

Electrification of schools in  
Region E,  
Eastern Cape  
Post-electrification study in Ludeke and  
follow-up in Mnceba

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## 1. Introduction

### 1.1 Background

Between February 1996 and October 1997 Independent Development Research (IDR) undertook a case study of schools and clinics electrification in Region E of the Eastern Cape. This study is an input into the Energy and Development Research Centre project entitled *The role of electricity in the integrated provision of energy to rural areas* which aims to assist in the development of appropriate rural electrification (RE) policies for South Africa. It also aims to provide practical assistance to agencies implementing and funding RE.

The case study comprised three component studies which explored the Eskom grid and non-grid electrification of school programmes and the clinic electrification programme of the Independent Development Trust (IDT). The first two studies were undertaken by IDR in early 1996 and early 1997 respectively. The first was a pre-electrification study undertaken in four settlements which focused on the local level context in which electrification was to take place and the perceptions of local level actors regarding electrification. Two of these settlements fell within the Eskom five-year grid-electrification plan and two fell outside of the plan in areas where provision had been made for PV electrification of the schools and clinics. The second study comprised an examination of the electrification process from the point of view of the service providers (Eskom and IDT) and the Departments responsible for Education and Health respectively.<sup>1</sup>

A post-electrification study was then conducted in August through October 1997 in the same settlements in which the pre-electrification study was conducted, namely Mnceba (Tabankulu) and Ludeke (Bizana) both of which are grid-plan areas, and AmaNdengane (Bizana) and AmaNtshangase (Bizana), both non-grid areas.

As indicated in Map 2, Ludeke is located near a main road, whereas Mnceba is located some distance from the main road and is less accessible.<sup>2</sup> Map 1 depicts the location of the two magisterial districts within the former Transkei and the population density of the various districts based on the 1991 census. The location of the schools and other services in the various settlements are represented on the hand-drawn maps (Maps 3 and 4).

The results of the study of *grid schools electrification* are outlined in the report below, and analyzed in the context of the first two studies. Two other reports have also been produced dealing with the Eskom non-grid electrification of schools in non-grid areas and IDT clinics electrification in non-grid and grid areas.

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<sup>1</sup> Laura J Bedford. Electrification of Clinics and Schools in the Former Transkei: Pre-electrification Study in Mnceba, Ludeke, AmaNdengane and AmaNtshangase. EDRC June 1996; Laura J Bedford. An Assessment of the Process of Electrification of Schools in Region E of the Eastern Cape. EDRC March 1997.

<sup>2</sup> All maps reproduced from Bedford (June 1996).

**Map 1: Districts and population density, former Transkei**

**Map 2: Location of four districts at 1:250 000 scale**

Map 3: Ludeke

**Map 4: Mvenyane area, including Mnceba/Mzalweneni**

## 1.2 Aims of the research

The schools component of the third study was intended to be primarily concerned with examining the extent to which the potential benefits of electrifying schools had been realised. The impact of the local-level context on the process itself was also to have been examined. Due to the failure of the electrification programme to have effectively electrified schools in the settlements, however, the focus of the research shifted to issues involving the planning and implementation processes.

The following issues were investigated:

- The impact of electrification on services provided at schools was assessed. The views of local-level actors were examined regarding the impact of electrification, focusing on local perceptions of the benefits and constraints of electrification.
- The views of local-level actors were examined regarding the place of electrification within the overall need for services and in the context of plans for improvement of these services.
- The electrification process and institutional arrangements were examined and analysed, focusing on local-level participation and consultation. Constraints at the local level (institutional and other) were explored. Further, the views of local-level actors regarding the constraints and opportunities inherent in the process were examined.

## 1.3 Method

The set-up for research within the settlements involved prior visits by two researchers to the settlements and notification of key individuals of the research plans. Permission to stay at AmaNtshangase<sup>3</sup> and Mnceba Clinics was granted by the Community Health Matron (St Patrick's Hospital) and Sisters in Charge of the clinics at this stage. Approximately two days was spent conducting research into schools electrification in Ludeke and one day was spent in Mnceba.<sup>4</sup> Interviews were also conducted with key individuals at the Regional Department of Education (Kokstad) and District Office of Education (Bizana). Following fieldwork, Eskom (Shelly Beach), Eskom Non-Grid Electrification (NGE) (East London) and the Provincial Department of Education (DoE) Physical Planning Director were interviewed.

It was initially envisaged that an impact assessment would involve observation of electricity utilisation and appliance acquisition as well as exploration of local-level perspectives regarding impact. This would involve field visits to various schools from Junior Primary (JPS) to Senior Secondary (SSS) including observation, discussions and participatory exercises with headmasters, teachers, high-school pupils and local schools committees / parent-teacher association (PTAs). Although preliminary investigations indicated that schools in Ludeke had been given a point of supply, none in fact had an operational electricity supply. 'Impact', therefore, was negligible. Nevertheless, open-ended discussions were held with teachers and headmasters regarding their plans for electrification and perceptions thereof. The electrification of Mnceba was originally part of the Eskom 1997 plan but had been 'rolled over' to early 1998. Nevertheless, discussions were held with staff of the high school there.

Local-level actors such as principals, teachers and PTAs were to be asked to participate in discussions aimed at eliciting their understanding of plans for other 'improvements' to education delivery, the link between these improvements and electrification, the process whereby other improvements have taken place, and their perceptions regarding maintenance of electricity supply issues.

Given the lack of functional electrification and of other planned improvements, the teachers and principals were asked to discuss the reasons for this and their understanding of the proposed plans for improvements. It is important to note that interviews and discussions with local residents and school

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<sup>3</sup> The decision to stay at AmaNtshangase Clinic during the course of research in this settlement as well as research in AmaNdengane and Ludeke was based on an assessment of the relative safety of the various settlements. Notably, a good relationship had been established with the Nkosi in AmaNtshangase, and electricity was working at the nurses' residence in AmaNtshangase, but not in AmaNdengane, which the researchers felt would provide greater security.

<sup>4</sup> In a number of cases meetings which had been scheduled had to be rescheduled and thus multiple visits were essential in most cases. The research at each location was thus conducted over a period of a few days.

staff did not involve further 'needs' assessment or prioritisation of possible improvements, as there were no plans to meet other needs or provide other improvements at this stage. Such research should ideally be undertaken in the context of planned delivery.

Discussions were also held with key role-players in the Regional DoE and District Education Office (DEO) regarding the state of the electrification programme, other planned improvements, and maintenance plans.

Meetings and discussions were held with the following key role players:

	<i>Position</i>	<i>Institution</i>	<i>Place</i>
1	<b>CHIEF EDUCATION SPECIALIST, RDP COORDINATOR</b>	RDE	Kokstad
2	Education Development Officers	DEO	Bizana
3	RDP Coordinator + Provision Manager	DEO	Bizana
4	Director, Physical Planning	DoE	King William's Town
5	Eastern Cape (EC) NGE Manager	Eskom NGE	East London
6	Electrification Manager + Electrification Planning Manager + Customer Liaison Man.	Eskom Area Office	Shelly Beach
7	Senior Electrowise Advisor + SACS Manager	Eskom Depot	Kokstad
8	Elected electrification representative	-	Ludeke
9	Principal	Marelane SSS	Ludeke
10	10 Teachers	Marelane SSS	Ludeke
11	<b>PRINCIPAL + VICE-PRINCIPAL</b>	Ludeke JSS	Ludeke
12	Principal	Masweni LP	Ludeke
13	Principal + 3 Teachers	Mnceba SSS	Mnceba
14	Elected councillor	-	Mnceba
15	Electrification contractor	DLV	Mnceba

#### 1.4 Structure of the report

The report comprises five sections including this introduction. The second section gives some background on the overall planning issues and recent developments in this regard. In particular, budgeting for internal wiring and the issue of payment for electricity at schools is explored. The third section examines the consultation and communication process between Eskom and the various tiers of the DoE administration; local level liaison; and internal coordination within Eskom and the DoE respectively. Section four looks at the perceptions of schools staff regarding the role of electrification and in particular the ways in which it is seen to be linked to the provision of appliances. The place of electrification within overall plans for improvements to schools is outlined. The fifth section comprises a summary and conclusion.

## 2. Status of the programme

### 2.1 Planning

We are simply meeting a government-set target of electrifying as many people as possible as soon as possible.<sup>5</sup>

The implementing agent for the electrification process is Eskom who appear to be operating without the guidance of a national electrification policy directed by government. The process of electrification is, therefore, currently supply-led. This supply-led process which is taking place without the support of a national policy framework has not been clearly acknowledged or approved by government; government has taken neither the role of client nor agreed to a supply-led process outside of its jurisdiction. It is unclear, therefore, what purpose schools electrification is to serve. The educational requirements of South Africa's people have not been factored into the process with any degree of clarity, and schools electrification appears to be an end in itself. The DoE (as client) has not provided the programme with a set of educational criteria which could provide the context for the electrification of schools programme.

The Provincial DoE Physical Planning Director noted that, until recently, the Provincial DoE did not have a post for a coordinating and management role for the provisioning of schools, maintenance, training etc. Recently such a post has come into being, which has led to an improvement in planning and coordination. Moreover, the Provincial DoE and Eskom are now working closely to formulate a strategy. A meeting was held recently at which DoE commitments and responsibilities were discussed. DoE has recognised that their original commitments had not been met, due to factors within the Department. They were now 'coming on board', but needed time. The main overall planning problem was that the DoE and Eskom were not synchronised at the outset: Eskom was ready to run with the Programme and the DoE lacked capacity to come on board and drive the process. This is in the process of being resolved within the DoE. The Eskom Electrification Plan for 1997 is inserted overleaf.

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<sup>5</sup> Electrification Planning Manager, Shelly Beach.

**Table 1: Eskom Electrification Plan, 1997**

## 2.2 Electrification budget

All schools which fall within Eskom's five-year grid plan will receive a point of supply in the course of the electrification of any given area.<sup>6</sup> However, the plan itself has altered over time, with a slowing of pace and a reduction in area.<sup>7</sup> The capital limit per connection has recently dropped to R3100.<sup>8</sup> In fact, due to the change in the capital limit, Eskom has switched its focus to areas in the former Transkei and away from KZN due to the higher population densities in the former Transkei areas. Schools which fall outside a grid-plan area will not get a point of supply, and delays in other areas has meant the delay of the electrification of schools in these areas.

Eskom has said that the responsibility for internal wiring of schools is theirs – but only up to the limit of their budget,<sup>9</sup> whereafter the responsibility lies with the DoE. However, the Director of Physical Planning Provincial DoE indicated that there were severe budgetary constraints within the DoE and that no money has been allocated for infrastructure development at schools, including internal wiring.<sup>10</sup> This is a serious problem: without internal wiring, schools will not be able to utilise electricity.<sup>11</sup> Furthermore, local residents and PTAs may not be in a position to pay for internal wiring.

Schools are required to apply for internal wiring once they have received a point of supply. When a school is wired, the normal 20A household supply needs to be upgraded to a 60A supply and this is paid for by Eskom.<sup>12</sup> Eskom Area Office explained that Eskom is responsible for maintenance up to the point of supply, and the DoE for the rest. The ready-board belongs to DoE, but the meter remains Eskom's property.

Given the small Eskom budget available for line extensions and internal wiring to schools, the flexibility with respect to inclusion of a particular school within a project boundary is essential, but opens up the possibility of 'corner-cutting' and ad hoc decision-making at both the planning and the installation stage of the project. Criteria based on policy determined by the Department of Education have been lacking. In fact, according to Eskom Area Office, the criteria for prioritisation of schools electrification and wiring were set by them – there was no input from the DoE. Eskom sets these priorities for schools electrification as follows: 1) high schools; and 2) as many schools as possible within the budget. The schools that cost least to wire therefore get priority in terms of wiring.

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<sup>6</sup> According to schools staff and local residents, schools in Ludeke had received a point of supply in mid-1997. The electricity in the area had worked for a few days and then stopped working in the whole lower Ludeke area approximately one month prior to the research which took place in late August 1997. Some people thought that it had never been 'turned on' whilst others thought that there was some technical problem with the installation. Eskom explained that there had been some technical difficulties, but that the problem had been resolved by October. It is possible that the intervention of IDR in reporting to the Eskom Depot in Kokstad that the system in lower Ludeke was not working led to the resolution of this problem. Certainly, the Eskom Depot indicated that they were unaware of the problem when IDR reported it in late August.

<sup>7</sup> One example of an area where electrification has been delayed is Mnceba in Tabankulu, where electrification was originally planned for early 1997, but has been rolled over to early 1998. Electrification will only take place in the event of money becoming available – that is, there is still no guarantee that this area will be electrified.

<sup>8</sup> The customer Liaison Manager from Eskom Area Office explained that, where possible, schools will be connected even if they exceed the capital limit.

<sup>9</sup> Eskom has a national budget of R50 million per annum for the whole of South Africa (Eskom Community Fund). Previously there was funding from Norad and RDP, but this has been cut recently. The inability to plan for line extensions and internal wiring at schools results from a lack of clarity at a national level with respect to budget allocations. This, plus repeated alterations to budgets and inconsistency from year to year have made the planning of electrification of schools, by whatever means, difficult for the Eskom Area Office (Shelly Beach).

<sup>10</sup> The Eskom list of seventeen schools which fall within the Margate area that have been earmarked for electrification and wiring during 1997 should funds become available include four in Ludeke, namely: 'Ludeke CP School, Marelane High School, Mhlabuvelile CP School, Mdeni School' (personal correspondence with Eskom, Margate).

<sup>11</sup> Teachers at the SSS in Ludeke described the ready-board as 'useless' in the absence of wiring – and they were waiting for Eskom to return to do the wiring but had no indication of when this might happen.

<sup>12</sup> According to Eskom Area Office, a school needing a three-phase supply must apply and pay for it themselves. In this case, they would go onto a normal billing system, not pre-paid metering because pre-paid meters for three-phase are too expensive.

The RDP Coordinator within the Regional Department was not aware that there was no DoE budget for the internal wiring of schools – although she had been informed by the provincial DoE that there was no budget for schools electrification in general. Local structures and schools staff also had limited information regarding the plans for internal wiring of schools. Schools staff in Ludeke indicated that although men had arrived at the school to ‘do drawings’, they had not been told when to expect wiring to take place.<sup>13</sup> Eskom Area Office explained that they did not give out any information regarding plans for electrification in general or internal wiring, due to the uncertainties with plans and budgets. Only once money had been confirmed for a particular project would they inform local structures.

### 2.3 Payment for electricity

The ready-board which has been installed at all schools runs on a pre-payment system. The schools receive a normal household supply (20 Amp S1). The customer (household or school) must pay an installation fee of R65 – and this may be done before or after installation. The customer then receives an ID card which proves they have paid. This ID card is essentially a license to buy electricity according to the prepayment system. A certain number of units is made available when the meter is installed. Once these units have been used up, another card must be purchased.

In some cases, schools staff indicated that they would be willing to pay for electricity out of school funds, whereas in others school staff argued that it was the responsibility of the DoE to arrange payment: ‘We have no intention of paying out of our own pockets.’<sup>14</sup> The Eskom schools application form for electrification is reproduced overleaf. It shows that the school or DoE accepts responsibility for payment.

Eskom Area Office indicated that, although schools were originally meant to be put onto a normal ‘billing system’ – and the DoE was supposed to sign a form stating that they would take responsibility for payment of electricity at each school which was connected, Eskom had decided to install pre-payment systems instead because it had become clear that the DoE may not be able to meet its commitments in terms of payment of electricity bills. They stressed that, in the event of no money being made available by the DoE, schools would at least have the option of buying cards themselves and keeping the school electrified.

As a consequence of the lack of clarity regarding responsibility for payment, the logistical arrangements for payment of electricity at schools is unclear. The SACS Manager at Eskom Kokstad said whereas he was aware that all schools are receiving prepayment meters, he knew nothing about payment arrangements and had not had any contact with the Regional DoE in Kokstad.

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<sup>13</sup> Currently there are twelve schools on the list (Eskom Internal Wiring Phase 1) from the former Transkei area of Region E (four of which are in Ludeke). These have had plans drawn up for wiring and they will be wired if and when money becomes available. There is no budget at present. Eskom Area Office has only identified twenty schools in Region E which could be internally wired at this stage – although Eskom Head Office had a budget for plans to be drawn up for thirty.

<sup>14</sup> Principal and Vice-Principal, Ludeke.

Eskom application form for schools electrification

The RDP Coordinator within the Regional Department was not aware that schools were receiving pre-payment meters as a matter of course – or that there was no DoE budget allocated for this. She said that to her knowledge the payment of electricity bills at schools would be arranged via the DOs, ROs and then passed on to Provincial DoE. The RDP Coordinator and Provisions Officer at the DEO also indicated that as far as they knew, the DoE is responsible for paying for electricity at schools, but they had no clear idea if this really was the case, nor did they understand the practical and logistical issues of this taking place. They said: ‘Maybe we will be told how it will happen once the electricity is installed.’<sup>15</sup>

Teachers generally had not heard anything about payment arrangements for electricity. They did not know how the meter worked or even how to go about purchasing another card. At one school, teachers said that if they were expected to order a new card from the DoE it could take up to a year to arrive – as this was the usual turn-around time for orders.

The ANC Coordinator / elected Eskom contact person in Ludeke did not know what the plans were for the electrification of schools or how payment of electricity for schools was to be arranged. He said that as far as he knew the government was responsible for paying the electricity bills at schools.

### 3. Communication and consultation

#### 3.1 Eskom and provincial Department of Education

The capacity within the DoE at provincial level has been limited and hampered by historical regionalism and delays in re-linking of various education departments. The Department’s lack of capacity has been demonstrated by its failure to drive the electrification process and the passive role which it has played in the schools electrification programme. Eskom Area Office made it clear that they felt the DoE should be responsible for driving the process and forging communication with Eskom in this regard.

There is no formal communication between us and the DoE and there has been no informal communication either. Our role is to supply electricity and this is what we are doing. We must just keep going. We cannot wait around for other role players to get their act together. It is not our responsibility to go to them. If we want education we will go to them – if they want electricity then they must come to us. If the Department of Education does not want to take responsibility for their schools this is not our problem. Maybe the DoE does have capacity problems, and we should be more proactive in trying to keep them informed. There may be sustainability issues – although this is not our responsibility. The issue is that we are implementing a program on behalf of government. As individuals we are each doing the jobs of more than two people. Our capacity is stretched. Maybe Head Office should take more responsibility for liaison with DoE.<sup>16</sup>

The DoE has not been involved in planning or implementation of schools electrification in Region E. Eskom Shelly Beach indicated that a lack of communication between their Office and Eskom Bisho may have led, in turn, to a communication problem between Eskom Area Office and the Provincial DoE. The Joint Steering Committee meetings (DoE, Department of Health, Eskom Non-Grid Electrification, and Eskom) held in Bisho are not attended by the Shelly Beach Area Office – in fact the Area Office did not know they were still taking place every three months.

#### 3.2 Eskom and the regional Department of Education

The Eskom Depot in Kokstad and the Eskom Area Office both noted that they have no communication with the regional DoE in Kokstad. The regional DoE also indicated that there had been a ‘communication breakdown’ between their office and Eskom. The regional DoE RDP Coordinator noted that one of the reasons that greater levels of coordination had not been possible was the limited

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<sup>15</sup> DEO, Bizana.

<sup>16</sup> Eskom, Shelly Beach.

capacity of the regional DoE. The Kokstad regional DoE is a newly constituted institution – there had never been a regional DoE in the Region in the past and administration had been the responsibility of a few individuals in Umtata. However, the Regional DoE has clearly recognised that greater levels of cooperation and communication are needed between their office and Eskom: ‘The way forward is to hold regular meetings between Eskom and the DoE: as the beneficiary of the project the DoE must get involved so as to avoid these problems’.<sup>17</sup>

### 3.3 Eskom and district Department of Education

The delegation of further responsibility to the district level in an effort to engage local level participation is to be commended in principle, but, given the current constraints at this level, may fail. Before too much responsibility is delegated to the District Education Offices (DEOs), it may be necessary for their capacity to be built, not least by providing them with functional offices and telephones.<sup>18</sup> Whereas schools may report their problems to the DEO, it is not surprising that schools have reported that the DEO is unable to resolve their problems. The DEO does not even have a list of the schools which have been electrified. They have tried to find out from the regional DoE, but said ‘the regional DoE cannot provide us with any information’.

According to the Education Development Officers at the DEO, the RDP office within the DEO is responsible for coordinating the electrification of schools within the district. Queries from teachers asking how to go about getting their schools electrified are also referred to the RDP section. However, according to the staff of the DEO, Eskom had never dealt with the DEO regarding electrification of schools. The DEO RDP Coordinator said that the liaison may have happened through the ANC structures in the district but that: ‘This is wrong – in the case of schools, the DEO must be consulted. Eskom never came here and we were never consulted, they just went directly to the schools.’<sup>19</sup> The Eskom Area office agreed that they deal directly with the headmasters of schools – not with District Offices. They feel that at this level there is too much ‘politics’ and this would only lead to projects stalling.

### 3.4 Eskom liaison with local residents

According to the Senior Electrowise Advisor at Eskom Depot, Kokstad, the uncertainties regarding plans and budgets meant that Eskom does not notify residents in an area of electrification plans until confirmation is received that money is available for a project.<sup>20</sup> Local residents are informed in the process of the marketing phase (Phase 1) when Eskom arrives and signs up all customers in an area. Schools are automatically connected. With respect to the electrification of schools, the Kokstad Depot only receives the applications and then forwards these to the Eskom Area Office. In Phase 2 the contractor puts in the high-voltage power and low-voltage power lines using local labour.<sup>21</sup> The contractor then briefly describes to the customer how the system works and how to use it.<sup>22</sup> Following this the customer is given a compliance certificate. The ready-board and light bulb with two-metre extension are left on site.

Whereas the Rural Development Strategy of the government places a great deal of emphasis on the empowerment of rural people and sets out mechanisms by which rural people and their elected local

<sup>17</sup> Regional RDP Coordinator, DoE Kokstad.

<sup>18</sup> The Bizana DEO had just moved to new premises and whereas they had previously had a telephone they have had to apply for a new one since the move and still do not have a direct line. They also have no computer and they do not have a reliable vehicle. Despite the fact that the DEO itself does not have a computer or telephone, according to staff at the DEO, the Regional DoE had asked them to identify five schools in the District which had phones and electricity to pilot computers and Internet communication between the various institutions.

<sup>19</sup> RDP Coordinator, DEO Bizana.

<sup>20</sup> In Mnceba, schools staff and local residents had assumed that they would be getting electricity after the contractors are finished in the adjacent Mvenyane area which was being electrified at the time of the research. However, one teacher had spoken with the contractor the previous day and he had informed them that Mnceba was not on their list and he knew nothing about the plans for electrification of the area. He told them that his brief was to finish the Mvenyane area and then leave. Notably, Eskom had not contacted anyone in Mnceba to let them know what the plans were for electrification.

<sup>21</sup> Approximately two people per ward. People contact the local Electrification Forums to apply for this work.

<sup>22</sup> The education of customers is the responsibility of the Promotion Department based in Margate.

government representatives can take charge of the development process in their areas, the extent to which local people have driven the process of electrification in the former Transkei and the effectiveness of these locally elected structures has been very limited. Meaningful engagement with local level structures is virtually absent in the process of electrification. The impression is that Eskom's interaction with local residents – and, in fact, with the Department of Education – has in most cases been inadequate and only sufficient to enable the implementation to take place. Eskom has made it clear, however, that they understand themselves to be implementing agents and are not responsible for the legitimacy of the electrification programme – this is government's role. Nevertheless, Eskom does engage with representatives from within the old Geographic Electrification Forum (GEF) structures through individuals who have now been incorporated into newly constituted elected structures and local government structures. As such there has been a continuity in this regard. However, Eskom Shelly Beach argued that the problem is that there are too many stakeholders and their internal conflicts have led to projects stalling in some cases. For example, in Ludeke, there are three different local representatives all claiming to represent electrification issues.<sup>23</sup>

### 3.5 Eskom liaison with schools staff

The degree to which school staff have been informed of electrification plans and consulted with regard to the installation of ready-boards appears to have been mixed. In the case of one school, the teachers said that they had been given no information about the electrification before the contractors had arrived. In the case of another, the principal had been informed of the electrification plans for the school early in 1996 by a locally elected electrification representative. At one school, the ready-board was installed during school holidays when no-one was there except the caretaker. It had been placed in a classroom, which the principal argued was inappropriate because it should have been placed in his office. At another school the contractors consulted with the principal as to the best place to install the ready-board. The principal had asked for it to be put in a classroom which is currently used for domestic science.

### 3.6 Liaison between Eskom and Eskom Non-Grid Electrification

In early 1997 reports were being received of schools receiving both grid (points of supply / ready-boards) and solar systems.<sup>24</sup> This problem appears to have increased since then. According to the Eskom Area Office this has occurred throughout Region E and is largely a result of the NGE contractors not following the five-year grid plan. On the other hand, the NGE Manager for the Eastern Cape pointed out that in October last year NGE had discussed this problem with Eskom Area Office directly and the Area Office had said they would investigate the issue. It turned out that some areas which fell outside of the five-year grid-plan were being grid electrified but this was only discovered by the Area Office following the investigation. He said that installation of solar at schools in grid areas is the fault of the Eskom grid programme and their contractors who have not stuck to their original plans.

Eskom grid also noted that there is no communication between Eskom and NGE and that this may have contributed to the problem. On the other hand, according to the NGE Manager for the Eastern Cape, a Joint Steering Committee (JSC) including representatives from Eskom the Eskom grid programme, NGE, DoE, DoH and IDT has been meeting every three months. The JSC is alternately chaired by DoH and DoE. This is a formal channel of communication through which the Eskom grid electrification programme and NGE are meant to coordinate their respective programmes. It was at these meetings that NGE would propose to electrify a certain area and seek approval from the Eskom

<sup>23</sup> In Ludeke, IDR was in all cases referred by schools and clinics staff to one particular representative – the 'elected electrification representative' in the area. No other representatives were mentioned at the local level.

<sup>24</sup> Evidence of this problem was found by IDR at Marelane SSS in Ludeke. The school had both a PV system and a grid connection (neither of which were functioning). The headmistress had arrived at the school to check up on it over a holiday period to find the solar contractors busy with installation. She had explained to them that the whole area was to be grid electrified and said that they were making a mistake. The contractors had replied that they had their plans and must stick to them. She did not know who to contact to complain. The elected electrification representative for the area said he was not even aware that a solar system had been installed at the school. Certainly, IDR has understood from Eskom grid plans since early 1996 that Ludeke was to be electrified on the grid in the course of 1996 /1997.

grid programme. NGE would only go ahead with non-grid electrification once approval had been given. However, the Eskom Area Office explained that the Eskom grid-electrification programme for the Eastern Cape is represented by a staff member from the East London Office of Eskom<sup>25</sup> whereas, the grid electrification programme for Region E is driven from the Shelly Beach Eskom office. There is little communication between the Eskom Shelly Beach office and the Eskom East London office. This had resulted in a breakdown in communication between Eskom Grid and NGE with respect to Region E.<sup>26</sup>

### 3.7 Liaison within the Department of Education

Capacity problems and poor communication between all tiers of the education administration have left Eskom without direction. The lack of impetus at a provincial level is compounded by a lack of decision-making mandate at the regional level and this has caused planning and implementation problems. As implementing agents Eskom has continued to implement, but does so in the absence of accountability for the impact of the schools electrification programme.

The DEO mentioned that there is a great deal of red tape involved in dealing with the regional DoE. Other staff of the DEO also noted that communication between their office and the regional and provincial office is not good and takes too long. In fact they said the main problem was poor communication between the Regional and the Provincial tiers of the DoE: 'The government is too far away from us here'.<sup>27</sup>

The regional DoE RDP Coordinator also noted that consultation had been lacking between schools, the DEO and regional DoE, and that in order to overcome the problem the regional DoE would work more closely and hold regular meetings with the DEOs in the future.

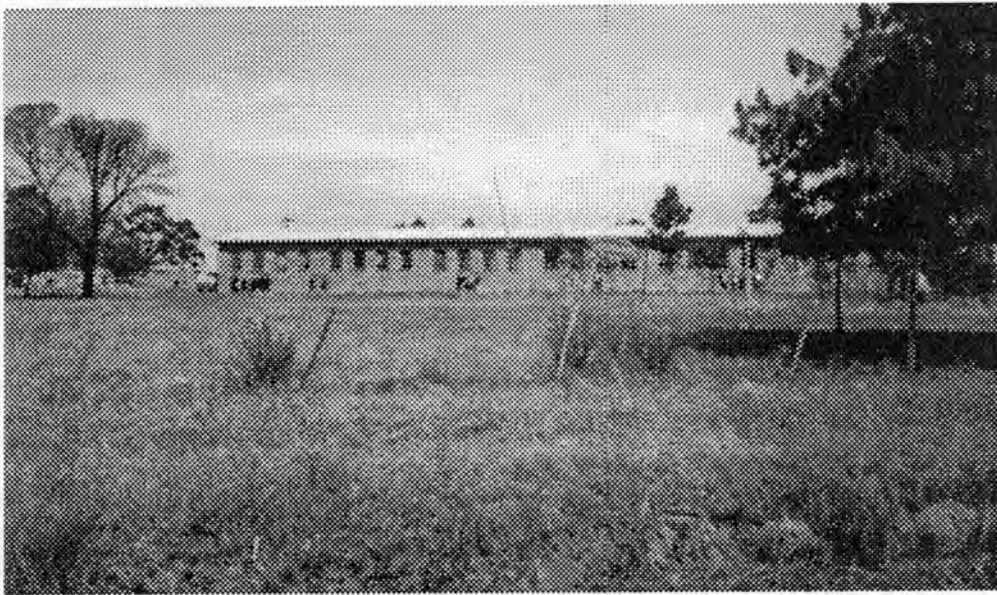
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<sup>25</sup> Eskom Area Office indicated that their communication with Eskom in East London is very limited. An Eskom Bisho Office was also opened in order to facilitate communication between the various offices, but no communication has taken place.

<sup>26</sup> In fact, the Eskom Area Office thought that the Joint Steering Committee was no longer functioning.

<sup>27</sup> Education Officer, DEO

**Photograph 1:** Marelane Senior Secondary School, Ludeke: Installation of both grid electricity supply and solar system depicted. School buildings in good condition. The school runs from Std 8-10 and has 650 pupils and 20 teachers.



**Photograph 2:** Masweni Lower Primary School, Ludeke: Current school buildings (three wattle and daub classrooms) and new buildings under construction in the distance. Right foreground shows last point of supply on boundary of Eskom project area (left of rondavel roof). The school has 241 pupils and three teachers.



## 4. Effective demand

### 4.1 Perceived benefits

As the electricity supply to the Ludeke area was not working at the time of the research it was not possible to establish the 'impact' of electricity in that area. Nevertheless, some data is available on planned utilisation and expectations of schools electrification.

Teachers at a JSS in Ludeke indicated that they expected the benefits of electricity to be the ability to use TV, video, overhead projector and heaters. They had in fact submitted a requisition to the DoE for such equipment in the first half of 1996 after the DEO had come to the school with a requisition form which listed these items. They had asked specifically for a TV and video recorder. Teachers said that in the event of delays in delivery of such equipment they would be more than willing to bring their own private equipment to the school to show films.

At the senior secondary school in Ludeke, perceived benefits would be laboratory equipment, night studies and adult education. They said that children could come to the schools to study in the evenings and some teachers would give extra lessons at night. The caretaker would look after pupils at night if the teachers were not present. The school would also use an overhead projector, photocopier and computers. In fact the school already has a photocopier, a TV and a video recorder bought out of school funds. They have not used it because the electricity has not worked since it was 'switched on' a month before.

### 4.2 Supply of equipment and appliances

Teachers in all areas felt that electrification of schools may play a role in increasing the capacity of teachers to provide children with marketable skills. Critically, however, these improvements to education services will depend on the fiscal and administrative capacity of provincial, regional and local education authorities to provide and maintain electrical appliances at rural schools. If electrical appliances are seen to be part of a coordinated effort to improve education services, planning for provision and maintenance of appliances by national and provincial Departments of Education should be a priority.

Further, *security* provision at schools to safeguard these appliances is essential. Most schools do not have security and suffer from theft of equipment. In the absence of effective security, the safety of electrical appliances cannot be guaranteed at schools. The fact that many teachers and principals in the former Transkei regions are not from the places where they work (and commute on a daily basis) may exacerbate the security situation at schools.

Teachers felt that electrification-based improvements to service provision at schools would be facilitated by the use of overhead projectors, educational (and entertainment) television and video machines, science laboratory equipment, evening studies and classes at night, sport in the evenings, concerts and films, a geyser for home economics, typewriters and computers, photocopiers, electric water pumps, heaters and fans. Lighting at schools is seen to have limited value given that schools largely operate during daylight hours. Further, whilst adult education classes are cited as one potential benefit of electrification, there has been no strategic plan aimed at supporting the initiation of programmes to facilitate such classes.

Whereas the benefits of electrification usually associated with electrical appliances are a long-term priority in the current context of backlogs in provision of the basic equipment to schools, IDR found that the supply situation (in terms of books and basic equipment) at schools appeared to have improved somewhat between early 1996<sup>28</sup> and mid 1997. Teachers in Ludeke said that the supply situation had improved since the move of the government from Umtata to Bisho. Still, teachers said that the process of getting supplies for the school was still very slow.<sup>29</sup>

<sup>28</sup> See Bedford, June 1996.

<sup>29</sup> The school had only just received books ordered almost a year previously – just in time for the final matric exams, but too late for the current year's curriculum.

### 4.3 Other improvements

Local residents and PTAs are frequently unable to afford internal wiring of schools – and may be unwilling to allocate scarce resources to such an undertaking given the limited benefits of electricity in the absence of appliances. They may well prioritise other improvements over electricity at schools, including additional staff, water, additional classrooms, equipment and renovations to buildings. In early 1996, staff ranked the problems at schools as shown in Table 2.

**Table 2:** Ranking of problems at schools in two unelectrified villages

<i>Description of Problem</i>	<i>Ludeke (JSS)</i>	<i>Mnceba (J.JSS&amp;SSS)</i>
Lack of teachers	1	1
Lack of electricity	2	5
Improvements to school buildings	3	-
Need library	4	-
Need laboratory	5	-
Need staffroom/ office	6	-
Poor roads / transport	7	6
Needs telephone	8	-
Need storeroom	9	-
Need water tanks / water	10	4
Lack of first-aid kit	11	-
Fencing	12	-
Security / night watchman	13	-
Shortage of classrooms	-	2
Lack of teaching equipment	-	3
Need maintenance equipment	-	9
Improved / more / student accommodation	-	8
More / improved /sports/rec. facilities	-	7

Source: Bedford (June 1996: 29)

A key problem at all schools is a shortage of staff, and high pupil-teacher ratios. Most schools also lack a water supply and rely on roof-mounted tanks which are frequently in a state of disrepair. Teachers frequently prioritise telephones, better roads and sanitation. More than anything, however, the need for additional classrooms<sup>30</sup> and renovations was highlighted by teachers:

This school was built as a temporary structure in 1985 – it has never been repaired. What is the point of ‘tubing’ [wiring] such old temporary structures given that the buildings themselves are not likely to last for more than a few years?<sup>31</sup>

Clearly, the allocation of funds for internal schools wiring must take into account the need for renovation and rebuilding of schools. However, coordinated improvements to schools has been lacking in the overall planning of the schools electrification programme and various service providers need to be directed by government within an overall demand-led policy framework.<sup>32</sup>

<sup>30</sup> Bedford (June 1996) noted that the former Transkei areas have the lowest rate of matriculation of all areas in the country. This is in part attributable to the low standards of primary education as well as a lack of high schools. More primary, secondary and tertiary education opportunities need to be provided within the region. The under-provision of classrooms and teaching staff at all schools, and at primary levels in particular, needs to be addressed.

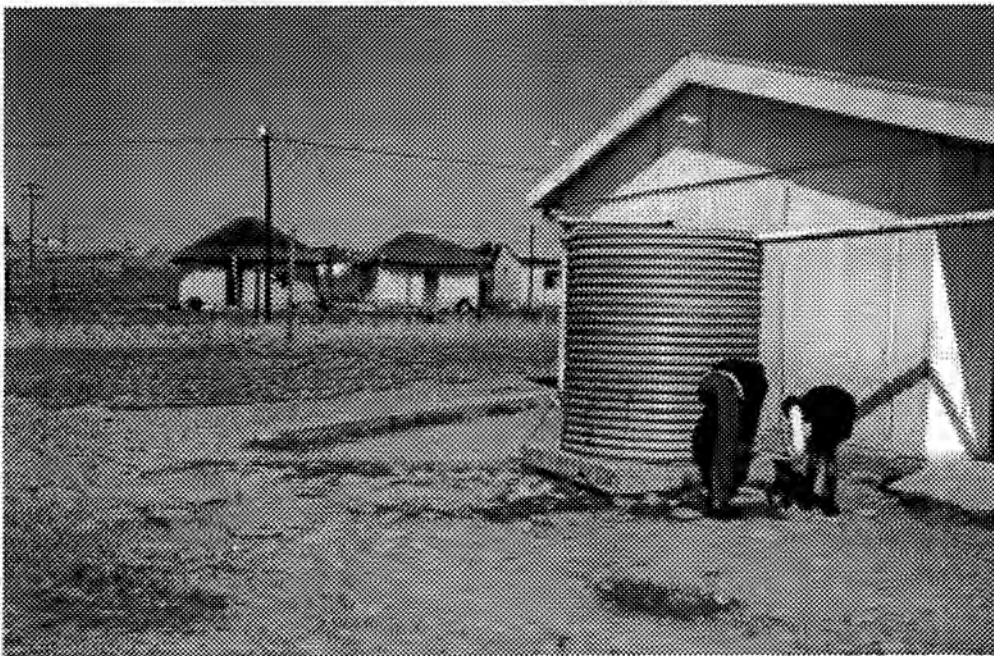
<sup>31</sup> Vice-Principal, JSS, Ludeke.

<sup>32</sup> Given the high priority for water at a local level a critical player must be the Department of Water Affairs and Forestry.

More recently, efforts at coordination have improved. According to the regional RDP Coordinator, a meeting with the Wild Coast Regional Council (which controls all the District Councils in the region) had been scheduled in the near future with the Department of Public Works (DPW) to discuss the DPW maintenance of projects at schools, but no headway had been made yet in this regard. Regional Consultative Committee meetings are attended by regional DoE, DEO, consultants, DPW and so on regarding the issue of schools building and renovation.

Further, the provincial DoE Director of Physical Planning explained that some ODA money (R55 million over three years) has been made available to the Eastern Cape Province for teacher upgrading, capacity building and training of DEO and regional Department staff, and for curriculum development. Planning for this is in process. Moreover, the DoE is in the process of drawing up a three-year scenario plan. Part of this is a 'Physical planning manual' which spells out the roles and responsibilities of various departments and agents. The Manual was the result of liaison with the six RCCs in the Province, TRCs and teachers unions, as well as the District and Regional Offices. It has been sent to Eskom and DPW for comment. It is hoped that it will be made available to the Districts before the end of 1997. The overall plans for improvements to schools are outlined in the 'Manual'.

**Photograph 3.** Ludeke Junior Secondary School, Ludeke: Showing point of electricity supply, telephone line in background (not connected to school), rainfed water supply, poor state of prefabricated school buildings built as temporary structures in 1985. The school is a combined Junior School and JSS and runs from SSA to Std 7. It has 592 pupils and twelve teachers.



## 5. Summary and conclusions

The electrification process is driven by Eskom and aims to achieve connection targets according to particular time-frames. Eskom has clearly indicated that it is merely an implementing agent and has stressed that their work is being carried out in the absence of a national electrification policy directed by government. This lack of liaison between Eskom and government is reflected in the breakdown in communication between Eskom and provincial DoE regarding the electrification of schools in Region E. The process of electrification is therefore supply-led. There is a necessity for government to take on the role of client and clearly direct Eskom's implementation.

The purpose of schools electrification is currently unclear. The role of the schools electrification programme should be placed within the context of a set of educational criteria which is determined by the DoE. Recently the DoE has been giving direction to the schools electrification process and the capacity problems which have impacted on coordination in the past are in the process of being resolved. At the same time fiscal constraints point to the need to carefully prioritise various improvements to schools – with electrification (and associated supply of appliances) being only one of many possible improvements.

The grid-electrification of schools within Region E, Eastern Cape has not yet had an impact as no schools have been internally wired. Plans and budgets for internal wiring of schools in the Region have not been clarified at this stage. The DoE should help in prioritising this process within the context of limited budgets and the desperate need for other improvements to schools, including renovation and additional classrooms. As present, the tentative plans which do exist have been formulated by Eskom with little input from the DoE.

The decision to install prepayment meters at schools also appears to have been made independently by Eskom in the absence of a commitment from the DoE to pay electricity bills at schools. There is a lack of information at all levels regarding provision for payment of electricity at schools, with virtually all role-players assuming that this is the responsibility of the provincial DoE. If the DoE does not intend to pay school electricity bills, then this should be clearly communicated to other tiers of the DoE administration and to schools. If, however, the DoE does intend to provide for payment then logistical arrangements will need to be made to facilitate this within the context of the pre-payment system.

A lack of clear plans and budgets has led to local-level structures being excluded from the process – leaving them unable to plan ahead in the event that they are electrified. As Eskom is reluctant to raise expectations, it does not inform local structures (or schools) of electrification plans until electrification is about to happen.

Eskom has also failed to keep the Regional and District Offices of Education abreast of developments with respect to the allocation of their schools budget. It is vital that the regional DoE is given a list of schools which Eskom plans to internally wire in the Region. This will aid DoE planning for other services at these schools.

Notwithstanding the lack of coordination and consultation to date, the DoE has recently indicated that it is ready to work with Eskom and other service providers to facilitate the implementation of a coordinated programme for general improvements to schools (including electrification) and administration thereof.

# **Electrification of schools in Region E, Eastern Cape : Post-electrification study in Ludeke and follow- up in Mnceba**

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**LAURA BEDFORD**

