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KaR-R8145

Modern Energy: Impacts on Micro- enterprises

Inception Report

A report produced for the Department for International Development

Tom Slesenger	AEA Energy and Environment
Denise Oakley	" " "

Paul Harris	IES Ltd
Chris Hazard	" "

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1 Executive Summary

Background

This is the inception report for KaR Project R8145, Modern Energy: Impacts on Micro-enterprises. Phase-1 (the inception phase) is scheduled to complete by 30th June 2003 at which time there is a contractual breakpoint. If authorised to proceed with phase 2, the project will then complete by end June 2005.

The project is being led by Future Energy Solutions of AEA Technology plc (AEAT) in partnership with Integrated Energy Solutions Pty of South Africa (IES), Energy, Economy & Environmental Consultants (EEEC) of India, and independent consultants.

The original project Purpose is to “investigate whether prospects for poverty reduction through employment and/or income generation opportunities in micro-enterprises can be created or enhanced by the provision of modern energy services” (section 2.1). Following correspondence with DFID the Purpose has been revised to become “investigate *how* prospects for poverty reduction...”

The Inception phase has centred on the development and testing of a field research methodology, and on the detailed planning for phase-2.

Progress

An inception meeting has been held in South Africa. A literature review completed and articles and project descriptor prepared for Energy Voices and the KaR web-site respectively. Methodology and project focus has been debated at length both within the project team and with DFID's advisor Andrew Barnett. A detailed methodology has been drafted including discussion of the research context, issues, inputs, and methodological approach and tactics. Field research questionnaires have been prepared. A field trial of methodology has been conducted in the community of Fisantekraal in South Africa. Methodology has been revised in the light of the field trial and detailed planning has been undertaken for phase-2. A planning meeting has been held in the UK involving both the UK and South African teams resulting in phase-2 resource estimates and scheduling being adjusted in the light of experience through the field-trial. High-level contact has been established with the South African energy utility ESCOM, who participated in field reconnaissance of communities that might be suitable for research in phase-2. Contact has been re-established with private sector and institutional organisations planning rural energy interventions in India. Taking into account planned energisation schedules in both countries, first and second preferences for communities to be surveyed in phase 2 have been identified.

Outputs

Primary outputs from this phase of the work are a Methodology and a Field Trial report (the latter providing insight and guidance on the implementation of methodology), a Literature Review and this Inception report. Other documents prepared and on file include a context paper, reports and correspondence on the selection of communities, texts for dissemination, draft dissemination strategy, and internal working papers that contributed to the evolution of methodology.

Literature Review

In terms of linkages between modern energy and micro-enterprise, the literature reviewed to date indicates that:

- a) Modern energy can, but does not necessarily, affect the emergence, development, productivity and efficiency of micro-enterprise.
- b) While lack of access to modern energy is often characterised as a barrier to micro-enterprise development, removing this barrier (through, for example, energy developments such as electrification) does not necessarily result in micro-enterprise development. Rather, modern energy should be viewed as one of a suite of critical enabling factors that act individually and/or in combination to create a suitable environment in which micro-enterprises can operate.
- c) The linkages between modern energy and micro-enterprise, and the effects of the former on the latter, can have a gender-specific dimension.

It is thus acknowledged that modern energy can impact on microenterprises. Later in this inception report we revise the Purpose of the project from “*whether* prospects for poverty reduction ... can be created or enhanced by the provision of modern energy services” to “*how* prospects...”

The review concludes that other areas that still require further investigation include:

- a) The energy needs of specific types of micro-enterprises, and the role of modern energy in meeting these needs efficiently and effectively;
- b) The contribution of micro-enterprise to economic and social development, particularly with regard to poverty alleviation in developing countries; and
- c) The environmental impact of micro-enterprise, including energy-related impacts.

Specific energy needs and the environmental impacts lie outside the scope of this project. The contribution of micro-enterprises to economic and social development is the purpose of the research and the literature review supports the need for this.

Methodology and Phase-2 Work-Programme

Final methodology centres on the collection of quantitative data that can be subjected of statistical analysis, supported by qualitative research to shed light on the context and interpretation of quantitative data, in particular regarding the influence of enabling factors other than energy. At the core of the research framework is a decision to scan, quantify and characterise all micro enterprise activity within a delineated community at a given point in time. To minimise reliance on anecdotal recollection of the impact of an intervention, it is planned to survey communities immediately before the intervention, and again 12-months later when the impacts of the modern provision have had time to take shape.

The plan is to research two communities in South Africa and two in India. The in-country project teams will seek to link to the Global Village Energy Partnership (GVEP) groups in those countries prior to final selection of those communities, and to explore further dissemination options.

Field Trial Observations

The field trial was undertaken in the South African peri-urban community of Fisantekraal, which had been electrified in 2001.

The purpose of the field trial was to undertake pre- and post energisation surveys rather it was to test the research methodology in a community where the likelihood of all relevant issues being present and readily explored using the quantitative and qualitative approaches was maximised (i.e. a community that had received a step change in energy provision and the micro enterprise activity was established and assumed to be diverse).

Of 1331 properties surveyed, in almost 24% an enterprise was found. Shabeens (selling liquor and entertainment) and Spaza shops account for 80% of micro-enterprises. Incredibly 3 out of 20 homes are trying to make some additional income through selling to their neighbours. Whilst Shabeens and Spazas are clearly a significant source of employment, income and service to the community, we have a concern that such a high level of retain activity may simply facilitate the circulation of money within the community but may not draw money into it. This is an issue that needs investigation in phase-2.

Some 9 % of micro-enterprise could be classified as manufacturing with some of these having significant potential for growth and serving markets outside the immediate community. The remainder offer services.

78% of the surveyed micro-enterprises offered informal credit (nil interest charges), and on average 17% of micro-enterprise turnover relied on such credit. Only 4% of turnover was lost to bad debts. Evidently trust and credit is an important contributor both to micro-enterprise activity and to survival for those households who received their incomes periodically.

A most profound finding is that at least 68% of the sample of micro-enterprises reportedly only started their businesses after the community received electricity and that all the businesses ranked having electricity as highly important to their business activities.

Subsistence level businesses were observed in Finsantekraal to be making an impact on households.

Selection of Communities for Research in Phase-2

We propose to study one peri-urban community in the Greater Cape Town area, and a rural community in the Eskom Eastern Cape region. In these areas the interventions are grid-connected electricity supply where there was none before. Energisation is scheduled for September/October/November 2003. Four peri-urban communities have been short-listed, our first choice is Lagrung, near Franschhoek in the Stellenbosch municipality (Greater Cape Town area) and comprising 1000 dwellings. Our preferred rural research area is Lady Frere Phases 5 and 6, just north of Queenstown, which comprises some 4,500 dwellings in discrete villages of between 100 and 400 homesteads.

In India we proposed to work in the Bangalore area, where EEEEC are active. Limited project resources inhibit research further afield. Whilst the majority of communities in India have been energised, an extensive problem is unreliable and poor quality power supply. We have short-listed seven rural communities in the Tumkur District, five of which are private sector initiatives in which biomass power plan is proposed, and two are public utility interventions,

sponsored by US-AID that will give a significant improvement to unreliable and low capacity supplies.

The final selection of communities is to be determined during the mobilisation period of the pre-intervention surveys and will be based on the exact energisation schedules at that time. Stakeholders from GVEP groups in each country shall be consulted prior to final selection. We note DFID's stated preference for private sector interventions in Tumkur District.

Dissemination

The methodology is detailed and highly demanding, requiring intensive field research to obtain quantitative data of significance that is supported by qualitative research to provide insight. The phase-2 budget is tight. The project team have taken the view that reductions in the resources for field research could compromise the results and raise other risks for the project partners, we have accordingly made cuts elsewhere and introduced cost-effective measures to fit within the phase-2 project budget. This includes the dissemination activities.

Dissemination during the research is to centre on articles that will be offered to newsletters and that will be distributed by e-mail direct to researchers interested in this area and to individuals in donor agencies (e.g. Doug Barnes, World Bank), utilities involved in the interventions, and the energy partnerships Global Village Energy, EU Energy Initiative and the Global Network for Sustainable Development, and the Renewable Energy and Energy Efficiency Partnership. At the start of phase-2, and following pre and post-intervention surveys, we shall update DFID's web-site project descriptor. Once the post-intervention results are analysed we shall target and distribute the lessons electronically.

We no longer propose a closing dissemination workshop as we consider that would not be as cost-effective and is not affordable within the present budget. Additional dissemination opportunities will be explored with the GVEP groups in South Africa and India. We will also keep the research communities, utilities and other stakeholders that are directly involved in the interventions, informed of progress and any preliminary conclusions that emerge whilst the research is ongoing.

Project schedule, budget and expenditure profile

Phase-2 has been planned within the original contract duration (phase-2 end-date 30th June 2005) and phase-2 budget (£169,336 excluding VAT).

We have identified communities that are to be energised commencing autumn/early winter 2003 (according to current schedules). This allows us to undertake pre-energisation surveys late July/August/September (South Africa) and October through early December 2003 (India). Post-energisation surveys will be delayed as late as practical into the financial year 2004/05 to cater for some slippage in the energisation schedules, and to allow time for the impacts of energisation to emerge whilst keeping as closely as possible to the original expenditure profile. Nevertheless some adjustment to the expenditure profile is unavoidable. We forecast that £12,300 (excluding VAT) of the original planned 2003/04 spend needs to be deferred to later years.

To keep to this timetable and expenditure profile we require DFID approval to proceed with Phase-2 by 25th July 2003 (preferably mid-July); this will allow sufficient mobilisation time for the first pre-energisation survey (expected to occur early August). In the event of delay there is a risk that we may not be able to survey the preferred communities pre-energisation and a risk that further 2003/04 expenditure has to be deferred to later years. Our lead researcher is involved in all surveys and it is impractical to recover lost time by scheduling surveys in South Africa and India in parallel.

Risk

Other than the inherent uncertainty of research, we consider the most likely operational risk to be the postponement or cancellation of an intervention after we have undertaken a pre-energisation survey. This would result in the data and the resources committed to its collection being of little use. Whilst this is outside the control of the research team the risk can be mitigated through contact with the energising authorities immediately on authorisation of phase-2 and in the period leading up to the surveys.

Conclusions and Recommendation

A field-research methodology has been developed, tested and demonstrated to be practical and capable of providing highly informative observations pertinent to the stated Purpose of the project.

The project focus and structure has been clarified.

Phase-2 resource planning has been defined by the demands of the methodology and informed by practical experience through the field trial. The plan is credible and achievable.

Risks have been identified and addressed where practical through methodology and the detailed planning for phase-2.

We recommend implementation of phase-2 as set out in this Inception Report

2 Goal, Purpose and Outputs of the project

2.1 GOAL, PURPOSE AND OUTPUTS

The contracted Goal, Purpose and Outputs are shown in the table below. The right hand column shows approved revisions to the phase 1 outputs. Whilst a contract amendment has been promised it has been delayed by the office relocations within DFID.

<p>GOAL: To support the emergence of livelihood diversification opportunities of poor people through the creation and growth of micro-enterprises after access to modern energy has been gained.</p>	<p>No modification</p>
<p>PURPOSE: To investigate whether prospects for poverty reduction through employment and/or income generation opportunities in micro-enterprises can be created or enhanced by the provision of modern energy services.</p>	<p>No modification prior to issue of inception report. We propose “whether” is replaced by “<i>how</i>” elsewhere in this document</p>
<p>OUTPUTS:</p> <p>PHASE 1</p> <p>Task 1</p> <p>1.1 A dissemination strategy that is capable of bringing the work and its implications to the attention of key stakeholders, including donors, local and national governments, utilities etc. This will include plans for developing linkages with other donors such as the World Bank to provide maximum added value from the work.</p> <p>1.2 Structured critical literature review setting out the current understanding of the relationship between micro-enterprise and modern energy provision. This review will include selected country programmes and their impacts.</p> <p>Task 2</p> <p>2.1 Survey of energy service use in the survey area, concentrating on identifying productive use by micro-enterprises.</p> <p>2.2 Final specification of methodology, including data collection and processing protocols to provide statistics and qualitative data, and case study specification.</p> <p>Task 3</p> <p>3.1 Project inception report, summarising the progress of Phase 1.</p> <p>3.2 Project review meeting with DFID to determine the need to carry out Phase 2.</p>	<p>Task 1 – No modification</p> <p>Task 2.1 – Report on a field test of research methodology covering a representative survey sample.</p> <p>Task 2.2 – No modification</p> <p>Task 3 – No modification</p>
<p>Break Point</p>	

<p>PHASE 2 Tasks 4 and 5 4.1/5.1 For each of the two identified sites three surveys carried out over an extended timeframe. 4.2/5.2 Feedback after each survey to the sponsoring organisations (ie the body that gave access and other stakeholders) (for each site)</p> <p>Task 6 6.1 Case study report, presenting field work findings and analysis including both qualitative information and quantitative data. These will be used to expose the relationship between provision of modern energy services and micro-enterprise. 6.2 Production of guidance notes that show how: Energisation of communities and associated interventions can maximise micro-enterprise development. -To maximise associated poverty alleviation. -To maximise impacts on beneficiary groups. -To minimise environmental impacts. -To maximise sustainability.</p>	<p>Modifications are proposed in section 4 of this inception report.</p>
<p>PHASES 1 & 2 Task 7 7.1 Targeted communications, specified in the strategy agreed in Task 1, that bring the work to the attention of key stakeholders, including utilities, donors, NGOs, local and national governments. 7.2 Linkages developed with donors and other work, such as the World Bank. 7.3 Final workshop.</p>	<p>Task 7 – No modification</p>
<p>Task 8 8.1 Effective management of the project. 8.2 Progress reports. 8.3 Final report. 8.4 Project summary.</p>	<p>Task 8 – No modification</p>

2.2 ISSUES ADDRESSED/CLARIFIED IN THE INCEPTION PHASE

The primary issue to be resolved in phase 1 has been the **Research Methodology** as this has a fundamental impact on the realisation of the project aims and on its outputs, scheduling and resource planning for phase 2.

In considering methodology it became clear that the project required improved focus and clarity regarding the **research goals and limitations**. The log-frame is too broad in its scope in that it postulates a great many linkages and impacts that cannot all be researched with an equal degree of robustness within the resources available to this project.

In discussion with DFID, it’s advisors, and the project team; it became evident there were different perceptions as to how the project is to achieve its goals. The issue largely centred on the **balance between quantitative research of a statistical nature, and qualitative research of a case study nature**. Another opinion debated, promoted the demonstration of

principal through design and implementation of an actual intervention, is beyond the scope of the contract.

Impacting on methodology and phase 2 planning has been the **number and type of communities to be the subject of research**. This influences the resources needed for research and the statistical significance of the results. With limited resources there has to be a compromise between the depth of investigations and the size and scope of the sample.

Related to this is the **selection of communities** to be the subject of research in phase 2. The derived methodology calls for surveys both before and after a modern energy intervention. The selection of communities is very much determined by utilities energisation schedules. A consequence for the project is a **critical timeline** for phase 2.

The methodology has been largely developed and tested by the South African and UK teams. The methodology must be followed systematically and the subtleties fully understood by those undertaking the research. **Harmonization of the South African, Indian and UK teams** has a resource impact in phase 2.

The **composition of the team** has been reviewed and steps taken to strengthen it.

There is also the question of the **balance of resources allocated to research and those allocated to dissemination**.

Finally the project team has been concerned with risk management. The inception phase has been challenging and resource intensive. By its very nature the outcome of any research is uncertain, nevertheless it has become a goal to develop a project plan for phase 2 that is costed realistically and which has a minimum of uncertainties in respect of the implementation of methodology. This impacts on the **distribution of resources between the project collaborators**.

3 Initial Findings and Activities

3.1 KEY ISSUES

Key issues for the inception phase have been presented in the previous section. Here we present out findings and conclusions.

3.1.1 Research Methodology

The methodology developed in phase 1 is presented in detail in the Methodology Report. In this section we present a synopsis of the key features.

At the core of the research framework is a decision to scan, quantify and characterise all micro enterprise activity within a delineated community at a given point in time.

To minimise reliance on anecdotal recollection of the impact of an intervention, it is planned to survey communities before the intervention, and again at a time when the impacts of the modern energy provision have had time to take shape.

The methodology developed for this project deploys the following research instruments and activities:

- Micro-enterprise identification sweep.
- Enterprise activity snapshot.
- Livelihood impact snapshot.
- Community characteristics.
- External intervention log.
- Qualitative information gathering.

An identification sweep briefly surveys all properties to detect micro-enterprise activity within the delineated research area.

The aim of Enterprise Activity and Livelihood Impact snapshots, in the form of quantitative questionnaires, will be to determine at a given point in time the extent and nature of micro enterprise being undertaken within the community area, the extent of livelihood impact from those micro enterprises. A subsequent “snapshot” of this data will give the research team the opportunity to evaluate changes related to micro enterprise activity and its impact in the delineated research area.

Evaluation of micro enterprise changes and the consequences of this within a defined community will require an understanding of the community itself. Hence, at the beginning of the research the community characteristics will need to be assessed and further regularly updated throughout the life of the project.

Changes in a community and the micro enterprise can come from many sources and drivers., examples being development programmes, macro environmental changes, external market accessibility, etc. As part of background data a log of intervention and external influences needs to be maintained during the research period. This will be of use in increasing understanding of the quantitative data and segregation of the energy impact.

The most important role for qualitative research techniques will be to conduct in-depth participatory cause and effect research to fully understand the various factors impacting micro-enterprise, especially from a modern energy provision perspective, what the linkages are and how they interrelate (if at all) with each other. The findings will also have a role in the validation of collected data. Qualitative research approach involves in-depth interviews with selected individuals and focus groups in order to further explore livelihood linkages and particular issues identified during the quantitative surveys.

Legitimacy in the community is key to obtaining the co-operation of the community and to guarantee the safety of the research team. The methodology includes actions and other measures designed to secure the legitimacy of the research team.

Also impacting on the development and implementation of the methodology is the recognised reluctance of micro-enterprise owners to release sensitive financial information. Creative questionnaire design has proved necessary to allow this type of data to be derived from a series of questions that are perceived by owners to be less intrusive and that they are therefore willing to answer.

The methodology is designed to be impartial and transparent to counter any suspicion that the project team has a vested interest in proving a causative linkage.

3.1.2 Research Goals and Limitations

The inception phase has been used to clarify the project goals and limitations.

- The project aims to deliver convincing, rather than anecdotal evidence of the impacts of modern energy intervention on micro-enterprise activity at the community level. It further aims to identify causative linkages between modern energy and micro-enterprise activity in poor communities.
- Whilst lessons may be extrapolated to other communities and environments, because of the many influencing factors the conclusions will only strictly be valid for the context of the communities under study. Nevertheless lessons that emerge are likely to have wider application and the project team will aspire to identify and extract these.
- Measurement by means of the community as receivers would be incredibly difficult as they receive livelihood impacts from countless sources. Differentiation between these, by say, a member of the community would be virtually impossible, thus both the enterprise and livelihood impacts are to be measured by engaging with the micro-enterprise and not the community in terms of the quantitative data collection. Part of the qualitative research will however also engage non micro-enterprise owners in the community, but the primary activity will be on micro-enterprise activity rather than community focussed.
- Micro-enterprises are defined for this project as being staffed by between 1 and 10 people, owned by a member of the community and utilising an energy connection within the community.

Questions or aspects that are expressly excluded from the scope of this project include:

- Overall household/individual livelihood changes that results from the introduction of modern energy services – the methodology focuses rather on the micro enterprise associated livelihood impact.
- The impact on livelihoods by changes in external employment, in other words adjacent factories, migrant labour etc; the methodology focuses rather on the local micro-enterprise impacted by the introduction of modern energy services and the associated livelihood impact in the community being studied (note the opportunities for and influence of external employment will be identified and monitored through the external intervention log and community characteristics record).
- This is an energy and micro-enterprise investigation, hence it is not a detailed study of micro enterprise enablers, operation and economic assessment – the project focus is on how energy enables and supports growth of micro enterprise.

- How energy impacts directly on livelihoods – the focus is on how energy impacts micro enterprise and thereby livelihoods.
- Economic modelling looking at flows of income and expenditure, aggregate and sectoral surpluses/deficits within defined communities.
- Whilst gender information will be collected on gender ownership and employment in micro-enterprises, the linkage between energy and women’s empowerment is a highly complex topic that, given the resources available, is beyond the scope of the methodology. Qualitative observations might shed some light on any such linkage, but women’s empowerment will not be a focus for the project per se.

3.1.3 Balance Between Quantitative and Qualitative Research

The methodology focuses on the systematic gathering and statistical analysis of quantitative data. Qualitative investigations will shed light on the context and interpretation of the quantitative data, in particular regarding the influence of enabling factors other than the energy.

3.1.4 Number and Type of Communities to be the Subject of Research

There has been considerable debate on this topic, with advisors wishing to have investigated a broad range of technologies (grid-extension, off-grid diesel-electrical, PV, and other renewable energy technologies including biomass), community types (rural, urban), and an extended range of timeframes, whilst at the same time desiring statistical significance in the quantitative data. There has also been the proposition that the project gathers data from control groups that are not subject to an energy intervention within the timeframe of the project.

DFID’s stated preference that the research includes both urban and rural interventions. It is also necessary (and appropriate) under the terms of the contract to undertake research in the 2 countries of South Africa and India.

Because of the many influencing factors, the research team considers the conclusions will only strictly be valid for the context of the communities under study. Whilst lessons may be contrasted from different communities it is questionable whether it is valid to combine the raw data from communities that are subject to differing external influences.

Mindful of the above, in particular the desire to maximise the statistical significance of the data, the phase 2 plan accommodates pre and post-intervention surveys for 4 communities: 2 each per county per country (South Africa and India). Grid extension will be the intervention to be studied in South Africa, whereas in India where the grid is extensive but unreliable and power supply sporadic, the research shall examine the impacts significant step change improvements to the power supply.

The methodology does not include the use of control groups. The primary reason is that we would not have legitimacy or credibility in the control group. Whilst a community can be encouraged to co-operate if they perceive that they will benefit from events related to our study and from our findings, the same would not be true of the control group and is likely to lead to resentment and non-co-operation. The control group dataset is likely to be

compromised as a result. Another major concern is that it will be very difficult, perhaps impossible, to identify a control group that is comparable and subject to the same external impacts as the group under study. Only if an adjacent and otherwise identical community were used as the control might the results be comparable, however the way in which electrification diffuses across an area suggests we would not find contrastable control and intervention communities. The limited resources are another contributory factor to the decision not to use control groups.

3.1.5 Selection of Communities for Research in Phase 2

Suitable communities for research in phase 2 have been identified in both South Africa and in India. A final selection will be made shortly before the pre-energisation survey, as intervention schedules are quite dynamic and energisation of a particular community that we select at this time may be delayed or brought forward (of even postponed indefinitely).

South Africa

Possible urban/peri-urban communities in the greater Cape Town area of South Africa have been identified through IES discussion with four Municipality or City Administrations and discussion with Mr Andre Kuhn, Electrification Manager, Eskom, Western Cape. From the information gathered on urban sites four possible sites have been found to be feasible. They are sufficiently large (with the smallest having 400 homes) and appear to be discrete sites. We are not in favour or working in subsequent phases of existing large communities such as Wallacedene since the data will be extremely complex to disentangle from what has already happened. The four *peri-urban* sites we have selected for final selection once Phase Two has been approved are:

Stellenbosch municipality:

- Langrug, Franschhoek with 1000 dwellings is a mixture of coloured and black residents is our first choice.

Eskom:

- Phillipi Park with 900 dwellings is predominately a black community.
- Laingville with 642 dwellings is a coloured community.
- Witsands, Atlantis with 400 dwellings is a mixed community.

Potential *rural* sites were identified through senior Eskom planning staff in the Eskom Eastern Cape Region. A reconnaissance trip of over 600km, and which included a member of Eskom staff, proved very useful in understanding the dynamics of performing micro-enterprise research in such a rural location. In this region electrification is implemented through a programme that electrifies large geographic areas at a time, with electrification sweeping through the villages in the area involving discrete projects of around 3000 homesteads. The preferred rural research area is just North of Queenstown, Lady Frere Phases 5 and 6, which together comprise some 4,500 dwellings in discrete villages of between 100 and 400 homesteads.

A meeting was held with the Eskom Regional Electrification Manager, Mr Eric Myoli. At the meeting a detailed overview of the project was given and feedback from the field visit. Various options on site selection were discussed and he agreed on behalf of Eskom that the

project would be accommodated. Following Phase-2 acceptance by DFID, he is awaiting a request for final site selection.

ESKOM EASTERN CAPE ELECTRIFICATION: TYPICAL HOUSING DENSITY



India

Up to 200,000 communities remain un-energised and those that are, the majority of inhabitants are either not connected or have unreliable power supplies.

Following field visits by EEEEC, there are 7 options short-listed for study, all of which are in the Tumkur District of the state of Karnataka and within 100km of Bangalore allowing it to be used as a research base.

Villages scheduled for an intervention in the near future by the public utility BESCO (Bangalore Electricity Supply Company) are:

- Gubbi Hosahalli comprising 348 households
- Neduvalapalya comprising 548 households and is a particularly dispersed community covering a geographic area of some 347 hectares

Both villages are near the town of Gubbi to the north of Bangalore and have similar power regimes: 3-phase supply for 3-hours in the morning and 1-hour in the evening for agricultural purposes, and 10 hours of poor quality, unreliable single-phase supply for domestic use. The intervention, in the latter part of this calendar year, is to extend the period of 3-phase supply, with single-phase supply to households and enterprises to be improved in quality and extended to a minimum of 22 hours per day.

Neduvalapalya and Gubbi Hosahalli are agricultural economies the villagers are known to do business other than cultivation to support their families off-season. There is evidence of pre-existing micro-enterprises in both villages. Whilst they are very similar in many respects an important difference is the level of land ownership, which is only 25% in Neduvalapalya but about 90% in Gubbi Hosahalli. The difference in impacts as a consequence of the improvement in energy services provision would be a very interesting observation.

Alternatives to the above villages arise from recent changes in legislation are designed to encourage private sector energisation. Biomass Energy for Rural India (BERI) working with ASTRA, a Department in the Indian Institute of Science, Bangalore, are planning private sector intervention in the villages of Kabbagere, Chickanahalli, Chickkarasenahalli, Agrenahalli and Obenahalli in Tumkur district of Turvekere taluk. These interventions will provide new electricity generating capacity (a biomass power plant) for each village. We understand some 50-75% of the load is already booked for agricultural applications. The remaining capacity would be available for micro-enterprises if they chose to contract for the supply.

We understand DFID's preference is to study villages that are to benefit from a private sector intervention. We will give priority to study of a private sector initiative provided the intervention schedule and other community parameters do not conflict with the project plan and the methodology.

As with South Africa the final selection of communities will be taken in the weeks immediately prior to our timetable for the pre-energisation survey. Once we have approval to proceed with phase-2, we shall re-establish contact with the public and private utilities and will monitor intervention schedules. Prior to final selection we shall consult with local GVEP stakeholders.

MOTOR WINDING MICROENTERPRISE IN NEDUVALAPALYA



3.1.6 Timeline

Communities have been identified for research in phase 2 on the basis that they will be energised late in the (UK) Autumn 2003 for South Africa, and early (UK) winter for India. This is to enable the pre-energisation surveys to take place and enable an interval of at least a

full year between the pre and post-energisation surveys. To enable the project to operate within this timetable, mobilisation for Phase 2 needs to occur at the end of July 2003 at the latest. Any extended delay in securing DFID contractual approval to proceed with phase 2 will jeopardise the use of these communities for research with the consequence of additional expenditure being required to identify and select alternatives. The timeline is illustrated in the project plan at the end of this section.

3.1.7 Harmonisation of the South African, Indian and UK Teams

IES has led the detailed methodology development with AEAT providing strategic focus and qualitative inputs. Although the methodology and field trial are reported in detail this is insufficient to transfer appreciation of the subtleties and lessons learned from the methodology field trial to the field research team at EEEEC. It is important that the methodology is followed precisely otherwise the results from India may not be robust. The field research in South Africa and India is staggered, with the lead EEEEC researcher involved for part of the opening South African pre-intervention survey in order to learn and subsequently transfer the methodology to the other members of the EEEEC project team. AEAT's lead researcher will participate in both the South African and Indian surveys and will monitor both teams application of the methodology.

3.1.8 Composition of the Team

During the inception Phase, Bereket Kebede of the Well-being in Developing Countries Unit at the University of Bath was added to the project team. Bereket brings expertise and track record in the statistical analysis of field data through his contacts with the AFREPEN network.

Due to turnover of staff and an extended illness, the AEAT project manager has been changed with DFID's approval, and the lead researcher replaced with another member of the team named in the proposal. The project manager and lead researcher are now Tom Slesenger and Denise Oakley respectively. Whereas the proposal names some 16 AEAT experts the AEAT team for phase two is restricted to these two individuals, plus a small amount of junior support for internet research, to ensure focus and effective recognition of lessons arising.

Professor Malcolm Harper will not participate in phase-2.

3.1.9 Balance of resources allocated to research and those allocated to dissemination

The methodology is detailed and highly demanding, requiring intensive field research to obtain quantitative data of significance that is supported by qualitative research to provide insight. The resources for phase-2 have been planned in detail, a meeting in the UK involving the South African and UK team being convened for the purpose. The phase-2 budget is tight. The project team are concerned that reductions in the resources planned for field research would limit the extent of observations and lessons learnt, might compromise the results, and would raise other risks for the project partners. We have strived to identify efficiencies elsewhere to allow the necessary resources to be allocated to the research whilst fitting within the phase-2 project budget.

Whilst we have necessarily reallocated resources from dissemination to field research, to compensate we have introduced cost-efficient electronic dissemination to networks and targeted individuals and collaborating energy service providers. We no longer propose a closing dissemination workshop as we consider that would not be cost-effective nor affordable within the present budget.

Section 5.2 provides further details of our dissemination strategy and section 4.7 our phase-2 budget breakdown.

3.1.10 Distribution of Resources Between the Project Collaborators

The methodology calls for extensive field research in the communities that needs to be timely, efficient and effective. The role of the local project partners is critical, accordingly a reallocation of budget is proposed from the AEAT staff resources to IES and EEEEC. Section 4.7 provides further details.

R8145 Modern Energy: Impacts on Micro-enterprises										Phase 2 Project Plan					
	FY 2003/04									FY 2004/05				FY 2005/06	
	July	Aug	Sept	Oct	Nov	Dec	Jan-04	Feb	Mar	Q1	Q2	Q3	Q4	Q1	Q2
Mobilise															
SA pre-energisation survey															
SA scheduled energy interventions															
India pre-energisation survey															
India scheduled energy interventions															
Preiminary partial analyses															
SA post-energisation survey															
India post-energisation survey															
Full analyses and team workshop															
Dissemination and reporting															

X denotes progress report

3.2 KNOWLEDGE REVIEW

3.2.1 Literature Review

A literature review has been undertaken which is reproduced elsewhere. Key points are reproduced in the box on the following pages. The conclusions are as follows:

In terms of linkages between modern energy and micro-enterprise, the literature reviewed to date indicates that:

- d) Modern energy can, but does not necessarily, affect the emergence, development, productivity and efficiency of micro-enterprise.
- e) While lack of access to modern energy is often characterised as a barrier to micro-enterprise development, removing this barrier (through, for example, energy developments such as electrification) does not necessarily result in micro-enterprise development. Rather, modern energy should be viewed as one of a suite of critical enabling factors that act individually and/or in combination to create a suitable environment in which micro-enterprises can operate.
- f) The linkages between modern energy and micro-enterprise, and the effects of the former on the latter, can have a gender-specific dimension.

It is thus acknowledged that modern energy can impact on microenterprises. Later in this inception report we revise the Purpose of the project from “*whether* prospects for poverty reduction ... can be created or enhanced by the provision of modern energy services” to “*how* prospects...”

The review also concludes that other areas that still require further investigation include:

- d) The energy needs of specific types of micro-enterprises, and the role of modern energy in meeting these needs efficiently and effectively;
- e) The contribution of micro-enterprise to economic and social development, particularly with regard to poverty alleviation in developing countries; and
- f) The environmental impact of micro-enterprise, including energy-related impacts.

Specific energy needs and the environmental impacts lie outside the scope of this project. The contribution of micro-enterprises to economic and social development is the purpose of the research and the literature review supports the need for this.

Key findings and questions from the literature review

- Standard of living is a key variable.
- Modern energy needs to be used productively to generate cash income.
- Notion of survivalist versus potential flyers.
- Few research studies have undertaken empirically rigorous comparisons of pre and post electrification impacts on micro enterprise development.
- Information about manpower employed, wages, income levels etc in the SME sector is scattered, scarce and often unreliable.
- Understanding of the link between modern energy provision and micro enterprise development is complex (due to other influencing enablers and varying energy needs for different enterprise types, location specific realities etc.). The link is not easily identified in the literature, yet is fully supported as a notion, whilst the strength of the connection certainly varies between different situations.
- There is scepticism regarding claims made about the benefits of modern energy for micro enterprises, with a view that such claims are often exaggerated, sometimes being based on flimsy empirical evidence and can therefore lead to disappointment.
- The arrival of an electricity supply in certain areas seems to be a crucial factor in precipitating decisions by local entrepreneurs to invest in a variety of productive enterprises.
- One view is that of modern energy as one of a number of critical enabling factors that are necessary for micro-enterprise development. Also that energy becomes a relevant input to income generation only when a certain economic capacity beyond sheer subsistence is reached.
- Another perspective is that the primary impact of modernising energy supply and service is felt by both struggling micro-enterprises and those that are already relatively well established, and is not so much a contributing factor for new micro-enterprise. Thus according to this view, access to electricity (in this case) encourages the modernisation of existing rural SMMEs but exerts only a modest stimulus for the growth of new enterprise.
- Access to electricity for business purposes is not relevant or necessary for some sub-sectors but lack of access is a significant constraint to those in other sub-sectors.
- Modern energy may be good for some sub-sectors, neutral for others and perhaps, negative for yet others.
- Over one third of the unofficial users in a 1996 survey of consumers in Orissa were employing some of the power for commercial purposes.
- There can be differing benefits to the entrepreneur, such as reduced time in collecting energy, time spent utilising it, productivity changes, impact of supply loss etc.
- The nature of the enterprise determines the intensity of energy use.
- Correspondingly the expenditure on energy varies as to the nature of the enterprise and the energy utilised.
- Availability of modern energy services has led to increased productivity, reduced labour components and has made products more attractive to consumers.
- Lighting has been shown to have widespread benefits for micro-enterprise in providing greater safety and security.
- Better process linked to the modern fuels can allow for higher quality products and better customer satisfaction, thereby higher prices can be asked for the outputs.
- Hours of operation can be lengthened through the availability of better or more light as a consequence of modern energy services.
- There are many micro enterprises which owe their existence to the availability of modern energy, but which also themselves play a vital role in the use and delivery of the energy. In India manufacturing, supplying and maintaining PV equipment, in Kenya entrepreneurs importing, wholesaling and retailing PV systems, village electricity committees in Eastern India, the charging of 300,000 batteries in Sri Lanka; and, the creation of pre paid electricity vendors for the urban electrification programme across South Africa.

Key findings and questions from the literature review (continued)

- Where a local power company offered a range of training and other support to promote new business in areas where electricity was newly available, some 62 businesses, employing several hundred people, were set-up as a result of their efforts.
- Energy systems can also produce valuable by-products such as Biogas digesters producing fertiliser, which is more productive and more convenient.
- Modern energy can also have negative impacts and sometimes impacts the most vulnerable people who may be displaced and have no alternative sources of livelihoods. Examples include transition from handloom to power-loom weaving, replacement of hand-milling by small scale motorised mills; and, the industrialised use of biomass for fuel in Brazil with ethanol production displacing large numbers of small farmers and reduced production of subsistence crops.
- Energy is clearly not the only barrier to poverty alleviation and in fact ranks way down the list.
- Other critical enablers would be; access to finance, equipment, skilled staff, markets, institutional support, etc.
- Access is not so much the issue as is the reliability and affordability of modern energy.
- Differentiation of energy availability from other constraining factors may prove to be difficult.
- Lack of access to modern energy, and electricity in particular, imposes a severe constraint on the level of technology that can be adopted by entrepreneurs.
- There are internal constraints for micro-enterprise growth and innovation, such as entrepreneurial ability and lack of organisation, and external constraints such as limited market for products, lack of investment and lack of electricity and water.
- The effect of micro enterprise on the empowerment of woman alone is a complex matter, with the added dimension of the energy relationship increasing the complexity level.
- While there are significant potential benefits to women in terms of poverty alleviation and income generation from modern energy in micro-enterprise, studies indicate in many situations, once it becomes profitable, men begin to control this activity.
- Overall, a number of impacts from the provision of modern energy will need to be measured.
- South Africa is both a developing and developed country. It has recently undertaken a major electrification programme among the urban poor and such projects are still in progress affording rare research opportunities.
- There is a need to assess the significance of modern energy in terms of the hierarchy of other enabling factors needed for micro enterprise development, for specific types of business, in particular circumstances.
- While lack of access to modern energy is often characterised as a barrier to micro enterprise development, removing this barrier does not necessarily result in micro enterprise development. Rather, modern energy should be viewed as one of a suite of critical enabling factors that act individually and/or in concert to create a suitable environment in which micro enterprise can operate.

Questions raised in the literature:

- What is the gender specific dimension to the impact?
- What are the energy needs of specific micro enterprise types, and the role of modern energy in meeting these needs efficiently and effectively?
- What is the contribution of the micro enterprise development on the socio economic development?
- What is the environmental impact of the micro enterprise development, including the energy related impact?

3.2.2 Sustainable Livelihoods Framework

Methodology development has also been influenced by DFID's Sustainable Livelihoods Framework and by consultative inputs from external advisors and from the project team.

From the Sustainable Livelihoods Framework we have taken particular heed of the following core principals:

- People centred approach including process of participatory enquiry at a community level.
- Holistic approach that attempts to identify;
 - Most pressing constraints faced by people. Promised opportunities open to people
 - Builds on people's own definitions.
- Includes multiple influences on people, multiple actors, multiple livelihood strategies and multiple livelihood outcomes. Attempts to gain a realistic understanding of what shapes peoples livelihoods.
- Dynamic approach that calls for ongoing investigation and an effort to uncover the nature of complex, two way cause and effect relationships and iterative chains of events.

Other important inputs from the DFID Livelihoods Framework have been:

- Participatory development. The approach will not be effective unless enacted in a participatory manner by people who are skilled in social analysis. Promotes peoples own livelihood objectives. There is no prejudgement and must be established through participatory activities. Also, indicators of impact are expected to be negotiated with local people.
- A sustainable livelihood is one that allows a household to maintain and increase its stock of assets.

3.2.3 External Inputs

We have received two pieces of advice that have directed us toward focus on income and thus quantitative data collection. In discussion between the project manager and Peter Davies of DFID, it was noted that at a 2002 intergovernmental development forum in Africa, senior representatives of African governments stated that they "cannot support rural electrification unless it can be shown to improve incomes". Andrew Barnet, DFID advisor, suggested that numerous projects have looked at the social impacts of energy at a household level. Though there might be social impacts it does not necessarily contribute to poverty reduction unless there is a change in the level of income for individuals, households and communities. He recommended the project explore income, and that it have a quantitative, statistical focus.

Andrew has reviewed the early methodology framework documents. He observed that the amount of data that could be collected under this will be limited and the data-set will

inevitably have limited statistical significance. The methodology team have been concerned not to erode the statistical significance of the data and for that reason we have not incorporated other thoughts that were raised as suggestions to be considered (as distinct from recommendations to be incorporated). These suggestions include survey of a range of energy sources, including diesel, and a range of timeframes (e.g. surveys 1,3, and 5 years after the intervention). Our methodology is based on comparison of pre and post-intervention survey results which, given the resources and end-date for the project, precludes this latter suggestion.

It was further suggested that the project targets SME's that have a potential for growth as a result of an intervention, many SME's have no such potential because they provide basic services in a saturated market. We have not adopted this recommendation. To target enterprises in this way is to bias the results in favour of proving a positive result from the intervention, it will not identify the overall impacts on the community which may include negative economic and livelihood impacts for some subsistence-level enterprises. There is a risk that an energy enabled enterprise may displace activity and incomes elsewhere. The methodology has been designed to obtain a snapshot of all micro-enterprise in a delineated community with the objective of determining the net effect of the intervention.

We have adopted Andrew's definition of micro-enterprises as employing between 1 and 10 people.

A copy of the draft methodology framework was sent to Doug Barnes at the World Bank but to date comments have not been received.

3.2.4 Project Team Inputs

The mechanics to be adopted for community engagement, the design of the questionnaire, and the design of the external intervention log all stem from the extensive field experience of the IES team, the mechanics and design being tested and refined by the project partners through the field trials. IES are particularly aware that interventions may not always have a positive effect for all, and that net positive impacts are likely to require other enablers to be in place. Such insights have influenced the design of methodology.

In his review of methodology Dr Kebede, the statistician in our project team, has advised against including too many variables in order to maximise the potential for correlation of results between communities studied.

3.3 INCEPTION WORKSHOP

An inception workshop was held in South Africa between 11th and 14th November 2002. Attendees were the AEAT substitute project manager Kate Meadows (the appointed project manager being on extended sick leave) and AEAT's Claire Downing; independent expert Professor Malcolm Harper; and the IES principals Paul Harris and Chris Hazard.

EEEC were unable to attend due to bureaucratic difficulties in securing a visa invitation in time. Rather than delay the workshop it was decided to continue without EEEEC's attendance.

The workshop considered hypotheses to be tested and questions to be addressed through the research; it agreed definitions and terminology; and other aspects of methodology. Site visits were undertaken to a variety of communities to demonstrate the South African context for the research and to identify issues for debate and attention in the research methodology.

Observations that influenced the methodology included:

- There is a need to check every property in the community for micro-enterprise activity as there was evidence of many such enterprises that supplement domestic income.
- Visible evidence of failed businesses.
- That micro-enterprise activity observed is, in the main at a subsistence level and may not make a meaningful contribution to lift those people out of poverty and dependency.

Other observations were in the form of tentative conclusions that we would expect to prove or refute through the research, e.g.

- Significant enterprise/income generation around the energy service sector;
- Access to external markets is needed to really grow micro-enterprises;
- More female than male entrepreneurs.
- Little evidence of knowledge amongst entrepreneurs of different energy costs, they simply use whatever they have access to and may or may not factor the costs into their prices;
- Little evidence of special organisation of micro-enterprise activity throughout the community.

3.4 FINDINGS AND RESULTS SO FAR

We present here some results from the field trial undertaken March 2003 in Fisantekraal, South Africa. Whilst in the field trial it has not been possible nor was it intended to undertake pre-and post energisation surveys, the quantitative and qualitative observations from the test methodology are nevertheless interesting and in places surprising. More data, discussion and guidance for future use of the methodology can be found in the Field Trial Report.

Fisantekraal

Township Age:	Approx 7 years
Population:	6,500
Households:	1,500
Languages:	Xhosa, Afrikaans, English
Electrified since:	2001 i.e. 2.5 years since electrification
Fuels used:	Electricity, wood, paraffin, LPGas
Building structures:	Legal formal structures
Politics:	Stable
Safety:	Calm
Accessibility:	Located 12 km north east of Durbanville

Key points to note from the micro-enterprise identification sweep are:

- Total of 1331 sweep questionnaires completed and captured.
- In 23.67% of the homes an enterprise was found.
- Shabeens and Spaza shops account for 80.31% of the enterprises!
- Incredibly 3 out of every 20 homes are trying to make some additional income through selling to their neighbours.

Types of Micro-enterprises

As indicated above there is a very high number of trading businesses rather than manufacturing, 62% of the micro-enterprises are Spazas selling household consumables and over 18% Shabeens selling liquor and entertainment. Collectively 80% of the 315 total numbers of micro-enterprises identified. However these micro-enterprises are a significant source of employment and income for members of the household and service to the community.

The remaining 12% of the micro-enterprises identified displayed a rich diversity of commercial activity. Some 9% of the micro-enterprises that were identified could be classified as manufacturing with some of these having significant potential for growth and serving markets outside the immediate community. Manufacturing activities included:

2 small scale bakers
 2 carpenters
 1 printer of T shirts
 8 shoemakers
 1 welding shop
 13 seamstresses

The balance of the micro-enterprises is service activities like hairdressing, crèche, transport and TV repairs.

Significance of Micro-enterprises in Community Economic Life

Micro-enterprise activity is clearly very significant given high levels of unemployment and a ratio of 1 micro-enterprise per 4.23 households in the community.

Average people employed per enterprise:	1.9 (includes owner)
Average transaction size:	R 39
Average micro-enterprise turn-over:	R9,937 per month
Average micro-enterprise profit:	R1,290 per month
Average owner's income:	R1472 per month
Average employee's income:	R 114 per month

At 0.45 people employed per household, the micro-enterprises impact in a community at with 1331 households is significant. Clearly micro-enterprises, however varied and modest that some may be, play a crucial role in economically sustaining this particular poor community.

There are many small survivalist micro-enterprises, especially among the smaller Spaza Shops and Shabeens. There are nevertheless a moderate number of highly successful and profitable business entities within the community

Despite the surprisingly large number of micro-enterprises, the majority will not contribute to the alleviation of financial poverty within the community *as a whole*. The majority of Shabeens and Spazas, and many of the services enterprises encourage circulation of money within the community and presumably redistribution from richer to poorer members, but will not draw money into it. Indeed, Shabeens and Spazas are more likely to be a drain on the community net financial resources in that consumables must be imported from outside the community. Such issues need investigation in phase 2.

Manufacturing

There is very little manufacturing present in this established community that was electrified more than 2-years ago.

Ownership

Micro-enterprise ownership is fairly equally split between men 42% and women 48%. However, that the majority of owners are women indicates the gender empowering element of micro-enterprises and that in many cases, where there is no income for family the women create livelihoods to support their children. Women are also often more restricted to remain at home to care for children and other dependent family members and they make use of this opportunity by starting small home businesses to augment family income. That women jointly own 10% of the micro-enterprises links to mainly to husband and wife partnerships and such partnerships are probably higher than reported in practice.

Micro-enterprise and Energy

A most profound finding is that at least 68% of the sample of micro-enterprises reportedly only started their businesses after the community received electricity and that all the businesses ranked having electricity as highly important to their business activities. It ranked, on average at 4.7 on a 5-point scale with 5 being high.

Every micro-enterprise surveyed had a refrigerator, and 68% a freezer. Some 37% used electric lighting and 27% a radio, jukebox or hi-fi. Regarding appliances used for manufacturing, woodworking power tools achieved 13% penetration; electric-cooking appliances, sewing machines, irons were each found in less than 10% of the micro-enterprises.

Credit

78% of the surveyed micro-enterprises offered informal credit (nil interest charges), and on average 17% of micro-enterprise turnover relied on credit. Only 4% of turnover was lost to bad debts. Evidently trust and credit is an important contributor both to micro-enterprise activity and to survival for the households who suffer cash-flow problems.

Field Trial - Conclusions

The results illustrate that micro-enterprises have an important role to play in the community. There is anecdotal evidence that modern-energisation has had an enormous impact on micro-enterprise formation, due to the limited scale and objectives of the pilot the net economic impact on the trial community is uncertain. The high proportion of turnover linked to credit offered by the micro-enterprises, and the low level of bad debts suggests significant social benefit and livelihood impacts. Application of the full methodology, involving pre and post energisation surveys, is expected to provide rich quantitative and qualitative evidences as well as insights on the impacts of such an intervention.

3.5 LIKELY PROJECT CONTRIBUTION TO POVERTY ELIMINATION AND IMPROVED LIVELIHOODS

Many energy interventions are promoted and implemented in the belief that they will contribute to poverty elimination and improved livelihoods. Whilst there is evidence that the arrival of modern energy stimulates investment decisions by local entrepreneurs, there is also the view that modern energy alone is not enough; other critical enabling factors need to be in place. Perhaps most tellingly, beneficiary governments have begun to question the effectiveness of modern energy interventions as a means of improving incomes, with the threat that future interventions might not be supported¹.

Previous research has typically focussed on households, and has been qualitative in nature. There is a lack of quantitative evidence to support the premise that interventions stimulate enterprise to the net benefit of a community.

This research will provide evidences and insights into the impact of an intervention on micro-enterprise activity, and it will explore the knock-on impacts on livelihoods. Whilst the impacts are likely interdependent of other non-energy enabling factors, the 'how-to' lessons drawn from this study are expected to help inform the design of future energy interventions and to underpin policy decisions designed to contribute to poverty elimination and improved livelihoods

The South Africa field trial, whilst limited in scope, nevertheless provides some tantalising insights for the community under study. The energy intervention reportedly has had a extensive impact on micro-enterprise formation. It clearly benefits micro-enterprise owners by providing or supplementing their incomes. The retail nature of the majority of enterprises suggests this has helped to circulate and distribute money within the community (perhaps at the expense of retail outlets elsewhere), but there is little evidence in this trial to support the premise that income for the community as a whole has increased – there is only limited manufacturing to provide 'added-value' which is exploitable through trade beyond the community. Nevertheless, micro-enterprises, stimulated by the intervention, have clearly had an impact on livelihoods throughout the community.

¹ Peter Davies, DFID, reporting statements made by representatives of African governments at the 2002 intergovernmental development forum

Ratifying, expanding and qualifying such insights through phase 2 would contribute to the management of expectations and to the design of future interventions.

3.6 AVAILABILITY OF DATA

External sources of data to be used by the project are primarily details of the latest electrification schedules. This is to allow the final selection of communities. Good communications have already been established with the energy service providers and we do not foresee any difficulty in this.

The project is to generate its own data. Information on external influences will be gathered from the communities under study. Whilst we might choose to follow-up some apparently significant external non-energy influences, such follow-up is neither central nor critical to the project.

The quality of the data will depend on the trust and co-operation offered by the communities. Actions have been planned to secure the co-operation of communities through prior interaction with community leaders and employment of interpreters and research assistants from the communities and the promise of feedback to the community as a whole. This proved very effective in the pilot community of Fisantekraal.

We do not expect highly sensitive data to be offered by all micro-enterprise owners. The questionnaire has been designed to capture tangential information that will allow data on income and profit to be derived. Such data will be approximate though we believe sufficiently accurate for the purposes of this research, especially since this is a 'natural experiment' in which we will be comparing data from before and after the modern energy intervention.

Quantitative results from each survey are examined at a mid-point to draw out any trends to be investigated through the qualitative research, and to identify any unexpected results that require follow-up and verification whilst in the community.

The communities targeted for study have up to 1000 dwellings if urban, and up to 550 dwellings if rural. As stated previously the final selection is directly influenced by electrification schedules in the latter part of this year. We cannot accurately predict the number of enterprises one year after intervention but on the basis of Fisantekraal we could hope for perhaps 200 micro-enterprises in urban communities and perhaps 100 in rural communities. The statistical significance of the data will depend on the number of enterprises established and surveyed, the quality of the data, and of course the coherence of the data collected from within each community.

4 Project Planning

4.1 REVIEW OF PROJECT PURPOSE AND OUTPUTS

The Output to Purpose Review Form is presented on the following pages, in it we recommend revisions to the Outputs and OVI's, and we adopt DFID's suggestion that the Purpose is revised from "whether" to "how". These revisions arise because the project is now much better defined in terms of focus, methodology and resources needed to implement methodology in phase-2. Justifications are presented below each suggested revision.

4.2 IMPLICATION OF INITIAL FINDINGS ON THE REMAINDER OF THE PROJECT

The initial findings presented in the previous section have focussed on and led to the detailed definition of phase-2 of the project. The decision of greatest impact has been to focus primarily on quantitative data collection with qualitative research methods playing a supporting role. Whilst this is implicit in the original submission, the proposal is ambiguous in places. Andrew Barnett (DFID advisor) and Peter Davies (formerly DFID project officer for this research) gave their interpretation that quantitative research is expected to be the focus for the project.

The field trials proved successful and have resulted in adjustments to the detail of the methodology. Phase 2 planning, in particular the distribution of resources between tasks, has been informed by the experience of the South Africa trial.

The data collected in the South Africa trial are interesting and in places surprising, it suggests that the phase-2 research should provide a number of valuable insights into the impact of modern-energisation on micro-enterprises.

OUTPUT TO PURPOSE SUMMARY REPORT - ONLY TASKS RELATING TO PHASE 2 ARE SHOWN				
Title: R8145 Modern Energy: Impacts on Micro-enterprises		Country: UK, South Africa and India		MISCODE: [to be inserted by DFID]
Report Number: ED03493 Inception Report		Date: 16 th June 2003	Project Start Date: 09/2002 Project End Date: 06/2005	Stage of project: End of phase 1 breakpoint
Project Framework				
Goal Statement: To support the emergence of livelihood diversification opportunities of poor people through the creation and growth of micro-enterprises after access to modern energy has been gained.				
Original Purpose Statement: To investigate whether prospects for poverty reduction through employment and/or income generation opportunities in micro-enterprises can be created or enhanced by the provision of modern energy services.				
Revised Purpose Statement: To investigate <i>how</i> prospects for poverty reduction through employment and/or income generation opportunities in micro-enterprises can be created or enhanced by the provision of modern energy services.				
Original Outputs:	Original OVIs:	Proposed Revised Outputs:	Proposed Revised OVI's:	Rating: [to be completed by DFID]
PHASE 2: Tasks 4 & 5 4.1/5.1 For each of the two identified sites three surveys carried out over an extended timeframe.	4.1/5.1 Data on impact of the provision of modern energy on micro-enterprise to be collected using an agreed protocol by 10/03. This survey to be refined and updated twice more over an extended period so as to explore the impact of seasonality etc. on sustainability, survey work by 12/04.	PHASE 2: Task 4 & 5 4.1/5.1 For each of the two identified sites in each of the two countries, pre and post- intervention surveys to be carried out with an elapsed time of approximately a year between them.	4.1/5.1 Pre-intervention data for all research communities to be collected using the agreed protocol by 03/04. Post intervention data for all communities to be collected by 03/05.	
Justification for revisions above The detailed methodology requires intensive fieldwork to characterise all micro-enterprise activity within the delineated community, and to collect the necessary quantitative data and undertake the required qualitative research. There are insufficient resources for three surveys and the timeframe is unlikely to provide additional insights if a third interim survey were to be introduced. OVI's have been amended to better reflect the actual work programme to be carried out in phase 2.				

Original Outputs:	Original OVIs:	Proposed Revised Outputs:	Proposed Revised OVI's:	Rating: [to be completed by DFID]
<p>4.2/5.2 Feedback after each survey to the sponsoring organisations (ie the body that gave access and other stakeholders) (for each site).</p>	<p>4.2/5.2 Carefully targeted information to be provided to key stakeholders as part of the ongoing dissemination activities.</p>	<p>4.2/5.2 Feedback to the communities under study, and to utilities and other stakeholders that are directly involved in the interventions, to inform them of progress and any preliminary conclusions that emerge whilst the research is ongoing.</p>	<p>4.2/5.2 Log of feedback provided to the communities and other stakeholders.</p>	
<p>Justification for revisions above Whilst dissemination to ‘key stakeholders’ whilst the research is ongoing may be premature, qualified feedback will be useful to those facilitating the research and to the local GVEP group. Only when robust results and conclusions have been drawn from the research will targeted information be sent to at the intervention agencies & other stakeholders (see below).</p>				
<p>6.1 Case study report, presenting field work findings and analysis including both qualitative information and quantitative data. These will be used to expose the relationship between provision of modern energy services and micro-enterprise.</p>	<p>6.1 A report that explores the potential for predicting the impact of modern energy service provision on micro-enterprise and provides practical illustrations of this relationship, and how this can be exploited to maximise opportunities for poor people, by 03/05.</p>	<p>6.1 A technical report, presenting fieldwork findings and analysis including both quantitative data and supporting qualitative information and interpretation. This report will aim to expose the relationship between provision of modern energy services and micro-enterprise.</p>	<p>6.1 A report that presents illustrations and interpretation of the relationship between modern energy provision and micro-enterprises in the communities under study and the observed impacts on livelihoods. The report will include lessons to be disseminated.</p>	
<p>Justification for revisions above The original Outputs text implies a focus on qualitative research and case studies, whereas the project has been pushed in the direction of quantitative data with a methodology that has been developed accordingly. The original OVI is highly optimistic in that the results will be globally applicable and robust enough to reliably ‘predict impacts’. The revised OVI is more pragmatic.</p>				

Original Outputs:	Original OVIs:	Proposed Revised Outputs:	Proposed Revised OVI's:	Rating: [to be completed by DFID]
<p>6.2 Production of guidance notes showing how:</p> <ul style="list-style-type: none"> • Energisation of communities and associated interventions can maximise micro-enterprise development. • To maximise associated poverty alleviation. • To maximise impacts on beneficiary groups. • To minimise environmental impacts. • To maximise sustainability. 	<p>6.2 Targeted guidance notes by 03/05 that deliver logical guidelines detailing recommended ways of using interventions associated with the provision of modern energy services to maximise benefits in terms of sustainable micro-enterprise formation.</p>	<p>6.2 Production of Guidance Notes that present the lessons learnt, both positive and negative, and including any globally applicable recommendations, and including a brief description of the evidences.</p>	<p>6.2 A set of short notes in a style that is appropriate for dissemination to targeted stakeholders. The lessons are likely to include messages, where robust, on the impacts of modern energy provision on micro-enterprise activity and on livelihoods.</p>	
<p>Justification for revisions above The original output and OVI prejudge the outcome of the research.</p>				

Original Outputs:	Original OVIs:	Proposed Revised Outputs:	Proposed Revised OVI's:	Rating: [to be completed by DFID]
<p>PHASES 1 & 2 Task 7 7.1 Targeted communications, specified in the strategy agreed in Task 1, that bring the work to the attention of key stakeholders, including utilities, donors, NGOs, local and national governments.</p>	<p>7.1 Use of web site, number of requests for further information and copies of publications (ongoing).</p>	<p>7.1a Ongoing promotion of the project though</p> <ul style="list-style-type: none"> - Annual update of project descriptor for DFIDs KaR website. - Articles annually submitted to newsletters and distributed electronically to researchers interested in this area, to individuals in donor agencies (e.g. World Bank, Asian Development Bank), collaborating energy service providers, and WSSD energy partnership networks. <p>7.1b Closing dissemination of lessons arising through electronic distribution of Guidance Notes (produced under 6.2 above) to targeted stakeholders and policymakers.</p>	<p>Three articles and three updates for DFID web-site</p> <p>Log of articles and notes disseminated, and recipients.</p>	
<p>Justification for revisions The developed methodology is necessarily resource intensive consequently there is little budget for implementation of an extensive dissemination strategy. Furthermore, lessons cannot be disseminated before they are derived. It is instead proposed to target only those individuals with a very specific interest whilst the project is ongoing, and to use electronic dissemination throughout to conserve resources whilst maximising cost-effectiveness.</p>				
<p>7.2 Linkages developed with donors and other work, such as the World Bank.</p>	<p>7.2 Communications and meetings with representatives of donors (and other groups).</p>	<p>Linkages developed with the World Bank and ADB.</p>	<p>Notes of meetings with donor representatives.</p>	
<p>Justification for revisions Output and OVI effectively integrated into proposed revised Output/OVI 7.1. AEA Technology undertakes to seek meetings with interested individuals without charge to the project when we visit the World Bank and ADB on other business. Meetings will be subject to the availability and interest of the individuals concerned.</p>				

Original Outputs:	Original OVIs:	Proposed Revised Outputs:	Proposed Revised OVI's:	Rating: [to be completed by DFID]
7.3 Final workshop.	7.3 A workshop presenting the results and implications of the work. The target audience will be refined during the	Analysis workshop in South Africa at which data will be reviewed, lessons extracted and content of Guidance Notes agreed and developed.	Note of actions arising from workshop & subsequent production of Guidance Notes (see task 6.2 above)	
<p>Justification for revisions It will be necessary to get the UK, Indian and S.African field teams together to compare and contrast each others results and to extract and agree on the messages to be disseminated. This is more important than a final workshop to disseminate results as, without agreed results to disseminate, any messages promoted might be flawed.</p>				
<p>Task 8</p>				
8.1 Effective management of the project.	8.1 Liaison with DFID, partners and complementary KAR projects (ongoing).	-no change-	-no change-	
8.2 Progress reports.	8.2 Reports in March and September each year that review progress towards outputs and review how these will satisfy the purpose & goal of the study.	-no change-	-no change-	
8.3 Final report.	8.3 Final Report to DFID detailing project findings and outputs, and how well these have met the purpose and goal of the project by 06/05.	-no change-	-no change-	
8.4 Project summary.	8.4 Short publication which summarises the project findings by 06/05.	-no change-	8.4 Short project descriptor which summarises the project and its conclusions.	

Original Outputs:	Original OVIs:	Proposed Revised Outputs:	Proposed Revised OVI's:
<p>Purpose: To investigate whether prospects for poverty reduction through employment and/or income generation opportunities in micro-enterprises can be created or enhanced by the provision of modern energy services.</p>	<p>OVIs:</p> <ul style="list-style-type: none"> - Evidence linking micro-enterprise, modern energy and the Millennium Development Goals. - Number of new micro-enterprises. - Number of jobs created by each micro-enterprise, broken down by socio-economic group where possible. - Sustainability through time of micro-enterprises. - Illustration as to how the above factors vary according to the type(s) of modern energy service provided and delivery model(s). - Review of energisation practices that clearly shows that the establishment and growth of micro-enterprises has been positively affected by providing access to modern energy services. 	<p>Purpose: To investigate how prospects for poverty reduction through employment and/or income generation opportunities in micro-enterprises can be created or enhanced by the provision of modern energy services from electricity.</p>	<p>OVIs:</p> <ul style="list-style-type: none"> - Evidence linking micro-enterprise, modern energy and the Millennium Development Goals. - Number of new micro-enterprises and growth in those present pre-intervention. - Number of jobs created by each micro-enterprise, broken down by socio-economic group where possible. - Commentary on the observed influence of other enabling factors and external intervention effects. - Illustration as to how the above factors vary according to the context of the communities and interventions researched. - Quantitative demonstration that access to reliable modern energy services has had a net positive impact on the establishment and growth of micro-enterprises.
<p>Justification for revisions</p> <ul style="list-style-type: none"> i) Whilst sustainability through time will be investigated through qualitative research techniques there is neither sufficient resource nor elapsed time to gather extensive quantitative data. ii) The context of the communities is likely to be a greater variant than the services and delivery models. iii) This project is not a review. It aims to gather convincing quantitative data. 			

4.3 ACTIVITIES TO DATE

The focus of the inception phase has been the development and testing of methodology. This is in accordance with the project plan. We believe the methodology is justified and stands up to criticism.

4.3.1 Chronology of activities

The following is a brief chronological synopsis of the defining project activities undertaken during the inception phase.

September to December 2002

- Mobilisation
- Inception Meeting, South Africa
- Draft framework dissemination strategy
- Literature review
- Article for DFID Energy Voices

January/February 2003

- Debate on the focus for the project and the implications for methodology, development of methodological context and framework paper.
- Interim progress report.
- Consultation with DFID and DFID's advisor on project focus
- Agreement obtained from DFID to revise the project staffing. Modest amendments to phase 1 programme of work and budget virement agreed.
- Development of the full methodology including questionnaires for use in the field.
- Selection of field test communities.

March to May 2003

- Methodology field trial in South Africa
- Limited field trial in India.
- Field trial reports.
- End of year progress report.
- Project descriptor submitted to DFID for inclusion on KaR web-site
- Internal project discussions on implications of field trials and analysis methods.
- Revisions to methodology; production of revised methodology document and process guidance in the form of an adapted field trial report.
- Phase 2 planning meeting, UK.
- Detailed phase 2 planning and budgeting.

June 2003

- Inception report

4.3.2 Methodology for the remainder of the project

The project methodology for the remainder of the project is described in detail in a separate Methodology Report and which has already been discussed in preceding sections. The integrated research process that has been field tested and is the subject of the above report may be briefly characterised as follows:

1. Final selection of sites for investigation with reference to the schedule for energisation in South Africa and India.
2. Gathering of the community characteristics record and community log.
3. Preparation of the site for investigation:
 - Interaction with community leaders.
 - Informing community members about the research project.
 - Selection and training of researchers drawn from the community
4. Micro-enterprise identification sweep: calls to all households, buildings and activity areas within the geographical bounds of the study to explain the project and identify micro enterprise and business owners.
5. Analyses of sweep data – targeting of the quantitative research.
6. Micro-enterprise owner interviews conducted by members of research team with assistance from community interpreters.
7. Overview analysis of micro enterprise interview data.
8. Formulation of further research questions and identification of issues arising from the micro-enterprise interview data (to be further explored through qualitative research).
9. Prepare for qualitative research:
 - Composition of focus groups
 - Identification of one to one interviewees
 - Invitation and briefing of respondents
 - Finalise qualitative research questions, aids and so forth
 - Conduct qualitative research
 - Analyse qualitative results
10. Undertake preliminary data analysis and data check.
11. Repeat 2-10 for post-energisation survey of the same communities
12. Conduct data analysis.
13. Consolidate all research findings
14. Feedback to communities.
15. Prepare findings, results and final report.

4.4 ADDITIONAL ACTIVITIES NECESSARY TO ACHIEVE A SUCCESSFUL OUTCOME AND UPTAKE OF OUTPUTS

Phase 2 requires updated information from local energy services providers on the schedule for energisation of communities, and co-operation of the communities themselves. Whilst neither of these are strictly under the full control of the project team, prior engagement of these stakeholders is planned (and as such are not *additional* activities) and the risks are considered manageable.

The project team is confident it can successfully complete the outputs presented under 4.1. Whether the research confirms or refutes the widely held perception that modern energy has a widespread positive and beneficial impact on micro-enterprises and consequently livelihoods cannot and should not be pre-judged.

Planned dissemination activities are modest and we believe appropriate given the inherent uncertainty of research results and the pressures on the budget. Whilst the dissemination activities will raise awareness amongst researchers and individuals in donor organisations, it is unlikely to lead to global take up of outputs by utilities and other practitioners without further dissemination action. Further dissemination needs to be appropriate to the significance of the findings. We suggest accelerated uptake might be best achieved through a co-ordinated and targeted DFID dissemination programme that profiles significant results emerging from its portfolio of KaR projects. We have not included any budget toward supporting any such conceptual dissemination programme.

4.5 PROJECT TEAM, STAFFING AND MANAGEMENT ISSUES

4.5.1 Project team and staffing

Changes to the project team during phase 1 have been outlined in the preceding sections. We propose to continue with the current project team into phase 2. Continuity of staffing through phase 2 is key to ensure consistent implementation of the methodology and the insights that are gained through having the same individuals involved in both pre and post-intervention survey.

The phase 2 project team and responsibilities are shown in the box on the next page.

IES and EEEEC will also involve other junior staff in the data collection and use the services of individuals from the communities to provide interpretation and assistance with the field research.

AEAT will utilise approximately a day of a researcher to assist with the targeting of dissemination actions. That individual will be selected from the current list of individuals approved by DFID to work on the project.

PROJECT TEAM – PHASE 2

Lead researcher

Denise Oakley (AEAT)

Field research, preliminary analysis and data check– South Africa

Paul Harris (IES) and D Oakley (AEAT). IES cover provided by Chris Hazard

Field research, preliminary analysis and data check- India

Prabhakaran (EEEC) and D.Oakley (AEAT)

Final analysis and extraction of lessons learned.

P Harris (IES), Prabhakaran (EEEC), D.Oakley (AEAT) and Bereket Kebede (Independent),

Energy Poverty advisor

Gill Wilkins

Project management

Tom Slesenger (AEAT Project Manager)

Subcontractor supervising managers

Paul Harris (IES) and Govinda Rao (EEEC)

4.5.2 Management issues

The main management concerns relate to safety; the co-ordination of the field research teams; the efficient and productive use of resources when researchers travel to South Africa or India; the impact of the numbers of micro-enterprises uncovered on resource planning; and continuity of staffing.

Safety

Safety of researchers will be improved by avoiding communities that are unstable or hostile, through community engagement activities designed to secure legitimacy and co-operation, and the employment of community members as interpreters/local guides/research assistants.

Co-ordination of the field research teams

Other than telephone and e-mail communications, co-ordination will be achieved through three measures incorporated into the phase 2 planning and discussed elsewhere in this report.

- Involvement of the senior researchers from IES, EEEEC and AEAT together in the pre-energisation survey in South Africa.
- Involvement of the AEAT lead researcher in all surveys.
- Involvement of the senior researchers from IES, EEEEC and AEAT together in the analysis workshop to be held in South Africa.

Efficient and productive use of resources

Once in another country a researcher cannot redirect their effort to another job in the event of a hiatus caused by delays in the field. There is no provision or contingent budget for such delays. It is the responsibility of the local field research team to ensure all local arrangements have been made and everything is in place by the time the other researchers arrive. Effective co-ordination and communications will minimise this risk.

Impact of numbers of micro-enterprises uncovered.

There is the prospect that energisation might increase very substantially the numbers of micro-enterprises. Whilst the resource planning has assumed a very significant amount of micro-enterprise penetration, it remains possible the numbers to be surveyed are beyond the numbers and scheduling assumed in the resource planning. The field research team may need to make a judgement during the post-intervention survey to constrain the area surveyed in detail to manage this situation. Such a decision needs to be managed intelligently so as not to compromise the methodology nor to introduce bias in the results.

Continuity of staffing

AEAT, IES and EEEEC undertake not to change the staffing of the phase 2 research team whilst it remains in their control not to do so. Our original lead researcher, who has been ill over an extended period, has been excluded from phase 2.

4.6 RISKS AND ASSUMPTIONS

4.6.1 Original risks and assumptions

The original risks and assumptions, presented in the proposal, are reviewed in the table on the following pages.

ORIGINAL PROPOSAL: RISKS AND ASSUMPTIONS	ORIGINAL PROPOSAL: HOW THE RISKS WILL BE MANAGED	COMMENTARY ON THE CONTINUED APPROPRIATENESS OF RISK MANAGEMENT
<p>During Implementation.</p> <p>Activity to Output: Information collected is useful.</p>	<p>Build on previously tested survey methodology, AEAT to lead with Prof Harper’s guidance.</p>	<p>Prof Harper did not integrate well with the team and proposed a direction incompatible with the project scope as defined through the log-frame. DFID’s Peter Davies has acknowledged this. No previously tested survey methodology appropriate to the research has been found. Methodology has been developed from first principals by the research team, informed and tested as described in preceding sections. Detailed methodology and field trial reports have been produced.</p>
<p>Recipients of communications worldwide benefit from them.</p>	<p>Target communications to enhance message delivery, AEAT to lead.</p>	<p>Targeted and efficient communications necessary for cost effectiveness.</p>
<p>Beneficiaries value the results.</p>	<p>Beneficiary feedback sought throughout project.</p>	<p>Whilst there may a funding beneficiary involved in some of the Indian communities (i.e. the when intervention is part funded from international aid) this may not be the case for all communities studied in phase 2. Feedback will be provided to the various agencies responsible for the energisation.</p>
<p>Stakeholders remain supportive and contribute to work.</p>	<p>Local members of project team will maintain stakeholder contact, as well as a central dissemination, especially those with local access to survey sites (probably IES and 3EC).</p>	<p>Stakeholder management is central to securing co-operation and safety in the communities.</p>
<p>Cultural differences do not prevent effective working.</p>	<p>The project team is a collaboration between well respected partners with experience of dealing with other cultures.</p>	<p>Potential risk identified in India where women are expected to be primary sources of information but the culture inhibits their talking to men. Team legitimacy is to be enhanced through prior community engagement and the employment of local (hopefully female) research assistants/interpreters from the communities. The project lead researcher is female whilst the lead EEEEC researcher is male.</p>
<p>The number of days booked equates to progress.</p>	<p>All partners are professional.</p>	<p>Advance planning and stakeholder engagement will mitigate the risk, though it is impossible to eliminate all risk of delay or non-co-operation when in the field.</p>

ORIGINAL PROPOSAL: RISKS AND ASSUMPTIONS	ORIGINAL PROPOSAL: HOW THE RISKS WILL BE MANAGED	COMMENTARY ON THE CONTINUED APPROPRIATENESS OF RISK MANAGEMENT
<p>During Implementation.</p> <p>Outputs to Purpose: Better understanding of the inter-dependency between micro-enterprises and energisation allow interventions to more effectively promote micro-enterprises.</p>	<p>The assumption is that this link can be better understood and as a result “fine tuning” of future interventions undertaken. Risk is lowered, since causal relationships do not have to be established – empirical data showing the link will suffice.</p>	<p>Dissemination to a wider audience is inappropriate until lessons have been derived for dissemination. Dissemination needs to be efficient and targeted to conserve resources for the research.</p>
<p>Target audience will use and value the reports.</p>	<p>Assumption will be tested and risk lowered by using a proactive dissemination approach from the outset designed to engage the target institutions.</p>	<p>The observations are likely to be influenced by other, non-energy enabling factors. Whilst clearly unrepresentative sites have been avoided there is no such thing as a generic community. Whilst the data is strictly only valid for the world environment of the communities under study, it is hoped that the lessons will be sufficiently generic to be applied more broadly.</p>
<p>The dissemination strategy contacts key stakeholders and that they respond to the messages sent positively.</p>	<p>That the causal or empirical link is sufficiently robust to be identifiable and can then influence through policy levers. The spread of the message will be enhanced via access to enterprise experts via Prof Harper and message targeting will be built into dissemination.</p>	<p>Prof Harper is no longer involved in the project. Links to AFREPEN network, which has an interest in micro-enterprise research, available through Bereket Kebede and others.</p>
<p>Survey sites are sufficiently representative to have wider applicability.</p>	<p>The final survey location is not yet fixed, thus if we find that we need to tailor the survey to explore specific dimensions the survey can be appropriately directed by AEA Technology.</p>	<p>The final selection of survey locations from our shortlist will be determined by actual intervention schedules at the time of the pre-energisation surveys. Invoice schedule considerations dictate the project has a critical timeline that inhibits delay in the research and thus limits the options for communities that can be studied. The quantitative survey methodology is highly systematic and cannot readily be revised without additional resources to avoid compromising comparison of results from the communities studied. Some scope exists to tailor the qualitative investigations though it is important that research builds on and provides insights to the quantitative observations.</p>

ORIGINAL PROPOSAL: RISKS AND ASSUMPTIONS	ORIGINAL PROPOSAL: HOW THE RISKS WILL BE MANAGED	COMMENTARY ON THE CONTINUED APPROPRIATENESS OF RISK MANAGEMENT
<p>After Implementation.</p> <p>Micro-enterprises can contribute to poverty reduction through provision of employment and income generating opportunities.</p>	<p>The project team will keep up to date with other research in this area, and look for cases that illustrate this is the case.</p>	<p>The methodology explores the impacts of energisation, and seeks to gain understanding and insights through allied qualitative research methods. Whilst it is a desire and reasonable expectation that the results will contribute to interventions being implemented in a more synergistic manner, by the very uncertainty of research, such an outcome cannot be guaranteed. Based on the limited findings from the field trial it would be remarkable if this research were not to produce highly informative observations and conclusions.</p>
<p>Organisations whose remit includes alleviation of poverty can be involved with energy programmes.</p>	<p>The project team and approach has been structured towards demonstrating how energy and enterprise interventions can be implemented in a more synergistic manner.</p>	
<p>Formation of micro-enterprises can be made an underlying goal for parties involved with energisation.</p>		

4.6.2 Additional risks and assumptions

Specific safety/staffing/technical risks and mitigation measures are presented under 4.5.2 Management Issues.

The inherent risk associated with research of any kind is mentioned elsewhere. There is a risk that researchers might unwittingly bias the results (through selection of enterprises sampled and in the qualitative research) if striving to prove a positive impact of an intervention and thus prejudging the outcome. We have approached the development of methodology from a neutral standpoint and with the aim of identifying the net impact of an energisation within a delineated community. The Outputs and OVI's presented in section 4.1 have been revised to remove any implication that the conclusions have been predetermined by the researchers.

There is a risk that an energisation may be postponed or cancelled after the pre-energisation survey has taken place. This is outside the control of the research team but the risk can be mitigated through contact with the utility in the period immediately prior to the survey.

There remains a risk that post-energisation surveys might be abandoned in the event of civil unrest, political change within the community resulting in withdrawal of co-operation, or some other event deemed force-majeure. Such events are beyond the control of the project team. AEA Technology heeds the travel advice of the FCO, that of our insurers and other international authorities. In the event FCO or other authorities recommend against travel or recommend evacuation, or if our insurers remove country cover, we shall act on that advice.

4.6.3 Logistical and Security Concerns

Discussed under sections 4.5.2 and 4.6.2.

4.6.4 Potential to Improve the Quality of the Research

The methodology developed in phase 1 aims to deliver research results of a high quality. We believe the observations and conclusions will be valid and robust within the context of the communities studied with some lessons that are likely to be transferable. The statistical significance of the data cannot be pre-determined; information on sampling variability can only be obtained after collecting the data. Expanding the sample size would likely enhance the statistical significance but would require additional resources. Enhanced statistical significance might not lead to additional observations and conclusions. Whilst the budget is tight and contains no contingency, we believe the phase 2 project plan and resources to be adequate to provide good quality, meaningful and influential research.

There will be a finite time for the impacts of an intervention to stabilise. The timeframe for this project allows only for monitoring of short-term impacts with the post-energisation survey to be undertaken about 9-12 months after the energisation. The research would be enhanced through follow-on surveys of the same communities after a further (say) 1½ years and 3 years in order to assess the long-term impacts.

4.7 PROPOSED ADJUSTMENTS TO PROJECT

4.7.1 Project Logframe

Proposed revisions to the phase-2 logframe Outputs and OVI's have been presented and justified under section 4.1

Proposed revisions to the phase-2 Activities, Inputs and Performance Budget are presented in the shaded boxes on the following pages. To help with help with project monitoring the activity descriptions have been restructured slightly to into discrete packages that better map to the methodology and chronology.

4.7.2 Phase 2 budget

The phase 2 budget is unchanged. A redistribution of budget between financial years is necessary a consequence of the methodology, the resource forecasting being informed by experience through the field trials. It is not practical for spend in later years to be brought forward to match the original forecast, because spend in FY 04/05 relates to the post energisation surveys which cannot be bought forward to FY 03/04.

FROM ORIGINAL LOGFRAME		
Activities	Inputs	Performance Budget
<p>PHASE 2 only</p> <p>Task 4: Field Survey #1</p> <ul style="list-style-type: none"> - Gather site information - Carry out baseline survey - Preliminary data review and critique - Follow on surveys - Further data analysis and critiques <p>Task 5: Field Survey #2</p> <ul style="list-style-type: none"> - Gather site information - Carry out baseline survey - Preliminary data review and critique - Follow on surveys - Further data analysis and critiques <p>Task 6: Implications of surveys</p> <ul style="list-style-type: none"> - Preliminary lessons from surveys - Updated lessons from surveys - Final lessons from surveys 		
<p>PHASES 1 and 2</p> <p>Task 7: Dissemination</p> <ul style="list-style-type: none"> - Ongoing dissemination - Development of linkages with donors and other organisations and work, such as the World Bank and the PRSPs. - Final workshop <p>Task 8: Project management and reporting</p> <ul style="list-style-type: none"> - Effective management. - Progress reports. - Final report. - Project summary. 		

PROPOSED REVISED LOGFRAME		
Activities	Inputs	Performance Budget
<p>PHASE 2 only</p> <p>Task 4a: Pre-energisation surveys: South Africa</p> <ul style="list-style-type: none"> • Community engagementx2 • Initial sweep x2 • Quantitative surveys x2 • Qualitative research x2 • Data review and check <p>Task 5a: Pre-energisation surveys: India</p> <ul style="list-style-type: none"> • Community engagementx2 • Initial sweep x2 • Quantitative surveys x2 • Qualitative research x2 • Data review and check 		
<p>Task 4b: Post-energisation surveys: South Africa</p> <ul style="list-style-type: none"> • Community engagementx2 • Initial sweep x2 • Quantitative surveys x2 • Qualitative research x2 • Data review and check <p>Task 5b: Post-energisation surveys: India</p> <ul style="list-style-type: none"> • Community engagementx2 • Initial sweep x2 • Quantitative surveys x2 • Qualitative research x2 • Data review and check 		
<p>Task 6: Implications of surveys</p> <ul style="list-style-type: none"> • Initial quantitative analysis • Knowledge assimilation project workshop, identification of lessons learnt • Drafting of guidance notes 		

<u>PHASE 2 only</u>		
<p>Task 7: Dissemination August 03-June05</p> <ul style="list-style-type: none"> • Articles for Energy voices x3 • Project descriptor for web-site • Targeted e-mail • Post-analysis dissemination of findings by e-mail 		
<p>Task 8: Project management and reporting</p> <ul style="list-style-type: none"> • Phase 2 mobilisation • Progress reports. • Final technical report. • Final management report • Project summary. • Invoices • General co-ordination and record keeping. 		

5 Monitoring, Evaluation and Uptake Strategy

5.1 MONITORING ARRANGEMENTS AND INDICATORS

Our proposed adjustments to the Phase 2 *Monitoring Arrangements for Purpose Indicators* and *Output Indicators* are presented in the table on the following pages. The adjustments bring the monitoring arrangements in line with the proposed revised outputs and OVI's presented under section 4.1 above.

We propose the *Activities and Budget* monitoring adopts the timeline presented in the project plan, section 3.1.6, and the performance budgets set out in the revised logframe in section 4.7.1 of this report.

ORIGINAL MONITORING ARRANGEMENTS		REVISED MONITORING ARRANGEMENTS	
Source of information for:	Responsibility & timing for collection	Source of information for:	Responsibility & timing for collection
<p>Purpose Indicators.</p> <ol style="list-style-type: none"> Evidence linking micro-enterprise, modern energy and the Millenium Development Goals. Number of new micro-enterprises. Number of jobs created by each micro-enterprise, broken down by socio-economic group where possible. Sustainability through time of micro-enterprises. Illustration as to how the above factors vary according to the type(s) of modern energy service provided/ delivery model(s). Review of energisation practices that clearly show that the establishment and growth of micro-enterprises has been positively affected by providing access to modern energy. 	<ol style="list-style-type: none"> All, Ongoing, Reviews following field surveys by project team All, Post field surveys All, Post field surveys All, On completion of surveys All, Project output AEAT, Project output 	<p>Purpose Indicators.</p> <ol style="list-style-type: none"> 1-3 UNCHANGED 4. Commentry on the observed influence of other enabling factors and external intervention effects. 5. Illustration as to how the above factors vary according to the context of the communities and interventions researched. 6. Quantitative demonstration that access to reliable modern energy services has had a net positive impact on the establishment and growth of micro-enterprises. 	<ol style="list-style-type: none"> 1-3 UNCHANGED 4-6 Qualitative investigations, assess observations during knowledge assimilation workshop.
<p>Output Indicators</p> <ol style="list-style-type: none"> Data on impact of the provision of modern energy on micro-enterprise to be collected using an agreed protocol in two field settings. This survey to be refined and updated twice more over an extended period so as to explore the impact of seasonality etc on sustainability. Carefully targeted information to be provided to key stakeholders as part of the ongoing dissmenation activities. A report that explores the potential for predicting the impact of modern energy service provision on micro-enterprise and provides practical illustrations of this relationship, and how this can be exploited to maximise opportunities for poor people. 	<ol style="list-style-type: none"> IES and 3EC (one per trial), Completion by 12/04 and 02/05 All, Ongoing AEAT, Completion by 05/05 	<p>Output Indicators</p> <ol style="list-style-type: none"> Pre and post-intervention data for all research communities to be collected using the agreed protocol. 8 UNCHANGED A report that presents illustrations and interpretation of the relationship between modern energy provision and micro-enterprises in the communities under study and the observed impacts on livelihoods. The report will include lessons to be disseminated . 	<ol style="list-style-type: none"> All, pre-intervention data by 03/04; post intervention by 03/05 UNCHANGED AEAT completion by 05/05

<p>10. Targeted guidance notes that deliver logical guidelines detailing recommended ways of using interventions associated with the provision of modern energy services to maximise benefits in terms of sustainable micro-enterprise formation.</p>	<p>10. AEAT, Completion by 05/05</p>	<p>10. A set of short notes in a style that is appropriate for dissemination to targeted stakeholders. The lessons are likely to include messages, where robust, on the impacts of energisation of micro-enterprises and on livelihoods.</p>	<p>10. All, by 05/05</p>
<p>11. Use of web site, number of requests for further information and copies of publications.</p>	<p>11. AEAT, Completion by 05/05</p>	<p>11. Three energy voices articles and three updates for DFID web-site. Log of articles and notes disseminated, and recipients.</p>	<p>11. AEAT completion by 06/05</p>
<p>12. Communications and meetings with representatives of donors (and other groups).</p>	<p>12. AEAT, Ongoing</p>	<p>12. Notes of meetings with donor representatives.</p>	<p>12. AEAT, Completion by 06/05</p>
<p>13. A workshop presenting the results and implications of the work. The target audience will be refined during the work but will probably include energy and enterprise experts.</p>	<p>13. AEAT, Ongoing</p>	<p>13. Note of actions arising from a project team analysis workshop & subsequent production of guidance notes</p>	<p>13. AEAT, Completion by 06/05</p>
<p>14. Liaison with DFID, partners and complementary KAR projects.</p>	<p>14. AEAT, Ongoing</p>	<p>14-17 UNCHANGED</p>	<p>14-17 UNCHANGED</p>
<p>15. Reports in March and September each year that review progress towards the outputs, and how well these have met the purpose & goal of the study.</p>	<p>15. AEAT, Ongoing</p>		
<p>16. Final Report to DFID detailing project findings and outputs, and how well these have met the purpose and goal of the project.</p>	<p>16. AEAT, Completion by end 06/05</p>		
<p>17. Short publication which summarises the project findings.</p>	<p>17. AEAT, Completion by end 06/05</p>		

5.2 DISSEMINATION STRATEGY

Dissemination has been discussed in preceding sections. We draw together here the key issues impacting on dissemination and our plans for phase-2.

Considerations impacting on dissemination activity

- The methodology is detailed and highly demanding. It centres on field research.
- Methodology is unavoidably resource intensive. Consequently there is limited budget for implementation of an extensive dissemination strategy.
- The project team take the view that reductions to the planned resources for field research activities (as set out in section 4.7.1) could compromise the results and raise other risks for the project partners.
- Research is inherently uncertain. Dissemination to the wider audience of enablers and influencers is inappropriate until lessons have been derived from the research observations. Lessons and supporting material will not be available until the latter months of the project.
- Enablers such as utilities and sponsors such as governments will only react to robust research results presented in a succinct and convincing manner. Due to other pressures on their time the majority will not be receptive to incomplete research or unsubstantiated or tentative conclusions.
- Dissemination needs to be efficient and targeted to conserve resources for the research.

Proposed dissemination activity

- Ongoing dissemination will target those individuals with a very specific interest in the project. These are likely to be researchers (identified through the literature review) and selected officials in the World Bank and ADB, and the utilities involved in the interventions.
- Promotional material shall be texts suitable as articles for newsletters and annual updates to the project descriptor on the KaR web-site.
- Whilst the project is ongoing the articles will be offered to the Global Village Energy Partnership, EU Energy Initiative, the Global Network for Sustainable Development, and the Renewable Energy and Energy Efficiency Partnership for their newsletters. They will also be electronically sent to the targeted individuals and to the collaborating energy services providers as a mechanism to raise awareness and update on progress.
- AEA Technology undertakes to seek meetings with interested individuals in the World Bank and the Asian Development Bank, without charge to the project, when we visit those agencies on other business.
- The project outputs include Guidance Notes that present the lessons learnt, both positive and negative, and including any globally applicable recommendations, and including a brief description of the evidences. The notes will be in a style that is appropriate for dissemination to busy enablers and practitioners. The lessons are likely to include

messages, where robust, on the impacts of energisation of micro-enterprises and on livelihoods.

- Closing dissemination of lessons arising will be through electronic distribution of the notes to targeted enablers and practitioners.
- A technical report will be prepared separately to the management report. The technical report can then be made available for peer review and as a source for other researchers. This is likely to be made available in 'PDF format to enable it to be provided via web-sites that target researchers and practitioners in relevant fields.

Exclusions from the dissemination activities.

- It is no longer proposed to hold a dissemination workshop. The resources have been redirected to an analysis and knowledge assimilation workshop for the project team that we believe to be critical for the distillation of lessons arising from the research.
- Dissemination targeting senior enablers and practitioners is likely to be most effective through a co-ordinated and targeted DFID dissemination programme which promotes important, substantiated results from its portfolio of projects in an efficient and succinct manner. We have not budgeted for participation in any such an action.