



DEA
Development and
Energy in Africa



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DEA

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Gordon A. Mackenzie, Risoe National Laboratory, Denmark

gordon.mackenzie@risoe.dk

tel: +45 4677 5171

Project website: www.deafrica.net

Authors: Gordon A. Mackenzie, Niels-Erik Clausen, Fatima Denton, Sten Dieden, Emiel J.W. van Sambeek (ECN)

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Abstract

This Progress Report refers to the COOPENER project "Development and Energy in Africa (DEA)" initiated on 1 May 2005. The report covers the period from 1 November 2005 to 30 April 2006.

The 30-month project is implemented by Risø National Laboratory, Denmark as project coordinator, in collaboration with the Energy Centre of the Netherlands (ECN), and in partnership with six African Centres:

- Botswana: EECG
- Ghana: KITE
- Mali: Mali Folkecenter (MFC)
- Senegal: ENDA-Energy
- Tanzania: TaTEDO
- Zambia: CEEEZ

The overall objectives of the project are:

- that national energy policy is better informed to take into account the complex linkages between energy interventions and social and economic development, and
- that energy interventions are better designed to contribute to real development needs, especially poverty alleviation and income generation, and otherwise achieving the Millennium Development Goals.

The immediate objectives of DEA are:

- to establish and apply an Assessment Framework for evaluating development and poverty impacts of energy interventions, and
- to engage in a dialogue with energy policy makers and other stakeholders on the basis of the framework, with a view to incorporating these issues in energy policy.

The second six months of the project were occupied primarily with three work packages:

WP4: The Catalogue of Energy Interventions
WP5: The Preliminary Assessment Framework
WP6: Case Studies

A major development in the project has been the link up with the international M&EED group established by EUEI, GVEP and other institutions. DEA will henceforth develop and use a common methodology with the M&EED group to the mutual advantage of all partners. The adopted methodology is highly case specific and therefore the selection of case studies was brought forward in the project. Thereafter work concentrated on preparing for the start of the case studies in the beginning of the next period, May to October 2006.

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Risø National Laboratory
Energy for Development (EfD)
Systems Analysis Department
P.O. Box 49
DK-4000 Roskilde
Denmark
Telephone +45 46775171
gordon.mackenzie@risoe.dk
Fax +45 46321999
www.e4d.net

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Preface

Development and Energy in Africa (DEA) is a project under the European Commission's Intelligent Energy - Europe programme COOPENER. Ultimately DEA aims to “support decision makers with the implementation of more sustainable energy policies, ...” in line with the key action VKA 11.1 of the COOPENER programme. The project will do this by identifying and quantifying, where possible, the elements of concrete energy interventions that contribute to sustainable development (SD) and systematising this in an Assessment Framework which can enhance policy to promote energy for sustainable development.

The principal aims of the Development and Energy in Africa (DEA) project are (i) to identify and examine the developmental impacts of energy innovations and actions linked to improving energy access and poverty alleviation and (ii) to use the information obtained to improve on-going and future energy interventions through the energy policy makers and institutions in the countries concerned.

Specific energy activities in six African countries (Botswana, Ghana, Mali, Senegal, Tanzania and Zambia) will be examined with respect to development impacts and a methodological framework developed to feed results back into the conception and design of new projects. The Project is aimed at national energy- and development-policy makers, initially in the six participating African countries, but with a view to wider application in Sub-Saharan Africa. The project is also relevant for international and national energy, development and environment practitioners.

1 Project objectives and major achievements during the reporting period

1.1 Project objectives

The overall objectives of the project are:

- that national energy policy is better informed to take into account the complex linkages between energy interventions and social and economic development, and
- that energy interventions are better designed to contribute to real development needs, especially poverty alleviation and income generation, and otherwise achieving the Millennium Development Goals.

The immediate objectives of DEA are

- to establish and apply an Assessment Framework for evaluating development and poverty impacts of energy interventions, and
- to engage in a dialogue with energy policy makers and other stakeholders on the basis of the framework, with a view to incorporating these issues in energy policy.

These objectives are targeted in the project towards six Sub-Saharan countries: Botswana, Ghana, Mali, Senegal, Tanzania and Zambia, although the results of the project will be applicable in principle to other African developing countries, and indeed other regions.

The objectives of DEA are very much in line with those of a number of activities in the area of energy and development initiated in connection with the Johannesburg WSSD in 2002. In particular, the aims of the EU Energy Initiative, elaborated and supported by a number of African governments in Nairobi in 2003, are consistent with greater awareness of the development impacts of energy initiatives, especially those to address the energy access needs of the rural and peri-urban poor. The specific role of the DEA project in the six participating countries is to engage with stakeholders to identify and quantify such impacts, in parallel with a methodological development carried out by the project partners.

In five of the six countries, the project interacts directly with the multi-sector groups established in conjunction with the two EUEI Facilitation Workshops carried out in Ouagadougou and Maputo, thus building on established structures. With regard to methodology of impact assessment, the project has established contact with a parallel international activity – “Monitoring and Evaluation for Energy and Development (M&EED)” – established as a partnership involving GVEP, EUEI, REEEP, Electricité de France, UNEP, DFID, ADEME and others, is being followed closely. During the reporting period, the DEA project (represented by the two EU partners, Risø and ECN) became a formal member of the M&EED Group.

This effective merging of efforts has mutual benefits: The DEA project has adopted the flexible 4-level impact assessment approach being developed by the M&EED group, contributing further to methodological development through the specific real-world examples. This provides a high degree of “visibility” and influence to all DEA project partners in the central M&E activity in the energy and development field. While DEA remains an independent project, following its own objectives, the associated expertise and support of the other M&EED partners considerably enhances the professional environment of the DEA project. In return, the M&EED activity gains by the DEA project’s case studies providing a testing ground for the assessment methods, and the use of the tools in the wider energy-development community.

1.2 Summary of activities and results for the reporting period

1.2.1 WP1 Project Management

During the second reporting period (November 2005 to April 2006) project management faced two major challenges which had already been identified in the First Progress Report:

- non-completion of the literature review which was intended to be one of the 3 “pillars” of the project, along with stakeholder consultations and the project catalogue.
- recognition of the lack of existing methodological approaches which would be appropriate for the type of interventions considered

These two related challenges were addressed through the recognition of the high degree of overlap with the work of the international M&EED Group and a decision to establish working links with that group.

While the original concept for the literature review as described in the Inception Report envisaged a broad literature survey on energy-development linkages, the reality of the DEA project, which would focus on project-level analysis, meant that much of the available literature would be less relevant to the choice of methodological approach. In view of the staff changes described in the First Progress Report, the delays in completing WP2 and a high priority to avoid delays in defining the PAF and initiating the Case Studies, it became clear that a more pragmatic and targeted approach to methodological choice was essential, focussing on existing studies that linked energy interventions to development effects at the micro level

The initial assessment of the literature yielded little practical guidance for micro-level analysis of development impacts from energy interventions in the articles identified for the literature TOC with two exceptions:

- Achieving the MDGs: The role of energy services (UNDP 2005)
- Various applications of the Sustainable Livelihoods Approach (SLA)

Thus, while there is a great deal of material in the literature discussing the importance of energy as an input to poverty alleviation, achieving the Millennium Development Goals, there is little on the practicalities of evaluating and monitoring this contribution at the micro-level. In parallel with this realisation, the project group made contact with the international M&EED group towards the end of the first reporting period. The decision to link up with the M&EED group and to base the DEA assessment framework on the M&EED approach meant that the original concept regarding the links between the 3 work packages WP2, WP3 and WP4, and the assessment framework WP5, have to be modified.

Project management during the reporting period was focussed on the general coordination of the partners and activities with respect to Work Packages 5 and 6. In particular, a primary goal was to ensure that the case study component involving the six African centres would not be subject to significant delay. In spite of delays in completion of the literature review, as described elsewhere, the choice of methodology was facilitated by linkage with the M&EED group.

Adoption of the M&EED approach and increasing awareness of the implications led to the recognition that the details of the assessment would be highly case specific. This justified

bringing forward the choice of case study topics to an earlier stage so that the specific assessment tools could be developed in collaboration with other members of the M&EED group. Project coordination then focussed on the following interrelated issues:

- consolidation of methodological approach (WP5)
 - o agreement with partners regarding adopting the M&EED approach
 - o ad hoc EU project team meetings to elaborate the methodology in close contact with other M&EED group members, including participation in M&EED group meetings
 - o extraordinary team meeting in Paris, January 2006 on methodology and case study selection
- criteria for case study selection (WP6)
- selection of case studies (WP6)
- preparation for 2nd Project Workshop (WP1/WP6)

Another concern, identified in the First Progress Report, was the question of the delayed deliverables from the African partner centres. Every effort was made to ensure that any overdue deliverables were submitted. At the time of writing, this had been achieved.

1.2.2 WP2 Literature Review

The Literature Review is carried out primarily by staff at Risoe. The initial objective of WP2 was to complete the review by September 2005 so that its results could feed directly into the WP5, development of the Preliminary Assessment Framework (PAF). This deadline was not achieved due to the change of personnel in the Risoe team (see section 2.2). In addition there has been a developing perception and re-evaluation of the project's objectives and methods on the part of the project team – informed by the stakeholder consultations and increasing awareness of and contact with other international activities.

The focus on micro-level project impact assessment, consistent with the country catalogues of interventions and the expressed stakeholder needs, led to a decision to follow the methodological approach of the international M&EED group. A significant body of literature related to this approach has been collected and made available to the project partners. It is still planned to complete the Literature Review (WP2), supplementing the material related to the chosen approach with more general background work and other approaches for relating energy interventions to development.

1.2.3 WP3 Catalogue of energy interventions

The contributions from the six countries were completed and submitted in the first period as reported in the First Progress Report. A Synthesis Report was thereafter prepared by ECN and circulated in draft among the project partners in January 2006. In all, 42 energy interventions were described by the six Centres. Comments on the Synthesis Report were forwarded to ECN and a revised version completed, including appendices which contain all six country catalogue entries. Because of project priorities concentrating on methodological issues and preparation for the 2nd project workshop, the Synthesis Report was completed shortly after the end of the present period, but is included in the list of completed deliverables. A draft version of the main report, excluding catalogue entries, is included in Annex 7.

1.2.4 WP4 Consultations

This work package has consisted so far of three components:

- Bilateral consultations conducted by the six African partner centres with key national stakeholders
- First National Workshops, arranged by the six partner centres, to introduce and discuss the DEA project and in particular gather stakeholder opinions on requirements for impact analysis of energy interventions
- Synthesis of stakeholder views by the Risoe team, based on material submitted by the six centres

The rounds of consultations and workshops were completed by October 2005 and the synthesis report (DEA Report Risoe 4.1) was completed in December 2005.

1.2.5 WP5 Preliminary Assessment Framework

WP5 is the primary responsibility of the Risoe team. Work on developing the PAF was initially planned to start immediately after the results from WP2, WP3 and WP4 had been completed. Thus the literature, catalogue and consultations would inform the development of the PAF so that it responded both to the needs (stakeholder requirements), realities (actual energy interventions in the target countries) and “state of the art” (available methodologies).

At the beginning of the present reporting period, the literature review had not been completed. Nevertheless it had become clear (as described below) that the most promising methodology to be used was related to that being developed in the Monitoring and Evaluation for Energy and Development group coordinated by GVEP¹. After initial discussions, the DEA project group was invited to join the M&EED Group and is now a fully participating partner.

The methodological approach adopted is fully consistent with the original plans laid out in earlier DEA documents. The core of the “M&EED” approach is the 4-level causal link, elaborated through various table, indicators and tools. In particular the approach to impact analysis is inspired by earlier work of the European Commission, GTZ and researchers in the field of impact analysis in the micro-finance sector.

The methodology is sufficiently flexible to allow DEA participants to adopt it for the special circumstances of the DEA case studies. This will be described in the Literature Review and PAF documents currently under preparation. Following the selection of the six case study interventions (described in the next section) the bulk of work of the project group (Risoe and ECN) in the second half of the project period has been focussed on preparing the methodology so that it could form the basis of the Second Project Workshop in June 2006. Through collaboration with the M&EED group, initial “templates” for the specific case study examples were prepared and distributed to the six country partners. This process then merges into the WP6 Case Studies.

¹ The Monitoring and Evaluation for Energy and Development International Working Group (M&EED) was initiated by GVEP in 2003 in response to a request from one of its partners (Electricity de France) to cooperate in developing indicators for measuring the impact of energy services on general development – poverty reduction, health, education etc. The EUEI joined soon after and the Group has expanded since to include major actors in this field such as UNDP, UNEP, World Bank, GNESD, REEEP, ADEME, GTZ, Energia, and private sector organisations like Future Energy Solutions, Fraunhofer ISE and IT Power. The objectives of M&EED are to enable the development of monitoring and evaluations practices among energy access programmes for poverty reduction in a coherent and coordinated manner, which can be recognised by all stakeholders, and to promote the results of energy projects in terms of development. (For more information see: <http://www.gvep.org/section/services/results/>)

A particular consequence of this choice of methodological approach is that it is highly case specific. The “templates”, i.e. tables and descriptive text which describe the structure and potential causal links are, in principle, different for each kind of intervention. One consequence of joining the M&EED group was that the other group members offered to assist in preparation of templates for the specific cases. However this meant that it was necessary to have an earlier indication of which kinds of interventions would be investigated in the DEA project case studies. Thus the setting of criteria and case study selection was brought forward by several months, as described in the next section.

1.2.6 WP6 Case Studies

The Case Studies are scheduled to be carried out by the six African partner centres, beginning in the middle of 2006 immediately following the Second Project Workshop in June.

The steps carried out in the present period comprised:

- development and agreement on criteria for case study selection
- selection of case studies for the six countries
- preparation of causal link diagrams and preliminary tables prior to the second project workshop

In the original project plan, it was envisaged that the agreement on selection criteria and actual selection of case studies would take place at the second project workshop, scheduled for April 2006. However, due to unforeseen developments in the methodological approach (in particular the adoption of the M&EED approach) it became clear that the case studies had to be selected earlier. This would allow the work to progress on the case-specific assessment tools, described in 1.25 and elsewhere in this report.

A set of selection criteria, comprising 6 local and 2 global considerations, was worked out in collaboration with all project partners. These criteria were discussed among the project partners through email communication and agreement was finalised an extraordinary project meeting in Paris in January 2006. After some discussion among partners, a final set of projects was selected for the case studies and these are listed in Table 1.1.

Table 1.1 Final set of projects for case studies

country	case study topic
Botswana	Rural electrification collective scheme (grid)
Ghana	Grid-based rural electrification
Mali	Women Renewable Energies Project (focus on one area)
Senegal	PROGEDE (focus on improved stoves)
Tanzania	small-scale irrigation using solar and wind energy
Zambia	Solar Energy Supply Companies (ESCOs)

1.3 Identified problems and corrective action taken

The “new” Risoe/ECN project team established towards the end of the previous period has continued to function well throughout the current period, concentrated on a core group of two at Risoe (G.A. Mackenzie and S. Dieden) and one at ECN (E. van Sambeek). Other colleagues (F. Denton, M. Hinostroza and N.-E. Clausen) at Risoe have also contributed during the period.

The major problem for project management in the period has been how to prioritise between the literature review and preparing the PAF. The Literature Review report was scheduled to be completed by the end of the first period. This was not achieved, mainly because of staff changes referred to in the First Progress Report. The original scope of the Literature Review, set out in the Inception report, was moreover quite comprehensive and wide, taking in a broad review of energy-development links from the macro- to micro-level. As the project progressed, however, and the preferred methodology converged on the “M&EED” approach, the need for such a comprehensive literature review to inform the

choice of methodology began to be less critical. In the light of project developments, the literature review could be seen more as setting the context for the methodology rather than providing a set of alternative “models” from which to choose.

The choice for project management was whether to focus on completing the delayed deliverables (i.e. specifically the Literature Review Report) and thereby risk an accumulating delay in preparing and operationalising the methodology for the case studies, or, alternatively, to focus on the chosen methodology and providing the six African partners with the material and support so that the case studies could be carried out as planned between June and August 2006.

The latter course was chosen, although this meant that a number of deliverables would be delayed. The critical meeting, the Second Project Workshop was scheduled for the beginning of June as dictated mainly by the availability of project partners. This Second Project Workshop (Zambia 5-7 June) is a major milestone in the project, providing a natural deadline for agreement on and preparation of the PAF, and representing the starting point for the case studies.

This choice of action is judged to be the correct one, in that the case studies will be allowed to start essentially on time, while the delayed deliverables, to be prepared by the EU partners and no longer critical for the choice of methodology and the start of the case studies, can be completed by the EU partners in parallel with the case study execution by the six African partners.

2 Consortium management in the period

2.1 Communication

There has been regular communication between all project partners during the reporting period, mainly by email. Shortly after inception, an intranet was established where working documents and literature references could be made available with access limited to project partners and selected guests. The intranet also provides a conference discussion facility, though this has not been used to any great extent. The partners appear to prefer communication by email. The intranet has been used primarily for sharing reference documents.

Telephone meetings have been used extensively between the two EU partners, most recently using internet telephony (Skype). The latter communications channel is becoming possible for African partners also as broadband connections become available. So far, this is the case with Mali.

Direct telephone consultations with the African partners have been useful throughout the period and a telephone conference between all eight partners (EU and Africa) was scheduled early in the next period, prior to the Second Project Workshop in Zambia.

Through these communication channels coordinated by project management at Risoe, close contact has been maintained throughout the project, and it has been possible to address all relevant issues in an efficient, friendly and productive atmosphere.

2.2 Staff changes

The EU project team at Risoe and ECN has essentially been constant over the period. The core project team has comprised Mackenzie, Dieden and van Sambeek. Others in the Risoe project team (Denton, Hinostrza and Clausen) have contributed on specific activities, as indicated below.

The African partners have been mainly unchanged with the exception of Ghana and Mali, where new staff joined the project. The transitions in both cases have been unproblematic.

Table 2.1 Assigned staff from EU partner institutions and the African Centres

name	institution	main responsibility
Gordon A. Mackenzie	Risoe (Denmark)	Project coordinator, PAF
Sten Dieden	"	Literature review and PAF
Fatima Denton	"	Consultation/dissemination/PAF
Miriam Hinostrza	"	Literature review and PAF
Niels-Erik Clausen	"	Catalogue review
Emiel van Sambeek	ECN (Netherlands)	Catalogue (WP3 coordinator), PAF
Peter P. Zhou	EECG (Botswana)	Director/coordinator/Reporting
Morena Kepile	"	Stakeholder Consultations
Farai Maiswa	"	Stakeholder Consultations
Boitumelo Motoma	"	Administration, stakeholder consultation surveys; workshop organization
Harriette Amisah-Arthur	KITE (Ghana)	Director
Kwafu Wiake	"	Coordinator (until 31 March 2006)
Solomon Quansah	"	Coordinator (from 1 April 2006)
Jamilla Agyeman	"	Literature review/data collection
Ibrahim Togola	MFC (Mali)	Director
Pierre Dembele	"	Coordinator, catalogue, case studies
Sécou Sarr	ENDA (Senegal)	Coordinator
Jean Philippe Thomas	"	Supervisor
Jean Pascal Korea	"	Assistant/dissemination.
Estomih Sawe	TaTEDO (Tanzania)	Director
Gisela Ngoo	"	Coordinator
Godfrey Sanga	"	Monitoring
Finias Magesa	"	Team member
Francis D. Yamba	CEEEZ (Zambia)	Director/coordinator

Lilian Zulu	“	Catalogue, case studies
Gilbert Phiri	“	Catalogue, case studies

2.3 Team meetings

In addition to regular telephone communication, physical project meetings between the Risoe and ECN team members have taken place, twice at Risoe during the period, exploiting the relative proximity and cheapness of air travel and the benefits of face-to-face contact in the methodological development phase.

The “core” EU project team (Mackenzie, Dieden and van Sambeek) also met twice during the period at the M&EED meetings in London and Paris, respectively. An extraordinary partners’ meeting, with participation of EU partners and five of the six African partners (all except Botswana), was held in Paris in conjunction with a meeting of the UNEP AREED project. The entire Risoe team meet on a day-to-day basis as appropriate, having offices in close proximity.

2.4 Workshops

No formal workshops were held during the period, whereas much of the project activity, especially in the latter months has been geared to preparation for the Second Project workshop in Zambia, 5-7 June. The schedule of workshops is shown in Table 2.2.

Table 2.2 DEA workshop schedule, with links to programmes and proceedings where available.

date	event	location
2005	First Project Meeting (Inception)	Risoe, Denmark
	First National Workshops	
1 September	First National Workshop, Ghana	Nogahil Hotel, Accra
6 September	First National Workshop, Botswana	Cresta Lodge, Gaborone
9 September	First National Workshop, Zambia	Mulungushi International Conference Centre, Lusaka
12 September	First National Workshop, Tanzania	Palm Beach Hotel, Dar es Salaam
6 October	First National Workshop, Senegal	Diambour Hotel, Dakar
12 October	First National Workshop, Mali	Hôtel Nord Sud, Bamako
2006		
11 January	Extraordinary Project Meeting	Paris, France
5-7 June	Second Project Workshop	Fringilla Lodge, Zambia
	Second National Workshops	
September-October	All countries	country capitals - to be announced
2007		
February	Third Project Workshop	Bamako, Mali (tentative)
	Third National Workshops	
July	All countries	country capitals - to be announced
September	Regional (Africa) Workshop	Arusha, Tanzania (tentative)

2.5 Relation to other projects

Both involved EU-based institutions are currently participating in one other COOPENER project: APPLES, with an overlap of key personnel (Mackenzie, Dieden and van Sambeek

working on both projects). There was little exchange of substantive content between the two project activities during this initial reporting period, mainly because of the “on-hold” status of the APPLES project due to co-financing issues. However, assuming that APPLES gets under way in the near future, there are likely to be strong links between the projects particularly in the methodological areas related to monitoring and evaluation. The APPLES project is already committed to applying the M&EED approach which will also contribute significantly to the tools used in the Assessment Framework of DEA as described elsewhere in this report.

Risø is also involved in the COOPENER project IMPROVES-RE. No formal contact has been established as yet, though this is likely in the future in view of the overlap of subject matter related to rural electrification which will be the focus of two DEA case studies. Coordination and contact, especially with other COOPENER projects will continue to be pursued actively with a view to exploiting synergies.

3 Progress of each work package in the period

3.1 Progress on work plan against initial objectives

A central concept in the original DEA project design was that the three initial activities (WP2, WP3 and WP4) running in parallel should feed into the methodological development activity WP5, originally due to start in October 2005, as illustrated in Figure 3-1.

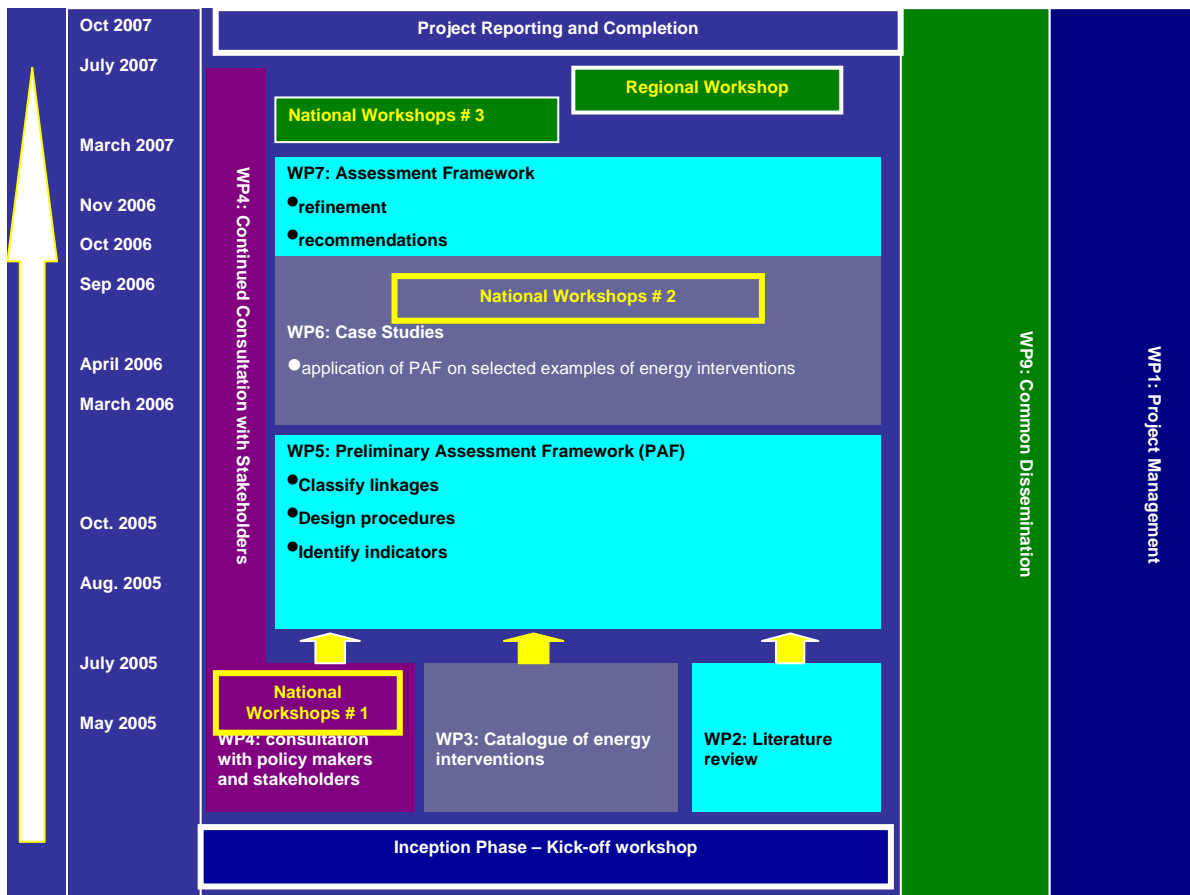


Figure 3. IDEA Work Packages and timeline.

Thus the three components Literature (WP2), Catalogue (WP3) and Consultation (WP4) would feed into the choice and development of the assessment framework (WP5). This means that the Assessment Framework would attempt to reflect not only stakeholder needs and the current methodological possibilities for impact analysis as found in the literature, but also the portfolio of real energy projects and interventions which exist in the countries. This idealised set-up has been modified somewhat in the light of project developments. While the PAF is still informed by the three “pillars”, the strictly sequential structure is no longer appropriate. In particular, convergence on the 4-level causal link approach (M&EED) as the most promising methodology has meant that PAF (WP5) and case study preparation (WP6) could progress without the completion of the Literature Review (WP2)

3.1.1 WP1 Project Management

The task for project management in the period was quite challenging. Recognising that there were inevitable delays in some components, the literature review and the catalogue synthesis report, a main priority was to ensure that these delays did not compound into delays in other parts of the project, in particular the case studies which were scheduled to be carried out by the six African partners in the middle months of 2006. It was regarded as essential that these case studies should take place as planned, leaving about one year to the end of the project, during which refinement of the assessment methodology, investigation of impact on stakeholders and not least dissemination could take place. Moreover, the six African partners had allocated time and resources in the period June to August in order to do the case studies. Delays in starting the case studies would thus cause major disruptions.

Project management thus faced two major challenges which had already been identified in the First Progress Report:

- non-completion of the literature review which was intended to be one of the 3 “pillars” of the project, along with stakeholder consultations and the project catalogue.
- a lack of existing methodological approaches which would be appropriate for the type of interventions considered

These two related challenges were addressed through the recognition of the high degree of overlap with the work of the international M&EED Group and a decision to establish working links with that group.

The original project concept is illustrated schematically in Figure 3.2. Here WP2, WP3 and WP4 would be completed before the initiation of WP5 which would develop the assessment framework, subsequently to be applied in the case studies (WP6).

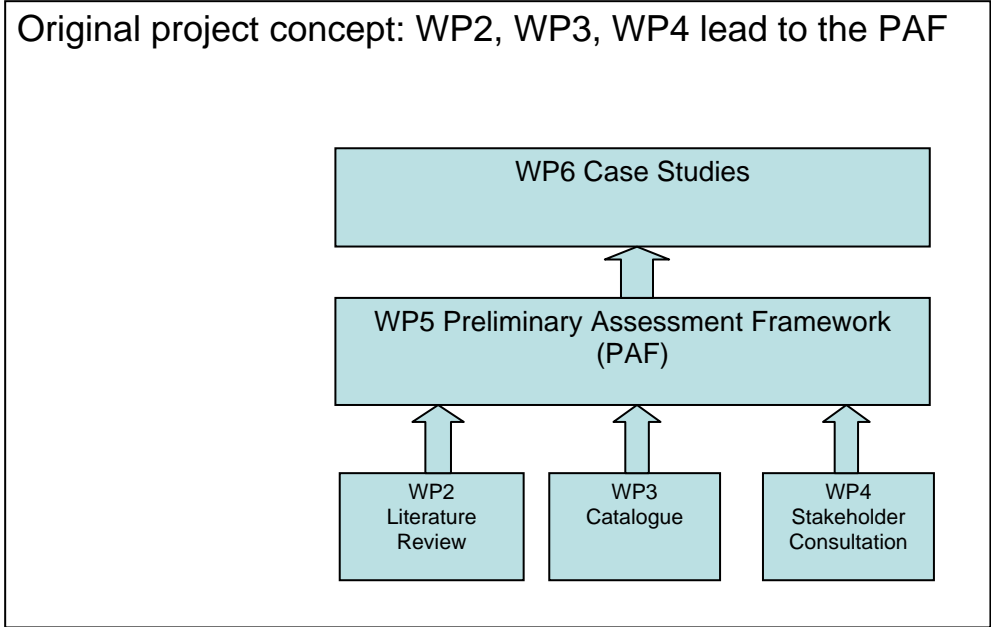


Figure 3.2 Original project concept whereby Work Packages 2, 3 and 4 inform the choice of Preliminary Assessment Framework to be used in the Case Studies and subsequently refined.

While the original concept for the literature review as described in the Inception Report envisaged a broad literature survey on energy-development linkages, the reality of the DEA project which would focus on project-level analysis, meant that much of the available literature would be less relevant to the choice of methodological approach. In view of the staff changes described in the First Progress Report, the delays in completing WP2 and a high priority to avoid delays in formulating the PAF and initiating the Case Studies, it became clear that a more

pragmatic and targeted approach to methodological choice was essential, focussing on existing studies that linked energy interventions to development effects at the micro level

The initial assessment of the literature yielded little practical guidance for micro-level analysis of development impacts from energy interventions in the articles identified for the literature TOC with two exceptions:

- Achieving the MDGs: The role of energy services (UNDP 2005)²
- Various applications of the Sustainable Livelihoods Approach (SLA)³

Thus, while there is a great deal of material in the literature discussing the importance of energy as an input to poverty alleviation and achieving the Millennium Development Goals, there is little on the practicalities of evaluating and monitoring this contribution at the micro-level. In parallel with this realisation, the project group made contact with the international M&EED group as described in the First Progress Report and elsewhere in this report. The decision to link up with the M&EED group and to base the DEA assessment framework on the M&EED approach meant that the original concept regarding the links between the 3 work packages WP2, WP3 and WP4, and the assessment framework WP5, have to modified as represented in Figure 3.3.

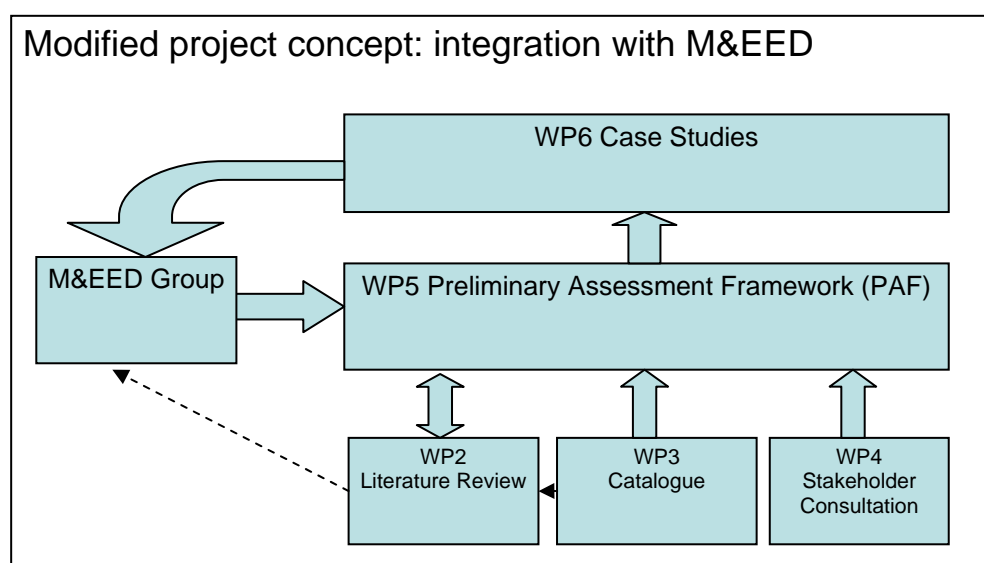


Figure 3.3 Modified project concept whereby the M&EED approach forms the basis of the PAF and the Literature Review is completed taking into account the methodological background for the M&EED approach. The predominance of small- to medium-scale energy projects in the catalogue also influenced the necessity to focus on the micro level, limiting the relevance of much of the existing literature and reinforcing the case for linking with the M&EED group. Collaboration with the M&EED group is completed by the results from the case studies feeding back into the general methodology of the group.

² Achieving the Millennium Development Goals: The Role of Energy Services - Case Studies From Brazil, Mali And The Philippines Jem Porcaro and Minoru Takada (ed.) UNDP, January, 2005

³ There have been few documented applications of the Sustainable Livelihoods Approach to energy interventions. A few that have been identified are:

Cherni, J. (2003) 'Renewable energy technology and sustainable livelihoods', DFID Energy Knowledge and Research Newsletter, 17, November, 6.

ITDG & ITC (Intermediate Technology Development Group East Africa and Intermediate Technology Consultants), Energy and Sustainable Livelihoods: Mbuiru Village Micro-Hydro Project, Intermediate Technology Consultants Report, (February 2002)

Barnet A. (2005). Sustainable Livelihoods, Energy and Poverty. In Sustainable Livelihood Approach in Energy & Poverty. EASE: Special issue. April, vol.2.

A discussion of SLA as it relates to energy projects will be included in the literature review.

Given this change in the project concept, and the choice of methodology, less priority was given to completion of the literature review for the sake of informing WP5. Project management during the reporting period was rather focussed on the general coordination of the partners and activities with respect to Work Packages 5 and 6. In spite of delays in completion of the literature review, as described elsewhere, the choice of methodology was facilitated by linkage with the M&EED group.

Adoption of the M&EED approach and increasing awareness of the implications led to the recognition that the details of the assessment would be highly case specific. This justified bringing forward the choice of case study topics to an earlier stage so that the specific assessment tools (templates and fiches) could be developed in collaboration with other members of the M&EED group. The PAF development is thus enhanced by collaboration with M&EED while DEA correspondingly contributes to the M&EED by applying and testing the methodology with real cases, involving developing country partners and influencing the final methodological approach which will be shared among major international actors in the energy/development field, such as EUEI, GVEP, UNDP, UNEP, DFID, GTZ, etc.

Project coordination then focussed on the following interrelated issues:

- consolidation of methodological approach (WP5)
 - o agreement with project partners regarding adopting the M&EED approach
 - o ad hoc EU project team meetings to elaborate the methodology in close contact with other M&EED group members, including participation in M&EED group meetings
 - o extraordinary team meeting in Paris, January 2006 on methodology and case study selection
- criteria for case study selection (WP6)
- selection of case studies (WP6)
- preparation for 2nd project meeting workshop (WP6)

3.1.2 WP2 Literature Review

The Literature Review is primarily the responsibility of the Risoe team, supplemented by smaller inputs from the partners. The initial objective of WP2 was to complete the review by September 2005 so that its results could feed directly into the WP5, development of the Preliminary Assessment Framework (PAF). This did not happen and the delays were attributed in the First Progress Report to the staff changes at Risoe soon after the inception period. The literature review process was not completed as planned by September 2005, and it is still not completed at the time of writing this Second Progress Report. The continued delay is due to a decision to prioritise WP5 and the preparation of WP6.

The focus on micro-level project impact assessment, consistent with the country catalogues of interventions and the expressed stakeholder needs, led to a decision to follow the methodological approach of the international M&EED group. A significant body of literature related to this approach has been collected and made available to the project partners. It is still planned to complete the Literature Review (WP2), supplementing the material related to the chosen approach with more general background work and other approaches for relating energy interventions to development.

A project management decision was made to focus on the necessary inputs for the case studies in order to avoid delay of this component. This was made possible by the fact that the methodology for the PAF had essentially been identified, rather than depending on the outcome of WP2, 3 and 4 as originally envisaged. The literature review was therefore no longer a crucial input for the PAF component, but could be given lower priority and become a parallel activity contributing to a background document. All documentation related to the adopted approach, emanating especially from the M&EED cooperation would be made available to the project partners and be incorporated in the detailed guidelines for carrying out the case studies.

The present plan is to complete the draft literature review before the end of the third project period (May to October 2006) so that it can be available as a background document, describing the broader context of the project as regards impact assessment of energy interventions.

3.1.3 WP3 Catalogue of energy interventions

The core work of WP3 was carried out by the six African partner centres, on the basis of Terms of Reference formulated by ECN. The six national catalogues were collated and analysed by ECN and the resulting document has been reviewed by Risoe. A total of 42 energy interventions have been described by the six Centres. These are categorised according to type of energy, size, main objective, etc.

The catalogue synthesis report was completed in draft by the end of December 2005 and circulated among project partners. The completed synthesis report is expected early in the next (third) reporting period and will include details of all the catalogued interventions. A draft version (February 2006) of the main report not including the intervention details, is included in Annex 7.

3.1.4 WP4 Consultations

The consultation phase, WP4, is carried out primarily by the six African partner centres, with participation in national workshops by Risoe and ECN staff, and synthesis of stakeholder views by the Risoe team. The main contribution to this component during the elapsed period has been the synthesis of stakeholder views expressed at the First National Workshops and in bilateral discussions, collected in the report “Policy Makers' Needs, Synthesis Report”⁴.

Stakeholders displayed an overall enthusiasm for a project such as DEA that seeks to measure the causal links between energy and socio-economic development. Likewise, there is a recognised need for an appropriate tool that can accurately and authoritatively link energy to poverty alleviation. The overall view is that energy projects need to be linked to other sectors and that DEA could help facilitate the process of looking at energy projects in a multisectoral manner through focussed groups such as multisectoral committees by working closely with partner institutions within a multidisciplinary framework.

There is general feeling that “policy matters” but participants feel that much depends on the quality of the information conveyed to policy makers and the manner in which this is done. Policy makers have the capacity to change the current *status quo* but we need to find ways of reaching them so that they can take on board key emerging findings emanating from the field. Policy maker and stakeholder involvement is seen to be very important, and a larger and broader involvement of policy makers should be encouraged in future DEA workshops.

⁴ Mackenzie, G.A. and Denton, F., 2005 “Policy Makers' Needs, Synthesis Report”, DEA Report number: Risoe 4.1, December 2005.

3.1.5 WP5 Preliminary Assessment Framework (PAF)

The assessment framework is the primary responsibility of the Risø team, with regular involvement of both ECN and the African partner centres through workshops and electronic communication.

Work on developing the PAF was originally planned to be initiated immediately after the results from WP2, WP3 and WP4 had been submitted and synthesised. Thus the literature, catalogue and consultations would inform the development of the PAF (see Figure 3.1) so that it responded both to the needs (stakeholder requirements), realities (actual energy interventions in the target countries) and “state of the art” (available methodologies).

Reality turned out differently. First of all, the catalogue of energy interventions which would establish the scope of projects that could be considered for assessment, by agreement between the partners at the outset, focused on small- to medium-scale interventions. This focus was motivated by the view that information on development impacts related to the interventions would be easier to detect and document at the project or local level, rather than at macro level where many different factors are likely to contribute. This essentially limits the range of relevant assessment methodologies.

At the same time, the project team became increasingly aware of the approach followed by the M&EED Group already referred to, combined with the generally expressed stakeholder need for an operational tool, pointed to adopting the M&EED 4-level causal link approach, and the associated tools. Additional tools or analysis methods would be brought in if required, but essentially the M&EED approach would be followed.

The adoption of the M&EED approach as the core methodology has two main advantages:

1. The DEA project is able to build on a significant body of work built up in the past two to three years by relevant partners who represent a core of institutions active in the field of monitoring and evaluation for energy and development projects. The additional support provided by joining this team strengthens the methodological basis of M&EED and links it to the mainstream of efforts in the field.
2. The DEA cases studies become examples of using the M&EED approach in practice and through this the DEA project has the opportunity to influence the M&EED methodology through its concrete experience.

With regard to progress against initial objectives, it has to be concluded that the project remains on track. The PAF methodology has been decided, guidance material prepared and the partners informed, so that the case studies (WP6) can essentially be carried out without significant delay. What has been achieved in linking up with the M&EED group exceeds the initial expectations in the DEA project, in that the project is now sharing an assessment methodology with relevant players and institutions in the field and through this contributing visibly to a methodological development and testing activity wider than the DEA project itself.

A particular consequence of this choice of methodological approach is that it is highly case specific. The “templates”, i.e. tables and descriptive text which describe the structure and potential causal links are, in principle, different for each kind of intervention. One consequence of joining the M&EED group was that the other group members offered to assist in preparation of templates for the specific cases. However this meant that it was necessary to have an earlier indication of which kinds of interventions would be investigated in the DEA project case studies. Thus the setting of criteria and case study selection was brought forward by several months, as described in the next section.

3.1.6 WP6 Case Studies

The case studies are scheduled to be carried out by the six African partner centres, beginning in the middle of 2006 immediately following the Second Project Workshop in June.

The steps carried out in the present period have comprised the following:

- development and agreement on criteria for case study selection
- selection of case studies for the six countries
- preparation of causal link diagrams and preliminary tables prior to the second project workshop

In the original project plan, it was envisaged that the agreement on selection criteria and actual selection of case studies would take place at the second project workshop, scheduled for April 2006. However, due to unforeseen developments in the methodological approach (in particular the adoption of the M&EED approach) it became clear that the case studies had to be selected earlier. This would allow the work to progress on the case-specific assessment tools. A set of selection criteria, comprising 6 local and 2 global considerations, was worked out in collaboration with all project partners and described in a note included in Annex 7. The agreed criteria are, in brief:

Local Criteria – seen from the point of view of the country team and the country

- L1. National preference/relevance
- L2. Development impact
- L3. Availability of development impact data
- L4. Availability of baseline
- L5. Achievability
- L6. Synergy with other development projects

Global Criteria – seen from the point of view of the DEA project as a whole – contributing to the quality and usefulness of the Assessment Framework

- G1. Representative: The set of interventions in the Case Studies should span a number of different types of interventions or energy technologies in order to “test” or develop the AF.
- G2. Illustrative value: The intervention may have high value in illustrating energy-development connections to other countries, i.e. intervention types which are common in other African countries.

The criteria were discussed among the project partners through email communication and agreement was finalised at an extraordinary project meeting in Paris in January 2006. Shortly thereafter, having applied the criteria, the partners submitted the following set of projects (Table for the case studies, chosen from the intervention catalogue:

Table 3.1 Initial set of projects for case studies

country	case study topic
Botswana	Rural electrification collective scheme
Ghana	LPG refilling station
Mali	Women Renewable Energies Project
Senegal	PROGEDE – forestry management and improved stoves
Tanzania	small-scale irrigation using solar and wind energy
Zambia	Solar Energy Supply Companies (ESCOs)

The above set of case studies reflects the local criteria applied by the six Centres. With regard to the global criteria, the selection is satisfactory in spanning a range of different energy interventions that are also relevant for African countries in general. Nevertheless, further discussion among partners took place following this preliminary selection, in particular with regard to:

Ghana: After some discussion between Risø and KITE, it was agreed that although the LPG filling station project represents a successful and important energy intervention, based on a private entrepreneur supplying an important need, the case

might provide limited testing power for the methodology. The Ghanaian team therefore proposed focussing on grid-based rural electrification. While this is also the topic chosen by Botswana, it was agreed among all parties that this would be acceptable because of the importance of rural electrification, the interest among stakeholders and the potential benefits to the DEA project of looking at two separate examples .

Mali: The topic chosen represents a relatively wide programme, involving several energy technology interventions at many locations. Significant focussing would be required in order to achieve a meaningful case study within the available resources. The Malian team therefore agreed to consider limiting the scope of the study either to one technology or one location. This would be agreed by the time of the Second Project Workshop.

Senegal: Likewise, the PROGEDE project is very broad in scope. The Senegalese team would therefore consider a focussed approach for the case study.

The final set of projects selected for the case studies is listed in Table 3.2. These would be further elaborated and focused where necessary in the second project workshop in Zambia scheduled for 5-7 June 2006.

Table 3.2 Final set of projects for case studies

country	case study topic
Botswana	Rural electrification collective scheme (grid)
Ghana	Grid-based rural electrification
Mali	Women Renewable Energies Project (focus on one area)
Senegal	PROGEDE (focus on improved stoves)
Tanzania	small-scale irrigation using solar and wind energy
Zambia	Solar Energy Supply Companies (ESCOs)

3.1.7 WP7 Refinement

Refinement of the Assessment Framework is the primary responsibility of the Risoe team, with input from all other partners. This Work Package is scheduled to start after WP6 towards the end of 2006. The work package will incorporate observations

3.1.8 WP8 Dissemination

Dissemination activities are carried out by all partners under the coordination of Risoe. No formal dissemination work was carried out during the period. Informally the six African project partners maintained contact with their respective stakeholders while the EU project group established a broad contact interface with relevant actors and institutions through involvement in the M&EED Group. The website hosted at Risoe was maintained, and though there has been discussion of transferring hosting or a mirror site to one or more of the African partner centres, this has not been judged necessary or practically possible so far.

Awareness of the DEA project was therefore maintained throughout the period. Targeted dissemination activity, for example through brochures and publications will be given higher priority in the next period after completion of the case studies.

3.1.9 WP9 Common Dissemination

Common dissemination activities are the primary responsibility of Risoe, with input from other partners as required. The only activity carried out in this area so far has been attendance at the COOPENER meeting in Brussels in December 2005 at which 2 Risoe staff and two African partners (Kwaku Wiafe from KITE, Ghana and Gisela Ngoo from TaTEDO, Tanzania) attended. The meeting was extremely useful in bringing together participants from the other COOPENER projects and it is hoped that it will lead to increased contact between projects, common activities and exploitation of synergies. It was clear from a number of parties however, that common workshops in target countries could be difficult to arrange because of the set work programmes and schedules of the individual projects.

3.2 Deviations from the project work plan

3.2.1 WP1 Project Management

The major delays encountered in the project during the past period have concerned the deliverables from the EU project team: the Literature Review, The Catalogue Synthesis Report and the Preliminary Assessment Framework Report. The reasons for delays in these documents have been covered above. In spite of these delays, every effort has been made to avoid accumulation of delay impacting on the work of the six African partners. In particular with regard to initiation of the Case Studies (WP6). This component is seen by project management as a the central part of the project, building on the initial work of WP2, 3, 4 and 5, and providing the material for the refinement and finalisation of the methodology in WP7. Since at least one year is judged to be necessary for the latter, delays in starting WP6 have to be avoided if at all possible.

As described above, this aim has been achieved, and by the Second Project Workshop in 5-7 June the country teams will be able to begin work on their respective case studies, with completion by September 2006.

In view of the necessity to avoid delaying WP6, the present Progress Report was delayed until after the Second Project Workshop, with submission by mid-July.

Key deliverables, such as the WP2 Literature Review Report, the WP3 Catalogue Synthesis Report and the WP5 Preliminary Assessment Framework Report, still awaiting completion will be subject as far as possible to independent review in subsequent periods. Intermediate deliverables from partners are reviewed by the project team and appropriate feedback forwarded to the authors.

3.2.2 WP2 Literature Review

The Literature Review has been significantly delayed due to factors already mentioned and compounded by the decision to focus on preparing the methodological framework in time to avoid delaying the start of the case studies. The latter has been achieved, but the non-completion of the Literature Review remains a major concern. While the choice of methodology is no longer dependent on the review, due to the adoption of the M&EED approach, the review report will still be an important output of the project, describing the state of the art of impact assessment of small- to medium-scale energy interventions. Every effort will be made to complete the literature review report within the next project period.

3.2.3 WP3 Catalogue of energy interventions

WP3 was completed as planned on the part of the six African partners, although, as mentioned in the previous progress report, the number of interventions covered was less than originally expected, totalling 42 for the six countries. The absolute number is however less important than the strength of the catalogue in identifying potential interventions for the case studies, WP6. As described elsewhere this has been achieved satisfactorily. The catalogue synthesis report (draft in Annex 7) was completed at the beginning of the present period and has been reviewed by partners and revised will be finalised at the beginning of the third project period. The delay in the synthesis report has not affected the timing of the rest of the project.

3.2.4 WP4 Consultations

The major output feeding into WP5, the summary of stakeholder requirements (deliverable 4.2.4) was completed in December 2005. No deviations from the project work plan are envisaged with respect to WP4. The six partner centres are maintaining contact with

stakeholders and will reconvene formally in the second set of national workshops to be held after case study completion, in September-October 2006.

3.2.5 WP5 Preliminary Assessment Framework

According to the original project plan, the PAF would be worked out between October 2005 and March 2006, and described in a report (deliverables 5.1 and 5.2). The six country partners would then use this as the basis for the case studies. In practice, there has been some deviation from this, but the time schedule is not affected significantly.

Following the decision to follow the M&EED approach, documentation from that activity was circulated to project partners and relevant background literature was placed on the project intranet.

Guidance to the partners on the methodology has so far taken the form of targeted documents for the preparation of causal link diagrams and the associated tables with indicators etc. This procedure will be written in a manual or set of guidelines, constituting the PAF Report, and revised following the case studies and stakeholder discussion. The draft manual will be written in parallel with the case studies from July to September 2006 for presentation and discussion at the next round of national stakeholder workshops.

The deviation from the original project conception is that the description of assessment procedure will be based on the actual steps carried out and tested by the participants, following the M&EED procedure, rather than a predefined "instruction book".

3.2.6 WP6 Case Studies

No significant deviation is envisaged. All case studies are scheduled to be completed by September 2006.

3.2.7 WP7 Refinement

No deviation envisaged. Refinement of the assessment framework will commence after completion of the case studies and the second set of national workshops.

3.2.8 WP8 Dissemination

Early plans for dissemination of the assessment methodology have been modified. The major focus in the reporting period was to prepare the PAF and the case studies. Moreover, it was felt that stakeholder interest is more likely if related to real results and application of the assessment in the national context. The main dissemination material will therefore focus on the results of the case studies, illustrating how the assessment can be used in practice.





3.2.9 WP9 Common Dissemination

No deviation envisaged.

3.3 Update of time schedule

months	1 May	2 Jun	3 Jul	4 Aug	5 Sep	6 Oct	7 Nov	8 Dec	9 Jan	10 Feb	11 Mar	12 Apr	13 May	14 Jun	15 Jul	16 Aug	17 Sep	18 Oct	19 Nov	20 Dec	21 Jan	22 Feb	23 Mar	24 Apr	25 May	26 Jun	27 Jul	28 Aug	29 Sep	30 Oct	
package 1: Project management																															
1.1: Inception phase	■	■																													
1.2-1.4 Main project: project monitoring, reporting, etc.			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1.5 Final reporting, etc																											■	■	■	■	■
Reports (progress=P, interim=I, final=F)							P								P				P	I							P			F	
Work package 2: Literature survey						▨	▨	▨	▨	▨	▨	▨	1	▨	▨	▨	▨	▨													
Work package 3: Catalogue												2	▨	▨	▨	▨	▨	▨													
Work package 4: Consultation with national stakeholders																															
4.1, 4.2			■	■	■	▨	▨	▨																							
4.2 (continued)						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
4.3																															
4.3 (continued)																															
Work package 5: Preliminary Assessment Framework						▨	▨	▨	▨	▨	▨	▨	3	▨	▨	▨	▨	▨													
Work package 6: Case Studies																															
Work package 7: Analyse and Refine AF																															
Work package 8: Dissemination																															
Work package 9: Common dissemination	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Project meetings (WP1)		■							4	▨			5											6							
National Workshops (WP4, WP6, WP8)					■	▨												7	▨												
Regional African Workshops (WP8)																															

Notes:

- original 
- extension (added) 
- delayed (1st Prog. Rep.) 
- delayed (2nd Prog. rep.) 

- 1 WP2 Literature: completion delayed to end September 2006.
2. WP3 Catalogue: country input completed Sept/October – synthesis report draft December 2005, completed July 2006.
3. WP5 PAF being defined throughout first half of 2006, presented at 2nd project workshop, manual to be written June-Sept. 06.
4. Extraordinary project partners' meeting , Paris 12 January 2006
5. 2nd Project Workshop, Zambia 5-7 June 2006
6. 3rd Project Workshop, Mali, Feb 2007 (tentative)
7. 2nd National Workshops – September and October 2005

3.4 List of deliverables

An update of the deliverables is included in Annex 1. A summary of the major elements of delay is presented below.

3.4.1 WP1 Project Management

The Quality Control procedure which involves reviewing of outputs (deliverables) has not been fully implemented. It is planned to ensure review of key deliverables such as the Literature Review and Catalogue Synthesis Reports. No major changes in WP1 deliverables are expected.

3.4.2 WP2 Literature Review

As described in 3.1.2 above, the Literature Review has not been completed by the end of the second reporting period. This was due mainly to the changing perception of the project informed by the country stakeholder consultations and increasing awareness of the synergies to be gained by linkage to the M&EED programme. With this new perception, the Literature Review was no longer crucial for the choice of methodology, and preparation for the case study was therefore given higher priority in order to avoid significant delay in this component.

The Literature Review report is expected to be completed by the end of the third 6-month project period in October 2006.

3.4.3 WP3 Catalogue of Energy Interventions

The analysis of country input, categorisation of interventions and reporting (component 3.3) was completed by mid-December 2005. The synthesis report has been circulated among project partners and comments received. Completion of the final report has been delayed because of concentration on preparations for the second project workshop and the case studies. The report is expected to be finalised by the end of July 2006.

3.4.4 WP4 Consultations

All national workshops were carried out in the period between 1 September and 12 October. Some country inputs (sub-components of 4.2) were delayed, but the synthesis of stakeholder requirements could be prepared on the basis of available input. Most of the remaining country input was delivered by the end of December 2005, with the exception of Zambia whose team experienced delays in some components. The synthesis report on stakeholder requirements (deliverable 4.2.4) was completed in December 2005. It is under review by ECN and will be finalised early in the third reporting period.

3.4.5 WP5 Preliminary Assessment Framework

Work on the core element of the project, the Preliminary Assessment Framework, was originally planned to start in October following completion of WP2, 3 and 4. Following the discussion presented in 3.1.1 and 3.1.5 above, a decision was made to link the methodological approach on that of the M&EED group. The specific deliverables planned under WP5 must therefore be revised somewhat to take this into account. For example, deliverable 5.1.1 is no longer directly applicable since linkages and indicators are specific to interventions. Each type of energy intervention has own potential linkages, to be described in "assessment templates" being developed in collaboration with M&EED group. The description of the Preliminary Assessment Framework, essentially all of WP5, will be included in the PAF manual report to be completed in parallel with the case studies, WP6.

3.4.6 WP6 Case Studies

The Case Studies were originally scheduled to be carried out following the completion of the Preliminary Assessment Framework in WP5. With the adoption of the “M&EED Approach” the methodology was determined and the six partner centres introduced to the procedure during the second reporting period. In particular, as noted above in 3.1.6, the choice of interventions for the case studies was brought forward, due to the case specificity of the methodology. The first delivery for the Work Package, 6.1 “common structure (TOR) for the case studies” was thus prepared during the second reporting period and made ready before the Second Project Workshop scheduled for 5-7 June in Zambia. The practical arrangements for the case studies and their actual execution, deliverables 6.2 and 6.3, are scheduled to follow immediately after the workshop, with completion by September 2006. No significant delay in completion of WP6, beyond a month or so, is foreseen.

3.4.7 WP7 Refinement

This Work Package will commence following completion of WP6. No significant delay in deliverables is anticipated at this stage.

3.4.8 WP8 Dissemination

Dissemination material (8.2) based on the results of work packages 2, 3 and 4 is delayed awaiting the completion of the work packages. Likewise the promotion of the project using this and other material is delayed. Nevertheless, through the website and contact to stakeholders at the first National Workshops, awareness of the project has been maintained. Preparation of material 8.2 and targeted dissemination is expected to take place in parallel with WP5 and WP6 so that it can include concrete information on the actual case studies being carried out in the countries. This is likely to attract more interest among the country stakeholders than the somewhat abstract description of the assessment framework. Appropriate dissemination material will be completed for distribution at the Second National Workshops, scheduled for October 2006.

3.4.9 WP9 Common Dissemination

Not applicable within the reporting period.

4 Progress regarding performance indicators

Details are presented in the Performance Indicators table in Annex 6. The major issues are noted below.

WP1 Project management: The challenges facing project management and how these were dealt with are discussed in section 3.1.1 above. As stated there, the major challenge has been realigning the project to match the new realities associated with linking up to the M&EED group. These details are reflected mainly in the indicators associated with the other work packages. With regard to WP1, a most important indicator has been the high level of communication which has been maintained with all partners throughout the first two project periods. There have been delays in the WP1 outputs (progress reports) but this has been due to a focus on the content of the project, ensuring that the case studies carried out by the six African partner centres did not suffer undue delay.

WP2 Literature Review: There were significant delays associated with the completion of the literature review, as discussed in section 3.1.2 and 3.2.2. These delays were initially due to personnel changes within the Risø team (in the first period) and subsequently to the changed project focus. The non-completion of the literature review has not, however, delayed significantly the choice of methodology, the preparation of the partners and the start of the case studies. The Literature Review remains an important part of the DEA project, though as a background document rather than a determinant of the methodological approach.

WP3: Catalogue of Energy Interventions: As noted in the 1st progress Report, the number of interventions reported by each country came below expectation in most cases. The performance indicates that project management must pay greater attention to careful specification of the extent of the tasks, the expectations and the requirements for subsequent tasks, as well as taking realistic account of the resources available. This will be particularly important in the execution of the Case Studies (WP6) where, because of the limited resources available for each country team, expectations are now for only one intervention to be assessed.

WP4 Consultation: The major effort in this work package so far took place in the period leading up to and including the 1st National Workshops in September and October 2006. All countries succeeded in contacting a broad selection of stakeholders, explaining the purpose and context of the DEA project, and documenting stakeholder views. Although there was some delay in receiving the detailed deliverables, this consultation process is judged to be adequate for the immediate purposes of the project. Some informal contact was maintained with stakeholders during the second period. The next main period of stakeholder contact, however, is scheduled around the 2nd National Workshops in October 2007. At this stage results from the case studies will be available and country teams will be able to describe in more tangible terms the content of the project. Consultation will be vital then, and targeted towards identifying how impact assessment information can interplay with policy.

WP5 Preliminary Assessment Framework: The formulation of the PAF took a different turn to what was originally envisaged, as described elsewhere in this report. The detailed sub-components of 5.1 which systematically describe the development of the PAF were not carried out in this sequence. The Assessment Framework has however been adopted, following the M&EED approach, and the method was successfully prepared for dissemination to the country teams at the second project workshop. What remains according to the performance indicator plan is to complete the formal documentation of the steps leading up to the PAF, 5.1.1 to 5.1.3. This will be written up as the Guidelines document in parallel with the case studies, WP6. Sub-

component 5.1.4, relating to how the assessment can feed back into policy and project design process, will be more relevant in conjunction with the stakeholder consultations associated with the 2nd National Workshops in October 2006.

WP6 Case Studies: Not immediately applicable in the present reporting period. However, for reasons described elsewhere, sub-components of WP6 were started earlier so that the criteria for case study selection and the actual selection of projects had been carried out by the middle of the reporting period. The target for the number of case studies to be carried out was grossly overestimated in the original plan. Given the resources available for the case studies (about 1.5 person months per centre) and the detail of the assessment procedure, requiring fieldwork, it is unrealistic to expect more than one case study per country. The span of project types however should ensure a broad test of the methodology.

WP7 Refinement: Not applicable in present reporting period.

WP8 Dissemination: Apart from the summary slides and the updating of the project website, no new dissemination material has been prepared. This has partly been due to lack of time during the reporting period when the main effort was put into developing the methodology, selecting the case studies and preparing for the 2nd project workshop. Dissemination material will also be more useful and informative when based on real assessment results. Therefore an effort will be made to prepare suitable material following the completion of the case studies.

Regarding the project website, this remains hosted at Risø. There appears to be no immediate advantage in transferring hosting to one of the African centres, and project management has prioritised centre resources being used for case study preparation. The possible transfer of web hosting, or mirror siting, will be discussed at a later stage in the project.

WP9 Common Dissemination: Not applicable in present reporting period.

Annex 1: Overview of the current status of deliverables

NB: Quality control procedure, column 7, remains to be implemented. This will be carried out for key deliverables in the next reporting periods.

Changes with respect to First Progress Report shown in italics.

WP	Task	Deliverable (responsible)	Type Of Deliverable	Due date (month)	Actual date delivered	Quality Assurance check (name and signature)
WP1	1.1	Summary slides (Risoe)	summary slides	1 (May 2005)	22.06.05	N/A
WP1	1.1	Kick-off (inception) report (Risoe)	Technical Report	2 (June 2005)	15.07.05	ECN:
WP1	1.6.1	Kick-Off Meeting (Risoe)	Project Meeting Report included in Inception Report	2 (June 2005)	31.05.05	N/A
WP3	3.1	TOR for Catalogue of Energy Interventions (ECN)	Technical Report / Intermediate Product	3 (July 2005)	30.06.05	Risoe:
WP8	8.1.1	establish website at Risoe (Risoe)	web site	3 (July 2005)	01.06.05	ECN:
WP8	8.2	Popular presentation material (Risoe)	dissemination material (updated regularly) Information sheet (June 2005) Material based on WP2, WP3 and WP4 Assessment Framework approach	3 (July 2005) 9 (January 2006) 12 (April 2006)	Information sheet 28.06.05 delayed delayed	ECN: ECN:

WP	Task	Deliverable (responsible)	Type Of Deliverable	Due date (month)	Actual date delivered		Quality Assurance check (name and signature)
WP4	4.1	Material for national consultation meetings and workshops (Centres)	technical report / intermediate product Country Background Paper: Botswana Ghana Mali Senegal Tanzania Zambia	4 (August 2005)	06.09.05 01.09.05 14.12.05 30.11.05 12.09.05 09.09.05		Risoe: Risoe: Risoe: Risoe: Risoe: Risoe:
WP4	4.2	Consultation meetings (Bilateral and informal meetings with key stakeholders, in particular the multi-sector energy committees.) (Centres)	Bilateral meetings Botswana Ghana Mali Senegal Tanzania Zambia	5 (October 2005)	17.10.05 07.10.05 14.12.05 15.12.05 13.10.05 05.06.06		Risoe: Risoe: Risoe: Risoe: Risoe: Risoe:
WP4	4.2.2	National Workshops # 1 (Centres)	Workshops Botswana Ghana Mali Senegal Tanzania Zambia	4 (August 2005)	Workshop	Proceedings 12.09.05 22.09.05 14.12.05 28.11.05 13.10.05 31.10.05	Risoe: Risoe: Risoe: Risoe: Risoe: Risoe:
WP4	4.2.3	Country Reports - Description of development impacts (Centres)	technical report / intermediate product Botswana Ghana Mali Senegal Tanzania Zambia	4 (August 2005)	14.11.05 26.09.05 14.12.05 15.12.05 17.11.05 05.06.06		Risoe: Risoe: Risoe: Risoe: Risoe: Risoe:
WP3	3.2	Documentation of energy interventions in each country (Centres)	Technical Report / Intermediate Product Botswana Ghana Mali Senegal Tanzania Zambia	5 (September 2005)	23.10.05 05.10.05 23.10.05 02.11.05 01.11.05 31.10.05		ECN: ECN: ECN: ECN: ECN: ECN:

WP	Task	Deliverable (responsible)	Type Of Deliverable	Due date (month)	Actual date delivered	Quality Assurance check (name and signature)
WP4	4.2.1	Country Reports - Policy makers' comments and requirements (Centres)	technical report / intermediate product Botswana Ghana Mali Senegal Tanzania Zambia	5 (September 2005)	12.09.05 26.09.05 14.12.05 15.12.05 13.10.05 05.06.06	Risoe: Risoe: Risoe: Risoe: Risoe: Risoe:
WP4	4.2.4	Synthesis report on policy makers' needs for Assessment Framework (Risoe)	technical report / intermediate product	5 (September 2005)	<i>draft complete 15.12.05</i>	ECN:
WP2	2.2	Literature Review report (Risoe)	Technical Report / Dissemination Product	6 (October 2005)	<i>delayed, expected October 2006</i>	ECN:
WP3	3.3	Energy project catalogue – indicating the broad spread of energy interventions (ECN)	Technical Report / Dissemination Product	6 (October 2005)	<i>1st draft complete Feb 2006 final report July 2006</i>	Risoe:
WP5	5.1.1	Classification of main linkages between energy and poverty (Risoe)	technical report chapter / intermediate product	6 (October 2005)	delayed awaiting completion of WP2 and linkages with M&EED <i>No longer directly applicable since linkages and indicators are specific to interventions. Each type of energy intervention has own potential linkages, to be described in "assessment templates" being developed in collaboration with M&EED group.</i>	
WP8	8.3	Promote project approach to stakeholders: through consultation process (WP4) (Centres)	project activity/consultations dissemination report on 1 st National Workshops and project status to be prepared December 2005 distribution of material 8.2 to stakeholders	6 (October 2005) 9 (January 2006) 10 (February 2006)	done at 1st national workshops Sept-Oct 2005 <i>delayed – prepare for 2nd National Workshops Sept.- Oct 2006, include info. on case studies</i>	

WP	Task	Deliverable (responsible)	Type Of Deliverable	Due date (month)	Actual date delivered	Quality Assurance check (name and signature)
WP8	8.8	Establish contact and liaise with EU Member State programmes in the energy sector in the target countries and subsequently in other countries of the region (through 8.6 and 8.7). (Risoe)	dissemination activities	6 (October 2005)	under way in connection with national workshops and consultation process	
WP 1	1.3.1	Progress Report #1 (Risoe)	Technical/Management Report	7 (November 2005)	submitted 15 December 2006	
WP5	5.1.2	Selection and design of relevant assessment procedure(s) (Risoe)	technical report chapter / intermediate product	7 (November 2005)	<i>Done – assessment procedure based on 4-level M&EED approach</i> <i>Documentation to be included in PAF manual report August/September 2006.</i>	
WP5	5.1.3	Identification and development of indicators for evaluation (Risoe)	technical report chapter / intermediate product	8 (December 2005)	<i>No longer directly applicable since indicators are specific to interventions</i> <i>Discussion to be included in PAF manual report August/September 2006</i>	
WP5	5.1	Preliminary Assessment Framework (PAF) (Risoe)	technical report / intermediate product	9 (January 2006)	<i>contribution to PAF draft report August/Sept 2006</i>	
WP5	5.1.4	Outline of how the evaluation can feed back into the design and implementation of future energy interventions (Risoe)	technical report chapter / intermediate product	9 (January 2006)	<i>delayed</i> <i>will follow 2nd national workshops</i>	
WP5	5.2	Draft PAF report for comments (Risoe)	draft technical report / intermediate product	10 (February 2006)	<i>PAF manual draft report expected September 2006</i>	
WP 1	1.3.2	Progress Report # 2 (Risoe)	Technical/Management Report	12 (April 2006)	<i>submitted 13 July 2006</i>	
WP 1	1.6.2	Mid-Term Meeting (Risoe) (develop case studies TOR)	Project Meeting	12 (April 2006)	<i>5-7 June, Zambia</i>	
WP4	4.3	Country Reports - Summaries of progress to inform policy makers throughout process (Risoe)	dissemination product	12 (April 2006)	<i>to be prepared for circulation at 2nd national workshops Sept-Oct 2006</i>	
WP5	5.3	Finalise PAF on basis of comments (Risoe)	final technical report / intermediate product	12 (April 2006)	<i>After 2nd National Workshops November 2006</i>	

WP	Task	Deliverable (responsible)	Type Of Deliverable	Due date (month)	Actual date delivered	Quality Assurance check (name and signature)
WP6	6.1	Common structure (TOR) for the case studies (Risoe)	technical report / intermediate product	12 (April 2006)	material for 2nd project workshop 5-7 June 2006	
WP6	6.2	Practical arrangements for case studies (Centres)	specification/agreements	13 (May 2006)	5-7 June 2006	
WP6	6.3	Conduct case studies, fieldwork, data analysis, etc. (Centres)	project activity	16 (August 2006)	scheduled to start immediately after workshop 5-7 June 2006	
WP6	6.4	Report Case Studies (Centres)	technical report / intermediate product	17 (September 2006)	Sept. 2006	
WP6	6.5	National Workshops # 2 (Centres)	workshop	17 (September 2006)	Sept-Oct 2006	
WP 1	1.3.3	Progress Report # 3 (Risoe)	Technical/Management Report	18 (October 2006)	November 2006	
WP6	6.6	Case Study Synthesis Report (Risoe)	Technical report	19 (November 2006)	December 2006	
WP 1	1.4	Interim Report (Risoe)	Interim Technical Implementation Report Interim Financial Statement	20 (December 2006)	December 2006	
WP7	7.1	Adjust/refine methodological approach on basis of case studies. (Risoe)	project activity project meeting (see 1.6.3)	21 (January 2007)		
WP7	7.2	Draft report on methodological approach (Risoe)	technical report	22 (February 2007)		
WP1	1.3.4	Progress Report # 4 (Risoe)	Technical/Management Report	24 (April 2007)		
WP7	7.3	Final report and manual on methodological approach (Risoe)	technical report dissemination material	24 (April 2007)		
WP8	8.4	Presentation material on project results after completion of the Assessment Framework (Risoe)	dissemination material	24 (April 2007)		
WP8	8.5	National Workshops # 3 (Centres)	workshop	24 (April 2007)		

WP	Task	Deliverable (responsible)	Type Of Deliverable	Due date (month)	Actual date delivered	Quality Assurance check (name and signature)
			workshop proceedings			
WP8	8.7	Disseminate and promote methodology, results, etc. beyond the project completion date. (Risoë)	dissemination activities	25 (May 2007)		
WP1	1.6.3	Final Project Meeting (Risoë) - tentatively to be held in Mali	Project Meeting	27 (July 2007) <i>brought forward to month 10 (February 2007)</i>		
WP8	8.6	Regional (African) Workshop. (Risoë) <i>tentatively to be held in Arusha, Tanzania</i>	workshop workshop proceedings	27 (July 2007) <i>expected August-September 2007 dependent on other arrangements.</i>		
WP1	1.5	Final Report (Risoë)	Final Technical Implementation Report Final Financial Statement	30 (October 2007)		

Annex 2: Overview table on the state of advancement of the budget expenditure per partner and per work package (*Status at 30 April 2006*)

Work package	Actual/Planned Achievement	Total Partners	Risoe	ECN	EECG	KITE	MFC	END	TaTEDO	CEEZ
			(Denmark)	(Netherlands)	(Botswana)	(Ghana)	(Mali)	(Senegal)	(Tanzania)	(Zambia)
<i>WP 1: Management</i>	Actual	40.0%	25.5%	15.2%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
	Planned	40.0%	25.5%	4.8%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
<i>WP 2: Literature review</i>	Actual	38.3%	38.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Planned	100.0%	38.3%	15.4%	7.7%	7.7%	7.7%	7.7%	7.7%	7.7%
<i>WP 3: Catalogue of energy interventions</i>	Actual	100.0%	10.8%	24.3%	10.8%	10.8%	10.8%	10.8%	10.8%	10.8%
	Planned	100.0%	10.8%	24.3%	10.8%	10.8%	10.8%	10.8%	10.8%	10.8%
<i>WP 4: Consultations</i>	Actual	80.0%	8.3%	5.6%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%
	Planned	80.0%	8.3%	5.6%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%
<i>WP 5: Assessment Framework</i>	Actual	49.9%	31.4%	7.3%	1.9%	1.9%	1.9%	1.9%	1.9%	1.9%
	Planned	100.0%	62.8%	14.9%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%
<i>WP 6: Case Studies</i>	Actual	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Planned	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<i>WP 7: Analyse case studies, refine methodology and report results</i>	Actual	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Planned	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<i>WP 8: Dissemination</i>	Actual	6.3%	6.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Planned	17.7%	11.4%	0.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
<i>WP 9: Common Dissemination</i>	Actual	9.7%	9.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Planned	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Project	Actual	40.4%	12.6%	6.2%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%
	Planned	51.1%	16.8%	8.0%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%

**Annex 3: Up-date of the publishable 1-2 page summary
to be included in the publicly accessible project
database of the Commission**

Project Fact Sheet

Created/updated: July 2006

Development and Energy in Africa (DEA)

Programme area: COOPENER, (Community cooperation with developing countries)
Target countries: Botswana, Ghana, Mali, Senegal, Tanzania, Zambia
Status: ongoing

Coordinator: Gordon Mackenzie
 Energy for Development, Risø National Laboratory, Denmark
 E-mail: gordon.mackenzie@risoe.dk
 Tel: +45 4677 5171

Partners: ECN, Netherlands
 EECG, Botswana
 KITE, Ghana
 Mali Folkecenter, Mali
 ENDA, Senegal
 TaTEDO, Tanzania
 CEEEZ, Zambia

Website: <http://www.deafrica.net>

Objective: Development and application of a method to assess the development impacts of energy interventions.

Benefits: Information obtained will lead to enhance development impacts of future energy projects.

Keywords: development, impact, assessment

Duration: 05/2005 – 10/2007

Budget: € 0.651 M (EU contribution: 50%)

Contract number: EIE/04/201/S07.40687

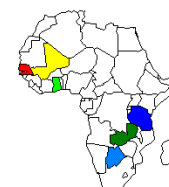
Short description

Access to energy is an essential input in the process of development and poverty alleviation. Better understanding of development-poverty-energy linkages, and embodiment of this knowledge in an operational tool, can lead to energy interventions which have higher development and poverty alleviation outcomes. DEA is developing an Assessment Framework to identify and quantify the outcomes and impacts of energy projects in collaboration with centres in six Sub-Saharan Africa countries (Botswana, Ghana, Mali, Senegal, Tanzania and Zambia). The Project is aimed at national energy- and development-policy makers, initially in the six participating African countries, but with a view to wider application in Sub-Saharan Africa.

The DEA project is working closely with the International Monitoring and Evaluation for Energy and Development (M&EED) Group established by GVEP, EUEI, UNEP, DFID, GTZ and a number of other institutions. The assessment framework employs a 4-level causal chain approach to structure the energy intervention in terms of inputs, outputs, outcomes and impacts. Indicators which are highly case specific are selected at each level and the assessment process identifies appropriate sources and methods to evaluate the indicators as shown in the figure below.

Six case studies are being carried out in the participating countries, comprising:

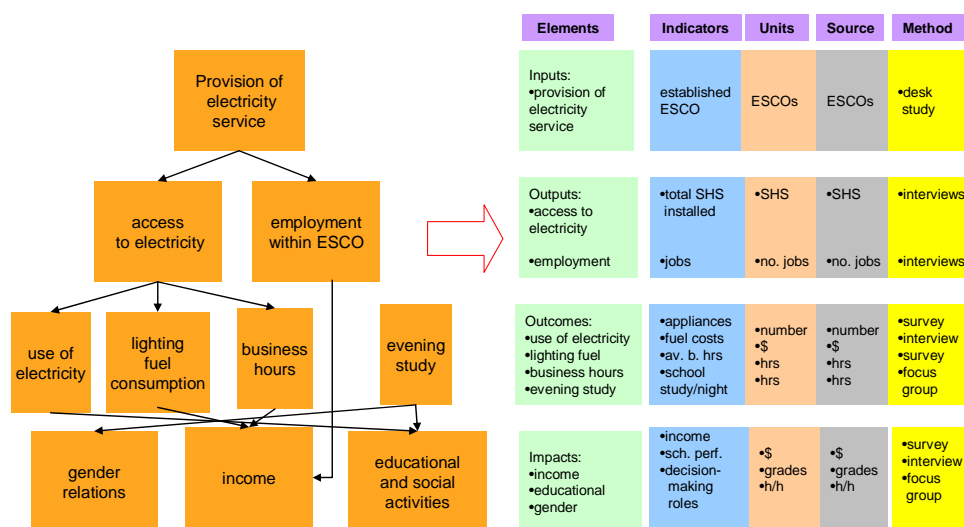
- rural electrification by grid connection (Botswana and Ghana)
- rural electrification by solar ESCOs (Zambia)
- solar water pumping and agriculture (Tanzania)
- renewable energy for women (Mali)
- improved cookstoves and sustainable forestry (Senegal)



DEA
Development and Energy
in Africa



From 4-level diagram to tables – an example



Expected and/or achieved results

- a proven and demonstrated evaluation methodology with real case study examples
- a catalogue of small and medium-sized energy interventions in the six countries
- a survey of literature on impact assessment of energy projects
- a participatory approach to identify impact indicators at the local level
- enhanced capacity in countries for assessing impacts of energy projects
- enhanced awareness among stakeholders of how energy access contributes to development

Lessons learnt

Although the project is not yet completed it gives rise to the following preliminary conclusions:

- Energy projects can have significant developmental impacts, but attribution is difficult because of other simultaneous factors. It is important therefore in assessing any energy intervention to take into account other relevant activities in the project context.
- Improved energy access is an essential input along with other infrastructure developments, such as water supply, roads, schools and health centres.
- Awareness among stakeholders of the importance of energy access can be enhanced by working together across sectors to examine the outcomes and developmental impacts of energy projects.

Annex 4: Up-date of the summary slides

**Development and Energy in Africa
(DEA)**



*Risø National Laboratory
Denmark*



*Energy Research Centre (ECN)
Netherlands*



Centres in 6 African countries:



Botswana



Ghana



Mali



Senegal



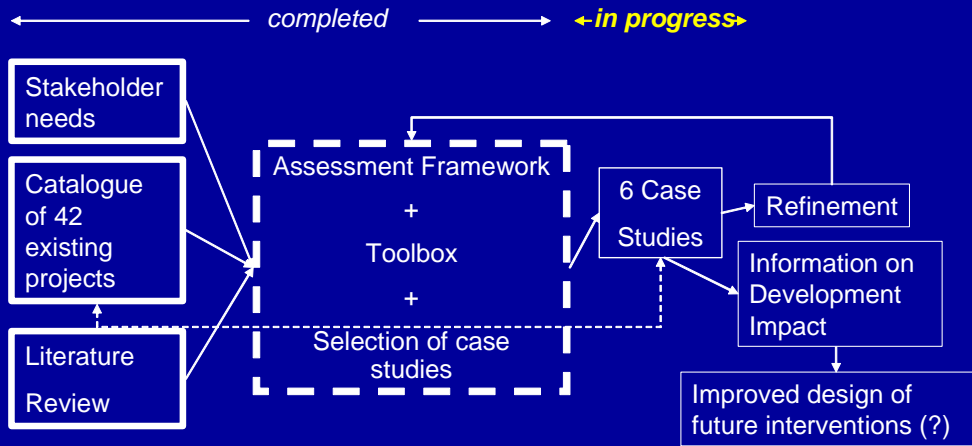
Tanzania



Zambia

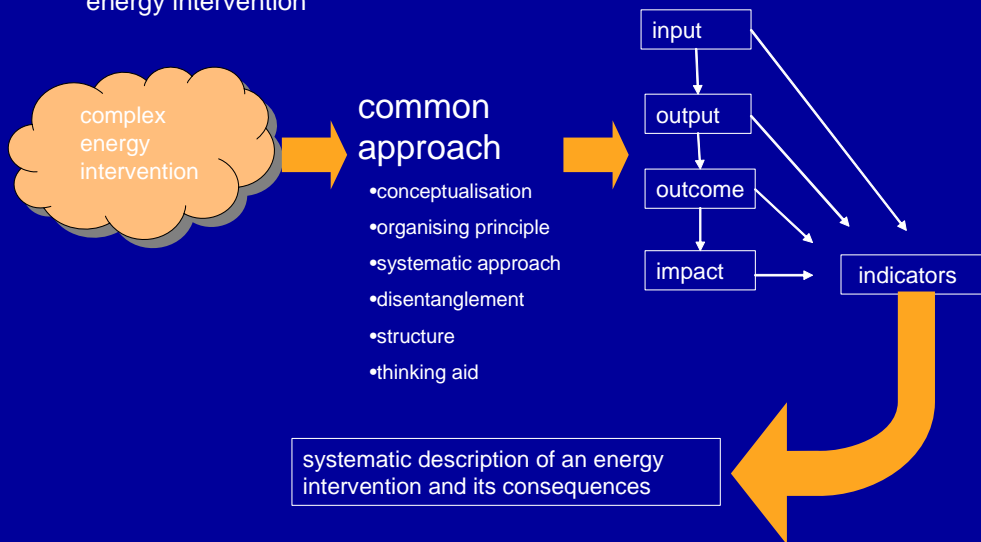
Development and Energy in Africa (DEA)

- Objectives:
 - to establish and apply an Assessment Framework for evaluating development and poverty alleviation impacts of energy interventions
 - to engage in a dialogue with energy policy makers and other stakeholders on the basis of the framework, with a view to incorporating these issues in energy policy.

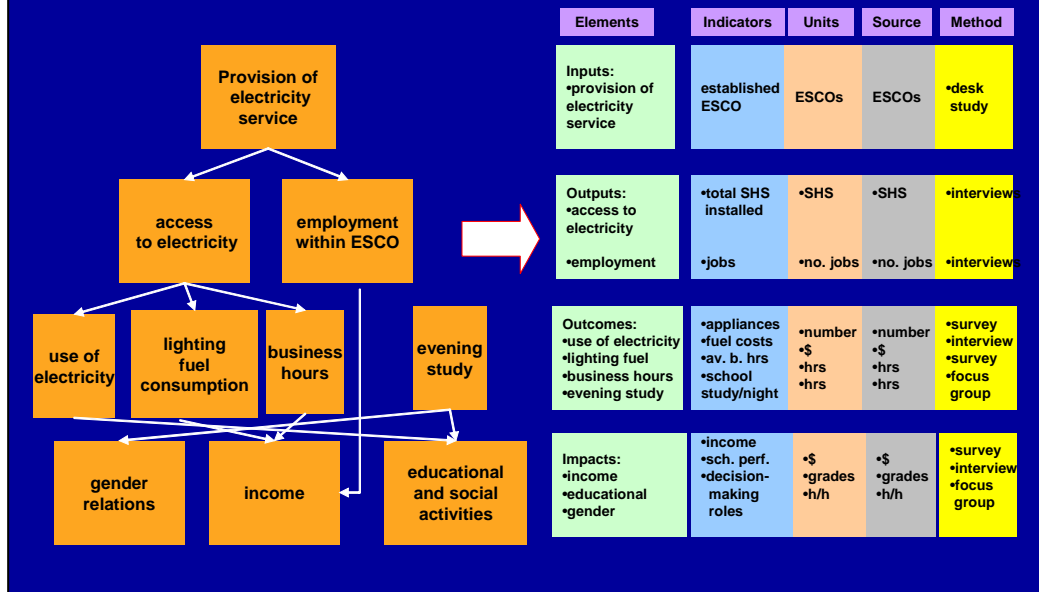


The common approach – The ASSESSMENT FRAMEWORK

A step by step approach to carrying out an impact assessment of a given energy intervention



From 4-level causal diagram to assessment tables: example solar ESCO



Status mid 2006

- Catalogue: completed
- Consultations: 1st Nat. Workshops held Sept. – Oct. 2005
Stakeholder requirements compiled
- Literature Review: work in progress, method decided
- Assessment Framework: 4-level causal chain based on M&EED group
- Case Studies: selected and in progress

website: www.deafrica.net



Main tasks for rest of 2006

- WP5: Assessment Framework
- methodology based on 4-level causal chain developed in collaboration with international M&EED group, adopted by teams at 2nd Project Workshop in Zambia, 5-7 June 2006 – “the Fringilla Process”
- Guideline Document being prepared in parallel with case studies, to be completed October 2006

WP6: Case Studies

- 1 project per country
- test different types of intervention
- July- September 2006
- present results of all 6 at 2nd National Workshops, Sept.-Oct 2006

WP7: Refinement of methodology – follows National Workshops

Challenges

- Empirical identification and attribution of impacts to energy interventions
 - many complex linkages between input and impact
 - lack of baselines
- Carrying out meaningful Case Studies with limited resources
 - 1 case study per country, selected from catalogue
 - cover range of intervention types
 - obtaining information on development impacts
- Presenting case study results to national multi-sector stakeholders
 - generalising the specific results to general development impacts of energy interventions
 - influencing policy makers so that development impacts of energy interventions are taken more into account in project planning and policy
 - Demonstrating and encouraging the use of the Assessment Framework

Annex 5: Performance Indicators

WP	Task	Performance Indicator	Target	Result	Date Due (month x)	Date completed
1	1.1 Inception Phase	Inception Report describes realistic project content, schedule and responsibility	By end of Inception Phase: 1. Detailed work plan formulated 2. Methodological Approach discussed and understood 3. Responsibilities assigned 4. Schedule updated and agreed	1. See Inception Report 2. PR#1: Approach under development – dependent on input from WP2, WP3 and WP4 <i>PR#2: Methodological approach decided and presented to partners</i> 3. done 4. done	end month 2 (June 05)	15.07.05
	1.2 Project Monitoring	Regular status updates received from project partners Constructive advice and criticism received from Advisory Committee Necessary adjustments to project content, approach and/or schedule on advice from Advisory Committee	status updates from partners (at least) every month feedback from Advisory Committee after Progress and Interim Reports, and other relevant milestones	regular contact from partners received <i>no substantive response from Advisory Committee required as yet.</i>	every month as appropriate	<i>N/A – regular contact with all partners is maintained</i>
	1.3 Progress Reports	Progress, Interim and Final Reports provide realistic and honest evaluation of status of each Work Package and project participant.	delivered on schedule	P.R.#1 delivered 16 December 2005 <i>P.R.#2 delivered 13 July 2006</i>	month 7 (Nov. 05) month 12 (May 06) month 18 month 24	15.12.05 <i>13.07.06</i>
	1.4 Interim Reports		delivered on schedule		month 20	
	1.5 Final Report		delivered on schedule		month 30	
	1.6 Project Meetings	participation by all relevant project team members clear documented outcome of meetings, especially decisions on way forward	goals of meetings achieved	1 st Project Meeting (Kick-off meeting) held 30-31.05.05 reported in Inception Report <i>Ad hoc project- team meetings (Risoë and ECN teams) at Risoë held 2-3 November 05 and 1-2 December 05 to discuss mainly WP3 and WP5 related issues. Results communicated to partner centres.</i> <i>Extraord. project meeting (Risoë, ECN and 5 country teams) held in Paris, 11 Jan. 2006, to discuss methodology and case study selection. Methodology and criteria agreed.</i>	month 2, 12, 27	30-31.05.05 <i>03.11.05 (EU partners)</i> <i>02.12.05 (EU partners)</i> <i>11.01.06 (Paris – EU partners and 5 African centres)</i>
	1.7 Project Administration	project resources used effectively budget/schedule revisions implemented as appropriate	project goals achieved within budget and time	see Progress Report # 1 no revisions required	N/A	N/A

WP	Task	Performance Indicator	Target	Result	Date Due (month x)	Date completed
2	2.1: Literature survey on assessment methodologies for energy and development	coverage of all relevant approaches, focussing on impacts of small-scale energy interventions (confirmation from Advisory Committee on coverage)	survey completed on schedule	delayed – see Progress Report # 1 <i>still delayed – see Progress Report # 2</i>	month 5 (September 05)	expected end December 2005 <i>revised to October 2006</i>
	2.2: Classify and discuss the methods and indicators	detailed discussion of available material and identification of needs, providing adequate input for development of operational approach in WP5	classification completed on schedule	delayed – see Progress Report <i>delayed – follows from Literature Review – less relevant since M&EED approach adopted</i>	month 6 (October 05)	under discussion – see Progress Report # 1 <i>M&EED approach adopted by consensus – see Progress Report #2</i>
3	3.1 Formulate Terms of Reference for the Catalogue of Energy Interventions	comprehensive and operational TOR for catalogue, clearly specifying area of interest	TOR ready as required	<i>completed on schedule, supplemented 30.09 05 with guidelines for reporting.</i>	month 3 (July 05)	30.06.05
	3.2 Each country team will compile a catalogue of relevant energy interventions	number of documented energy intervention cases, with associated information	at least 10 energy interventions per country with documentation of purpose, status, impacts, etc.	Number of interventions Botswana: 9 Ghana 9 Mali 10 Senegal 5 Tanzania 5 Zambia 4 Only one country team succeeded in documenting the required minimum of 10 interventions. The reasons for this and the consequences will be documented in the Catalogue synthesis report under preparation. Follow-up with countries to supplement catalogues where necessary.	month 5 (September 05)	partially completed see Progress Report # 1 <i>completed by all countries by 01.11.05</i>
	3.3 Compile catalogue	classified catalogue covering all energy interventions from target countries, identifying main types of energy projects, possible impacts, need for further data, etc.	catalogue completed on schedule	<i>The synthesis report is delayed due to delays in the incoming reports from the country teams.</i>	month 6 (October 05)	PR#1 expected completion 20.12.05 <i>PR#2 draft completed 02.06 expected completion July 2006</i>
4	4.1: Prepare material for workshops: presentation material on project concepts, focussing on special circumstance of each country with respect to energy and development, as well as the international context.	concise and relevant material on project approach and rationale, designed at level of detail appropriate for high-level decision makers and professionals from energy and relevant sectors	5-10 page country paper power point slides for presentation	<i>Each country prepared satisfactory country background papers for 1st National Workshops, as well as presentation material on DEA approach and background.</i> <i>See Proceedings and presentations – 1st National Workshops (http://www.deafrica.net/events.htm)</i>	month 4 (August 05) month 4 (August 05)	all countries by 1 st Nat. W/S see Annex 1 - Deliverables all countries by 1 st Nat. W/S
	4.2: Arrange and hold bilateral consultations and workshops with relevant policy makers and stakeholders in the target countries, prior to development	number and relevance of informal consultations with ministries and stakeholders, through multi-sector energy committees set up under EUEI workshop process (or equivalent in Botswana)	country teams consult with at least: Ministries for Energy, Finance/Development, Agriculture, SME Development, rural Development, or equivalent	Country consultations documented in deliverable 4.2.1, see Annex 1 for status of delivery. Results of consultations summarised in deliverable	month 4 (August 05)	All 1 st Nat. Workshops held Sept. – Oct. 05 – see Table 3.1

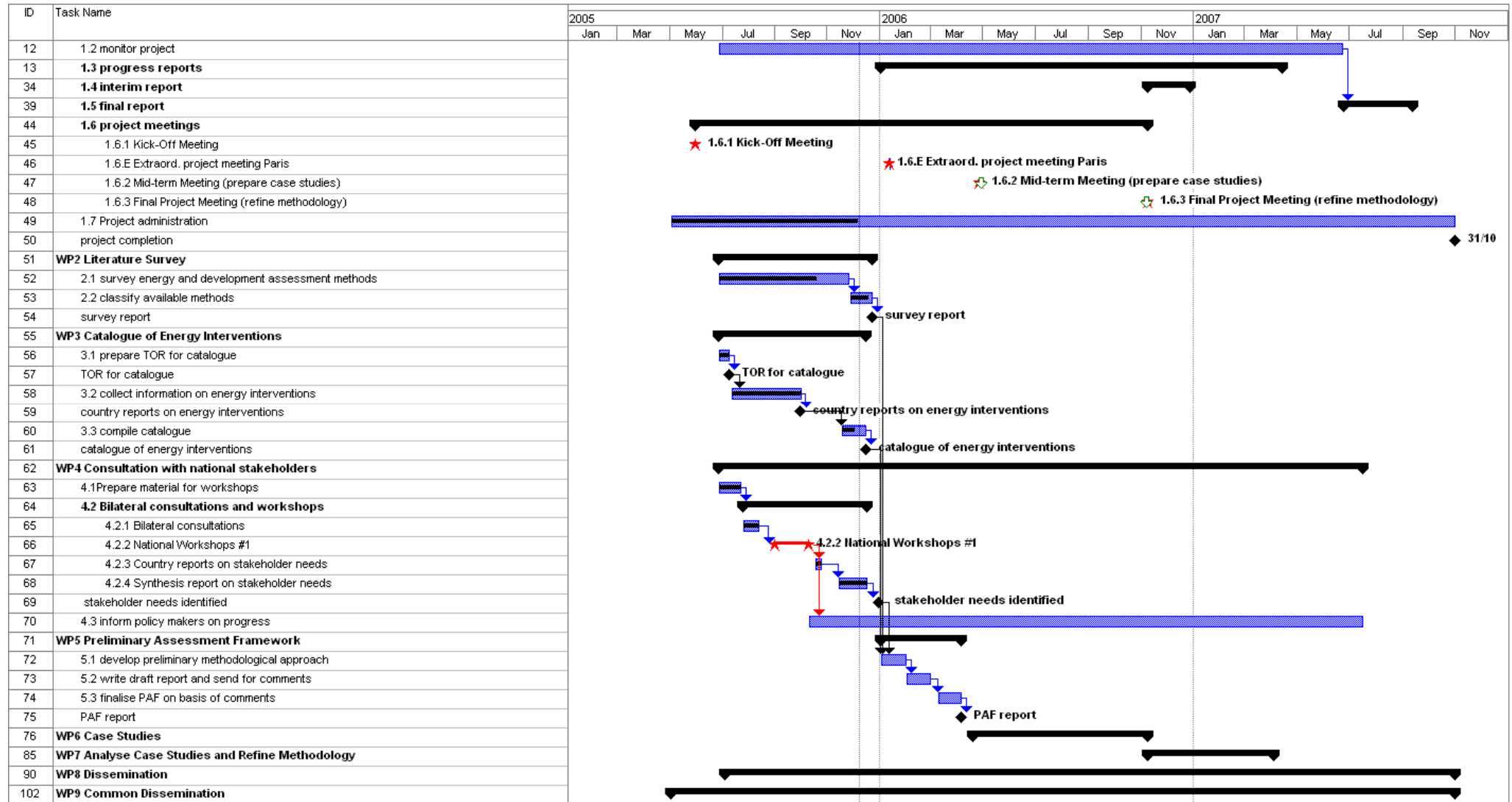
WP	Task	Performance Indicator	Target	Result	Date Due (month x)	Date completed
	of the Preliminary Assessment Framework. In particular National Workshops # 1 in each country.	<p>number and relevance of policy makers and stakeholders attending national workshop #1</p> <p>expression of interest from attendees in terms of perceived needs for assessment framework (documented in workshop proceedings, bilateral meeting reports, country reports)</p> <p>country teams assist stakeholders to identify potential and actual development impacts of energy interventions</p> <p>synthesis of policy makers' needs</p>	<p>10 high-level stakeholders (director level) from energy and other relevant sectors attend workshop</p> <p>development impact potential associated with all identified energy interventions</p> <p>needs identified so that preparation of PAF can proceed</p> <p>20-40 page document from each country</p>	<p>4.2.4.</p> <p>Broad representation of stakeholders at all 1st National Workshops - see proceedings. Botswana: 9 stakeholders Ghana: 15 stakeholders Mali: 17 stakeholders Senegal: 10 stakeholders Tanzania: 5 stakeholders Zambia: 17 stakeholders</p> <p>Stakeholder needs summarised in Annex 5.</p> <p>Overambitious objective. Each country team submitted a few pages on stakeholder opinions and requirements. This was adequate at this stage for formulating synthesis report (4.2.4)</p>	<p>month 4 (August 05)</p> <p>month 5 (September 05)</p> <p>month 5 (September 05)</p>	<p>Sept.-Oct 2005</p> <p>partially received Oct. 2005</p> <p>Expected Dec. 2005</p> <p><i>All countries submitted by December 05</i></p>
	4.3 Inform policy makers and stakeholders through development process.	stakeholders remain interested and committed to project	country teams revisit relevant ministries and stakeholders, reporting progress		<p>month 12-14</p> <p>month 18-20</p>	<p><i>continual informal communication</i></p> <p><i>formal consultations expected after case studies Sept-Oct 06</i></p>
5	5.1: Develop and document a Preliminary Assessment Framework (PAF)	PAF documented in a comprehensive and operationally applicable report	PAF completed on schedule		month 9 (Feb 06)	<i>May 06 – methodology finalised before 2nd Project Workshop</i>
	5.1.1 Classification of the main linkages between energy and poverty according to type of intervention	The module must adequately answer the question: "What are the poverty/development links between the energy intervention types (as listed in the catalogue 3.3)?"	10-20 page chapter	<p>In development – discussing links with M&EED activity where causal links have been developed.</p> <p><i>Energy/poverty linkages are highly specific to interventions. Detailed discussion in case study reports.</i></p>	month 6	<p>delayed – See Progress report # 1</p> <p><i>To be included in Report/Guideline (Oct. 06)</i></p>
	5.1.2 Selection and design of relevant assessment procedure(s) for a given type of energy intervention	The module must adequately answer the question: "How can these impacts/links be assessed?"	10-20 page chapter	<i>M&EED approach adopted. Indicators specific to interventions at each level.</i>	month 7 (December 05)	<p><i>May 06 – methodology finalised before 2nd Project Workshop</i></p> <p><i>to be included in Report/Guideline component 5.2</i></p>
	5.1.3 Identification and development of indicators for evaluation of the impacts of the energy intervention on poverty and broader development aspects.	The module must adequately answer the question: "How can this assessment approach be operationalised through a relatively small number of indicators?"	<p>10-20 page chapter</p> <p>software tool</p>	<i>M&EED approach can address this in principle, judicious choice of indicators is case dependent.</i>	month 8 (January 06)	<i>to be included in Report/Guideline component 5.2</i>
	5.1.4 Outline of how the evaluation can feed back into the design and implementation of future energy interventions.	The module must adequately answer the question: "How can the assessment feed back into the project/intervention design process?"	10-20 page chapter	<i>will depend on reaction of stakeholders to case study results</i>	month 9 (February 06)	<i>delayed until after 2nd national Workshops Sept/Oct 06</i>
	5.2 Write draft report and send for comments (to Advisory Committee and others)	Has the Advisory Committee adequately reviewed the document?	50-100 page draft document with appendices, software tool, etc.		month 10 (March 06)	<i>Report/Methodological Guidelines to be developed in parallel with Case Studies – target completion date Nov. 06</i>
	5.3 Finalise PAF on basis of comments	Have the comments been incorporated in the PAF approach and the report.	50-100 page final document with appendices, software tool, etc.		month 12 (April 06)	<i>delayed – new target January 07</i>

WP	Task	Performance Indicator	Target	Result	Date Due (month x)	Date completed
6	6.1: Common structure (TOR) for case studies	Project group agree on specification of case studies to test the PAF Case studies must cover range of energy intervention types and settings	Set of Case Studies broad enough to test all aspects of PAF	<i>Because of case specificity of methodology, the selection of case studies was brought forward, as described in Progress Report # 2</i>	month 12 (April 06)	<i>criteria issued and agreed Jan 06</i>
	6.2: Make practical arrangements, preliminary study, etc. for case studies	Country teams are able to select sufficient number of relevant Case Study examples to test PAF	10 potential per country	<i>Only one country included 10 interventions in the catalogue. Nevertheless the 42 interventions span a wide range of project types.</i>	month 13 (May 06)	<i>initial set Feb 06 revised May 06 case study details and research plans worked out at 2nd Project Workshop 5-7 June 06</i>
	6.3: Conduct case studies, fieldwork, data analysis, etc.	Number of case studies carried out Indication of relevance of PAF in different kinds of energy intervention as represented by Case Studies	3-5 case studies per country	<i>3-5 case studies is unrealistic. Resources available limited to 1 case study per country.</i>	month 16 (August 06)	<i>revised completion date Sept 06</i>
	6.4: Report Case Studies	Each country team describes and discusses critically the Case Studies and relevance of PAF	50-100 page detailed document from each country team		month 17 (September 06)	<i>expect Sept-Oct 06</i>
	6.5 National Workshop # 2	number and relevance of policy makers and stakeholders attending National Workshop #2 indications from attendees on relevance of the PAF (as illustrated in Case Studies) for assessing development impacts and improving project design	10 high-level stakeholders (director level) from energy and other relevant sectors attend workshop reaction from all attending stakeholders on relevance of PAF and Case Studies, suggestions for improvement		month 17 (September 06)	<i>expect October 06</i>
	6.6: Write report synthesising Case Studies	extent to which report captures results of case studies, stakeholder reactions on relevance of PAF, suggestions for improvement Advisory Committee comments on the relevance, sensitivity and applicability of the PAF and Case Studies for assessing development impacts.	report completed on schedule documented suggestions for improvement of PAF from national stakeholders and Advisory Committee		month 19 (November 06)	
7	7.1: Adjust/refine methodological approach on basis of case studies.	address all comments and suggestions from 6.6	checklist based on 6.6		month 21 (January 2007)	
	7.2: Write draft report on methodological approach, discuss with partners	assessment from project group on relevance, applicability, whether all comments and suggestions from 6.6 adequately addressed	all comments addressed		month 22 (February 2007)	
	7.3: Write final report and manual on methodological approach	Advisory Committee and stakeholder comments on final report and manual: report comprehensive? manual understandable and operational	all comments addressed		month 24 (April 2007)	
8	8.1: Set up web site Risoe Africa	check web sites	web sites operational on schedule	web site at Risoe operational <i>African site still under discussion- Risoe based site is adequate. Country resources best used for case studies in present period.</i>	month 3 (July 2005) month 5 (September 2005)	01.06.05 delayed <i>aim at African site by end of project</i>
	8.2: Prepare popular	presentation material available and appropriate	presentation material available on schedule	delayed – to be prepared following completion of	month 6 (October 2005)	delayed, expected January 2006

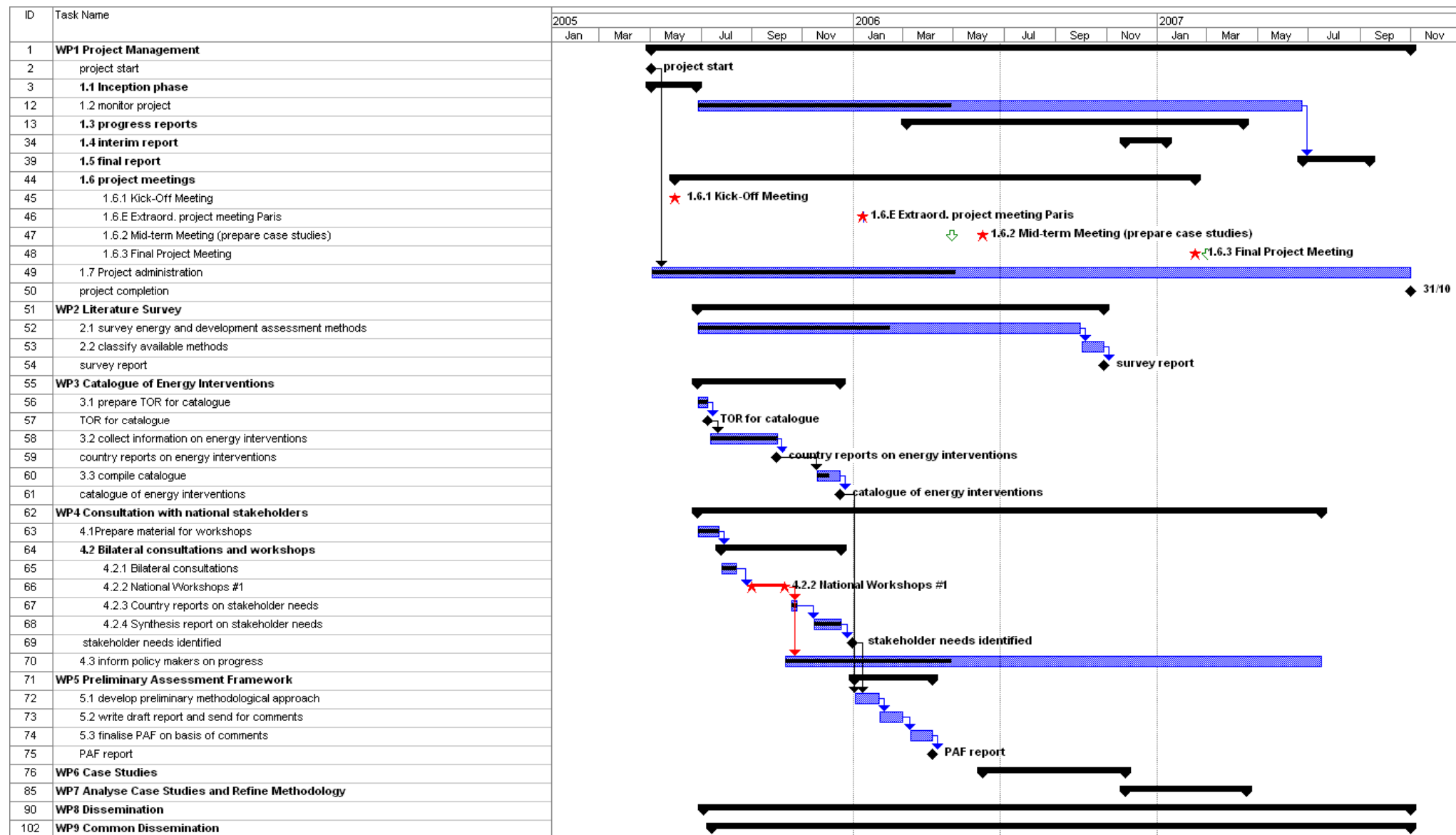
WP	Task	Performance Indicator	Target	Result	Date Due (month x)	Date completed
	presentation material (targeted to well-defined groups of stakeholders) The literature review The consultations The energy project catalogue Description of the Assessment Framework	to the target groups		WP2, 3 and 4 and agreement on form of WP5 with links to M&EED. <i>Presentation material for stakeholders will be more relevant with national examples from case studies.</i>		<i>expect after case study completion Oct 06</i>
	8.3 Promote project approach to stakeholders: through consultation process (WP4)	number of national stakeholders engaged in discussion through bilateral consultations and workshops number of relevant comments and suggestions from stakeholders	see WP4	<i>Presentation material for stakeholders will be more relevant with national examples from case studies.</i>	month 7-23 (Nov 2005 – Mar. 2007)	
	8.4: Prepare presentation material on project results after completion of the Assessment Framework, emphasising the use to which the Assessment Framework is being put, opinions of national stakeholders, etc.	presentation material available and appropriate to the target groups	presentation material available on schedule		month 24 (April 2007)	
	8.5 National Workshops #3	number and relevance of policy makers and stakeholders attending National Workshop #3 continued interest from attendees on relevance of the refined AF (as illustrated in Case Studies) for assessing development impacts and improving project design	15 high-level national stakeholders (director level) per country		month 25 (May 2007)	
	8.6 Regional (African) Workshop	number and rank of national stakeholders attending from participating countries number of other country representatives attending number of other organisations attending (Member States, other donors, multi-laterals, regional organisations)	2high-level stakeholders from each participating country 10 high-level participants from other countries, financed through other sources, attracted by relevance of activity		month 27 (July 2007)	
	8.7: Disseminate and promote methodology, demonstrate applications, and discuss further application and extension to other countries/regions, etc. This may include presentations as side events at large conferences etc. To continue beyond the formal project completion date using own resources of the partners.	number of other countries contacted and expressing interest in the assessment methodology	promote approach in at least 9 other African countries (through EUEI workshop follow-up in West and S/E Africa)		month 25-30+ (May – Oct 2007)	
	8.8 Establish contact and liaise with EU Member State programmes in the energy sector in the target countries and subsequently in other countries of the region (through 8.6 and 8.7).	number of Member State agencies expressing interest in the approach	2 EU Member State programmes expressing positive interest in the approach (in addition to Danish and Dutch)		throughout	
9	9.1: Contribution, upon request	N/A	contribution as requested		as required	

WP	Task	Performance Indicator	Target	Result	Date Due (month x)	Date completed
	of the Commission, to the development of online information systems under EC management.					
	9.2: Participation, upon request of the Commission, at contractors' meetings and conferences in association with the EIE and other relevant programmes, EU-wide exhibitions, etc.	N/A	participation as requested		as required	
	9.3: Contribution, upon request of the Commission, to the preparation of common presentation material related to EIE actions.	N/A	material provided as requested		as required	

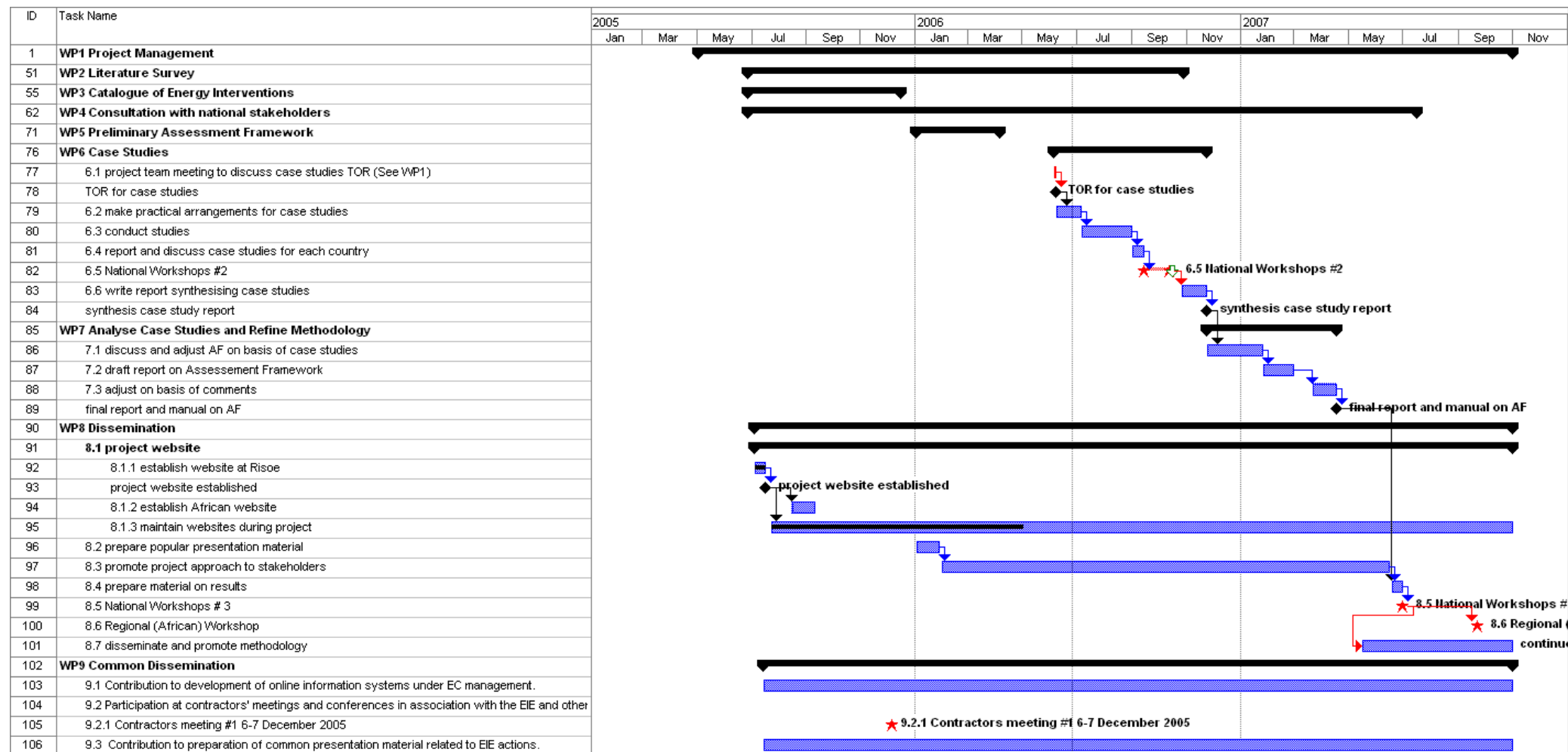
Annex 6: Project Implementation Plan (GANTT Diagram)



Project Implementation Plan (GANTT Diagram) – revised 2nd Progress Report, part 1



Project Implementation Plan (GANTT Diagram) – revised 2nd Progress Report part 2



Annex 7: Synthesis report of the DEA country catalogues of energy interventions

ECN-I--05-000

Energy-Development Linkages

**Synthesis report of the DEA country catalogues of
energy interventions**

Emiel van Sambeek

DRAFT

February 2006

Preface

This Synthesis Report constitutes deliverable number 3.3 under the COOPENER project “Development and Energy in Africa (DEA)”. This 30-month project is implemented by Risoe National Laboratory, Denmark as project coordinator, in collaboration with the Energy Centre of the Netherlands (ECN), and in partnership with six African Centres:

- Botswana: EECG
- Ghana: KITE
- Mali: Mali Folkecenter (MFC)
- Senegal: ENDA-Energy
- Tanzania: TATEDO
- Zambia: CEEEZ

This Synthesis Report refers to the Catalogue of Energy Interventions in the abovementioned six African countries. This Catalogue is provided as a separate annex to this report.

Abstract

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Summary

1 Introduction

1.1 Development and Energy in Africa: Background and Objectives

It is widely recognised that access to affordable, reliable, clean and sustainable energy is a necessary, however in itself insufficient, condition for development. The exact relation between energy and development and the many other factors that influence this relation is often complex and intractable. A more thorough understanding of these complex linkages can help policy makers, NGOs and international donors to better target their projects, programmes and policies to specific development objectives. In this context the Development and Energy in Africa project (DEA) seeks to investigate the relation between energy interventions and development.

The objectives of the DEA project are to:

1. identify and examine the development impacts of energy interventions linked to improving energy access and poverty reduction;
2. work with stakeholders to develop an assessment framework that will allow a better targeting and monitoring of energy interventions with respect to their development impacts.

Considering the increasing importance of the Millennium Development Goals (MDGs) in international development policies, DEA will pay particular attention to the contribution of energy interventions to achieving the MDGs.

1.2 Development and Energy in Africa: Approach

The key result of DEA is an assessment framework for analysing the development impacts of energy interventions. It is important that this assessment framework is not merely an academic framework, but one that helps stakeholders in Africa to design better targeted energy interventions. The assessment framework is therefore constructed in a bottom-up approach, which takes actual projects in six African countries as the basis for developing the assessment framework. This ensures that the assessment framework is closely aligned with national stakeholder interests and development priorities. Moreover, stakeholders are actively involved in the project through a series of national stakeholder workshops.

As a first step to developing the assessment framework a catalogue of energy interventions for six African countries⁵ was set up. This catalogue lists key energy interventions implemented in the last 5 years per country. Details on the objective and scope of the intervention, monitoring and evaluation data and its social, environmental and economic impacts are included in the catalogue. This catalogue serves multiple purposes. It provides:

⁵ The Catalogue of Energy Interventions describes energy projects, programmes and policies in Botswana, Ghana, Mali, Senegal, Tanzania and Zambia.

1. an overview of key energy interventions in six African countries;
2. information on energy-development linkages that is relevant for the development of an assessment framework;
3. candidates for detailed case studies in applying the assessment framework.

Based on the information on energy-development linkages from the catalogue, as well as a literature study on development impact assessment methodologies and stakeholder requirements from national consultations a preliminary assessment framework will be developed. This preliminary assessment framework will consequently be applied to a number of the energy interventions from the catalogue in detailed case studies. Finally, based on the experiences in these case studies, the preliminary assessment framework will be adjusted and finalised.

1.3 Purpose of this report

The purpose of this report is to synthesize the information available in the catalogue of energy interventions in a way that the information becomes useful for constructing the preliminary assessment framework. The idea behind this is that the development impacts attributed to the energy interventions in the catalogue can serve as hypotheses of possible energy-development linkages that the assessment framework would have to be able to verify for a specific project. The attempt to make explicit the causal chain from the implementation of an energy project to a development impact and to categorize different energy-development linkages is therefore an important exercise in this report.

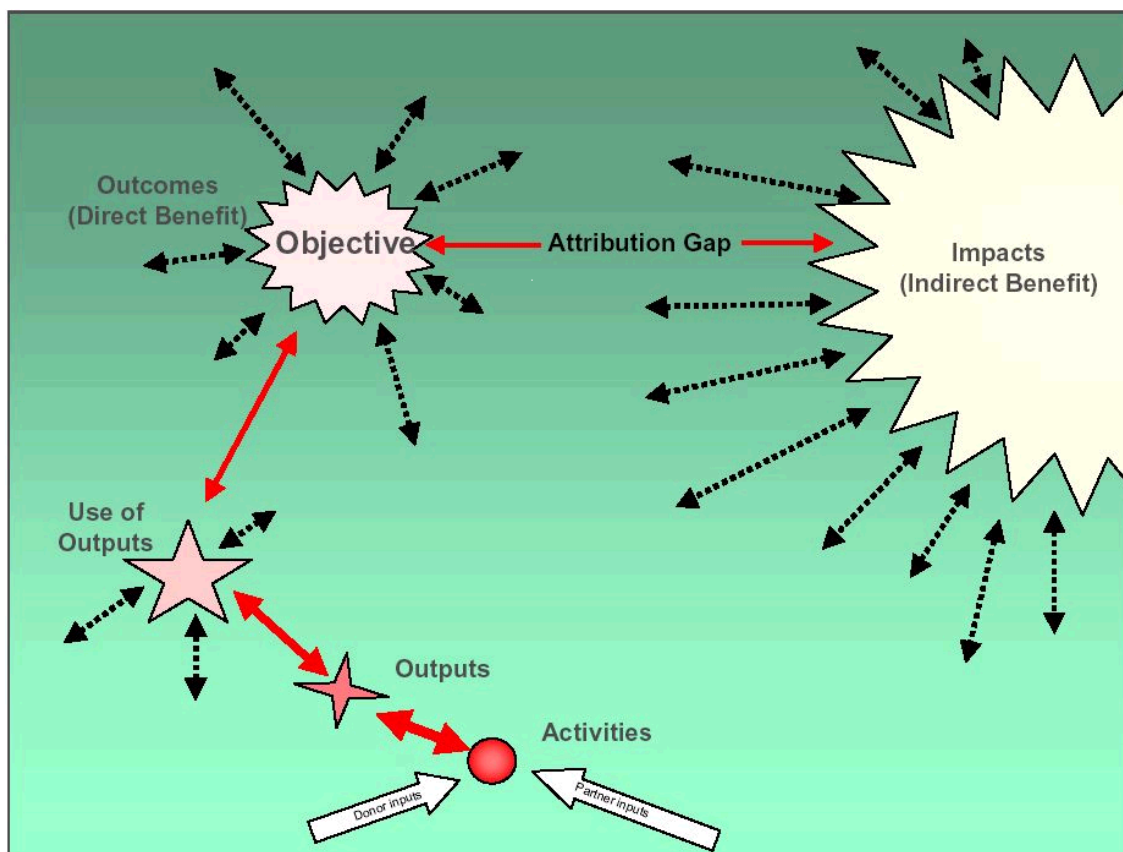
1.4 Analytical framework for mapping development impacts

The analytical approach for tracking and mapping the empirical relation between energy interventions and development impacts in DEA draws on the work of the international working group on Monitoring and Evaluation for Energy and Development (M&EED), which is based on the “Results based monitoring guidelines for impact assessment”, which in turn builds on a significant body of literature and is applied by the EC in other development sectors. The M&EED group was originally set up by GVEP and EUEI, but now involves actors such as UNEP, EDF, DFID, ADEME and others.

The M&EED version of the monitoring guidelines (henceforth “the Results Model”) represents the causal chain from intervention to impact as consisting of four links. The causal chain is illustrated in Figure 4. The first link in the causal chain constitutes the *input* into an intervention, such as equipment, finance or institutional support. The input is expected to generate *output* - the second link - that would constitute energy services, such as lighting or motive power. The use of outputs give rise to the third link, *outcomes*, which could be occurrences such as refrigeration of vaccines, extended study hours for pupils, or increased agricultural production.

The outcomes may in turn lead to or – in conjunction with other interventions or happenings - contribute to an ultimate *impact*, e.g. improved health levels or income poverty reduction.

Figure 4 Results Model (source: Results-based Monitoring - Guidelines for Technical Cooperation Projects and Programmes, GTZ 2004)



Up to the level of “use of outputs”, attributing causality to a specific project is relatively straightforward in most cases. However, as one climbs up to the levels of “outcomes” and “impacts” external factors that cannot be influenced by the project or programme become increasingly important. Further, the results chain described above reflects the "major" results hypothesis of the project, which in turn is based on a number of so called more "minor" results hypotheses. In the case of a hypothesis that links energy provision for cooling of vaccines to improved child health, such minor hypotheses could be:

- Electricity services are actually being utilised by all the clinics for which they were intended.
- Clinics utilise the electricity services to run refrigerators which in turn are used for storing vaccines.
- The appropriate vaccines are available to the clinics and primarily given to children

An immediate objection to the “Results Model” could be its apparent linear representation of causality. A recurrent finding in the few empirical studies that exist is the considerable impact from energy interventions *in concert with other infrastructure interventions*. This is also illustrated by the descriptions of energy interventions in the catalogue. Hence, one could imagine several “Activity”-“Output” associations feeding into a “Use-of-outputs” link, that jointly have an impact on a given objective. In the above example of improved child health, it is conceivable that efforts towards contemporaneously improved water access would impede the spread of disease among children and thus amplify the impact from better storage facilities for vaccines. It must also be kept in mind, that the use of outputs may generate multiple outcomes (as suggested by the multiple, black two-way arrows radiating from the “Use of outputs” star in Figure 4). In the case of refrigeration services for clinics, better storage of other medicines than vaccines for children could, through health improvements among adults, also increase labour productivity, for example in agriculture.

In the above example it is difficult to attribute improved child health solely to improved opportunities for refrigeration of vaccines as a result of increased access to electricity. This attribution problem is illustrated in Figure 4 as the “Attribution Gap”. The attribution gap presents a major methodological problem in linking energy interventions (or any other type of development related project) to one or more specific development impacts. Recognizing the practical impossibility of bridging this gap completely, DEA focuses its attention on revealing or obtaining information on the major and minor hypotheses linking the energy interventions and development impacts.

2 Scope of energy interventions in the catalogue

2.1 Geographical scope

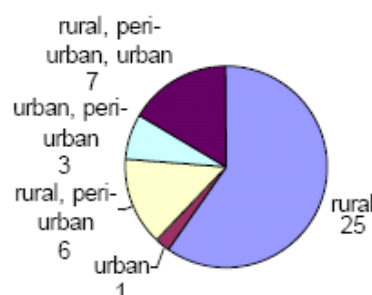
A total of 42 project across six countries were described in the catalogue of energy interventions. The distribution of these interventions among countries is given in Table 3.

Figure 5 gives the spread of interventions over rural, peri-urban and urban areas.

Table 3 Number of energy interventions described in the catalogue per country

Country	# interventions
Botswana	9
Ghana	9
Mali	10
Senegal	5
Tanzania	5
Zambia	4
Total	42

Figure 5 Number of projects in rural, peri-urban and urban context



The energy interventions described in the catalogues have a varying geographical scope. While most interventions concerned village level projects (10) or regional programmes with village level projects (14), there was one international programme, 15 national policies and programmes and 2 interventions specifically targeted to one city. Three of the interventions described were national government policies rather than concrete energy projects. The energy catalogues thus describe a broad range of interventions in different countries, in different development contexts and with varying geographical scope.

2.2 Baseline and monitoring data

Key in investigating the development impact of energy interventions is the availability of a good baseline study and monitoring data. Of the 42 energy interventions described in the catalogue 18 did not have a baseline study conducted before the implementation of the intervention. The remaining 24 interventions had some form of baseline, either in the form of a market study, a feasibility study or a detailed baseline study. Monitoring data is available for 31 interventions, although it is not always clear what type of monitoring data this exactly concerns. Most monitoring data seems to refer to internal project monitoring rather than impact monitoring. For enterprise development projects often only the internal financial accounting data is available as monitoring data. Often monitoring is done in an informal way through site visits of project managers or programme officers. In some interventions monitoring is based on a participatory approach that involves the stakeholders around the intervention.

3 Energy-Development Linkages

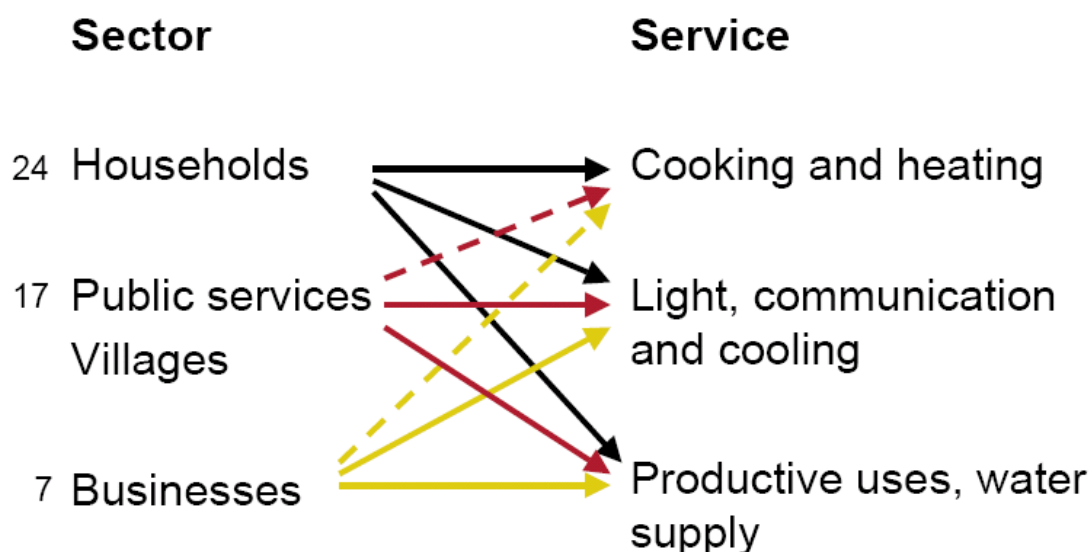
In trying to deal with the complexity of energy-development linkages and provide a framework for analysing the energy-development linkages in the catalogues, the analysis is broken up in several pieces. First energy end use sectors and services are separated out. Second, the major types of projects in the catalogues are classified. Thirdly, the linkages between these types of project and the energy services are outlined. Consequently, the types of projects, energy services and end use sectors and the development impacts in the catalogue attributed to the combination of each is presented in an overview table. Finally, a ‘map’ of types of energy interventions and the linkages to development impacts in terms of the MDGs is presented at the end of this chapter.

3.1 Energy end use sectors and services

The interventions described in the catalogue can be categorized according to the end use sector and services they target. Three end use sectors can be distinguished: 1) households, 2) village level public services - often community-based initiatives - and 3) small businesses. Each of these end use sectors uses energy for different services. The three major classes of services that can be discerned are: 1) cooking and heating, 2) lighting, communication and cooling, and 3) productive uses, including water supply.

Figure 6 describes the relation between the end use sectors and the energy services. While all sectors can in principle use energy for all the mentioned energy services some links are stronger than others. Most interventions that target households, for example, focus on cooking and heating services. However, cooking and heating services are hardly ever targeted in interventions at the village or community level or interventions in relation to enterprise development (dotted arrows).

Figure 6 Energy end use sectors and services



3.2 Types of interventions in the catalogue

The catalogued interventions can be categorised according to four main types, which are listed in the first column of Table 4. Examples of concrete projects from the catalogue are provided in the second column. Of the 42 interventions 7 interventions focused on fuel improvement and efficient use, 12 concerned fuel substitution, 7 concentrated on motive power provision and 20 were electrification projects and programmes, of which the majority concerned off-grid electrification. Several interventions targeted fuel efficiency and substitution or motive power and electrification at the same time.

Table 4 Types of interventions in the catalogue

Type of intervention	Example from catalogue
1. Fuel improvement and efficient use ⇒ seeking to enhance the quality of the fuel, the efficiency of fuel use and a reduction of environmental impacts of the fuel chain.	<ul style="list-style-type: none"> – Sustainable fuel wood forest management and forestation – Improved stoves
2. Fuel substitution ⇒ seeking to move consumers up the 'energy ladder' using cleaner and higher quality fuels with less impact on the environment	<ul style="list-style-type: none"> – LPG marketing Briquette production and distribution – Charcoal production and distribution – Kerosene promotion – Jatropha oil production and marketing – Biogas promotion

- 3. Motive power
 - ⇒ *seeking to provide motive power for productive uses*
 - Multifunctional platforms
 - Solar and wind water pumping
 - 4. Electrification
 - ⇒ *seeking to provide access to electricity services*
 - Grid electrification
 - Solar home systems
 - Solar PV for schools, hospitals and public lighting
 - Hybrid mini-grids
-

3.3 Linking types of interventions and energy services

The previous section provided a categorisation of different types of energy interventions that can be found in the catalogue. Figure 7 shows how these different types of energy interventions distinguished in the previous section can be related to the energy services and end use sectors that they predominantly target. The relations indicated in the diagram are based on the descriptions of the interventions in the catalogue.

Figure 7 *Types of energy intervention and key targeted energy services*

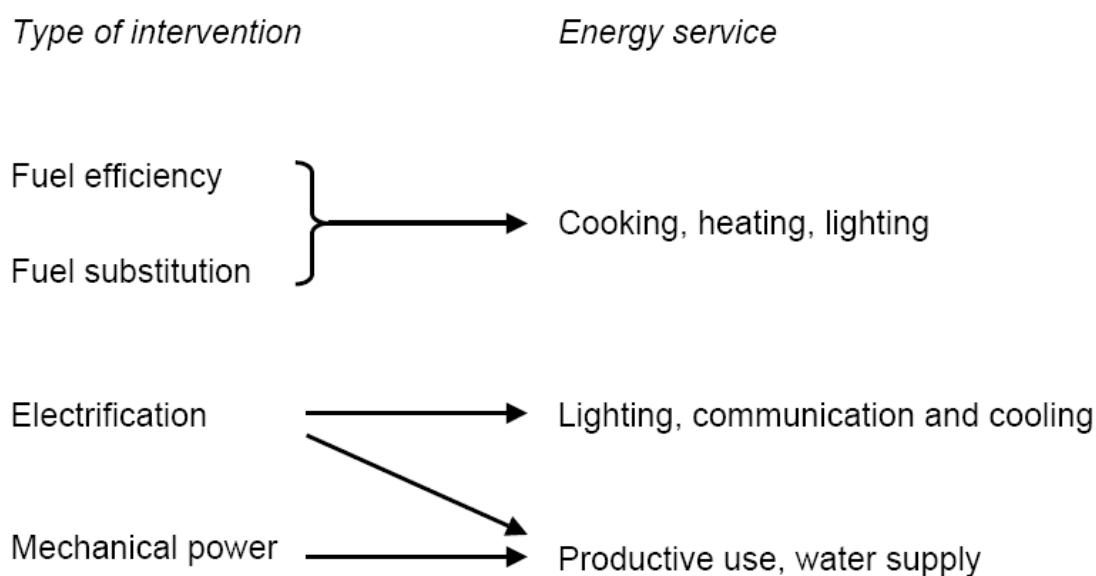


Figure 7 illustrates that fuel efficiency and substitution projects mostly target cooking, heating and lighting services at the household level. Electrification projects focus on providing lighting, communication and sometimes refrigeration services, as well as productive uses and the use of electricity for water pumping. Motive power is almost exclusively used for productive uses, such as agro-processing and for water pumping.

3.4 Linking types of energy interventions to development outcomes

The types of energy interventions and their key targeted energy services (as outlined in section 3.3) can be related to the end use sector that they apply to (based on the relations outlined in section 3.1). This results in 2 main clusters of energy interventions, services and end use sectors:

1. fuel improvement and substitution for cooking and heating at the household level
2. electrification and motive power for lighting, communication, refrigeration, productive uses and water pumping at the village and community level or for businesses.

The development outcomes that are attributed in the catalogue to the various types of interventions that fall within these clusters are listed in Table 5 and Table 6.

It should be noted that the distinction between outcomes and impacts is not always clear. Some outcomes could also be considered impacts. For example, Table 6 mentions improved health services as an outcome of electrification for lighting, communication and refrigeration for community services. It could also be argued that the outcome is cooled vaccines or better lighting for surgery. Whether this materialises in improved health services is not immediately obvious and depends on many other things, such as for example the skills basis of hospital staff, medicine supplies, availability of medical equipment, etc. Improved health services could therefore be considered an impact. However, it can also be argued that improved health services are only an intermediate outcome that aims to contribute to higher level impacts such as reduced child mortality and improved physical well-being. The example of improved health services illustrates that the distinction between outcomes and impacts can be ambiguous and depends on the level of the development goals that are targeted. Table 5 and Table 6 reflect the information that was provided in the catalogues and do not intend to provide a decisive categorization of outcomes, while leaving out things that might be classified as impacts.

Table 5 Development outcomes of fuel improvement and substitution and electrification interventions in the household sector.

	Development outcomes through cooking/heating/lighting services
Fuel efficiency	<ul style="list-style-type: none">– direct job creation– improved indoor air quality– reduced fuel expenses– reduced fuel wood consumption– reduced women work load– reduced fuel storage space– forest regeneration– increased agricultural productivity

Fuel substitution	<ul style="list-style-type: none"> – reduced fuel wood consumption – direct job creation – time saving – reduced land degradation – improved indoor air quality – decreased deforestation – reduced women work load
Electrification	<ul style="list-style-type: none"> – reduced kerosene consumption – improved education opportunities

Table 6 Development impacts of electrification and motive power interventions in the community services/business sector.

	Development outcomes through lighting/communication/refrigeration services	Development outcomes through productive uses and water access
Motive power	<ul style="list-style-type: none"> – lighting for public schools and health clinics 	<ul style="list-style-type: none"> – decreased women work load – increased women participation – improved water access – direct job creation – increased agricultural productivity – improved food security – decreased soil erosion / reforestation / desertification – fuel expenditure savings – decreased fuel wood consumption – improved agro-processing – increased girl school attendance – increased income generating activities
Electrification	<ul style="list-style-type: none"> – direct job creation – decreased fuel wood consumption – decreased kerosene consumption – improved education/teaching conditions – improved social structure/meeting facilities – improved health services 	<ul style="list-style-type: none"> – longer business hours – improved food processing – improved water access – increased agricultural productivity – reduction of waterborne diseases – facilitation of new businesses

3.5 Energy-development impact maps

In Chapter 1 it was mentioned that the goal of this report was to analyse the information available in the catalogue of energy interventions in a way that the information becomes useful for constructing the preliminary assessment framework and that the analytical framework for the analysis is provided by the input-output-outcome-impact model in results-based development monitoring.

This section graphically maps the relation between types of energy interventions and their development impacts in terms of the MDGs in accordance with the abovementioned input-output-outcome-impact model. Two impact maps are given, one for each cluster of impacts detailed in Table 5 and Table 6.

Figure 8 gives the relation between electrification and motive power interventions - mostly targeted at community services - and their development impacts. Figure 6 illustrates the linkages between fuel substitution and improvement interventions - mostly targeted at the household sector - and their development impacts. Both figures follow a similar structure. At the top the map begins with an intervention (e.g. electrification through solar home systems) - or “activity” in Figure 4 on the input-output-outcome-impact chain. The activity leads to specific outputs (e.g. lighting), which in turn create outcomes (e.g. longer business hours). These outcomes can lead to development impacts. For example, longer business hours through enhanced lighting can contribute to income generating activities and increased sales, thus leading to a reduction in income poverty (MDG 1). To take another example, fuel efficiency improvement activities such as the marketing of improved stoves result in less consumption of fuel wood (output). This in turn leads to saving of time spent on fuel wood collection, reduction of women drudgery and improved indoor air quality (outcomes). These outcomes contribute to a range of development impacts, such as improved gender equality (MDG 3) and maternal and child health (MDG 4/5/6). While the linkages between activities, outputs and outcomes are often clear and direct, the relation between the outcomes and the impacts (e.g. evening study hours for pupils and gender equality) is often less direct and many other factors co-determine whether this development impact actually materializes. In the below diagrams the uncertainty in the link between outcomes and impacts is illustrated by the dotted lines. Finally, the diagrams also illustrate that a specific intervention may have several outputs, which in turn may have several impacts. The impacts directly contribute to development impact or they may interact and combine to contribute to a development impact. The diagrams also show that different types of energy interventions working in good coordination can reinforce each other’s outcomes and development impacts.

Figure 8 Development impact map for electrification and motive power interventions.

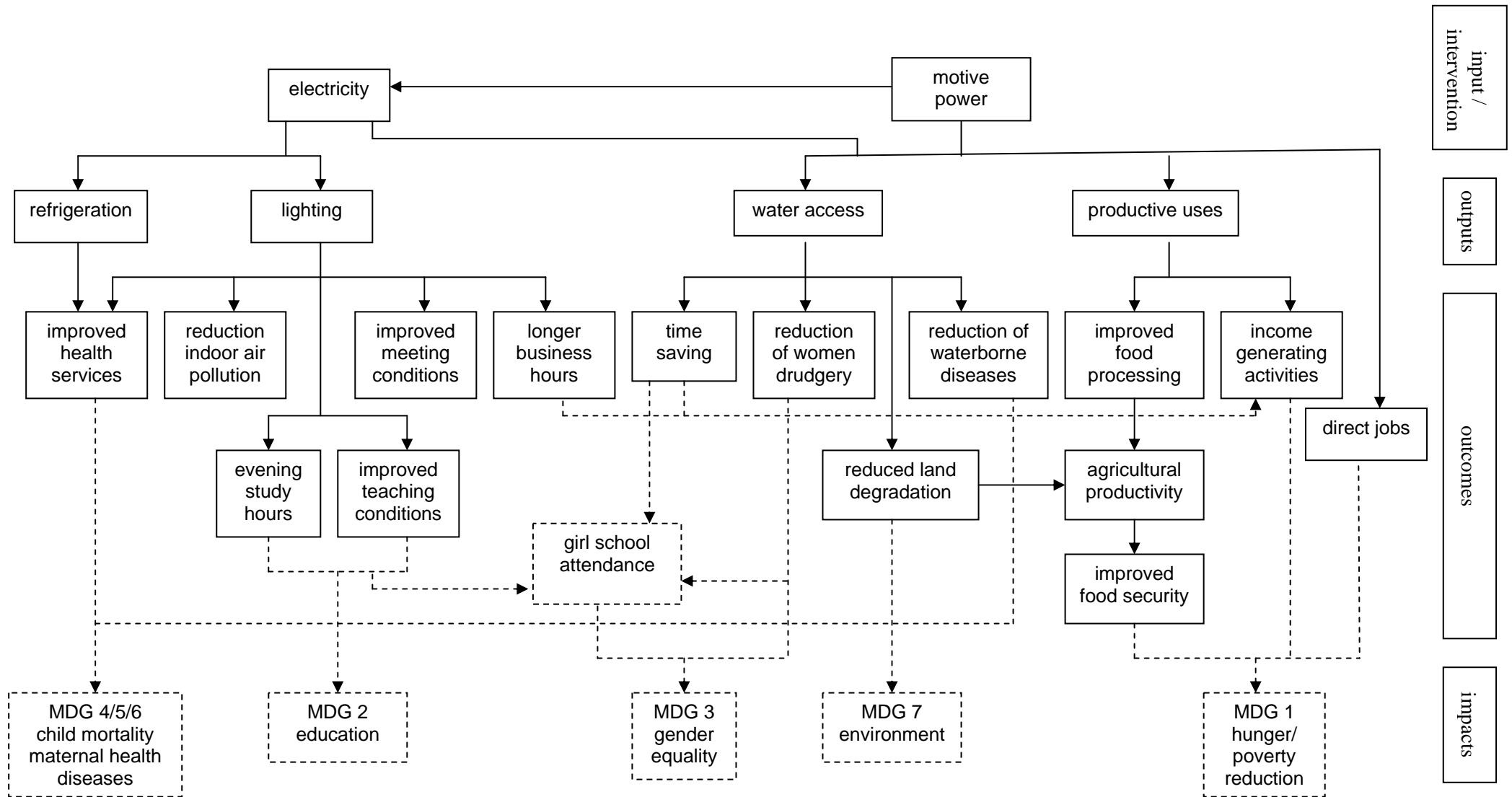
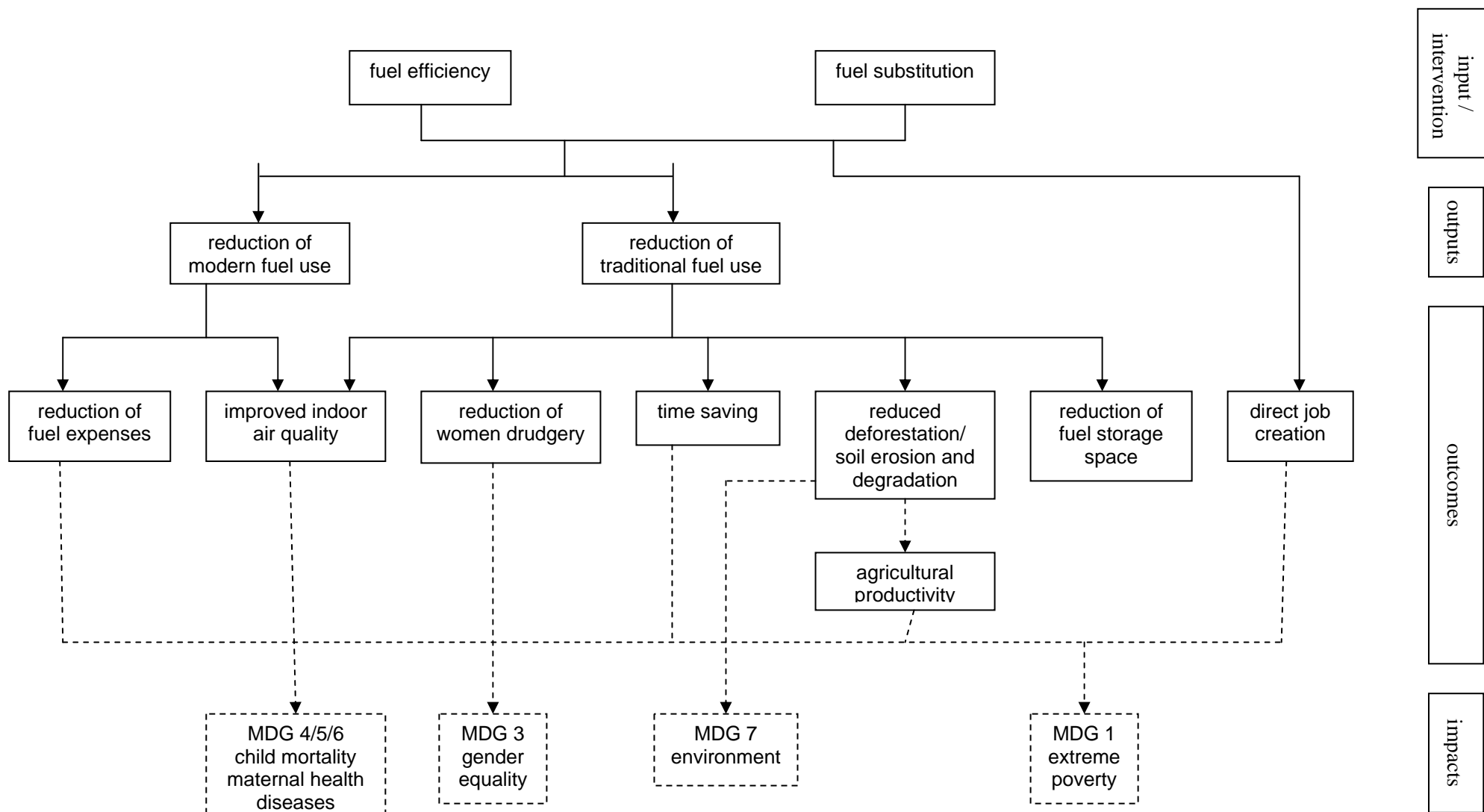


Figure 9 Development impact map for fuel efficiency and fuel substitution interventions



4 Conclusions

Mapping the input-(activity-)output-outcome-impact chain separates out the many linkages and interactions that determine a development impact from an energy intervention. Each input-(activity-)output-outcome-impact trail that you can follow in the above diagrams presents a hypothesis for possible development impacts from a certain type of energy intervention. In developing an assessment framework for assessing the development impacts of energy interventions this exercise provides a starting point by making explicit all the ‘major’ hypotheses that lead to a development impact. The next step is to make explicit all the ‘minor’ hypotheses and to contribute to the body of evidence that confirms each of the ‘major’ and ‘minor’ hypotheses. This is done through detailed case studies later in the DEA project.

Annex 8: Note to partners on selection of case studies

DEA project: Selection of Case Studies

A primary task facing the DEA team at the moment is to select the cases studies which have to be carried out in the countries in the period from June to September. The intention of WP3, the catalogue, was to obtain an overview of the energy interventions in the six countries, in other words a scoping exercise. On the basis of this scoping, along with the literature review (WP2) and stakeholder consultations (WP4), an assessment framework for development impacts would be formulated (WP5).

The country teams identified a number of energy interventions and projects during in Work Package 3 and these are recorded in the Catalogue. Altogether 42 interventions were identified, distributed among the countries as follows:

country	No. of interventions in catalogue
Botswana	9
Ghana	9
Mali	10
Senegal	5
Tanzania	5
Zambia	4

In order to apply and test the assessment framework being developed in WP5, country teams are expected to carry out at least one in-depth case study in Work Package 6. The subject for the case study should be drawn from the catalogue portfolio of each country, according to criteria to be agreed in collaboration between all project partners. At the DEA meeting in Paris (10 Jan. 2006) a set of criteria, grouped into local and global, was proposed, discussed and agreed upon in principle. It was emphasized that the criteria should be seen as guidelines which are open for discussion, and not as rigid requirements, and intended to help all the project partners to arrive at the best set of case studies for the DEA project as a whole. Some of the partners expressed a need for further clarification of the criteria. This clarification is attempted below.

Another view expressed at the Paris meeting was that Centre partners would need details of the data requirements of the assessment framework before selecting case studies. This is difficult to provide in practice since the details of the assessment will be dependent on the type of intervention being assessed. For example whether it is a biomass project like charcoal production, a village electrification project, or a solar bakery. What is evident is that the assessment will require as much information as possible about development effects since this is the main objective of the DEA project. It is unlikely that a great deal of development impact data exists in published form apart from a very few examples. Thus, Centre partners must assume that some fieldwork, survey or interrogation of target groups will be necessary during the Case Studies. Nevertheless it is accepted that development impact data may already exist. Therefore an important selection criterion could be that such data does exist. This must be taken into account along with the other criteria.

In this spirit, the Risø/ECN team suggests that we enter an iterative process, starting with the partners' suggestion of two case study candidates from their respective catalogue contributions – indicating order of preference – using in the first instance the Local Criteria below to select the candidates. At the next stage when each country team has submitted its candidates, the Global Criteria will also be applied to take into account interests of the DEA project as a whole. The

application of the global criteria will be an open process with all partners contributing; ending with a set of case studies which best satisfies both the individual country interests and those of the DEA project as a whole.

Local Criteria – seen from the point of view of the country team and the country:

L1. National preference/relevance: Is the case study project one which can capture the interest and involvement of national stakeholders – especially the energy sector, and the country partner – not necessarily because of the project’s size or absolute impact but because of its potential contribution to energy access, development and replicability? Any other national preference, which may be stated explicitly, can favour a particular candidate study.

L2. Development impact: The intervention should have significant detectable developmental impacts other than or beyond “just” providing energy. Examples are income generation, gender impacts, social impacts, productive uses, address several MDGs. In short, the project should appear “interesting” to non-energy sector stakeholders. The development impacts may be difficult to measure, or attribute to the energy intervention alone, but they will provide a real challenge for DEA in going beyond normal M&E, and in attracting the attention of stakeholders.

L3: Availability of development impact data: Following on from L3, if significant development impact data from the project actually is available, this would count strongly in favour of the candidate. It is unlikely that all data required by the assessment framework will be available from an earlier study, so some supplementary fieldwork or survey is likely to be necessary.

L4. Availability of baseline: Similar to 3. There may not be a documented baseline as yet, but preliminary indications, for example from the WP3 scoping, may indicate that information on the situation before the intervention can be obtained, e.g. by calling on peoples’ memory, anecdotal evidence,

L5. Achievability: Will data be available for both the energy intervention and potential impacts? This does not mean that data actually has been collected yet. The case study is likely to involve some fieldwork, but the data should in principle be readily accessible within the resources available. Note that fieldwork/data collection is an integral part of the case study work programme, refer to the contract TOR. The partner’s knowledge of the project may play a role here since previous involvement in the project, for example as an AREED project means that data is likely be more accessible..

L6. Synergy with other development projects: A project which captures the impacts of concerted infrastructure efforts could be very useful in illustrating synergistic effects. Examples could be energy projects coinciding with rural development, agriculture, financing or other infrastructure projects.

Global Criteria – seen from the point of view of the DEA project as a whole – contributing to the quality and usefulness of the Assessment Framework

G1. Representative: The set of interventions in the Case Studies should span a number of different types of interventions or energy technologies in order to “test” or develop the AF. We would also hope to cover a minimum of intervention types and impacts: rural or village electrification, productive uses, income generation, production and use of bio-fuels

G2. Illustrative value: The intervention may have high value in illustrating energy-development connections to other countries, i.e. intervention types which are common in other African countries.

Gordon Mackenzie 25/01/2006