

<i>Environmental Impact Assessment for Proposed Expansion of Aluminium Smelting Plant on Lot 36, Samalaju Industrial Park, Bintulu, Sarawak for Press Metal Bintulu Sdn. Bhd.</i>	Project No:	<i>P17004</i>
	Revision:	<i>0</i>
	Date:	<i>June 2019</i>

CHAPTER 3 STATEMENT OF NEED

3.1 USE OF ALUMINIUM

Properties of aluminium include low density and therefore low weight, high strength, superior malleability, easy machining, excellent corrosion resistance and good thermal and electrical conductivity. These properties make aluminium as one of the main materials used in automotive construction sectors.

The automotive industry is a key growth driver for the aluminium industry, not only due to the continued strong growth in private transportation worldwide, but also to the increasing pressure by automotive makers to utilise lightweight materials to protect the environment and the climate. It's advantage as a lightweight material provide weight reduction in a transport vehicle in which directly translate to improvement in fuel efficiency and driving experience. In an automobile, weight reduction can be achieved by substituting traditionally used steel with aluminium in parts such as wheels (**Plate 3-1**), engine parts, chassis and body panels. The field of lightweight automotive construction continues to develop, and its possibilities are far from being exhausted.

In the lightweight construction sector, aluminium is in competition with other materials, yet even if it should lose market share in individual areas of application, it will find increasing employment in others, and its growth areas will remain larger than the areas in which substitutes are found. The trend towards material's excellent reusability, which allows the energy invested in its production to be entirely reclaimed, are certain to increase aluminium consumption in construction sector. In this sector, aluminium is used as main material for roofing, windows, etc. (**Plate 3-2**)

In other sectors, the consumption of aluminium is growing in the booming electronics industry (as lightweight chassis, **Plate 3-3**), aerospace industry, mechanical engineering and packaging markets.



Plate 3-1 Lightweight Aluminium Rims

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Plate 3-2 Aluminium Construction Material

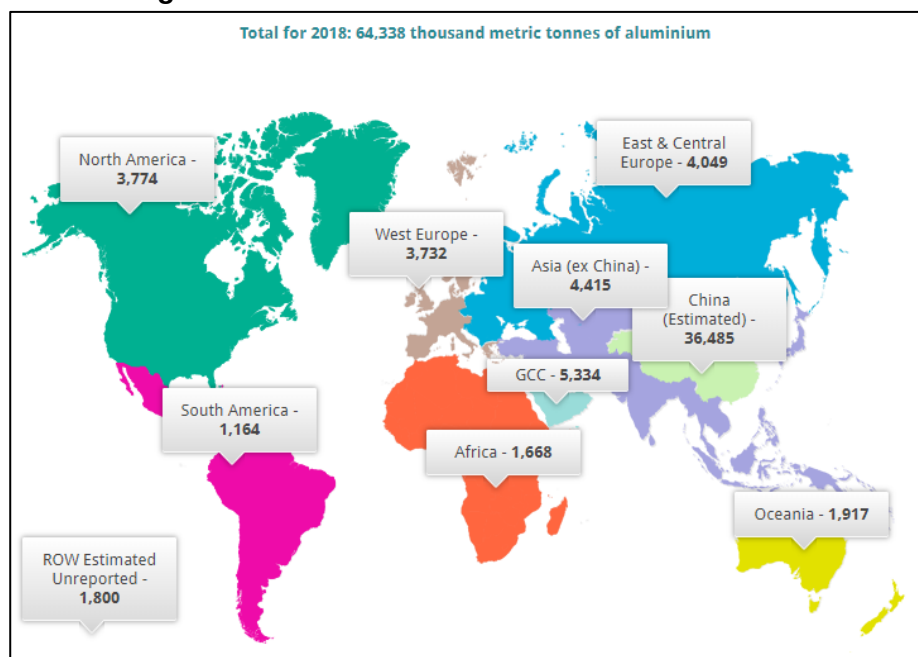


Plate 3-3 Lightweight Aluminium Electronic Chassis

3.1.1 Supply and Demand of Aluminium

Aluminium is often seen as an indicator of the health of the world economy, because of its use in a variety of sectors. According to International Aluminium Institute (IAI), global primary aluminium production increased by 5.8% in 2017. Across all regions, approximately 64.3 million tonnes of aluminium were produced worldwide in 2018 as illustrated in **Figure 3-1** and shown in **Table 3-1**.

Figure 3-1 Global Aluminium Production 2018



Source: <http://www.world-aluminium.org/statistics>

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Table 3-1 Global Aluminium Production 2018

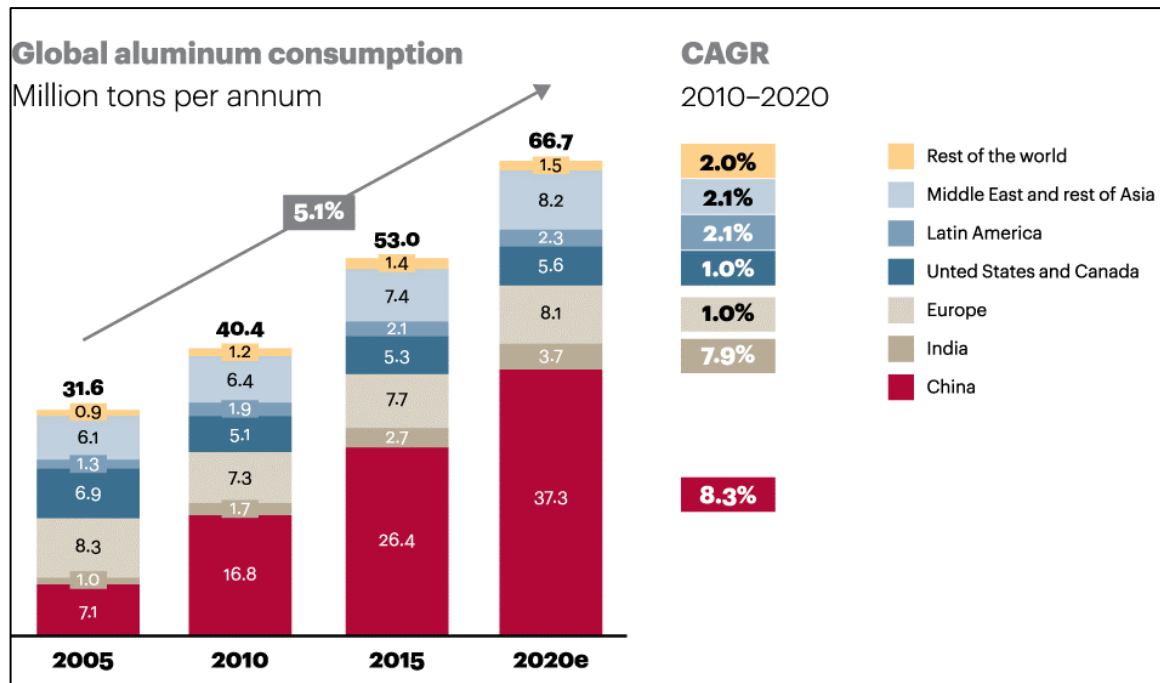
Month	Region										Total	Daily Average
	Africa	North America	South America	Asia (excl China)	West Europe	East & Central Europe	Oceania	GCC	China (Estimate)	Estimated Unreported		
Jan 2018	138	322	110	369	321	344	162	452	2,993	150	5,361	172.9
Feb 2018	128	285	103	338	282	311	146	414	2,750	150	4,907	175.3
Mar 2018	143	319	112	377	310	345	162	462	3,042	150	5,422	174.9
Apr 2018	138	311	103	355	303	334	156	443	3,007	150	5,300	176.7
May 2018	134	321	94	372	315	345	163	452	3,090	150	5,436	175.4
Jun 2018	140	303	88	368	310	333	155	437	3,050	150	5,334	177.8
Jul 2018	144	313	96	376	321	343	166	451	3,115	150	5,475	176.6
Aug 2018	144	320	95	377	321	343	163	454	3,120	150	5,487	177.0
Sep 2018	138	310	89	364	312	332	159	437	3,010	150	5,301	176.7
Oct 2018	143	323	93	377	321	343	164	450	3,126	150	5,490	177.1
Nov 2018	138	318	90	361	309	332	156	433	3,042	150	5,327	177.1
Dec 2018	141	329	92	381	307	344	165	449	3,140	150	5,498	177.4
Total	1,669	3,774	1,165	4,415	3,732	4,049	1,917	5,334	36,485	1,800	64,338	-

Source: <http://www.world-aluminium.org/statistics> (Data sourced from International Aluminium Institute), 2019

Note: GCC = Gulf Cooperation Council consisting of Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

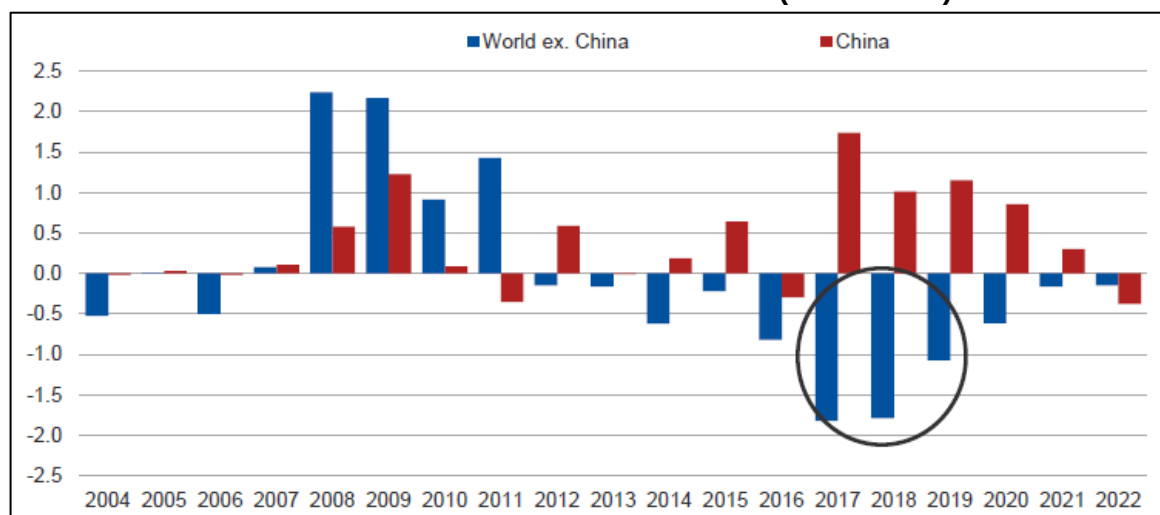
Current global demand for aluminium is at 63.59 million tonnes per year, and with anticipated annual increment of 5.1%, the demand could rise to 66.7 million tonnes per year in 2020 (**Chart 3-1**). Currently, the estimated deficit in supply of non-Chinese aluminium is in excess of 1 million tonnes and is expected to remain in deficit for the subsequent years (**Chart 3-2**). In the coming years, increase in aluminium supply is favourable to cater to global demand, which is in-lined with the Project's development.

Chart 3-1 Global Aluminium Consumption (2005 – 2020)



Source: A.T Kearney

Chart 3-2 Aluminium Market Balance (Million Ton)



Source: CRU International Limited

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In spite of recent political uncertainty and market conditions, such as the US tariffs on aluminium imports, Brexit and the China's potential European market's export expansion, the overall long-term global outlook for aluminium remains favourable, with rising demand and more conducive conditions in regional markets. In general, the Project will benefit aluminium users and consumers by providing higher quality of aluminium at higher volume that is economically competitive in the domestic and regional markets.

3.2 PROJECT BENEFIT

Press Metal's existing business activity had proven beneficial to the Sarawak State by boosting its local economy by direct contribution to the industrialisation and as a catalyst to other direct and indirect business opportunities. Press Metal has successfully made Sarawak and Malaysia the largest integrated aluminium producer and leading aluminium exporter in Southeast Asia. Thus, Project is expected to bring forward the same benefit for the state. Besides that, Project development is in line with Sarawak State economic plan and policies under SCORE.

The Project also will lead to many new investment opportunities in the downstream industries that add value by transforming primary aluminium into finished and semi-finished products for export. As such, this Project demonstrates the potential of fulfilling the increasing demand of recovering precious metals at the same time promoting optimum recovery to avoid precious metal-contained ended up in the landfill.

Other benefits of the Project are the employment opportunities it generates and allows for creation of more skilled work force. The overall Project development from planning stage to the site preparation, thereafter construction stage and subsequent operational stage would require significant amount of human resources from different proficiency levels and expertise. This Project anticipates the creating of various job opportunities, especially for the locals, under direct employment or indirect opportunities. Indirect opportunities include opportunities for local contractors and subcontractors whom will be employed for site preparation and construction activities. During the operation stage, similarly there will be local contractors and subcontractors employed for routine maintenance and monitoring works. It is estimated around 3,895 workers (local and foreign) are required for the Plant 1, Plant 2 and Plant 3 operation. In term of distribution, Press Metal is aiming for 70-30 local-foreign employee ratio.

Press Metal facilities are clean and use renewable energy and applied the latest energy efficient 400 kA smelting technology. This is a way of promoting clean, sustainable energy across Southeast Asia and in lined with the strategic core of 11th Malaysia Plan (RMK 11) under the Sarawak State Government, to ensure sustainable environmental and resource management.

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3.3 CONCLUSION

The overall long-term global outlook for aluminium remains favourable, with rising demand and supply deficit in regional markets. In conclusion, the Project will benefit the aluminium users and consumers by providing higher quality and economically competitive aluminium products for the domestic and regional market. In addition, the Project will generate significant job opportunities for the local community. Other added benefits include contribution to SCORE development and sustainable environmental and resource management.