MEDIA STATEMENT
KUCHING LIGHT RAIL TRANSIT ROUTE
29TH MARCH, 2018

Ridership Population Estimates

- There are 4 major population centres in the State of Sarawak with the largest being Kuching. Greater Kuching, which includes the divisions of Samarahan and Serian, is estimated to have a population of 908,400;

o Kuching: 700,300 people;
o Samarahan: 109,100 people and
o Serian: 99,000 people.

Project Ridership Time Saving Benefits

- Based on the Kuching Urban Transport Study;

o It is estimated that travelling by rail from major developed areas within Kuching district to the city centre can be achieved within 30 minutes;

o While travelling from Kota Samarahan to Kuching by rail will take 50 minutes as compared to travelling by road which takes 90 minutes during peak hour. (A savings of 40 minutes per trip)

o 3 lines of the total 6 lines have been identified for immediate implementation of the rail transit system from the above-mentioned study. The remaining lines will be implemented at a later stage.

Project Estimated Construction Duration

- The estimated duration for the construction of these lines are approximately **five (5) years**, dependent on the procurement strategy and also allowing for long lead items such as Rolling Stock (trains) manufacture and delivery. **The LRT lines are expected to be operational by the year 2024.**

Project Expected Employment Impact

- Each LRT line is expected to create a total of **20,919** jobs once in full operations;

- Line 1: 8,679 jobs
- Line 2: 10,420 jobs
- Line 3: 1,820jobs

Line One: Kota Samarahan to Sungai Batu to Damai

- This route covers 48% of current travel demands for Kuching city. The line is approximately 62.4km in length with 28 stations.
- The line will start at Rembus in Kota Samarahan, where the depot is proposed and end at Damai via Sungai Batu.

Line Two: Serian to Senari

- This route covers 30% of current travel demand for Kuching city. The line is approximately 82.0km in length with 26 stations.

- The line will start at Serian via Siburan and will terminate at Senari.

- This line will have an interchange station with Kota Samarahan-Damai option at the Simpang Tiga Roundabout.

Line Three: City Dispersal Line

- The line is approximately 10.8 km in length with 13 stations.

- The proposed city dispersal line will be an at-grade tram system which can better navigate urban streets, has less intrusive stops and integrates well into the concept of a pedestrianised urban landscape.

Ridership Forecast

The forecasted daily ridership for year 2024 and 2034 are as follows:

Table 1: Forecasted Daily Ridership for the Proposed Line at Year 2024

Line	Description	Population Coverage (3km Corridor)	Length (km)	Line Load (PPHPD*)	Ridership (pax/day)
1	Kota Samarahan-Damai	751,900	62.4	5,225	70,541
2	Serian-Senari	732,000	82.0	4,669	63,035
3	City Dispersal Line	72,400	10.8	2,055	11,099

PPHPD Person Per Hour Per Direction*

Table 2: Forecasted Daily Ridership for the Proposed Line at Year 2034

Line	Description	Population Coverage (3km Corridor)	Length (km)	Line Load (PPHPD*)	Ridership (pax/day)
1	Kota Samarahan-Damai	910,600	62.4	8,115	182,579
2	Serian-Senari	883,600	82.0	7,114	160,057
3	City Dispersal Line	87,400	10.8	2,762	24,859

PPHPD Person Per Hour Per Direction*

Benefits

The Light Rail Transit envisages realising efficient mobility in Kuching; creating economic opportunities, enabling trade and facilitating access to markets and services.

At the same time, it will help transform Kuching into a more dynamic and competitive city, as well as create more jobs. Besides, the LRT will traverse and link dense residential areas, businesses, industrial areas, tourist hotspots and new transit oriented developments (TOD), thus driving the economic development in Kuching. The TOD along the corridor will be examined and incorporated in line with the state development plans.

The development of the LRT is expected to provide benefits in terms of time savings, monetary savings due to lower annual vehicle operating costs and creating job opportunities, amongst others. This is summarized in the table below:-

Table 3: Estimated Savings on Time (Daily), Vehicle Operating Costs (Annual) and Creation of Job Opportunities (Annual) at Year 2024

Line	Description	Estimated Daily Time Savings (pax/ hour)	Estimated Annual Vehicle Operating Costs Savings (RM Million)	Job Opportunities (pax/year)
1	Kota Samarahan-Damai	19,427	76	8,679
2	Serian-Senari	27,488	108	10,420
3	City Dispersal Line	767	3	1,820

Hydrogen Fuel Cell Train

This cost effective and environmentally friendly technology is new to the rail industry, and is anticipated to be the first of its kind to be implemented in this region when incorporated in the Kuching LRT system.

The train, which gain its power from hydrogen, produced through water electrolysis combined with external oxygen supply, will feature a motor that is impressive in both energy conversion and energy efficiency. The train is environmentally friendly as it utilises hydrogen with the by-products of only water and steam.

Main features of the train are:-

- Speed – 70-140 km/h*
- Driving Range – 40-800 km**
- Passenger Capacity – 340 pax (3 car configuration)

Technology advancements in hydrogen fuel cell are expected to improve the range and capacity of the trains in the coming years.

The usage of hydrogen fuel cell trains not only reduces costs and is environmentally friendly; it is also in line with the Sarawak Government's vision to develop a hydrogen economy as part of the State's green initiative, thereby generating economic benefits for the people of Sarawak.

**Alstom's maximum speed is 140 km/h as compared to CRRC's maximum speed of 70 km/h.*
*** Alstom's driving range is 800km as compared to CRRC's driving range of 40km.*

Construction Costs & Estimated Duration

The indicative construction costs for Line 1, 2 and 3 are summarized below:-

Line	Description	Length (km)	Total Construction Cost (RM Million) *incl rolling stock*	Costs per km (RM Million)
1	Kota Samarahan-Damai	62.4	**4,489,688,838** *Civil – 2,009,530,196* *Systems – 2,370,986,259* *Land – 109,172,383*	**72.0** *Civil – 32.2* *Systems – 38* *Land – 1.8*
2	Serian-Senari	82.0	**5,448,071,505** *Civil – 2,309,166,611* *Systems – 2,995,299,894* *Land – 143,605,000*	**66.4** *Civil – 28.1* *Systems– 36.5* *Land – 1.8*
3	City Dispersal Line	10.8	**819,567,678** *Civil – 453,153,750* *Systems – 347,608,708* *Land – 18,805,220*	**76.3** *Civil – 42.2* *Systems–32.3* *Land – 1.8*

#Land costs are estimated on per km basis (RM 50 per square meter)

Innovative construction techniques, coupled with the use of hydrogen fuel cells, will make the LRT project economically viable. Further studies to refine the costs will be carried out in the next phase.