BRIEFING NOTES ON TAZAMA OPERATIONS

1.0 BACKGROUND

TAZAMA Pipelines was incorporated in 1968 and is owned by the government of the Republic of Zambia, with two thirds of the share capital and the government of the United Republic of Tanzania which holds one third of the share capital.

The two owner governments formed TAZAMA Pipelines Limited as a private company for the purpose of transporting crude oil or its petroleum products cheaply from the port of Dar-es-salaam into land locked Zambia. The main purpose of forming the company was to ensure that the people of Zambia and their economy did not endure high fuel prices as a consequence of Zambia being land locked. To this effect the two governments negotiated between them a pipeline convention which to this day still regulates on operations of the pipeline including such matters as tax status, way leave easements and ownership, shareholding, market share and many other rights and privileges.

2.0 PROFILE ON COMPANY OPERATIONS

TAZAMA Pipelines Limited owns and operates a Petroleum Crude Oil Pipeline, that runs from Dar-es-salaam in Tanzania to the INDENI Refinery at Ndola in Zambia. The pipeline runs for a distance of 1710 kilometers and comprises 954 kilometers of 8 inch diameter pipelines and 798 kilometers of 12 inch diameter pipelines and has an installed annual transportation capacity of 1.1 million metric tons.

From the port of Dar-es-Salaam the pipeline follows the highway to Zambia and passes through the Mikumi National Park, then up the escarpments of Iringa and Mbeya before crossing into Zambia at Nakonde. In Zambia it continues through the plateaus of Chinsali and Serenje and then onwards through Mkushi before finally reaching the INDENI Refinery in Ndola. Currently the optimum operating capacity is 700,000 metric tons per annum.

The pipeline has been de-rated pending completion of the Rehabilitation programme. The programme was halted in the year 2000 as a result of the withdrawal of financiers, the World Bank.

The company also operates a tank farm facility situated at Kigamboni in Dar-es-salaam comprising six tanks with a holding capacity of 231,000 cubic meters (190,000 metric tons).

Pumping is achieved through seven pumping stations, five of which are in Tanzania and two in Zambia. In order to further explain the situation in the company historical and current trends are given here:

2.1 Historical Trends

For a long time since the company's inception in 1968, the pumping fees paid for services rendered had been kept low in line with the pipeline convention in order to keep petroleum products affordable to the Zambian consumers. As a consequence, the revenues the company received remained too low to fully support the requisite preventive maintenance programs needed to keep the pipeline at internationally acceptable standards of operational condition.

As a result of this, the first pipeline leak occurred hardly five years after pipeline inception (in 1973) and by 1983 over 100 leaks were being recorded and repaired annually.

Other support equipment including crude oil storage tanks, pumps, telecommunications etc. faired equally badly and consequently need arose for a comprehensive rehabilitation program to bring the pipeline to internationally acceptable standards of operation. The rehabilitation program started in 1986 and in view of the huge capital requirement it was carried out in four phases. Although the last phase was not completed due to cancellation of the credit by the World Bank, the program was generally successful as a big part of the infrastructure was renewed.

In the meantime operations had remained smooth until May 1999 when the INDENI Refinery was gutted by fire.

2.2 Current Status

In recent years the company had enjoyed profitability, after resumption of operations at the Refinery and stabilization of arrangements for feedstock supply.

Further, government appointed TAZAMA as their agent in the coordination of crude oil movement from load port to Dar-es-Salaam Port, refining and sale of products to Oil marketing Companies at the Ndola Fuel Terminal. The Agency Fee (though recently reduced from US$15.00 to US$5.00 per MT) has helped a lot in improving the financial situation of the company.

Currently, the National fuel demand is estimated at 1,200,000 metric tons and is growing rapidly as new mines are established in the country. As a consequence, the pipeline throughput is expected to rise to over 1.1 million metric tons per year. Such an increase will impact favourably on the financial standing of the company while taxing the ability of the equipment to cope with such demand.

The pipeline has been de-rated and its optimum capacity capped at 700,000 metric tons per annum. This available capacity is falling behind the National demand and projected export potential. In terms of capacity, last financial year ending 31st December 2015, the pipeline delivered 613,074 metric tons of feedstock to the Refinery and the balance on the demand of 600,000 MT of products was met through imports

The intelligent pigging exercise of the pipeline carried out in 2013 exposed weaknesses in the pipeline. These have all been repaired, and the exercise has greatly reduced the number of leaks along the pipeline.

Meanwhile, a fully rehabilitated pipeline remains the most viable and cost effective means of transporting petroleum feedstock and/or products into Zambia.

In terms of costs, the pipeline charges US$54 per metric ton delivered into Zambia and this is far less compared to over US$150 per metric ton charged by road transporters and US$100 per metric ton charged by rail transportation.

As for road transportation the charge does not include the serious damage to the road network caused by the huge trucks involved in the exercise.

2.3 Current Bottlenecks

As at present, the company is facing the following problems which need to be solved:

2.3.1 Reliability of INDENI Operations

For some time, INDENI Refinery had experienced constant breakdowns which forced TAZAMA to go on long shutdowns as well, though the situation has slightly improved of late.

2.3.2 Long Term Loans

The company has long term loans with the World Bank, the European Bank and the African

Development Bank. The Government has since moved to convert these to equity. What remains is for Cabinet to adopt the recommendations.

2.3.3 Pipeline Vandalism

Tazama has experienced several incidences of vandalism on it infrastructure. All the vandalism on the pipeline has been occurring on Tanzania side. Management has engaged the authorities in Tanzania for assistance to curb the situation. The Government of Tanzania has taken very radical steps to curb this vice and consequently vandalism on the pipeline has completely stopped.

3.0 REHABILITATION PROJECTS

3.1 Main Engines Replacement Project:

The pumping units used to pump crude oil to Zambia are the same ones installed at the company's inception in 1968. They are now too old to continue providing a reliable service coupled with the fact that their spares have become very difficult to find. In view of this, management has embarked on an exercise to replace all the 28 units (4 per station). The project is being phased to tackle one station at a time in view of the high costs involved. (US$5.5 million per station). Two pump stations (Kigamboni and Elphons Pass in Tanzania) has been completed and work on the third station (Chinsali in Zambia) is in progress.

3.2 Pipeline Repairs:

Management is carrying out phased pipeline repairs in order to enhance the integrity of the pipeline as well as improve the capacity.

The intelligent pigging exercise was carried out in 2013 in order to establish the extent of corrosion in the pipeline which has lead to define a scope of work needed to be done on the pipeline to enhance reliability and reduce losses due to leaks. Based on the intelligent pigging results all weak areas which metal losses is above 60% have been sleeved and replaced. These repair works have greatly reduce losses due to leakages and improved our pumping rate from 100m^3/hr to 115m^3/hr i.e 800,00 MT per year.

3.3 Tank Repairs

In order to ensure that there is always enough storage capacity at the Tank Farm, tanks are routinely rehabilitated and maintained. Management recently completed repairs on Tank 4 which had leaks on both roof and bottom plates at a cost of **USD 2,995,515.90.**

3.4 Dar es Salaam Port Facilities

3.4.1 Single Point Mooring

This facility belongs to Tanzania Ports Authority (TPA) and is used for offloading vessels of 60,000 to 120,000MT capacity.

The facility has recently been upgraded and is operating well.

3.4.2 Kurasini Oil Jet

This facility also belongs to Tanzania Ports Authority (TPA) and is operational.

4.0 Management of the Strategic Fuel Depots

Government appointed TAZAMA Pipeline Limited management to take over the management of the Ndola Fuel Terminal with effect from 1st January 2007. This was done and to date operations of the Terminal are going on smoothly. Government has extended this appointment to the management of Lusaka Fuel Depot, Mpika Fuel Depot, Solwezi Fuel Depot and Mongu Fuel Depot.

5.0 Manpower and Training

Currently the company has 392 employees out of whom 181 are Zambians and 211 are Tanzanians. The approved establishment stands at 410. In addition, the company employs 303 staff at the Ndola Fuel Terminal, Lusaka, Mpika, Solwezi and Mongu Fuel Depots bringing the overall manpower strength to 695. The company continues to enjoy cordial industrial relations with the two unions representing the workers in the two countries.

Currently, with slightly improved cash flows management is working out a vigorous training Schedule to train personnel in key departments of the Company in line with the existing Training Policy.

6.0 AREAS OF FURTHER COOPERATION

6.1 New Petroleum Products Pipeline

The consumption of Petroleum products in the Southern part of Tanzania has increased tremendously. The main consumption center of Morogoro, Iringa, Makambako, Songea, Mbeya and Sumbawanga are all supplied by road Tankers. Malawi is also supplied through Mbeya.

A products pipeline with depots at Morogoro, Makambako and Mbeya would greatly reduce the number of road tankers and save the road infrastructure while providing a cheaper and more efficient transportation means of the Petroleum products. This pipeline can also be extended to the existing Mpika depot and Ndola fuel Terminal. All this can be done using the existing Right of Way and the Legal mandate of Tazama.

This will lower the landed cost of petroleum products at these centers.

The new pipeline will supply products, Diesel and Petrol especially, to Southern Tanzania, Malawi, Zambia and Congo. This will make the project technically feasible and financially viable.

6.2 Natural Gas Pipeline

Tanzania has discovered huge deposits of Natural Gas off its coast. Zambia can use this Gas for Power Generation, Fertilizer Production and other industries.

The Tazama proposal is the setting up of a Combined Cycle Gas Fired Power Plant at Chinsali, the provincial headquarters of Muchinga province. With the discoveries of huge reserves of Gas off the coast of Tanzania, supply of Gas is guaranteed.

The Power Generation plant will be supplied with Natural Gas from the Port of Dar es Salaam via a 36 " pipeline. This pipeline will be laid alongside the crude oil pipeline in the existing Tazama wayleave. The Natural Gas pipeline will be within the existing Tazama Legal mandate to transport the gas to main consumption centers between Dar Es Salaam and Ndola.

The length of the Line will be 1100km and maybe branched off at some points to supply other needy centers such as Morogoro, Iringa and Mbeya

Domestic consumption can be encouraged to reduce usage of Charcaol.

This project will generate jobs during construction and during operation. Further jobs will be generated in the offshoot industries such as fertilizer, petrochemical and plastic manufacturing.

Management is in the process of obtaining a unified Government position on the two projects through the Board. As soon as the necessary approvals are obtained, Feasibility Studies will be conducted to ascertain their financial viability.

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