MOZAMBIQUE

Energy Reform and Access Project (ERAP)

IDA Credit 3819-MOZ & GEF TF 052650-MOZ

AIDE MEMOIRE

Supervision mission October 25 to November 8, 2010

Introduction

1. A World Bank (WB) team comprising Reto Thoenen (Energy Specialist, TTL for ERAP), Rob Mills (Economist, TTL for EDAP), Rene Mendonca (Power Engineer for ERAP), Ayse Cansiz (Power Engineer for EDAP), Elvis Langa (Financial Management Specialist), Bernard Tenenbaum (Regulatory Specialist for ERAP), Marcelino Madrigal (Regulatory Specialist for EDAP), and Salma Chande (Team Assistant) carried out a supervision mission for the Energy Reform and Access Project (ERAP) from October 25 to October 29, 2010. In addition, the WB team participated in a series of project ‘mini-retreats’ with the EDAP implementing agencies from November 1-4 2010, in order to review the proposed EDAP project activities and achieve a consensus on the way forward for implementing EDAP. Separate notes will be prepared and circulated for these mini-retreats.

2. The mission held meetings with H.E. Minister Namburete and senior officials of the Ministry of Energy (ME), Ministry of Finance (MoF), Ministry of Plan and Development (MPD), Ministry of Education (MINED), National Energy Regulatory Council (CNELEC), Electricidade de Mozambique (EdM), and the Energy Fund (FUNAE). The list of people met is enclosed in Annex A.

3. The mission also conducted a site visit to the Maputo suburb of Chamanculo where Pre-Paid Meters have been installed under Component B (Grid-based Peri-urban Electrification), as well as a remote metering (AMR) site.

4. A wrap-up meeting was held in Maputo on November 8 to discuss the mission findings and to invite comments, on the basis of a draft version of this aide-memoire. The mission wishes to thank Minister Namburete and staff from the Ministry of Energy (ME), EdM, FUNAE, and CNELEC for all the courtesies and hospitality extended to the mission. The mission recognizes the commitment demonstrated by the staff of ME, EdM, FUNAE, CNELEC and the other agencies in preparing for and participating in the mission’s meetings. This Aide Memoire (AM) summarizes the mission’s findings and agreements reached which are subject to confirmation by IDA management.

5. On July 1, 2010, the World Bank Group introduced a new policy on information disclosure. Under this policy, following consultation with the Government, mission aide-memoires are generally made public, including on World Bank websites. The disclosure of this AM was discussed and agreed by the project implementing agencies, coordinated by Nazario Meguigy, at the wrap-up meeting that took place on November 8, 2010 at the Ministry of Energy in Maputo, Mozambique.
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Annex A: List of Persons Met
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Distribution

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H.E. Aiuba Cuereneia, Minister of Planning and Development
H.E. Manuel Chang, Minister of Finance
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Mr. Issufo Mussagy, Commissioner, CNELEC
Mr. Manuel Cuambe, President, EdM
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Mr. Carlos Yum, Director, EdM
Mr. Luis Amado, Director, EdM
Mr. João Catine, Director, EdM
Mr. Arone Malendza, Project Manager, EdM
Mr. Helder Gimo, Deputy Project Manager, EdM
Ms. Miquelina Menezes, President, FUNAE
Mr. Mário Batsana, Head of Mini Hydro, Biomass and Gensets Division, FUNAE
Mr. Miguel Diogo, Head of Solar and Wind Division, FUNAE
Mr. Manuel Rego, Director of Planning, MINED
Ms. Tseli Lebesa, African Development Bank
I. SUMMARY OF KEY POINTS AND RECOMMENDATIONS

6. Preparation for Project Closing. The project will close on March 31, 2011. Ongoing procurements and activities should be completed as quickly as possible and no new activities should be undertaken. Given the surplus of IDA funds expected at the end of the project, in very limited circumstances it may be possible for implementing agencies to extend existing or recent activities for a limited period. However, there will not be sufficient time for any new competitive procurement processes and the WB team will not grant any further No Objections in this regard. It is strongly recommended that implementing agencies consult with the WB team, even for ‘post-review’ activities that do not require a WB No Objection before proceeding. The WB team informed that currently all disbursement requests have to be submitted to the WB before the March 31, 2011, the project end-date. The WB team is processing a request to establish a separate end-date for disbursements, which would allow disbursements to be made after March 31 for activities completed by that date. If such a date is established, the WB will inform the implementing agencies by way of a written communication.

7. Grid-based peri-urban electrification. EdM has successfully concluded the implementation of the IDA-financed grid intensification package. However, some technical issues continue to be experienced with the ‘Automatic Meter Reading’ activity, which has not yet achieved full functionality. EdM senior management is encouraged to monitor this important loss-reduction pilot carefully, given that medium-voltage customers account for up to 50% of EdM revenues.

8. CNELEC’s Monitoring of EdM Performance Contract: Public Consultations and Consultant Reports. Following the completion of the public consultations on EdM’s performance contract and the issuance of two reports on the EdM’s performance and on the tariff framework, both Government and CNELEC are strongly urged to follow-up quickly, in order not to lose the momentum that has been created. CNELEC is currently preparing a report to Government and it is recommended that this be made public. Specific follow-up actions that CNELEC can undertake immediately using its own capacity include: (i) drafting a Customer Code that establishes customers’ rights and obligations in the areas of quality of service and supply; and (ii) creation of a monitoring system that would provide reports to the general public on EdM’s performance in the areas covered by the Customer Code.

9. A Review of the Electricity Law is being conducted. CNELEC informed the mission that it expects to become a fully-independent regulator with decision-making powers as a result of the electricity law review. All sides agreed that the ultimate objective is a well-functioning independent decision-making regulator to assist in the development of Mozambique’s energy sector. However, the WB mission team recommends that the decision to transform CNELEC into an independent decision-making regulator should not be an automatic process. Instead the WB team recommends that the transformation is contingent on the achievements of certain benchmarks. These benchmarks could include demonstration by CNELEC that it has the capability and experience to perform basic regulatory tasks, such as delivering a full cost of service and tariff study for EDM or establishment of a functioning monitoring system of EDM’s performance. It is advisable that these benchmarks are achieved within a pre-determined time period, to avoid the risk of excessive delays. The mission encouraged CNELEC to proactively use the space available to it as an independent advisory regulator and issue public recommendations on issues it considers important.

10. WB support to CNELEC will continue via EDAP for special studies and consultant assistance. In addition, the mission believes that it is vital for CNELEC’s future effectiveness as a regulator that it develops its own capacity to perform its duties, using consultants only for limited and specific tasks.
11. The implementing agencies were informed that Reto Thoenen is the new TTL for ERAP. Rob Mills is the TTL for the follow-up EDAP project. The mission informed further, that any communication should be addressed to both, as the projects are effectively co-managed by Rob and Reto.
II. MISSION FINDINGS & RECOMMENDATIONS

Overall Financial Position and Financial Management

12. Remaining project expenditures were reviewed, covering contracts under disbursement. The latest analysis indicates that, as of September 2010, there is a financing surplus of approximately $2.0 million. This figure assumes that no money will be allocated under ERAP to the Transaction Advisers activity. In the GEF grant, a deficit of $280,000 is currently foreseen, but the final figure will depend on the results of the procurement process for the ‘100 additional clinics’.

13. The mission reviewed the FM arrangements in place at the project and assessed their continuing adequacy of the control environment, the record keeping, the financial reporting and information systems, progress made since the last FM supervision and followed up on the findings of the audit reports and management letters.

14. The project is current with regards to the un-audited interim financial reports and has been submitting the reports in an acceptable manner. However, the audited financial statements for the year ended December 31, 2009 for the project were not submitted within the stipulated time. The financial statements for P071942 for the year ended December 31, 2009 were unqualified but these were submitted after the due date. The financial statements of the P069183 were qualified due to auditors’ inability to verify original documentation related to direct payments. Auditors will need to be presented with original documentation to avoid future qualifications. Staffing has remained adequate and proper books of accounts and supporting documents have been kept in respect of the reviewed expenditures, however, the project has been working with very limited space for filing and storing the supporting documentation.

15. AfDB has confirmed that it will extend its ERAP project to June 30, 2011. The auditor for 2009-10 for ERAP (AfDB and IDA) has previously been recruited and hence 2010 can now be covered by AfDB. AfDB also noted that audits that occur after project closure can still be financed out of AfDB funds, hence allowing all 2011 activities to be audited. AfDB will ask ME to extend the audit contract to cover 2011 accordingly.

Component A: Power Sector Reform

16. Public Consultations and Consultant Reports. Since the last supervision mission, CNELEC has successfully completed public consultations in three cities (Maputo, Beira and Nampula) in June 2010. The focus of these hearings was on EDM’s commercial quality of service (e.g., billing, metering, and handling of complaints) and quality of supply (i.e., frequency, voltage and interruptions) at the distribution level. As part of the consultations process, CNELEC publicly committed to undertaking various follow-up activities – see Annex C for details. In addition, in September, CNELEC received the final versions of two ERAP-financed consultant reports. The first report by CRISIL (India) provided an assessment of EDM’s performance under its 2006 performance contract with the Government. The second report by CEPA (Great Britain) provided an analysis of EDM’s existing tariffs and tariff methodology with respect to both level and structure. Both reports recommended specific follow-up actions. The mission reviewed these reports and agrees with virtually all of their recommendations. Both Government and CNELEC are strongly urged to follow-up quickly on both the public consultations and the recommendations in the two reports with which they agree, in order not to lose the momentum that has been created.
17. Under the July 2006 Directive from the Minister of Energy to CNELEC, CNELEC is required to provide the Minister with a written report that provides recommendations on follow up actions. The reports provide an excellent opportunity to move from a strategy formulation phase to an active implementation phase.

18. It is recommended that: (i) the report should be sent to the Minister as soon as possible; (ii) the report should be a public document; and (iii) it should be no more than 10 pages in length (with technical appendices as necessary). Also, the report should be more than a “repackaging” and transmittal of the consultant’s analysis and recommendations. The report should constitute CNELEC’s opinions and formal recommendations to the Minister, reflecting those parts of the two reports it agrees with and omitting those parts it disagrees with. Finally, it is important that the report, the new Ministerial Directive to CNELEC and CNELEC’s proposed workplan all be consistent with each other.

19. To improve CNELEC’s visibility with the general public, the mission recommends that CNELEC issue a press release when the report is sent to the Minister of Energy. This would create more awareness by the general public of CNELEC’s existence and functions. It would be important for CNELEC’s reputation and public profile that it demonstrate that it is capable of proposing and implementing specific regulatory actions to deal with the concerns of the public.

20. Possible specific follow-up actions. Meetings were held with CNELEC and the Ministry of Energy to discuss possible follow up actions by CNELEC. The discussions took note of the commitments made by CNELEC to follow-up activities after the public consultations – see Annex C. The recommendations below are based, in part, on the early actions taken by other newly created electricity regulatory bodies in other SADC countries. There appears to have been general agreement on seven specific follow up actions:

a. Action #1--A Customer Code that establishes customers’ rights and obligations in the area of commercial quality of service and quality of supply. This would be sent to the Minister after consultations with EDM and another public hearing.

b. Action #2--Creation of a monitoring system that would provide reports to the general public on EDM’s performance in the areas covered by the Customer Code. These reports should be published quarterly in national and local newspapers (as is currently done in Zambia).

c. Action #3--Establishment of a broader transitional monitoring system that would include the Customer Code monitoring system as one of its sub-components. This broader monitoring system would include key performance indicators on EDM’s performance in the areas of operations and internal efficiency, quality of service, quality of supply, access expansion and finances. It is expected that this transitional monitoring system would eventually be made permanent as one or more components of the planned EDM Management Information System known as SIGEM (which is expected to become operational 18 to 24 months).

d. Action #4--An independent, outside and periodic review/validation of some of the key performance indicators reported to CNELEC in the monitoring system. This would help to establish the credibility of the reported numbers. In this sense, it would be similar to the independent outside audit of EDM’s finances that is currently performed on an annual basis by an outside auditor.

e. Action #5--An annual public opinion survey on EDM’s quality of service and supply. A precursor to such a survey was performed by EDM in 2009. There was agreement that future surveys should be undertaken by CNELEC to ensure that the surveys have credibility in the eyes of the general public. Similar surveys have been conducted by ANEEL (the Brazilian electricity regulator) for several years on the public’s perception of the performance of more
than 60 public and private distribution enterprises in Brazil. CNELEC may benefit from the experience of other regulatory agencies (such as ANEEL in Brazil) that have designed and implemented such surveys and could explore ways to exchange knowledge. CNELEC may want to explore whether ANEEL would be prepared to second a staff member to CNELEC to help in this and other matters.

f. Action #6—A cost of service and tariff study for EDM. The report by CEPA on possible tariff methodologies (noted above) would, if CNELEC agrees with the recommendations made, be a good methodological basis for such a cost of service / tariff study. The last such study was performed in 2001 and it clearly needs to be updated. The benefit of performing a new study is that it would provide the Government and CNELEC with more accurate numbers on EDM’s costs, tariff structure and cross-subsidies.

g. Action #7—CNELEC should give its recommendations on the design of the Government’s new performance contract with EDM. The CRISIL report examined the use of performance contracts between governments and national utilities in several other countries. The report provides useful recommendations on how to improve the existing performance contract. With respect to the new performance contract, the mission has two specific recommendations: first, CNELEC should be asked to give its views on the proposed new contract and, second, the Government should formally assign to CNELEC the role of monitoring EDM under the new performance contract and this should be explicitly stated within the contract.

21. There was consensus that follow up actions “1” and “2” should be performed by CNELEC using its own existing staff and resources. The mission stated its initial view that the other actions (Actions 3-7) could be possible candidates for technical assistance that would qualify to be financed under EDAP (see below).

22. The Tariff Methodology Report reaches a conclusion of great importance for tariff setting in Mozambique: that while EDM has been successful at connecting new consumers above the targeted levels, this success has created a problem by widening the gap between EDM costs and revenues. Reaching new customers (especially new rural customers in relatively more remote locations) require greater transmission and distribution investments than new customers in areas that are already served, and are hence more costly to serve. The other reality of access expansion is that these new customers, on average, consume less electricity than existing customers. These realities have the effect of widening the shortfall between EDM’s costs and its revenues as more new customers are connected.

23. Since current tariffs for lower consumption classes do not presently cover the cost of providing the service, this growing gap will affect EDM’s financial ability to continue expanding the service. Given that increasing access is a major goal of the Government, the mission recommends that more attention should be paid to actions to address what will be a growing financial problem. One option suggested by CRISIL is to restructure tariff levels to increase cross-subsidies between higher and lower consumption classes. However, there are limits on the level of cross-subsidies that can be financed on the backs of industrial and commercial customers without hurting the commercial viability and international competitiveness of these customers. Another option would be to explicitly target a portion of the profits from future international electricity exports to create a fund to finance the cost-revenue gap that exists in serving new and existing low consumption customers. If the Government adopts this second option, it should publicize this policy. One benefit of making an explicit linkage between future electricity exports and increasing electrification is that it would increase public support for such exports.

24. Review of the Electricity Law. An outside consultant has submitted an interim Report to the Ministry of Energy on possible changes to the existing Electricity Law. Based on a preliminary review...
of the consultant’s report, the mission believes that special attention needs to be paid to the following issues:

a. **Section 3.1 Public-Private Partnership Law.** It is our understanding that a new PPP law is under active discussion. Considerable care must be taken to minimize conflict between the new PPP law and any revised electricity law. They cannot be developed as unrelated and uncoordinated legal projects. Two options that could be considered are to exempt the electricity sector from the PPP law (because it is already a regulated sector) or to explicitly task the Ministry of Energy and CNELEC with administering the law in the electricity sector.

b. **Section 3.2 Transmission Expansion:**
   i. **Private investment.** Any new law should be clear that one entity will have a monopoly on the operation of the national inter-connected system (excepting dedicated merchant lines such as MOTRACO) but that multiple entities (including private companies) may own transmission lines that are part of that inter-connected system, subject to the operational control of the monopoly system operator. Separation of system ownership from system operation has been used successfully in obtaining significant private investment in new transmission facilities in Colombia and Brazil. GoM could consider a similar model for Mozambique.
   
   ii. **Open access.** More attention needs to be paid to developing a clearer policy on open access. As with other countries, Mozambique will probably need to establish a hybrid form of open access: developers of new transmission facilities will need to give first priority in their new lines to “anchor customers” while providing open access to other users for the remaining available transmission capacity.
   
   iii. **Cost allocation and granting of concessions.** Any new law should be clear that the form of cost allocation will be allowed to vary among the three major types of transmission expansion: Type A — a transmission project to increase the capacity and reliability of the national system as established in a national transmission plan; Type B — a transmission project to allow for exports by one or more private companies or a state-owned enterprise that does not have any captive customers; Type C — a transmission project that is a combination of the two. Just as the cost allocation will vary between these three types of transmission projects, the new law should also allow the procedures for granting concessions to vary as well.

c. **Section 3.4 Clarifying and strengthening the regulator’s role.** CNELEC presently operates as an advisory regulator to the Minister of Energy. The current law foresees CNELEC becoming an independent regulator with full and final decision-making authority (except for court review), although a change in law is required to achieve this. CNELEC informed the mission it expects to become a full independent regulator with decision-making powers as a result of the electricity law review. All sides agreed that the ultimate objective is a well-functioning independent decision-making regulator to assist in the development of Mozambique’s energy sector. However, the WB mission team recommends that the decision to transform CNELEC into an independent decision-making regulator should not be an automatic process. Instead the WB team recommends that the transformation is contingent on the achievements of certain benchmarks. These benchmarks could include demonstration by CNELEC that it has the capability and experience to perform basic regulatory tasks, such as (i) completion of a full cost of service and tariff study for EDM, (ii) establishment of a functioning monitoring system for EDM’s key performance indicators in the area of operations, finance and service performance and (iii) completion of one survey of public opinion on EDM’s commercial performance. Furthermore, it would be advisable that these benchmarks are achieved within a pre-determined time period, to avoid the risk of excessive delays.
An assessment by an external entity of the achievement of these benchmarks would significantly enhance the credibility of the process. Such an outside assessment of CNELEC’s operations was recommended in CNELEC’s “Action Plan For Operationalizing CNELEC As A Strong Advisory Regulator”. The Regional Electricity Regulatory Association of Southern Africa (RERA) has an active programme of such assessments of electricity Regulatory Commissions in the region, conducted on a ‘peer-review’ basis, and the Government may want to learn more about this process from the RERA Secretariat and consider requesting such a peer-review evaluation of CNELEC in the coming 12 to 18 months.

Finally, the mission encouraged CNELEC to proactively use the space available to it in its current status as an independent advisory regulator to issue public recommendations on issues it considers important.

25. EDAP Subcomponent 3.3 on Support to CNELEC. The mission reviewed with CNELEC and the Ministry of Energy the proposed support for CNELEC set out in the EDAP’s ‘Project Appraisal Document’ (PAD). The mission discussed with CNELEC possible specific tasks to be financed, noting that the activities listed in the PAD can be considered ‘placeholders’ that may be revised. It was agreed that CNELEC will first formally submit to the Ministry of Energy their work plan for the next two or three years describing their proposal for the use of EDAP’s resources. The work program will largely be based on the recommended action proposed in CNELEC’s forthcoming report to the Ministry and on the new directive to CNELEC by the Ministry.

26. The mission reiterated that the CNELEC component of EDAP envisages support for special studies and consultant assistance but not for staff costs. In addition, the mission believes that it is vital for CNELEC’s future effectiveness as a regulator that it develops its own capacity to perform its duties, using consultants only for limited and specific tasks.

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1 Operating costs of $0.3 million for ME and CNELEC are foreseen in EDAP. As the implementing agency, ME should take the lead in allocating this budget between the Ministry and CNELEC.
Component B: Grid-based Peri-urban Electrification

Peri-urban Grid Intensification

27. As recorded in previous aide-memoires, there was a 4 months delay in the actually completion of the contract for package II, awarded to ISOLUX. Under the ISOLUX contract, 19, 243 customer connections were completed and energized. The target for the project was for 28,000 new customers, and the reasons for the difference have been described in previous aide-memoires. However, the surplus materials from the project has allowed for 8,757 customers to be connected by EdM’s own services since ISOLUX demobilised, resulting in the targeted number of connections for the project being achieved in full. Indeed, EdM has connected with its own materials additional customers in the project area. EdM is requested to continue monitoring the additional connections made, and to provide a final total, once ERAP closes in March 31, 2011. About 91.3% has been disbursed so far out the revised contract amount of €11.28 million, including the two retention amounts (5% on issuance of the completion certificates and 5% on issuance of the operational acceptance certificates).

28. Due to the project completion delays incurred by ISOLUX, EdM has applied liquidated damages of approximately €697,000. EdM and ISOLUX had earlier disputed the basis on which the liquidated damages should be calculated, but following several meetings agreement has now been reached. At the same time, ISOLUX also submitted a claim against EdM, as recorded in previous aide-memoires, for approximately €520,000 and this has also now been agreed. Now that these disputes have been resolved, the final payments due to ISOLUX will be made shortly. In addition, the World Bank a received a letter dated October 18, 2010 from ISOLUX asking for assistance to resolve these payment issues, which was shared with EdM.

Revised ERAP Customer Connections Projections

<table>
<thead>
<tr>
<th>Package</th>
<th>Target (in contracts)</th>
<th>New connections</th>
<th>Total customers benefitting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Package I: ETDE (ADB)</td>
<td>15,500</td>
<td>15,200</td>
<td>18,000</td>
</tr>
<tr>
<td>Package II: ISOLUX (WB)</td>
<td>32,500</td>
<td>28,000*</td>
<td>28,000**</td>
</tr>
<tr>
<td>Package III: MT Hojgaard (NDF)</td>
<td>28,000</td>
<td>17,000***</td>
<td>~23,500</td>
</tr>
<tr>
<td>Totals</td>
<td>76,000</td>
<td>~53,000</td>
<td>~71,000</td>
</tr>
</tbody>
</table>

* Includes 8,757 connections completed by EdM in project areas using project-supplied materials
** This may be higher by project-end, as a result of EdM making connections using its own materials
*** Includes connections completed by EdM in project areas, using project-supplied materials

29. Consulting Services for Grid Intensification. As recorded in previous aide-memoires, disputes between EdM and the AfDB had resulted in a cessation of activities in ERAP package 1, awarded to ETDE, in September 2009. The dispute has now been resolved and installation works re-started on 1st September 2010, and are approximately 72% complete as of end-October 2010.

30. The estimated completion date is end-2010. However, given the risks of further delays, and also the time required for resolution of snags by the consulting engineer, it was agreed that it would be best to
extend the contract of the consulting engineer (financed by IDA) by an additional 2 months. EdM will send proposed amendment. It was underlined once again that the Bank cannot consider requests for ‘retroactive’ No Objections and that the request + documentation **must** be received before the expiration of the current contract end-date.

**Commercial Reorientation of the Sector Toolkit (CREST)**

31. **Automatic Meter Reading (AMR) component.** The AMR Master Server, which has capacity for 1000 meters, has been installed in the EdM premises. A new version of the AMR software has been released and the manufacturer (ISKRA of Slovenia) provided the new update within the present scope of the project. After configuring the remote metering points in the AMR system database, failure to communicate the remote meters from the master system was the main concern, as recorded in previous aide-memoires. The visit of an engineer directly from ISKRA was arranged by the consultant to resolve the communication problem and to configure the software correctly. The problem has been solved and AMR master station can now communicate with remote meters.

32. However, a further problem has now been encountered. The AMR project covers 436 meters (comprising 400 meters for MV customers and 36 check meters for the distribution network). These from meters are from 3 different vendors:

- Itron “Actaris”: 45 existing SL-7000 AMR-ready meters, which have been fitted with SIM cards as part of the project
- Landis & Gehr: 145 existing ZMD AMR-ready meters, now fitted with SIM cards, as well as 10 new check meters
- ISKRA: 236 new meters

<table>
<thead>
<tr>
<th>Meter Summary</th>
<th>New meters for MV customers</th>
<th>New check meters</th>
<th>Modems only for existing MV meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISKRA</td>
<td>210</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Actaris/Itron</td>
<td></td>
<td></td>
<td>45</td>
</tr>
<tr>
<td>L&amp;G</td>
<td>10</td>
<td></td>
<td>145</td>
</tr>
</tbody>
</table>

33. The issue is that the non-ISKRA meters are not currently fully compatible with the ISKRA-supplied AMR system. The internal software configuration of the non-ISKRA meters does not comply fully with the AMR master software and a specific proprietary configuration is required. As a result:

- Itron meters: of the three energy consumption parameters -- active energy, reactive energy and maximum demand (MD) -- the reactive energy parameter (part of the billing) cannot be read.
- L&G meters: the MD parameter cannot be read.

34. In order to resolve this issue, L&G and Itron need to supply codes to ISKRA to allow the overall ISKRA system to fully read the meters from the other manufacturers. Because of concerns about proprietary information, this has required Non-Disclosure Agreements (NDA) to be signed at the manufacturer level. The Consultant has facilitated this process. ISKRA has reached agreement with L&G and Itron on the NDA and final differences in the wording of the agreement are being negotiated before it can be signed. However, it is expected that this could take up to two more months, implying completion will only be by end-December 2010.
35. In the meantime, it has been decided to commission the Master Station despite the lack of full functionality of the non-ISKRA meters – hence a partial completion will be accepted. A snag list will be prepared to track all un-finished system features. The AMR expert from Actom (supplier of the ISKRA system) is currently commissioning the system during the mission period and will provide the operation and maintenance training after completion of his work. After finalizing the NDA, the ITRON meters will be commissioned and the 100% commissioning of the master station will be accomplished. At that point, another expert training session will be conducted by the expert from ISKRA.

36. The delays in contract completion are due to the contractor rather than the employer. The contractor for AMR (Electrotec) requested extensions of time for project completion. EdM has allowed the contractor to continue works in order to fulfill the contract, but has not granted a formal extension of the contract completion date and reserves the right to apply liquidated damages as per the contract. EdM is reminded of the need to seek a formal No Objection before making any amendments to contracts.

37. Overall, due to the problems experienced, no disbursements have been made to Electrotec since April 2010. Disbursements of approximately 35% of the contract amount remain to be paid, not including any liquidated damages that may be imposed.

38. **Pre-Paid Meters (PPM) Component.** All the prepaid meters (as per the BOQ) have been installed by the contractor (Electroredes), who has now demobilized from the project sites. The seven pre-paid card vending systems and the replacement of some service connections have also all been completed.

39. The contractor is currently finalizing the ‘As-Built’ documentation and preparing the last invoice as per the respective amendment for additional supply and installation Airdac cable. A very small amount of material that was left has been handed over to EdM. The contractor is currently finishing the geo-coding (collecting the GPS co-ordinates of the metering point and processing as per EdM’s requirements for delivery).

40. Some small snags and discrepancies have been resolved and the Consultant has consequently issued completion certificates (representing the milestone for 5% of payments) and soon thereafter the operational acceptance certificate. The consultant is working on the close-out report and will issue op. acceptance certif. (the milestone for the final 5% payment) once system tested. The performance guarantee will then get released. An overall balance of $80,000 is expected, due to some savings related to equipment.²

41. The mission team visited the Maputo suburb of Chamanculo to inspect the finished works and spoke with local residents to gauge community satisfaction with the project. In general, customers seem to be happy with their improved ability to control expenditure on electricity.

42. **CREST Consulting Engineer Contract.** The contract of UDS, the CREST consulting engineer, expired in July 2010. A request for an amendment, for an amount of approximately $25,000, was sent to the World Bank only on September 4th 2010. The reason for the delay was that the discussions regarding the amendment extended to the end of August.

43. The World Bank had communicated to EdM that there is no provision for retroactive No Objections in WB guidelines, and that previous exceptions were made because of exceptional circumstances. In this case, however, EdM had been requested in the previous mission to send any

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² Specifically, some poles related to service connections were not necessary, due to difficulties siting the poles.
requested amendments before the expiration of the UDS contract. Accordingly, it was communicated that a No Objection for the proposed amendment could not be given. Therefore it is recommended that EdM finds financing from internal sources for any further work required.
Component C: Independent Grid Rural Electrification

44. Component C has been cancelled as part of the recent restructuring. However, as noted in previous aide-memoires, given that the concession was supported in part by ERAP, the World Bank has an interest in ensuring that disputes between the contracting parties are settled promptly, equitably and in accordance with the terms of the agreements in question.

45. ME informed the mission that due diligence has commenced on August 16 and is expected to be completed before the end of November (as previously noted, PWC was selected by mutual agreement between the two parties). ME will keep the WB informed on any progress.
Component D: Renewable Energy and Cross-sectoral linkages

46. The installation of the solar PV systems for the 50 schools and 50 clinics carried out by the contractor Angelique has been completed and site acceptance certificates have been issued for all sites by the supervision consultant.

47. The installation of the solar PV systems for the 100 schools and 100 clinics carried out by the contractor Mohan and the pilot village electrification carried out by the contractor Moçambique Diesel Electrica has not yet been finished. Progress is slow and the installations face quality issues. In total, out of 150 PV systems for schools and the 150 systems for clinics, as of the end of the mission, 111 systems for schools and 125 systems for clinics have been installed and accepted, corresponding to a completion rate of 78.7%. Two of the five pilot villages have been completed and site acceptance certificates issued. After initial difficulties, Moçambique Diesel Electrica has replaced all fridges in clinics with WHO compliant ones and has provided high quality lamps.

48. FUNAE is testing 290 high quality DC lamps obtained from GTZ-AMES. The lamps have been installed in different locations about 2.5 month ago and no failures have been reported so far. FUNAE has launched a tender for the procurement of around 5,000 high quality 12V DC CFLs. FUNAE has obtained different quotes from local firm which seem to be on the high end. The mission indicated that it might be beneficial to procure lamps outside of Mozambique for lower cost. FUNAE indicated that the previous statement reported in the last aide-memoire that MISAU would procure lamps for the ERAP clinics was not correct. MISAU’s procurement is for clinics not financed by ERAP. FUNAE will follow up to find out if MISAU is not procuring spare lamps for ERAP clinics because they are covered under MISAU’s maintenance contract with Afritool.

49. **Safety issues.** During last mission’s field visit in Tete Province, the mission had observed a number of safety related issues. FUNAE provided the following updates regarding the safety issues:

   - To protect batteries in class-rooms, FUNAE has developed a design for battery cases that can be produced locally and installed by FUNAE personnel.
   - The problem with uninsulated charge controllers has been solved by both contracts, Mohan and Angelique. Cable connection to the charge controller has been adjusted so that no bare cables are reachable.

50. **Meeting with MINED.** A constructive meeting was held with MINED’s Director of Planning, to discuss security, O&M issues and the scope for improvements that will increase the impact of solar PC systems for users. It was agreed that vandalism and theft of systems is a far greater problem with schools than with clinics, largely caused by a lack of effective security and guards. MINED has recently instructed the provincial directorates to reinforce its security efforts, but it was agreed that further efforts will be needed, to protect existing (ERAP) and future (EDAP) investments.

51. Regarding O&M, the lack of skilled technicians in MINED was noted. It was hence agreed that the most efficient way to proceed with maintenance would be for MINED to agree with MISAU that O&M for schools will also be undertaken by MISAU’s private contractor[^3]. Two options for proceeding were discussed: (i) for MINED to sign a contract with the same private contractor, or (ii) for MINED to compensate MISAU for extending the scope of its private contractor to also cover the schools. If the latter option is chosen, given the complexities of financial transfers between Ministries, it was further agreed that MINED will negotiate with MISAU to supply equipment and spare parts, rather than make

[^3]: In conjunction with MISAUMISAU’s own technical staff, which will be expanded over time, as documented in the previous aide-memoire.
a financial contribution. For example, MINED could agree to supply spare lamps and replacement batteries.

52. Given that regular O&M will need to start soon, FUNAE and the Ministry of Energy are urged to actively follow up with MINED to finalise these arrangements and facilitate any MoU that may be needed between MINED and MISAU.

53. For EDAP, ways to improve the value of the systems for users and local communities were discussed. For example, appliances that could improve teaching methods – such as radios, black-&-white TVs or CD players – could be included at low cost. In addition, such appliances would also be valuable to the community at large, transforming schools into community centres. (This would also help improve the security situation, if local communities had a stake in the upkeep of the systems). Used correctly, the solar systems could also provide school administrators with a small source of revenue – for example, from charging mobile phones. Again, this would enhance the incentives for communities to maintain and secure their systems. MINED agreed that it would discuss internally what appliances would be useful and promised to revert to FUNAE within the next few weeks. FUNAE is urged to follow up on this, while the issue is still ‘fresh’ at MINED.

54. **100 Additional Clinics.** The procurement of the 100 additional clinics under the remaining GEF grant is delayed and it is unlikely that anything more than the initial payment can be made before the closing of the credit. During the mission the FUNAE and WB teams worked on the BER in close collaboration with the procurement office in Washington. FUNAE is currently finalizing the revised report for WB no-objection. The WB provided a no-objection to the RFP for the supervision consultant. The deadline for submission was November 5, 2010 and FUNAE will submit the evaluation report shortly.

55. **‘Package of Improvements’.** Regarding the package of improvement, FUANE provided the following updates: (i) the only available reflectors on light fittings in the local market are very expensive and FUNAE has not yet decided on how to proceed; (ii) conversion of DC plugs to either cigarette-lighter type or to AC via small inverters has been considered and AC inverters rejected because of the small system sizes. FUNAE could not find cigarette-lighter type sockets in the local market and during the discussion the mission pointed FUANE to some internet resources; and (iii) provision of solar lanterns for clinic staff houses has been put on hold due to the bad experience with the solar lanterns used so far. The mission encourages FUNAE to look at low-cost options for these improvements.

56. **Impact evaluation study.** The ToR for the impact evaluation study have been submitted to the AfDB for approval and funding. However, progress is slow. At the same time FUNAE has carried out an in-house study on the impact of village electrification. FUNAE gave an oral summary of the report to the mission and will send the report to the WB task team.
Component E: Institutional Development and Capacity Building (ME)

57. It was confirmed that the Transaction Advisers has been delayed, and that this activity will now be financed entirely from EDAP. The mission emphasized the importance of expeditiously recruiting these Transaction Advisers so that they can assist in the negotiations regarding the concession agreement with the developers of the power projects in Tete province.

58. The Review of the Electricity Law is discussed in Component A above.

59. The requests for disbursement category re-allocation and/or overdraw requests were reviewed. It was emphasised that it would be preferable if the needs for any additional funds in particular disbursement categories can be managed via category overdraws authorised by the task team, rather than a formal disbursement category re-allocations.

60. While the re-assignment of the Transaction Advisers means that surplus IDA funds are now available, the project time remaining is insufficient for any new competitive procurement processes. Activities limited to selection of individual consultants and methods such as shopping may be possible, but it is strongly recommended that implementing agencies consult with the WB team, even for ‘post-review’ activities. It is underlined that all ERAP activities must be completed before end-March.

61. The following possible activities were discussed, and it was agreed that the final decision on all of these activities will be made by ME, as the lead implementing agency for ERAP:

- **Financial model consultancy for EdM.** This will allow EdM to update its financial model and receive further training on its use, so that future updates can be done in-house. It was agreed that a single-source contract would be used for the individual consultant who has previously assisted EdM on this matter. A WB No Objection will be needed.

- **IT Goods for the Ministry of Energy.** given the recurring technical problems with the system. A small procurement of goods by the appropriate method should be possible in this area.

- **Moçambique Diesel Electrica contract amendment.** An oversight was made during the 2009 restructuring of ERAP, such that the additional costs relating to covering taxes (as covered in the first restructuring in 2007) were not included in the calculations of the necessary disbursement category reallocations. However, given the lack of No Objection to the amendment of Diesel Electrica’s contract, clearance still needs to be obtained before ME can proceed with the requested category overdraw and eventual disbursement. ME will follow up further with the World Bank task team and disbursement team in Johannesburg.

- **Additional support for CNELEC for 3 months of operations in 2011.** It is underlined that any amendments to Commissioner or staff contracts will need to be agreed before the current contract end-dates: No Objections for retroactive amendments will not be given.

- **An evaluation consultancy on lessons learned from ERAP for ME, by an individual consultant, should be possible in the timeframe.**

- **Funding for CNELEC training already undertaken:** ME stated that the training already undertaken was in the training plan for which a formal No Objection was given, but that an error was made in adjusting the relevant disbursement category sufficient during the 2009 restructuring. The training has been paid out of the project Special Account. ME will find this No Objection in its records and send to the World Bank before this can be considered further.

- **In addition, authorisation for a category overdraw for MD Consultores is required, for two invoices that are pending. During the 2009 restructuring, it was thought that these had already been paid and hence this item was not included in the reallocation of ERAP’s disbursement categories. ME will re-send this overdraw request to the WB.**
62. Overall, it is estimated that these additional small activities will amount to approximately $536,000. ME will consider these activity and take a decision. ME agreed to send to the WB a summary note communicating its decision and setting out the cost estimates and next steps for all these proposed activities for further review.
### III. ANNEXES

**Annex A: List of Persons Met**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salvador Namburete</td>
<td>Minister, Ministry of Energy</td>
</tr>
<tr>
<td>Mr. Júlio Bernardino Mahumane</td>
<td>Ministry of Energy</td>
</tr>
<tr>
<td>Nazário Meguigy</td>
<td>Ministry of Energy</td>
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<tr>
<td>Anuencio Bouene</td>
<td>Ministry of Energy</td>
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<tr>
<td>Carlos da Conceição José</td>
<td>Ministry of Energy</td>
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<tr>
<td>Ilídio Bambo</td>
<td>Ministry of Energy</td>
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<tr>
<td>Ernesto David Zandamela</td>
<td>Ministry of Energy</td>
</tr>
<tr>
<td>Benjamim Nandja</td>
<td>Ministry of Energy</td>
</tr>
<tr>
<td>Guilherme Luis Mavila</td>
<td>CNELEC</td>
</tr>
<tr>
<td>Isaque Chande</td>
<td>CNELEC</td>
</tr>
<tr>
<td>Issufo Mussagy</td>
<td>CNELEC</td>
</tr>
<tr>
<td>Iacumba Ali Aiuba</td>
<td>CNELEC</td>
</tr>
<tr>
<td>Sérgio Paulino Moreno</td>
<td>CNELEC</td>
</tr>
<tr>
<td>Osvaldo Soliano Pereira</td>
<td>Resident Regulatory Adviser, CNELEC</td>
</tr>
<tr>
<td>José Micas</td>
<td>EdM</td>
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<tr>
<td>Marcelino Gildo</td>
<td>EdM</td>
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<tr>
<td>Luis Amado</td>
<td>EdM</td>
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<tr>
<td>Arone Malendza</td>
<td>EdM</td>
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<tr>
<td>Helder Gimo</td>
<td>EdM</td>
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<tr>
<td>Moisés Silombe</td>
<td>EdM</td>
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<tr>
<td>Vagner Languene</td>
<td>EdM</td>
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<tr>
<td>Miquelina Menezes</td>
<td>FUNAE</td>
</tr>
<tr>
<td>Mario Batsana</td>
<td>FUNAE</td>
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<tr>
<td>Miguel Diogo</td>
<td>FUNAE</td>
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<tr>
<td>Edson Uamusse</td>
<td>FUNAE</td>
</tr>
<tr>
<td>Constantino Cachela</td>
<td>FUNAE</td>
</tr>
<tr>
<td>Mr. Manuel Rego</td>
<td>Director of Planning, MINED</td>
</tr>
<tr>
<td>Mr. Andre Utui</td>
<td>MINED</td>
</tr>
<tr>
<td>Ms. Piedade Mataveia</td>
<td>Ministry of Finance</td>
</tr>
<tr>
<td>Adriano Ubisse</td>
<td>Ministry of Plan and Development</td>
</tr>
</tbody>
</table>
Annex B: Summary follow-up actions

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
<th>Responsible Entity</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Finalise disbursement category overdraw requests and send a summary note to the WB setting out the cost estimates and next steps for the final set of proposed activities under ERAP.</td>
<td>ME</td>
<td>Asap</td>
</tr>
<tr>
<td>2.</td>
<td>Apply for extension of the disbursement deadline beyond March 31, 2011 and inform ME</td>
<td>WB</td>
<td>Asap</td>
</tr>
<tr>
<td>Component A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Produce public report from CNELEC to the Government of Mozambique on EDM’s performance</td>
<td>CNELEC</td>
<td>Asap</td>
</tr>
<tr>
<td>4.</td>
<td>Define the regulatory monitoring parameters to be included in the SIGEM system.</td>
<td>CNELEC</td>
<td>Ongoing</td>
</tr>
<tr>
<td>5.</td>
<td>ME to provide to the WB the No Objection given to an extension of CNELEC’s training program prior to the 2009 restructuring</td>
<td>ME</td>
<td>Asap</td>
</tr>
<tr>
<td>Component B</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6.</td>
<td>AMR: Inform WB of status / resolution of the technical problems regarding communication between meters and Master Station.</td>
<td>EdM</td>
<td>Ongoing</td>
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<tr>
<td>7.</td>
<td>Inform WB well in advance of any further contract amendments required.</td>
<td>EdM</td>
<td>Ongoing</td>
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<tr>
<td>Component C</td>
<td></td>
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<tr>
<td>8.</td>
<td>ME to consult with the WB on the findings of the PWC’s due diligence report on the ENMo concession</td>
<td>ME</td>
<td>Started on August 16, 2010</td>
</tr>
<tr>
<td>Component D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Advance the procurement of 100 additional clinics; WB to provide suggested list of items to be negotiated with the selected contractor</td>
<td>FUNAE/WB</td>
<td>Ongoing</td>
</tr>
<tr>
<td>10.</td>
<td>Advance the recruitment of supervision consultant for 100 additional clinics</td>
<td>FUNAE/WB</td>
<td>Ongoing</td>
</tr>
<tr>
<td>11.</td>
<td>Determine why MISAU is not procuring spare lamps for the ERAP clinics</td>
<td>FUNAE</td>
<td>Asap</td>
</tr>
<tr>
<td>12.</td>
<td>Disbursement category overdraw request to allow for funds for MD Consultores’ contract amendment: obtain clearance from WB before proceeding with the requested category overdraw and eventual disbursement.</td>
<td>ME/FUNAE</td>
<td>Asap</td>
</tr>
</tbody>
</table>
Annex C: Next steps of CNELEC: Statement at conclusion of public hearings

(Unofficial translation provided by World Bank)

CNELEC takes the opportunity of this first round of public consultations to engage with the community with their next steps in ensuring the improvement of electricity service in the country.

By the end of August 2010, CNELEC will submit to the Government a report containing a detailed evaluation of the performance of EDM in the implementation of the Agreement Programme signed between the GoM and that company and recommendations regarding the technical and commercial quality of service provided by the same company.

Towards the end of September is expected to send a series of recommendations concerning the establishment of a management system for customer complaints in EDM for subsequent monitoring by CNELEC.

Finally, to end of November this year, CNELEC will develop a draft Code of Consumer Electricity contemplating the rights and duties of consumers, which will be the subject of a new public hearing before final approval by the Government.

From 2010, CNELEC will monitor and disclose quarterly the performance of EDM in a series of performance indicators, including among others: the average frequency of outages, the average duration of interruptions, the number of complaints received during the period by type of complaint and the average number of connection requests pending.

In parallel, CNELEC will continue to act in its function of conciliation, mediation and arbitration of disputes between the EDM and its customers, or among themselves, having exhausted the possibilities of agreement between them.

Thus, CNELEC hopes to support the Government of Mozambique to ensure the improvement of the service provided by EDM at the time the service is expanded to the larger contingent of Mozambicans still not covered.