Northern Electricity Distribution Service in Northern Namibia

A Case Study in the Private Provision of Rural Infrastructure

Submitted by:

Econ One Research, Inc. in association with EMCON Consulting Group

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5th Floor 601 West 5th Street Los Angeles, California 90071 213 624 9600

Suite 200 1004 Prairie Houston, Texas 77002 713 228 2700 Suite 1170 1215 K Street Sacramento, California 95814

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SECTION I – INTRODUCTION

1.1 Case Studies of Private Provision of Rural Infrastructure

This report documents the results of a case study of the Northern Electricity Distribution business in Northern Namibia. The study is one of a series of six case studies organized by the Public-Private Infrastructure Advisory Facility (PPIAF), a multi-donor technical assistance facility aimed at helping developing countries improve the quality of their infrastructure through private sector involvement. The studies within the series are meant to examine the experience of private companies in the provision of infrastructure services in rural areas of developing countries. This examination includes factual reporting, assessment of performance and identification of lessons for policymakers, lenders and private companies. Results of each study will serve as an input into a broader study attempting to identify "emerging lessons" in the private provision of rural infrastructure.

1.2 Northern Electricity Distribution in Northern Namibia

Northern Electricity provides a natural focus for a case study. The company entered a rural area where previous operators had consistently performed very poorly and no other company - including the national utility and bidders responding to an international tender – was willing to accept the challenge and bear the risks. Despite the formidable difficulties, the company had great success and provided what was almost universally described as very high quality service. This makes it particularly surprising that the company did not have its license renewed at the end of its five-year duration. And therein lies an interesting – and instructive – tale. Because the story of Northern Electricity's experience in Namibia is one of both great success and great failure, it provides insights on both what should and should not be done as policymakers and businesses contemplate the private provision of infrastructure service in rural areas.

1.3 Our Approach

This report is meant to provide factual information about the experience of Northern Electricity's electricity distribution business in northern Namibia throughout the past five years, a critical assessment of the extent to which implemented policies and practices have achieved the intended results, analysis of critical issues, and identification of lessons emerging from our examination. We have relied partially on background reading, but mostly on interviews conducted and observations made throughout a two-week visit to Namibia. The consulting team's mission included an extensive set of interviews with Government officials, company management, customers and other industry stakeholders; as well as field trips to rural sites. By a coincidence of timing, the team was in Namibia when the distribution business was being transferred from Northern Electricity to a new operator. A listing of interviews is included in this report as an Appendix.

SECTION II – BRIEF HISTORY OF THE NORTHERN ELECTRICITY EXPERIENCE

When Namibia became independent in 1990, the electricity industry was composed of one national utility, NamPower (then known as SWAWEK), and several municipal distribution companies operating in urban areas. NamPower was then – and still is today – the only provider of generation and transmission service within the country (it also provides distribution service in some areas). The national grid, which had been developed between the late 1960s and the mid 1980s, connected all major commercial centers and some large customers such as mines, water pumping stations and tourist resorts. Rural areas were mostly unconnected, except for a few commercial farming areas close to urban areas. The National Government had provided some remote towns with diesel-powered mini-grids.

Rural electrification was a key focus of the new Government from the beginning. Driven by a vision of economic and social empowerment of rural communities, the new Government embarked in 1991 on a national rural electrification program. The program began in the most densely populated central northern region of the country and then progressed clockwise. Initially supported by donor funds, the program has recently been financed by annual National Government budget allocations.

By 1998 many rural towns and large settlements in the country had been electrified. Responding to the challenge of electrifying the remaining smaller settlements, a Rural Electricity Distribution Master Plan was released in August 2000. It identified approximately 2,800 rural settlements to be electrified, prioritized them, provided 20 year schedules and proposed a budget of almost US\$5 million per year. An off-grid electrification program, with an annual budget of around US\$0.5 million, was established to provide support to those areas far removed from the electricity grid.

The national rural electrification program has over the past 11 years extended distribution systems to many rural centers, villages and commercial farms. Access to electricity in rural areas is currently estimated to be around 12% (the corresponding figure for urban areas is 75%).

Northern Electricity played a role in Namibia's rural electrification. From December 1996 through March 2002 (a bit more than five years), the company operated – under the terms of a license and franchise and lease agreements – a set of state-owned assets in the central northern region of the country. The northern region of Namibia is the most densely populated, with more than half of the country's 1.8 million population. It is primarily rural. The settlement pattern is characterized by dispersed households practicing communal farming, small settlements of mostly commercial outlets, villages with some institutional infrastructure, and a few urban centers.

It is very important to be clear about the extent (and limits) of Northern Electricity's role in the rural electrification program. In Namibia, Northern Electricity was contracted to operate assets that were, with few exceptions, financed and owned by others. While the company was obligated under the terms of its contracts to finance and construct a relatively small amount of

infrastructure – and it indeed not only successfully completed this obligation, but also went beyond it – the primary role that had been envisaged for Northern Electricity was as an operator.

This was enough of a challenge. Local authorities had been operating the assets and collectively losing approximately N\$10 (US\$1) million annually¹. Northern Electricity was the only firm to respond to the National Government's tender for service provision in the region in accordance with the specified terms (even NamPower was unwilling to take on the challenge.) The tendering process was organized by the Ministry of Regional and Local Government and Housing (MRLGH), the national Ministry that manages the assets used in towns, villages and settlements. Although some of the local authorities were unhappy about losing the responsibility for providing electricity service, there was sufficient consensus at the level of the National Government. In particular, the MRLGH - responsible for coordinating with local governments on the provision of local service - and the Ministry of Mines and Energy (MME) – responsible for overseeing the development of the national electricity industry – were both supportive.

The first year of Northern Electricity's contract was the most challenging, with the company having to cope with substantial technical and commercial problems, while establishing itself as service provider for a dispersed customer base spread over an area covering more than 120,000km². The company took over operations when the performance of the older electricity networks was at a low point. There were many outages. The National Government retained formal responsibility for upgrading and strengthening these older networks; but as Government funds were not made available, the firm was forced to undertake its own investments. In addition, a comprehensive meter survey and repair program was implemented. The firm discovered that less than half of all consumers of electricity had been registered as customers. While some illegal connections were found during the initial meter survey, most connection were in fact legal but had never been registered, and therefore never billed.

By all accounts, Northern Electricity was able to completely transform system performance through its skill as an operator. Within one year, the firm had established effective management and customer service systems and overcome many of the initial technical and commercial problems. Customer satisfaction was very high as evidenced by the results of an independent study in 1998: 85.5% of customers claimed the service they received was good service; 10% found it to be average and 4.5% thought it was below average. This is perhaps the best reflection of Northern Electricity's intense and consistent focus on understanding, and finding ways to accommodate, the needs of its customers. It is a testament to the effectiveness of the firm's core principles and practices that it was able to sustain such high customer approval ratings at the same time it was implementing a very strict disconnection policy.

While Northern Electricity provided its service, the broader rural electrification program continued, both within and outside the northern regions of the country. The portions of the network developed through the rural electrification program have been funded mostly by donors, with the National Government funding the rest. Ownership and operation of transmission and bulk distribution infrastructure above 11kV is retained by NamPower. The distribution networks within towns, villages and rural settlements are owned by MRLGH (on behalf of the local

¹ Monetary values will be presented throughout this report in Namibian dollars. One U.S. dollar is worth approximately ten (10) Namibian dollars.

authorities), with the exception of one municipality in the region (Oshakati) fully responsible for service within its jurisdictional area.

The national rural electrification program had a gap; one that was important in its own right and that ultimately had a profound impact on Northern Electricity. The program was aimed entirely at providing first-time access to villages and settlement communities. The towns were not covered for system expansion within their borders and, with support from the MRLGH, retained responsibility for financing this expansion. Limited funding from the Ministry meant that the towns had to bear a portion of the financial burden.

The financial terms for the towns to contribute infrastructure to the electrification program were not attractive. When Northern Electricity and the MLRGH signed their contracts in 1996, system operations were poor in almost every respect, and the risk allocations and commercial terms embedded within the contracts reflected this historical fact. Northern Electricity was obligated to contribute only a very small amount to the costs of the infrastructure (so that the assets were effectively provided for free without a significant return on or of the investment costs This was true not only for the assets that existed at the time, but also for all new assets that would be constructed throughout the period of Northern Electricity's operation. While this sort of arrangement is understandable given the information available (on historical system performance) at the time the contracts were signed, as Northern Electricity began to operate the assets effectively (and profitably), expectations changed. The local authorities whose towns were not covered by the rural electrification program found themselves having to essentially provide free infrastructure financing to a profitable company without any hopes of receiving – consistent with the terms of Northern Electricity's contract with the MRLGH – a significant financial return of or on their investment.

The bad feelings engendered by this financial arrangement were exacerbated by three factors. First, several of the local authorities were not happy from the beginning with having to cede operating rights to Northern Electricity. They felt, at the time, that the MRLGH was not including them in the decision-making process about an issue of great importance to them, and was thereby not representing their interests well. Second, a law was passed in the year 2000 (the Decentralization Enabling Act) that further formalized and extended Namibia's basic constitutional commitment to devolve power to the local governments. In particular, the Act empowers towns to take on increasing responsibility in this area for electricity distribution. Third, the leadership and (on this point) the ideology of the MRLGH had changed soon after the Northern Electricity began operating. Whereas the town councils once reported to a leadership within MRLGH that was anxious to impose financial discipline on the towns, the new leadership was more devoted to the cause of local empowerment.

This combination of factors created a difficult political environment – and therefore an important challenge - for Northern Electricity. And this challenge was of a sort Northern Electricity was far less equipped to deal with than the operational and commercial problems of serving customers. The owners and managers of Northern Electricity were resolutely non-political. They understand themselves to be business people skilled in solving the technical and commercial problems of serving customers. While they clearly recognized that the firm operated within a charged politicized environment, and while there is evidence that the firm attempted (both before and after the anger of the town authorities revealed itself so clearly) to contribute (beyond their contractual obligations) to infrastructure expansion and community development,

they had little success in easing the tensions. The firm's political problems were compounded by the fact that NamPower – the single most powerful commercial entity in the industry – was also aligned against it. NamPower, which aspired to expand its distribution service (including within the northern region), seemed to resent and feel threatened by the success of Northern Electricity.

The sort of political dynamics that Northern Electricity's managers would have been happy to ignore were set to determine the company's fate, far more than the performance of its business. Several local authorities, the MRLGH and NamPower were aligned against Northern Electricity. The firm was supported at the national level not only by MME (whose primary interest with respect to electricity is ensuring effective industry performance), but also by a new regulatory agency - the Electricity Control Board (ECB) - established in 2000 as part of a broader program of industry restructuring and rationalization. While it is to be hoped and expected that a industry regulator will be able to reposition precisely these sorts of conflicts in a manner allowing for them to be resolved through application of narrow technical criteria rather than through the clashing of competing interests, the ECB was unable to make an effective contribution in this regard. This was due partly to the fact that the enabling legislation establishing the agency did not provide the sorts of powers and structural features normally recommended for protecting regulatory independence, and partly to the fact that the agency was relatively new, with all the concomitant inexperience and credibility problems, as the controversy played out. This notwithstanding, it also appears that the ECB did not act as boldly as it might have, and thereby missed an opportunity to not only help resolve the dispute correctly, but also to take an important step towards establishing its own credibility.

On 13 February 2002, the ECB issued its decision to not renew Northern Electricity's license. The ECB instead awarded a license to a new firm, Nored, to operate the electricity assets throughout Namibia's northern region, including what used to be Northern Electricity's service territory. Nored is a joint venture company with ownership shared between NamPower and several local and regional governments.

SECTION III – LEGAL, POLICY AND POLITICAL FRAMEWORK

3.1 Legal Foundation

Four laws establish the legal foundation for the provision of electricity services in rural areas of Namibia.

3.1.1 Local Authorities Act

The Local Authorities Act (Act 23 of 1992, amended 2001) provides for the establishment and structuring of local governments and defines the powers, duties and functions of Local Authority Councils. Local councils exist on three levels – municipalities, towns and villages. Each type of council is authorized by the Act to distribute and supply electricity within its jurisdictional area.

Settlement areas - where communities have begun to develop, but no formal administrative authority has been established – are not covered by the Local Authorities Act.

3.1.2 Regional Councils Act

The Regional Councils Act (Act 22 of 1992, amended 2000) provides for the establishment and structuring of regional governments and defines the powers, duties and functions of regional councils. The Act authorizes these councils to conduct planning for the development of an electricity system (including investment in infrastructure) and to enter into joint business ventures for service provision. Settlement areas are covered by this Act.

3.1.3 Decentralization Enabling Act

The Decentralization Enabling Act of 2000 formalizes a commitment by the National Government to enhance the authority of municipalities and local and regional councils with respect to electricity distribution and supply. The Act confers full responsibility and accountability for electricity distribution to municipalities, and empowers towns to take on increasing responsibility in this area. The Act also establishes the basis for devolving rural electrification responsibilities to regional councils.

3.1.4 Electricity Act

The Electricity Act of July 2000 defines the legal and regulatory framework for reform of the electricity sector. The Act establishes the Electricity Control Board (ECB) as the industry regulator and defines a licensing regime. It specifies the criteria for evaluating license applications, and the obligations of licensees. Licenses are issued for provision of service within geographically defined areas. All areas within the country – including local, regional and municipal, are subject to the licensing authority of the ECB.

3.2 Institutional Framework

3.2.1 Local Authorities

Municipalities are defined by the existence of an approved township and are completely financially and logistically independent from the National Government. They provide funding for infrastructure and provide a wide range of social services. The affairs of a municipality are governed by an elected Municipal Council of between 7 and 12 members. This Council elects the mayor, deputy mayor, chairperson and vice-chairperson, as well as the management committee.

Towns retain some autonomy for functions such as planning and budgeting, but usually depend on the National Government (through MRLGH) for financial support for carrying out their assigned functions. The affairs of a town are governed by an elected Town Council of between 7 and 12 members. This Council elects the mayor, deputy mayor, chairperson and vicechairperson, as well as the management committee.

Villages depend on the National Government for both funding and logistical support. The affairs of a village are governed by an elected Village Council of seven members. This Council elects a chairperson and a vice-chairperson.

3.2.2 Regional Authorities

There are 13 regions in Namibia. The affairs of a region are governed by a Regional Council, whose members are elected on a constituency basis. The Council elects the Governor and the management committee from amongst its members. A Regional Officer, appointed as the CEO of the Regional Council, is responsible for carrying out decisions of the Regional Council and for the administration and affairs of the council. The Regional Officer may be supported by other officers and staff.

Each Regional Council elects two of its members to serve on the National Council.

3.2.3 Ministry of Regional and Local Government and Housing

The Ministry of Regional and Local Government and Housing (MRLGH) has traditionally been responsible for providing a range of services to Town Councils and Villages Councils. Local governments outside the municipality areas (in towns, villages and settlement areas) have most often not maintained their own finances and have been dependent on MRLGH for financial and, in the case of villages and settlements, logistical support for the provision of all services, those with both a national and a local character.

Although the Local Authorities and Regional Councils Acts assigned (in 1992) responsibility for electricity service provision to each of the local and regional councils, only the municipalities took on the authority. MRLGH continued to provide electricity infrastructure and services to the regional, town and village (and settlement) areas. This includes the provision of the infrastructure, its operation and maintenance, and the collection and disbursement of revenues. System planning and financing are centralized within Ministry directories at the national level, while operations, maintenance and revenue collection are performed by locally- and regionally-based MRLGH staff.

It is only recently, under the auspices of the Decentralization Enabling Act, that some town councils have begun taking on some of these responsibilities.

3.2.4 Ministry of Mines and Energy

The Ministry of Mines and Energy (MME) is the custodian of Namibia's energy resources. It is responsible for establishing policy and legal protections to ensure the responsible development and sustainable utilization of these resources. The Ministry is organized within four technical directorates - Mines, Diamond Affairs, Geological Survey and Energy –and the supporting Directorate of Administration and Finance.

The Electricity Division is one of three divisions within the Energy Directorate. Its mission is to ensure an adequate supply of high-quality and affordable energy.

3.2.5 Electricity Control Board

The Electricity Control Board (ECB) is the regulatory authority for the electricity industry. It was established as an independent agency by the Electricity Act. Its main policy goal is to guide the industry away from a model dominated by a vertically integrated monopoly towards a model fostering competition in generation, distribution and supply of electricity.

The ECB was established in 2000. There are five Board Members (analogous to what in other countries are often called Commissioners), each appointed by the MME, with expertise in the electricity industry, law, economics and the environment. The Board Members appoint a Chief Executive Officer, who in turn recruits staff members. The ECB issued its first set of (temporary) licenses in October 2001.

3.3 The Policy Framework

3.3.1 Energy Policy

Namibia's 1998 White Paper on Energy Policy is a comprehensive document providing the policy foundation for restructuring the electricity industry. It requires Government to provide access to electricity for 25% of the country's rural population and 95% of the urban population by the year 2010². It defines a rural electrification program. It also recognizes the shortage within Namibia of the technical, administrative and financial expertise required to operate and maintain electricity assets. The Energy Policy therefore promotes the participation of private investors and entrepreneurs.

The restructuring of the electricity industry was launched in 1998. A study commissioned under the auspices of the Ministry of Mines and Energy recommended that Namibia be divided into four electricity distribution regions, and that regional electricity distributors (REDs) be established to distribute and supply electricity within these regions (including all urban and rural areas).

² With present levels estimated to be 12% (rural) and 75% (urban), this is an ambitious goal requiring substantial financial resources

This recommendation was approved by Cabinet in November 2000 and is now being implemented by the MME. Stakeholder working groups in each of the four regions are currently developing suitable RED models for their regions. Three basic models have been proposed.

In the northern regions, an asset-based RED is envisaged, where asset owners will combine their resources within a company that provides service.

For the coastal areas, a phased approach is envisaged, involving three stages of implementation:

- provision of assistance from the more to less efficient distributors;
- establishment of a service company, owned and controlled by distributors (who retain formal ownership of the assets);
- transfer of staff, operating responsibility and (financial) assets and liabilities to the service company.

In the central and southern regions, the option of service provision through management contract is being investigated.

3.3.2 Decentralization Policy

Devolvement of political power from the national government to local and regional governments is a constitutional requirement in Namibia. A consultative process led by MRLGH culminated in the adoption by Cabinet in November 1996, and by Parliament in August 1997, of the national policy on decentralization. The policy is explicated in three documents: (i) A Decentralization Policy for the Republic of Namibia: Decentralization, Development and Democracy (September 1997); (ii) Decentralization in Namibia: The Policy, its Development and Implementation (March 1998) and (iii) Decentralization in Namibia: Situation Analysis (April 1998).

The policy mandates that municipalities retain full responsibility for all aspects of the financial and operational management of electricity distribution. It also provides towns with increased authority for electricity distribution. Finally, it designates regional councils to play a more active role in rural electrification over the medium-term.

3.4 Policy Interpretation and Implementation

The focus of MME has been on establishing an effective electricity industry throughout the country. Two core components of its approach, as articulated in the Energy Policy, have been rural electrification and private sector participation. The focus of MRLGH has been on improving the effectiveness of local and regional governments. A core component of its approach, as required by Namibian Constitution and emphasized with the Decentralization Policy, has been the devolvement of political power to the local and regional governments.

There is perhaps no single factor more important in explaining the evolution of Northern Electricity's experience in Namibia than the manner in which the policy imperatives of the two Ministries have been understood and coordinated over time. While the MME and the MRLGH

initially saw their respective policy initiatives as predominantly complementary, they eventually came to see them as mostly competing.

3.4.1 Rural Electrification - A Shared Commitment

Rural electrification, as a core component of a broader rural development strategy, is the most obvious way that the policy initiatives of MME and MRLGH are understood as complementary. An effective rural development program expands the country's electricity infrastructure, and provides an extremely valuable service to the constituents of local governments.

The Ministries have coordinated in this area. The rural electrification program is administered by MME. The Ministry contracts with independent experts to design and construct electricity networks for extension into rural areas (outside municipal areas and towns). Once commissioned, the networks are turned over to MRLGH for operation and maintenance. MRLGH retains responsibility for the expansion and reinforcement of the network within electrified areas, including the connection of new customers.

The coordination of the policy initiatives initially extended to a shared commitment to attracting private companies to operate portions of the network. The MRLGH recognized that the electricity assets were being operated very poorly, both by MRLGH staff (outside the towns) and the town councils (inside the towns). Core competencies and suitable management systems were not available, the existing revenue management system was outdated and customer records were incomplete and inaccurate.

MRLGH had given local councils in the northern region an ultimatum to improve revenue collection, fiscal discipline and service levels, or cede operating authority to a private sector company. Only one town of four convinced the Ministry that it was capable of managing its own affairs. In explaining its decision to not allow the other three to retain its service authority, the Ministry cited "the unacceptably enormous outstanding arrears on electricity sales which we cannot tolerate anymore."³ The Ministry stated that the Town Councils "have not done enough to educate and to encourage consumers to pay regularly for their services, especially the business community", and were therefore subject to the Cabinet decision to involve the private sector "in national interest alone".

To protect and enhance the benefits of rural electrification, MRLGH led an effort, supported by MME, to contract with a private company to operate the assets in northern Namibia. In making its case to Cabinet for approval of the initiative to involve the private sector, MRLGH wrote the following: "Due to the rural electrification program the electrical infrastructure in the rural areas has increased. The Government, through these two ministries, is not in a position to maintain these infrastructures due to the shortage of managerial and technical manpower as well as financial limitation to attract well-qualified people for the jobs. It has therefore been proposed that the distribution function of the government be contracted out to a private concern for at least two years after which a permanent body will have been established to take over the distribution functions."⁴

³ This commentary, contained in a January 5th, 1996 letter from the Permanent Secretary of the MRLGH to the Town Clerk of the Ondangwa Town Council, refers to annual losses of N\$10 million from electricity operations in the northern regions.

⁴ Quote in MRLGH letter to Cabinet, dated 8 February 1996

This decision by MRLGH was not popular at the time with some town councils. There were several protests, led primarily by the Ondangwa Town Council. Inconsistencies with provisions of the Local Authorities Act were highlighted. But MRLGH stayed the course.

3.4.2 A Different Ministry with a Different Perspective

Towards the end of 1996, the Minister of MRLGH was changed and several senior officials retired. The new Minister – and, indeed, the new Ministry – was significantly more focused than the old on empowerment of local governments (rather than the provision of a service). Despite an inter-ministerial initiative to amend the Local Authorities Act to eliminate any conflict with the electricity restructuring (including rural electrification) activities, the new MRLGH was determined to protect what it understood as local interests. And the particular local interest that was the focus of protection was the right to control the electricity assets, and the revenues generated by their operation.

Local empowerment (the core focus of MRLGH) and private sector involvement in service provision in rural areas (a core tool of the MME in implementing its restructuring program) were now understood to be in conflict.

SECTION IV – NORTHERN ELECTRICITY ENTERS THE SCENE

4.1 Competition for the Market (Part 1)

A 1994 study to evaluate the feasibility of "contracting out the management, financial administration, operation, maintenance and extension of the electricity supply system in northern Namibia" concluded that the risks involved in establishing a dedicated distribution organization in a new, rural market were substantial, and were compounded by the proposed temporary nature of the contract. The following was proposed:

- 1. NamPower's high connection charges should be investigated as these account for more than 30% of the company's average bill to its wholesale customers (MRLGH and the several town councils).
- 2. The town of Oshakati, as well as other large consumers of electricity (irrigation schemes and water pumping stations) presently served directly by NamPower, should be included in the contract so as to improve the viability of the concession.
- 3. A request for proposals (RFP) should be issued to gauge private sector interest in, available expertise for, and financial implications of the proposed contract.
- 4. As an alternative to contracting out to the private sector, consideration should be given to NamPower taking on the responsibility for these rural systems.

In the event, only the latter two of the recommendations were followed. NamPower was asked, but declined the opportunity to provide service in the rural north based on an assessment that it did not present an attractive commercial proposition. The Government therefore issued an RFP. Because of the sense of urgency, no attempts were made to include the other large electricity consumers in the scope of the contract, or to investigate NamPower's high connection charges.

The RFP was issued in November 1994 and the Evaluation and Monitoring Committee (EMC), consisting of officials from MME and MRLGH, was established to evaluate proposals.

Proposals were requested to provide electricity distribution and supply service, for an initial period of 3 years, in approximately 200 rural villages and settlements and three towns, spread across an area of approximately 120,000km² in central northern Namibia, just south of the Angolan border. The town of Oshakati, which had obtained municipal status and was therefore legally empowered to look after its own electricity supply, decided not to be included in the program. The towns of Ongwediva, Ondangwa and Rundu tried to obtain municipal status, but failed to convince MRLGH that they could effectively manage their affairs financially without help from the Ministry. They were, to their displeasure, included in the program.

Three proposals were received, but only one responded directly to the Terms of Reference (TOR). The other two offered alternatives, each for a more narrowly tailored type of management contract.

The only complete response to the TOR came from a Namibian entrepreneur proposing to establish a dedicated electricity supply company to serve the identified territories, and perhaps also take over NamPower's medium voltage (11 - 33kV) distribution system and expand responsibilities to other parts of the country. This bidder, which eventually formed a company called Northern Electricity, was the only entity willing to take on the opportunity as defined by the Government.

4.2 The Licensing and Contractual Framework

The EMC, which had added a consultant to its staff, led negotiations for the Government. Before negotiations commenced, the EMC and the successful bidder visited various supply authorities in South Africa to study alternative business models. Discussions were also arranged in South Africa with ESKOM, the national electricity utility, and several industry experts. The EMC was supported in its negotiation with experts from South Africa. Negotiations proceeded cordially and cooperatively, and were concluded after 5 months.

Two contracts and one license were negotiated between the Namibian Government, represented by the EMC, and Northern Electricity. The broad outlines of the arrangement were that Northern Electricity's primary responsibilities would be the management, operation and maintenance of the existing electricity system, while network extension (electrification) would remain primarily the responsibility of Government. The MRLGH, which retained formal authority for electricity supply (including ownership of the assets), was the contracting counter party to Northern Electricity.

4.2.1 Electricity Distribution Trading License

This license provided Northern Electricity the sole right to distribute and supply electricity within the geographically defined area for a minimum period of five years. This right came with the obligation to supply power to all customers willing and able to pay the costs of connection and electricity. Prices were to be approved by the MRLGH. Other provisions of the license include maintenance of adequate resources to perform the service, environmental sensitivity, electricity network adherence to statutory safety standards, supply quality standards, and reporting requirements.

It was anticipated that, consistent with the Electricity Act, this license agreement would eventually be replaced by a license issued by the future regulator, the Electricity Control Board.

4.2.2 Franchise Agreement

MRLGH retained formal responsibility for electricity service within non-municipal areas. The Franchise Agreement transferred operating responsibilities to Northern Electricity. However, the MRLGH established itself as a middleman, purchasing bulk electricity from NamPower and selling to Northern Electricity (at cost). MRLGH also continued to pay NamPower's connection fees.⁵

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⁵ The thinking was that these fees were too high and unless and until they could be rationalized, they should not be passed on to consumers.

The Franchise Agreement defined the obligations of both Northern Electricity and the Government, and provided for monitoring of Northern Electricity's compliance with its obligations by the EMC. This agreement also stipulated that the company's Board of Directors would include one Government representative and two community representatives.

While Northern Electricity was established primarily as an operator, it did retain a small obligation for funding electrification, mainly to customer connections and minor network extensions. As defined in the Franchise Agreement, the company must invest a total of N\$2.7 million over the initial five-year period.

4.2.3 Lease Agreement

This document defines the terms for the leasing of MRLGH's network assets to Northern Electricity for a nominal monthly payment (just enough to cover the costs of the monthly EMC meetings). These attractive commercial terms came with an obligation to maintain the assets in an acceptable condition. Ownership of the assets as well as responsibility for of all improvements and replacements, and most expansion, remained with MRLGH.

Additional provisions include the following:

- compilation of an asset inventory,
- maintenance of accurate and systematic asset records,
- upgrading and strengthening of overloaded and inadequate networks (at the time of takeover by Northern Electricity) at the cost of MRLGH,
- rehabilitation of existing network infrastructure to bring it to fully serviceable condition, at the cost of MRLGH, and
- insurance of the assets.

4.2.4 The Nature of the Documents

Relative to international standards, the contracts and the license were relatively thin on details. Perhaps partly as a conscious decision, and also perhaps partly because of the general lack of international experience with similar arrangements on both sides of the negotiating table, the documents contained significantly less prescriptive detail and legal formality than comparable documents generally held up as standards by international experts.

Before highlighting the (obvious) problems with this approach, it is worthwhile to highlight its benefits. First, the nature of the contracts reflected to some extent the cooperative spirit of the negotiations and, more fundamentally, what seems to have been a very genuine interest at the time to not allow contractual formalities to interfere with the commitment – shared across the negotiating table - to improving people's lives. It appears that it is precisely this spirit that motivated Northern Electricity to provide significant funds (for electrification) beyond what was required by the contracts (and with no accounting in the contracts for how – and whether – such investments would be compensated). Second, with a few exceptions, the contracts did not focus on the way Northern Electricity was to run its business and did not outline methods for evaluating performance relative to a few specified indicators. This provided Northern Electricity far greater scope than is normal, in similar circumstances in other countries, to develop its own

methods and define its own terms for success. The contracts reflect – intentionally or unintentionally – a great respect for, and deference to, the sanctity of the commercial relationship between company and customer. In fact, international standards are currently evolving to recognize the benefits - albeit perhaps not to the full extent embedded within the Northern Electricity contracts - of a less prescriptive form of contracting.⁶

The benefits of the approach notwithstanding, the lack of detail in the contracts did create problems, in exactly the way international experts would have predicted at the time. It is well recognized that prescriptive detail in contracts provides little benefit (and can often impose significant constraints) when the interests of the contracting parties are aligned. This sort of detail, and the legal formality that most often accompanies it, becomes valuable when, and is recommended to be inserted in anticipation of, the interests of the contracting parties diverging over time. Staff within the MRLGH stated to our team that the contracts should have included more benchmarks for measuring service quality. And the Northern Electricity managers, who generally benefited from the flexibility afforded them in the contract, regret the failure to clearly incorporate within the documents an "exit strategy." This is a classic example of a form of contract failure – in particular, an inability to anticipate and account for a foreseeable contingency. This failure did indeed complicate the process of asset transfer required after Northern Electricity's license was not renewed.

4.2.5 Contract Administration

Once the contracts were signed, the EMC again expanded to include community representatives and it took on the role of administering the contracts, including monitoring Northern Electricity compliance with its obligations.

The EMC met with Northern Electricity once a month to discuss the company's performance and compliance with contract conditions (as documented in the company's monthly reports to the EMC), and to provide direction and guidance as necessary. Notes for all these meetings were recorded. All indications are that the meetings were constructive and proceeded smoothly.

The MRLGH, as the contracting partner of Northern Electricity, was meant to chair the meetings for the EMC. The Ministry began quickly after its change in leadership (discussed above) to take a far less active role in the activities of Northern Electricity. The Ministry often sent junior officials, or none at all, to the meetings.

4.3 The Northern Electricity Business Model

Northern Electricity entered the northern Namibian service territory with a well-conceptualized business model defining the principles underlying its activities. Four key components stand out: (i) attention to the customer; (ii) management focus; (iii) business systems; and (iv) aversion to politics.

⁶ In particular, an output-based aid approach emphasizes the importance of not including in contracts significant prescriptive detail on the use of so-called "inputs" (i.e., resources and methods employed); but instead focusing far more intently on the quantity and quality of outputs produced. This approach does, however, emphasize the importance of ongoing performance evaluation relative to defined indicators.

4.3.1 Attention to the Customer

This is the foundation of the company's approach. Its customer service philosophy was clearly articulated in its Customer Service Charter and was communicated through a variety of mechanisms such as a 24-hour toll-free fault reporting facility, clear and informative bills, and customer contact via radio talk shows and customer newsletters. A strictly (and fairly) enforced disconnection policy signaled to customers that they would have to live up to their commercial obligations.

Customer Service Charter

The Charter specified the customer's rights as:

- speedy processing of new applications
- respectful treatment by company employees
- prompt service
- confidentiality
- claims for damages (in case of negligence on the company's part)
- Time limits on power outages
- Information in advance of planned power outages

Fault Reporting Center

Fast response to power outages and system faults was enabled through the company's Fault Reporting Center, operating on a 24-hour basis with a toll-free telephone number. All communications were recorded on computer so that an exact record of a call, from first report to final restoration of power, was kept. Prompt action was ensured through sophisticated internal communication systems, including mobile telephones and short wave radio. The response time to calls was closely monitored and long outages were investigated and reported to the EMC. In the event of a power failure on the NamPower networks, Northern Electricity co-operated closely with the bulk supplier to restore power quickly.

Billing

Northern Electricity developed and implemented a unique billing system enabling the inclusion of detailed customer-specific information on the electricity accounts, in an easy-to-understand format. Electricity accounts were also used to inform customers of general matters.

The company applied innovative methods to ensure it would receive timely payment. Meter reading cycles were scheduled such that customers received their electricity bills on time just before the typical monthly salary payment date. Care was also exercised in having uniform monthly meter reading periods to avoid fluctuating bill amounts. This consistency enabled customers to better manage their money.

Customer interaction

The company interacted with its customers in the following ways:

Newsletter

Northern Electricity kept its customers informed through a bi-monthly newsletter that was sent out with electricity accounts and was available at all pre-payment vending stations and service centers.

Radio talk show

As radio is the most effective medium of communication in northern Namibia, the company hosted a popular weekly talk show on the radio. Customers and others could ask questions and receive responses from Northern Electricity staff.

Disconnection Policy

Northern Electricity applied its disconnection policy with both strict discipline and fairness. In the event of non-payment of an electricity account, Northern Electricity hand-delivered a cut-off warning to the defaulting customer in an attempt to determine the reason for the non-payment, and to agree with the customer on a date by which the account must be paid, failing which the supply would be cut off. The company was also willing to negotiate terms of repayment. When attempts at accommodation failed, disconnection was the inevitable result. This policy was applied strictly, not only with private parties, but also Government customers, including hospitals.⁷

4.3.2 Management Focus

The financial performance of an electricity distributor is driven by two factors – i.e., ability to successfully deliver power (loss reduction) and ability to collect money for deliveries (collections). These were precisely the factors focused on by Northern Electricity management.

Loss Reduction

Losses on electricity distribution systems are attributable to either theft (e.g., illegal connections, bypassing of meters), technical faults (leakage currents, faulty meters) or administrative errors (incorrect meter factors, incorrect formulae, wrong meter readings, customers not captured on billing system). Management therefore focused on the three core principles of loss control: eliminate theft, ensure all meters work correctly, and implement a trustworthy administrative system.

The focus was on meter quality. The firm installed meters on illegal connections and registered the former thieves as customers. When the firm first began operations, it conducted an initial meter audit during which all electricity meters were tested for integrity, and faulty meters were repaired, calibrated or replaced.

All meters were sealed after being audited. The audit provided the information for correcting the multiplication factors for the maximum demand meters on the billing system to ensure, after correcting erroneous formulae, that large customers were charged correctly. Meter readings were taken by technical staff who at the same time checked meter integrity and that the connection had not been tampered with.

⁷ As an example of Northern Electricity's attempts to accommodate, if a hospital was set to get its electricity cut-off due to lack of payment, the company staff would visit the hospital the day before to ensure back-up generators were available and operational.

The company reduced losses from 49% in December 1996 to below 30% by January 1997 and 15% by April 1997, stabilizing at around 7% by the end of 1999 (an acceptable level in a rural setting is 15%).

Collections

The second core area of management focus was ensuring that electricity delivered was paid for. Supported by a belief that a customer will pay his bill if he can trust the information provided, the company commissioned the development of proprietary software that generated easy-tounderstand electricity bills.

Revenue collection cycles were carefully synchronized with monthly salary payment dates, so customers receive bills when they have money. Also, as many customers, particularly those in the civil service, make use of post office savings accounts, Northern Electricity timed its billing cycle to coincide with customers' monthly salary deposit trips to the post office. Revenue collection for pre-payment customers was controlled at the vendor level by limiting vendor credit and through regular reconciliation of accounts. Non-payment was managed through a fair and consistent consultative process with ultimate cut-off of supply, rather than by action without warning. Upon expiry of a grace period for settlement of the account, a Northern Electricity official would visit the customer with the intent of understanding the customer's circumstances. A deadline for payment was mutually agreed, and if no payment had been received by that date the supply would be cut off. Restoration of supply would only be effected upon settlement of the account and payment of a reconnection fee to cover costs. Management reports that no complaints were ever received from customers about this procedure. Sensitive to the threat of a community response and/or political interference, Northern Electricity had a policy never to cut off more than 10% of its customers in an area at any one time. Legal action was avoided as a last resort because the process was costly and time-consuming.

Additional Performance Indicators

In addition to losses and collections, Northern Electricity tracked performance relative to the key indicators displayed in Table 4.3.2.

Indicator	Value (2000)	
Average consumption by pre-payment customers	196 kWh	
Percent of revenue outstanding at 60 days	1.42%	
Employee / customer ratio	1:217	
Average reaction time to restore power	92 minutes	

TABLE 4.3.2 KEY PERFORMANCE INDICATORS⁸

4.3.3 Business Systems

The implementation of business tactics and strategies was primarily manifest in the application of IT-based control systems, such as the fault reporting center, the billing system and prepayment vending.

⁸ Figures are taken from the Northern Electricity Annual Review, 2001.

The establishment of a 24-hour fault-reporting center enabled prompt reaction to power outages and network problems, while recording all calls and transactions provided an accurate record of the sequence and timing of events. The recordings demanded call center operator integrity, and they proved invaluable in tracing causes of customer dissatisfaction with the company's service. The system also provided evidence on where system faults had occurred, relieving Northern Electricity of the blame for power outages when these were located on NamPower's networks.

On the revenue collection side, Northern Electricity had implemented a billing system for credit meter customers, tailored to the needs of a rural electricity distributor, as well as innovative vending systems for prepayment meter credit. Both rely on modern communication systems. The customized billing system was developed and supported locally and could therefore easily be adjusted to changing needs. Prepayment credit vending was done from strategically located vending stations at Northern Electricity's service centers, linked via data modem to a central system master station. A live link existed between head office and the two regional offices. In remote villages where a vending station could not be justified, Northern Electricity initially sold electricity credit through shoebox vending.⁹ With the advent of mobile vending technology, unique coding of meters became a possibility, and the company gradually migrated to this rather expensive but superior system, thereby enabling the installation of standardized and more secure prepayment meters in those remote places. Only keypad-type meters are being used these days, gradually replacing the old card-type meters.

While allowing customer choice of meter technology, Northern Electricity has promoted the application of prepayment metering for single-phase customers. Prepayment metering reduces overhead costs of the distributor as it requires no meter reading and billing, and, probably even more importantly, it provides customers with better control over their electricity consumption. Customers in northern Namibia generally prefer prepayment meters over credit meters as indicated by Northern Electricity's customer base.

Northern Electricity had endeavored to integrate the credit and prepayment customer databases to have one control interface but this could not be achieved because of the proprietary vending software for prepayment technology.

In terms of non-IT-based business systems Northern Electricity has applied a practical solution to address the issue of lack of skilled human resources. Through specific training in a narrow field of application, and authorization upon successful examination, staff with only limited qualifications and experience have been prepared to fulfill specific tasks, e.g. switching on 11kV networks or operation of a vending station. Supported by the company's management systems and with appropriate supervision and control, this approach has served its purpose.

A redesign by Northern Electricity of the old MLRGH tariff structure in mid-1997 resulted in a reduction of the tariff for small customers. The objective of the redesign had been to make the tariff more transparent and cost-reflective so that customers understand what they are paying for.

⁹ Early prepayment meters operated with disposable credit cards, coded on village level (i.e. the cards coded for a particular village could be used in any meter in that village). A vendor would be issued with a number of cards in different denominations (e.g., N\$5, N\$10and N\$20), and would literally sell these out of a shoe box.

Concerning network rehabilitation, the company acted decisively upon taking over the responsibility to restore networks to an acceptable condition. A major cause for concern had been the ailing electricity networks in some of the larger centers. Maintenance of these networks had been poor in the past, and extensions were done without proper network planning. Northern Electricity instituted emergency repair and upgrading work to remedy the major shortcomings. With additional Government funds, the company succeeded in restoring most of these networks to normal functionality, and power outages due to network problems were soon reduced to an acceptable minimum.

4.3.4 Aversion to Politics

Company managers stated to our team very clearly, with a touch of pride and perhaps even a bit of defiance, that they are not political. They are, in contrast, business people. By this we understand them to mean that their wish is to focus on the technical and managerial aspects of their company and the services provided to their customers. The world of politics – which they clearly understand themselves to be embedded within – is driven by a fundamentally different set of dynamics that they neither understand nor enjoy as much as the work they do managing the distribution business. Indeed, it appears that a part of Northern Electricity's overall business strategy was in some sense to rise above the political machinations surrounding the firm.

4.4 Pricing

Northern Electricity employed a relatively simple tariff structure. For conventional (post-paid) customers, there were four tariff classes, as follows:

- Domestic (residential users)
- Business Low Usage (commercial customers most often small shops on single phase)
- Business Medium Usage (larger commercial customers on three phase, no greater than 60 Amps)
- Large Power Users (high consumption above 60 Amps on three phase)

There were two categories for pre-paid customers:

- Single Phase (mostly residential and small business)¹⁰
- Three Phase (mostly business and small industry)

Prices for all these customer classes, for each of Northern Electricity's five years of service, are displayed in Table 4.4. Prices were fairly constant over time, except for a significant increase across most customer classes in the final year. This was driven primarily by increased costs of bulk power purchases.

TABLE 4.4 NORTHERN ELECTRICITY TARIFFS

Tariffs	1997/1998	1998/1999	1999/2000	2000/2001	2001/2002

¹⁰ While the connection fee varied for residential and commercial customers within this tariff class, the usage charges were the same.

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Commercial Classes						
Domestic	Basic charge (N\$ per Ampere)	0.8	0.9	.96	1.0	1.08
	Unit cost (cents per kWh)	27.0	28.5	31.0	33.0	36.29
Low power users	Basic charge (N\$ per Ampere)	0.85	1.0	1.06	1.1	1.37
	Unit cost (cents per kWh)	29.0	31.5	33.5	35.5	44.56
					4.95	
Medium power users	Basic charge (N\$ per Ampere)	4.5	4.5	4.75	5.0	6.15
	Unit cost (cents per kWh)	29.0	31.0	33.5	35.5	44.39
Large power users	Basic charge (N\$ per Ampere)	100.0	100.0	100.0	100.0	115.0
	Unit cost (cents per kWh)	20.0	19.0	19.0	20.4	25.3
	Maximum demand Cost* (N\$ per kVA)	41.44	45.72	49.38	52.2	64.98
Pre-Paid Classes Single phase	Unit cost (c per kWh)	34.0	36.0	37.5	39.9	43.8
Three phase	Unit cost (c per kWh)	34.0	36.0	37.5	39.9	50.37

*Large power users must pay at least 70% of their notified Maximum Demand

As displayed in Figure 4.4, displaying average cost per kWh for domestic customers in several service areas, Northern Electricity's prices were about average compared with other (all non-private) electricity distributors operating across the country. Because all (including Northern Electricity) are significantly subsidized by the government, prices throughout Namibia are low by international standards.

FIGURE 4.4 COMPARISON OF AVERAGE DOMESTIC PRICES (per kWh) FOR 2000 TO 2001



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As the only company in Namibia providing generation and transmission services, NamPower was positioned to either support or frustrate the efforts of Northern Electricity. It appears to have chosen the latter. With the change in NamPower leadership in 1995, the company's interest in electricity distribution increased. Northern Electricity, while not a direct competitive threat within any single market, became a broader strategic threat. NamPower aspired to be the best distribution company in Namibia and also, as eventually became clear, aspired to provide service in the northern region. In 1999, the firm established a subsidiary, Premier Electric (Pty) Ltd. (Premier). Premier controls distribution assets in a few small settlements and commercial farming areas, and is seeking to expand.

Throughout the country, including within the northern regions where Northern Electricity provides service, NamPower controls all lines above 11 kV. This includes 22 kV and 33 kV lines that would be recognized in most areas as distribution level. NamPower's control of what are effectively distribution assets allowed it to offer service directly to a wider range of commercial and industrial customers than if it were restricted to higher voltage, transmission level, lines. It also meant that NamPower and Northern Electricity needed to interconnect at many supply points. This not only increased the number of areas where interface issues needed to be handled, but also increased the opportunities for NamPower to impose what were generally recognized as high (and unregulated) network extension and connection charges. Finally, although Northern Electricity had many more technicians close to the interface points that were well positioned to respond to problems as they arose, NamPower generally did not allow the sort of access to its equipment that would have allowed for technical problems in Northern Electricity's service area to be resolved quickly.

Relationships between the firms were no doubt further strained by Northern Electricity's regular reporting to the EMC of causes of system outages and other faults. Most long power outages were identified by Northern Electricity as originating on NamPower's system.

4.6 Competition for the Market (Part 3)

The role of Northern Electricity was specified very clearly as an operator. It retained very few obligations for expansion of the system. But this of course does not change the fact that electrification remained an important objective for the industry overall, and for the rural areas within Northern Electricity's service territory.

The rural electrification program continued to be implemented by MME. There was, however, an important gap. It was aimed entirely at providing first-time access to villages and settlement communities. The towns were not covered for system expansion within their borders.¹¹ The towns and the MRLGH retained responsibility for financing this expansion. Limited funding from the Ministry meant that the towns had to bear a portion of the financial burden.

An investment of course should not be characterized as a burden if it is made willingly and there is a fair opportunity of a reasonable return. The problem with the position of the town councils is that neither of these conditions was satisfied. They were forced to accept the terms agreed to

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¹¹ The town councils of Ondangwa, Ongwediva and Rundu did benefit from the rural electrification program in their peri-urban (informal) areas; but not within the formal areas of the towns.

by MRLGH in its contracts with Northern Electricity, an arrangement they never wanted to be a party to in the first place. Worse, the financial terms of the contracts had started to appear generous to Northern Electricity.

At the time the contracts were signed, it made sense for MRLGH to offer very attractive financial terms (the assets were provided with a negligible lease payment and connection fees with Nampower were covered by the Ministry). The assets had performed terribly over the previous few years. Northern Electricity was confronting substantial risks (indeed, no other company or bidder was willing to take on the challenge). But as Northern Electricity began to operate the assets successfully, expectations about the value of the assets changed. The town councils saw themselves as being consistently forced to make investments without the prospect of a reasonable return.¹²

The unhappiness over their financial position only exacerbated the town councils' original unhappiness over initially being forced into the arrangement.¹³ The leaders of the towns had always been enthusiastic about all aspects of the decentralization policy and initiatives supporting local empowerment. They were anxious to manage their own affairs and hopeful about the prospects for doing it successfully (and generating revenues for community development). But whereas, several years earlier when the contracts were being signed, the town councils were reporting to a leadership within MRLGH that was anxious to impose financial discipline on the towns and supportive of MME's efforts to improve the performance of an important industry, the new leadership was more devoted to the cause of local empowerment.

¹² There was of course some return on the investment. First and foremost, there was a good, and fairly priced service. Second, Northern Electricity did attempt to partially correct the financial imbalance with the establishment of an electrification fund (financed from a tax on electricity sales and supplemented with the company's donation of the revenue collected from street lighting and sewage pumps) and a community development fund (financed entirely from the company's revenue). It is also true that, when the town councils had previously operated the assets, they lost money. But the intention here is not to assess the validity of the town councils' unhappiness with their position. The intention is simply to characterize the position. That said, it is worth noting here the irony of any entity, as part of the first private sector participation within the electricity industry, being put in a position where the basic commercial principle of investments being made with a reasonable expectation of a fair return was being so clearly violated.

¹³ The council leaders our team met with des cribed their displeasure with not only the results of the Ministry's decisions, but also the underlying process. In particular, they did not feel they were adequately consulted.

SECTION V – PERFORMANCE ASSESSMENT (PART 1)

5.1 Service to Connected Customers

There seems to be near universal consensus among the stakeholders we spoke with that Northern Electricity was providing a very high quality service. Even members of the town councils, who were unhappy about having to essentially provide free financing for expansion of the system the company operated, were mostly complementary about the characteristics of the company's service.

Customer satisfaction was very high. A survey conducted in 1998 by the Energy for Development Research Center at the University of Cape Town found 85.5% of NE's customers were satisfied with their service.

The company consistently improved its efficiency throughout the period it operated. Figure 5.1 shows the growth in customers (mostly prepaid), beginning with 5,760 (in January, 1997) and more than doubling to 14,800 five years later. Throughout this same period, the company increased its staff from 59 to 60 employees. The net effect was an improvement in its employer to customer ratio from 1:98 to 1:217. This sort of efficiency (in addition to the various forms of subsidy discussed below) the company was able to consistently maintain low prices throughout its service period (while earning, as discussed below, a commercial return).



FIGURE 5.1 NORTHERN ELECTRICITY CUSTOMER BASE

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5.2 Financial Viability

We were not able to obtain much information on financial performance. Northern Electricity is a privately owned and closely held company. However, we do have enough information to draw some general conclusions. Our information comes from three sources:

- interview with the Northern Electricity Managing Director;
- the Northern Electricity Annual Review for fiscal year 2001;
- a financial model containing pro forma projections, prepared by Northern Electricity management in 1999 to analyze the ability of the company to finance the costs of electrification (including asset costs) in the company's service territory; and
- a report prepared by SAD-ELEC, a South African consulting company that prepared a financial analysis of electricity distribution service in the northern regions of Namibia.¹⁴

All figures in this section are for fiscal year 2001.

Northern Electricity sold electricity at an average cost of 44.9 cents per kWh. The company's Managing Director claimed that this incorporated a profit of approximately 10% (4.5 cents per kWh).¹⁵ It also includes a (voluntary) contribution to a community development fund of 1.1 cents per kWh. While it's reasonable to claim that this should be treated as a business cost (particularly given the need for the company to generate political goodwill), we treat it here (for the sake of conservatism in assessing commercial viability) as a portion of profits. So total profits are approximately 5.6 cents per kWh. This yields (across the 83,417,000 kWhs sold) a profit from electricity sales for the fiscal year of approximately N\$4.7 million.

It is difficult to assess the financial performance for the company because we do not have a balance sheet to estimate the value of the asset base. We know that the company invested N\$13.9 million over the life of its contracts; but we do not know the amount invested for buildings and office equipment, management and information systems (an important component of the Northern Electricity business model), or the amount of financing required for working capital (which, despite the general difficulty rural customers have paying for service, may not be unusually large because of the large portion of pre-paid customers).¹⁶

If we assume that financing requirements related to company structures, systems and working capital add anywhere between 20 to 30 percent to the incurred costs of system expansion (reflecting the upper portion of a reasonable range of estimates), and we assume a reasonable treatment of depreciation underlying the reported profit figure, the annual rate of return on

¹⁴ This report – entitled "Financial Modeling and Analysis of a Northern RED for Namibia," dated March 6, 2002 – analyzes the financial viability of a distribution company serving as the northern region's RED within the new industry framework. It focuses on a geographic area larger than the one currently served by Northern Electricity, but provides disaggregated figures for this latter area.

¹⁵ This figure is generally consistent with results contained in the Northern Electricity financial model. We have no other independent verification.

¹⁶ There are uncertainties associated not just with balance sheet items (which comprise the denominator of a rate of return computation), but also the profit figure (i.e. the numerator). In particular, we were not told how (or even if), the quoted profit figure accounts for depreciation of the com pany's investments. This uncertainty over the treatment of depreciation (which can impact the results dramatically) is discussed further below.

invested capital is comfortably above 20 percent. This is a strong financial performance for the year.

The Northern Electricity financial model appears to indicate that the company was not accounting for its system expansion expenditures in the traditional manner. It appears from the financial proformas that, rather than capitalizing the costs (and thereby treating the assets as long-term investments to be depreciated over time), the firm was expensing them. This will understate profits. A line item in the financial model indicates that investment costs of approximately N\$4.8 million may have been treated this way. If so, the best estimate of profits may be approximately N\$9.5, more than twice the initial estimate discussed above.

In either case, because of the significant amount of Government subsidization of the company's service, the analysis thus far does not fully address the broader question of financial viability of the service, on commercial terms. In this context, there are two important forms of Government subsidization that must be accounted for.

First, the Government subsidized service by paying NamPower's extension charges at a rate of approximately N\$250,000 per month. Over the course of the year, this amounts to N\$3 million in subsidy.

The more substantial form of Government subsidization is for the assets used by Northern Electricity. As discussed above, the company was made to bear a negligible portion of the costs of the infrastructure it operated (the company paid a monthly leasing fee of N\$3,900). The SAD-ELEC report estimates infrastructure costs in the Northern Electricity area at N\$12,000 per rural customer. (In the towns and urban areas, infrastructure costs are estimated at N\$5,000 per customer.)¹⁷

Table 5.2 presents, based on this figure, the annual costs of financing the infrastructure for the existing customer base employing alternative estimates of the useful life of the equipment and the required rate of return on invested capital (figures are in millions of Namibian dollars):¹⁸

	Required Rate of Return			
Asset Life	16%	14%	12%	10%
20 years	19.4	17.4	15.4	13.5
30 years	18.7	16.5	14.3	12.2
40 years	18.5	16.2	14.0	11.8
50 years	16.2	16.2	13.9	11.6

TABLE 5.2 ANNUAL INFRASTRUCTURE CARRYING COSTS (SENSITIVITY ANALYSIS)

¹⁷ This is the value provided on a forward-looking basis. It is close to an estimate of the same parameter that can be derived by dividing SAD-ELEC's estimate of the gross value of existing assets by the current number of customers.

¹⁸ The required return reflects the (post-tax) weighted average cost of capital (WACC). The figures in the table reflect the annual costs of financing infrastructure investment above and beyond the \$13.9 million contributed by Northern Electricity (i.e., only the portion financed by Government).

The figure in the upper left corner of the table (N\$19.4 million) is probably the best estimate of the annual infrastructure related costs for the Northern Electricity service territory. It assumes an equipment life of 20 years and a weighted average cost of capital (WACC) of 16% (this latter figure is the estimate employed by SAD-ELEC). The range of estimates for the two parameters is provided to account for our basic uncertainty about the correct values. The displayed values probably extend beyond the range of "reasonable" estimates. They are displayed because they help to highlight the basic conclusion on commercial viability.

Each of the figures in the above table – even the ones yielding carrying cost estimates that are certainly too low – are larger than either of our estimates (N\$4.7 or N\$9.5) of the reported profits of Northern Electricity. It is clear that the service provided by the company is not a commercially viable one (i.e. it requires subsidy). But the level of subsidization required is not clear. If the NamPower subsidy were not in place then, assuming the lower of our two profit estimates, the existing business would have generated a profit (on its relatively small asset base) less than its WACC funds to cover only a very small portion of the infrastructure costs. If our second profit estimate is correct (i.e. assuming Northern Electricity has expensed rather than capitalized its system expansion costs), then the "extra-normal" profits (i.e. beyond the WACC) could have been employed to finance approximately 30 percent of the infrastructure costs.

Northern Electricity managers claimed that their business would be able to support 50 percent of the infrastructure costs. It is not clear how they arrived at this figure. Perhaps they assumed the Nampower subsidy would continue. In this regard, it is perhaps worth noting that, because prices charged by Northern Electricity are relatively low by international standards, there may be scope for improving commercial viability by increasing rates. This study did not generate sufficient data to estimate the magnitude of this effect.

In either case, it is clear that subsidy support for service in Northern Electricity's region is required. This conclusion is consistent with SAD-ELEC's remarks about the viability of the RED serving the broader northern region. The report states, "a company with the customer base, current prices, the network assets, cost structure, and forecasted electrification obligations would be far from financially viable."

5.3 Connecting New Customers

Northern Electricity began its operations in 1996 with more than half of its "customers" not recorded (and therefore not being sent invoices). The firm's audit of customers in February 1997 identified 1,845 conventional customers and 3,863 prepaid customers, totaling 5,708 customers.¹⁹ By December 2001, NE's customer base had grown to 2,280 conventional customers and 11,852 prepaid customers for a total of 14,800 customers.²⁰ Thus, given the infrastructure made available to it, Northern Electricity appears to have had success adding customers to its system (and formally recognizing – in a commercial sense – "customers" that were physically connected but not, for lack of representation in MRLGH's records, receiving invoices).

¹⁹ EMC Report, April 1997.

²⁰ EMC Report, December 2001

The bulk of the responsibility for connecting new customers was retained by the National Government through its administration of the rural electrification program. This program has, since the time of Namibia's establishment as an independent country twelve years ago, been successful. Starting from a point where practically no rural customers were receiving electricity from a grid, service has since been extended to many rural centers, villages and commercial farms. Access to electricity in rural areas is currently estimated to be around 12% (the corresponding figure for urban areas is 75%). For a form of service where success is inevitably incremental, this reflects steady and persistent progress.

But the program had a gap. It was aimed entirely at providing first-time access to villages and settlement communities; expansion of the system within town borders was not covered. This meant that local authorities were forced to finance infrastructure under the terms of a set of agreements they never endorsed. And the financial terms were not attractive. The local authorities found themselves having to essentially provide free infrastructure financing to a profitable company without any hopes of receiving – consistent with the terms of Northern Electricity's contract with the MRLGH – any return of or on their investment. This is not an advisable arrangement under any circumstance. And, particularly given the lingering resentfulness of the town authorities in having been forced to cede their authority for providing service, the fact of their having been placed in such an unenviable position reflects an important public policy failure.

SECTION VI. – THE END GAME

6.1 Drawing the Battle Lines

Local authorities became increasingly determined to take over service provisions within their jurisdictional areas. Furthermore, after further evolution of the policy framework supporting local empowerment combined with a shift in MRLGH leadership, the Ministry became significantly more focused on empowering local authorities. These entities, combined with NamPower, which was frustrated by the activities of Northern Electricity for a variety of reasons, were anxious to see Northern Electricity replaced.

The firm was supported at the national level not only by MME (whose primary interest with respect to electricity is ensuring effective industry performance), but also a new regulatory agency – the Electricity Control Board (ECB) – established in 2000 as part of a broader program of industry restructuring and rationalization.

6.2 The First Shot

An opportunity to challenge Northern Electricity was provided by the contractually required (within clause 4 of the franchise agreement) three-year review.

The review was initiated in August 1998 – one year earlier than the contract specified - by the MRLGH without consultation of the MME or EMC.²¹ A draft of the review was released in March 1999. While there were some valid criticisms included in the draft, there were also many criticisms that were unsubstantiated, confusing, or even defamatory. This draft review was circulated to a wide audience and had a large effect on the Northern Electricity's image.

The draft review concluded that a different outsourcing contract should be established with other stakeholders for electricity distribution in the northern region. It specifically criticizes low electrification rates resulting from Northern Electricity's contract with the government. It also cites – with little substantiation - customer dissatisfaction with service quality and high tariffs. The draft review recommends that Northern Electricity be removed and other stakeholders become involved.

Northern Electricity threatened legal action if the draft report were accepted. Although a final version was never officially released, the draft had been widely circulated and thereby damaged the company's image.

6.3 The Tactical Response

The draft review made clear to Northern Electricity managers the extent of the political difficulties confronting the firm. In response, they teamed up with a black empowerment group.

²¹ Draft Report on Northern Electricity Review: Comments by the EMC, April 23, 1999.

This involved selling half the ownership of the company to local black interests in the hope that black ownership would improve relationships with the local authorities. This did not have the desired effect. Some believed (incorrectly) that the empowerment group owned only a small fraction of the company and were an insignificant token factor.²² The work of the empowerment group also appears to have further strained relations with NamPower.

6.4 The Conclusion

The Decentralization Enabling Act of 2000 empowers local authorities to take on increasing responsibility for electricity distribution. Consistent with the terms of this Act and supporting policy statements, the MRLGH had recently transferred all assets to regional councils and local authorities. Northern Electricity therefore had to sign lease agreements with the regional councils and local authorities when the original agreements expired. They refused to sign.

A new company, Nored, was formed late in 2001 to distribute electricity in the northern region.²³ Nored is a partnership of seven regional councils, seven town councils and NamPower. This new firm applied for a license to the ECB.

The new regulator was positioned to help resolve a difficult situation. While it is to be hoped and expected that a industry regulator will be able to convert a politically charged dispute into one that can be settled through the application of narrow technical criteria, the ECB was unable to make an effective contribution in this regard. This was due partly to the fact that the enabling legislation establishing the agency did not provide the sorts of powers and structural features normally recommended for protecting regulatory independence, and partly to the fact that the agency was relatively new, with all the concomitant inexperience and credibility problems, as the controversy played out. This notwithstanding, it also appears that the ECB did not act as boldly as it might have, and thereby missed an opportunity to not only help resolve the dispute correctly, but also to take an important step towards establishing its own credibility.

The ECB did not renew Northern Electricity's license, but rather granted a license to Nored. This despite the regulator's statement that it did not feel Nored had enough technical expertise or financial resources to manage the contract it was granted.²⁴ Nored was entitled to begin operating on March 13, 2002; but it was not ready. The company was still negotiating with Northern Electricity regarding the purchase of equipment. Also, Nored had not hired the needed staff before its start date. Most of the people capable of working for Nored were employed by Northern Electricity as recently as a day earlier.

²² Conversation with John Walenga, President of the Indigenous Peoples Business Council.

²³ The region NORED was to operate includes Caprivi Region and part of Kunene Region, and is larger than Northern Electricity's service territory.

²⁴ Press release by the ECB quoted in The Namibian on March 6, 2001

SECTION VII – PERFORMANCE ASSESSMENT (PART 2)

7.1 The Immediate Future for the Northern Region

This is an area where a clear standard for evaluating success is readily apparent. Northern Electricity had provided very good service and there were some inadequacies in the provisions of its contracts. A successful result for the northern regions would have been the retention of Northern Electricity, with some revisions to its contracts. It seems, but for feelings of resentment and ill will, this could have been accomplished.

While it is not unimaginable that Nored will turn out to be an effective service provider, preliminary indications are not encouraging, for the following reasons:

- Nored is owned by several entities whose interests will not always be aligned, corporate governance – and decision-making – will be difficult;
- the large ownership stakes of local and regional authorities threatens the ability of the company to separate commercial and political interests
- the firm has no experience distributing electricity; and while some of its owners are experienced, none have as strong a track record as Northern Electricity;
- the process of introducing Nored including both the establishment of an agreement with the local governments and the turning over of equipment and operations from NE – were sloppy and rushed;
- with NamPower as an owner of Nored, the diversity of suppliers for the electricity distribution service within Namibia is reduced; and
- with strong involvement of the local councils, autonomy of the management of the day-today operations of Nored is lost.

7.2 Providing a Strong Foundation for Ongoing Development

In consideration of the potential for Namibia to attract private providers of infrastructure services in the future, it is as important to examine the way events unfolded as the specific results attained.

The experience of Northern Electricity in Namibia provides almost a textbook example of precisely the sorts of things international investors are most concerned about when evaluating opportunities in developing economies. While it is true that Northern Electricity did not protect itself through contract as well as it might have, most potential future investors will likely conclude from an examination of recent events that the current legal, institutional and regulatory framework does not provide sufficient protections, particularly from political interests and, in particular, shifts in political ideology over time.

It is precisely because of the ever-present possibility that the leadership of government agencies like the MRLGH will change over time, and that these changes will be manifest in different policy emphases, that governments wanting to attract private investors must develop ways to make credible and binding commitments in areas where investors are most risk sensitive. Many of the mechanisms that have traditionally been implemented to insulate an investment opportunity from shifts in the political landscape – including, for example, the establishment and empowerment of an independent regulator, development of detailed contracts, effective dispute resolution procedures, etc. – are exactly the elements within Namibia that revealed themselves throughout the Northern Electricity experience to be underdeveloped. The implementation of the three year review, in particular, displayed a type of arbitrariness – with respect to both process and he content of its conclusions – that will substantially increase the perceived risk of private companies investing and conducting business in the country.

SECTION VIII – PRELIMINARY LESSONS

8.1 It's Hard to Build Something Lasting on a Weak Foundation

Northern Electricity entered the Namibian electricity industry in 1996 as the first-ever private operator. There had been no privatization law or set of policies put in place to define a systematic set of rules and procedures for attracting private operators to, and effectively supporting their operations within, the industry. There was, instead, recognition by Government of a very serious problem (i.e., the very poor performance of the electricity systems operated by the local governments in the north) and well-intentioned determination to address the problem.

Good intentions notwithstanding, little of the structural foundation normally seen in countries implementing successful privatization programs had been put in place in Namibia. There was no industry regulator (until 2000), ownership rights of the electricity assets in the north were not clearly defined, the contracts with Northern Electricity were thin on detail, and the core policies (on industry reform and local empowerment) that would ultimately come to most directly impact Northern Electricity's business had not yet been documented. And while MME and MRLGH were at the time coordinated in their efforts to transfer operations to Northern Electricity, local governments within the service territory were unhappy from the start.

Upon this foundation, it took only a reemphasis of existing policy (supporting local empowerment) and a political shift within the MRLGH to set in motion a chain of events that would ultimately lead to Northern Electricity, an outstanding service provider and good corporate citizen, not having its license renewed.

8.2 The Importance of Coordination

The policy focus of the MME has consistently been on reforming the electricity industry, including private sector participation. The policy focus of the MRLGH has consistently been on empowering the local and regional governments, both economically and politically.

These policy objectives are not inherently in conflict, and were not understood to be by the MRLGH leadership in place in 1996. Empowerment of local governments does not require operation (or even ownership) of electricity assets. It does, however, require that local officials have the ability and the opportunities to control their own destiny.

Partly because of an ideological shift within the MRLGH, and partly because several local governments were understandably unhappy with the poor financial terms foist upon them, the notions of local government empowerment and private sector involvement in electricity supply came to be recognized as in conflict. The Ministries and local governments were then operating at cross-purposes.

8.3 Seize the Moment

The life of an institution – like the life of an individual – presents a limited number of opportunities for making an important and bold statement. These should not be passed up lightly.

Statements issued by the Electricity Control Board reveal the new industry regulator's concern about whether Nored possesses the technical skills and the financial resources to provide satisfactory service in the northern region. Despite these reservations, and despite a belief that Northern Electricity had done its job well, when the ECB was put in a position to exercise its licensing authority, it decisively chose Nored over Northern Electricity. It would be a mistake to excuse this poor decision by citing the fact that the ECB was a relatively new agency at the time, and had not yet established its credibility. On the contrary, it is this very fact that argues for, when the right opportunity presented itself, forcefulness rather than timidity. A defining moment for the ECB – one that presented the opportunity for quickly establishing credibility – was squandered.

8.4 Private Sector Participation is not Just about Infrastructure Investment

A very big problem for utility sectors in developing countries, perhaps the biggest problem, is lack of financial capital. This should not obscure the fact that, once infrastructure has been constructed, the prospects for service quality, affordability and financial viability vary widely with the character and quality its management.

The experience of Northern Electricity in northern Namibia is an extraordinary example of a business being completely transformed by the power of good management. Northern Electricity invested a relatively small amount, almost entirely in commercial systems, not infrastructure expansion or reinforcement. There were tremendous returns to this investment because of the combination of Northern Electricity's clear mission, strong leadership, commercial focus (on reducing losses and increasing collections), effective management information systems and commitment to customer service.

These sorts of contributions could be undervalued because – relative to investment dollars, which are easily counted – they are difficult to see and measure. When one of the town council leaders we visited was asked about the decision to replace Northern Electricity, he said matter-of-factly that "it's just management" and he could find anyone to run the business well. He is wrong.

8.5 Respect Your Customers, and Expect a Lot from Them

The foundation for Northern Electricity's success was its absolute commitment to serving customers. This commitment, consistently displayed rather than just referenced as a marketing tool, was manifest in two distinct ways.

First, the company focused on understanding, and adapting its business model to, the personal and consumption characteristics of its customers. Their needs were anticipated, analyzed and attended to. Bills were presented in a clear format and sent according to a strict schedule (because customers planned their budgets, and often their long walks to the Post Office, on a strict schedule); pre-paid options were available (for customers who wanted to protect themselves from becoming over-extended) but never imposed on customers who had trouble keeping up with payments on a traditional account (because of a concern about stigmatizing pre-paid customers); and outages and complaints were responded to very quickly.

The second component of Northern Electricity's service approach was to provide its customers the ultimate respect of insisting that they live up to their end of the commercial deal. The company began its operations by visiting all customers to ensure meters (many of which had been under-reporting) were recording accurately. Equally important, customers that failed to pay for service, even after attempts at accommodation, were disconnected. Any other action would reveal something other than a complete expectation that customers can, and must, play by the rules.²⁵

The link between these two factors is critical. A strict disconnection policy is justified in the minds of customers (and thereby ultimately accepted) when it is clear that all efforts have been made to avoid having to impose it. In this regard, the company's authority derives not from any law or regulation, but simply from the perception that it is fair and diligent. The onus remains on the company to retain this authority.

8.6 Leave the Business to the Operator

A government contracts with a service provider because of, presumably, a belief that the operator can provide effective service. It makes sense to offer the operator as much latitude as possible in its approach and decision-making.

Many management contracts, lease / concession contracts and regulations throughout the world specify performance indicators and establish target service levels for operators. While these sorts of specifications can be appropriate in areas where company financial interests may not be perfectly aligned with customers and the broader social interests (e.g. reporting on outages, environmental protection), they are almost always not appropriate in areas where the interests are aligned (i.e. reducing system losses, improving labor productivity).

The contracts signed by Northern Electricity specified few indicators that would be employed to measure the company's performance. It's not clear whether this omission was strategic or inadvertent, but that is not the issue here – the lesson remains the same. A capable operator was selected, a reasonable set of obligations and monitoring protocols was defined, and the operator was left with wide latitude to implement a business model. Management was not

²⁵ There is a certain form of social character – perhaps best summarized as a general respect for the law among the populace - that must exist for this approach to be effective. As acknowledged by Northern Electricity's Managing Director, in areas where respect for property rights and other foundational legal concepts are not so well grounded – particularly, for example, within areas populated by aggrieved and angry communities – the approach described here (relying as it does on the notion of an unwritten commercial compact between company and customer) will likely not be effective.

distracted by concern over compliance with performance indicators policymakers believe to be important.

8.7 Avoid Politics but Pay Attention to Politics

For companies conducting business in an infrastructure industry (one that is generally recognized as providing an important public service), it will be useful to draw a distinction between, and cultivate different approaches to dealing with, politics.

When the term "politics" is understood in its general form - i.e., as describing the general dynamic of different interest groups competing - companies are advised to adopt Northern Electricity's approach and try to avoid entanglement. Private companies are introduced to an industry to improve the quality of service. They make their greatest contributions by focusing their energies on this task.

But, it is of course unavoidably true that no clear separation exists between business and politics. When the term "politics" is understood as characterizing a particular allocation of benefits among competing interest groups, then private companies are advised to pay attention. The introduction of a private company into a major industry like electricity is a dramatic transformation. Most of the important policymakers with influence over the industry will not be familiar with the voluminous literature highlighting the benefits of private sector participation. They must be persuaded of the benefits and they will naturally assess performance based on personal experience. If an entity perceives itself as being treated unfairly, it will attempt to move back to the familiar.

One of the outstanding features of Northern Electricity was its ability to understand, anticipate and respond to the needs of its (commercial) customers. Things may have evolved differently for the company if it had more clearly recognized that its customer base included not just those to whom it delivered electricity, but also those whose assets it operated. It is certainly true that the MRLGH bears the bulk of the responsibility for the predicament of the town authorities. But it also appears true that, given the existence of this predicament, Northern Electricity might have done more to protect its interests by understanding, anticipating and responding to the needs of the Town Councils. This is a form of politicking that would likely have been for the greater good.

APPENDIX – INTERVIEWS

Organization	Representatives		
Ministry of Mines and Energy	Deputy Minister: Mr. Immanuel Ngatjizeko Permanent Secretary: Mr. Joseph S. Iita Director of Energy: Mr. Martin J Heita Deputy Director of Energy: Mr. Markus von Jeney Chief of Energy: Davidzo Namate		
Ministry of Regional and Local Government and Housing	Permanent Secretary: Mr. Samuel Goagoseb Deputy Director: Mr. Charles Tjijenda		
NamPower	Managing Director: Dr. Leake S. Hangala General Manager: Mr. Imker Hoogenhout		
Electricity Control Board	CEO: Mr. Siseho Simasiku Manager Economic Affairs: Mburumba Appolus Manager Administrative: Sandra Goliath		
National Planning Commission	Director of Development Planning: Ms. Penny Akwenje		
Northern Electricity	Chairman: Mr. Richard Himmel Managing Director: Mr. Rudy Huysen Director: Mr. Mwahafar N Ndilula Area Manager: Mr. Toivo Shovaleka		
Ondangwa Town Council	Town Clerk: Mr. Funeka Shigwedha Chairperson of the Management Committee: Mr. Nangolo Deputy Chairperson of the Management Committee: Ms Tuutaleni Town Treasurer: Mr. Hilundwa		
Ongwediva Town Council	Town Clerk: Ms A.N. Wiliams -Tanyaanda Public Relations Officer: Mr. Uutonih Town Treasurer: Mr. Werner Iita		
Nored	Acting Managing Director: JC van Wyk		
Oshakati Premier Electric	Manager: Filemon N. Nakashole Head: Technical Services: Wisernan P. Molatzi		