ENERGY REGULATION BOARD

QUALITY CONTROL AND MONITORING GUIDELINES FOR THE ZAMBIAN PETROLEUM FUEL INDUSTRY

SECOND REVISION

2024

ACRONYMS

CoQ	-	Certificates of Quality
ERB	-	Energy Regulation Board
ISO	-	International Organisation for Standardisation
LPG	-	Liquefied Petroleum Gas
NFT	-	Ndola Fuel Terminal
OMC	-	Oil Marketing Company
TPL	-	TAZAMA Pipelines Limited
TPPL	-	TAZAMA Petroleum Products Limited
ZCSA	-	Zambia Compulsory Standards Agency
ZMA	-	Zambia Metrology Agency
ZS	-	Zambian Standard

DEFINTITONS

For the purpose of these guidelines, the following definitions shall apply:

Accredited Laboratory	-	A laboratory accredited to ISO 17025: General Requirements for the Competence of Testing and Calibration Laboratories
Consumer facility:	-	An installation in which the storage facility is for own use.
Depot:	-	Premises also known as marketing installations, on which the capacity for above ground storage of petroleum products is above 200 cubic meters and on which supplies are normally received from a refinery or from other bulk depots by road, rail, sea or pipeline (or by a combination of these) and from which such petroleum products are delivered directly to consumers. Such installation shall be equipped with loading and offloading facilities.
Fuel Marking Program	-	The petroleum marking program established under SI No. 69 of 2017.
Importer:	-	Government or any undertaking licensed by the ERB to procure petroleum fuels from outside Zambia.
Licensee	-	Has the meaning assigned to the word in the Energy Regulation Board Act No. 12 of 2019
Marker	-	A biochemical substance capable of being introduced into a petroleum product in small quantities for the purpose of identification and maintenance of the quality of the petroleum fuel without compromising the quality of the petroleum product
Marking	-	The introduction of a marker into a petroleum product
Marking Company	-	A company contracted by the ERB to mark a petroleum fuel
Off-specification petroleum fuel	-	Petroleum fuel that does not conform with the requirements of the applicable Zambian quality standards
Petroleum Fuels	-	Unleaded petrol), Low Sulphur Gas Oil (diesel), Kerosene, Propane, Butane, Jet A1, Aviation Gasoline (AvGas), Fuel Oil (FO), Liquefied Petroleum Gas (LPG) and blends of unleaded petrol and diesel
Pipeline	-	A system/line of pipes equipped with storage(s), pump(s), and other control devices for moving petroleum products

Retail site	-	An installation licensed to retail petroleum fuels
Retail Site Operator	-	A Licensee or the duly appointed agent of the Licensee authorised to conduct the Licensed activity at the Licensed site.
Road Tank Vehicle	-	A tank truck, tank trailer, or truck-tractor and tank -semi-trailer combination
Rail Tank Wagon	-	A trailer specially constructed for the bulk transport of petroleum fuels by rail, with a tank fixed to the chassis
Transporter	-	Road tank vehicle, pipeline or rail tank wagon operator for the conveyance of petroleum fuels
Driver	-	A person driving a road tank vehicle

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1.0 INTRODUCTION

The second revision of the Quality Control and Monitoring Guidelines for the Zambian Petroleum Fuel Industry was necessitated by the need to address the following:

i) Government policy to convert INDENI Petroleum Refinery to an OMC and Tazama Pipeline from transportation of crude oil to diesel.
ii) Weaknesses of the existing guidelines as identified by the various stakeholders in the supply chain;
iii) Challenges associated with quality assurance in the wake of emerging issues;
iv) Introduction of biofuels blended and additised petroleum fuels;
v) Introduction of the Fuel Marking Program; and
vi) Handling of contaminated and/ or off specification petroleum fuels.

These guidelines shall be reviewed every five years or as and when need arises to address emerging issues in the Zambian Petroleum Fuel Industry.

2.0 COMPOSITION OF THE TECHNICAL COMMITTEE

The guidelines were revised by the Quality Control and Monitoring Technical Committee comprising the following members:

i. Energy Regulation Board - Secretariat;
ii. Biofuels Association of Zambia- Chairperson;
iii. Indeni Energy Company Limited;
iv. Tazama Petroleum Products Limited;
v. Tazama Pipelines Limited;
vi. Ministry of Energy – Department of Petroleum;
vii. Spectra Oil Corporation Limited;
viii. Puma Energy Zambia PLC - Vice Chaiperson;
ix. Alfred H Knight (Zambia) Limited;
x. Zambia Compulsory Standards Agency (ZCSA);
xi. Zambia Bureau of Standards; and
xii. Petroleum Transporters Association of Zambia (PTAZ).

3.0 THE ZAMBIAN PETROLEUM FUEL SUPPLY CHAIN

All petroleum fuels in Zambia are imported either by road, pipeline or rail as finished products and supplied to the Zambian market through a supply chain as illustrated in Appendix 1.

3.1 Imported Petroleum Fuels

Imported petroleum fuels shall be accompanied by Certificate of Quality (CoQs) from the source issued by an accredited Laboratory, the petroleum fuels shall then be certified on receipt from cargo ships. Systems and procedures for different modes of transportation are as outlined below:

3.1.1 Pipeline

Tazama Pipelines Limited (TPL) transports the bulk of the diesel consumed in Zambia. The diesel received via cargo ship at the Kigamboni tank farm in Tanzania shall be certified for compliance to respective Zambian petroleum fuel quality standard and thereafter transported to Zambia via pipeline. The product is received in Zambia at Ndola Fuel Terminal and/or TAZAMA Mpika depot where the fuel in the receiving tank shall be certified for quality compliance.

3.1.2 Road

Road tank vehicles load and transport petroleum fuels from receiving depots in various countries. The petroleum fuels in the bulk distribution depots shall be certified for compliance to respective Zambian petroleum fuel quality standards in the receiving tanks before transportation to Zambia. The petroleum fuels shall be received in Zambia at various Government and OMC depots where upon offloading the fuel in the receiving tanks shall be certified for compliance to respective Zambian petroleum fuel quality standards by accredited laboratories. The petroleum fuel shall thereafter be distributed to end users.

3.1.3 Rail

Rail tank wagons shall load and transport petroleum fuels from receiving depots in various countries. The petroleum in the bulk distribution depots fuels shall be certified for compliance to respective Zambian petroleum fuel quality standards before transportation to Zambia. The petroleum fuels shall be received in Zambia at various Government and OMC depots with wagon facilities where upon offloading**,** the fuel in the receiving tanks shall be certified for conformance to respective Zambian petroleum fuel quality standards by accredited laboratories.

3.2 Handling of Imported Petroleum Fuels

Imported petroleum fuels shall be dispatched from the source (overseas) with batch CoQs. The petroleum fuels shall be certified for compliance to respective Zambian petroleum fuel quality standards in the receiving tanks prior to transportation to Zambia. The CoQ of the receiving tanks (at the load port) from which a consignment is uplifted receiving tanks certification CoQ shall be presented to the Zambia Compulsory Standards Agency (ZCSA) inspectors at the point of entry for preliminary quality checks. Thereafter, quality checks of varying levels of detail including but not limited to density, presence of water, temperature and visual appearance shall be conducted on the product prior to offloading at the final destination for rail and road transportation.

Petroleum fuels shall be received in Zambia at various Government and OMC depots where upon offloading, the fuel in the receiving tanks shall be certified for quality compliance to respective Zambian petroleum fuel quality standards by accredited laboratories.

3.3 Fuel Marking Program

Following the promulgation of Statutory Instrument No.69 of 2017 - The Energy Regulation (Fuel Marking and Monitoring) Regulations, the ERB implemented a Fuel Marking program in 2018. Fuel marking entails the introduction of a marker into all fuel legitimately imported into the country destined for local consumption. The objectives of the program include the prevention of petroleum fuel adulteration and contamination, the detection of dumping and smuggling of petroleum fuels and to enhance petroleum fuel quality monitoring.

The marking of unleaded petrol, diesel and illuminating kerosene shall be undertaken as follows:

3.3.1 Government owned depots – all imported petroleum fuels received via pipeline, road or rail shall be offloaded into storage after the requisite petroleum fuels quality checks outlined in section 3.2 have been undertaken by the receiving depot. Thereafter, all petroleum fuels uplifted by road or rail shall be marked with the appropriate marker prior to dispatch from the depot. Each road or rail tanker marked shall be issued with a Certificate of Marking as prescribed in S I 69 of 2017.

3.3.2 OMC depots – all imported petroleum fuels received via road of rail shall be sampled and the requisite petroleum fuels quality checks outlined in section 3.2 shall be undertaken by the Fuel Marking company. Upon ascertaining the indicative quality of the fuel, the respective road or rail tanker shall be marked with the appropriate marker prior to offloading into receiving tank. Each road or rail tanker marked shall be issued with a Certificate of Marking as prescribed in S I 69 of 2017.

3.4 Systems and procedures at different points of handling finished petroleum fuels

3.4.1 Certification of petroleum fuels received through the pipeline

Diesel is received at the NFT and Mpika depot for distribution to the market. Upon receipt of each batch, the receiving tank shall be allowed to settle before a sample is taken and sent to an accredited Laboratory for re-certification. The Certificates of Quality (CoQs) for the product shall be filed at the respective depot and shall be availed to ERB, ZCSA and OMCs on loading. Loaded road tank vehicles and rail tank wagons shall be sealed and dispatched to OMC depots, retail sites and consumer facilities.

3.4.2 Certification of petroleum fuels received via rail and road

Petroleum fuels are received at various Government depots for storage and distribution to the market. Upon receipt of each batch, the receiving tank shall be allowed to settle before a sample is taken and sent to an accredited Laboratory for re-certification. The Certificates of Quality CoQs for the product shall be filed at the respective depot and shall be availed to ERB, ZCSA and OMCs on loading. Loaded road tank vehicles and rail wagons shall be sealed and dispatched to OMC depots, retail sites and consumer facilities.

3.4.3 *Re-certification at OMC Depots*

Depots operated by OMCs receive product from government owned bulk storage facilities and through imports. Road tank vehicles and rail wagons carrying imported petroleum products shall arrive with batch CoQs from the source. In the event that petroleum fuels are mixed from different source and/ or batches, the 'mixed' petroleum fuels shall be subjected to re-certification. Loaded road tank vehicles and rail tank wagons shall be sealed and dispatched to OMC depots, retail sites and consumer facilities.

3.4.4 Receipt and handling of Product at Consumer and retail Sites

On receipt of petroleum fuels, the consumer facility/retail site operator shall ensure that all seals are not tampered with. The seals shall thereafter be broken and ullage marks inspected for conformance with the tanker assize certificate. The consumer facility and/ or retail site operator shall conduct quality checks prior to offloading of petroleum products. Quality checks include temperature, density, visual appearance and presence of water.

4.0 BIOFUELS AND BLENDED FUELS

In 2008, the Zambian Government revised its National Energy Policy to include biofuels in the energy mix. This was actualized through Statutory Instrument (SI) 42 of 2008 which include biofuels as a source of energy.

Further, in 2023 Cabinet approved that Oil Marketing Companies (OMCs) with the capacity to blend denatured anhydrous ethanol (99.9% pure ethanol) with unleaded petrol be permitted to undertake a six (6) months pilot ethanol blending programme and consequently integrate blended fuels into the Zambian market.

4.1 **Denatured anhydrous ethanol**

The sections below guide the use of denatured anhydrous ethanol in blended unleaded petrol.

4.1.1 Prior to blending, the fuel grade ethanol shall be denatured and certified by an accredited laboratory against the requirements of ZS 706: Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel. A copy of the certificate shall be submitted to the ERB;

4.1.2 A corrosion Inhibitor shall be added to the fuel grade ethanol prior to blending with unleaded petrol;

4.1.3 A licensee shall comply with the blending procedure of unleaded petrol with denatured anhydrous ethanol as stipulated in ZS 869: Ethanol fuel blends for automotive Spark Ignition Engines-Specifications;

4.1.4 Prior to commencing the storage and dispensing of ethanol blended petrol, a selected tank shall be converted from storage of unleaded petrol to the blended fuel and shall be thoroughly flushed and cleaned in line with the requirements of ZS 869;

4.1.5 The storage tank and dispenser for ethanol blended petrol shall be appropriately labelled to distinguish it from unleaded petrol in line with the requirements of ZS 869;

4.1.6 The blended petrol shall be certified by accredited laboratory to meet the requirements of ZS 868 Ethanol Fuel Blends Quality Standard For Automotive Spark Ignition Engines – Specification. A copy of the certificate shall be submitted to the ERB; and

4.1.7 Appropriate water finding paste shall be used for checking water in the tank.

4.2 **Automotive Biodiesel**

The sections below guide the use of automotive biodiesel in blended diesel.

4.2.1 Prior to blending, the automotive biodiesel shall be certified by an accredited laboratory against the requirements of ZS 702: Automotive Biodiesel Specifications. A copy of the certificate shall be submitted to the ERB;

4.2.2 A licensee shall comply with the blending procedure of biodiesel with diesel as stipulated in ZS 869;

4.2.3 Prior to commencing the storage and dispensing of blended diesel, a selected tank shall be converted from storage of diesel to the blended fuel and shall be thoroughly flushed and cleaned in line with the requirements of ZS 869;

4.2.4 The storage tank and dispenser for blended diesel shall be appropriately labelled to distinguish it from diesel in line with the requirements of ZS 869;

4.2.5 The blended diesel shall be certified by an accredited laboratory to meet the requirements of ZS 867: Biodiesel fuel blends for automotive compression ignition engines-specification. A copy of the certificate shall be submitted to the ERB;

5.0 CRITICAL STAGES IN THE SUPPLY CHAIN FOR QUALITY CONTROL AND MONITORING

Several stages in the handling of petroleum fuels are critical when it comes to ensuring that the quality of petroleum fuels reaching the consumer conforms to respective Zambian standards. These are as outlined in the subsequent subsections:

5.1 Critical Stages of diesel handling through the pipeline

The following stages are identified as being critical during diesel handling:

i) Loading of diesel at loading port;
ii) Discharge of diesel at discharge port (Dar-es-Salaam); and
iii) Receipt of diesel at NFT and Mpika depot

DIESEL HANDLING STAGE	NECCESARY QUALITY CONTROL MEASURE	RESPONSIBLE ENTITY
Diesel loading port	Certification of product by independent inspector	Exporter
Discharge port (Dar-es-salaam)	Quality checks by an independent inspector	Importer
Receipt point at NFT & Mpika depot	Full quality analysis	TPPL and ZCSA

5.2 Critical Stages of handling petroleum fuels via road and rail

The sources of petroleum fuels on the Zambian market are wide. However, the following points are identified as critical points in the handling of imported finished products for quality assurance:

i) Certification of petroleum fuel from source (receiving depot);
ii) Certification of recipient storage tanks at Government or OMC depots;
iii) Re-certification of Petroleum fuels at OMC depots;
iv) Receipt of Petroleum fuel at both consumer and retail sites.

HANDLING STAGE FOR IMPORTED PETROLEUM FUEL	QUALITY CONTROL MEASURE	RESPONSIBLE ENTITY
Dispatch port from source	Certification	Supplier
Port of entry	Inspection	ZCSA
Discharge depots at the: • Government • OMC	a) Certification b) Re-certification	TPPL OMC
Receiving at retail sites and consumer facility	Quality checks	Retail site or Consumer facility Operator

6.0 SAMPLING OF PETROLEUM FUELS

Sampling of petroleum fuels shall be undertaken in accordance with the requirements stipulated in the **Zambian Standard ZS 396: Sampling Petroleum Products Part 1: Manual sampling of liquid hydrocarbons**. In the absence of a Zambian Standard for sampling of gaseous hydrocarbon, sampling shall be conducted in line with internationally accepted best practice.

7.0 TESTING OF PETROLEUM FUELS

Testing of petroleum fuels shall be done by an **accredited laboratory**.

8.0 RESPONSIBILITIES OF STAKEHOLDERS

In order for the consumers to be supplied petroleum fuels that meet the requirements of the respective Zambian petroleum fuel quality standards, all stakeholders shall play their role effectively. The following subsections highlight the said responsibilities:

8.1 Importer of Diesel through the pipeline

The importer of diesel shall ensure the following:

i. CoQs from the port of origin and independent inspector shall be filed with TPL and the ERB before the cargo is discharged at Kigamboni tank farm;
ii. The diesel is offloaded into the tanks at Kigamboni tank farm in accordance with industry best practice.

8.2 TAZAMA Pipelines Limited (TPL) and TAZAMA Petroleum Products Limited (TPPL)

TPL shall do the following:

i. Re-certify the tanks at Kigamboni Tank Farm (after receipt of each cargo) before pumping through the pipeline; and
ii. Transport Diesel through the pipeline to Ndola and Mpika.

TPPL shall do the following:

i. Certify the receiving tanks with accredited laboratories; and
ii. Store and distribute petroleum fuels.

8.3 Importer of petroleum fuels via road and rail

The importer shall ensure the following:

i. CoQs issued by an accredited laboratory from the source are filed with the ERB and ZCSA;
ii. Ensure that all imported petroleum fuel meets the relevant Zambian Petroleum quality standards;
iii. Engagement of an independent inspector for qualitative and quantitative checks at the point of loading and offloading;
iv. The road tank vehicles or rail tank wagons are in conformity with the requirements of the relevant Zambian Transportation Standards;
v. Offloading off all imported petroleum fuel at ERB licensed depot for certification before distribution into the market;
vi. ERB licence to import petroleum fuels is valid at all times; and
vii. Compliance with regulatory requirements e.g. facilitate inland inspections, sample collection and fuel marking.

8.4 The Fuel Marking Company.

The fuel marking company shall ensure the following:

i. To mark all unleaded petrol, diesel and illuminating kerosene uplifts made from government depots destined for the local market;
ii. To undertake quality checks on unleaded petrol, diesel and illuminating kerosene receipts at OMC depots prior to marking;
iii. To mark all imported unleaded petrol, diesel and illuminating kerosene prior to receipt at OMC depots;
iv. To issue a Certificate of Marking for each road tank vehicle or rail tank wagon marked; and
v. Licensee witness the marking of their unleaded petrol, diesel and illuminating kerosene.

8.5 Government bulk depot operator

The operator of Government depot facilities shall:

i. Clean tanks at least once every three (03) years for Jet A1 and ten (10) years for other products. However, if there is reason to believe that petroleum fuel quality in the tank is compromised by, among others, excessive sludge accumulation, tank cleaning shall be undertaken earlier than the aforesaid period. Tank cleaning shall be undertaken in accordance with the provisions of all relevant Zambian standards including but not restricted to the following:
    a. **ZS 604 Part 2: Tank Cleaning Safety Code; and**
    b. **ZS 671: Environmentally Sound Management of Waste Oils – Guidelines**
ii. Provide CoQs as issued by an accredited laboratory for all products uplifted by OMCs; and
iii. The said COQs shall be filed with the ERB.

8.6 Oil Marketing Companies

The OMC depots shall:

i. Conduct quality checks prior to receipt of locally sourced petroleum products. Checks are to include temperature, density, visual appearance and presence of water
ii. Maintain documentation that clearly shows the chain of custody of all petroleum fuels. Refer to the Products Stock Transfer sheet in appendix 2;
iii. Certify the receiving tanks with accredited laboratories.
iv. Adhere to the Additised petroleum fuels guidelines;
v. Clean tanks at least once every three (03) years for Jet A1 and ten (10) years for other products. However, if there is reason to believe that petroleum fuels quality in the tank is compromised by, among others, excessive sludge accumulation, tank cleaning shall be undertaken earlier than the aforesaid period. Tank cleaning shall be undertaken in accordance with the provisions of all relevant Zambian standards including but not restricted to the following:
    a. **ZS 604 Part 2: Tank Cleaning Safety Code;** and
    b. **ZS 671: Environmentally Sound Management of Waste Oils – Guidelines;**

8.7 Transporters (Local and Foreign)

The transporter of petroleum fuel shall:

i. Ensure that the road tank vehicle complies with all the relevant Zambian Standards including but not restricted to the following:
    a. **ZS 371: Road Tank Vehicles for Petroleum Based Flammable Liquids – Specifications;**
    b. **ZS 372: Transportation of Petroleum Products: Operational Requirement for Road Tank Vehicles – Code of Practice; and**
    c. **ZS 429 Part4: The Handling, Storage and Distribution of Liquified Petroleum Gas (LPG) in Domestic, Commercial and Industrial Installations – Transportation of LPG in Bulk by Road – Code of Practice**.
ii. Local road tank vehicle shall be licensed by the ERB, issued with a certificate of conformity by ZCSA and issued with assize certificate by ZMA;
iii. Foreign road tank vehicles shall be compliant to regional standards for transportation of dangerous goods and issued with a certificate of conformity by ZCSA;
iv. Ensure that the pipeline complies with all the relevant Zambian Standards including but not restricted to the following:
    a. **ZS 704: Transportation Pipeline Systems for Liquid Hydrocarbons – Code Of Practice;**
v. Ensure that the rail tank wagon complies with all the relevant Zambian Standards including but not restricted to the following:
    a. **ZS 673: Rail Tank Wagons– Specifications**;
vi. Ensure that compartments are free from debris;
vii. Flush the compartments whenever there is a change in loading from:
    a. Any petroleum fuel to another; and
    b. Any chemical to petroleum fuels.
viii. Ensure that petrol and kerosene are not carried on the same trailer of the road tank vehicle;

ix. Monitor the movement of their loaded road tank vehicles and rail tank wagons from point of loading to point of discharge; and
x. Monitor the movement of the diesel along the pipeline;
xi. Ensure that loaded road tank vehicles park only at designated park yards;

8.8 Road Tank Vehicle Driver

The drivers shall:

i. Meet the requirements of ZS 372: Transportation of Petroleum Products: Operational Requirement for Road Tank Vehicles – Code of Practice that are applicable to the driver;

ii. Ensure that petrol and kerosene are not carried on the same trailer of the road tank vehicle;

iii. Ensure that compartments are free from debris and free water;

iv. Flush the compartments whenever there is a change in loading from:

a. Any petroleum product to another; and
b. Any chemical to petroleum products.

v. Ensure that they carry correct documents related to the load;
vi. Not tamper with the seals and the ullage marks; and
vii. Not tamper with the quality of the petroleum fuel.

8.9 **Operators of retail sites and consumers facilities**

The operators of retail sites and commercial consumer facilities shall:

i. Conduct quality checks on petroleum fuels on the truck prior to offloading. Checks shall include temperature, density, visual appearance and presence of water;
ii. Maintain a record on site (for at least the last three months) of all deliveries showing the quality checks mentioned in (i) above. A sample of the record has been included as Appendix 2;
iii. Clean tanks at least once every three years for Jet A1 and ten years for other products. However, if there is reason to believe that petroleum fuels quality in the tank is compromised by, among others, excessive sludge accumulation, tank cleaning shall be

undertaken earlier than the aforesaid period. Tank cleaning shall be undertaken in accordance with the provisions of all relevant Zambian standards including but not restricted to the following:

a. **ZS 604 Part 2:** and
b. **ZS 671.**

iv. Be responsible for the quality assurance of petroleum fuels being offered to the consumers.

8.10 Energy Regulation Board

The Energy Regulation Board (ERB) shall:

i. Ensure that the guidelines herein are adhered to by Industry players;
ii. Ensure that importation, transportation, storage, distribution and retailing of petroleum fuels are conducted by licensed entities;
iii. Conduct planned and random sampling and testing of petroleum fuels from the following facilities:
    b. Government and OMC depots (at least twice a quarter);
    c. Consumer sites and retail sites (at random).
v. Conduct an audit of the quality control procedures of licensees as provided for by these guidelines;
vi. Obtain, interpret and maintain a database of all quality related information from all industry players.
vii. ensure that all unleaded petrol, diesel and illuminating kerosene sold on the Zambian market are appropriately marked; and
viii. conduct marker and fuel quality checks on unleaded petrol, diesel and illuminating kerosene at petroleum fuel storage, distribution and retailing facilities.

8.11 Zambia Compulsory Standards Agency

The Zambia Compulsory Standards Agency (ZCSA) shall ensure that:

i. Local and foreign road tank vehicles transporting petroleum fuels in Zambia have obtained certificate of conformity from ZCSA;
ii. Diesel imported through the pipeline is inspected, sampled and tested by accredited laboratories and issued with batch certificates for compliant products;
iii. Petroleum fuels imported via rail and road are inspected, sampled and tested by accredited laboratories and issued with batch certificates for compliant products;
iv. Market surveillance is conducted in the supply chain; and

v. Importers provide CoQs issued by an accredited laboratory at the point of entry, copies of the same shall be shared with ERB.

9.0 HANDLING OF CONTAMINATED PETROLEUM FUELS

When handling contaminated and/or off spec petroleum fuels, the licensee and/ or ZCSA shall inform ERB of the contamination and/or off spec petroleum fuels for further action. The licensee shall then have the petroleum fuel analysed at an accredited laboratory to ascertain the extent of contamination. Thereafter, the following options shall be considered:

9.1 Conditioning of the contaminated and/or off spec petroleum fuel by blending with an on spec petroleum fuel. Blending shall be done at a licensed depot. The conditioned petroleum fuel shall be recertified at an accredited laboratory to ascertain conformity to the respective Zambian quality standards, and a copy shared with ERB for further instructions;

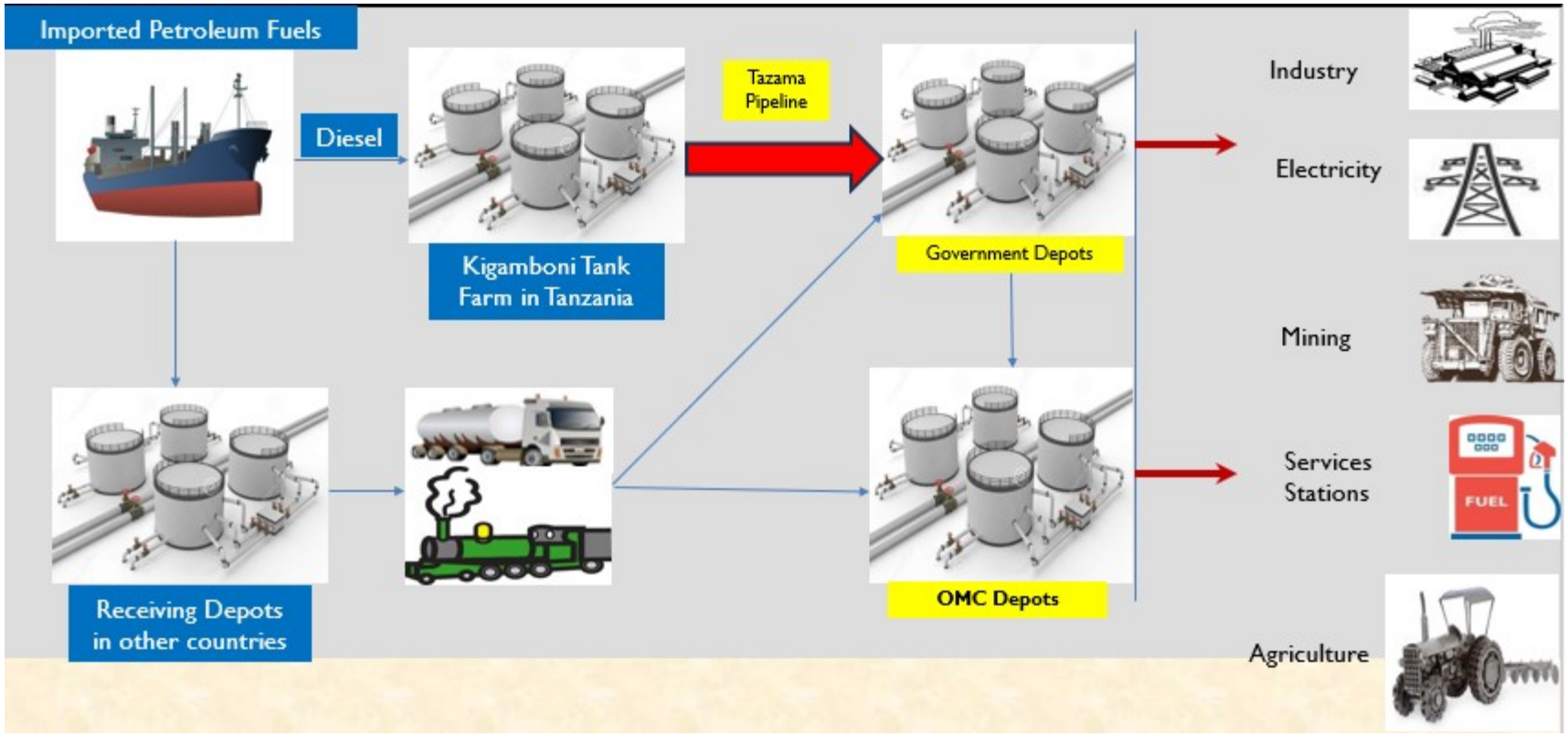
9.2 Alternative use of the contaminated or off spec petroleum fuel for calorific value i.e. use of contaminated and/or off spec diesel in processes that require fuel oil;

9.3 Incineration of the contaminated or off spec petroleum fuel in accordance with Zambia Environmental Management Agency (ZEMA) guidelines;

9.4 Selling the contaminated and/or off spec petroleum fuel as slopes to interested buyers for reprocessing; and

9.5 In a case of imported petroleum fuels, reject the contaminated and/or off spec petroleum fuel consignment at the point of entry or prior to offloading.

10.0 APPENDIX I: ZAMBIAN PETROLEUM FUEL CHAIN



11.0 APPENDIX II : SAMPLE OF A PRODUCTS STOCK TRANSFER SHEET

PRODUCT STOCK TRANSFER				
BULK PRODUCT BY ROAD				
1	**ISSUING DEPOT**		**OIL MARKETING COMPANY**	
	Date		Temperature/C	
	Batch Certificate No.		Density	
	Delivering Tank No.		Water Check	
	Observed volume Litres		Visual appearance	
	Seal No.		Suspended particles	
	Vehicle Registration No.			
	Dispatching depot			
	Operators Name and Signature			
	Tanker Drivers Name and Signature			
2	**RECEIVING SITE**			
	Date			
	Observed volume received Litres			
	Temperature/C			
	Density			
	Visual appearance			
	State of seals			
	Receiving official Name and Signature			
	Tanker Drivers Name and Signature			
3	**TO BE FILLED BY RECEIVING SITE**			
	Volume dispatched (Litres)			
	Volume received (Litres)			
	Loss/Gain (Litres)			
	%Loss/Gain			
4	**COMMENTS BY RECEIVING SITE**			