6.4 Competition in Energy Markets is the Best Approach to Delivering Energy Services

This session opened the debate on deregulation of the liquid fuels industry and the energy sector as a whole. The key question that needed to be answered was whether an open market and competition would deliver best prices for the consumers.

6.4.1 EWP Policy Statement

"Government will encourage competition within energy markets."

6.4.2 Summary of Deliberations

One presentation indicated that there are many schools of thought in this arena. One school of thought is that there is no need for regulation to increase competition in the energy market and that removing regulation does not influence competition for the market. The South African liquid fuels market is oligopolistic and given the current constrained logistical capacity in this industry, it is not conducive to make it a market-driven industry. Given this structure of the oil industry, healthy competition can therefore be much more effectively influenced by a regulation regime.

Another school of thought is completely against competition and it states that competition will increase the prices of energy services and can have a negative impact on the poor and only favours the wealthy. Given the centrality of energy to economic and social development, supply of energy must remain in the hands of the State to provide affordable energy.

Some examples such as those in Norway indicate that competition is not always the best as demonstrated by the Norwegian case where a competitive market introduced in the electricity market initially reduced prices but subsequently led to an increase in the electricity prices.

In Brazil, it has been found that competition works but this required a concerted effort by Government and private players alike. In electricity generation (Hydro),

SOEs, private companies and IPP's participate in a competitive market. Some of the results showed that competition in transmission market made it the cheapest service provider and that there was 20% load reduction through competition. Given the Brazilian case it shows that competition works, but privatization is not a prerequisite.

Discussions on competition should take in to account new policies such as those that have been put in place, for example the Petroleum Pipeline Act which promotes competition and the fact that NERSA has issued a petroleum Pipeline Construction license to private sector. The liquid fuels industry is a competitive market.

The following arguments were laid against deregulation taking in to account the few developments expected in the deregulated environment:

- intensified competition and sporadic price wars in the major urban areas;
- regional wholesale price differentials reflecting variations in transport costs;
- volume concentration of retail sales through larger outlets;
- diversified use of outlet sites with expanded accessory and grocery stores;
- relocation of outlets from restricted inner city sites to sites with lower land values;
- wholesaler acquisition and franchising of strategic sites, to secure market shares; and
- continued niche markets for smaller suburban and rural outlets.

6.4.3 Key Outcomes

The key outcomes from the session can be summed up as follows.

- In the pursuit of competition, social issues such as alleviation of poverty should not be ignored. When deregulating, it is of outmost importance to take into account the social configuration of a country for instance in South

Africa, it is important to take into consideration the level of economic development and income inequality.

- It should be acknowledged that competition will not solve the issue of prices (i.e. necessarily drive prices lower). Competition is not always an appropriate approach to energy service delivery since it also has the potential to increase prices to unbearable levels.
- Lack of competition is not always due to a lack of regulation but can also be a result of market monopoly. Good regulations can create competitive markets.
- Generation, transmission and distribution should remain in the hands of the State.
- Competition does not help other development agendas and can create monopolies especially in the rural areas.
- Competition is not an end in itself but merely a means to an end.
- Competition is not only about private sector but competition can take place amongst government institutions.

6.5 The Role of the State in the Energy Sector - Should the State Participate in the Energy Sector?

The EWP envisages limited State participation in the energy sector but the question that needed to be addressed was whether in the light of global focus on energy security, this approach is still relevant. The session included discussions on infrastructure development and energy minerals production.

6.5.1 EWP Policy Statement

There is no one official policy statement in the EWP regarding this matter. The closest description of the role of State is the sector is a quotation in the EWP that reads thus:

"The State should establish a clear difference between its primary role as a policy making and regulatory entity of the energy sector, and its secondary role as a facilitator in the supply of energy services."

6.5.2 Summary of Deliberations

One of the views which were presented with regard to the role that State should play in the energy sector was that there was a general agreement around the involvement of the State in a developing country like South Africa, in an effort to eradicate poverty and ensure security of supply. It was noted, however that it is essential to assess the extent of State involvement and one of the areas of involvement is the assistance in the financing of infrastructure development especially where the market could not deliver.

It was pointed out that the country was still plagued by areas which do not have grid electrification and that implied that there was no development in such areas. This requires regional economic integration, infrastructure development and provision of regulatory framework, all of which are the responsibility of the State.

It was also mentioned that State was also key in providing general public good items especially those that are critical to the national socio-economic well being, and these include:

- infrastructure development, especially nationally strategic infrastructure;
- driving policy imperatives such as renewable energy targets, nuclear, nuclear, black economic empowerment within the sector, and so forth;
- facilitating and creating a regulatory framework and ensuring consistent application of regulation; and
- leveraging the private sector as far as possible to ensure that it was not unduly burdened with the high cost of infrastructure replacement and new capacity.

One other factor to be considered is that, on the electricity side, markets do not work in an environment characterised by diminished resources and therefore the role of the State should be to monitor and ensure security of supply.

Investment in infrastructure development is linked to GDP growth and therefore the State must ensure correct infrastructure investment at the correct time.

Further areas of strict guidance by the State include facilitating the creation and adherence to regulations and standards defined for the sector. Private sector is more attuned to be involved in operations of their production facilities and marketing of their products and services.

It was also indicated that local production and increasing the proportion of indigenous raw material is desirable. The State should therefore expand its role beyond policy making and regulation to also provide support for private players in meeting national goals. This can be done through participation in energy research and developing of renewable energy sector, legislating energy efficiency, and stimulate renewable energy industry.

The State also needs to ensure that its state owned entities are strengthened especially the National Oil Company (NOC) with regard to management of the petroleum sector. This would be critical in assisting the NOC to transform from only monetising petroleum reserves into becoming agents of sustainable economic development in their own nations as well as being instruments in an emerging new world order in helping their shareholders meet new strategic imperatives.

The above is critical as the new strategic imperatives of the State demand multilateral coordination and cooperation, new alliances and constructive participation in new multilateral institutions.

6.6 Ensuring Security of Supply

This session focused on a number of security of supply policy positions including reserve margin policy, local production with indigenous or imported material and import and export policies. The role of synfuels in security of supply, promotion of

local uranium industry, strategic stocks policy, promotion of coastal (crude refining) versus inland refining were also issues that needed to be explored.

6.6.1 EWP Policy Statement

"Given increased opportunities for energy trade, particularly within the Southern African region, government will pursue energy security by encouraging a diversity of both supply sources and primary energy carriers."

6.6.2 Position Paper

The Energy White Paper commits the government to ensure the security of supply of oil and petroleum products through the holding of strategic stocks. *"Government will determine the country's strategic oil requirements and will ensure that supply security is maintained"*. Cabinet approved a strategic Stocks Policy for the Republic of South Africa in November 1999. This policy stipulates that South Africa shall hold the equivalent of 90 days of net imports thus aligning the country's position to the International Energy Agency (IEA) member countries that have to keep 90 days of equivalent oil consumption.

While the Policy statement makes reference of 90 days stock holding, the Industry and Government combined have typically held less stock, both in finished products and crude oil. While the Basic Fuel Price (BFP) formula in 2003 made provision for Industry to be carrying the equivalent of 25 days stock of finished products for consumers, the Industry has not been abiding to this practice. No recent investments in tankage have been made by the Industry. A varying level of crude oil has been held by Government at Saldhana Bay as strategic stocks.

DME has conducted a study to review the strategic stocks policy. The study focused on the level of strategic stocks, the form, management, financing and trigger and release mechanisms of such stocks.

At present, South Africa through the National Oil Company is holding 10.3 million barrels of crude only, which is equivalent to 20 days of stocks. This is in contrast to the policy requirement of 90 days of net imports. Oil companies have an

obligation to hold strategic stocks but have not been fulfilling it to the full extent. Furthermore, although oil companies are compensated for holding 25 days of finished product stocks, no regulations are in place to contractually force them to hold the stocks.

The study conducted demonstrated the need to ensure Industry compliance to strategic stock holding levels through regulations.

6.6.3 Summary of Deliberations

The policy environment sets the tone for how the trade-off between security of supply and costs has to be done. Energy consumption is driven by demand and not the other way around. Energy Policy, Foreign Policy as well as Trade and Industrial Policy are traded off in support of economic growth. All these have to be complementary to support economic growth.

Energy policy is about strategically managing the orderly development of the energy economy to ensure that energy is accessible and affordable and that the supply thereof is sustainable in order to support economic growth whilst addressing climate change imperatives.

The following were identified as some of the key challenges with regard to energy management within South Africa

- There was a lack of efficient integrated energy planning.
- There was a lack of local, regional and global contextualisation of the supply challenges in terms of a strategic stocks policy, import-export policies and integrated supply and infrastructure investments.
- There needed to be effective demand side management that could sustain economic growth and poverty reduction.

Key challenges within the liquid fuels as well as electricity supply chain were mainly related to the production and logistics.

Within the liquid fuels supply chain production challenges include access to sustainable supplies of crude oil and refined product; insufficient refining

capacity; and the lack of a workable regulatory framework. Logistics challenges involve the sustainable distribution of refined product to the market.

Within the electricity supply chain, production challenges include ensuring sustainable supplies of affordable fuel; provision of sufficient surplus generation capacity and reserve margin as well as a workable regulatory framework. Logistics challenges include provision of an efficient transmission grid as well as an efficient local distribution grid.

In a sense security of supply could be summed up as an infrastructural issue.

Other views highlighted that there was a need for:

- diversification of fuel requirements for electricity generation;
- standards for electricity security of supply;
- adequate delivery mechanisms in the transmission and distribution of electricity;

It was also pointed out that there should be systematic interactions between various energy carriers and energy planning issues should take into consideration the availability of skills, demand profiling and forecasting as well as the issue of reserve margin.

Another view which was raised was that the import bill and its impact on balance of payments encourages dependency on own resources. Some form of dependency is built in the inflexibility of refinery feedstock diet (e.g. refineries designed according to imported grades of crude). There was also a strong view that the global environment had raised the need for self-sufficiency.

Consumers of energy have minimum requirements for security of supply. Major consumers of electricity stated the following as important to their energy;

- Competitive pricing, which would enable them to compete in international Markets
- Excellent quality of supply, which would take cognisance of safety considerations as well as the cost of unserved energy

Other views which were expressed are summarised below.

It was also pointed out that investments in the sector had been historically hampered and therefore risking security of supply. Ensuring security of supply in South Africa is expensive due to high capital considerations such as coal, nuclear and also historically low prices to attract private investment.

Reserve margin is an important factor which requires a balance between costs and reliability. NERSA's NIRP3 proposed a reserve margin of 19% (1 day in ten years) and this should be implemented.

Harmonisation of current plans is also necessary. A combination of NIRP and ISEP is also supported. Human capacity development should be part of this cooperation.

In considering energy security, the idea of the supplier of last resort needs to be considered. Additionally, a possible role for the State and the responsibilities for its various institutions should be clearly defined.

6.7 Energy Import and Export Policy: Global and Regional Cooperation in Energy Supply and Demand

The objective was to address Eskom's reserve margin. Discussions were invited to assess if this is it good enough and whether the intervention from the Government was required. Further considerations were to be given to a possible special dispensation for SADC countries and if South Africa should treat them the same as the rest of the world.

6.7.1 Energy White Paper Policy Statement

There is no clear policy statement on this matter but the following is the closest.

"Given increased opportunities for energy trade, particularly within the Southern African region, government will pursue energy security by encouraging a diversity of both supply sources and primary energy carriers."

6.7.2 Summary of Deliberations

Discussions indicated that the White Paper on Energy Policy was not specific on what should be done regarding electricity imports and exports. However it was pointed out that Eskom had a self-imposed export limit of 15% or 6000 MW. It is suggested that electricity imports be based on an operating limit whose value is dependent on the country's reserve margin. If South Africa were to import, the source should be a risk adjusted supply from one of the three corridors[1]. In doing this, the risk of each country of origin must be totally evaluated and the final choice of the import source be based on this risk profile. Some of the factors that contribute to the risk profile should include the primary energy source, cost of productions and prevailing contracts in those nations for access to the primary energy source.

Given the abundance of resources in the SADC region and the recognition of the inextricably linkage of RSA and the region, (CBM reserves in RSA, Botswana and Zimbabwe; Angola's 6 million bpd equivalent coal reserves) the aim towards self-sufficiency in the region could be considered. The level of adequate imports and self sufficiency must be agreed as a policy. This should take into consideration the huge regional potential and also a clear focus on network security and stability of an interconnected region.

Standardisation of operations, maintenance and operating procedures must be enforced, taking carbon footprint into account. As far as possible, existing institutions such as the African Petroleum Producers' Association (APPA) and the South African Development Community (SADC) must be used to carry all these forward. APPA tends to promote inter-trade among countries and harmonisation of policies that promote regional integration of economies.

Cooperation can not be limited to energy resources, but should be extended to include expertise such as world class operating standards for refineries as well as maintenance programmes. Cooperation in general has however been

[1] The three corridors are namely Eastern, Central and Western Africa , depending on the linkages between the DRC and SADEC

impacted by self-interests among countries which have to be managed in order that this cooperation be successful.

In choosing the import country and to ensure diversity of imports, matters such as performance history of the exporting utility and transmission distance are some of the factors that would need to be taken into account. The avoided cost of supply should also be a key driver in making the decisions.

Cooperation on the crude oil front is also key as countries like Angola produce 2mbbl/d versus 6 billion reserves. Hydrocarbon import and exports should encourage participation of HDSAs and especially focus on access to infrastructure by those entities. Harmonisation, especially with regard to specifications, is therefore important as these should determine where South Africa should import from as well as where we should export to.

The Energy Security Masterplan prescribes usage of 30% of indigenous raw material. The view is that this is too low if Coal Bed Methane, Coal and Mozambican gas are taken into account. The debate is steered at choosing investments in expanding crude oil refineries and investing in SA's competitive CTL technology. Coal reserves applied in CTL will render the country in the same league as the major oil producing countries.

In addition to security of supply, usage of indigenous material is important and whenever possible, imports should be reduced to address the balance of payments. In pursuing exploitation of local resources such as coal however, the environmental outfall such as climate change should be adequately and appropriately addressed.

6.8 Uranium Mining and Beneficiation: A contribution to Energy Security. The Coal Energy Industry Remaining Deregulated – How do we treat Other Minerals?

This session was about security of supply of feedstock for energy carrier production on a sustainable basis, at affordable prices.

6.8.1 EWP Policy Statements

"The coal energy industry will remain deregulated and its level of performance will be monitored."

"The Department of Minerals and Energy will investigate the implications of separating the governance of nuclear energy issues from that of other issues associated with the use of nuclear materials."

6.8.2 Summary of Deliberations

Some of the main points presented against regulation of the coal industry were that control of exports on coal will work against the current industry boom and therefore attainment of high earnings, good employment and a sustained mining industry, all of which will remain in place as long as exports are required and suitable reserves are available. This also means that the prices fetched are international and therefore market forces dictate the future.

It was however indicated that some regulation can only be considered and directed to protection of specific products which may be essential for local industries. It was argued that this mild form of regulation can also apply to training and skills development in the form of a levy the energy and hydrocarbon industries.

It is accepted that coal can contribute to a national energy mix but a policy on this can be considered once viability of alternative sources have been proven.

The management and regulation of uranium was also discussed. At the core of the issue is that nuclear policy recognizes that nuclear energy is the only economically viable alternative to coal for base-load generation and therefore full beneficiation of South African uranium (9% of world reserves) will ensure security of energy supply.

Other key interventions of the nuclear policy are beneficiation through uranium conversion, enrichment and nuclear fuel fabrication. An important policy principle is also the use of uranium in a sustainable manner which implies reprocessing of used fuel / 95% recycled / MOX fuel.

Some of the suggested ways of implementing the above is through the following:

- Mining and milling: Government must ensure security of supply for national needs
- Conversion: An enabling environment and full capabilities must be developed.
- Enrichment: The intent is to develop national capacity
- Fuel fabrication: The government must lead the design of a strategy to develop nuclear fuel fabrication capabilities.
- Reprocessing: A feasibility study must be carried out to evaluate the creation of a processing facility.

Two main challenges to achieving the above have been identified as technology and capacity. With regard to technology, it was indicated that South Africa did not yet have state of art and economically viable nuclear technology. One option in which this could be addressed was through research and development. This is however time consuming and will require significant funding. Alternatively, this can be acquired through joint work with an international partner.

The issue of capacity was highlighted as an urgent necessity for South Africa. It was mentioned that South Africa would have to institute a special capacity building programme or alternatively an international partnership that can bring capacity into the country. A special promotion on national focus as well as coordination will be key to implementation.

7. Electricity

7.1 Promotion of Access to Basic Energy Services to Poor Households

The discussions of this session were focused on the Integrated National Electrification Programme, universal access, Free Basic Energy (FBE), LPG prices and liquid fuels prices, amongst other factors. The proposed household

energy policy and strategy, safety and standards as well as issues on off-grid solutions, thermal solutions and the role of gas were also discussed.

7.1.1 EWP Policy Statements

The White Paper outlines the need for the provision of basic energy while dividing the energy sector into economic and social areas. In terms of the White Paper, the energy sector can therefore contribute to economic growth and creation of employment. However, the provisions of basic energy services to households remain critical. The Energy White Paper was supported by the development of policies related to the provision of Free Basic Energy to indigent households and the development of strategies to ensure universal access to basic energy.

"Government will promote access to affordable energy services for disadvantaged households, small businesses, small farms and community services"

Government will determine a minimum standard for basic household energy services, against which progress can be monitored over time"

Government commits itself to the promotion of energy efficiency awareness in households"

"New household electrification connections made under the national electrification programme will receive a standard subsidy and there will be no discrimination in subsidy level on the basis of geographic region, supply technology or any other factor"

To a large extend, the objectives of the Energy White Paper were addressed through various policies such as the Free Basic Electricity Policy, Free basic Alternative Energy Policy, Universal Access Plan and the removal of VAT on paraffin. However, not all households benefited in line with the policy position as outlined. It became apparent that there was a need to strengthen and enforce the current policy to ensure effective implementation of the White Paper.

7.1.2 Summary of Deliberations

A number of presentations were made outlining the challenges associated with the provision of basic electricity to indigent households. The initiatives which had been implemented to ensure access to basic energy by indigent households in general were acknowledged.

The DME presented a paper on Energy Access through IeC (Integrated Energy Centre) programme. IeCs are defined as one-stop centres for rendering energy services to rural communities, where the community owns the IeC and is responsible for its operation. At the time, the DME had successfully established six IeCs in various parts of the country. To ensure their sustainability and delivery on their mandates, the DME started auditing of these centres since 2004. In turn, this also encouraged community participation and buy-in, and allowed for the offering of many services as possible in addition to primary energy services. However, due to capacity constraints, the roll-out of IeCs to other rural communities had been slow.

Another presentation outlined that the energy sector policy has shifted from security of supply to access. There was a strong correlation between energy consumption and GDP growth rates and South Africa was at a point where growth in demand outstripping supply and this is mainly driven by high industrial and population growth. As a result, South Africa was experiencing constraints in meeting peak demand and shortfalls of energy supply were expected.

Some other points which were made were that:

- Investments were needed for generation, transmission and distribution.
- There was a need for affordable and sustainable energy in rural areas; however this would lead to an increase in tariffs for those in rural areas due to their geographical location and lack of adequate infrastructure.
- Affordable energy services can contribute towards poverty alleviation and as such support for delivery of access to basic energy services was required.

- The funding of infrastructure will fill the gaps in the delivery of basic energy coursed by market failure. There must be significant investment in energy infrastructure to meet the increasing demand for energy.

Another presentation highlighted that Government could enter into cooperative agreements with non-government community-based entities to achieve objectives of addressing electrification issues in rural areas. Government should create an enabling environment for these cooperatives to establish themselves, but should not take a direct role in their operations. This model had been adopted in other countries, such as the United States of America. Not all its aspects will apply to South Africa, but certain elements of it could certainly be applied. A consideration could be having a cooperative system which is driven by the private sector however the key challenge would be that private companies are normally for profit and therefore it would be difficult for them to operate a non-profit entity.

Other views which were raised were that:

- Even if people get access to infrastructure, affordability is still an issue. More over universal access needs to be expanded to all rural and out of reach areas
- The issue relating to the transfer of ownership with the establishment of REDS needed to be addressed. This was impacting on the ability for some of the municipalities to commit funds for electrification programmes.
- The definition of "poor" needed to be clarified because it appeared that all Government interventions were resulting in the rich extracting more benefits than originally intended for them whilst the opposite is true for poor people.
- A full assessment of all beneficiaries of the electrification programme must be undertaken.

7.1.3 Key Outcomes

The session indicated the need for investment in energy infrastructure for effective access to basic energy especially in rural areas. Government should

enable an environment that allows for the establishment of non-profitable organisation focusing on investment in energy infrastructure. The establishment of IeCs was viewed as an achievement in the provision of basic energy to rural communities. However, there is a need to provide access to basic energy to various rural parts of the country. It was recommended that the department's approach should be to establish IeCs in every:

- Poverty node by 2008,
- District municipality by 2010, and
- Municipality by the end of 2015.

It is apparent that investment in rural infrastructure will be very costly hence government needs to work closely with non-profitable organisations in delivering these services. It was further emphasised that generation of electricity must also be given high priority given the high demand for electricity.

Government should provide an enabling environment for the establishment of other energy centres. The American model of establishing co-ops (NRECA) needs to be investigated in South Africa with a possibility of allowing private sector to participate or partnering with other interested parties. However, it was acknowledged that the private sector is interested in making profit and might not be interested in non-profitable organisations.

It is important to have a clear definition of indigent households. The government introduced Free Basic Electricity but most indigent households are not benefiting from the programme while non indigent households are benefiting.

7.2 EDI Restructuring for Security of Supply

Discussions in this session were guided by the published Cabinet decisions on the topic but with the key focus being on security of electricity supply. This included ensuring reliability of supply in the EDI, its role in economic growth and contribution to sustainable development.

enable an environment that allows for the establishment of non-profitable organisation focusing on investment in energy infrastructure. The establishment of IeCs was viewed as an achievement in the provision of basic energy to rural communities. However, there is a need to provide access to basic energy to various rural parts of the country. It was recommended that the department's approach should be to establish IeCs in every:

- Poverty node by 2008,
- District municipality by 2010, and
- Municipality by the end of 2015.

It is apparent that investment in rural infrastructure will be very costly hence government needs to work closely with non-profitable organisations in delivering these services. It was further emphasised that generation of electricity must also be given high priority given the high demand for electricity.

Government should provide an enabling environment for the establishment of other energy centres. The American model of establishing co-ops (NRECA) needs to be investigated in South Africa with a possibility of allowing private sector to participate or partnering with other interested parties. However, it was acknowledged that the private sector is interested in making profit and might not be interested in non-profitable organisations.

It is important to have a clear definition of indigent households. The government introduced Free Basic Electricity but most indigent households are not benefiting from the programme while non indigent households are benefiting.

7.2 EDI Restructuring for Security of Supply

Discussions in this session were guided by the published Cabinet decisions on the topic but with the key focus being on security of electricity supply. This included ensuring reliability of supply in the EDI, its role in economic growth and contribution to sustainable development.

7.2.1 EWP Policy Statement

"The electricity distribution industry will be consolidated into the maximum number of financially viable independent regional distributors"

"The distributors will be owned by municipalities and ESKOM. Control of all distribution network assets must pass to the companies and the Transformation Team will determine appropriate mechanisms for achieving this"

The Energy White Paper of 1998 and the EDI Restructuring Blueprint of 2001 comprehended that the distribution industry faced a number of challenges in its attempt to provide low cost, equitably priced and quality supply to consumers. The government committed to establishing a transitional process that would lead up to the establishment of independent electricity distributors. To this end EDI Holdings was established to manage the process of restructuring and facilitate the transition from the fragmented industry structure of 188 separate electricity distributors to a new model of six regional distributors (REDs) as per Cabinet decision of 25th October 2006. It was also specified that these entities would be regulated by NERSA.

7.2.2 Summary of Deliberations

In her keynote address to the Energy Summit, the Minister of Minerals and Energy Ms. Buyelwa Sonjica made reference to the audit report which was released by the National Energy Regulator of South Africa (NERSA). The report was based on a study which was conducted on eleven electricity distribution utilities in the country and showed that the operations of the electricity distribution industry were sub-optimal with an infrastructure maintenance backlog of approximately R7 billion at the time. This scenario posed a serious challenge for the restructuring of the electricity industry in the country and called for the acceleration of the EDI restructuring process.

The objectives of the restructuring include ensuring that mechanisms would be in place to ensure an equitable application of tariffs for each consumer segment. The restructuring would further enable the provision of quality supply and service,

in support of economic & social development. It would allow Government to meet its electrification targets in the most cost-effective manner while meeting the legitimate interests of all stakeholders in the industry. It would also enable the electricity distribution industry to operate in a financially sound & efficient manner, for consumers & employees.

The consolidation of the industry would provide economies of scale, financial viability as well as rationalised and competitive tariffs. Some benefits which were anticipated to be achieved through this process included increasing access to electricity, improvements in service and reliability thereof which would in turn contribute to local economic growth.

The following outlines some of the key views which were formally presented during the session.

The DME provided an overview of the recommendations of the Energy White Paper on Energy Policy with respect to the facilitation of national growth and the blueprint for EDI restructuring. Some of the challenges and the Cabinet decision of 25 October 2006 were touched upon. The view was that the distribution industry only looked at their own isolated areas without taking the national issues into consideration.

National Treasury outlined the objectives of the restructuring and the role of the municipalities. This indicated that the constitution gives local government the function of electricity reticulation. It was indicated that for restructuring process to be successful, the key drivers required would be a supporting legislative framework and a clear roadmap with commitments and support.

Further views highlighted some of the key issues and opportunities that would form part and parcel of the restructuring process. Advantages and disadvantages of the different types of restructuring models (single versus multi buyer models) were shown. These indicated that each model depended on the size of the market.

Another view was that some of the reasons that the REDs had realised included that there was inadequate support from the relevant stakeholders and role players; the process had not been managed effectively; and there were problems associated with control and ownership of assets which in turn led to problems with regards to the transfer of assets upon the establishment of the REDS. It was also raised that, as an alternative plan, only those municipalities which did not perform well should be incorporated into the REDs with those that performed well being left to operate on their own (i.e. "Plan B").

Another challenge experienced by EDI, was the implementation of the Cabinet decision to establish six REDs. It was also highlighted that the primary reason behind the failure of the establishment of the first RED (RED 1) was that there was no relevant legislation to support the processes establishment. The reason behind the non-success of this RED was that parties did not fulfilling their obligations for the transfer of assets. It was also indicated that there was a master plan for establishment of REDs which could be achieved if issues were resolved and the end state was clarified.

Other comments from stakeholders are outlined below.

- There is a lack of understanding by the role players as to how these REDs would operate.
- Other challenges include a general lack of experience and benchmarking. The recommendation was made that training needs should be identified and where relevant provided.
- Another view indicated that the question about possible loss of income by the distributors of electricity if they become integrated into the REDs remained unanswered. They also posed a question seeking for clarity on what the DME was doing with regard to stakeholder interests and timeframes regarding the process.
- There was disagreement about whether or not municipalities which performed well should be incorporated in the REDs (i.e. "Plan B"). A view

which opposed this recommendation indicated that the decision rests on local government having the authority and therefore was not an option. They also indicated that the model for the establishment of six REDs could work as shown by the modeling exercise which had been done. It was further indicated that this exercise showed that all REDS, with the exception of one required financial assistance which could be provided by the National Treasury, hence making this model viable.

Following the presentations, discussions and inputs which were made during this session, the conclusion that can be reached is that the following are some of the issues that should be addressed.

Legislation to clarify ownership and align the structure of the industry to the new RED scenario is required. This would entail introduction of the RED Establishment Bill as well as development of an asset transfer framework amongst others.

The role of municipalities post the establishment of REDs as well as the issues of loss of revenue from electricity sales would need to be addressed. This would require agreements to be put in place regarding revenue flows based on performance as well as compensation of assets to be transferred.

Investment would need to be made for infrastructure development as well the maintenance thereof. In this regard, a strategy would need to be developed which would enable the distribution industry to minimise the maintenance backlog and bring infrastructure to an acceptable level of operation.

Support would be required from all the role players. There would need to be a concerted effort on the development and retention of skills. This would require an effective communication strategy to all stakeholders. A skills retention strategy would need to be put in place so that skills are not lost to other industries due to uncertainty and delays in the restructuring process.

7.2.3 Key Outcomes

Implementation of the Cabinet decision to establish the REDS was highlighted as one of the biggest challenges. A major contributor is the lack of legal support for the process. This was highlighted with respect to the constitutional rights of local government which is legally obligated to reticulate electricity. This has led to the lack of legal support for the process for the establishment of the REDS. This in turn led to poor definition of roles for all stakeholders and therefore poor cooperation. Visible progress can only be realised by addressing the above.

7.3 Investment in new Electricity Generation – The Role of Independent Power Producers (IPPs) and Market Structure

This session deliberated on the role of IPPs (including renewable IPPs). Appropriate market structures to deliver on a South African Industrial strategy and ASGISA ambitions were also some of the issues that this session intended to address.

7.3.1 EWP Policy Statement

"Government will encourage competition within the energy markets"

"Where market failures are identified Government will intervene through transparent, regulatory and other carefully defined and time delineated mechanisms, to ensure effective delivery of energy services to consumers"

7.3.2 Summary of Deliberations

In 2003, Cabinet approved private-sector participation in the electricity industry and decided that future power generation capacity would be divided between Eskom (70%) and independent power producers, or IPPs (30%). The DME was mandated with the responsibility of ensuring private-sector participation in power generation through a competitive bidding process that would diversify primary energy sources and be developed within the electricity sector without hindrance.

A power generation investment plan was drawn up to take into account this 30% private-sector participation in power generation. The planning and development

of transmission systems was to be undertaken by the transmission company, subject to the government's policy guidelines.

During 2003, Eskom implemented a revised business model to prepare for capacity requirements and the impending restructuring by splitting its business into regulated and non-regulated divisions. Eskom's core business, its strategic support businesses, and target markets were reviewed.

- The generation division was to continue to be part of Eskom. In 2003, the power stations in the division were paired together to form clusters to prepare the generation sector for flexibility to accommodate different options in a changing electricity supply industry (ESI).
- The Transmission division was to take responsibility for the electricity grid. Worldwide transmission is regarded as a natural monopoly hence it was proposed that in South Africa, an efficient regulatory body be established that would grant all players access to the grid. For example, in an appropriately structured market, customers could buy energy from sources other than Eskom, such as the Southern African Development Community (SADC) electricity pool or IPPs, but still use the same transmission infrastructure to have power delivered to them.

The key objectives that were sought to be achieved with the introduction of IPPs included stimulating economic development and securing supply through diversity. In order to achieve this, an electricity market structure would need to be established. The key components of the study included,

- Electricity market structure
- Methodology for Introduction of IPPs
- Mechanisms for ensuring equity

Some of the planned benefits included increased opportunities to exploit cheaper generation options; the potential to increase the level of supply security; the potential for efficiency improvement as well as the downward pressure of electricity prices.

Government's position was that the security of supply was a national priority which took precedence over all other key elements, including a competitive market. Therefore Cabinet resolved in 2007 that Eskom be designated as the single buyer of power from Independent Power Producers (IPPs) in South Africa. Eskom would be responsible for ensuring that adequate generation capacity would be made available and that 30% of the new power generation capacity would be derived from IPPs. This policy would ensure that the responsibility and accountability for the construction of power generation capacity would be coordinated and provide certainty to the potential independent power producers.

Some of the views expressed regarding the introduction of IPP's indicated that based on recent experience of establishing an IPP that government and the players clarify exactly what the market structure under this model should look like. It was mentioned that the single buyer model, in particular the fact that Eskom would play this role, introduced uncertainty since the rules and protection pertaining to the IPP's were not clear. The view expressed was that the lack of certainty with regards to policy resulted in the reluctance of IPPs to invest.
The session was also a platform for shared best practices which were gained through the adoption of co-operative models used in rural areas in the USA. The potential of leveraging smaller generation opportunities specifically in the remote areas, were shown to offer some real value.

Some support was shown to the concept of IPP's. but there was a general misgiving regarding the single buyer model as stated in the recent Cabinet Decision. It was stressed that it is essential to take into account the support required by poor households. Furthermore, it was stated that there was still a 27% electrification backlog that needed to be addressed and therefore IPP's were seen as playing a positive role in this regard.

Other inputs which were obtained from various comments from the floor are outlined below.

In order to create an enabling environment, it is essential that the market structure be addressed and the rules for providing the desired signal to potential investors as well as the customers at large be defined. The outstanding policy gaps regulating the IPP business need to be finalised in order to create certainty to attract the required investment. Furthermore, clarity was required on what informed the figure of 30% of power to be produced by IPPs. The State should prepare an enabling environment so that there is a balance between demand and supply.

The social impact of the introduction of IPPs was another facet of the topic that came through the discussions. Concerns were raised that representatives of the social structures were not present at the Energy Summit to state their case. Clarity was also sought on whether the introduction of IPPs would have an impact on electricity tariffs. It was also pointed out that all government initiatives, including IPPs, should have national, class and gender considerations. The impact of the OCGT operations on diesel requirements was also raised. The price impact of the importation of diesel, specification and transportation given the high cost to electricity had to be factored in to the affordability of electricity..

7.3.3 Key Outcomes

Following the presentations, discussions and inputs it can be concluded that the following, are some of the issues that should be addressed.

- The single buyer model must be investigated
- The regulation of the current buyer model by NERSA
- A separate white paper on electricity generation should be developed
- The DME should create an enabling policy environment which will encourage IPP's to invest in South Africa and to ensure that the establishment of an effective market be addressed to provide certainty and a more predictable energy perspective

7.4 Cost Reflective Tariff Setting

The purpose of this session was mainly to address the contentious issues pertaining to tariff setting and the approaches connected therewith. Tariff discussions by and large in South Africa are intertwined with municipal surcharges especially in the electricity sector, where municipalities have executive authority over reticulation. The Energy White Paper of 1998 laid principles with regard to the treatment of tariff and therefore the summit needed to examine successes, failures of those principles and as well to offer proposals on how areas that lacked progress could be improved.

7.4.1 Key Policy Position

The Energy White Paper espoused the following principles with respect to tariffs:

- A move towards cost reflective energy prices, including externalities.
- Transparency of subsidies
- Retention of the option of energy taxation
- Usage of prices signals to support optimal investment within the energy sector

7.4.2 Assessment of Policy

The principles of the EWP were thoroughly unpacked for the development of the Electricity Pricing Policy (EPP) which sought to provide an elegant manner of applying the principle within an environment of strong contestation with regard to outcomes upon applying the principles. The EPP is not yet mature enough to enable to measure its effectiveness, however it could said that most of the stakeholders support the principles contained therein and hope to see its full implantation soon. The policy acknowledges the challenges that relate to tariff setting as further effort would be required to make cost reflective within our context.

7.4.3 Summary of Deliberations

A number of presenters highlighted frustration with the lack visible implementation of the proposal contained in the EWP with many suggesting that the failure to restructure distribution is exacerbating the unequal treatment of consumers. Lack of skills in the municipal environment with respect to the subject of tariff design featured prominently. The importance of having a clear policy and regulation framework was highlighted as being critical in ensuring the required uniformity with the energy sector. This lack of this is evident in the electricity sector which has over 1000 tariffs that are mostly not aligned with costs and causation. The idea of surcharges and cross subsidies were welcome but the presenters highlighted that this must happen within a ring fenced environment in order to achieve sustainability.

What became clear from the Summit regarding the subject is that tariff design is by no means a science and emphasis was placed on understanding broader economic impacts. Cost reflective tariffs were seen to send the right economic signals. The following items must be treated adequately in order to ensure successful application of this approach.

- Avoid unnecessary cross subsidies;
- Reduce heavy reliance on taxes;
- Use direct subsidies without reducing tariff/prices;
- Use revenue required and follow regulatory principles and
- Carry demand studies that links prices and quantities from time to time.

7.4.4 Key Outcomes

The session concluded by stressing the following elements which are viewed as pillars of cost reflective tariff setting:

- Accept the complexities and uncertainties within the tariff setting arena
- Strengthen the Regulator and regulatory framework

- All tariff should be set based on revenue requirement to provide an efficient service,
- Allocate common costs fairly
- Use demand studies to determine billing determinants.
- Treasury to regulate surcharges.

7.5 Coordination of Electrification Programme and the Role of Non-Grid Solutions in the Quest for Universal Access

This topic was about understanding the role played by different energy carriers, including that of non-grid solutions, is important in energy recurity. Non-grid solutions should never just be seen as interim measures. Community experiences will be shared in a bid to formulate longer lasting approaches.

7.5.1 EWP Policy Statements

"Government commits itself to implementing reasonable legislative and other me asures, within its available resources, to progressively realise Universal Access Household to electricity".

"Government will establish a National Electrification Fund to provide electrification subsidies."

"Government will subsidise a portion of the capital costs of connections made towards meeting electrification targets"

"The impact of national electrification programme will be evaluated and the electrification policy amended from time to time"

7.5.2 Summary of Deliberations

The DME is mandated to establish a universal access to electricity through appropriate planning, funding and managing the implementation process. This I will be achieved through cooperation and the implementation of the ISRDP, URP, EPWP and IDP.

At the time of the Summit, there was a backlog of 3 416 533 households in the Eastern Cape, Kwa-Zulu Natal and Gauteng have higher backlogs due to a general existence of informal households. These were as a consequence of topographic problems and high cost per connection.

Key challenges were found to be mainly infrastructural and implementation constrained by poor availability of skills at municipalities who are normally licensed to distribute electricity but lack the capacity to deliver the electrification programme.

It was highlighted that appropriately targeted funding will help alleviate the key problems of capacity and backlog.

It also emerged that some of the independent contractors assigned to the programme are not properly registered and hence compromising quality and legality of project delivery.

Completed connections do not readily imply electricity supply to the needy. This dislocation is mainly due to capacity constraints in the transmission system and breakdown of aging network. This ought to be corrected if universal access has to be achieved.

The electrification programme, known in the industry as the Integrated National Electricification Programme (INEP) also contributes substantially towards job creation. At the time of writing, this stood at 5000 jobs per annum

Some municipalities believe that INEP should be executed within the context of competing with other socio-economic programmes such as sanitation, water and health. Prioritisation is therefore key in the overall service provision by the municipalities especially with regard to funding requirements. This requires coordination with other stakeholders like departments of Housing, Education, and Water Affairs.

Some further constraints to delivery encountered by the municipalities include:

- Sparse density of settlements

- High costs of operations and maintenance
- Illegal connections and
- Theft of infrastructure

7.5.3 Key Outcomes

Improvements in the following areas can assist expedite the electrification programme.

- Acceptance of off-grid solutions
- Improvement of institutional arrangements especially between Eskom, NERSA, DME and municipalities and clear definition of roles and responsibilities.
- Proper funding allocations
- Employment of tools such as electrification modelling, planning.

8. Renewable Energy and Energy Efficiency

8.1 Energy Efficiency and Demand Side Management (DSM) to enhance Energy Security

The purpose of the session was to deliberate on Energy Efficiency and Demand Side Management (EEDSM) and their role in enhancing energy security. The energy security framework recognises the need for optimal use of energy carriers both as a climate change mitigation tool as well as a tool to ensure continued and sustainable supply of affordable energy. The framework also recognises the appropriate choice of energy carriers for applications and a greater understanding of different sectoral demand patterns are fundamental in achieving our set targets. Some of the issues addressed included how EEDSM can enhance energy security, required measures, funding, regulatory adjustments and , technology opportunities to be explored or focused upon.

8.1.1 EWP Policy Statement

"Government will facilitate the establishment of energy efficiency norms and standards for commercial buildings".

"Government will facilitate the performance of audits, demonstrations, information dissemination, sectoral analyses and training programmes".

"Government will facilitate the establishment of energy efficiency standards for industrial equipments".

"Government will consider the implementation of an energy efficiency programme to reduce consumption in its installations"

8.1.2 Summary of Deliberations

The opening of the session highlighted that there was a need for South Africa to adopt a holistic approach to energy management and in particular to educate customers with reference to the effective use of the various energy sources.

The following outlines inputs and comments were raised by various stakeholders.

There was a strong view that South Africa, for too long, had relied heavily on grid energy and hence the perception had been created that the most appropriate energy solution was electricity.

With regard to energy policy and strategy, it was pointed out that it is essential that in policy setting, lessons which have been learnt both locally as well as elsewhere in the world be taken into account to ensure appropriate policies for the South African conditions without reinventing the wheel.

With regard to the regulatory environment, there was a view that the energy market required appropriate regulations and the setting of standards which would promote the effective use of the various energy sources. Furthermore, the regulatory regime must facilitate the monitoring, compliance, reporting and measuring of the progress in terms of the implementation of energy efficient initiatives. The need for the setting of technical standards and specifications, as well as a mechanism to implement and control these standards, which should be

applicable to manufacturers of any equipment and goods for the energy market, was also raised.

With respect to focusing on the customer, it was highlighted that there was a clear need for customer education in terms of the selection of the appropriate energy source. It was therefore essential that the energy policies do not discriminate against customers and they take into account particularly the poorest of the poor.

A point was mentioned that unless the efficient use of energy in the broader sense was appropriately promoted, traditional energy usage patterns would continue. It was also pointed out that the efficient use of energy could contribute directly to the improvement of health, resource utilisation, job creation, climate change as well as environmental management.

It was also mentioned that it would be important for Energy Services Companies (ESCO's) to be appropriately established and that adequate funding should be made available and individuals trained to provide effective customer education and support.

Key points which were raised with regard to affordability included that the price of electricity would be under pressure in the future, primarily due to the capital and investment requirements in the short to medium term. Furthermore, the lack of investment in the current assets serving electricity customers, will further contribute to capital requirements to normalise the conditions of these assets.

The view was that if these aspects were not effectively managed, the affordability of electricity as an energy source could come under risk. This further proved the point why it was essential that energy should be promoted in the holistic sense and it might call for the promotion of access to energy rather than access to grid electricity.

One view which was raised with regard to the utilisation of energy was that it is essential that pricing signals be effectively used to influence customer behaviour and holistic energy efficient utilisation. It was pointed out that while Demand

Side Management (DSM) was recognised as an effective option for managing energy utilisation, it was essential that the emphasis should shift towards energy efficiency and the selection of the appropriate energy source for the relevant application.

The transport sector and in particular the public transport sector, was identified as having significant opportunities from an effective energy efficiency management perspective. It was therefore essential that this sector receive specific focus and attention to leverage the energy efficiency potential in the national interest

Another point of view acknowledged that the energy sector played a pivotal role in the economy as well as the upliftment of people. Therefore it was essential that the regulatory regime encourage effective asset management and ensure that current asset owners comply. The energy industry must be restructuring in such a way that it provides open access to all potential customers and that it ensures a sustainable, efficient and reliable industry for all SA.

The effective management of an energy efficiency programme should directly contribute to capital savings with respect to infrastructure upgrading.

Policy and strategy should promote the broader national goals and to this end it is important that empowerment of previously disadvantaged groups must receive priority while the empowerment of women should remain high on the agenda.

Some recommendations were made and these included the following:

- that existing energy policies be reviewed against the current scenarios and inputs from the Energy Summit be utilised where appropriate;
- that the establishment of the energy market and the associated rules be addressed;
- that a consolidated and integrated energy efficiency strategy be developed;
- there should be an increased focus on a holistic approach to energy efficient utilisation and that customers should be educated accordingly; and

- Effective asset and infrastructure management must remain a top priority.

8.1.3 Key Outcomes

From the deliberations during the session, it emerged that there was a clear need for an appropriate policy framework and strategy to address, amongst others:

- Energy Efficiency;
- Demand Side Management (DSM);
- Energy Security and Reliability;
- Mitigating against dumping of inefficient equipment;
- Energy market and associated rules;
- Energy efficiency programmes to complement load management programmes;
- Protection of the poor;
- Contribution by developers towards energy efficiency;
- Contribution by manufacturers and suppliers towards energy efficiency;
- Accreditation of ESCO's; and
- Roll-out of customer education.

8.2 Renewable Energy Framework for South Africa

The role that has to be played by renewable energies in energy security needed to be fully explored, identifying the areas that South Africa should focus on as well as the costs and benefits associated with different approaches. The session aimed to reflect on the status of the renewable energy policy framework, challenges faced, policy perspective and initiatives that are on the pipeline to address identified challenges in South Africa.