

Consultations with our partners
– Workshop report

Developing a new Sida energy policy



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Report from a workshop held in Stockholm 9 – 10 December 2004

Anders Arvidson
Stockholm Environment Institute

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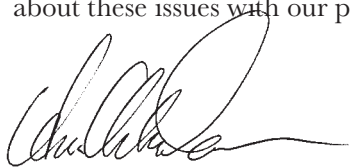
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Preface

The workshop was held in Stockholm during two very intensive days in December 2004 right at the time of the annual Nobel Prize Ceremonies. Many of the participants had travelled across the world to provide their knowledge and insights in energy sector development. On behalf of the Department of Infrastructure and Economic Cooperation at Sida I would like to express my sincere appreciation for everyone's active participation and contribution to the process of revising Sida's Energy Sector Policy.

This consultation workshop did provide an impressive and invaluable amount of information that will provide inspiration in the formulation of a revised energy sector policy. The workshop proved to make additional contributions to the internal learning process. Several discussions highlighted and brought attention to aspects that Sida had not previously considered. In addition, the format of the workshop also allowed for issues to be discussed and developed that were driven by the participants own interests and agenda. This brought a number of interesting issues onto the table which Sida otherwise may not have explored.

Without doubt, many new contacts were made during these days and it was very rewarding and fun to spend two days talking widely about these issues with our partners.

A handwritten signature in black ink, appearing to read 'Anne-Charlotte Malm', with a long, sweeping horizontal line extending to the right.

Anne-Charlotte Malm

Head

Division for Infrastructure and Financing

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Executive summary

Sida held a two day consultation workshop, in December 2004 as part of the process of revising its policy on energy sector cooperation. The Energy Sector Policy is a document that gives guidance in making choices about what activities Sida should engage in. In the process of revising the energy policy, Sida finds it important to understand the perceived priorities of its partners. To enhance the understanding this consultation workshop sought to explore the participant's priorities for energy sector development.

The objective of the workshop has been to generate substantive and high-quality information from invited partners to generate guidance in the development of a revised energy policy sector cooperation policy for Sida. The workshop was structured around four sessions and three themes, namely: Energy and Poverty, Energy and Environment and Energy and Reform. The method used for the workshop was highly participative and all participants were engaged in group discussions and group exercises.

There were a few messages that kept on being repeated in many discussions, across the themes, around which the participants seemed to have rather similar views. Energy sector development should focus on the energy services that are required to meet prioritised needs and not on particular energy service carriers or technologies. Access and choice of energy services is key. It is important to consider all options available to increase the access to relevant energy services that can improve the lives of poor people and their possibility to engage in income generating activities. Thermal energy is important for the poor. Energy services are important for improving income generating activities, transport, health, education and general well-being. The need for a broader societal involvement in both assessing and addressing the real energy service demand was raised.

Some highlights from the *Energy and Poverty* discussion: energy services for income generation were considered as very important, followed by health and education. In addition, energy service needs assessment was considered a key element for prioritisation of initiatives generating economic development. Another important aspect was the need for complementary services such as credit and business development support to ensure the best impact on economic growth.

The discussion on *Energy and Environment* emphasised a number of messages. One was that fossil fuels will continue to play an important role to improve energy services of the poor. A switch from biomass to

LPG or cleaner bio-fuels for cooking will contribute to mitigate climate change and improve health as well as saving time for women and children in particular. There is a need to consider a stepwise transition from fossil to renewable fuels.

Under the theme *Energy and Reform* several messages were repeated in the discussions. Government's role is to have the strategic overview of the development of the energy sector and to create a level playing field and stimulate relevant actors to be a part of that playing field. An appropriate regulatory structure that is sensitive and adapted to the circumstances is essential for utilities performance. The importance of public participation in the reform process was stressed.

1. Background

In December 2004, the Infrastructure and Finance Division at the Department for Infrastructure and Economic Cooperation at Sida arranged a two day workshop as part of the process of revising Sida's policy on energy sector cooperation. Sida's Energy Sector Policy is a document that gives guidance in making choices about what activities Sida should be engaged in.

An important starting point for Sida in developing a revised energy policy is to understand the perceived priorities for energy sector development of Sida's partners. This workshop therefore sought to consult with Sida's partners on their priorities for energy sector development.

A point of departure for the consultations was Sweden's recently adopted policy for Global Development under which Sweden's development cooperation has been given one single goal: to help create the conditions that enable poor people to improve their lives. Therefore, the main objective for Sida's assistance to energy sector development is to contribute to an environment supportive of poor people's own efforts to improve their quality of life. The new policy implies an increased poverty reduction focus that demands that all work can be explicitly motivated as relevant for reducing poverty.

1.1 Workshop objectives

The objective of the workshop was to generate input to the development of a revised energy sector cooperation policy for Sida by generating substantive and high quality information concerning Sida's partners' priorities for energy sector development.

1.2 Venue and participants

The workshop was held at the Sida offices in Stockholm between the 9th and 10th of December 2005 and was attended by some forty two energy experts from twenty different countries. Participants came from energy ministries, government agencies, universities and research institutes, NGOs, bilateral and multilateral donors and consultants. The full list of participants is attached in Appendix A.

1.3 Workshop structure

The workshop was structured around four sessions. In three of the sessions the topic for discussion was pre-decided by the organisers and in the fourth session the topics for discussion was open for suggestions by

the participants, called “open floor session”. The agenda for the workshop is presented in Appendix B.

The three themes that were pre-decided were topics that Sida wished to explore further together with its partners in the workshop. The themes were: Energy and Poverty, Energy and Environment and Energy and Reform. Half a day was devoted to each theme at the workshop. Prior to the workshop, three background papers, each covering one of the three themes had been circulated to the participants beforehand.

The workshop was carried out using a highly participatory method in which all participants were engaged in group discussions and group exercises. Participants were seated around six tables with about seven participants around each table.

At the beginning of each thematic session, the topic for discussion was introduced by a 20 minute presentation made by the authors of the background papers. Thereafter, six pairs, consisting of a facilitator and a note-taker, each posed a particular question to the table on the theme of the discussion. Participants discussed this question for 20 minutes. During this time participants were encouraged to write down their own points on coloured card, as well as having points from the discussion recorded by the note-taker. After 20 minutes, the facilitator and the note-taker proceeded to the next table bringing with them the information gathered from the first discussion. The facilitator and the note-taker then introduced the same issue to the new group and also briefed the participants at the table about their previous discussion. A different facilitator and note-taker came to the table that the first facilitator and note-taker had just left. Each table got to discuss three different issues during the duration of one hour.

By using this methodology, each participant is exposed to a different set of questions on a related theme and their previous discussion is likely to influence their thinking when exposed to a new set of related questions. This way one discussion may benefit from another and also trigger the thinking in an alternative way. By briefing the participants of the discussions from a different table it also sets a new scene for starting the discussion on the issue. Group discussions benefit both from each other and also from across the themes. Each participant’s previous discussion is likely to generate new lines of thinking depending on what issue they have discussed previously. This cross-fertilisation between groups and between questions in related themes provided an opportunity for participants to reflect and respond to the questions posed at them.

After having had discussions on the same topic with three tables, the facilitator and note-taker returned to the table where they had started and together with the participants at that table started to organise and make sense of all points (cards) that had been raised in the discussions into themes or groups that made sense. The material generated in the discussion was organised and presented on large panels. The panels were displayed and could be questioned and commented by participants from other groups having discussed and organised different issues.

The questions that were discussed in each of the three pre-decided thematic sessions are presented in Table 1.

During the open floor session, the participants were encouraged to pose and facilitate the discussion around issues that they felt had not been brought up or covered sufficiently by the organisers. The issues for discussions that were suggested by the participants are presented in Table 2.

Questions concerning Energy and Poverty

How do you think increased **electricity** access can enable poor people's efforts to improve their life conditions?

How do you think **non-electricity** energy carriers can enable poor people's efforts to improve their life conditions?

To what extent do you think **renewable** energy technology systems have a role to play in enabling poor people's efforts to improve their life conditions?

How would you **prioritise** increased energy service access to specific consumer groups in order to maximise the possibilities for poor people to improve their life conditions?

In what way do you consider **regional energy sector cooperation** to be relevant in contributing to sustainable development and poverty reduction?

Questions concerning Energy and Environment

Which role do you think **large scale hydropower** should play in contributing to sustainable development?

What roles do you think **fossil fuels** should play in contributing to sustainable development regarding rural electrification and cooking?

What roles do you think **cleaner production technologies** and the switching to cleaner fossil fuels have in the development of a sustainable energy sector?

What types of activities do you think should be a priority from donors in relation to **climate change**?

How would you like to see **regional environmental problems** addressed by the energy sector?

Questions concerning Energy and Reform

What do you consider is the role of the **state** in increasing economic and technical efficiency of the energy sector while at the same time meeting sustainable development goals?

What do you consider is the role of **energy utilities** (private and public) in increasing economic and technical efficiency of the energy sector while at the same time meeting sustainable development goals?

What do you consider is the role for the **private sector** in increasing economic and technical efficiency of the energy sector while at the same time meeting sustainable development goals?

In what way to you think different **consumer groups** should participate in the energy sector reform to improve their energy situation?

Which earlier **mistakes** relating to energy sector reform would you not like to see repeated?

Table 1 Issues discussed in the three pre-decided thematic sessions

Energy services (lighting, power, heating) for development vs. fuels

Credit support facility for private sector investors in rural electrification

Getting small scale thermal energy on the agenda

Aid coordination in the energy sector

European power markets and responsibility for security of supply

Monitoring the achievement of the MDGs/Indicators for poverty reduction and energy

Natural forest management and income generation for poor people (natural forest management and sustainable use of biomass)

Role of local financial institutions in the energy sector

Capacity building for local groups, NGOs and women

Indoor air pollution

Subsidising energy services for the poor

Private sector role in the energy and development. International and local developers

Table 2 Issues for discussion that were suggested by the participants.

2. Results

The following chapter presents the results from the discussions held at the workshop. It is based on the notes that the participants, note-takers and facilitators made and later on grouped and prepared into panel presentations to display the essence of the discussions around each issue. This chapter is divided into five sections, the first highlights the issues that surfaced throughout all of the sessions and around which there seems to be a rather large consensus. The second, third and fourth sections summarise the results of the discussions on all of the particular issues discussed within the three themes: Energy and Poverty, Energy and Environment and Energy and Reform. Finally the last section presents the notes generated in the open floor session.

2.1 Key messages from the whole workshop

In the workshop discussions, there were a few themes and issues that kept on being repeated, across the different thematic sessions. The following section brings out these key messages around which the participants seem to have rather similar views.

Access and choice of energy services are key, not the energy carriers

A very clear message from the workshop participants is that energy sector development should focus on the energy services that are required to meet prioritised needs and not on particular energy carriers or technologies. There is a whole range of particular energy carriers and technologies that have different roles to fill in different circumstances. *Access and choice are the key objectives*, or as one participant phrased the issue, “How do we increase access to a menu of energy services that are relevant to meeting the needs of both the poor and the non-poor”.

Consider all options

Fossil fuels, large scale hydro power and renewable energy technologies should all be part of the menu of options to consider in meeting prioritised energy service needs. The message is that a *diversified menu* of energy carriers and technologies is needed to increase access to relevant energy services that enable poor people to improve their lives and to engage in income generating activities. It was especially pointed out that this means addressing energy service needs beyond those that can appropriately be met with electricity and also to naturally consider both fossil and renewable energy sources. A wide mix of energy carriers and technologies can facilitate the transition to more efficient and clean energy

carriers including for example mechanical pumps, improved traditional cook stoves, liquefied petroleum gas (LPG), ethanol gel fuels as well as electricity from large hydro power. To empower the poor it is important to improve all fuel markets ranging from wood fuel markets to LPG markets to electricity markets.

Thermal energy is important for the poor

It was recognised by the participants that efficient and clean thermal energy services for cooking and heating are especially important to the poor and especially for *women, children* and people who are *HIV/AIDS infected*. It was also stressed that the poor are often more dependant on thermal and mechanical energy and to a lesser degree on electricity. Thermal energy was recognised as important not only at the household level to reduce indoor air pollution but also for income generating purposes. LPG for cooking food, propane for welding and biomass for small scale industrial activities such as brick making were specifically mentioned.

Energy services for income generation, social institutions and at household level

Energy services are important for improving income generating activities, transport, health, education and general wellbeing. A majority of the participants considered energy service improvements to be most important to enable more effective *income generating opportunities* within small and medium sized enterprises, in agriculture and at the household level.

Most participants were of the opinion that, second to energy services for income generation, energy services that deliver social services were to be prioritised. Health, education and water supply services were especially recognised as important social services that could be improved with access to improved energy services. In third place in terms of prioritising improved energy service access, most participants considered it important for energy services at household level to be cleaner and more efficient.

Involving society in assessing and addressing prioritised energy service needs

An issue that was echoed in many of the discussions is the need to better assess and *address the real energy service demand* that can lead to maximising the benefits of improved access to energy services. Many participants wanted to see a broader societal involvement in for instance planning expansion of the electricity network, how energy sector reform programmes are implemented and in valuing the benefits and the negative impacts of large hydro schemes. Many considered it necessary to strengthen the capacity of the government and other actors in involving in such *participatory processes* and also suggested improving and developing tools and methods to do this. Many participants also stressed the importance of involving more actors from the local level in actually delivering improved energy services.

Realistic options

The issue of addressing energy service supply options that are *realistically accessible to the poor* was raised several times. It was stressed that this includes biomass, fossil fuels, mechanical energy as well as electricity. In this context the scope for improving efficiency was highlighted. It was also by most participants considered necessary to apply subsidies to overcome entry cost barriers of the poor and allow for a switch to cleaner and more efficient fuels.

Addressing environmental concerns

Many participants were of the opinion that the main environmental concerns resulting from energy systems in developing countries are related to local and regional environmental problems rather than global environmental problems. At the same time participants recognised the wide impacts that *climate change* bring and said that the approach to dealing with climate change needs to be as holistic as when addressing sustainable development. It requires adaptation to uncertain risks, is long-term, and will impact all sectors of society. It was also stressed that addressing climate change will require long term donor support and commitment.

It was suggested by several participants that a *gradual shift towards cleaner fuel* options and renewable energy sources should be strived for. It was also recognised that minimising the environmental impacts of extraction, supply and use of fossil fuels, such as cleaner production methods, energy efficiency and switching to cleaner fossil fuels is important and that in the short to medium term fossil fuels will continue to dominate and will be an increasingly important energy carrier for the poor.

It was stressed that there is a need to strengthening the institutional capacity to carry out strategic development planning of *large scale hydro power* schemes taking into consideration alternative power generation strategies, environmental, social and economic impacts, and potential impacts resulting from climate change. *River basin management* was considered being of particular environmental importance.

The *transport* sector and *forest* resources were identified as strategic areas for intervening in order to mitigate environmental and health impacts.

2.2 Summary of the issues discussed in the Energy and Poverty session

2.2.1 How do you think increased electricity access can enable poor people's efforts to improve their life conditions?

The energy services not the energy carriers

To begin with, the discussion around this issue questioned the relevance of focusing on particular energy carriers as opposed to the particular energy services that are needed by people to support economic growth and well being improvements. It was pointed out that to the poor the most relevant energy service is thermal heat for cooking. Most participants did not consider cooking to be an end use that would in the short time perspective be met by electricity, or as one participant commented "cooking with electricity is not around the corner".

The discussion then moved on to look at particular energy services that are important to the poor. These can be categorised into three different areas, namely energy services to support: income generation, health and education and living conditions within households.

Important energy services to support income generation involving the poor that were mentioned were thermal energy for food preparation, lighting to support businesses activities at night, mechanical energy for agro-processing such as grain milling and powering of telecommunications and entertainment appliances. It was recognised that some of these energy service needs can be met by electricity, whereas others are more appropriately met by other energy carriers. Some pointed out that electricity may not be as relevant to the poor as thermal energy which can be met by energy carriers such as wood fuel, biogas and fossil fuels (LPG and kerosene). However, where electricity is relevant for income generation involving the poor is in agricultural production, handicraft production

and informal business activities at the household level. Energy services met with electricity that were mentioned as relevant to the poor included: lighting (that can be used to prepare and sell food after dark), refrigeration, and telecommunications. In the discussion, energy services to support income generating activities were given the highest priority. In second place came energy services for health, education and lastly, energy services to generally improve living conditions at the household level.

It was also pointed out that there are public benefits, beyond the specific end-users that have access to electricity that can be realised from electricity supply. Such benefits that were mentioned included improved health care services, public street lighting (to improve security but also to enable trade activities after dark), water supply, improved education and telecommunications.

At the household level, important energy services important to the poor that were mentioned included cleaner and more efficient fuels and energy carriers for cooking and lighting to mitigate health impacts from use of dirty fuels and for children to study after dark. To enhance general wellbeing, energy services to power appliances such as radios, TVs, videos, fans etc were also mentioned as relevant.

Significant impacts of electrification take time to materialise

The discussion did address how increased access to relevant energy service for the poor could be realised and what types of activities need to take place.

Some comments were made that there seems to be too much belief that electrification is a quick fix to reducing poverty and instead wanted to see a more diversified approach to increased energy service access, taking into account the whole array of potential energy carriers and technologies to meet prioritised energy service needs and not just electricity. A few participants were of the opinion that electricity indeed is very important to enable poor people to move out of poverty.

It was mentioned that the impacts of electricity access on poverty reduction are often delayed why electricity should only be seen as having a long-term impact. One participant commented that “in the short term, electrification is not such a good idea for the very poor”. A few others were of the view that “electricity has an instant impact on improving quality of life”.

The fact that there are studies showing very little economic impact of rural electrification but also empiric evidence of the contrary was raised. It was concluded that a number of complementary conditions need to be in place in order for electricity access to have an important impact on income generation and livelihood improvements. One such condition that was suggested was existence of business activities in the area being electrified.

How make the most out of electrification?

There was a discussion on how projects aimed at increasing electricity access should be planned and implemented to have an impact on the poor. Several participants believed it is important to create awareness of the potential that electricity has for productive uses.

Others raised the importance of having other complementary services in place to maximise the opportunities that electricity access brings to support income generating activities. Examples of relevant services that were mentioned were access to credit and business development support.

The need for the government ministry responsible for energy to properly assess the energy service needs of end-users including other

sectors such as the health and agriculture sectors was brought forward as an important component of maximising the positive impacts on poverty reduction of electrification programmes. Several participants stressed the need to take into account the gender differences when prioritising different energy services and when assessing needs and expanding energy service access.

How to get started?

The involvement of the local government was stressed by many as an important step to really meet the needs of the end-users. Many of the participants proposed to strengthen the mandate and capacity of the local government, regional government and provinces to take a strong leadership in increasing energy service access within their constituencies. Tools that were mentioned to make this happen included, simple guidelines for assessing energy service needs and making priorities, low-interest credits managed by local government and involving the local actors in the delivery of energy services.

A message from the participants to policy makers in developing countries was that government needs to involve a wide range of actors in both assessing and agreeing on prioritised energy service needs as well as in expanding and delivering the identified prioritised energy services. Some of these actors may not previously have been involved directly with energy service delivery such as communities and the private sector.

As a starting point it was suggested that governments communicate and consult around a vision for how energy service access should be expanded to the poor.

Barriers

One important barrier to expanding energy service access to the poor that was brought forward was entry costs (for energy technologies, appliances and electricity connection) as well as the cost of the energy supply (tariffs, fuels). For improved energy services to be in the range of poor peoples paying abilities it was therefore considered important to address the improved energy service supply options that were realistically accessible for the poor. This could be for example replacing charcoal with LPG and not to make the leap from charcoal to electricity directly.

Some of the participants were of the opinion that it was therefore important that tariff policies should be sensitive to the poor.

Also having a maintenance infrastructure established for energy technologies such as PV was raised as important in making more options available on a sustainable basis.

Political views

A few participants were of the opinion that the poor can not be denied access to electricity and that the utility needs to have a mandate to include the poorer parts of the population. Others were of the view that electricity has a role to fill in some places but is not a universal solution that should always be prioritised first. Another comment was that a conventional market approach should be driving increased access to all types of energy carriers. One question that was raised was “who is behind this seemingly large driving force to primarily increase access to electricity?”

2.2.2 To what extent do you think renewable energy technology systems have a role to play in enabling poor people's efforts to improve their life conditions?

"To the man with a hammer the problem is a nail"

On a similar note as in the discussion on the previous issue, the participants questioned the relevance of focusing on a particular energy technology when the key issue to be tackled is which energy services are important in enabling poor people's efforts to improve their life conditions. A conclusion from this discussion was that several energy technology solutions are needed to meet the prioritised needs of the poor such as heating, lighting, mechanical power and cooling. It was stressed in the discussions that this means that electricity is not the only solution but one amongst many energy carriers that are important. Households use a range of energy sources and use the ones that are the least cost in fulfilling their energy service needs. From the point of view of poor people, renewable will be considered if they can provide a prioritised energy service at the least cost. Renewable energy technology systems need to compete in this reality.

Access and choice was at the core of the discussions. The prioritised question was by a majority of participants considered to be "how can we increase access to a menu of energy services that are relevant to meeting the needs of both the poor and the non-poor". Renewables should be viewed in a context of being one potential energy resources amongst others. Some one commented that "the link between poverty and renewables should be reality led not technology driven".

Many of the participants stated that cooking heat is the most important energy service to the poor and especially for women and children who carry out most of the cooking at household as well as within small scale businesses.

It was also stressed that energy services that support income generation are very important for the poor.

Approaches to increasing access to prioritised energy services for the poor

The discussion continued to address possible approaches that could effectively meet the prioritised energy services of the poor. One issue that got quite a lot of support was the need to better assess the energy service demand and to get away from top down solutions.

It was also pointed out that to developing countries improved access to energy services is the driver and not environmental impacts.

In Kosovo, there is a slightly different set of issues that drive the view on renewables. Here one reason to consider renewable energy systems is to fit into the European environmental requirements and the second is to generate employment opportunities.

Enabling adoption of renewable energy when it is an appropriate choice

In cases when renewables are an appropriate solution to meeting energy service needs in a cost effective way, there are sometimes certain issues that have to be addressed in developing countries to enable its application. Such issues that were brought up in the discussions were for example capacity building of people that can design, install and operate such technologies and adoptions of technical standards. There might also be a need to build awareness amongst end-users to get acceptability of new technologies. Some participant raised the need to support local institutions in making choices about renewable energy and other energy

technology choices. Another comment made was that many other sectors have extension workers (such as agricultural extension workers) who provide advice and inputs for certain productive activities whereas the energy sector does not generally provide such advisory services.

Planning of energy systems development needs to be location specific and has to take into account the prioritised energy service needs, the available resources (that are either existing in a particular location or may have to be imported) and the institutional capacity to handle specific energy systems. One component of such an institutional capacity is to decide on and make financing for investments available

Different approaches to addressing the above mentioned issues in planning and expanding energy service systems were mentioned such as in Indonesia where the decision has been made to use renewable only in remote locations. In Nepal, a similar assessment taking into account the needs, resources available, the institutional capacity and the physical infrastructure and topography of the country arrived at a strategy to support a large biogas programme and not based on diesel since the supply would have been more expensive. Today, 3% of households in Nepal use biogas for cooking. 130 000 systems are in operation and the number is growing by 20 000 systems per year. Here the government has decided to subsidise the biogas investment cost with 30%. In Nepal the possibility of selling carbon credits using the Clean Development Mechanism to reduce the need for a government subsidy is being explored. On the topic of CDM there were also comments of the limited scope for small scale renewable energy investments to receive CDM credits.

Environmental benefits of renewables and defining renewables

There was a discussion on the definition of renewable energy. It was stressed that renewables is much more than wind and PV. Some participants argued that charcoal is also a renewable energy source if produced in a sustainable way. Gel fuels were mentioned as one renewable energy fuel that could substitute charcoal while at the same time generate employment in rural areas.

From a typical northern perspective the advantages of renewables are that they have much less negative impact on the environment than fossil fuel based energy systems. If a key global benefit of renewables is reduced environmental impact then, it was argued, it would be just as important and in some cases more effective to put emphasis on energy efficiency improvements ranging from the use of traditional fuels (that could have economic and health improvement impacts on households and small scale industries in developing countries) to improved management of fossil fuels. Examples of improved management of fossil fuels that were brought up were development of markets for clean coal, more environmentally friendly coal mining, smokeless coal for households, substitution of coal by gas, and methane recovery from land fills. The argument was that there are other approaches to addressing global climate change than increasing the use of renewable energy technologies.

Some participants commented “In Africa carbon emissions are not an issue but access is”. Never the less, it was said that there are local rather than global environmental impacts of energy systems that currently need to be addressed also in Africa.

Arguments for and against renewable energy systems

The participants raised some specific qualities that renewable energy systems have in comparison to energy systems based on non-renewable

energy sources. An example of such a quality that was raised is that some renewable technologies used for electricity generation (such as PV) can be divisible and therefore can be more affordable. This divisibility was also raised as a negative quality as mobile technology is more easily stolen.

Other arguments for developing renewable energy resources that were mentioned were to diversify energy resources, to secure an energy resource portfolio, to increase incomes and to improve global environment. There was some hesitation towards the relevance of the last point as it was stated that for renewables to have a significant impact on the global environment, a large scale use of renewable is needed and the realistic possibility of this happening in the short to medium term was questioned.

There were also a few sceptical comments made about the reasons behind the push for renewables such as “first world products peddled to the less developed countries”

2.2.3 How do you think non-electricity energy carriers can enable poor people's efforts to improve their life conditions?

To begin with, an important message from the discussion around this issue is that there is an array of non-electricity energy carriers that are important in enabling poverty reduction. Basically these fit into the transition of moving from human energy to modern energy.

From human drawn ploughs to draft animals to tractors

Important energy carriers and technologies that were brought up in the discussion stretched from fuel wood to improved charcoal stoves to LPG stoves, solar dryers, stove efficiency, solar cookers in social institutions such as boarding schools, biogas (it was noted that a shift from wood fuel to biogas leads to a shift from collecting wood to collecting water for the biogas digestion process), and wind water pumps. It was pointed out that there are often multiple types of energy services that are needed and that these can often most effectively be met by different energy carriers. An example of where such a system has been set up to cater for the varying energy service needs is the multi functional platform.

Such energy carriers are relevant in making a transition from practices using human or traditional energy wood fuel to more effective practices applying motive, mechanical, thermal and electrical energy.

Outcomes

The important outcomes that improved access to non-electricity energy carriers could have were categorised into three groups namely: impact on income generation activities, impact on transport and impact on health and wellbeing.

An important role that non-electricity energy carriers have in income generation activities is to improve productivity in the agricultural sector. Also for other small scale industrial activities such as brick making and fish smoking, non electricity energy carriers are important.

Transport infrastructure has an important role to play in improving access to markets and to bring people to social service facilities such as clinics. Sometimes there are simple solutions such as having drought animals or wheel barrows to fetch water and to facilitate fuel wood collection that could provide significant improvements.

As for health and well being, more efficient use and types of traditional non-electrical energy carriers can have important impacts on health,

especially for women. Such movements up the “energy ladder” were also brought up as important in raising women’s overall status especially when related to income generation.

Solutions

The participants then came to discuss possible solutions for improving access to non-electricity energy carriers. The solutions were categorised under the headings policy level, mechanisms and technology. As was echoed in the discussions around other issues, a key conclusion is to carefully assess the prioritised demand for different types of energy services that can enable poor people’s efforts to improve their life conditions. Only then should one proceed to look at which types of energy carriers and technologies or which mix of these can meet the needs.

There was also a discussion on the potential for developing and creating markets for new fuels such as LPG and smokeless coal that some participants thought had positive qualities. There was also a discussion on the scope for improving energy efficiency of traditional biomass energy in the small scale industry and small business sector. Someone claimed that before developing markets for new fuels the traditional methods should be improved first.

Relating to new fuels it was also recognised that, to the poor, there may be important financial barriers to switching fuels as this often requires investments in new appliances or fuel containers. An example is the canisters needed for use of LPG. In some markets these are by design less appropriate for the poor as they are too big. Consider smaller canisters or subsidise the entry cost was suggested. Relating to subsidies it was argued that subsidies could be considered for enabling poor to enter into a new fuel market but not to subsidise the operation or the use of fuels.

Also the institutional frameworks supporting the market development of non-electricity energy carriers were discussed. Here it was stressed that the whole energy system needs to be taken into account including both the technical and the non-technical aspects. Some also raised the importance of engaging the local communities in a process of developing improved non-electricity energy carriers markets. In setting up an institutional framework for a particular energy technology, the importance of the after-sales-services was pointed out.

2.2.4 How would you prioritise increased energy service access to specific consumer groups in order to maximise the possibilities for poor people to improve their life conditions

A clear message from the discussions on this issue is that, increased and improved energy services that enable poor people to be engaged in income generating activities is the first and foremost priority. It was also pointed out by participants that the poor are often engaged in productive activities that more often require thermal and mechanical energy than electricity.

The types of enterprises that would be most important to target in order to have an impact on poverty reduction were discussed. A majority of the participants were of the opinion that it was most important to increase access to reliable energy services for small and medium sized enterprises (SMEs) based on the argument that these type of companies would be more directly relevant for the poor in creating employment and enhancing incomes. There were also some participants that thought that prior to meeting the energy service needs for SMEs it was important to increase access to modern energy services to enable income generation at

the household level (cooking food for sale, mechanical energy to process agricultural produces). Improving energy access for large industry came in third place as an end-use category that was considered relevant in contributing to poverty reduction.

There was a rather coherent agreement amongst the participants that second to energy services for income generation, comes that of providing social service institutions with increased and improved energy services. Health, education and water supply services were particularly emphasised as being important in this category. It was also pointed out that improving energy service access within social services is more democratic than for example connecting a few households to electricity supply since the availability of energy services in social service institutions tends to benefit more people and are thereby an effective way of reaching the poor with improved basic services.

In third place, in terms of prioritising improved access to energy services, came the individual households. Energy services directed at the household level were by many seen as the last priority although there was not a complete agreement on this. A few participants felt that the benefits of more efficient and cleaner lighting in the households have very important impacts on the health status at the household level. Also the benefit of efficient and clean lighting was recognised as important as it enables children to study at night. From a survey amongst women in Nepal, the results showed that the top priority of having access to electricity was that the children can study at night. To women and children and people with HIV/AIDS the benefits of cleaner fuels was raised several times.

Making a prioritisation policy operational

The participants discussed how the real priorities could be better reflected in the expansion of energy systems in developing countries. Several participants made the point that government should have a clear policy on how to prioritise electrification and other energy services. It was suggested that a key element of such a prioritisation process should be to look at the potential for creating a significant impact on economic development. It was also suggested that governments should “do their homework” better and really engage with local governments and other stakeholders in carrying out the prioritisation process.

It was also suggested by some participants that the local government should be given a stronger ownership and responsibility in governing the use of subsidies for energy system expansion. In that way it was argued the priorities of a specific region could be better catered for.

Many participants agreed to the need of providing subsidies to expand energy infrastructure. It was also suggested that the subsidies be financed through cross subsidies from urban areas to rural areas. It was also pointed out that subsidies have to be clear and transparent to avoid corruption and that subsidies should only be used to enable entrance to a particular energy market and never to cover running costs of energy use.

2.2.5 In what way do you consider regional energy sector cooperation to be relevant in contributing to sustainable development and poverty reduction?

Scope of regional energy sector cooperation

From the discussions the definition of energy carriers perceived in regional energy sector cooperation is not only electricity but all types of energy carriers including e.g. LPG and wood.

How can regional energy sector cooperation be relevant for the poor?

There seemed to be quite a lot of agreement amongst the participants that regional energy sector cooperation does not automatically benefit the poor or contribute to sustainable development unless it is specifically addressed in the planning process of such cooperation. “Regional cooperation does not automatically benefit the poor – it has to be part of the mandate”.

Nevertheless, regional energy sector cooperation can have huge impacts on the environment as well as on the livelihoods of the poor. These impacts can be either negative or positive. The negative impacts are more likely to appear when environmental issues and poverty issues are not considered in the planning process. On the contrary, if sustainable development issues are considered at the on-set of considering regional energy sector cooperation, regional energy sector cooperation can have positive impacts on poverty reduction and reduce environmental stress.

Outcomes of regional energy sector cooperation

The fundamental reasons for engaging in regional energy sector cooperation is to create economic growth through availability to more and cheaper energy to fuel income generating activities of large scale electricity users in industry and agriculture. Regional energy sector cooperation can increase efficiency in supply and thereby reduce the cost for delivering energy services. This energy can in turn be used by large scale energy end users to contribute to economic growth of the country. This increased supply of energy can be of benefit to the poor but this causality is dependant on other national policies guiding energy sector development, income redistribution policies etc. Other reasons for regional energy sector cooperation can be the potential to get economies of scale where energy systems investments could become financially viable if the market includes more than one country. Furthermore, peace was mentioned as a potential positive impact of regional energy sector cooperation. It was stated that interdependence tends to motivate diplomacy instead of conflict. Finally in the area of power sector cooperation, security of supply was mentioned as an important reason for cooperation.

A specific area that could be more directly relevant to the poor as opposed to regional power sector cooperation was suggested in the discussion to be bulk purchases of fuels such as LPG. Regional energy sector cooperation targeting fuels that are more commonly used by the poor would potentially bring down costs for these and thereby have a positive impact on the poor. Some participants also pointed out that this type of cooperation is of relevance also for traditional wood fuel markets.

Harmonisation between neighbouring countries such as technical standards for energy technologies and fuels was mentioned as an area where the poor could directly benefit from regional cooperation as this could bring down costs for fuels, appliances and energy technologies. Regional labelling/standards of household appliances such as stoves and PV equipment were types of harmonisation activities that could be relevant for the poor under regional energy sector cooperation.

Conditions to be considered when planning regional energy sector cooperation

One recommendation from this session is that it is important to consider how the poor and how the environment will be affected by any regional energy sector cooperation. It was also pointed out that such an analysis should be quite wide to include issues such as water use (if hydropower schemes were considered) and emissions from certain facilities that could

impact on neighbouring countries. As one participant put it “include wide perspectives when planning and look beyond the national boundaries”

Another recommendation is to consider all the energy fuel markets and not only electricity in regional energy sector cooperation as other energy markets may be important for the poor. For example cross trading of energy carriers such as LPG and “wood interconnections”.

Another form of regional energy sector cooperation that was considered important was that of sharing experiences (best practices) and exchanging information and perceptions. Even before any type of regional energy sector cooperation takes place opening up for a regional dialogue to understand view points was brought up as a relevant “regional energy sector cooperation” activity.

Finally there was a word of warning to Sida not to be sucked into great big projects.

2.2.6 Key messages from the Energy and Poverty thematic session

Focus on the energy services not the energy carriers Many of the discussion groups questioned the relevance to the poor of focusing on a particular energy carrier as opposed to the particular energy services.

Thermal energy is important to the poor. Many participants were of the opinion that thermal energy was most important to the poor in meeting heating, cooking and drying needs. Mechanical energy and clean and efficient lighting services were also considered important to the poor.

All are needed. A strong message from the participants was to consider all technologies and energy carriers in meeting prioritised energy service needs of the poor. Meeting the energy service needs of the poor often requires facilitating access to a mix of fuels and technologies.

Prioritised end-users. Energy services for income generation were considered most important followed by energy services for health and education and lastly to improve living conditions within the household.

Assessing needs. Many participants called for more careful assessments of the prioritised demand for different types of energy services and clear policies on how to prioritise energy service delivery expansion. Many considered that a key element of such a prioritisation should be impact on creating significant economic development.

Increased participation. In assessing needs and making prioritisations of energy system expansion, many participants saw a need for better tools and methods involving relevant actors at different levels from inter-ministerial dialogue to engagement with local communities and end-user groups. Many saw the need for governments to involve a wide range of actors in both assessing and agreeing on prioritised energy service needs as well as being part of expanding delivery.

Local government should be given stronger ownership, responsibility and resources. Several participants suggested deeper involvement of the local government and to strengthen their mandate and capacity in increasing energy service access and provide them with appropriate tools such as guidelines for assessing energy service needs and making priorities, and resources to provide low-interest credits and involve local actors in the delivery of services.

Existing and complementary services. It was also recognised that to have important impacts on economic growth and engaging the poor in income generating activities, a number of non-energy inputs and conditions need to be in place or needs to be put in place to maximise the benefits of increased access to energy services. Complementary services

such as credit and business development support was one important area that was stressed as important. Also access to markets and natural resource availability, a sufficiently developed workforce etc. were considered important conditions.

Market-entry subsidies. The existing barriers for poor to switch fuel (such as requiring investment in new appliances or fuel containers) were recognised by many. Many also considered subsidies to be warranted to enable poor to enter into cleaner and more efficient energy markets but not to subsidise the operation or the use of the fuels. It was also recognised by many that subsidies are needed to expand energy infrastructure. It was also stressed that subsidies should be clear and transparent to avoid corruption and that using cross subsidies would often be appropriate.

Importance of after sales services. To increase options for sustainable energy services to the poor, the importance of established energy technology maintenance infrastructure was pointed out several times. For such an infrastructure to become available, capacity building in design, installation and operation of technologies may be needed. In this context, adoption of technical standards was also raised.

Environmental concerns. Many participants were of the opinion that the main environmental concerns resulting from energy systems in developing countries are related to local and regional environmental problems rather than global environmental problems. It was also suggested that in many cases it may be more effective to put emphasis on energy efficiency improvements rather than substituting fossil fuels with renewables.

New fuel markets. Developing markets for fuels such as LPG and smokeless coal was considered important to the poor and that efforts should be made to remove barriers for the poor to enter such markets. Other participants pointed at the large volume of the traditional biomass energy system and stressed the importance of improving the energy efficiency of biomass energy production and use.

Regional energy sector cooperation. Regional energy sector cooperation can have huge impacts on the environment as well as on livelihoods of the poor – both negative and positive. It was stressed that poverty and environmental issues have to be specifically addressed in regional energy sector cooperation to benefit the poor and contribute to sustainable development. As a part of this, sharing experiences and understanding different national view points, interests and concerns within a region was also recognised as important to the poor. Some participants pointed out that there are non-electricity markets, such as regional wood fuel markets, that may be relevant for the poor to address at a regional level

Economic growth supported by availability of more and cheaper energy for large industry can benefit the poor but is dependant on national policies guiding energy sector development, income redistribution etc.

Large hydro. Many participants were of the opinion that large hydro should be considered amongst the options in meeting large demand for electricity. However, it was stressed that there is a need to strengthening the institutional capacity to carry out strategic development planning of large scale hydro power schemes taking into consideration alternative power generation strategies, environmental, social and economic impacts, and potential impacts resulting from climate change. In this process it was also considered important to involve relevant stakeholders to safeguard interests at the regional, national and local levels.

2.3 Summary of the issues discussed in the Energy and Environment session

2.3.1 Which role do you think large scale hydropower should play in contributing to sustainable development?

A common line of reasoning amongst many of the participants discussing the role of large hydro was that large hydro is a powerful resource that should be considered amongst other options in meeting large demands for electricity and that it should be included in the “menu” of options for increasing electricity generation.

It was also commented that large hydro in many countries is one electricity generation option based on local resources that has significant potential of being exploited as opposed to other large scale options for electricity generation such as electricity generated by coal, oil, natural gas or nuclear. Here, hydro was recognised by many as often being the least cost option. Referring to countries without their own fossil fuel resources, one participant’s comment was: “what are the alternatives?” It was also acknowledged that for the global environment, large scale hydropower would be preferred to fossil fuel options since it has much less impact on climate change as well as on local and regional air pollution.

However, there was also a clear recognition that hydro power development has certain potentially important negative social and environmental impacts that have to be considered, and avoided or mitigated if large scale hydropower is to be developed. Therefore, many participants thought that the process and the system assessments made in planning large scale hydro development were important and in many cases needed to be improved to avoid or minimise the negative environmental, social and economic impacts. It was also pointed out that development of large scale hydro power schemes are complex and that strong institutions with the necessary capacities are essential. There is often a need for capacity strengthening at different levels. Institutions should be able to clearly assess the negative and positive impacts of large scale hydropower development as well as to take into the analysis alternative energy system development strategies. Furthermore, it was pointed out that planning of large scale hydro power schemes need to involve a wide range of different stakeholders including, in many cases, neighbouring countries to assess the negative and positive impacts and the costs and benefits of a large scale hydropower development. It was noted that large scale hydro power development must be seen in a total water resource context and that a river basin perspective should be applied. The consultations with the stakeholders, directly and indirectly affected, needs to take place at different levels. Some participants made the critique that consultation often only takes place at the national or regional level but not with the communities directly affected by the development scheme. The benefits need to be visualised. It was stated that there needs to be a transparent and open debate about the rationale behind developing a large hydropower scheme and that the benefits, costs and consequences are identified properly and debated at all relevant levels of society and that compensations to those affected are adequate. It was suggested that one suitable tool in such a process could be a “regional code of good conduct”. It was also pointed out that there are such guidelines for development of hydro power in the World Commission of Dams.

Accessing international financing for large scale hydropower development as well as the impact of lobby groups that oppose such developments were two important barriers to development of large scale

hydropower schemes that were recognised in the discussions. It was also argued that if stronger institutions equipped with strategic planning tools, involving more stakeholders and more thoroughly assign alternative development strategies were established, it would probably become easier to attract financing for investments.

There was a discussion on the rational behind exploiting large scale hydro resources, and to many it was considered less relevant to the poor to develop large scale hydro as it was to the electricity intensive industries of a country. Some one claimed that “poor may benefit indirectly but the negative effects are direct”. It was reasoned that this of course depends on the level of economic and infrastructural development of the country and how far a country has come in creating access to electricity. In a country with extensive electricity network coverage, large scale hydro was thought to benefit and be more relevant to the poor as opposed to a country with a limited electricity network. One comment was that if large hydro power schemes are developed they should be so for the right reasons, whether to provide large industry with power or for export, but that in most cases it would not be for direct poverty alleviation purposes. Some participants stressed that large scale hydro power creates opportunities for both energy intensive industrial activities and thereby incomes as well as on a more local scale in that it can support fishing and irrigated agricultural activities. Large scale hydro power export was also seen as a potential source of income for countries with less domestic electricity demand. Other participants thought that to the poor, in less developed countries, development of hydro power was not really relevant to support poverty reduction as there were other pressing needs that had to be addressed first. It was argued that the significant amount of investment needed to develop large scale hydro power schemes would have to be made at the appropriate time, when this kind of investment was more important than other prioritised investments. Investments in large scale hydro power schemes should when built significantly contribute to national economic development and not be a burden on the government finances that could lead to important cut-backs in other important sectors relevant for poverty reduction. Some of these participants made the comment that the argument to increase electricity access for the poor should not be used when talking about developing large scale hydro power schemes.

There were both arguments for and against large scale hydro power playing a role in creating security of supply. On the one hand some participants argued that large scale hydro would reduce the vulnerability to external price increases on fossil fuels if the bulk of the power sector was dependent on electricity generation from fossil fuels. On the other hand other participants argued that with global climate change, the amount of available water for hydro power generation would become more uncertain and investments thereby more sensitive to changes in the hydrological regime.

An advantage of large scale hydropower development that was brought up related to its potential impact on regional political stability as it often requires regional cooperation around sharing of common natural resources.

Advice to Sida

The participant’s key advice to Sida is to assist in strengthening the institutional capacity to carry out strategic development planning of large scale hydro power schemes taking into consideration alternative

strategies, involving all relevant stakeholders to safe guard interests at the regional, national and local levels. This type of assistance was considered important in facilitating attraction of investors.

2.3.2 What roles do you think fossil fuels should play in contributing to sustainable development regarding rural electrification and cooking?

Being demand driven and focusing on poverty alleviation will not exclude fossil fuels

A strong message from the participants is that neither the fuel nor the technology should be a key issue in energy system development but the prioritised energy service needs and any rational solutions needed to achieve meeting these needs. Or as noted by one participant “focus on access has to be the key”. It was pointed out by many participants that fossil fuels will be a major fuel from now and a couple of decades to come. A comment to this was “not recognising that fossil fuels have an important role to play in increasing energy service access is a sign of not being in touch with reality”. It was said that, to the poor, what is most relevant is that energy services are available, affordable, reliable and efficient – other concerns come in second place.

However, it was also acknowledged that fossil fuels have negative environmental impacts and especially global impacts that should not be forgotten, therefore it was suggested that Sida should address issues of how to manage impacts of fossil fuel use. Fossil fuels should be used as efficiently as possible and the participants recognised the scope for improvements here. Also the potential for making use of fossil fuels less polluting was raised in the discussions. To start with the, the win-win situations in cost reductions and mitigated environmental impacts resulting from energy efficiency improvements had to be sought for.

Thermal energy

There were several roles that fossil fuels were recognised as having in contributing to sustainable development. To begin with, an area that many considered to be of high priority is to improve thermal energy services of the poor. That is replacement of traditional biomass with fossil fuels such as LPG. This was considered to be relevant mainly amongst urban energy end-users and that amongst rural energy end-users biomass would for a long time continue to dominate, mainly for affordability reasons. Only amongst a small group of the rural population are fossil fuels used for certain purposes such as reheating of food or heating of water.

Some participants complained that this type of fuel substitution did not seem very appealing to donors to support and a possible reasons was thought to be that working with household energy is perceived as difficult. They also noted that very little money is put into household programmes to substitute traditional fuels.

It was also brought out that it is often men who make the decisions about what appliances to invest in and what fuels to use. Since it is mainly women who are involved in heating and cooking activities, this is often an area that gets forgotten. So from a gender perspective, participants argued, that more emphasis should be placed on meeting thermal energy service needs.

Several participants were of the opinion that to address poverty and sustainable development, fossil fuels have an important role in facilitating a transition from biomass based cooking to using fossil fuels such as LPG and kerosene. This would have both positive health impacts as well as in

urban areas, reduced impact on global warming, since inefficient combustion of traditional biomass creates particulate clouds that have a more severe impact on climate change than LPG.

It was by some participants noted that improvements in indoor air pollution (such as replacing biomass with LPG for cooking and heating) have important benefits for people who are HIV/AIDS infected since they are particularly sensitive to particulates from indoor air pollution.

It was also stressed that thermal energy services are important for income generation activities. This ranges from preparation of food for sale to welding within small businesses selling local repair services and manufacturing. It was noted that LPG and in particular propane are important sources of energy for such small and medium sized enterprises in the construction, small scale industrial and restaurants businesses.

Off-grid electrification

Another area where fossil fuels were recognised as having an important role to play, was for isolated rural electrification schemes using diesel generators. It was stressed that in many countries the work force and institutional capacity to manage diesel generator systems exist. It was also pointed out that within the typical demand for rural electrification schemes (5-10 kW) there are few renewable energy options. It was estimated by one participant that the renewable energy potential for isolated rural electrification could be in the range of 2-3% of the demand over the next 10-15 years.

It was also commented that for remote locations diesel supply can become very costly as a result of transporting the fuel and may therefore be dependent on long term subsidies. The negative environmental impacts and the risks of depending on imported fossil fuels were also pointed out by the participants.

Alternatives

There was a discussion on alternative fuels that can meet the prioritised needs, both fossil and renewable that should be considered for environmental and local employment reasons.

Among the fossil fuels that were discussed were the smokeless coal pellets that have been developed in South Africa and that significantly reduce indoor air pollution.

A strategy that was suggested by some participants was to apply a stepwise transition from fossil to renewable fuels. It was said that one should not segregate fossil fuels from renewables and treat them differently, but rather progressively look to promote a shift towards cleaner options. A renewable energy alternative to diesel that was discussed is bio-diesel produced from different locally available seeds and fruits that can create local or regional employment and that reduce dependence and risks associated with reliance on imported fossil fuels. Also here it was pointed out that in many countries the capacity to manage diesel generator systems exists and that this capacity can be used in running bio-diesel systems. The multifunctional platform, where a range of energy services can be provided was discussed as a good example.

Where are the technological options for improvements?

Improved stove efficiency was one area where the participants saw the scope for improvements. Also improved energy efficiency in buildings was recognised as an area for improvements.

There was disagreement over the appropriateness of the introduction of hybrid electricity generating systems. Some participants thought these systems were an appropriate and effective way of combining diesel with available renewable energy resources for rural electrification. Others thought that in the short to medium term they would not be suitable as they would add technological complexity requiring a lot of capacity building.

Making the transition to more modern energy carriers

To make the transition to cleaner and more modern energy carriers it was suggested by some participants to use taxes and cross subsidies to encourage fuel switching. The participants also identified market entry barriers to fuel switching such as the sizes of LPG cylinders. In Kenya and in other markets, LPG cylinders are now made smaller and thereby more affordable and easier to transport which enables poorer consumers to access a cleaner and more efficient fuel. Some participants also thought it appropriate to consider subsidies for the up-front investment needed to buy e.g. the first LPG cylinder. It was also suggested that the introduction of new fuels such as LPG be coupled with educational initiatives.

Another issue that was brought up in the discussion was that the Rural Electrification Agencies being set up in some countries do not always address cooking fuels and currently there is no responsible institution to handle expansion of the market for cooking fuels. It was suggested by some participants that there is a need to set up a specific policy on household energy.

2.3.3 What roles do you think cleaner production technologies and the switching to cleaner fossil fuels have in the development of a sustainable energy sector?

A primary reason for cleaner production technologies, which was stated in the discussions, is to reduce local environmental and health impacts resulting from regional, local and indoor air pollution and deforestation. A secondary reason for promotion of cleaner production technologies, that was stated, is to reduce global warming.

The participants identified the transport sector and the use of forest resources as two areas where it could be strategic to intervene in order to mitigate these environmental and health impacts. Power generation was also identified but not considered having as large an impact as the first two.

The participants suggested that in order to reduce emissions from the transport sector, it could be effective to apply different incentive and taxation measures to encourage replacing old and inefficient transport fleets with newer ones and to switch to cleaner fuels. In addition it was noted by some participants that legislating and enforcing more diligent maintenance requirements and emissions criteria of existing vehicles and engines could significantly reduce emissions. In countries where lead is still being used to enhance octane levels of petrol, replacement was considered to be important. It was suggested that bio fuels could be used to a larger extent to reduce environmental and health impacts. It was also considered important by some participants to properly monitor and evaluate the health impacts of different potentially harmful emissions.

It was acknowledged that the introduction of new technologies and production methods has a cost and that to afford replacement of appli-

ances or switching to cleaner fuels amongst some end-user groups such as households is not that easy. Price determines the choice to a large extent. But some of the participants argued that sometimes the barrier to switching is related to awareness of the options. Some participants argued that emission reductions do not necessarily require new appliances, technologies or new fuels but could be related to awareness about efficient use of energy or how to save energy with simple behaviour changes.

It was suggested that many of the measures to introduce cleaner production technologies would require institutional capacity strengthening. For example more efficient and sustainable use of the forest resources for charcoal production would in many countries require institutional change and institutional strengthening to promote sustainable use of these resources.

A word of caution was also raised when it comes to considering fuel-switching: It is important to consider the impact of fuel switching on the whole system. One such system is the charcoal production system which in many African countries involves a significant portion of people making a living out of production, transporting and sale of charcoal from the rural areas to the urban markets. If the livelihoods of the workforce engaged in the charcoal production system are not considered in a fuel switching programme for urban users, it can have seriously negative impacts on the livelihoods of many people especially in rural areas. It was commented by some participants that the issues of cleaner production methods require political leadership and a vision of how to make the transition.

2.3.4 What types of activities do you think should be a priority from donors in relation to climate change?

The participants recognised the wide impacts that climate change bring and said that the approach to dealing with climate change needs to be as holistic as when addressing sustainable development. It requires adaptation to uncertain risks, is long-term, and will impact all sectors of society. It was also stressed that addressing climate change will require long term donor support and commitment.

The participants identified a set of activities that were considered relevant for donor support in relation to climate change and grouped these into five key areas: capacity strengthening, actions at policy level, research, adaptation, and mitigation technologies.

Capacity strengthening

Several participants considered the current international climate change negotiations to be imbalanced and saw a need for capacity strengthening within public institutions responsible for international climate change negotiations. It was felt that lesser developed countries could not participate on equal terms with other developed countries. The need for capacity strengthening in order to define the role of developing countries post-Kyoto was especially recognised. For this the participants saw a need to be better equipped in making analysis of the different development strategies that climate change and the uncertain regional and local impacts necessitates. Many participants considered it necessary to create new institutions to handle international climate negotiations. For other issues regarding climate change, the need to strengthen the capacity within existing institutions was brought forward.

Several participants raised the need to strengthen capacity within designated national authorities regarding definition, prioritisation and

selection of CDM projects. Also capacity strengthening of the private sector in identification, marketing and implementation of CDM projects was identified as an area where donor support is needed.

Policy level

Some participants identified the need to strengthen capacity within different line ministries (ministry of energy and ministry of environment were mentioned) to be aware of and able to handle the challenges and uncertainties that climate change brings on development strategies. The need for strategic planning applying a holistic approach was called for.

Some participants considered it important for donors to support national communication around climate change in developing countries to raise public awareness and to localise the debate. Public awareness about climate change was also considered important in order to back up and support a government's actions to adapt to and mitigate climate change. It was also considered relevant to raise awareness amongst the public in developed countries on climate change as this can support more drastic measures to address climate change in the developed world. It was suggested that donors "support developing countries in reaching out with global advocacy campaigns"

Regional cooperation was also identified as an area where donor support is of importance in order to share information that for example could be used to replicate best practices between countries.

Research

Strengthening of institutions that can provide relevant research and analysis results to support strategic decision-making processes within the public and private sector was considered important. It was especially noted that there is a need to make such results relevant to specific locations and regions in developing countries and to analyse what the impacts of climate change may be on different levels of society, the environment and the economy. Some participants raised the need to better understand the impact of climate change on the poor.

Adaptation

Donor support for adapting to climate change was also identified as important. It was also recognised that less donor money has been provided for adaptation than for mitigation or as one participant put it "adaptation is what you need to do – mitigation is what you get money for". Areas mentioned as relevant for developing adaptation strategies included issues of food security, energy security and how hydrological changes will impact on agriculture, hydro power and the biomass resource potential within a country. It was considered important that national and regional research institutions have the capacity to do vulnerability analysis that can support strategic decision making processes in order to avoid lock-ins and risky investments. The importance of being able to do better prognosis and assessment of different adaptation strategies within all sectors was raised.

Mitigation

In the area of climate change mitigation, the relevant research that was said to be important included research and analysis on how to reduce CDM transaction costs, technology adaptation including renewable energy and energy efficiency improvements in the transport sector. Mod-

ern biomass was also raised as an area of importance that could have an impact on both CO₂ emissions from the transport sector as well as provide cleaner cooking fuels that would reduce health impacts of end-users. Coal gasification and CO₂ storage were also raised as areas where mitigation research is in need of donor support.

2.3.5 How would you like to see regional environmental problems addressed by the energy sector?

What are the key environmental issues of regional dimension?

The key issues of regional environmental concern that were identified in the discussion included emissions of pollution into the air and water arising from transport, industry and electricity generation. Land use for agriculture and forestry were also among issues identified as potentially having regional environmental impact.

There was some uncertainty around the importance of regional environmental problems resulting from cross border pipelines for oil and gas.

By many of the participants, river basin management was of particular importance when it comes to addressing regional environmental problems. There were some environmental concerns regarding the future development of hydropower and some frustration as to the usefulness of the tools to carry out impact assessments with that were raised in the discussions. The Environmental Impact Assessment tools were said to “always come out favourable for power lines, despite of actual environmental effects”.

How can regional environmental issues be addressed?

The participants then discussed how regional environmental issues can be addressed. Largely the solutions that were discussed had to with institutional capacity strengthening particularly within regional institutions and river basin commissions. It was considered important to promote and enhance regional dialogue around relevant regional environmental problems. It was also recognised that it is sometimes not easy to achieve regional dialogue and that strong political leadership is needed.

Topics for regional dialogue that were mentioned as relevant were dialogue on research and harmonisation of trade, policy, legislation (e.g. pollution criteria), taxes (subsidies) and standards. The regional cooperation should facilitate the creation of common regional agreements on how environmental problems are identified and valued. It was suggested by some participants that the international conventions should be used as a platform for this dialogue.

Apart from government institutions, capacity strengthening to increase cooperation on regional environmental problems between research institutions was also considered relevant. Such cooperation could for example concern climate change issues, regionally relevant adaptation strategies and promotion of energy technologies and development of scenarios for future environmental problems.

The key recommendation to Sida was to play a role in facilitating regional environmental discussions and initiatives. Sida was considered to have a special role to play here as a mediator since many participants saw Sida as an unbiased partner.

2.3.6 Key messages from the Energy and Environment thematic session

Fossil fuels. Most participants recognised that fossil fuels will continue to dominate and have an important role to increase and improve energy

service access for the poor. The focus should lie on minimising the environmental impacts of extraction, supply and use of fossil fuels, such as cleaner production methods, energy efficiency and switching to cleaner fossil fuels.

Switching from biomass to LPG will contribute to mitigating climate change, improving health (especially amongst women, children and people with HIV/AIDS) and freeing up time for mainly women and children. Thermal energy is also important for income generation as it is used for preparation of food for sale. LPG and propane are important for small and medium sized enterprises. The message was therefore that donors should to a larger extent support development of thermal energy markets as it is so relevant to the poor.

Off-grid electrification. For isolated rural electrification schemes diesel is often appropriate. Many countries have the necessary workforce and institutional capacity to manage diesel systems. At the same time, diesel supply in remote locations may become very costly. Also the vulnerability of being dependent on imported fossil fuels has to be considered.

Apply a step-wise transition from fossil to renewable fuels. It was suggested to gradually shift towards cleaner fuel options and renewable energy sources. Bio-diesel as an alternative to diesel was discussed as an example which builds on local capacity to manage diesel systems and at the same time creates local or regional employment opportunities in the production of the bio-diesel.

Energy efficiency. It was recognised in many of the discussion groups that improved energy efficiency has important contributions to make in both reducing energy supply costs for the poor as well as mitigating environmental and health impacts

Market entry barriers. Many participants raised the problem of market entry barriers to fuel switching for the poor. There is a cost barrier to switching to cleaner and more efficient fuels, technologies and appliances that has to be recognised as not always easy to overcome. Several groups discussed the example of LPG cylinders that are sometimes too large and too expensive for the poor to afford. To enable and encourage fuel switching to cleaner and more efficient energy carriers and technologies many considered it appropriate to consider use cross-subsidies and taxes. Some barriers can be overcome by increased awareness of alternative options and behaviour patterns. Emissions reductions does not always require new appliances, technologies or new fuels but can be achieved through behaviour changes induced through increased awareness about benefits from efficient use of energy.

Environment. The transport sector and forest resources were identified as strategic areas for intervening in order to mitigate environmental and health impacts. Power generation was not considered as having as large an impact as the first two. It was suggested that emissions from transport should be reduced through incentive and taxation measures to encourage replacing of old and inefficient transport fleets and to switch to cleaner fuels. Legislating and enforcing maintenance requirements and emission criteria for existing vehicles and engines also relevant and this also applied to power generation. Where lead is still being used as an octane enhancer, its replacement was considered important to address. Switching to bio fuels was also considered relevant to reduce environmental and health impacts.

Rural Electrification/Energy Agencies should handle all relevant energy carriers and technologies and not just electricity. Many measures to introduce cleaner production technologies will require institutional capac-

ity strengthening. More efficient and sustainable use of the forest resources many times requires institutional change and institutional strengthening. It is important to consider the impact of fuel switching on the whole society as it may have seriously negative impacts on the livelihoods of many people especially in rural areas. Monitoring and evaluation of the health impacts from energy use was considered relevant by some.

Climate change. The participants recognised the wide impacts that climate change bring and said that the approach to dealing with climate change needs to be as holistic as when addressing sustainable development. It requires adaptation to uncertain risks, is long-term, and will impact all sectors of society. It was also stressed that addressing climate change will require long term donor support and commitment. Many participants recognised the need to strengthen the capacity of developing countries to participate in international climate change negotiations especially for the situation post-Kyoto. Also the need to strengthen the capacity within research and analysis institutions to support national and regional climate change adaptation and mitigation strategies was brought up as important.

Regional environmental problems. The key issues of regional environmental concern and cooperation that were identified in the discussions included emissions of pollution into the air and water resulting from transport, industry and electricity generation. Agricultural and forestry land use was also acknowledged as having potential regional environmental impact.

River basin management was considered being of particular environmental importance. Institutional capacity strengthening particularly within regional institutions and river basin commissions was called for and were considered important in promoting and enhancing regional dialogue. Some participants questioned the usefulness of the current tools to carry out impact assessments.

Addressing regional environmental issues. Regional dialogue and cooperation on: research, harmonisation of trade, policy, legislation (e.g. pollution criteria), taxes (subsidies) and standards were considered important steps in addressing regional environmental problems. Such a process was thought to be important in creating a common regional agreement on how environmental problems are identified and valued and addressed. Regional cooperation was also considered important in developing scenarios and regional adaptation and mitigation strategies resulting from climate change.

2.4 Summary of the issues discussed in the Energy and Reform session

2.4.1 What do you consider is the role of the state in increasing economic and technical efficiency of the energy sector while at the same time meeting sustainable development goals?

The overall role of the state

Most participants were of the opinion that the government's role is to have the strategic overview of the development of the energy sector and to create a level playing field and stimulate relevant actors to be a part of that playing field. Many of the participants were of the opinion that that role includes facilitating increased access to relevant energy services that takes into considerations environment, reliability, and efficiency aspects with the objective of maximising the benefits and minimizing the costs.

Access to relevant, reliable and efficient energy services- participation and agreement

Some participants considered it to be part of the government's mandate to involve stakeholders and lead a participatory consensus process for defining prioritised areas where access should be increased and where the benefits were transparently debated and agreed on.

In the context of defining priorities for energy sector development and energy system expansion it was pointed out that the government has a role to support and encourage collaboration between ministries. It was also recognised by some participants that this was often difficult. Other participants pointed at the PRSP-process that was meant to ensure collaboration and cooperation between different sectors where an overarching role of the government is to set the correct budget and to monitor the use of allocated funds and progress.

Environmental considerations

Some participants also thought it was important that environmental issues should be considered using the same approach as when valuing benefits of access. The benefits of applying environmental criteria to energy sector development should be discussed and agreed on widely. The benefits of application of environmental criteria should be from the perspective of all society.

Benefits not recognised by the private sector – a role for the state

Environmental and in some cases access benefits are likely to require subsidies or financing that would normally not be made by the private sector. The public benefits of access to electricity in rural areas and mitigated or avoided environmental impacts are often not captured in private sector economic calculations. Therefore the state has a role to play in placing a value and providing the economic instruments to cater for these benefits.

Apart from adopting different policy instruments and standards that take these public benefits into consideration, the participants recognised the important role for the state in implementing and enforcing the application of these instruments. Some participants brought up for example the need to have auditing and inspection capacities strengthened within appropriate government agencies. It was also stressed that the instruments are well coordinated and harmonised so that they are not counter-acting the development of the energy sector.

Another public benefit that was identified as most suitable for the government to take responsibility for is reserve capacity in the electricity system.

Attracting and setting the rules for participation of relevant private and other actors in energy sector development

Another role that participants thought was important for the state is to encourage and engage non-government actors in the development of the energy sector. There were different types of non-government actors mentioned as relevant participants of energy sector development including: commercialised state utilities, private international and local investors, finance institutions, local energy companies, Independent Power Producers and Communities/cooperatives taking responsibility for their own electricity distribution. A particularly important reason for the reform that was pointed out is to attract private investments.

It was also recognised that the regulatory frameworks needs to be stable and harmonised before most of these actors will start moving.

There were some participants that questioned the appropriateness of involving the private sector in rural electrification which in developing countries is often a market with very little competition. Part of the cost for delivering rural electricity services would go towards the profit margin of the private company. In theory, that profit margin is an extra cost to the state which, if the state could deliver the services with the same efficiency as the private sector, would not be needed and could be used for access expansion or other prioritised investments.

2.4.2 What do you consider is the role of energy utilities (private and public) in increasing economic and technical efficiency of the energy sector while at the same time meeting sustainable development goals?

Role of utilities

An interpretation of what came out of the discussions as the basic role of energy utilities is as follows:

The utilities role is to supply customers with appropriate, affordable, reliable energy services (not only electricity, but other fuels as well) using least costs solutions, while at the same time covering the costs of this supply.

In the discussions it was brought up that utilities also have a number of other roles to fulfil. It was suggested that utilities should focus more on demand side management and consider investments in end-use efficiency as an alternative to investing in increased capacity. This role included a role of raising awareness amongst its customers.

Most participants thought that the utilities should not set up the rules for how the energy system is expanded and for example should not decide on cross-subsidies and other economic instruments as these were considered to be the mandate of the government to decide on.

Some were of the opinion that the utilities should play a more proactive role in increasing access and to set up both economic and social objectives for their operations.

Fulfilling expected roles

To strengthen the capacity of the utilities to contribute to sustainable energy system development an appropriate regulatory structure was identified as a key priority by many of the participants. Such a framework, it was said, should be sensitive and adapted to the circumstances of the particular country. It was for example noted that the market needs to be sufficiently large for unbundling of utilities to be beneficial. It was also stressed that the regulatory structure first needed to be set up before any restructuring is commenced. Important issues that the regulatory structure needs to consider are the possible incentive mechanisms for increasing rural electrification levels and taking environmental considerations into account. If utilities are to contribute to particular sustainable development goals these need to be covered in the regulations. It was noted that “utilities need to get to the bottom of understanding their economic vs. social corporate responsibility”. It was also noted that regulation should foster good governance and transparency of the utilities operations and fight corruption. Some participants thought that there was a need for better procedures for monitoring and evaluating the performance of the utilities and in enforcing the laws governing the regulatory structure.

2.4.3 What do you consider is the role for the private sector in increasing economic and technical efficiency of the energy sector while at the same time meeting sustainable development goals?

The discussion largely focused on the role of the private sector in developing the electricity sector.

Capital

One role that the participants identified was within raising capital for energy sector investments. This was seen as possible at different levels. One level was directly for private companies involved in production to invest in energy efficiency improvements to reduce system demand while at the same time reducing their own expenditure on energy. Another area was in countries with existing financial barriers, where the private sector, to access capital could work with the government to lobby for changes in the banking rules. A third area was to respond to local capital demand once any potential barriers were removed.

Performance improvement

There was a belief amongst quite a lot of the participants that the private sector is more efficient in managing and delivering services than a public monopoly. The argument was that with increased competition, efficiency improvements would become more attractive and thereby the overall costs and tariffs would be reduced. Adoption of technical innovations was also something that the private sector was believed to be good at. It was also considered by some participants that the private sector has a role to play in raising public awareness and could use efficient marketing techniques in doing so.

Private sector involvement in energy service delivery

Some participants saw the potential for involving local private industry more in delivering energy services. It was also noted that in some countries such participation by the private sector is not possible due to legal barriers.

It was also recognised that there are a number of non-electrical energy markets that are already private (such as the charcoal system) but that there is scope for better regulation and enforcement of such regulations to make them sustainable.

In dialogue with government over sustainable development priorities

Another role for the private sector that was identified in the discussions was that of a dialogue partner to the government in identifying and prioritising areas for energy system expansion. It was also pointed out that the Millennium Development Goals can not be achieved unless there is close cooperation between government and the private sector.

Remaining policy challenges

In the discussions there were a number of regulatory and reform challenges that were identified as remaining for private sector to more effectively contribute to sustainable energy sector development. Amongst these were existing monopolies where the private sector could contribute more in terms of electricity generation and distribution. What was also said to often be lacking are appropriate incentives for the private sector to get involved in expanding energy systems and being involved in delivering energy services.

Some participants also thought that involvement of the private sector in electricity supply could lead to higher tariffs since the incentive for their involvement is to make as large a profit as possible.

2.4.4 In what way to you think different consumer groups should participate in the energy sector reform to improve their energy situation?

On this issue the participants discussed the importance of public participation in the reform process. Some participants stressed the importance of making the public aware of the objectives and process of energy sector reform while others were supporting a more active involvement in actually taking part of designing and getting the public involved in making priorities related to energy sector reform.

Some considered the process of reform as important as the goal and that a country as a whole has to agree and be convinced about the objectives of reform.

There were two main reasons for involving the public in the energy reform process that were raised in the discussions. One was based on the need to go one step at a time in a reform process and to do the right things which requires a good understanding of the development priorities of the country and hence requires participation from many actors in society. Here, the importance of also involving those without access to energy services in the dialogue was brought up.

Another motive for raising awareness of the energy sector reform is that there is often a general public fear of price increases. It was by many considered important that the reform process is transparent and that the government explains to the public the current situation and why some things have to be done. Some participants talked about the vicious circle of non-payment for electricity supply and others said that customers with electricity supply gave first priority to price and only second priority to supply reliability. Being aware of the objectives of reform was believed to make the whole of society more engaged and motivated in contributing to achieving the objectives. It was noted that government is sometimes the largest consumer of electricity and they, for one, should pay their electricity bills to set a good example. It was suggested that a common and nationally agreed upon vision for energy sector reform could be a powerful tool in the process of arriving at an energy system beyond the current.

How to engage the public in energy sector reform process

There were different suggestions for how to practically involve the public in energy sector reform process. Some thought it was important to support a strong and free journalism and stated that the government is often bad at communicating new policies. Others suggested that the government should develop a communications strategy for the reform process. Someone said that there should be obligatory public hearings to debate the reform objectives. Someone said it was important not only to include those that had access to electricity today but also to involve the non-customers or the future customers in the debate. Other ways of involving the public and specific stakeholders is through interactive workshops.

Some participants saw the need for strengthening the capacity amongst some key stakeholders to be involved in the energy sector reform process. It was considered necessary to have a powerful lobby group with technical knowledge.

2.4.5 Which earlier mistakes relating to energy sector reform would you not like to see repeated?

There was quite a lot of critique from the participants as to how previous efforts to reform energy sectors in developing countries have been conceived and carried out. It was considered by many participants that earlier reforms have neglected important public benefits such as increased energy access. Many participants were of the opinion that reform had not benefited the rural customers. It was mentioned by some participants that there is in some countries a growing discontent towards external foreign private companies, sometimes referred to as neo-colonialism.

Perhaps, as one participant phrased it, “it has proven more difficult to set up the regulatory institutions to achieve a lot of benefits from energy sector reform than at first believed.”

At the same time, many of the participants recognise that many public monopolies have not been able to operate technically and economically efficient and deliver and expand energy services as would have been liked. Therefore some a reform is needed but it has to be made with wider considerations than has been the case so far.

Some suggestions for alternative approaches to continue reforms that were brought up in the discussions are to go one step at a time and to be very strategic about implementing reform. It was by many participants recognised that the process of reform is as important as the goal. It was considered very important that a country agrees on the objectives of the reform and that a majority is convinced about the objectives and the process.

One suggestion was to start with commercialisation and not have privatisation as the ultimate goal. A specific comment regarding small markets was to avoid unbundling these due to the limited scope of competition on such markets.

Institutional structure

One point that came out of the discussions is that the government has a new role to play. This role is to draw up the strategy for reform, the structure and the rules guiding the energy sector in a very participatory and transparent manner. To fulfil this role there is a need for capacity strengthening. Several participants believed that many countries that have embarked on an energy sector reform process have not had institutions with the capacity to handle reform adequately. Some commented that, the lesson from other sector's reform processes is to begin with creating the necessary institutions. It was especially recognised that the reform's impact on poverty reduction is an important component that such institutions need to be able to analyse and assess.

The initiatives to establish special agencies to lead increase rural access to energy services were supported by many participants.

The conditions for how to engage with the new actors that are or are expected to be involved in the market to enable technically and economically efficient energy supply were also discussed. Someone pointed out the need for clearer incentives to stimulate increased access and many recognised the need for special funding mechanisms to expand access, especially in rural areas. Involving the grass roots in commercialisation and privatisations was suggested by some, and examples from Thailand were mentioned where these had been mobilised to increase awareness of electricity. Several participants called for more involvement of local enterprises such as micro utilities in a reformed energy sector. Others questioned whether the private sector should be involved in rural electricity delivery at all.

2.4.6 Key messages from the Energy and Reform thematic session

The role of the state is to have a strategic overview of the energy sector's development which includes facilitating increased access to relevant energy service that take into consideration environment, reliability and efficiency aspects with the objective of maximising the benefits and minimising the costs. Governments have a new role to play. For one they should draw up the strategy for the reform, the structure of the rules guiding the energy sector in a very participatory and transparent manner. Many participants felt that governments need capacity strengthening in order to fulfil this role. It was also stressed that any reform process should begin with creating the necessary institutions. Reform's impact on poverty reduction is an important component that such institutions need to be able to analyse and assess. Environmental and in some cases access benefits are likely to require subsidies or financing that would normally not be made by the private sector. The state has a role in placing a value and providing the economic instruments to cater for these benefits. Implementation and enforcement of such instruments is needed. Participants felt that there is a need to strengthen capacities within appropriate government agencies to perform auditing and inspections of the actors on the energy market. The state also has a responsibility for assuring reserve capacity of energy carriers and electricity generation. State has a role in attracting and engaging non-government actors in the development of the energy sector. A particularly important role for the state is to attract financing for expansion of energy services. However, regulatory frameworks need to be stable before most actors will start moving.

Inter-ministry collaboration. Some participants expressed a need to support and encourage collaboration between ministries on how to best expand energy service access.

Stakeholder participation. It was stated several times by the participants that there is a need to more extensively involve stakeholders in a participatory consensus process for defining prioritised areas where access should be increased. Also the need for a wider public participation in the reform process was expressed. It was said that the public should at least be aware of the objectives and the process of reform and other felt that the public should be more actively involved in the debate and reform process. It was said that reform requires good understanding of the development priorities of the country and that a change process would be more effective if society is engaged and motivated in contributing to achieving the objectives, for example paying electricity bills. One role of the private sector that was discussed was that of a dialogue partner to the government in identifying and prioritising areas for energy system expansion. The condition for engaging with new actors was discussed. It was suggested that there should be more involvement of local enterprises such as micro utilities in a reformed energy sector. It was also recognised that there is a need for special funding mechanisms to make this happen. Others questioned whether the private sector should be involved in rural electricity delivery at all.

Method for public participation. A free press was suggested as a means of practically involving the public in the reform process. It was also suggested by some that the governments should develop communications strategies to inform about reform. Other suggestions were obligatory public hearings to debate the reform objectives where also those without access to modern energy should be included. It was also recognised that it is sometimes necessary to strengthen the capacity amongst some key stakeholders in order to have powerful lobby groups with technical knowledge.

Environment issues. It was said that environmental issues should be considered using the same approach as when valuing benefits of access. The benefits of application of environmental criteria should be from the perspective of all society.

Utilities should supply customers with appropriate, affordable and reliable energy service (not only electricity), using least cost solutions, while at the same time covering the costs of this supply. Demand side management and end-use efficiency as alternatives to investing in increased capacity. Raising awareness amongst its customers about using energy efficiently was also raised as important. Most thought that utilities should not set the rules for how the energy system is expanded; but that this should be the mandate of the government. Some, however, thought that utilities could have a more proactive role in increasing access and set up both economic and social objectives for their operations. Some participants questioned the appropriateness of involving private sector in rural electricity delivery in markets with very little competition. Several participants considered the private sector to be more efficient in managing and delivering services than public monopolies. The private sector was said to be better at adopting technological innovations and raising public awareness and were accustomed to efficient marketing techniques. It was also stated that increased competition will lead to efficiency improvements and thereby reduce overall costs and tariffs. It was also acknowledged that there are sometimes legal barriers to involving local private industry in delivering energy services.

Regulation. An appropriate regulatory structure that is sensitive and adapted to the circumstances of the particular country was identified as a key priority for utilities to perform well. The importance of setting up the regulatory structure before any restructuring of utilities is begun was stressed. Any particular sustainable development goals have to be covered in these regulations. While non-electricity markets are already private there is still scope for making these markets more sustainable with better regulation and enforcement of regulation. Initiatives to establish special agencies to lead increased rural access to energy service were considered appropriate by many. It was also recognised that there are regulation challenges in order for private sector to more effectively contribute to sustainable energy sector development.

Investment capital. Some said that the private sector has a role to play in making capital for investments possible. For example they can work with governments to lobby to change banking rules. It was also felt that they have a role to respond to local capital demand. Incentives for private sector to invest in energy efficiency improvements to reduce their own costs as well as reduce overall system demand should be explored more.

Need for reform. Most participants recognised that reform is needed since public monopolies have not been able to operate technical and economically efficiently but that reform needs to be made with wider consideration than has been the case so far.

Reform process. There was quite a lot of critique as to how previous efforts to reform energy sector in developing countries have been conceived and carried out. Previous reforms have neglected important public benefits such as increased energy access. Many felt that many reforms have not benefited the rural customers. It was also suggested that reform is done one step at a time and that implementation should be done in a very strategic manner. It was said that it is important that a country agrees on the objectives of the reform and that a majority is conceived about the objective and the process. Start with commercialisation and do not have privatisation as the ultimate goal.

2.5 Notes from the open session

2.5.1 Energy services (lighting, power, heating) for development vs. fuels

- Sida should focus on supporting improved access to energy services and in this context consider the full menu of options including fossil fuels, renewables, as well as [large scale] hydropower.
- How do we convince Sida and other donors to package their funding for energy services rather than electrification?
- Energy services approach enables diversification of supply options: e.g. PV-Solar for lighting, diesel/bio-diesel for power, solar driers, solar water heaters
- Stress on cooking fuels, biomass
- Support to income generation. Pumping of water facilitating commercial use
- Diversification of suppliers and energy enterprises, ESCOs have played a role in selling stoves. Good outreach
- Mechanical power then add on electrification
- We need to do electricity
- How can non-electricity enterprises access rural “energy” funds (rather than rural electrification funds)? This has to be the next issue on energy-for-development agenda.
- Example: how do you meet the heating needs of small enterprises?
- There are difficult institutional issues to solve in achieving the objective of increased access to energy service. Many actors are involved ranging from Ministry of Energy, Ministry of Natural Resources, Ministry of Agriculture. All these ministries and more have to be involved and approve the energy strategy of a country.
- A lesson from South Africa with energy centres to respond to the needs of disadvantaged groups in rural areas is that a top down supply driven approach does not work well.
- There is a limited capacity of poorest countries to claim credits under CDM
- Women: income generation, comprehensive health

2.5.2 Credit support facility for private sector investors in rural electrification

- Private – include “communitised” “any kind of organised entity from rural areas”
- Nepal arguing for a 1% tax of petroleum to fill up the fund.
- 100 million dollars invested in Nepal from local markets
- Working with local banks
- ADB – unbundled in Nepal
- 3 000 GWh in Nepal
- Reform as it is proposed is not the solution
- Organic growth. Distribution not commercial but run by communities
- In the long run financing should be procurement led
- Unsustainable model
- Replicate
- Grass root involvement

2.5.3 Getting small-scale thermal energy on the agenda

- Poverty can not be addressed without consideration to meeting thermal energy needs. Thermal energy is important for the poor. Both in households to meet cooking and heating needs but also as part of income generating activities. Also within institutions and businesses thermal energy is an important energy service. Discussion so far dominated by large scale electricity for power and MDGs. For many poor the largest demand and the first priority is for thermal energy. Second to that there is a demand for electricity to provide lighting. Another important demand is for process heat.
- Linkages thermal – household and income generation. Economics: thermal also for economic activities/income generation. Most women involved in this informal sector. Informal sector are the ones using thermal power – micro businesses. PRSP seldom mention thermal energy. There is work to be done by African policy advocacy groups about the importance of thermal power.
- The problem is the indoor/outdoor air pollution.
- A changing of mindset is needed. Thermal energy is not just about improved cook stoves. There are other strategies and technologies and fuels that are important for addressing constraints.
- LPG has a role to play in urban areas
 - LPG is an attractive option when a country has its own refinery
 - Challenge if there is no refinery
 - How to get into rural areas? (Kenya example)
 - Impact on charcoal producers
 - Impact on deforestation? (depends on why wood is cut)
- Switching to LPG – risk of charcoal producing industry. LPG switching from charcoal- what happens to the charcoal price? Falls – stats being used for other purposes. Integrate the 50 000 employed in the charcoal business in any new fuel market. “integrated development”
- Good models are needed SNV Nepal Biogas might be one example of a good model. FWD charcoal stoves à more case studies mentioned in public domain (see for example: generating opportunities/UNDP). Micro credits for enabling access
- Urban Air pollution for poor (both indoor and outdoor). Overlooked the differences between urban problems vs. problems in rural areas. Urban – market mechanisms exist that can be used. In rural areas there are institutional mechanisms that can be used. Rural households – access via health sector. Existing traditional functioning markets that are efficient.
- Technology development – bi lighting/cooking
- Income generation. /more difficult – probably peri-urban
- Urban problems. Less choice at poorer end as opposed to rural populations
- Incremental cost – circular expansion based on profit from centres.

2.5.4 Aid Coordination in the energy sector

- Operational level
 - Rural energy funds: a tool for donor coordination
 - DFID: channels large funds through international initiatives (for lowering transaction costs)
- Research: aid coordination as an opportunity
- Ownership à facilitates donor coordination
- Kosovo: UN special role, coordination of donor in the energy sector
- Strategic level: through international organisations

Appendices

A. Workshop participants

Name	Affiliation
Dima Al-Khatib	UNDP, USA
Anne-lie Andersson,	Sida, INEC/UUM
Wendy Jill Annecke	Sustainable Energy Africa, South Africa
Anders Arvidson	SEI, Sweden
Pascoal Basela	Ministry of Mineral Resources and Energy, Mozambique
Gity Beharavan	Sida, SAREC
Anders Cajus Pedersen	Danida
Edith Chilembo	Energy Environmental Concerns, Zambia
Joy Clancy	University of Twente, Netherlands
Peter Davies	DFID, UK
Helena Forslund	SEI, Sweden
Dipak Gyawali	Institute for Social and Environmental Transition-Nepal
Göran Haag	Sida, INEC/IF
Osman Hajdini	Kosovo Trust Agency – Head Quarter
Marie Holmlund	Sida, INEC/IF
Thomas B Johansson	IIEEE, Sweden
Fredrick A Kabagambe – Kalisa	Ministry of Energy and Mineral Development, Uganda
René Karottki	EU
Stephen Karekezi	AFREPREN/FWD, Kenya
S. Kumar	AIT, Thailand
Smail Khennas	PREDAS-CILSS, Burkina Faso
Dominique Lallement	ESMAP, World Bank
Per Ljung	Global Infrastructure, USA
Ramos Mabugu	CEEPA, South Africa
Gordon A. Mackenzie	RISØ, UNEP Collaborating Centre on Energy and Environment
Anne-Charlotte Malm	Sida, INEC/IF
Nguyen Manh Cuong	Hydropower Dept from Institute of Energy Institute, Vietnam
Nguyen Manh Hung	Ministry of Industry, Vietnam
Sobudh Mathur	Private Consultant, USA
Eugenio Molini	Molini, Sweden
Anna-Karin Municio	Sida, INEC/IF
Hasril Nuzahar	ASEAN Center for Energy, Indonesia
Geoffrey Musonda	Department of Energy, Zambia
Bikash Pandey	Winrock International, Nepal
Trine Refsbaek	Private Consultant, Denmark
Arun P. Sanghvi	The World Bank

Estomih N. Sawe	Tatedo, Tanzania
Ingvar Spanne,	Sida, INEC/IF
Mikael Söderbäck	Sida, INEC
Eric Usher	UNEP, France
Bertil Wahlund	Sida, SAREC
Harriet Zulu	Department of Energy, Zambia

B. Workshop agenda

Thursday 9 December

08.00–09.15	Light breakfast and registration	
09.15–09.45	Opening of the Workshop and Introduction	Anne-Charlotte Malm
Workshop methodology	Eugenio Molini	
09.45–10.00	Setting the stage for discussion on energy and poverty	Subodh Mathur & Trine Refsbaek
10.00–11.40	interactive round table discussion on energy and poverty, 3 x 2 tables x 20 minutes	6 issue facilitators
11.40–12.10	Break	
12.10–13.00	Meaning making. Synthesising and organising the material created in the round table discussions.	The 6 discussion groups
13.00–14.00	LUNCH	
14.00–14.15	Setting the stage for discussion on energy and environment	Thomas B. Johansson
14.15–15.55	Interactive round table discussion on energy and environment, 3 x 2 tables x 20 minutes	6 issue facilitators
15.55–16.25	Break	
16.25–17.15	Meaning making. Synthesising and organising the material created in the round table discussions.	The 6 discussion groups
17.15–17.30	Closing the first day's work	Anne-Charlotte Malm & Eugenio Molini
17.30	Departure for cultural event and dinner	Please see appendix for practical details

Friday 10 December

09.00–09.15	Setting the stage for discussion on energy and reform	Per Ljung
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09.15–10.55	Interactive round table discussion on energy and reform, 3 x 2 tables x 20 min.	6 issue facilitators
10.55–11.25	Break	
11.25–12.15	Meaning making. Synthesising and organising the material created in the round table discussions.	The 6 discussion groups
12.15–13.00	"Policy fair" (the results of the three thematic discussions are displayed for all participants to walk around to look at and make comments on. The issue facilitator stands next to his/her display to explain and receive comments.)	All
13.00–14.00	Lunch	
14.00–14.30	Introduction to "Open floor Session"—Creating the agenda.	Eugenio Molini
14.30–15.15	Round table discussions 1–6	The participants posing the questions
15.15–16.00	Round table discussions 7–12	The participants posing the questions
16.00	Closing session	Anne-Charlotte Malm

Halving poverty by 2015 is one of the greatest challenges of our time, requiring cooperation and sustainability. The partner countries are responsible for their own development. Sida provides resources and develops knowledge and expertise, making the world a richer place.



SWEDISH INTERNATIONAL
DEVELOPMENT COOPERATION AGENCY

SE-105 25 Stockholm Sweden
Phone: +46 (0)8 698 50 00
Fax: +46 (0)8 698 56 15
sida@sida.se, www.sida.se