**Project summary:**

With the rapid development of science and technology, Lithium gradually entered scientists’ vision, occupied an increasingly important position and is used in many fields. In the medical science, lithium can be used to treat mania; in the military, lithium is one of the most important elements in the manufacture of nuclear bombs[1]. The most important aspect which is also our research direction is the application of lithium in renewable energy. Such as lithium battery, it has high energy density and can store more electricity in the same volume[1]. Therefore, it is often used in laptops, electric cars and phone.

Australia is rich in lithium resources and is also one of the countries with the most lithium mines in the world. According to the data in 2019, Australia has the largest lithium production in the world, accounting for 52.9%, and lithium reserves accounts for 18.1% of the world, second only to Chile[2].

Our project is aimed to make an engineering findings and discussion on renewable energy for lithium mining project in Australia. The context of the project will be discussed in these following parts: stakeholders, social challenge, environment challenge and ethical challenge.

The Lithium mining is a really huge project. In this process, many different systems will be involved, such as: employment, economy, transportation and so on and they are also the stakeholders of lithium mining. However, lithium mining will also bring many challenges. From an environmental perspective, water consumption and the production of toxic chemicals are main impacts and the low recycling rate of lithium batteries is difficult to solve in production. In terms of social challenge, land ownership, labor demand and the economic impact of lithium mining are all worthy of attention. From the perspective of engineering ethics, safety industry standards, dust suppression, etc., are all possible problem.

Following, we will show our specific findings and detailed discussion from these different aspects and propose some suitable solutions for these problems which may occur in the lithium mining project.

**References：**

[1] <https://www.shangyexinzhi.com/article/362590.html>.

[2] <https://www.forbes.com/sites/rrapier/2020/12/13/the-worlds-top-lithium-producers/>.