new Africa-EU Energy Partnership, which addresses energy efficiency and RES.

¹²⁴ These documents have been analysed in Chapter 2 and Annex 7. For example, The 2005 European Consensus on Development only makes a short reference to improving "access to modern energy services through [...] the Johannesburg Renewable Energy Coalition." p.20.

¹²⁵ See Annex 5.

§ Finally, the Commission is actively promoting the use of biofuels, both as an alternative energy source for the EU and as an economic opportunity for emerging economies. It is the opinion of the Joint Research Centre that the actual costs of biofuels largely outweigh their potential benefits. The Centre, which with EUCAR and CONCAWE has performed detailed sets of well-to-wheels analysis of different fuel and power-train combinations, noted in the report that the EU's biofuels promotion policy is unlikely to contribute to any greenhouse gas savings, with costs largely outweighing potential benefits¹²⁶.

¹²⁶ Source: Euractiv, article published Friday 18 January 2008.

4. Conclusions

This section presents the evaluators' Conclusions from two different perspectives:

- § first, it provides an overall assessment of the Commission's support for partner countries in the energy sector, this assessment following the ten stages of the co-operation cycle which was introduced above¹²⁷;
- § second, the effectiveness and sustainability of the Commission interventions within its strategy are further assessed, the conclusions being specific to the Commission's strategic priorities.

4.1 Overall assessment of the EC strategy: a co-operation cycle not yet formalised, with important consequences

In order to address strategic challenges associated to energy, the European Union has formulated a multidimensional policy which is being constantly developed:

- § During the last seventeen years the European Institutions have been the main foreign contributors to improvements in nuclear safety in countries which had to undergo major political and economical reforms, with all the risks that this process entailed.
- § For rather less than a decade, and especially during the last five years, Europe has increasingly perceived the risk arising from its dependency on foreign suppliers for all its major energy sources and has launched policies specifically devoted to addressing this vulnerability.
- § During the last five years, following the path open by some of its Member States, the EC has resolved to invest in facilitating access to energy as a major contribution to poverty reduction.
- § During the last decade the risks related to global climate change has become an increasingly serious concern and Europe, which was already the most energy-efficient region, has taken the lead in global attempts to address this new problem.

This policy has external dimensions, the activities related to which form part of the scope of this evaluation.

The most striking finding of this evaluation is that the resources devoted to that policy remain extremely limited in relation to the critical importance of this sector for the future of Europe. Moreover, while the European Community increasingly articulates its energy policy¹²⁸, implementation of this policy in each of the countries where the

¹²⁷ See EQ1 and the interventions logics presented in Annex 2.

¹²⁸ The evaluators had no mandate to evaluate the European energy policy, it is therefore taken here as a given benchmark.

Commission intervenes in the energy sector is far less precise¹²⁹. Not much is done to ensure that the allocation of these very scarce resources dedicated to the energy sector in a given country is optimised in order to address the EC's priorities in its co-operation with that country. It is also hard to know the extent to which this resource allocation is optimal from the point of view of that country. In most cases a link is missing between the EC's general policy statements and the practical energy-related interventions of the Commission in neighbouring or developing countries.

Why should this be so? Interviews, written sources and even some project titles¹³⁰ suggest that the concept of co-operation needs to be clarified. Energy is nearly always a critical issue for consumers, suppliers and in some cases, transit countries. It needs to be made very clear in that sector, even more than in others, that "co-operation" between countries has little to do with making mutual concessions and even less with "harmonising" partners' policies. Sound co-operation rather implies making European policies as clear as possible to the partner, as well as understanding the other party's priorities and constraints, in order to identify common objectives where both parties have an interest in joint efforts (co-operation area). The evaluators have found little evidence of such preliminary steps.

As presented when answering the first Evaluation Question, co-operating at policy level is a process which has to follow explicit stages. These ten stages will provide the framework for this overall assessment.

4.2. Conclusions along the 10 stage of the co-operation cycle

STAGE OF THE CO-OPERATION CYCLE	CONCLUSIONS ON THE EC SUPPORT FOR ENERGY
FORMULATION OF THE ENERGY POLICY	C1. Important improvements achieved in policy definition at central level, but application at country level still needing to be made clearer.
MUTUAL UNDERSTANDING	C2. Insufficient communication on the Community's strategy in each partner country. C3. Insufficient analysis of the partner's and donors' own objectives and constraints.
DELINEATION OF A CO-OPERATION AREA	C4. Identification of "common objectives" sometimes relying on assumptions not derived from detailed analyses.

¹²⁹ This is true in nearly all cases except for the first phase of the nuclear safety programme, where interventions were prioritised on the basis of an internationally recognised overall assessment of the nuclear risk (see EQ1 and EQ3).

¹³⁰ The project called "Harmonisation of Energy Policies of Russia and the EU" is interesting from that point of view.

STAGE OF THE CO-OPERATION CYCLE	CONCLUSIONS ON THE EC SUPPORT FOR ENERGY
PRIORITISATION OF CO-OPERATION OBJECTIVES	C5. No prioritisation of operational objectives; no critical path. C6. Insufficient focus on the regulatory framework and pricing policy, even though these are prerequisites for energy efficiency and market liberalisation.
RESOURCES ALLOCATION	C7. Grants: mismatch between limited financial resources and ambitious objectives, worsened by dispersion of resources. C8. Loans: co-ordination between Commission, EIB and EBRD strengthened, albeit with disparities. C9. Insufficient technical capacities.
PROGRAMMING	C10. Despite recent improvements, persistent difficulties in provision of public works and equipment in the framework of a programme designed for TA. C11. Nuclear safety aside, Commission's reactions to crisis conditions impeded by limited human capacities and cumbersome procedures.
IMPLEMENTATION	C12. Some regional institutions too weak to act as a partner in sectoral dialogue, limiting the value of a regional approach in such cases.
MONITORING	C13. Outputs measured, but outcomes not.
EVALUATION	C14. Nuclear safety apart, limited learning of lessons in Brussels.
LESSONS LEARNED	

As indicated in section 3.1, the 3Cs (co-ordination, coherence and complementarity) are transversal aspects dealt with from stage 2 (Mutual Understanding) to stage 8 (Monitoring) of the co-operation cycle.

Stage 1 - FORMULATION of energy policy: improving but not translated to country level

C1. Important improvements achieved in policy definition at central level, but application at country level still needing to be made clearer.

Based on EQ1 (Relevance)

The successive Green Papers and more recent documents¹³¹ now provide a precise view of the European priorities in the energy sector. But much remains to be done to develop

¹³¹ See section 2.1 on the EC policy framework.

country strategies in that sector and to incorporate energy into the Commission's country strategies¹³².

- § Access to energy as a means of contributing to poverty reduction: none of the demand-driven interventions analysed are justified by country-specific notes – whether or not prepared by the Commission – explaining why the intervention is a priority for addressing the partner's poverty constraints.
- § Security of supply: the common documents produced in the framework of the energy dialogues with Ukraine and Russia present statements respectively on the EU's and partner's positions, but the EC strategies, based on detailed analysis and defining the expectations from co-operation with these countries, are still insufficiently precise.
- § Nuclear safety: once the most urgent priorities defined by the IAEA Green Book have been addressed, the policy of the EU in this field became less explicit. Should the Commission focus on what could be considered as major risks for European citizens? If so, what are these risks and how should resource allocation be optimised to address them? If not, what are the main priorities which should drive allocation of European resources in each partner country? Since 1999 key priorities have been identified, such as safety culture at operator and at regulator levels, management of nuclear waste and the respect for the commitments to the international agreements, but this remains very broad in relation to the resources available. More recently, new priorities have been defined but need more focus, for example in the domain of nuclear waste or assistance to RA/TSOs where no "exit strategy" has been outlined.

Stage 2 - MUTUAL UNDERSTANDING: not enough is done to better understand the partner's and other donors' policies

C2. Insufficient communication on the Community's strategy in each partner country.

Based on EQ1 (Relevance), EQ2 to 5 (Effectiveness).

The European energy strategy reflects European interests and values. However, the translation of this European strategy into European expectations of relations with a given partner is less explicit.

C3. Insufficient analysis of the partner's and donors' own objectives and constraints.

Based on EQ1 (Relevance), EQ2 to 5 (Effectiveness).

- § The partner and other donors have their own sectoral priorities and constraints, which are not necessarily the same as the Commission's (see interaction between three priorities areas in EQ1). The Commission has insufficiently analysed these specific interests of the partner. The same can be said in terms of analysis of other donors' specific interests.

¹³² See EQ 1 Relevance.

- § In Russia, Ukraine and MEDA countries among others, the Commission clearly identifies price distortions as a major issue hampering – if not preventing – progress in several fields such as investment profitability, market liberalisation, and energy efficiency. However, no study has so far been launched to analyse the economic and political reasons why a specific partner country decides to maintain such tariffs, and suggest how they could be helped to change this policy. This major issue of political motivations of heavily subsidised tariff policies and how to address them remains largely a “black box” for the Commission. In many countries the partner itself has no answer to these questions.
- § Access to energy for poverty reduction: national energy policies in developing countries are often not explicitly linked to other policies such as economic growth or poverty reduction. In none of the countries visited was a focus on the specific constraints of the “energy poor” observed, either in the sectoral strategies or in the most recent PRSPs.
- § Nuclear safety: the partners involved have not updated their priorities in this area; or, if they have done so, the priorities are not known by the Commission.

Stage 3 - Delineation of a CO-OPERATION AREA: not an explicit step

C4. Identification of “common objectives” sometimes relying on assumptions not derived from detailed analyses.

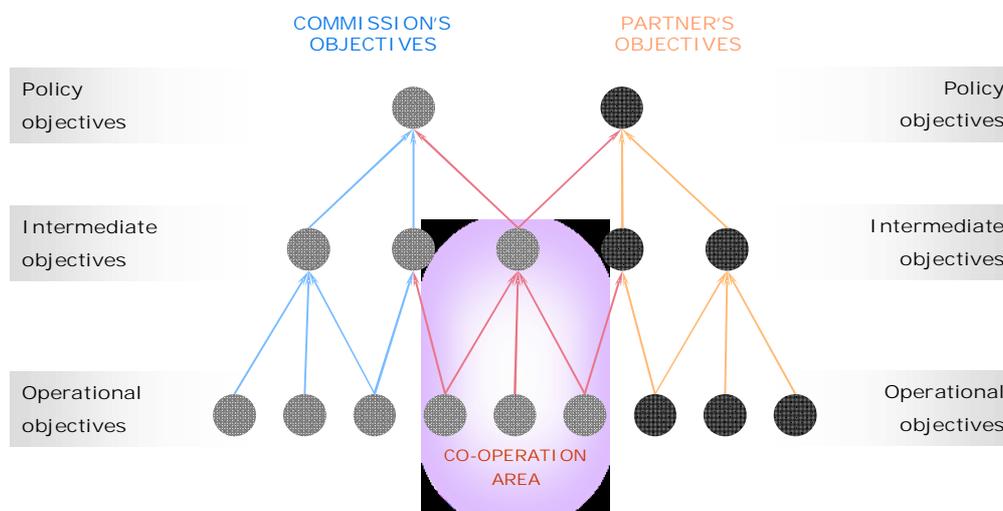
Based on EQ1 (Relevance), EQ2 to 5 (Effectiveness), EQ8 (Efficiency).

When designing an intervention, the Commission often over-estimates the willingness of the partner government to share its own views, because it has not invested enough time and resources in understanding the actual political priorities of the government. This hampers the delineation of a “co-operation area” (defined as the objectives shared by the donors and the partner), and therefore the definition of a clear “co-operation strategy”.

In all the countries visited, energy is now high on the partner’s agenda. However, it is still rarely a focal sector of the Commission on ACP countries. Therefore, in the countries where the EU has no direct interest in terms of security of energy supply or nuclear safety, the Delegations have no sectoral dialogue with the partner or other donors in that field.

The Commission’s objectives diagram for a given country is not clearly presented to the partner or to the other donors involved.

In terms of security of supply, the parallel dialogues carried out by Member States with the same suppliers make the picture even more blurred.



Launching programmes without having: (i) understood the overall set of objectives of the partner and (ii) jointly defined a set of explicit common objectives, has major consequences for the co-operation process: interventions are based on the assumption that what is an important objective for the Commission (blue area) is necessarily important for the partner (orange area).

The same process should be conducted with the other donors involved in the sector, with the ultimate aim of identifying the potential co-operation between the three actors (Commission, partner and other donors¹³³).

The following examples show that the partners did not always share the Commission's view of the benefits to them of the measures supported:

- § The INOGATE programme resulted from the willingness of the Commission to open an alternative route for channelling oil and gas to Europe without having to rely on Russia. The supposed contribution of the INOGATE programme to developing outlets for its member countries, or to securing a part of their own supply needs independently of the Russian system, could have allowed creation of an interesting "co-operation area". However, a better understanding of the political priorities of each of these countries would have shown that (i) their relations with Russia are much more complex than assumed, and (ii) that their will to develop genuine regional co-operation, or even to develop transparent market rules and practices for oil and gas, were not as strong as the project designers assumed. INOGATE clearly addresses objectives which are part of the blue area of the above diagram (Commission's objectives), but not always part of the orange area (partner's objectives). Therefore, the programme falls partly outside the area of possible co-operation.
- § In the same way, eligibility criteria ensure that interventions supported by the Energy Facilities fall within the Commission's area of interest (blue area). But these eligibility criteria put too general attention to the contribution to the partner's energy policy (orange area), as the partner itself is not involved in the selection process. That means that the current selection process does not ensure grounding of the selected interventions within a true co-operation area.

¹³³ See EQ1.

§ The reverse might also be true: interventions related to low radioactivity nuclear waste management are relevant for Russia, whereas they might be less a matter of concern for EU populations. That means that these interventions are situated in the orange area, but also that they are of lesser joint priority than NPP safety, which is a high concern for both Russia and the EU¹³⁴.

Stage 4 - Limited PRIORITISATION of co-operation objectives: most interventions are relevant, but resource allocation remains sub-optimal

C5. No prioritisation of operational objectives; no critical path.

Based on EQ1 (Relevance), EQ2 to 5 (Effectiveness), EQ8 (Efficiency).

The previous conclusions showed that identification of a co-operation area is often not made explicit enough by the Commission and the partner. This prevents them from agreeing on prioritisation of operational objectives (i.e. which interventions could best support the strategy; see diagram). The result is sub-optimal resource allocation.

- § Nuclear safety: the Commission does not currently justify resource allocations on the basis of a recent overall nuclear risk assessment, or any other criteria. Further, the concept of nuclear safety is multi-dimensional. The Commission has listed the topics that it is willing to address, but these are too broad to allow genuine prioritisation. Whose specific safety should be addressed by the Commission as a priority is not clarified in programming documents (safety for EU citizens, or for both EU and FSU citizens? What is the basis for prioritisation?). The limited resources available cannot cover a too broad a range.
- § Security of supply: as with nuclear safety, this priority covers a vast range of potential interventions. Given the extremely limited budget available in relation to the political emphasis given to security of supply, prioritisation and focus on a limited set of complementary interventions is of the utmost importance. However, this approach was not applied; whether in the energy market reform programme in Ukraine, in the "harmonisation" project in Russia, or in the INOGATE programme, dispersion of resources was observed.¹³⁵
- § In developing countries activities are very much based on calls for proposals. General eligibility criteria allow at best checking whether interventions are in line with the Commission's policy guidelines, but take limited account of the priorities of the partner governments, the latter being uninvolved in the selection process. None of this improves the relevance of interventions or, still less, optimisation of resource allocation.

¹³⁴ See EQ1.

¹³⁵ See EQ1.

C6. Insufficient focus on the regulatory framework and pricing policy, even though these are prerequisites for energy efficiency and market liberalisation.

Based on EQ1 (Relevance), EQ2 to 5 (Effectiveness), EQ8 (Efficiency).

In many cases, both an adequate regulatory framework and an appropriate pricing policy are necessary for achieving the common objectives of the Commission and the partner for the sector. The first was not often a priority; and except in Syria the second was left aside.

Stage 5 - RESOURCES allocation: objectives and resources available do not match in many cases.

C7. Grants: mismatch between limited financial resources and ambitious objectives, worsened by dispersion of resources.

Based on EQ1 (Relevance), EQ2 to 5 (Effectiveness), EQ8 (Efficiency).

Financial grant resources devoted to the energy sector are very limited. Their dispersion and sub-optimal allocation often fail to match ambitious objectives. This is particularly the case for interventions carried out in the field of security of supply¹³⁶.

C8. Loans: co-ordination between Commission, EIB and EBRD strengthened, albeit with disparities.

Based on EQ1 (Relevance), EQ2 to 5 (Effectiveness), EQ8 (Efficiency).

The EIB and EBRD are major investors in the sector. Co-ordination between them and the Commission is now promoted as a key dimension of the EU's external energy policy. Field observations show that co-ordination practices vary greatly according to the capacity and willingness of the Delegation to co-ordinate with these institutions in the energy sector. This co-ordination works better when the Commission is involved in some form of policy dialogue such as in Syria, than in the ACP countries where its sectoral involvement is limited. The EIB's usual partners for co-ordination are the other IFIs involved in the field. On the other hand EC Delegation staff says that local co-ordination with the EIB could be easier if the EIB had permanent local representations. The opening of regional EIB offices in several ACP and Northern African countries goes in that direction.

C9. Insufficient technical capacities.

Based on EQ2 to 5 (Effectiveness), EQ8 (Efficiency).

Commission staff in Brussels and the Delegations are concerned by the inadequacy of technical capacities to deal with energy-related issues. Except for nuclear safety where the Commission has set up a specialised team which can rely on European technical networks, the Commission's skilled human resources in charge of the energy sector outside the EU

¹³⁶ INOGATE and Harmonisation of policies are examples of dispersion of too limited resources

are very limited. The budget they control seems very small compared to the very ambitious objective of ensuring security of energy supply for Europe.

Stages 6 and 7- PROGRAMMING and IMPLEMENTATION: procedures remain heavy on both sides, despite progress in nuclear safety

C10. Despite recent improvements, persistent difficulties in provision of public works and equipment in the framework of a programme designed for TA.

Based on EQ8 (Efficiency).

The nuclear safety team was able to improve implementation conditions significantly during the period under review. This is less true of INOGATE which is the other TACIS programme of the sample which included implementation of small-scale investments.

C11. Nuclear safety aside, Commission's reactions to crisis conditions impeded by limited human capacities and cumbersome procedures.

Based on EQ2 to 5 (Effectiveness), EQ8 (Efficiency).

Very different contexts (energy crisis in Ukraine in 2006, and currently in Ghana) have illustrated the difficulties experienced in provision of appropriate and timely European answers to the partners. The difficulties related even to clear and timely perceptions of how to protect European interests in crisis conditions. The reasons relate to:

- § insufficient capacity to collect, analyse and use information on how the various scenarios developed;
- § limited sectoral dialogue with partners, beyond individual projects; and
- § the inertia of the Commission's procedures and instruments.

In nuclear safety the Commission has an internal technical team and two research centres, and relies on a network of European regulatory authorities. Regular contacts are maintained with other teams in EBRD and the IAEA. The Commission team's knowledge of the nuclear sector in the TACIS region is connected with the best think-tanks in Europe. In cases of crisis, however, it is likely that the heavy decision-making procedures hamper quick reactions.

C12. Some regional institutions too weak to act as a partner in sectoral dialogue, limiting the value of a regional approach in such cases.

Based on EQ1 (Relevance), EQ2 to 5 (Effectiveness), EQ8 (Efficiency).

Implementation of regional programmes has costs reflecting more complex decision-making processes, which however may be counterbalanced by the value added of a regional dimension. It is not certain that the balance was positive for projects such as the small-scale investments of INOGATE and Phase 2 of the Programme Régional Solaire.¹³⁷

- § Where the sectoral mandate transferred to the regional structure by the participating countries was limited, the ability of the regional structure to ensure that the often ambitious objectives were realised was restricted (INOGATE and Euro-Arab Mashreq Gas Market projects).
- § Where a regional structure did not exist, no continuous dialogue could emerge (MEDA region).
- § Even where the regional structure existed and had a mandate, its technical capacity was sometimes incapable of handling the administrative burden (as with the insufficient capacity of the CILSS to handle the Programme Régional Solaire).

Stage 8 - MONITORING: outputs rather than outcomes are measured

C13. Outputs measured, but outcomes not.

Based on EQ2 to 5 (Effectiveness), EQ6 to 7 (Impact), EQ8 (Efficiency).

The Results Oriented Monitoring (ROM) system provides information on implementation and output, but does not allow for reliable assessment of the outcomes and impacts of interventions. In particular:

- § the Commission has recently shed light on how to measure the effects on poverty reduction of support for energy access; but up to now these effects have not been measured;
- § no recent overall assessments of progress have been conducted in relation to overall nuclear safety;
- § no indicators have been designed to assess the contribution of interventions to EU supply security.

As a result, currently available data on impacts is extremely scarce.

¹³⁷ See EQ8.

Stage 9 and 10 - Very few EVALUATIONS which are not used for drawing LESSONS and accumulating knowledge

Very few interventions in the energy sector have been evaluated. The ROM reports include rapid assessments based on the classical DAC evaluation criteria. The quality and credibility of these assessments vary a lot from one ROM report to another.

C14. Nuclear Safety apart, limited learning of lessons in Brussels.

Based on EQ2 to 5 (Effectiveness), EQ6 to 7 (Impact), EQ8 (Efficiency).

The ROM process and the few evaluations carried out have had limited effect on accumulation of institutional knowledge. The Commission has no procedures for capitalisation of knowledge in that field. Basically, aside from nuclear safety, experience is gained by individuals, not by the institution.

In the field of nuclear safety, the Commission benefits from centralised decision-making procedures supported by skilled teams. Many of the Commission's NS specialists have been in charge for a long period of time. Informal knowledge accumulation has therefore been possible. However formal attempts to share this knowledge (through technical databases for instance) have been less successful.

4.3 Effectiveness and sustainability: positive contribution to improved safety of several NPPs, limited effects on EU security of supply and on poverty reduction

The following conclusions are specific to the major priorities supported by the Commission as regards its support for partner countries in the energy field. They are summarised below and further developed in the following pages.

MAJOR EC PRORITIES	SPECIFIC CONCLUSIONS
CONTRIBUTION TO EU SECURITY OF SUPPLY	C15. No measurable effects of the Commission's interventions so far.
MITIGATION OF ENVIRONMENTAL IMPACT OF ENERGY	C16. No significant impact so far.
SUPPORT FOR NUCLEAR SAFETY	C17. Effective on-site interventions, but effects on overall nuclear safety in the partner countries, for instance through replication of techniques and ownership of safety culture, unknown.
SUPPORT FOR POVERTY REDUCTION	C18. Despite EIB contributions to energy access (large supply and transport infrastructure), overall impact on poverty still unknown.
PILOT PROJECTS	C19. Demonstrable effects not monitored, sustainable exit strategies often not included.
DEMAND-DRIVEN INITIATIVES	C20. Limited political effects in the field, and limited benefits in Delegations.

C15. Contribution to the security of EU supplies: no measurable effects of the Commission's interventions so far.

Based on EQ 5 (Effectiveness), EQ7 (Impact), EQ8 (Efficiency).

The objectives of the EC contribution to the EU security of energy supply are to increase understanding between the Union and the main suppliers, transit and consumer countries, diversify energy sources, and strengthen capacity to address crisis situations, so as to ensure the security of affordable energy supplies to the EU and to each of its Member States¹³⁸.

The results and sustainable impacts of this policy that can be observed are the following:

¹³⁸ Green paper: A European Strategy for Sustainable, Competitive and Secure Energy, 2006.

- § Understanding of the policy and constraints of the partner countries has slightly improved. But it is still far from being sufficient to guide effective negotiation and intervention in critical issues such as tariffs and related policies on the market and overall energy efficiency.
- § The actual effects on security of supply have yet to be demonstrated.
- § The Commission has not developed a demonstrable capacity to address crises.
- § The main Member States do not seem to rely on the Commission to ensure their security of supply. They carry out their own external policies in the sector. Incomplete energy market integration within the EU still provides arguments in favour of such individual national approaches.

C16. Mitigation of environmental impact of energy: no significant impact so far.

Based on EQ4 (Effectiveness), EQ7 (Impact), EQ8 (Efficiency).

The objectives were to support a low-carbon economy (use of renewable technologies, energy efficient consumption) and environmental standards (adequate regulatory frameworks and pricing policies) in order to mitigate the environmental impact of energy-related activities.

The observed results and sustainable impacts are limited:

- § Interventions have had limited effects so far: pilot projects were not always appropriated and funds allocated to energy loss reduction were limited.
- § Insufficient support was given to developing a regulatory framework and pricing policy that provides an incentive for energy efficiency and renewable energy sources.

C17. Support for nuclear safety: effective on-site interventions, but effects on overall nuclear safety in the partner countries unknown, for instance through replication of techniques and ownership of safety culture.

Based on EQ3 (Effectiveness), EQ 7 (Impact), EQ8 (Efficiency).

The objective of the nuclear safety programme was to improve in a sustainable way nuclear safety (design safety, operational safety and safety culture) and nuclear security (safeguards) in TACIS countries.

The observed results and sustainable impacts have been the following:¹³⁹

- § The TACIS programme has contributed to transferring technologies matching international standards. The safety of the first-generation reactors has improved. TACIS has been able to improve the knowledge of the partners' NPP technical staff, to build "cultural and technical bridges" between the Western and Eastern civil nuclear industries. This is an unquestionable achievement which per se contributes to global nuclear safety. The sustainability of these "bridges" remains a question of political willingness on both sides.

¹³⁹ See EQ4.

- § However, the impact of the EC contribution to nuclear safety (as concerns the civil nuclear safety programmes) is hard to evaluate since no recent overall risk assessment has been conducted.
- § Valuable support was given to regulatory authorities, the sustainability of which depends on the level of ownership by the partner countries.

C18. Support to poverty reduction: despite EIB contributions to energy access (large supply and transport infrastructure), overall impact on poverty still unknown.

Based on EQ2 (Effectiveness), EQ6 (Impact), EQ8 (Efficiency).

The objectives were to ensure sustainable access to energy (availability, reliability, affordability and sustainable supply of energy) so as to improving living conditions and economic growth, with particular attention devoted to the “energy poor”.

The findings on results and sustainable impacts were:

- § Impacts of interventions on poverty reduction are not measured by the Commission.
- § Interventions mainly supported the supply chain, but little emphasis was put on the specific constraints vulnerable groups experience as a result of limited access to energy.
- § Achieving access to energy does not necessarily generate growth and local development. Where sensitisation to productive, safe and clean use of energy has complemented hardware support, this has helped materialise those impacts.

C19. Pilot projects: demonstrable effects not monitored, sustainable exit strategies often not included.

Based on EQ2 and 4 (Effectiveness), EQ6 (Impact), EQ8 (Efficiency).

The objectives of pilot projects were to test and promote new practices and technologies, mainly for using renewable energy and improving energy efficiency.

In respect of results and sustainable impact the findings were:

- § Promotion of energy efficiency and renewable energy are very recent activities. The use of pilot projects for that purpose is therefore highly relevant.
- § However, the extent to which such innovative initiatives actually have a “pilot effect” (replication, induced change in regulations, etc.) is almost never monitored. Very few “pilot projects” are designed to disseminate their practices and results, and when they come to an end, little is done to ensure that the accumulated knowledge based on that experience will benefit the country or the group targeted (exit strategy) or will be shared with the donor community.
- § Results and impacts are therefore not known and likely to be much more limited than expected.

C20. Demand-driven initiatives: limited political effects in the field, and limited benefits in Delegations.

Based on EQ2 and 4 (Effectiveness), EQ6 to 7 (Impact), EQ8 (Efficiency), EQ9 (Co-ordination)

The objectives of the EUEI were to create a focus on energy and poverty so as to:¹⁴⁰

- § raise political awareness among high level decision-makers of the important role energy can play in poverty reduction;
- § clarify the need for energy services for poverty reduction and sustainable development;
- § make apparent the need for energy services in national and regional development strategies;
- § encourage the coherence and synergy of energy-related activities;
- § attract new resources (capital, technology, human resources) from the private sector, financial institutions, Civil Society and end-users.

As regards results and sustainable impact, in none of the three ACP countries visited were the EC Delegations aware that institutional support had been provided by the EC (through COOPENER or PDF). These processes lack visibility, ownership and interaction with institutional actors (partner and donors). There are several reasons: limited communication on these initiatives to and in the field; externalisation of their implementation; limited focus on the partner's priorities in eligibility criteria; limited involvement of Delegations in sectoral dialogue and in the design of the initiatives; rare institutionalised co-ordination in the sector. Further, the externalisation to the Intelligent Energy Executive Agency (IEEA) of the co-ordination and knowledge management of these demand-driven interventions affects appropriation of the process by Delegations. The IEEA has a mandate to disseminate know-how and best practice, and to foster exchanges and co-ordination between all players involved, but despite organising meetings and contacts through its website, it has not been able to organise these contacts in such a way that they provide significant benefits to the different actors. This affects in particular the effectiveness of these demand-driven initiatives, especially where they are aimed at supporting the partner in the definition of a pro-poor energy strategy¹⁴¹. Policy papers are produced but not used by the partner, and are unknown to the donor representatives (including the Delegations).

¹⁴⁰ Source: EUEI website.

¹⁴¹ In particular, the Partnership Dialogue Facility (PDF) promotes partner's pro-poor energy policies and their integration in the PRSP.

4.4 Community value added

This section analyses the extent to which the Commission's interventions have added benefits to what would have resulted from Member States' interventions only¹⁴².

MAJOR EC PRORITIES	SPECIFIC CONCLUSIONS
NUCLEAR SAFETY	C21. Effective synergy between the Commission and EU networks.
EU SECURITY OF SUPPLY	C22. A value added hampered by the restricted Commission mandate.
POVERTY REDUCTION	C23. Limited Community value added, due to the limited technical and financial resources available.
MITIGATION OF ENVIRONMENTAL IMPACT OF ENERGY	C24. Increasing strategic focus, needing further translation into actions.

C21. Nuclear safety: effective synergy between the Commission and EU networks.

Based on EQ3 (Effectiveness), EQ8 (Efficiency) and EQ9 (Co-ordination and Complementarity).

The Commission has built up strong leadership in nuclear safety, a field where it had no prior expertise. Extensive use has been made of the Commission Services and supporting expertise networks to create expertise. The Commission is now regarded by the Member States as a credible, effective actor in this field.

C22. Security of supply: value added hampered by the restricted Commission mandate.

Based on EQ5 (Effectiveness), EQ8 (Efficiency) and EQ9 (Co-ordination and Complementarity).

The Commission has received a fairly limited mandate from the Council to negotiate on EU security of supply. A consequence is that the resources made available to deal with this major issue are extremely limited. Formal instruments to develop knowledge in this field are also very limited. The Community has therefore not much to offer with a view to justifying any form of leadership in that sector. Further, the Commission's interventions in this area are not prioritised and are dispersed across several activities. Their actual effect on security of supply is not visible so far.

¹⁴² Source: guidelines from the EuropeAid Evaluation Unit.

C23. Support for poverty reduction: limited Community value added, due to the limited technical and financial resources available.

Based on EQ2 (Effectiveness), EQ6 (Impact), EQ8 (Efficiency) and EQ9 (Co-ordination and Complementarity).

Since the creation of the EUEI, the Commission has increased its financial support for supporting access to energy for developing countries. This support is mainly channelled through calls for proposals. The various interventions financed with these instruments have generated valuable information which, however, has been gathered and disseminated by the Commission either not at all or only to a limited extent. Sectoral dialogue is improving with the ASEAN countries, but remains extremely weak with the ACP countries. This is due to the limitations on the Commission's available technical resources, as well as on the demand-driven approach itself (C20). Therefore, compared with the Member States, with the EIB or with other IFIs, the Commission's technical contribution remains low in this area.

C24. Energy and environment: increasing strategic focus, needing further translation into actions.

Based on EQ4 (Effectiveness), EQ9 (Co-ordination and Complementarity) and EQ10 (Coherence).

The EU is now leading international debates and actions in the field of climate change. So far, concrete actions in partner countries have remained limited to pilot projects, the dissemination effects of which have not been monitored (C19). But if the Commission makes more use of the experience gathered within the EU and if it learns from the pilot interventions supported in partner countries, its potential value added in that area will be considerable.

5. Recommendations

5.1 The specifics of the energy sector

Each of the fields in which the European Commission intervenes has its characteristics and the Commission has to take them into account in adapting its procedures and practices. The energy sector, and especially the external relations part of it, has specificities that deserve special attention:

Energy is a vital political issue for Europe, for each of its Member States and for its partner countries (who are variously suppliers, transit countries or net importers). A nuclear accident is one of governments' worst fears. Energy price variations have a major impact on their budgets and balance of payments, while disruptions of supply or sharp price variations may have daunting economic, social and political consequences. Co-operating with partner countries in such sensitive fields requires a very systematic and well-informed approach.

The time frame plays a more important role than in other sectors

- § The short term is extremely short: experience in the fields of nuclear safety and power transport has shown that a reaction delayed for just a few seconds, or wrong decisions taken in an emergency, may have consequences for millions of European citizens. Disruptions in the gas market also require very quick reactions. Such crises easily cross borders. Internal and external relations are closely interrelated. Effective information circulation, effective co-ordination and clear decision-making chains are critical.
- § The long term is very long, yet constantly present in daily life. In Europe, most decisions dealing with energy are now taken by governments, enterprises and even households, with an increasingly clear concern for their long-term consequences (climate change and related irreversible biodiversity losses, resource depletion, nuclear waste accumulation...). Awareness of the long-term consequences raises two challenging issues:
 - changing and often conflicting values;
 - new direction and acceleration of technological evolution.

Changing values and interests...

- § Interests and values change over time: very few sectors are experiencing such a dramatic evolution of perceptions of the constraints and challenges. From being a rather peripheral political issue, energy recently came to the top of most agendas. Fears for the consequences of global warming, perceptions of the vulnerability of Europe in terms of energy supplies, the new perception of the potential role of nuclear energy induced by the two previous considerations, and the importance of improving access to energy as a factor in poverty reduction, are all rather new concerns which are still undergoing rapid evolution.

...but not for all at the same time...

§ The EU Member States do not always share the same views about how to react to these challenges. Nuclear power, energy market integration and related competitive negotiations with third parties are among the main areas of divergence. Outside Europe, the situation is even more difficult. The balance between growth based on enhanced competitiveness on the one hand, and social or environmental priorities on the other, is perceived very differently in the EU, the US, China, Russia or Africa. Decisions in the energy sector are also motivated by very different objectives such as channelling of social subsidies, imposition of geopolitical power, support for the vested interests of specific groups, and others.

New techniques to address new challenges

- § New energy sources are being promoted with new objectives (not only cheaper energy); they have new short-term and long-term effects, sometimes very complex and still overlooked (for example biodiversity losses due to biofuels cultivation).
- § New energy-saving techniques require major investments from governments, enterprises and households.
- § New regulations may have unexpected effects.

Lessons drawn from all these innovations have to be accumulated, and then drawn upon and used by decision-makers.

All these characteristics lead to four sets of overarching recommendations.

1. Energy is critical for Europe.
 - DEFINE A CLEARER MANDATE. The external policy carried out by the European Commission in this sector deserves to be supported by a much clearer political mandate.
 - DEDICATE MORE RESOURCES. The sector is strategic both for the Union's internal and external interests (which are interrelated). Much more human and financial resources should be dedicated to it.
 - FOCUS AND OPTIMISE ALLOCATIONS. Resources will remain scarce in relation to the very ambitious objectives. They have therefore to be carefully focused on the most critical issues in the most important countries from the European strategic point of view. Relevance is not enough to justify an intervention; it is a necessary but not a sufficient requirement. Optimisation of resource allocation should become the main decision criterion.
2. Energy is critical for the partners and many of them have strong views on how to respond.
 - FORMALISE A CO-OPERATION CYCLE. All interventions should follow more formally the steps of the "co-operation cycle". It clearly differentiates stages of the process specific to each partner and which have to be considered and presented as such, from stages that have to be designed and carried out in co-operation.

3. The sector is complex and volatile.
 - DEVELOP KNOWLEDGE. All interventions in the sector must be much more knowledge-intensive, that is based on effective flows of accurate information and relying on high-level analytical capacities.
4. Owing to the divisions between the Member States on security of supply and nuclear power production, the Commission is unlikely to obtain a clearer mandate from the Council. However, European citizens would benefit from a more consistent line from Europe in the energy sector. Under pressure of events, the Union will become increasingly united in these fields.
 - ENHANCE CREDIBILITY. The Commission should prepare itself in that perspective and, to some extent, facilitate the process by enhancing its credibility as the leading institution to carry out that policy....
 - ...THROUGH IMPROVED KNOWLEDGE MANAGEMENT. The Commission's main asset is that it is considered independent of national interests. Its main weakness is that its knowledge of these fields, and its ability to monitor the political background that drives decisions inside and outside Europe in the energy sector, are considered weaker than those of some national administrations or even private companies. Better knowledge management is a key condition for promoting the leadership of the Commission in the sector.

5.2 Two major areas of progress

The above four sets of overarching recommendations could be addressed through two major fields of evolution:

- § For all three intervention sectors, the Commission should adopt a more formal co-operation cycle with the aim of optimising resource allocation for both parties, taking account of their respective policies. This implies being very selective, focusing resources on the countries which are the most important from the point of view of the EU's interests and priorities, and ready to co-operate.
- § For each of the three intervention areas, the Commission should develop up-to-date knowledge management systems. This is especially important if the European institution is to take some lead in the field of security of energy supply.

5.2.1 Implementing a more formal co-operation cycle

The expression "policy dialogue" used in the context of international aid is often a misleading euphemism. This is especially true in such a sector as energy which now has such central political importance. The term "policy negotiation" would be clearer and could lead to a more systematic approach. Indeed the principles of sound negotiation between future partners wishing to carry out a common undertaking are as follows:

- § identify your goals and make them known as clearly as possible;
- § analyse the other party's position to understand its goals and constraints;
- § find objectives of common interest which contribute to both parties' goals;

- § negotiate the contributions each party will make to reaching these common objectives;
- § make clear what should be done if one party reneges on its side of the agreement.
- § be ready to accept that, in some cases, no objective of common interest can be identified, which means that co-operation should not be undertaken in that field.

A systematic adherence to stages 1-4 of the co-operation cycle¹⁴³ allows a co-operation programme to be designed on the basis of better mutual understanding of the policies of each party.

Expected effects of a more formalised co-operation cycle

5.2.2 Strengthened knowledge management would raise the Commission's leadership

Experience shows that the Commission has built up strong leadership in nuclear safety, starting from nothing. This was made possible by the knowledge accumulated and used by the Commission Services and the supporting expertise networks. In contrast, the Commission has not yet developed comparable leadership in improving the security of supply of energy to Europe. Building strong knowledge-based Commission credibility is however a precondition for the Union talking with a single voice. Similarly, the visibility of the Commission is low in the area of energy and poverty. The potential for creating strong leadership is there, in both international forums and the field (by using the knowledge capacity of the demand-driven initiatives, the EIB's financial capacity, and the willingness of the Member States to allow the Commission to take the lead). However the absence of explicit strategies at country level, partly due to scarce dedicated human and financial resources and the lack of focus on energy under EDF 9, remains a major constraint.

For each of the three intervention areas, the Commission should define the role it wishes to play in each of these fields and how can it reach its objectives through co-operation programmes with each of its partner countries.

Knowledge management systems are key to supporting that strategy. In a sector which is complex and volatile, interventions should be much more knowledge-intensive, that is based on effective flows of accurate information and relying on high-level analytical

¹⁴³ See section 4.1.

capacities.

Further, the Commission's attempts to drive Europe towards a much more integrated energy policy implies that it should increasingly be considered by the Member States as a credible leading institution able to conduct Europe's foreign energy policy. In the current context it is unlikely that the Commission will be given a formal mandate to play that role. However, it might be possible and would be in the interest of most European citizens that the Commission sets itself the goal of taking de facto a knowledge-based leadership in at least two fields: Nuclear Safety and Security of European Supplies. Better knowledge management is a key condition for promoting the leadership of the Commission in the sector.

Expected effects of an improved knowledge management system

5.3 Adapting the European Commission's approach

Stage 1 - FORMULATION of energy policy: to be operationalised at country level

R1	<i>Make the Community's strategic objectives in each partner country more explicit.</i>
	Who should do it? EC sector specialists; EC desk officers; EC Delegations; Co-operation with EIB and EBRD

Based on C1.

Knowing better why one wants to do something furthers one's understanding of how to go about it.

The main priorities of the European external energy policy have recently been made much clearer¹⁴⁴. However, the logical chain from each of the three main goals of this strategy –

¹⁴⁴ See section 2.1.

security of EU energy supplies, nuclear safety and access to energy for poverty reduction – down to the individual interventions in specific countries suffers from several gaps.

The strategy papers need the following clarifications:

- § Security of EU energy supply: the continuity between the general policy statements and the bilateral negotiations could be assured by attaching a list of countries where dialogue has to be carried out, stating the reasons why. This means that for each of these countries the main European expectations from the dialogue¹⁴⁵ have to be made clearer. The political difficulty of energy dialogue with major supply and transit countries should not prevent Europe from identifying common objectives that could be supported by the Commission.
- § Nuclear safety: now that the most urgent priorities defined by the 1996 IAEA Green Book are being addressed, the Commission has to decide whether or not to focus on what could be considered as major risks for European citizens. If this is the Commission's priority, it should identify the main risks in each intervention country and how to optimise resource allocation to address them. If the Commission has another overarching priority justifying its support for nuclear safety, it should identify it as precisely as possible in order to use it as the reference for prioritising its interventions. This objective should be adapted to the level of resources the Commission is ready to dedicate to reaching it. The Commission's position in this field is hampered by a lack of clarity of European policy on nuclear energy. A clearer European position would allow full integration of nuclear energy (and not only nuclear safety) into the policy dialogue, which might allow agreement on broader and more sustainable co-operation areas, which would include the safety dimension.
- § Access to energy for poverty reduction: here again, based notably on other donors' experience and on an orientation that could be provided in the framework of EUEI, the Commission should explain why, in each of the intervention countries, it has decided to support access to energy as a way of contributing to poverty reduction.

Stage 2 - MUTUAL UNDERSTANDING: more should be done to better understand the partner's policy

R2	<i>For each country of intervention analyse the partner's sectoral policy choices and try to explain their rationale. Involve the other donors active in the sector in that analysis, in order to define common interests.</i>
	Who should do it? EC Delegations, desk officers, sector specialists, external expertise when needed.

Based on C2, C3.

- § The conclusions highlight the inadequate Commission analysis of the partner's constraints and political choices, including explanations of decisions such as its pricing

¹⁴⁵ Dialogues to be carried out (mostly in continuity with the past) are listed in annex I of the Presidency Conclusion of the Council of 8 and 9 March 2007, but European expectations in each case could be clearer.

policy and regulatory framework. These choices may have an effect on access to energy for the poor, on macroeconomic stability, security of supply for Europe and on energy efficiency, among others. A good understanding of the political justification for these choices from the partner's point of view is important for building sustainable co-operation. In a limited set of countries, more systematic analysis, which could be carried out in co-operation with other donors, would help understanding of the political motives driving the energy policies of the partner countries, and thereby help identify areas for co-operation in these fields.

- § Nuclear Safety is not only a technical issue. It is first and foremost a major political choice. A survey carried out by the Ukrainian Centre for Economic & Political Studies suggests that, despite the dramatic experience of the Chernobyl accident, the population has more urgent issues to worry about than nuclear risk and is therefore not very sensitive to Government's decisions in that field. After a phase of emergency intervention at NPP level, the Commission is now focusing on support for technically and institutionally strong and independent Regulatory Authorities. This is highly relevant from the point of view of the EU, but without a strong national political support, these efforts will not lead to sustainable results. The extent to which this support exists in Ukraine, Russia or Armenia is not really known. The evaluators have even received rather fatalistic answers to that question. Can one build on that basis? What are the political and economic forces driving national nuclear safety policies? What kind of objectives can be shared between the Commission and partners with some hope of local ownership? Much more time and resources should be invested in exploring these questions at political level.
- § At a more technical level, the Commission should require a systematic internationally-accepted update of nuclear risk assessments, in order to provide the necessary information for negotiating optimisation of the Commission's resource allocation. These studies could also be financed through the extra-budgetary programme of the IAEA (or other international mechanisms if available).
- VVERs (1000 and 440/213): updating the Issue Book, as eventually agreed on with the partners, is particularly relevant. For the Commission it will also be an opportunity to receive feedback on the actual impacts of the hard component of the OSA programme.
 - The VVERs of the first generation (VVER 440/230) should be included in the updating.
 - A review by an international team of the safety of RBMKs would be timely and appropriate. It should address all RBMKs and have a scope similar to that of the aforementioned VVER review. It should also address issues of ageing that were not taken into account in the EBRD-financed assessment.
 - Breeder: to the knowledge of the evaluation team, no international expert team has ever been invited to provide an assessment of the safety of the concept adopted by Russia.

Stage 3 – The delineation of a CO-OPERATION AREA should become an explicit step

R3	<i>Define the co-operation area with the partner and with the other donors involved in the sector.</i>
	Who should do it? EC Delegation with support from HQ and consultants

Based on C4.

The Commission and the partner should define common objectives which they are ready to follow together (the so-called “co-operation area”). More attention should be devoted to specifying the objectives shared by the Commission, the partner and the other donors or IFI involved (see the co-operation areas depicted in EQ 1).

Convergence of objectives between the EC and partner countries should not be overestimated. A careful assessment of the limits of the co-operation area is necessary. This analysis should not be based on the European perception of what the partners should do “in their interest”, but rather on a detailed analysis of what they are actually willing to do and, as far as possible, why they make those choices. The results of this analysis should then be compared with European priorities in each intervention country, before assessing the co-operation area. When Europe feels itself in a position to negotiate decisions closer to its interests and priorities, it should be as realistic as possible about the reliability of the commitments obtained before determining co-operation priorities on that basis.

R4	<i>Ensure that the assumptions that bear on effectiveness are carefully and regularly checked.</i>
	Who should do it? EC Delegations, desk officers, sector specialists, external expertise when needed.

Based on C4.

Interventions are based on several assumptions that bear directly on effectiveness. These assumptions should be clearly identified, validated, measured and reviewed over time. The Commission and its partners should agree on what to do when some critical conditions are not met. The sector and its socio-political context in the main partner countries deserve more analytical work (studies) and day-to-day monitoring.

R5	<i>Allow for a broader co-operation area in the nuclear sector.</i>
	Who should do it? The European Commission

Based on C4.

Nuclear energy is a major source of power in Europe as well as in many of its most important partners. Focusing nuclear energy dialogue on safety-related aspects only, while excluding other components, may limit the scope for defining sound “co-operation areas” Such a narrow approach could lead to an end to co-operation in this critical sector. This could have harmful consequences for global nuclear safety and hamper the process of

electricity market integration. It could also harm the development and international promotion of the results of European research and innovation in that sector.

A more comprehensive approach would allow integration of the whole picture of power production and markets, and facilitate identification of many more objectives of mutual interest, that is a much broader co-operation area of which nuclear safety would be an important part. Despite the political sensitivity of these issues, the Commission could draw them to the attention of the Council.

Stage 4 - PRIORITISATION of co-operation objectives: relevance is a prerequisite, followed by optimisation

R6	<i>Within the resulting co-operation area, prioritise jointly the operational objectives and draft the country co-operation strategy.</i>
	Who should do it? The EC Delegations with external support when needed

Based on C5.

Resources available for the sector are very limited, therefore relevance should not only be defined as an intervention's matching objectives common to donors and the partner. This is only a first step. It should also relate to common prioritisation of those objectives, in order to optimise resource allocation. Once the "co-operation area" has been defined, the Commission and the partner need to:

- a) prioritise jointly their common objectives;
- b) design a co-operation strategy to address them;
- c) mobilise resources to implement this strategy;
- d) draft a country co-operation programme on that basis.

Such a programme would include analytical work and institutional and regulatory reforms (including tariffs and reforms of trade agreements with the EU), as well as investments. Participation of the EIB and EBRD in these bilateral programming exercises would allow better co-ordination with these institutions as well as better coherence between support for institutional reforms and investments, which is critical in that sector. Indeed, better linkages between the Commission-supported institutional reforms and European-Bank-supported investments in a given country are the main field of co-operation between these institutions. This implies that in countries where the Commission does not invest in a genuine energy policy dialogue as a framework for a co-operation programme, enhanced co-ordination between the Commission and the EIB is unlikely and indeed is less relevant.

Demand-driven programmes such as the "Energy Facility" could contribute to these country co-operation programmes provided that the project selection criteria become country-specific and in line with the different country strategies. Requests for financing government energy projects in countries where there is no will for or possibility of energy dialogue should be given low priority.

R7	<i>To help ensure that interventions are effective and sustainable, give priority to pricing policy.</i>
	Who should do it? EC Delegations in co-operation with the EIB, other IFIs and external support

Based on C5, C6

An appropriate pricing policy is a transverse issue, politically sensitive but also a prerequisite for the effectiveness and sustainability of interventions in the sector. Pricing policies which do not reflect economic costs imply subsidisation, which creates inflation, depletes public resources, and affects the quality of services¹⁴⁶. Subsidised energy prices do not encourage energy efficiency and hamper policies such as market liberalisation or unbundling of production and network ownership. Subsidies are not targeted on the most vulnerable, which means that subsidising energy prices is a very inefficient way of dedicating resources to supporting the poor. However, the partner has its own political reasons for keeping energy prices subsidised. The Commission should analyse these reasons and assess with the government whether EC support for improving the tariff structure could be part of the “co-operation area”. If no agreement can be found at that level, the Commission should question whether a co-operation area (objectives of common interest) exists in that sector.

R8	<i>In support for nuclear safety, select interventions aimed at promoting safety culture and transfer of know-how, based on an updated risk assessment.</i>
	Who should do it? Nuclear Safety Unit

Based on C5, C17.

In terms of focus for further interventions, it is recommended that projects that do not include a transfer of safety technology or know-how be avoided. It is therefore recommended that the Commission give priority to the following:

- § Projects that contribute to limiting potential radioactive fallout in both the European Union and partner countries. Such a proposal means that Low-Level Waste (LLW) projects or waste projects on NPP premises that do not present the EU with any risk of radiation fallout should not be financed unless the Commission defines an overarching objective justifying their financing.
- § OSA projects aimed at increasing the safety culture (soft components), as already agreed upon with the partners. It is suggested that the proposals presented to the Commission (after having been initiated at plant level) are classified according to their contribution to safety and selection then be made of the most relevant ones. It is also suggested that steps are taken to draw out the lessons of the soft projects that have already been successfully implemented in at least one NPP prior approving further support to other NPPs. Projects should have clearly-defined outputs and outcomes.

¹⁴⁶ See EQ2.

R9

Select a limited number of developing countries in which to test a Sector Wide Approach (SWAp) for the energy sector.

Who should do it? EC Delegations, with external support, in a small number of selected countries.

Based on C5,C18, C19, C20 .

A sectoral approach in the energy sector should be developed in a selection of ACP countries in which sufficient European resources are earmarked for the energy sector. This pilot approach would have the following objectives:

- § Test the added value of the Commission's dialogue with the partner in the energy sector, in the framework of:
 - a sectoral policy defined with the partner, on the basis of which the participating donors accept the framing of their interventions;
 - a sectoral policy structured round a mid-term expenditure framework with a broad donor consensus;
 - a regular sectoral dialogue between the partner and donors, the latter having reached preliminary agreement on a common approach to energy dialogue (harmonisation) and designated a chef de file to speak in their common name;
 - commitment to the process elsewhere in Government, particularly in the Ministry of Finance and at senior political level;
- § Test how co-ordination works and produces complementarity between sectoral institutional and policy reforms (energy prices), EIB investments, various demand-led initiatives and the EDF, and more generally between the following actors:
 - EC Delegation;
 - EC Headquarters in Brussels;
 - EUEI co-ordinators in Headquarters;
 - EIB operational staff;
 - Representations of the EU Member States involved in the energy sector;
 - Partner's sectoral services;
 - Operators in the field.
- § Ultimately, derive operational lessons from a SWAp approach, so as to contribute to improving a co-operation strategy which would involve not only the Commission but also the EIB and other donors.

This approach has a pilot dimension. It means that the lessons from this approach should be regularly measured and disseminated to the other participating partner countries, as well as to the Brussels Headquarters and international fora.

R10

Refocus the demand-driven initiatives with a pilot dimension in support for sectoral dialogues.

Who should do it? EC Delegations and EuropeAid (C7 Unit), DG DEV (B1 Unit), external support

Based on C20.

A lesson from three ACP countries visited is that demand-driven initiatives with political ambition can only be effective in a context of pre-existing institutional dialogue, in support of sectoral policies which have already been developed.

Further, a collection of individual projects financed on a demand-driven basis does not amount to a donor strategy. At best, eligibility criteria enable projects to fit in with donor objectives, but these projects are not the result of dialogue with the partner, and therefore do not necessarily form part of the “co-operation area” in which both donor and partner objectives are met.

It is recommended the selection process for demand-led initiatives be redefined; selection procedures for all “soft” demand-driven initiatives should satisfy the following criteria:

- § The interventions supported should contribute to the co-operation strategy defined above. This requires that a “co-operation strategy” has been given a preliminary definition by the Commission and the partner. It is therefore recommended that priority be given to projects to be implemented in the pilot SWAp countries referred to in R5.
- § These interventions should have a pilot dimension. That means that the proposed projects should first explain what they draw from existing knowledge and what they aim to add to it. Second, they should justify the extent to which their lessons can be generalised. And third they should have a detailed strategy and budget for organising the dissemination of their lessons, both to the field (partner authorities, donors) and to headquarters in Brussels.
- § The project should include a selection of impact indicators as the basis for assessing its effects. These indicators should contribute to monitoring the intervention as well as providing empirical information on the evaluability of such activities.
- § Indicators should also be proposed for assessment of the “dissemination effect” of these projects
- § Furthermore these interventions should be sustainable if their direct results are proved positive. This implies that an explicit “exit strategy” is defined in the project proposal, to ensure that the outcomes will be appropriated by local actors.
- § Last but not least, the opinion of the EC Delegation on the proposals submitted should be given higher value than they are currently.

Stage 5 - Energy deserves more human and financial RESOURCES

R11	<i>Dedicate more human and financial resources to the energy sector.</i>
	<i>Explore the benefits of closer co-operation with EIB and EBRD.</i>
	Who should do it? The European Commission and other European Institutions.

Based on, C7, C8, C9, C18.

The future transfer of the management of the Energy Facility projects to the Delegations may accentuate a qualitative mismatch between their mission and their human resources in that sector¹⁴⁷. In the countries where sectoral approaches will be undertaken in the energy sector, the Delegations should enhance the respective human capacities.

The extent to which more co-ordination with the EIB and the EBRD could contribute to alleviating both constraints (financial and skilled human resources) has not been explored by this evaluation. An analysis of the potential benefits of closer co-operation in the energy sector could deliver valuable results. Furthermore specific co-ordination instruments should be envisaged in a context of energy crisis (bottlenecks in the supply of energy resources for the partner).

Stage 6 and 7 - PROGRAMMING and IMPLEMENTATION: the sector requires flexible instruments

R12	<i>Given the volatility of the energy sector, promote flexible design and implementation mechanisms based on a regular flow of accurate general and country-specific information.</i>
	Who should do it? The re-engineering of the Services to enhance their ability to react to unexpected situations may rely on resources both internal and external to the Commission (see below). This kind of decision requires support at high level

Based on C10, C11.

The energy sector is characterised by volatile prices, evolving political choices and changing values. Crises, accidents and serious supply disruptions may also occur at any time. They could have important consequences for Europe as well as for the vulnerable populations of partner countries. Strategies and intervention modalities have to be flexible and able to adapt quickly to unexpected situations. Decision-makers have to be in constant touch with their partners and be able to rely on an effective information network as described below¹⁴⁸. The design of programming and implementing procedures should take those kinds of risk into account.

R13	<i>To ensure that a regional approach is effective, only involve regional authorities that are technically competent and politically recognised.</i>

Based on C12.

When a regional structure has no sectoral expertise or no mandate from its members, the potential added value of a regional approach is insufficient to compensate for the additional administrative burden.

¹⁴⁷ See EQ8.

¹⁴⁸ See §5.5

5.4 Improving knowledge management to enhance the Commission's leadership

Stages 8 to 10 of the co-operation cycle contribute to the much needed knowledge base, the building of which is a condition for improving European interventions' effectiveness in the energy sector and enhancing the credibility of the European institutions to take the lead in European external energy policy.

Stage 8 – Monitoring the outputs and outcomes

R14	<i>Conduct project and policy monitoring jointly with the partner and the other donors involved.</i>
	The ROM system could invest more in impact assessment based on mutually-agreed indicators so as to provide the EU and the partners with accurate information at that level.

Based on C 13, C14, C15.

The parties involved should share the same factual information about projects, policy implementation, outputs and outcomes. However since this information has to feed a new cycle of policy formulation (stage 1 of the cycle), each partner has to draw its own lessons from the common experience, that is to say carry out its own evaluation. The following documents should be generated by the monitoring process:

- § Programming and financial documents (i.e. documents included in the Common Relex Information System (CRIS) database);
- § Monitoring reports (ROM) and implementation completion reports. The ROM is an important step forward compared to the previous absence of standardised presentation of non-financial data on ongoing projects. However, the current ROM should be reoriented to provide more factual information on project implementation, outputs and outcomes but, on the other hand, fewer judgments such as assessments of relevance or effectiveness, which should be left to the evaluation process.

Stage 9 – Much more evaluation to feed into policy design

R15	<i>Based on the information provided by the monitoring process, promote regular evaluation of each co-operation activity, with attention to results and impacts.</i>
	Who should do it? : Evaluation Unit, Delegations

Based on C 13, C14, C15, C16, C18.

Far more needs to be done systematically to evaluate¹⁴⁹ the co-operation programme on energy in each country so as to provide the Commission with the basis for drawing the

¹⁴⁹ Assessing relevance, effectiveness, efficiency of the elements of the co-operation programme. Very few evaluations have been carried out in the energy sector.

lessons from experience and reviewing the Commission's policy formulation in each of these countries (stage 1). The effectiveness of policies needs to be assessed permanently. This effectiveness cannot only be evaluated on the basis of outputs only. Therefore, defining results and impact indicators ex ante is necessary for clarifying policy objectives and for providing clear guidance for implementation.

R16	<i>Nuclear Safety: evaluate the effectiveness of RA/TSO programmes.</i>
	Target groups: Evaluation Unit

Based on C17.

As far as assistance to RA/TSOs is concerned, a thorough analysis should be initiated on the actual impact of the assistance on the beneficiaries:

- § To what extent is the methodology transferred thanks to the 2+2 approach being implemented for modifications financed by local resources?
- § How are the results recorded - the advice given, the decision taken, the conditions attached to the decision (usually the case), implementation of the conditions by the relevant operator?
- § At the end of each project, the beneficiary should explain the lessons learned and their potential use.

Stage 10 – Much more should be done to draw lessons from experience

R17	<i>In the design of any sectoral intervention, include in-depth analysis of the national and global contexts and of lessons learned from past experience.</i>
	Who should do it? The Commission's technical unit with support from Delegations and external bodies

Based on C14.

Knowledge accumulation based on a systematic capacity to draw and accumulate lessons from experience is a critical condition for building the Commission's knowledge base.

Interventions in the energy sector could be grouped into "clusters" of similar interventions. Active circulation of information between interventions in the same cluster, along with a requirement to refer to this accumulated experience in any new financing proposal, would help the building of such a capacity.

R18	<i>Refocus the demand-driven initiatives to incorporate a pilot dimension, in support of sectoral dialogues.</i>
	Who should do it? Institutions in charge of the design and implementation of these projects

Based on C13, C19.

An intervention which is not explicitly oriented to dissemination of results, and is not equipped with specialised M&E provision clearly designed to draw detailed lessons from experience and disseminate them, cannot have any "pilot" effect.

Furthermore the use of the lessons drawn from pilot projects requires a centralised structure able to accumulate, analyse and disseminate the knowledge.

5.5 Setting up a knowledge management system

R19	<i>Security of EU supplies: promote a significant improvement in knowledge management so as to help the Commission take the lead in European energy policy.</i>
	Who should do it? EuropAid, DG TREN, external support (European Research Centres, consultants).

Based on C15, C14.

The Commission should define its own strategy: what role does it wish to play in each of the countries selected as important for the sake of security of supply? How can it reach its objective of securing energy supplies for Europe? Knowledge management systems are key to supporting that strategy.

This will entail the setting up of a knowledge management structure with a view to:

- a) collecting general information on the sector such as:
 - § Energy market organisations
 - § Market prices
 - § Energy flows and policies of the main players
 - § Market disruptions and crises
 - § Short-term and long-term forecasts
 - § Member States' policies and main concerns
 - § Technical developments in the different sub-sectors
 - § Evolution of the environmental perspective
 - § Other key interested parties
- b) collecting information from the different countries of intervention, such as:
 - § Country assets and vulnerability
 - § Tariff policies, their political roots and their effects
 - § Investment policy
 - § Import/transit/export policies
 - § Foreign policy of the country in the energy sector
 - § EU interventions in that country and their effects (based on monitoring and evaluation results).

analysing this information and circulating it between the different country teams.
- c) accumulating information and analysis in order to develop a base of genuine "cutting-edge" knowledge;
- d) facilitating access to this information and analysis through well-designed (i.e. client oriented) databases, but also through personalised advice to Commission staff;

- e) mobilising resources with flexibility to focus analysis on the most relevant topics;
- f) reacting quickly in crisis contexts so as to provide accurate advice to European decision-makers at very short notice.

Handling such flows of information, analysing them and providing the decision-makers with a permanent supply of relevant, accurate, and analysed information requires the setting up of a permanent network on which the European institutions can rely.

The Commission has recently¹⁵⁰ launched the EU Network of Energy Security Correspondents (NESCO), bringing together representatives of the Commission, the Council Secretariat and the EU Member States with the following purpose:

- a) monitoring the security of the EU's external energy supplies, drawing on the collective capacity and expertise of the European Commission, the Council and the Member States;
- b) acting as an early warning mechanism for potential supply disruptions;
- c) enabling the EU to take decisions and prepare itself for the event of specific threats to EU energy supplies, through its shared assessments of potential threats.

The NESCO will also help the Commission formulate a common EU approach to external energy crises.¹⁵¹ The creation of the NESCO could indeed become an important and much needed step forward towards increased co-ordination between the Member States and the European institutions in that field.

However, the extent to which this network will have the necessary flexibility and continuity to provide the basis for systematic knowledge accumulation, both at global level and at the level of each intervention country, remains to be demonstrated. In order to design its co-operation strategy in each country, permanent direct access of the Commission to research and policy advice sources may remain necessary so as to enable it to:

- § monitor and analyse the global evolution of the energy sector and its consequences on EU security of supply; this network would support the Commission;
- § support the Delegations in analysis of the partner's sectoral priorities and energy situation (also see R2);
- § support Delegations and the partner in the delineation of a potential "co-operation" area between the Commission and the partner for the sector (also see R3);
- § ensure a drawing out and institutionalising of the lessons of experience in relation to the Brussels headquarters;
- § overview the monitoring and evaluation of interventions related to EU security of supply;
- § mobilise short term external expertise in the context of energy supply crises;
- § provide permanent on-call support for the Commission.

¹⁵⁰ 10 May 2007.

¹⁵¹ First meeting of the EU NESCO, welcome remarks from Mrs Benita Ferrero Waldner, European Commissioner for External Relations and European Neighborhood Policy.

The European institutions have limited resources for pursuing such a system, but Europe has many capacities which are currently much more used by the Member States than by the Commission. These capacities could be mobilised through a well designed network of European research institutions and consulting firms represented in the main partner countries, with expertise locally and across Europe and with a permanent link with the European institutions. A trade-off between continuity of service and the obligations of the EC competition rules could be achieved by submitting one third of the partner positions of the network to open tendering every year.

A system close to the one proposed above already existed in the late 1990s and early 2000s and dramatically improved the information available to the Commission, allowing it to convert its then rather ineffective €500m/year food aid programme¹⁵² into more sophisticated support for food security. The approach pioneered by this system, called the RESAL¹⁵³, deserves more attention than it has received so far, since an improvement in relations between the Commission and Europe's research and advice capacity is a critical condition for its effectiveness, especially in sectors as demanding in terms of information management as the security of energy supplies to Europe. A public-private partnership should not be excluded in this regard.

R20

Support for poverty reduction: the Commission should join the group of the leading donors which are investing in improving access to energy as a contribution to poverty reduction.

Who should do it? Delegations of countries selected for a SWAp in energy; EC sectoral specialists, external support.

Based on C7, C11, C18.

In this field there is less need for the Commission to take a lead than for it to join networks of donors contributing to development of know-how on the link between access to energy and poverty reduction. Contributing to sectoral policies in some pilot cases could provide opportunities for multi-donor co-ordination and exchanges of experience in that field.

Such an approach would however require reinforcement of staffing capacities in Brussels as well as in the EC Delegations. This could be done with permanent Commission staff supported by a technical network, with teams in Europe and the pilot countries dedicated to implementation of such programmes. Knowledge accumulated by such a network could also be circulated in order to provide guidance to interested Member States.

Strengthening Commission know-how could be achieved by making more use of currently supported demand-driven activities. In particular, the agency or service in charge of co-ordinating demand-driven initiatives¹⁵⁴ should invest much more in dissemination of know-how and best practice and in fostering exchanges of experience, as mentioned in its actual mandate. This dissemination should be more explicitly targeted on the EC Delegations,

¹⁵² Evaluation of the contribution of European Food Aid to Food Security (1996).

¹⁵³ Réseau Européen de Sécurité Alimentaire

¹⁵⁴ DG DEV has informed the evaluators that the Intelligent Energy Executive Agency has recently been renamed to Executive Agency for Competitiveness and Innovation (EACI), and will not continue to deal with ACP countries.

which have extremely little awareness of what the EUEI is or of what the Commission's headquarters supports locally.

R21

Nuclear safety: confirm the Commission's leadership through improved knowledge diffusion and capacity for addressing crises.

Who should do it? EC Nuclear Safety Unit with external support

Based on C11, C14, C17.

In the field of nuclear safety, the Commission is already the main player in the European donor community. Despite implementation difficulties, the experience gained by the Commission after 15 years of support in that field is unique. The stability of the group of Commission staff involved in that activity, as well the stability of relations between the Commission and expertise networks such as the Regulatory Assistance Management Group, has allowed an accumulation of skills and experience and has imparted unquestioned leadership to the Commission in that field. The challenge is now to maintain and reinforce this leading position. Indeed, if nuclear safety remains the main concern in the short run, it is likely that the progress of negotiations on electricity grid interconnections, and the renewed interest in nuclear energy throughout the world, will necessitate a broader approach to the dialogue on nuclear power production. Accepting a broadening of the scope of co-operation and maintaining and even enhancing the current knowledge-based leadership of the Commission remain important priorities.

Keeping a close link with the regulatory authorities of the Former Soviet Union countries, with the support of a network of EU regulatory bodies, appears to be one of the major priorities in support of overall nuclear safety but another challenge is to obtain as much information as possible about the safety levels of nuclear power production in the different countries. Increasing the pressure on partner governments and providing the means of making overall and local risk assessments would give access to the information necessary to prioritise co-operation objectives.

Information accumulation is currently under way, notably in Petten. However it could be broadened to non-technical information such as the political and economic elements influencing nuclear safety policies in the different countries

Attempts to circulate information between intervention sites and to a broader public through databases, although interesting, have failed so far, probably because the design of the databases was too much influenced by the suppliers of the information and not enough by the potential users, and also because the necessity for active circulation of information has been underestimated.

5.6 Conclusions and recommendations summarised

STAGE OF THE CO-OPERATION CYCLE	
CONCLUSIONS	RECOMMENDATIONS
Formulation of the energy policy	
C1. Important improvements achieved in policy definition at central level, but application at country level still needing to be made clearer.	R1. Make the Community's strategic objectives in each partner country more explicit.
Mutual understanding	
C2. Insufficient communication on the Community's strategy in each partner country. C3. Insufficient analysis of the partner's and donors' own objectives and constraints.	R2. For each country of intervention analyse the partner's sectoral policy choices and try to explain their rationale. Involve the other donors active in the sector in that analysis, in order to define common interests. R3. Define the co-operation area with the partner and with the other donors involved in the sector.
Delineation of a co-operation area	
C4. Identification of "common objectives" sometimes relying on assumptions not derived from detailed analyses.	R4. Ensure that the assumptions that bear on effectiveness are carefully and regularly checked. R5. Allow for a broader co-operation area in the nuclear sector.
Prioritisation of co-operation objectives	
C5. No prioritisation of operational objectives; no critical path. C6. Insufficient focus on the regulatory framework and pricing policy, even though these are prerequisites for energy efficiency and market liberalisation.	R6. Within the resulting co-operation area, prioritise jointly the operational objectives and draft the country co-operation strategy. R7. To help ensure that interventions are effective and sustainable, give priority to pricing policy.. R8. In support for nuclear safety, select interventions aimed at promoting safety culture and transfer of know-how, based on an updated risk assessment. R9. Select a limited number of developing countries in which to test a Sector Wide Approach (SWAp) for the energy sector.

STAGE OF THE CO-OPERATION CYCLE	
CONCLUSIONS	RECOMMENDATIONS
	R10. Refocus the demand-driven initiatives with a pilot dimension in support for sectoral dialogues.
Resources allocation	
C7. Grants: mismatch between limited financial resources and ambitious objectives, worsened by dispersion of resources. C8. Loans: co-ordination between Commission, EIB and EBRD strengthened, albeit with disparities. C9. Insufficient technical capacities.	R11. Dedicate more human and financial resources to the energy sector. Explore the benefits of closer co-operation with EIB and EBRD.
Programming & Implementation	
C10. Despite recent improvements, persistent difficulties in provision of public works and equipment in the framework of a programme designed for TA. C11. Nuclear safety aside, Commission's reactions to crisis conditions impeded by limited human capacities and cumbersome procedures. C12. Some regional institutions are too weak to act as a partner in sectoral dialogue, limiting the value of a regional approach in such cases.	R12. Given the volatility of the energy sector, promote flexible design and implementation mechanisms based on a regular flow of accurate general and country-specific information. R13. To ensure that a regional approach is effective, only involve regional authorities that are technically competent and politically recognised
Monitoring	
C13. Outputs measured, but outcomes not.	R14. Conduct project and policy monitoring jointly with the partner and the other donors involved.

STAGE OF THE CO-OPERATION CYCLE	
CONCLUSIONS	RECOMMENDATIONS

Evaluation & Lessons Learned	
<p>C14. Nuclear Safety apart, limited learning of lessons in Brussels.</p>	<p>R15. Based on the information provided by the monitoring process, promote regular evaluation of each co-operation activity, with attention to results and impacts.</p> <p>R16. Nuclear Safety: evaluate the effectiveness of RA/TSO programmes.</p> <p>R17. In the design of any sectoral intervention, include in-depth analysis of the national and global contexts and of lessons learned from past experience.</p> <p>R18. Refocus the demand-driven initiatives to incorporate a pilot dimension, in support of sectoral dialogues.</p> <p style="text-align: center;">Setting up a knowledge management system</p> <p>R19. Security of EU supplies: promote a significant improvement in knowledge management so as to help the Commission take the lead in European energy policy.</p> <p>R20. Support for poverty reduction: the Commission should join the group of the leading donors which are investing in improving access to energy as a contribution to poverty reduction.</p> <p>R21. Nuclear safety: confirm the Commission's leadership through improved knowledge diffusion and capacity for addressing crises.</p>

