

SONG Pengsheng, XIANG Renjie, 2014. Utilization and Exploitation of Lithium Resources in Salt Lakes and Suggestions for Development of Li Industries of China. *Acta Geologica Sinica* (English Edition), 88(supp. 1): 371.

Utilization and Exploitation of Lithium Resources in Salt Lakes and Suggestions for Development of Li Industries of China

SONG Pengsheng^{1,2}, XIANG Renjie³

¹ Qinghai Research Institute of Salt Lakes, Chinese Academy of Sciences, Xining, 810008, Qinghai, China

² Key Laboratory of Saline Lakes Resources and Environment, Ministry of Land and Resources, Beijing

³ Information Center of the Ministry of Land and Resources, Beijing, 100812, China

1 Introduction

Lithium and its compounds as a joint of rising industries new energy sources, new materials, and information technique have become more and more important recent years.

Especially lithium ion batteries with bigger or smaller power are widely needed for electrical vehicles, mobile electronic equipments, and energy storage. These all promote development of Li industries in the world.

Consumption growth may exceed 11%py, even in the base-case scenario, as demand from 3C, EV and off-grid battery markets increase

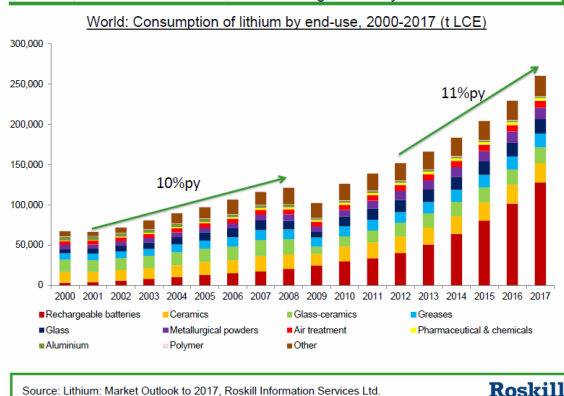


Fig. 1. Prediction of Li consumption growth.

2 Lithium resources and reserves

Lithium from salt lake brines, oil well brines, underground brines accounts for over 70% of its total reserves. Salt lakes on the central Andes Mountains hold a great part of global reserves in store.

In addition to high concentration of Li, K, and B in brines, extreme dryness of the climate in the area is the most favourable to the use of solar pond for evaporating and concentrating brines.

3 development of salt lake li resources and comprehensive utilization of other minerals in brines

Development and exploitation of Li salt brines in the central Andes area are recently becoming a hot point of inorganic chemicals on the world.

Trends and progress in utilization and development of Li resources in brines are introduced in this paper. Production of lithium compounds from salt lake brines on Xizang(Tibet), Chaidamu Basin of Qinghai, China are also involved.

4 Suggestions for development of Li Industries in China

Lithium industries from Li carbonate extracted from brines and hard ores to various Li products on the downstream have recently boomed in China. The present paper also gives some suggestions about sound development of Li industries in China at last.

References

- Gao Shiyang, Song Pengsheng, Xia Shuping and Zheng Mianping 2007. The Chemistry of Salt Lakes, Beijing: Science Press.
- Song Pengsheng, Li Wu, Sun Bai, Nie Zhen and Wang Yunsheng, 2011. Recent development on comprehensive utilization of salt lake resources, Chinese J. Inorg.Chem., 27 (5):801–815.
- Li Wu, Dong Yaping, and Song Pengsheng, 2012. Exploitation and Comprehensive Utilization of Salt Lake Resources (in Chinese), Chemical Industry Press, Beijing.
- Song Pengsheng, Sun Bai, Ceng Dewen, 2013. Sobubility Phenomena studies concerning brines in China, Pure Appl. Chem., 85(11): 2097–2116.
- Brian W., Jaskula, 2013. Lithium, in “USGS 2012 Minerals Yearbook”, Sept. 2012, 44.1–44.12.

* Corresponding author. E-mail: songpsh@sil.ac.cn