

An Interview with:
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President of:
Asaka Riken Co.,Ltd.
JAPAN

Conducted by Global Kigyo, for a special report about Japan to be distributed in TIME Magazine.

Japan has made a big shift from a global B2C to a B2B leader. With locations overseas, your company has also proven itself as a B2B leader in the global market. However, as we know, countries like China and Taiwan offer strong competition in the manufacturing industry. In terms of the Japanese Monozukuri, what competitive advantage does Japan have when competing against other APAC leaders in this market such as those in China?

In the beginning, I have been the President of Asaka Riken for three years now. However, before moving to this company I was a trader in the international business section of Mitsubishi Corporation. I think if I had not worked at Mitsubishi, I would not have the perspective that I have now. I experienced a lot there and I have understood the meaning of 'Made in Japan' through my various experiences.

In my opinion, Japanese companies were great during the 80s and 90s, however, recently, Japanese companies have lost their market share as well as their innovative reputation around the world.

While Japanese companies still have the knowledge to develop good products, the world has since moved on to other countries such as South Korea and China. There are several reasons why this is the case: Japanese people may be polite and diligent, but our R&D processes are slow compared with other countries as mentioned. They can create new products more quickly and cheaply. The quality of production might not be as high, but the products still work well enough. Global markets seem to be satisfied with this.

However, I do believe the Japanese companies have a key competitive advantage which is their technologies and their ability to focus on details. Japan is an industrial economy where many companies operate at the same time and each of these companies has their unique and great technologies. Especially in dealing with precious metals, the technology that has been cultivated for centuries is extremely advanced.



Japan has announced several sustainability goals connected to infrastructure and energy. The country has also been implementing policies that incentivize corporations within the country to do so as well. Although it is true that these policies have made it more difficult for many manufacturers to operate, it has also provided an opportunity for companies to rethink material consumption and increase efficiency. How have SDGs impacted Asaka Riken, and what has the company done to work towards these goals?

Asaka Riken has been engaged in recycle business for long time of Copper and precious metals, mainly Gold, Platinum, Palladium, and Silver from e-scrap. E-scrap generally includes useable materials as well as the industrial wastes in themselves. Therefore, it's been a bit difficult to import because of concern for the environment, but we should be importing these things because unlike other countries in APAC, we have the technology to transform them back into useable materials in a safe and sustainable way. Our specialized ability of recycling is appreciated and contributing to the realization of SDGs.



Also, Asaka Riken has invested a lot of money and time for the study of the recovery of rare earths and rare metals over the last 10 years. We founded a research and development center for this in Iwaki City, Fukushima, in 2014, where we have developed the technology to repurpose and reuse these components long before people started to mention EVs and LiBs.

If society would like to move towards carbon neutrality, the LiB industry is the key. Solar, wind, and hydropower can produce the energy we need, but the issue is with its storage. It's because of the storage matter, and the development of the technology to repurpose those batteries that Asaka Riken has the space to thrive within sustainable development goals.



I think if companies strictly follow these principles, carbon neutrality can be achieved but zero-carbon is not possible. The world is still quite reliant on fossil fuels. If we stop using petroleum, how will middle eastern countries survive, what will happen to the stock market, and what would happen to the money these countries have spent overseas? It is very difficult balance the implementation of 'zero-carbon' along with the economic stability of the planet. Additionally, it's important to mention that carbon emissions and regulations are very relevant. We live on this planet, and we need to take care of it. The issues with the environment cannot be ignored and action is required. When we consider the EV market, the technology has been very helpful in the support of a greener society, although we still need to consider how they are handled after their end of life.

There seems to be a lot of competition in this market, both globally and locally. Some major players in precious metals recycling have put a lot of emphasis on developing state-of-the-art technology and expertise to maintain their competitiveness. How has R&D and your proprietary technologies, or other business processes allowed you to stay competitive of this competition?

To answer your question, I would like to point out that recycling is a word that is easy to understand but contains so many meanings. The principle is that something used is collected. After this stage of collection, this scrap is either burnt or pressed.

There are roughly two ways to extract the elements of this scrap to be reused. The first is by using pyrometallurgy, which employs fire. The second is hydrometallurgy, which uses chemicals. At Asaka Riken, our expertise is in hydrometallurgy. We separate the elements through solvent extraction. In fact, it is not very rare technology and it has been around for a very long time now since ancient times. However, we have improved and developed our own LiB recycling technology utilizing solvent extraction, so, no other company utilizes the same technology as efficiently as we do.

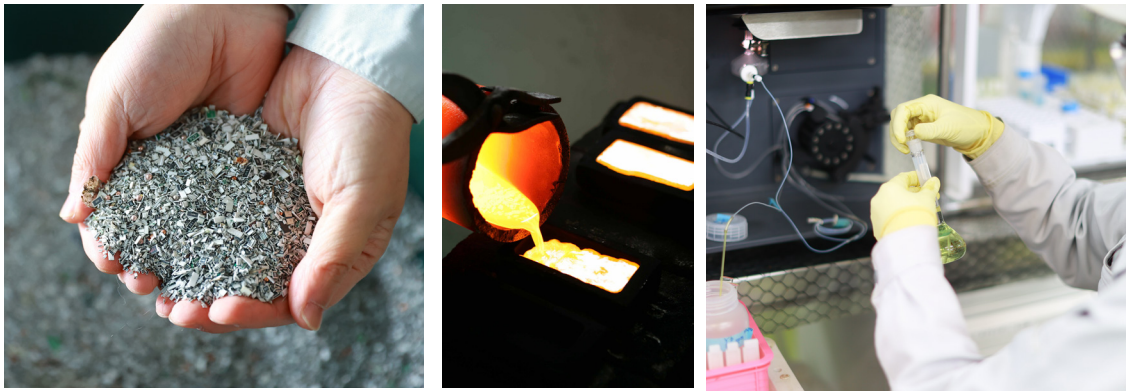
Generally, extracting lithium is very difficult because it is such a sensitive material and too many chemicals are needed for it to be recycled, but we are realizing to recover 100% of the materials, even lithium, from all the metals and components used in the production process.



In just March of last year, a report came out detailing the growth of the global Lithium-Ion Batteries market. There are expected to be a 12% growth over the next 8 years to \$116billion USD in 2030. With this growth comes the challenge of both recycling and providing rare metals for the industry. What steps have your company taken to integrate itself into this market?

Now, a lot of LiBs are used many electric products, they are in our phones, watches, computers, everywhere. It is not efficient for us to recover valuable elements from small LiBs in such consumer products in terms of cost and technique. On the contrary, with an EV, the battery packs are composed of battery modules in total weighing around 300 kilograms and multitudinous components are utilized in the production of the battery, including cathode, anode, separator, and extra-light solutions. So it generally costs more to recover than small products, hence, although it offers a bigger reward in terms of the amount of material we can recover.

There are some batteries produced more cheaply, whose end of life should be shorter than 10 years. But for companies such as Tesla or Volkswagen, these LiBs should have quite a long life maybe 10 years or more. So, in average, in about 8 to 10 years, this market will take off.



Once this full-scale process begins, we will have to focus on creating a consortium of car manufacturers and recyclers. This process requires systematic collection by different manufacturers working with companies like ours to help in the pretreatment, dismantling, and repurposing of the LiBs. We then send the elements back to battery manufacturers that then pass it down the line again where it eventually goes back into new vehicles supporting a circular economy. This is why we need the consortium. Currently, we are working with companies on many levels of the supply chain to make this happen.



It seems like creating these groups will require a large amount of cooperation between many different companies on many levels of the supply chain as you have mentioned. Does this mean that Asaka Riken has been searching for new partners, for example, companies such as Tesla, Toyota, or Mitsubishi both on a national and international level?

I cannot disclose with whom we are working, but I can say that talks have already begun. Both car and battery companies.

Your company seems to be connecting two major market trends, both EV and Fuel cell markets with SDGs through your implementation of LiB recycling technology. Regarding LiBs, partnerships, and SDGs, how do all these things come together to form a cohesive business plan? In other words, what is your company's midterm strategy?

For a while, we are focusing on the study of chemical extraction side of this recycling process, but the pretreatment, done through pyro processes, is also very important. We have partnered with Toho Zinc Co., Ltd. for a pretreatment study. They are the largest zinc and lead smelters in Japan. We are still trying to find out what the best pretreatment process is, as well as what technology might be most efficient.

Under this situation, some venture capitalists may come to us or we may consider issuing more shares depending on our business growth. Of course, we would like to motivate investors to invest more in us and eventually increase our capital. There still hasn't been a specific decision yet on how we should approach gaining more capital, the important thing though is to think about what is best for our growth.

In near future, we would like to connect our technologies to big users, car companies or battery companies, to show them what we can do and how we can provide value to them. We are quite proud of our technology and would like to share it everywhere even in Europe, America, and Asia.

