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**GATS Energy Services
Negotiations and Energy Market
Regulation and Liberalisation in
South Africa**

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ACRONYMS

BEE	Black Economic Empowerment
CEF	Central Energy Fund
DC	Direct Current (Electricity)
DME	Department of Minerals and Energy
DPE	Department of Public Enterprises
DRC	Democratic Republic of Congo
ESI	Electricity Supply Industry
EU	European Union
FDI	Foreign Direct Investment
FON	Fibre-Optic Network
GATS	General Agreement on Trade in Services
GATT	General Agreement of Tariffs and Trade
HDSA	Historically Disadvantaged South African
IPP	Independent Power Producer
KV	Kilovolt
MFN	Most-Favoured Nation
MW	Megawatt
MWE	Megawatts Electric
NEPA	National Electric Power Authority (Nigeria)
NEPAD	New Partnership for Africa's Development
NER	National Electricity Regulator (South Africa)
NUFCOR	Nuclear Fuels Corporation of South Africa
RED	Regional Electricity Distributor (South Africa)
RMB	Rand Merchant Bank
RTA	Rural Telecommunications Africa
SA	South Africa
SADC	Southern African Development Community
SAPIA	South African Petroleum Industry Association
SSA	Sub-Saharan Africa
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
US	United States
WCO	World Custom Organisation
WTO	World Trade Organisation

EXECUTIVE SUMMARY

This paper is a scoping exercise to explore the types of issues that might arise for South Africa (SA) in World Trade Organisation (WTO) energy service negotiations. The background to the current round of negotiations in energy services is explained, including the uncertainties that remain in classifying energy services.

The extent and diversity of the energy industry (coal, oil, gas, electricity, nuclear and renewable energy) is described to develop an understanding of the issues that will arise around trade in energy services in SA or by SA companies. Current and potential energy service exports are mapped. The regulatory framework and liberalisation process in each energy sector is also described.

While there are some market access issues in the petroleum industry, the main questions will arise in the electricity sector. This is the fastest-growing area for exports of SA energy services. It is also the sector that faces the most fundamental market restructuring and liberalisation.

SA might wish to make a number of requests for the removal of limitations on market access and national treatment in services related to electricity transmission and distribution, in marketing and supply, and in facilities management and other related services that include installation, repair and maintenance. It may also wish to make additional requests in terms of more transparent and justiciable regulatory systems that would not disadvantage SA companies. The immediate potential market is Africa, but it is feasible for some of SA's energy service companies to make headway in other emerging markets.

In terms of the liberalisation of SA's electricity market, the creation of a power exchange and electricity trading market would offer many opportunities for power producers in the Southern African region to sell into the largest market in Africa. There will also be new openings for a range of energy-related services in the operation of these markets.

The SA government has in principle decided to begin the liberalisation process – although no new legislation is in place to give effect to this intent. The government has, for the moment, decided to keep the Transmission and Distribution system in state ownership. Third party-access to the Transmission system is already guaranteed. If the distribution and supply monopolies that will be held by the six proposed Regional Electricity Distributions companies are challenged, government could argue that they are necessary to fulfil public-service obligations related to expanding access to electricity.

Finally, it is recommended that a comprehensive survey of private energy service providers in SA be undertaken to obtain a more detailed and quantitative understanding of the kinds of barriers they face in foreign countries. Such a study could form the basis of an offensive strategy in the WTO energy service trade negotiations.

This paper provides an introduction to the SA energy sector for those involved in trade issues, and an introduction to WTO trade negotiation opportunities for those involved in energy services.

1. INTRODUCTION

Energy is probably the biggest business in the world economy, with a turnover of at least US\$1.7-trillion to \$2-trillion per year¹. Although much of this business is geared to the production and trade of energy goods, there is a growing market in the trade of energy services.

Energy services may be considered as those services involved in the exploration, development, extraction, transportation, transmission, distribution, marketing, consumption, trade and management of energy, energy products and fuels. While the production and trade in fuels such as coal, uranium and petroleum are clearly regarded as trade in energy goods, there is a growing argument that the production, generation and trade of electricity and gas (which are not easily stored as commodities) should be regarded as an energy service.

Total annual trade in services amounts to about \$1.4-trillion, or almost 20% of total world trade. The WTO estimates that SA exported \$4.9-billion of commercial services in 2000, although growth in these exports has been fairly modest in recent years. The share of services in SA exports is about 14%. SA also imports about \$5bn worth of services per annum (Nathan, 2002).

It is difficult to obtain official data on trade in energy services because they are not captured as a distinct category. Instead, cross-border energy services are reflected in other data on engineering, financial, transportation and consulting services. However some international data exists for energy service transactions. In 1996, foreign affiliates of US energy services firms recorded sales of \$20bn, a figure that had grown by 39% over the previous year. A major factor explaining this growth was the acquisition of electric power companies abroad (Melly, 1999).

Energy is central to achieving the inter-related economic, social and environmental aims of sustainable development, and energy services play a crucial role in providing efficient access to energy in support of development. Developing countries are faced with the challenge of achieving more reliable and efficient access to energy for domestic consumption and production and also of growing their share in the trade of energy goods and services.

2. BACKGROUND TO NEGOTIATIONS ON TRADE IN SERVICES

The WTO General Agreement on Trade in Services (GATS) commits member governments to undertake negotiations to progressively liberalise trade in services.

The Council for Trade in Services formally launched new GATS negotiations in February 2000. The 'rule-making' phase was concluded in March 2001 with the agreement of Guidelines and Procedures for Negotiations on Trade in Services. This agreement builds on the core articles of GATS but includes some additional principles (see www.wto.org):

- Negotiations shall be conducted on the basis of progressive liberalisation that will expand national schedules of commitments to provide national treatment and market access for particular services. Liberalisation shall be advanced through bi-, pluri- or multi-lateral negotiations using the request-offer approach. Once the deal is agreed to, results are inscribed into national schedules and extended to all other WTO members in accordance with the most-favoured nation (MFN) principle². If

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GATS commits member governments to undertake negotiations to progressively liberalise trade in services.

¹ *The Economist*, 10 February 2000

² "Each Member shall accord immediately and unconditionally to services and service suppliers of any other Member treatment no less favourable than it accords to like services and service suppliers of any other country". However there is a qualification: a Member is permitted to maintain a measure inconsistent with the general MFN requirement if it has established an exception for this inconsistency. Exemptions are temporary in principle, subject to review every five years, with the goal of lasting no longer than 10 years.

members want to include MFN exemptions in their national schedules, those exemptions will be subject to negotiation. The negotiations will be transparent and open to all members.

- Public services not in the commercial domain and provided on a non-competitive basis are excluded from GATS negotiations.
- There is recognition of the rights of members to regulate, and to introduce new regulations, on the supply of services in pursuit of national policy objectives (for example, public-service obligations), and their right to specify which services they wish to open to foreign suppliers and under which conditions.
- Special attention shall be given to sectors, and modes of supply, of export interest to developing countries. There shall be appropriate flexibility for developing country members opening fewer sectors, liberalising fewer types of transactions and progressively extending market access according to their development situation. Due consideration shall be given to the needs of small and medium-sized service providers.
- Developing countries will be given credit for autonomous liberalisation.
- Technical assistance shall be provided to developing country members, on request, to carry out national/regional assessments.

The principles thus embody special considerations for developing countries, the process is voluntary, and the objective is to liberalise services trade – not to deregulate services. GATS does not require privatisation, commercialisation or deregulation of any service.

The Doha Declaration in November 2001 endorsed the work already done, reaffirmed the negotiating guidelines and procedures, and established some key elements of the timetable, including the deadline for the conclusion of the negotiations as part of a single undertaking (nothing is agreed until everything is agreed). The fifth Ministerial Conference is due in September 2003 and the target for the conclusion of negotiations is 1 January 2005.

Issues to be negotiated fall into two categories – ongoing activities and additional topics.

Ongoing activities include:

- The built-in agenda (professional services, emergency safeguard measures³, subsidies, government procurement and exceptions to the MFN principle);
- Reforming domestic regulatory regimes;
- Expanding national treatment and market access commitments for trade in services;
- Further sector liberalisation; and
- Liberalisation in policies towards the movement of natural persons.

Additional topics for negotiation include expanding the coverage of GATS to incorporate service sectors not yet under GATS obligations. The energy services sector falls under this category.

The 'request and offer' phase of negotiations is currently being undertaken. Commitments may be scheduled horizontally or according to the four modes of supply specified in GATS:

- Mode 1: Cross-border supply of services. An example is the transmission of design services via the Internet.

The GATS negotiating procedures embody special considerations for developing countries, the process is voluntary and the objective is to liberalise services trade – not to deregulate services.

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The target deadline for the conclusion of GATS negotiations is 1 January 2005. The 5th Ministerial Conference is due in September 2003.

Issues to be negotiated are categorised as ongoing activities and additional topics.

Additional topics include incorporating sectors – such as the energy services sector – not yet under GATS obligations

³ Emergency safeguard measures provide governments with a legal right to withdraw commitments temporarily if a surge of imports threatens domestic service industries.

- Mode 2: Consumption abroad is the supply of a service in the territory of one member to the service consumer of another member. Typical examples are tourism or international training or the repair of a ship or aircraft.
- Mode 3: Commercial presence is the supply of a service through the presence of the foreign supplier in the territory of another member. This could take the form of a subsidiary, a branch, a joint venture, etc.
- Mode 4: Movement of natural persons is the temporary admission of foreign nationals to another country to provide services there. Main barriers would be visa restrictions.

Negotiated requests and offers focus mainly on market access and national treatment. The additional issue of opaque, discriminatory and arbitrary regulatory frameworks is also increasingly a matter for trade negotiations.

Market access involves the removal of quantitative restrictions to trade in services. There are six categories of restrictions that may not be maintained unless specified in national schedules (Nathan, 2002):

- Limitations on the number of service suppliers, whether in the form of monopolies, quotas or needs tests.
- Limitations on the total value of service transactions or assets in the form of needs tests or quotas.
- Limitations on the total number of service operations or the quantity of service outputs.
- Limitations on the total number of natural persons that may be employed in a services sector.
- Measures restricting the form of legal entry (branches, subsidiaries, offices).
- Limitations on foreign capital as a percentage of total shares.

National treatment involves the application of domestic laws and regulations to foreign producers on the same basis, or on terms no less favourable, than they are applied to domestic producers. For firms, examples include taxation, subsidisation and local content requirements. For workers, they include taxation, subsidisation, denial of benefits and amenities, restrictions on the rights of dependents, and unfair treatment in the workplace (Nathan, 2002).

GATS acknowledges that member countries' service industries could be subject to national regulation. However GATS provisions stipulate that domestic regulation should adhere to the following principles (Nathan, 2002):

- Regulations should be non-burdensome, serve legitimate policy objectives and be transparent.
- Measures should be administered in a reasonable, objective and impartial manner.
- Members must maintain judicial or administrative tribunals to provide prompt review and remedies for decisions taken that affect services.
- Authorities are required to inform applicants for services licences of the status of their applications.
- Members are required to negotiate disciplines ensuring that qualifications requirements, technical standards and licensing procedures are not unnecessary barriers to trade.

An objective of GATS would be to ensure that where national regulations exist, they apply in an equal, non-discriminatory and transparent manner to services and service suppliers from foreign countries.

Negotiated requests and offers focus on market access and national treatment, with the additional issue of opaque, discriminatory and arbitrary regulatory frameworks increasingly on the agenda.

Market access involves the removal of quantitative restrictions to trade in services, including limitations on the number of service suppliers, total value of service transactions and limitations on foreign capital as a percentage of total shares.

Where member countries' service industries are subject to national regulation, GATS stipulates that they should be non-burdensome, serve legitimate policy objectives and be transparent. National regulations should further apply in equal, non-discriminatory manner to foreign services and service suppliers.

A key starting point for SA's negotiating strategy in the trade of services is to prepare an offensive agenda by identifying SA export interests and the problems they experience in accessing foreign markets, particularly foreign government restrictive measures. A second step would be to survey local market access issues and regulations and SA's own preparedness to liberalise. In general, it makes sense not to make requests for liberalisation in areas where SA is not prepared to liberalise itself. The energy services sector provides an interesting example of SA companies expanding their trade in energy services at the same time that the government is considering the liberalisation of local energy markets.

SA negotiating strategy in the trade of services should include an offensive agenda that has identified SA's export interests and the problems they encounter in accessing foreign markets.

A second step is to survey local market access issues and SA's own willingness to liberalise.

3. BACKGROUND TO TRADE IN ENERGY SERVICES

Relatively few commitments for energy services were made during the Uruguay Round of trade negotiations, primarily because much of the energy industry was characterised by vertically integrated, state-owned monopolies. Energy companies controlling the entire production and distribution chain performed most service functions 'in-house'. However the past two decades have seen radical restructuring and liberalisation of energy markets – state-owned monopolies have been unbundled, competition has been introduced and even the large, private, multi-national energy companies outsource a significant number of services.

The current Doha Round of negotiations accepts that no service sector should be excluded from negotiations, and a number of countries have begun to make requests around trade in energy services.

There is no separate classification of energy services in the current WTO Sectoral Classification List (W/120), which is based on the United National Central Product Classification, although aspects are covered under other categories. Further, there is no agreed definition of the term 'energy services' and the classification does not explicitly include many new energy services, such as the operation of power pools, energy trading and brokering and energy management. The US, EU, Japan and other countries have proposed the development of a new, comprehensive classification for energy services.

There is no separate classification of energy services in the current WTO Sectoral Classification List.

There is also no agreed definition of the term 'energy services', and the aspects covered under other categories do not explicitly include many new energy services, such as the operation of power pools.

Energy services are required at each step of the energy chain – from the location and development of the potential energy source to its conversion to various energy forms, its long-distance transport and ultimately to its distribution to the final customer. Value is added in each phase.

The EU has proposed the following classification of energy services:

-
- Services related to exploration and production
 - Services related to the construction and maintenance of energy facilities
 - Construction
 - Installation
 - Maintenance and repair
 - Services related to networks
 - Operation of transportation/transmission and distribution
 - Connection services
 - Ancillary services
 - Storage services
 - Services for the supply and marketing of energy
 - Wholesale sales of energy products
 - Retail sales of energy products
 - Trading
 - Brokering

- Services for final use
 - Energy audit
 - Energy management
 - Metering
 - Billing
 - Services related to decommissioning
 - Other energy-related services
 - Installation, maintenance and repair of energy equipment
-

A distinction should be made between trade in energy services and trade in energy goods. Some energy products, such as oil and solid fuels that are easily stored and traded across borders, clearly fall in the goods category. So trade in fuels such as oil, coal and uranium constitutes trade in goods. Cross-border trade of electricity or gas is a little more complicated. The purchase of electricity or gas could be regarded as trade in a commodity; however, many of the activities involved in cross-border trade, such as the trading service itself as well as transmission or transport services would fall under the energy services category. It should be noted that members of the World Custom Organisation (WCO) are not required to classify electricity as a commodity for tariff purposes.

In the WTO framework, the production of energy goods comes within the scope of the goods (GATT) agreements, while transmission and distribution fall under GATS.

There is a general understanding within the WTO framework that the production of energy goods comes within the scope of the goods (GATT) agreements, while transmission, distribution and related services fall under GATS. Foreign direct investment (FDI) in the production of energy goods is not the object of comprehensive multilateral trade rules (WTO, 1998). The question that arises is whether the WTO separation between trade rules for goods (applying to trade in energy products) and services trade rules (trade in the transportation/transmission and distribution of energy products) is desirable in the electricity sector. It would be more efficient to apply a single, coherent set of trade rules to liberalisation in this sector, and perhaps also to natural gas, considering the nature and structure of these industries.

Other services, including construction, engineering and consulting, contribute to the energy value-added chain. However these services are better defined as energy-related rather than energy services *per se*.

Liberalisation of energy services is closely linked to the liberalisation of trade in energy goods. In many areas there is significant potential for cross-border trade. This is not simply a North-South issue, but rather a question of also unlocking the potential for energy trade between developing countries. A clear trading framework, as well as transparent, predictable and depoliticised legal and regulatory frameworks, is needed to fulfil this potential.

The question is whether the WTO separation between rules for trade in goods (energy products) and services (transport/transmission and distribution) is desirable in the energy sector.

Trade in energy services is usually undertaken in three of the four defined modes. First there is cross-border supply of services (mode 1). The energy services most likely to be traded across borders include transportation, design and engineering (for example, using the Internet); and financial services associated with energy trading, marketing, brokerage and risk management. The most significant energy services trade mode is commercial presence (Mode 3), for example, through a foreign-owned energy distributor, a foreign concessionaire or contract management company. Finally, trade in energy services would often involve the temporary movement of natural persons. The issues involved in the latter mode are common to most service sectors and is not discussed in detail in this paper.

A single, coherent set of trade rules for the liberalisation of electricity, and perhaps also natural gas, could be more efficient.

Market access and national treatment restrictions to trade energy services are similar to those faced by many service providers, and include obstacles to the right of establishment, an inability to provide cross-border services, and discriminatory treatment between foreign and domestic service providers. Furthermore, energy sector regulatory frameworks can often be opaque, discriminatory and arbitrary. Without a

regulatory framework that provides a transparent and justifiable basis for fair competition, energy service companies are often at a disadvantage to a favoured competitor. Market access and national treatment commitments, while necessary, are often not sufficient to assure liberalisation of energy services. Regulatory reform and certainty are often also needed.

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4. A BRIEF OVERVIEW OF THE SA ENERGY SECTOR

To understand the issues that will arise around trade in energy services in SA or by SA companies, it is useful to realise the extent and diversity of the energy industry. The energy sector includes coal, oil, gas, electricity, nuclear and renewable energy. The entire energy value chain is described, although it should be remembered that the direct production of energy goods is excluded from the GATS. On the other hand, the services involved in their discovery, development, transportation, distribution and retail fall within the ambit of GATS.

SA has a well-developed energy supply system. The country's large coal resources supply three-quarters of SA's energy, with coal used to produce some of the cheapest electricity in the world. Further, the world's leading synfuel producer Sasol transforms coal resources into petroleum products, while small reserves of gas off the south coast are also transformed into petrol and diesel. Synfuels contribute about a third of local liquid-fuels consumption, with the balance imported as crude oil and refined locally by multinational oil companies.

SA has a well-developed energy supply system. The country's coals reserves (SA is the 5th-largest coal producer globally) supply 3/4s of its energy.

Internationally, SA is the fifth-largest coal producer (after the US, China, India and Australia, with Russia's production being slightly less), and the second-largest coal exporter after Australia. Total SA coal sales were valued at R19.7-billion in 2000, of which R10.9bn was exported (SA Chamber of Mines, 2001).

Coal production is dominated by Anglo American's coal subsidiary Anglo Coal and BHP Billiton's Ingwe. A joint initiative between Anglo Coal and Ingwe has resulted in the formation of black economic empowerment (BEE) coal company Eyesizwe Coal. Anglo Coal recently announced the sale of its KwaZulu-Natal coal reserves to another BEE company, Leeuw Mining and Exploration. Ingwe has coal operations in SA and Australia, and most of its production is sold to SA electricity provider Eskom. The rest is exported through the Richards Bay Coal Terminal.

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Anglo Coal has six operating collieries – five in SA and one in Colombia. Anglo Coal exports about a third of its mine production overseas from the Richards Bay Coal Terminal, in which it has a major shareholding.

XStrata has emerged as an important producer following an agreement with its Swiss-based shareholder Glencore International AG that acquired a controlling interest in Duiker in 1999. Duiker has interests in several other SA mining operations, including a 21% interest in the Richards Bay Coal Terminal.

Eskom dominates the electricity sector, producing about 96% of all electricity sold in SA. The rest derives from self-producers and municipalities.

Sasol has several mining operations to supply its SA petrochemical facilities near Vereeniging and Secunda, while Kumba Resources has large SA coal operations to supplement Iscor Ltd's steel foundry operations. AfriOre has entered into the SA coal industry through its acquisition of the Springlake Colliery. Expansions of its operations, which will make AfriOre the largest producer of anthracite in SA, are envisaged (see <http://www.mbendi.co.za> for further details).

Eskom accounts for more than half of the electricity production in Africa and is the 7th-largest electricity utility in the world.

Eskom dominates the electricity sector, producing about 96% of all electricity sold in SA. The rest derives from self-producers and municipalities. Eskom accounts for more than half of the electricity production in Africa and is the seventh-largest electricity utility in the world. Its annual revenue in 2001 was R26.1bn (Eskom Annual Report, 2001). Eskom owns the entire high-voltage, long-distance transmission grid (except for the Motraco line to Mozambique, which it jointly owns with the Swazi and Mozambican utilities). Distribution networks – soon to be consolidated into six Regional Distribution Companies – are also owned by Eskom and the municipalities. A limited number of

Independent Power Producers have been licensed to allow local industry participation, for example by companies such as the US-based AES.

SA imports crude oil primarily from the Middle East, although it has been trying to diversify its sources. A floating production, storage and offloading vessel produces a small amount of oil from the Oribi oil field off the south coast.

State-owned Central Energy Fund (CEF) subsidiary PetroSA is involved in petroleum exploration and incorporates the Moss gas synfuel plant. CEF also controls the Strategic Fuel Fund, which trades in petroleum and controls the country's strategic fuel stocks. Companies currently licensed for offshore oil exploration include Forest, Ranger, Pioneer and Philips Petroleum. BEE company Mvelaphanda Holdings (MVP) has recently taken a modest share.

After Egypt, SA has the second-largest refining capacity in Africa. Its refined products are sold in the local market and exported when there are surpluses – mainly to other parts of Southern Africa but also into the Indian and Atlantic basin markets. Multinational companies including BP, Shell, Caltex (ChevronTexaco) and TotalFinaElf are major participants in SA's downstream petroleum markets. Engen, owned 80% by Malaysia's Petronas and 20% by Worldwide Africa Investments, is also a major participant in refining and has the largest share of the retail market.

A number of BEE deals have occurred in the industry. Thebe Investment Corporation purchased a 25% share of Shell's SA downstream retail and marketing business. Shell, with its Sapref refinery (Durban) partner BP, signed an agreement with BEE firm Southern Tankers to transport oil from the refinery to other SA locations. Southern Tankers will cover all the refinery's coastal shipping requirements.

Several local firms also are involved in SA's downstream market, including black-owned firms Excel and AfricOil. Proposed amendments to SA's Petroleum Products Act would allow synthetic fuel producers Sasol and Moss gas to enter the retail market. Sasol jointly owns the Natref refinery with Total. Sasol has signed an agreement with Mozambique's state-owned oil marketing and distribution firm Petromoc to market petroleum products to Mozambican service stations and commercial customers.

The turnover of the major petroleum companies in SA totalled R39.6bn in 1998 (Sapia, 2000). Petroleum taxes contribute about 10% of fiscal revenue.

SA does not have a well-developed gas system. The current network in Gauteng, Mpumalanga and parts of KwaZulu-Natal is supplied by gas that Sasol produces from coal. The modest gas distribution network in Gauteng has been privatised and is now run as Egoli Gas by a consortium led by the US-based Cinergy and BEE group Egoli Empowerment Holdings.

Neighbouring countries Namibia and Mozambique have natural gas reserves, and a 865km pipeline is being constructed from the Pande and Temane fields to Secunda and Sasolburg. The pipeline will be 50% owned by Sasol – which will be the pipeline operator – and 50% by the SA and Mozambican governments. Sasol will convert its existing pipeline-gas network to natural gas and supply natural gas to SA industries, including its own facilities. Sasol will also switch its Sasolburg plants from coal to gas feedstock and use natural gas at Secunda to supplement coal-based growth there.

The production of uranium, a by-product of gold mining, has declined in recent years and SA now ranks eighth in world production. Uranium is processed into uranium oxide for export by the Nuclear Fuels Corporation of SA (Nufcor), a private company whose board of directors originally comprised representatives from all gold mining groups that were members of the Chamber of Mines. The shareholding has been restructured and the company is 100% owned by AngloGold Limited. Nufcor and Rand Merchant Bank have set up a new company to help customers to deal with the commercial and financial challenges of deregulation. Nufcor International's activities will include the marketing of SA uranium production, while the Johannesburg company continues to manage uranium contracts and uranium recovery operations. The Nuclear Energy Corporation of SA (previously the AEC) is no longer involved in the conversion and

Eskom and the municipalities own the distribution networks, which will soon be consolidated into six Regional Distribution Companies.

A limited number of Independent Power Producers have been licensed to allow local industry participation, for example by companies such as the US' AES.

After Egypt, SA has the 2nd-largest refining capacity in Africa.

BEE deals in the industry include Thebe Investment Corp buying 25% of Shell SA's downstream retail and marketing business. Shell and its Sapref refinery partner BP also signed an agreement with BEE firm Southern Tankers to cover the refinery's coastal shipping requirements.

A gas pipeline is being constructed from Mozambique, which has natural gas reserves, to SA. 50% owned by Sasol, the synfuel producer will convert its pipeline-gas network to natural gas to supply SA industries. Sasol will also switch its Sasolburg plants from coal to gas feedstock.

enrichment of uranium. Eskom owns and operates Africa's only nuclear power station at Koeberg, outside Cape Town.

Traditional use of biomass in the form of fuelwood is increasingly being commercialised as local fuelwood traders respond to reduced stocks for self-collection. There is also a small but active energy management and renewable energy industry, which mainly focuses on solar devices.

The energy industry is supported by a plethora of smaller service industries, including equipment, design, research, consulting and maintenance services and management contracting.

5. SA EXPORTS OF ENERGY SERVICES

As indicated above, SA's exports of energy goods, particularly coal, are significant, with those of uranium and petroleum products more modest. Relatively small amounts of electricity are exported to Botswana, Lesotho, Mozambique, Namibia, Swaziland and Zimbabwe.

Insufficient information is available on the export of energy services. Anecdotal data is given below for some of the larger energy companies.

Sasol and Eskom are best positioned to grow exports in energy services. Sasol has entered into international joint ventures where a primary competitive advantage is its design and operations know-how in synfuels technology. Eskom subsidiary Eskom Enterprises has been established to grow Eskom's business in energy and energy-related services, mainly abroad. Eskom Enterprises' vision is to become the leading energy and related services business in emerging markets. It targets energy business operations, including management, operating, maintenance and refurbishment contracts, and further aims to invest in electricity and gas projects and related services.

Eskom is expanding its involvement across Africa. It has signed a partnership agreement with Nigeria's National Electric Power Authority (Nepa) to improve electricity supply. Eskom will help to develop Nepa's repair capabilities, execute transmission-line projects and participate in rehabilitating, operating and transfer schemes for the running of Nigeria's power stations. It has bid for a concession in Uganda. Zimbabwe's state-owned utility, Zimbabwe Electricity Supply Authority (Zesa), awarded Eskom a contract to assist in the management of its main power station, Hwange. In addition, Eskom recently bought a 51% interest in Zambia's Lusamefwa Hydropower Company.

In addition, Eskom has created an investment fund which will leverage further debt financing, and is planning investments of about R1.5bn in electricity generation and transmission systems over the next five years. A number of priority projects have been identified within the Nepad⁴ framework, including the development and strengthening of an Africa-wide electricity transmission grid (see *Appendix 1*). The Southern African Power Pool facilitates cross-border trade in the region. Eskom also plans to invest R1.2bn in gas transport, reticulation and trading. And the utility is committing significant resources to the development of a new-generation nuclear energy technology, the pebble-bed modular nuclear reactor, which it hopes would lead to significant exports.

SA has a well-developed support industry in terms of energy equipment supply, design, research, consulting, maintenance services and management contracting. For example, the country is a world leader in the development of pre-payment technologies. A growing number of SA service companies are beginning to export their services abroad, with some recently winning management contracts for utilities in Lesotho and Tanzania. Interestingly, Rand Merchant Bank (RMB) owns and operates MCo, the electricity market operator in New Zealand, which is also involved in electricity trading in Australia and elsewhere.

SA's exports of energy goods, particularly coal, are significant.

But insufficient information is available on the export of energy services.

Sasol and Eskom are best positioned to grow exports in energy services.

Sasol has entered into international joint ventures with its synfuels technology.

Eskom subsidiary Eskom Enterprises has been established to grow Eskom's business in energy and energy-related services, mainly abroad.

Eskom is also expanding its involvement across Africa. It aims to invest about R1.5bn in electricity generation and transmission systems over the next 5 years and R1.2bn in gas transport, reticulation and trading.

SA group Energy Africa has exploration interests in 10 countries in SSA and North Africa, with production in Congo, Gabon and the UK.

⁴ New Partnership for Africa's Development

SA group Energy Africa is involved in oil and gas exploration and production in foreign countries. Energy Africa's strategy for growth is to add to its reserves and production of oil and gas through exploration, development and acquisition. The Group applies its technical knowledge and commercial experience to expand its interests into Africa and beyond. Energy Africa's shares are listed on the Johannesburg and Luxembourg Stock Exchanges, with Engen holding 57.5% of the shares. The Group has exploration interests in 10 countries in sub-Saharan Africa (SSA) and North Africa and has production in Congo, Gabon, SA and the UK.

Although SA energy service companies have ambitious plans, they face numerous difficulties, mainly in terms of market access and national treatment with respect to establishing a commercial presence, and sometimes in terms of cross-border supply and the movement of natural persons. Further difficulties are experienced through the absence of transparent and predictable regulatory systems in many African countries and elsewhere in emerging markets.

As SA's electricity market is liberalised and Eskom gives up local market share, it will be interested in growing a commercial presence abroad, with an interest in asset swaps already being expressed. Eskom is the seventh largest utility in the world and could establish itself in emerging markets as well as in electricity markets of the north. It may well make sense to link the progressive liberalisation of SA's energy market to widened access to those of its trading partners.

SA's potential interests in energy services exports is summarised in Table 1 below. (For a more detailed list of existing and potential projects, see the Appendix.)

Another way of constructing the trade liberalisation requests listed in Table 1 would be to make them technology or energy sub-sector neutral; that is, a request for removal of limitations should apply to all energy industries, unless explicitly excluded.

In addition, SA could make horizontal requests. This makes sense in terms of restrictions in Mode 4 – movement of natural persons. It is also logical to make an additional horizontal request regarding the need for transparency in regulatory frameworks, including clear legal procedures for the application and issuing of licences. It may further be strategic to cluster requests, for example, the energy request might be clustered with requests in engineering and financial services (energy trading hedges, etc.).

SA energy services companies face numerous difficulties in terms of market access, national treatment and the absence of transparent regulatory systems in many African countries.

As SA's electricity market is liberalised and Eskom gives up local market share, it will be interested in growing a commercial presence abroad.

Trade liberalisation requests could be made technology neutral or energy sub-sector neutral, so that a request for removal of limitations should apply to all energy industries, unless explicitly excluded.

Table 1: SA's Potential Interests in Energy Services Exports

Energy service category	Examples of SA companies	Potential projects	Mode of supply	Possible request
Exploration and development	Energy Africa PetroSA	10 African countries Elsewhere?	1 & 3	Removal of limitations on market access and national treatment in exploration, drilling and development services in the petroleum sector
Networks, transmission and distribution	Eskom, Sasol, Engen and others	Nearly all African countries Elsewhere?	1 & 3	Removal of limitations on market access and national treatment in services related to transportation, transmission and distribution of electricity, gas and petroleum products
Marketing and supply	Electricity, petroleum, and coal companies. Nufcor, etc. RMB, MCo	Mainly SADC ⁵ , but also other African countries and emerging markets for electricity and petroleum products, and industrialised countries for coal and uranium	1 & 3	Removal of limitations on market access and national treatment in the wholesale, retail, marketing, trading and brokering of energy and fuels
End-use	Electricity and energy management companies	?	1 & 3	Removal of limitations on market access and national treatment in energy audit, energy management, metering and billing
Facilities management	Eskom and Sadelec; Netplan and others	African and other emerging economies	1 & 3	Removal of limitations on market access and national treatment in the management and operation of energy facilities
Other related services, including installation, maintenance and repair	Engineering companies	Mainly African and emerging markets	1 & 3	Removal of limitations on market access and national treatment in engineering, construction and related services

6. SA ENERGY SECTOR REGULATION AND MARKET LIBERALISATION

6.1 Coal

The dominant energy sub-sector in SA – coal – is entirely privately owned and largely unregulated in terms of market access and prices. Trade issues concern mainly the trade of energy goods, and where services are involved they relate mainly to the range of support services for mining, engineering, rail transport and shipping. Some barriers exist in terms of access to the coal export facilities at Richards Bay. A modest coal service industry exists in the form of local distribution, wholesaling and retailing.

Coal – SA's dominant energy sub-sector – is entirely privately owned and largely unregulated in terms of market access and prices.

⁵ Southern African Development Community

6.2 Petroleum

SA's petroleum industry is highly regulated in terms of market access and prices. Upstream, the Minerals and Petroleum Resources Development Act of 2002 provides for the granting of exploration and production rights, and the issuing of technical co-operation and reconnaissance permits. The Petroleum Agency issues such permits and rights on behalf of the Department of Minerals and Energy (DME) Minister. Chapter 6 of the Act prescribes procedures for applying for and the issuing of permits and rights. In broad terms, the legislation is comparable to that which applies in many other countries and it clearly sets out the rights and obligations of the various parties involved. The Act also contains provisions to promote the involvement of historically disadvantaged South Africans (HDSAs).

Up to now, the Petroleum Products Act (No. 120 of 1977) and a number of industry agreements have controlled the downstream industry. Government controls the import of petroleum products, the ex-refinery gate price, and the wholesale and retail margins. The price from the refineries is set at import parity. A new Petroleum Products Amendment Bill has been tabled in Parliament. A licence from the licensing authority is required for any party wishing to conduct business as a wholesaler, own and develop a retail outlet, and conduct the business of a retailer of petroleum products. The advancement of HDSAs is also to be taken into account when licences are issued. The licensing authority is designated by the Minister and is currently the Director: Hydrocarbons in the DME. Draft regulations have been promulgated which specify the procedures to be followed in applying for and issuing licences. Appeals may be made to the Minister. The licences contain certain prohibitions and conditions, including that sales must be in cash (no credit is permitted) and at the government-determined price, and self-service is prohibited. In recent years, all new retail sites have been allocated to HDSAs.

An industry agreement requires oil companies to market Sasol and Mossgas' synfuel output, but Sasol has given notice that it intends cancelling this agreement and wishes to expand its retail operation.

6.3 Gas

A new Gas Act was passed in 2001 which makes provision for the establishment of a Gas Regulator to issue licences for the construction and/or operation of gas transmission, storage or distribution facilities. The Act specifies the licence application and issuing procedures. Licences contain conditions with regard to ring-fencing of gas transmission, storage and distribution businesses; third-party access to pipelines; exclusive geographic areas for distributors; and the setting of tariffs for consumers and distributors where there is inadequate competition. The Act also specifies that for a period of 10 years, the regulator will be bound to a prior agreement between the Minister of Trade and Industry and Sasol on the Mozambique Gas Pipeline. The agreement gives Sasol exclusive transmission rights, exclusive distribution rights in certain geographic areas, it limits third party access, and excludes the regulator from setting or reviewing prices.

Government's decision to rationalise energy regulators means the functions of the gas and electricity regulators will most likely be merged.

6.4 Electricity

6.4.1 Electricity market liberalisation

The SA government has started with a process of managed liberalisation of the electricity market which involves corporatisation of Eskom; vertical and horizontal unbundling of generation, transmission and distribution; the introduction of competition; partial privatisation; and a new regulatory framework. The current structure of industry is shown in Figure 1 below.

SA's petroleum industry is highly regulated in terms of market access and prices.

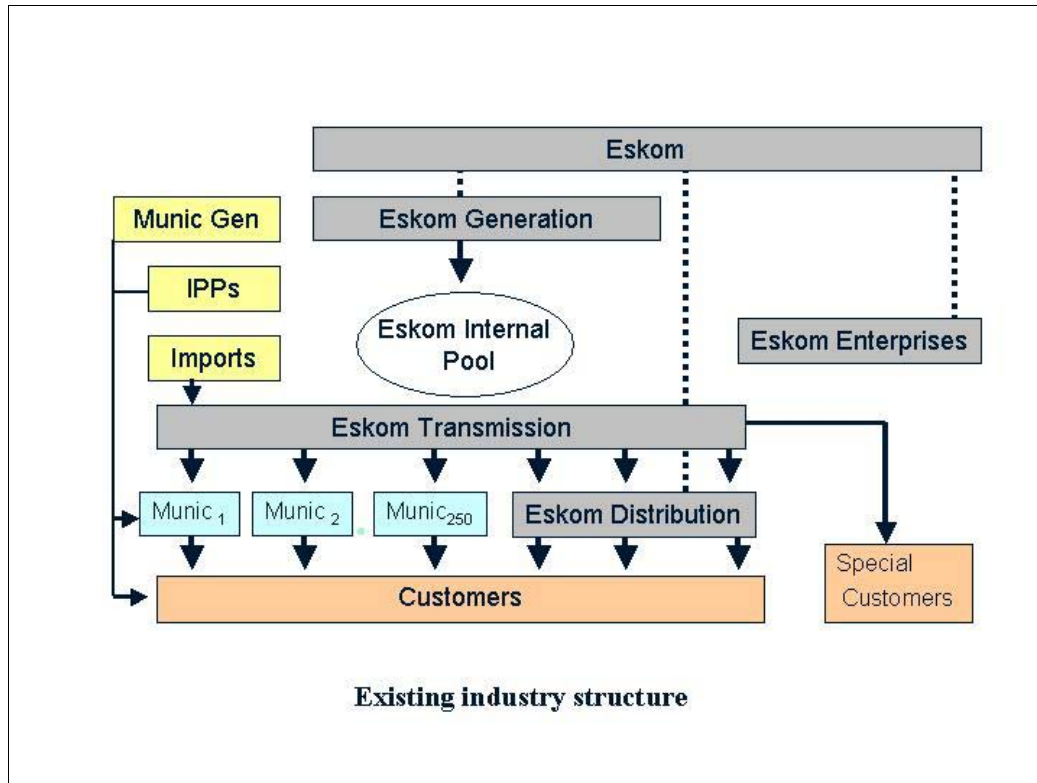
Upstream, the Minerals and Petroleum Resources Development Act (2002) grants exploration and production rights, and promotes HDSA involvement.

Downstream, government controls the import of petroleum products and wholesale and retail margins. In recent years, all licences for retail sites have been allocated to HDSAs.

A new Gas Act was passed in 2001, which makes provision for a Gas Regulator to issue licences for the construction and/or operation of gas transmission, storage or distribution facilities.

Managed liberalisation of the electricity market involves: corporatisation of Eskom; unbundling of generation, transmission and distribution; competition; partial privatisation; and a new regulatory framework.

Figure 1: The Current Structure of the SA Electricity Market



In terms of the electricity market reform process:

- Electricity distribution will be taken out of Eskom and combined with local-authority distributors into 6 REDs.
- An ESI restructuring committee has been established.
- Eskom Holdings is to establish subsidiaries for Eskom Generation and Transmission in 2003, and a 10% BEE partner will be introduced.
- A full multi-market is to be established in 2004, and another 20% of Eskom's generation capacity privatised.
- Eskom Transmission could be converted into a state-owned company.

As previously explained, Eskom dominates generation and transmission and half of distribution. Small Independent Power Producers (IPPs) and modest imports are permitted at the margin. These either sell directly to the customer (for example, City Power to Johannesburg) or could in principle sell directly to Eskom. Prices are regulated.

In terms of the reform process, government's response to the problems of poor management, technical capacity, operational efficiencies and financial controls in distribution is to rationalise and create financially viable distribution utilities. Electricity distribution will be taken out of Eskom and combined with local-authority electricity distributors into six Regional Electricity Distributors (REDs). In addition, the Eskom Conversion Bill (2002) consolidates the corporatisation of Eskom and makes the formation of subsidiary companies possible.

The DME, the Department of Public Enterprises (DPE), the National Electricity Regulator (NER) and Eskom have reached broad consensus on the next steps of reform. An Electricity Supply Industry (ESI) restructuring committee, chaired by the DPE, has been established. During the course of 2002, Eskom will ring-fence its generation stations into clusters or portfolios for internal competition. Eskom Transmission will also ring-fence its operations into wires, system operations, market operations and an international trader.

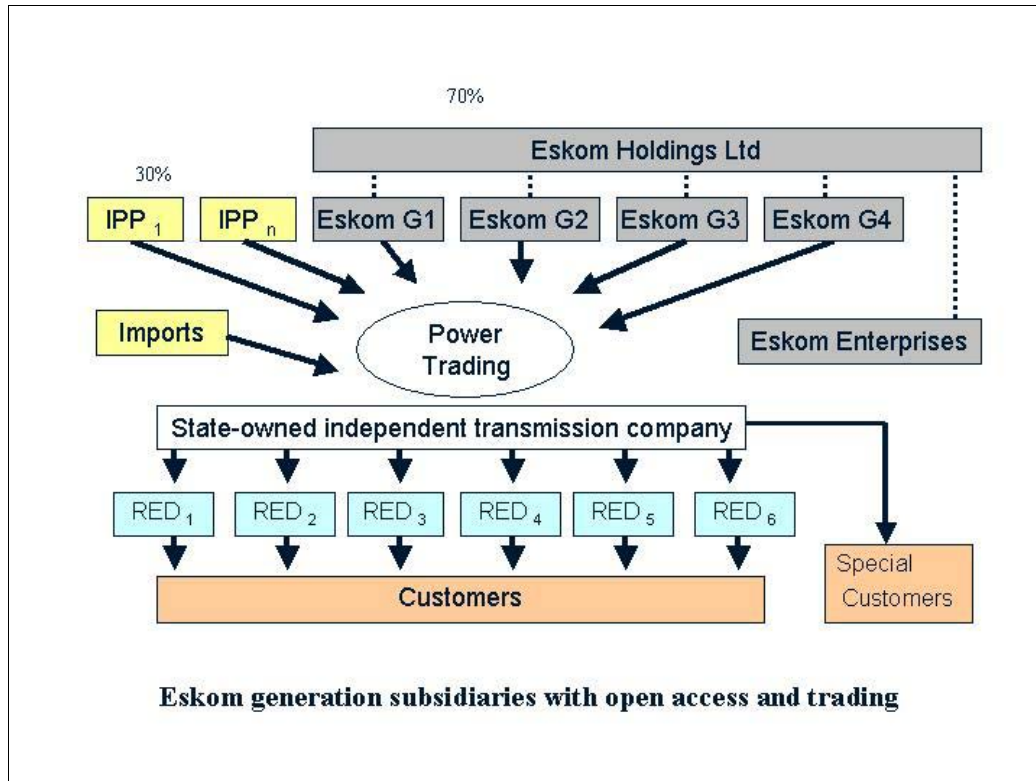
It is envisaged that Eskom Holdings will establish subsidiary companies for Eskom Generation and Eskom Transmission in 2003. Separate generation subsidiaries (Genco's) will also be created, based on the portfolios/clusters of generating plant, while a 10% BEE partner will be introduced. The internal pool will be converted into an independent market operation company (power exchange).

In 2004, it is envisaged that a full multi-market will be established. A further 20% of Eskom's generation capacity will be privatised. RED companies and contestable customers will have the right to purchase electricity through the market. And depending

on the outcome of a study and final acceptance by the DPE and Eskom, the Eskom Transmission Company might be converted into a separate state-owned company.

If Cabinet approves the agreement reached between the DPE, DME, NER and Eskom, the structure of the SA ESI might look as follows by the year 2004:

Figure 2: Potential Future Structure of the SA ESI



In terms of electricity-sector regulation, all electricity generators, transmitters, distributors and sellers have to apply for a licence from the NER, which determines prices and settles disputes.

Municipalities have specific powers, including electricity reticulation.

However the NER's and the municipalities' specific jurisdictions are currently being argued in court.

6.4.2 Regulation of the electricity sector

The Electricity Act (No. 41 of 1987) was amended in 1994 and 1995 to set up the NER. All electricity generators, transmitters, distributors and sellers have to apply for a licence from the NER, which has the power to determine prices and settle disputes, although decisions of the NER may be appealed to the Minister. The NER is also responsible for ensuring compliance with the Quality of Supply Standard (NRS 048) and the Quality of Service Standard (NRS 047). The NER therefore licenses IPPs; the generation, transmission and distribution businesses of Eskom; and municipal electricity utilities. The Constitution and the Municipal Systems Act grant specific powers to municipalities, including the reticulation of electricity. However the respective jurisdictions of the NER and local government are currently being argued in court. A new Electricity Regulatory Bill is being drafted, which will provide a regulatory framework appropriate for a liberalising market.

As the electricity sector is liberalised, the competitive components (in particular generation) will come under the jurisdiction of the Competitions Commission. Section 21 (1) of the Competition Act defines the responsibilities of the Competition Commission as follows:

- (h) Negotiate agreements with any regulatory authority to co-ordinate and harmonise the exercise of jurisdiction over competition matters within the relevant industry or sector, and to ensure the consistent application of this Act.
- (i) Participate in the proceedings of any regulatory authority.

(j) Advise, and receive advice from, any regulatory authority.

(k) Over time, review legislation and public regulations, and report to the Minister concerning any provision that permits uncompetitive behaviour.

On the other hand, the Electricity Act of 1987 (amended in 1994) gives the NER statutory responsibility to regulate market access to electricity suppliers (through licensing) and approve all electricity prices. A formal agreement between the Competition Commission and the NER has been negotiated, but further work is necessary to develop a common understanding between the two regulatory bodies and government on the scope and pace of restructuring to achieve competition in the electricity industry and the respective roles in overseeing competition.

The extent to which market liberalisation and regulations affect trade in energy services in modes 1, 2 and 3 is summarised in Table 2 below:

It should be noted that the Minerals and Petroleum Resources Bill, the Petroleum Products Amendment Act, the Gas Act and the draft Electricity Regulation Bill require consideration to be given to the advancement of HDSAs when issuing licences.

In terms of liberalisation, the competitive components of the electricity sector (specifically generation) will fall under the Competition Commission's jurisdiction.

On the other hand, the Electricity Act gives the NER statutory responsibility to regulate market access to electricity suppliers and approve electricity prices.

An agreement has been reached between the two parties, but further work is needed to develop a common understanding on the scope of restructuring and their respective roles in overseeing competition.

Table 2: The Effect of Market Liberalisation and Regulations on Trade in Energy Services

Energy Sector	Energy Service	Regulatory framework	Market Access	National Treatment
Coal	All		1. None 2. None 3. None	1. None 2. None 3. None
Oil and gas	Exploration and development	Minerals and Petroleum Resources Development Act Licence required	1. None 2. None 3. None	1. None 2. None 3. None
Oil products	Transport	Draft Petroleum Pipelines Bill Licence required	1. Licence for import only if local refineries cannot meet demand 2. None 3. None	1. None 2. None 3. None
Oil products	Marketing and supply	Petroleum Product Amendment Act Licence required	1. Licence only if local refineries cannot meet demand 2. None 3. Number of retailers controlled. New licences to HDSA	1. None 2. None 3. None
Oil products	Storage	Petroleum Product Amendment Act Licence required	1. None 2. None 3. None	1. None 2. None 3. None
Natural Gas	Transmission and distribution Storage Marketing and supply	Gas Act Licence required	1. & 3. Sasol 10-year exclusivity on Mozambique pipeline and distribution in certain areas 2. None	1. None 2. None 3. None
Electricity	Transmission and Distribution	Electricity Act Licence required Municipal Systems Act Constitution?	1. & 3. Eskom has Transmission monopoly. Distribution is shared between Eskom and local government	1. None 2. None 3. None
Electricity	Supply	Not defined in current Electricity Act Required in draft new Regulatory Bill licence	1. & 3. No wholesale or retail competition	1. None 2. None 3. None
Electricity	End-use		None	None
All	Energy-related services		None	None

7. CONCLUSION

This paper has essentially been a scoping exercise to explore the type of issues that might arise for SA in WTO energy service negotiations. While there are some market access issues in the petroleum sector, the main questions will arise in the electricity sector – the fastest-growing area for exports of SA energy services. It is also the sector that faces the most fundamental market restructuring and liberalisation.

SA might wish to make a number of requests for the removal of limitations on market access and national treatment in services related to electricity transmission and distribution, in marketing and supply, facilities management and other related services that include installation, repair and maintenance. It may also wish to make additional requests in terms of more transparent and justiciable regulatory systems that would not disadvantage SA companies. The immediate potential market is Africa, but it is feasible

for some of SA's energy service companies to make headway in other emerging markets.

In terms of the liberalisation of SA's electricity market, the creation of a power exchange and electricity trading market would offer many opportunities for power producers in the Southern African region to sell into the largest market in Africa. There will also be new openings for a range of energy-related services in the operation of these markets. The SA government has in principle decided to begin the liberalisation process – although no new legislation is in place to give effect to this intent. The government has, for the moment, decided to keep the Transmission and Distribution system in state ownership. Third party-access to the Transmission system is already guaranteed. If the distribution and supply monopolies that will be held by the six proposed RED companies are challenged, government could argue that they are necessary to fulfil public-service obligations related to expanding access to electricity.

Finally, it is recommended that a comprehensive survey of private energy service providers in SA be undertaken to obtain a more detailed and quantitative understanding of the kinds of barriers they face in foreign countries. Such a study could form the basis of an offensive strategy in the WTO energy service trade negotiations.

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Nepad has developed a priority list of electricity-sector investments, in which Eskom plans to be involved. The tables below list these priority projects.

Table 3: Possible Eskom Involvement in Africa Electricity Sector Investments

Investment Opportunity	Description	Total Cost (US\$m)
Zambia – Tanzania transmission line	330kV ⁶ transmission interconnection	150
Tanzania – Kenya transmission line	330kV transmission interconnection	40
Malawi – Mozambique transmission line	220kV transmission interconnection	30
Zongo-Sanga – rehabilitation of 95MWE ⁷ hydro plant	Hydro power station rehabilitation	25
DRCANSA ⁸ – Western Corridor transmission line	DRC ⁹ , Angola, Namibia, SA transmission line to evacuate power from Inga hydro	1,700
New HV transmission line between Kolwezi (DRC) and Luano (Zambia)	High voltage transmission line	40
Upgrading of Inga-Kolwezi 500kV DC ¹⁰ line	Upgrade of 500kV direct current line	300
Kafue Lower – 600MWE greenfield hydro plant in Zambia	Building of new hydro power station	600
Itezhi-Tezhi – 120MWE greenfield plant in Zambia	Building of new hydro power station	150
Mepanda Uncua – 1,300MWE greenfield hydro plant in Mozambique	Building of new hydro power station downstream of Cahora-Bassa on the Zambezi river	1,000

Table 4: Possible Eskom Involvement in Africa Electricity Sector Investments

Investment Opportunity	Description	Total Cost (US\$m)
Libreville – Franceville corridor development (includes market building investments)	Development of gas field for power generation, providing a transmission line between Libreville and Franceville, including a telecoms fibre-optic backbone and electrification of a railway line	150
Corridor Sands	200km of 400kV transmission line plus one 400/110/33kV substation (320MW)	50
Uganda Electricity Generation Company	Concession to manage and operate the 180MW and the 80MW hydro stations	7.2
Uganda Electricity Distribution Company	Distribution company concession	80-90
GAPCO ¹¹ co-generation project	Development of 120MW co-generation IPP to supply electricity and process steam to a new alumina refinery to be constructed	150
Alscon power plant	Acquisition and operation of an existing dedicated gas-fired plant supplying power to an aluminium smelter	Phase I: 100 Phase II: 20 Phase III: 300
DRC fibre-optic network (FON)	FON project with RTA ¹² and SNEL ¹³	151
Nepa telecoms	Use of fibre-optic cable	10-20
Northern Khartoum power project	New 180MW oil fired thermal IPP	180

⁶ Kilovolt

⁷ Megawatts Electric

⁸ The interconnection between Inga (DRC), the three separate systems in Angola and the proposed Aus substation near Windhoek (Namibia).

⁹ Democratic Republic of Congo

¹⁰ Direct Current (Electricity)

¹¹ Egypt's Gulf of Suez Oil Company

¹² Rural Telecommunications Africa

¹³ THE DRC power utility