KEPSA- KENYA RAILWAYS MEETING AND SITE INSPECTION ON THE STATUS OF THE STANDARD GAUGE RAILWAY,
Nairobi Terminus at Syokimau, 2nd March 2017
1. Introduction

The Nairobi – Mombasa section of the Standard Gauge Railway (SGR) is due for commissioning in June this year. KEPSA and Kenya Railways have previously held a joint briefing session on the progress of the construction of SGR. As the construction of this phase nears completion, KEPSA and Kenya Railways organized an SGR status update meeting and a site inspection of various SGR related facilities at the Nairobi SGR terminus at the Syokimau on 2nd March 2017. The objective of the meeting was to appraise the private sector on the status of the SGR as well as inspect locomotives and coaches already shipped from China. Other sites visited are Nairobi terminus for the clearance, departure and arrival of passengers as well as monitoring and signalling of train movement. Later the delegation toured the Inland Container Depot (ICD) for the custom clearance of containers.

The purpose of the Standard Gauge Railway as explained by Eng. Beatrice Akun, Railway Track Engineer, was to provide fast, reliable, cost effective means of transport for freight and passengers – creating the necessary competition required for lowering tariffs; lower the cost of doing business by providing cost effective mode of transport; promote domestic tourism enhancing citizens knowledge of their country; and create economic zones and industrial parks along the SGR corridor; Increase transport capacity in the Northern Corridor; provide alternative land transport in the Northern Corridor; reduce congestion at Mombasa Port hence increase Port Capacity attract the neighbouring countries.
2. The SGR Status Briefing

In 2009 private sector undertook an initiative within KEPSA to establish a consortium of key stakeholders that formed the private sector consortium in partnership with government in order to secure a multidimensional approach and maximise stakeholder contribution and value in the implementation of SGR. The objectives of the consortium is to promote local manufacturing and provision of services, ensure employment Creation, technology transfer as well as promote regional collaboration with EAC Partner States in the Northern Corridor in respect to transport and logistics to Uganda, Rwanda and South Sudan which access the Indian Ocean through The Port of Mombasa and maintain sustainability of the SGR and ultimate sustainability in all scopes to spur social and economic growth in this sphere.

The consortium has achieved the following outcomes: Joint communiqué between East Africa Community Head of States, Local content was improved in the following sectors: cement, metals and trade. The consortium also developed occupational standards and curriculum in Welding, Heavy and Light Machinery, Instrumentation and Control Mechanical Engineering and Maintenance thus contributing to international standard of skills in the disciplines. Support had also been given to the Ugandan steel sector. The Coordinator of the Consortium Dr. Kevit Desai remarked that the SGR collaborative efforts was a demonstration of an incredible story of success in creating pathways of local industry growth as well as contribution to technical and vocational training and education standards.

The Vice Chair of the consortium Mr Kelli Kiilu reported that the project had opened up the East Africa Region and it was important to use it to demonstrate that the public private partnership model of development delivers results. Indeed the project has far reaching economic benefits for Kenya and the region.

“SGR will create pathways of local industry growth & contribute to TVET...

Dr. Kevit Desai, Co-coordinator –
Private Sector Consortium on SGR
In his remarks, the Managing Director of Kenya Railways Mr. Atanas Maina acknowledged KEPSA for their continued support during the construction of the SGR. He confirmed that they had procured a transaction advisor who would develop the best pricing tariff model for SGR services. The period between July – December 2017 would be the pilot phase during which KR collect data on cargo and passenger flow and volumes which will be useful in ascertaining optimal pricing. SGR and the metre gauge railway would operate concurrently. The metre gauge railway would be rehabilitated under the Mass Rapid Commuter train system for passenger transport within the Nairobi Metropolitan area.

KEPSA CEO Ms. Carole Kariuki urged the private sector to keep engaging with Kenya Railways so that they can maximize business opportunities that will arise during the operationalization of the SGR.

Eng. Karanja, Deputy Team Leader, TAEC Consultants highlighted that the SGR is expected to help minimise the following challenges in the transport corridor:

- Reduced port capacity due to perennial congestion at Mombasa Port and in A109/ A104
- High cost of roads maintenance particularly in Northern Corridor
- High cost of transportation hence high cost of doing business in the country and Region
- Lack of fast, reliable and cost effective sea connection to landlocked countries of Ethiopia, South Sudan, Uganda, Rwanda and DRC.
- Threatened Kenyan position as transport, logistics and economic hub in the East African region
- Slow pace of economic exploitation in mining, agriculture and livestock farming in Kenya;
- Slow pace of increasing industrial production in the country
- Poor quality of passenger services between Mombasa and Nairobi
- Congestion on the cities’ roads
He also gave an overview of the standard gauge railway Mombasa to Nairobi phase, contract details, design features, stations facilities and progress that had been made.

The SGR project from Mombasa to Nairobi has two major stations: Nairobi Terminus and Mombasa Terminus as well as 24 passing (Signal) stations at various locations with an interval of the passing stations ranging 10 to 15km. Additionally SGR will also operate a county train that will stop at all seven intermediate stations for a maximum of 5 minutes. The intercity train (express service) will only stop at Mtito Andei intermediate Station and will take 4-5hrs. The two terminus stations at Nairobi and Mombasa consist of the following facilities; main station building, power substations, dispatch centre, comprehensive maintenance office building, locomotive depot and signals building, locomotive and vehicle workshops, materials shed and warehouses, freight transportation building and THDS Station (shaft box and detection system), water supply house, boiler room, duty room and guard room.

The Mombasa- Nairobi SGR project contract sum is USD 3.804 billion funded 10% by the National Government of Kenya and 90% by the Import- Export Bank of China (EXIM Bank). The project has two contract components: Contract I is the construction of the SGR Mombasa to Nairobi Kenya at USD 2.66 billion and Contract II is the supply and installation of facilities, locomotives and rolling stock for Mombasa to Nairobi SGR at USD 1.44 billion. The overall responsibility is borne by the Ministry of Transport and Infrastructure with the direct employer being Kenya Railways represented by the TAEC consortium. The contractor is China Road and Bridge construction. The commercial contract began on 1st July 2012, implementation date 12th December 2014 and the completion date is expected to be 1st June 2017.
The design standards and specifications in comparison to the existing meter gauge railway are summarized in the table below:

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESIGN FEATURE</th>
<th>DESIGN STANDARDS AND SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Standard Gauge Railway</td>
</tr>
<tr>
<td>1</td>
<td>Design standards</td>
<td>Class I (More stable)</td>
</tr>
<tr>
<td>2</td>
<td>Gauge</td>
<td>1435mm (broad)</td>
</tr>
<tr>
<td>3</td>
<td>Number of main lines</td>
<td>Single track</td>
</tr>
<tr>
<td>4</td>
<td>Limiting gradient</td>
<td>&lt;1.2%</td>
</tr>
<tr>
<td>5</td>
<td>Minimum radius of curve</td>
<td>1200m (min. 800m)</td>
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<tr>
<td>6</td>
<td>Axle weight</td>
<td>25 tons</td>
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<tr>
<td>7</td>
<td>Loading gauge</td>
<td>Suitable for double stacked containers-216 TEUS per train, double deck passenger cars</td>
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<tr>
<td>8</td>
<td>Design speed of freight vehicle</td>
<td>80 km/hr.</td>
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<tr>
<td>9</td>
<td>Design speed of passenger car</td>
<td>120 km/hr.</td>
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<tr>
<td>10</td>
<td>Type of traction</td>
<td>Diesel –electric locomotion, with provision for future electrification.</td>
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<tr>
<td>11</td>
<td>Tactive tonnage</td>
<td>4000 tons (216 TEUS)</td>
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<tr>
<td>12</td>
<td>Crossing loops</td>
<td>880m (long trains)</td>
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<tr>
<td>13</td>
<td>Type of Locomotives</td>
<td>Passenger: 2500KW; Freight: 4500KW; Shunting: 1800KW;</td>
</tr>
<tr>
<td>14</td>
<td>Fencing</td>
<td>Whole alignment to be fenced</td>
</tr>
</tbody>
</table>

The procurement of locomotives, rolling stock and depot facilities include: 5 passenger train locomotives, 43 freight train locomotives, 8 shunting locomotives, 1 locomotive training simulator, 2 mobile rail crane, 1620 wagons, 40 passenger coaches and 3 workshop facilities.
3. Progress Achieved So Far

As at the end of January 2017, the civil works, earthworks and bridgeworks were 100% complete, station building are 94.99% complete. The progress of facilities is at 95.08% complete with communication and information facilities at Athi Intermediate Station at 90% completion.

8 locomotives have arrived out of 43 with manufacturing going on with the 3rd batch expected to be received on 10th March 2017; 2 passenger locomotives out of targeted 5; 2 shunting locomotives out of targeted 8; 31 passenger coaches out of targeted 90 and 60 freight wagons out of targeted 1620. Manufacturing is ongoing for the remaining locomotives’ and coaches and will have arrived by the launch date.

4. Benefits of the SGR

Kenya Railways technical personnel made a presentation on the status of the SGR and the benefits of the SGR to the economy. These include:

- Reduced cost of transportation, making the region attractive for investment by improving connectivity with the neighboring land locked countries
- Expected to contribute to an annual GDP of at least 1.5% during construction and operations
- Will reduce congestion on A109/A104 and the Port of Mombasa.
- Will reduce high cost of Road Maintenance on A109/A104
- Reduction of carbon emissions
- Will promote tourism
- Creation of jobs and business opportunities
- Improve passenger transport between Mombasa and Nairobi

The meeting was informed that the Railway Training Institute has been equipped in order to increase human resources for the SGR while the Government of China is offering 25 Engineering scholarship in their top universities, this will enable them have all the necessary man power they need in operationalization of the SGR.

The hospitality industry is exploring a way of developing a tourism package for domestic travel between Mombasa and Nairobi through the SGR during the operation stage. Further all the 14 stations along the corridor will requires various auxiliary services which the private sector is expected to invest in.

The delegation was taken through a guided inspection tour of the various facilities being constructed in readiness of the commissioning of the SGR in June 2017.
5. The SGR Operator and Capacity Building

It is expected that the EPC Contractor (CRBC) will be retained as the Operator for the interim since they are familiar with the infrastructure and also to de-risk initial commissioning and maintenance requirements. The EPC contractor has expressed willingness for same. It is expected that the Operator will be on board by 1st April 2017 to commence crucial tests on the infrastructure, facilities and equipment. The proposed term is 10 years and shall adhere to the performance parameters specified in the Agreement within the time limit set forth therein or the time limits as mutually agreed upon by KR and the Operator for freight trains.

SGR will be operated by well trained and qualified locals supported by Chinese experts. KR intends to have trained at least 700 locals in the various railway specific operation and maintenance skills by end of 2017. Skills to be developed include: Driving of locomotives, Maintenance of the track, locomotives, rolling stock, signalling and communications, operation of trains and other railway functions.

Currently, training and capacity building is being supervised by Chinese instructors. Progress made so far includes: 217 students have completed classroom training and are in the field for hands-on experience; A second class of 115 will complete classroom training in February 2017; A total of at least 500 students to be trained by end of 2017.

In China, full sponsorship is being offered to locals to pursue 4 – 5 years engineering degree courses in China; 25 students are at Beijing Jiatong University completing first semester this December of the 4-years engineering courses; 35 students are being recruited to join the University in February 2017 and a total of 200 engineers to be trained are expected to graduate within the next eight (8) years.
6. **Comparison between Kenya and Ethiopia- Djibouti SGR**

Members enquired about the difference or similarities between Kenya’s SGR and Ethiopia SGR. This was highlighted as follows: that the cost for Kenya’s project are not comparable to those of Ethiopia for a number of reasons which include:

a. The gross trailing load for Kenya SGR is 4000 Tones while Ethiopia has 3500 tones trailing capacity.

b. The SGR in Kenya traverses through privately owned land which Government had to procure at inflated costs in many areas as opposed to ease of acquisition by Ethiopian Government for the comparison project.

c. Ethiopia SGR is being constructed on level crossing while Kenya is doing overpasses and bridges to allow for free movement of animals and cars.

d. Kenya SGR construction cost per kilometre is USD3.89 compared to Ethiopia’s USD3.92. Kenya is using Class 1 Chinese Standard of Construction (CSC) while Ethiopia is using Class 2 CSC.

e. Kenya’s signalling is automatic while Ethiopia is using semi-automatic signalling for low density capacity.

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7. **Features of the SGR eco-system**

i. The Coaches for the passenger train which will be cruising at average of 120km/h taking an average of 5 hours between Nairobi and Mombasa. The coaches have both VIP and economy class. The cargo train will travel at a speed of 80k/h between Nairobi and Mombasa.

ii. Pricings basis will be decided in consultation with stakeholders, competition (road and Mile Gauge Railway (MGR), last mile issues and benchmarking, branding.

iii. The locomotives yard. It is expected SGR will have 21 locomotives for the passenger train and 43 locomotives for the cargo train.

iv. Nairobi terminus which will be the main destination for SGR for cargo marshalling, passenger terminal. Operation at the terminus will be automated for departures and arrivals by use of swipe card.
v. Control Command centre. This is highly secured centre to be managed 24 hours a day in order to monitor and guide operations of the SGR. It is also equipped with CCTV monitor to track movement of the train. The Communication Authority has allocated the SGR a dedicated frequency in order to ease, Communication, monitoring and emergency response.

vi. Inland Container Depot (ICD) this is a custom managed depot operated by Kenya Port Authority and other Custom agencies for marshalling and clearing tax payment for container’s entering in the country or containers on transit.

vii. Supporting logistics and infrastructure for freight operations are being established at Port Reiz, Nairobi South and Inland Container Depot (ICD) for handling loose freight and containers.

viii. ICD capacity is being expanded and modernised for throughput of 405,000 compared to current 180,000.

ix. Payment terms of the SGR contacted Operator are linked to the performance on the Key Performance Indicators (KPIs) including:
   
a. Time between traffic offers by customer to the Operator to the time when freight is delivered at the terminal station – 24 hours;

b. The transit time for rake movement from Mombasa Port to Nairobi between port to unloading point shall not exceed 12 hours;

c. If during any quarter, there is a shortfall in average performance any Key Performance Indicators, then the Operator shall bear the Damages due and payable to the Kenya Railway Corporation.
8. Opportunities within the SGR

Opportunities within SGR include the following: Freight consolidation, supply and manufacture of maintenance inputs – brake-blocks, track clips, Warehousing and Clearing and Forwarding Services in Nairobi, Last mile services within Nairobi, Nairobi environs and destinations west of Nairobi and entrepreneurship within proposed Special Economic Zones along the corridor e.g. Konza Techno City.

9. Conclusion

KEPSA shall continue to engage with Kenya Railway and other Trade Facilitation Agencies in order to improve the business environment in Kenya.

For more details please follow the links below to view the individual presentations made during the engagement.