

Historical Development of the Largest Aluminium Smelter in the Middle East

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Abstract

Aluminium Bahrain B.S.C (Alba) consistently ranked as one of the largest and most modern Aluminium smelters in the world. Alba started metal production with the commissioning of two Reduction Lines (1 & 2) in 1971 using side-break, un-hooded, end to end Montecatini technology operating at 100 kA with a capacity of 120,000 metric tonnes per year. Since then Alba has steadily expanded and today it is one of the top performing aluminium producers in the world. Production output has increased stepwise since startup through technology improvement projects and major expansions using state of the art technologies. The journey began with commissioning of Reduction Line 3 in 1981 using Kaiser Technology, Line 4 in 1992 and Line 5 in 2005 using the AP 30 technology. Today, Lines 4 and 5 are running close to 400 kA amperage. In line with its vision to emerge as one of the largest single site smelters in the world, Alba took a giant leap by commissioning of Reduction Line 6 using DX+ Ultra technology, one of the most advanced technologies available. This enabled to increase its annual production capacity by 540,000 metric tonnes bringing total production capacity to 1.54 million metric tonnes per year. The first hot metal from Reduction Line 6 was successfully achieved in December 2018. This presentation describes the journey of the historical development of the largest aluminium smelter in the Middle East.

Keywords: Alba, Montecatini technology, Kaiser technology, AP 30 technology, DX+ Ultra technology.