

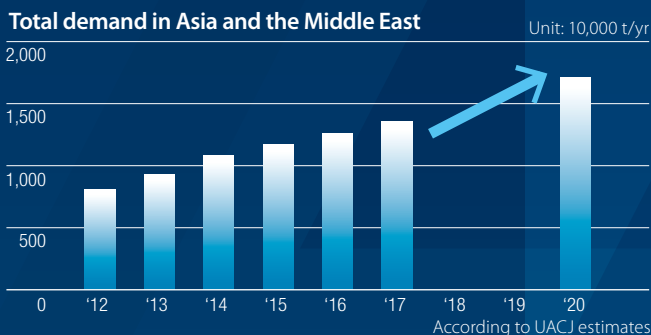
# Increasing Our Global Competitiveness



## Thailand p. 15

### Supporting Growth in Asian Markets — Core Asian Factory Established

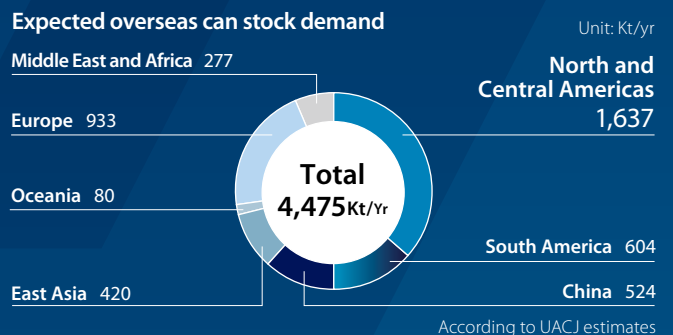
The construction of a new factory in Thailand that is to serve as the core of operations in Asia began in 2012. With the second phase of construction—covering processes from casting to hot rolling—completed in August 2015, the factory is now capable of fully-integrated manufacturing. In order to meet the vigorous demand in the Asian market, we plan to continue expanding our supply network.



## USA

### Supporting World's Largest Beverage Can Market in USA — Joint Operation of World-class Can Stock Factory

Can stock is one of the most important products at UACJ. In 2011 in the USA—the world's largest market for can stock—we acquired one of the world's largest rolled aluminum manufacturing and sales companies. Utilizing the company's wealth of experience in manufacturing can stock and sophisticated technological prowess we have further solidified our presence as a global player in the can stock market.



Supported by continuing economic growth, the demand for aluminum in Asian markets is rising across a wide range of fields. In the North American market, increasingly stringent standards, such as the CAFE regulations for more fuel efficient automobiles, are accelerating the adoption of aluminum to reduce vehicle weight. In order to respond to the increasing demand for aluminum around the world, UACJ has reinforced its global supply network with hubs in Japan, Thailand and the USA.



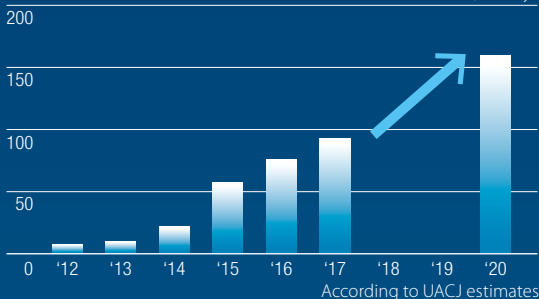
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## Responding to Growing Aluminum Use in Vehicles and Body-in-White Panel Demand in North America

As fuel efficiency regulations grow more stringent, the use of aluminum in automotive parts is increasing in the USA. In response, UACJ established a joint venture to manufacture and sell BiW panels. Construction of the factory is currently underway, and operations are expected to begin in fiscal 2016.



Demand for Automotive BiW Panels Unit: 10,000 t/yr



### / Mexico

#### Supply Network Reinforced and Expanded with Establishment of **Automobile Parts Manufacturing and Sales Subsidiary**

In response to the impressive growth of the automotive industry in Mexico, we established an automotive parts manufacturing and sales subsidiary in the country in February 2014. Cooperating with Group companies in North America, the new subsidiary has strengthened our supply network for high-precision, high-quality metal automobile parts.



### / Germany

#### Company Established **with Local Partner** to Sell Automotive Heat Exchanger Materials

Responding to the strong demand for automotive heat exchanger materials, we signed a letter of intent with the Grecian aluminum manufacturing and sales company Elval Hellenic Aluminium Industry S.A. to create a sales company that will serve the European market. The company was established in October 2015.



### / Malaysia

#### Company Acquired to Manufacture and Sell Aluminum Foil for **Beverage Containers and Food Packaging**

In January 2014, UACJ Foil Corporation acquired a Malaysian company that manufactures and sells aluminum foil, and converted it into a subsidiary. Through this acquisition, we are responding to the growing Southeast Asian demand for foil used in beverage containers and food packaging.



# Thailand



## World-leading Manufacturing Base for the Growing Asian Market

In order to meet the growing demand for aluminum in Asia, construction of the Rayong Works at UACJ (Thailand) Co., Ltd. (hereinafter UATH) began in 2012. The lines completed in the first phase of construction started operating in January 2014, and the lines in the second phase of construction were completed in August 2015. Now, fully-integrated manufacturing enables the realization of both high quality and low cost, doing so with an annual production capacity of 180,000t. With plans to increase capacity to 300,000t in the future, our goal is to transform the Rayong Works into a leading manufacturing and supply base not only in Asia, but worldwide.



## Overview of UATH Rayong Works

In order to maximize the synergies created through integration, the UACJ Group is building a global supply network with hubs in Japan, Thailand and the USA. As the core manufacturing and supply base in Asia, the UATH Rayong Works is a vital component in the system. Not only is it supplying flat rolled products throughout the Asian region where demand is rising, it is also collaborating with a Malaysian aluminum foil manufacturing and sales company that became one of our subsidiaries in January 2014, enabling us to better respond to needs in the Asian market.

Additionally, the works is located in the Amata City Industrial Estate, which is in an area developed so that business is unaffected by flooding and other natural disasters as part of Thailand's governmental policies to attract multinational companies. It is also near major harbors. Utilizing this advantageous location, we will strengthen coordination between the Rayong Works and production bases worldwide, establishing a pivotal role for the mill in our global supply network.



## Fully-integrated Manufacturing from Casting to Finishing

The manufacturing processes at an aluminum rolling mill begin with casting, which involves melting raw materials to form aluminum slabs. The slabs are then hot-rolled, cold-rolled and subjected to finishing processes such as surface treatment, coating and cutting. The UATH Rayong Works is the first fully-integrated

manufacturing factory built overseas by a Japanese rolled aluminum manufacturer. The ability to perform all processes onsite—including pre-processing that determines final quality and functionality—enables UACJ to deliver products tailored to regional market needs quickly and efficiently.

The cold-rolling and finishing lines started operation in January 2014, and construction of the casting and hot-rolling lines, the addition of which achieves fully-integrated manufacturing, was completed in August 2015. The works combines large-scale

production with advanced manufacturing technologies developed in Japan, giving UACJ a powerful edge over competitors in the areas of cost competitiveness and quality assurance.



### Timely Transfer of Technical Skills to Local Employees

To ensure stable operations at the UATH Rayong Works, it is necessary to have a system in place that efficiently employs and trains local employees so that they, themselves, can perform all tasks as quickly as possible.

In order to impart the traditional monozukuri (manufacturing) principles and expertise accumulated by the UACJ Group to local employees, from 2012 to 2013, 35 trainees from Thailand were invited to the Fukui, Fukaya and Nikko works, where they received training from specialized instructors. The training program passed on knowledge covering various areas, such as onsite practices, skills and technologies, and education on safety and management. Participants were encouraged to think of themselves as members of the family we call the UACJ Group.

After completing the program, the trainees returned to Thailand to work on bringing the Rayong Works online. As operations began, they showed great leadership ability locally, taking on key roles. They are expected to advance into management positions at various business sites in the future.

### Rolling Mill Constructed Taking Local Environment into Consideration

Before beginning construction of the UATH Rayong Works, UACJ conducted environmental assessments, and was subjected to a review and receiving approval from various governmental agencies. As part of the review, public town hearings were held twice at two different locations, for a total of four hearings.

Careful consideration for the environment was also maintained when designing the manufacturing processes. Efforts are made to conserve resources by recycling aluminum to the furthest possible extent. We also introduced measures to reduce energy consumption throughout the rolling mill and offices, such as promoting more efficient operation of equipment and installing



energy-saving smelting furnaces that reuse waste heat. Furthermore, we are working to reduce the output of effluents, exhaust gases and harmful chemical substances.

We believe it is important to prosper together with the local community. In addition to creating jobs by employing local residents, we participate in a variety of local initiatives, such as cleanup drives, traffic safety activities, planting trees, donating books to schools, and conducting mill tours.

### Steadily Expanding Production Capacity to Support the Global Supply Network

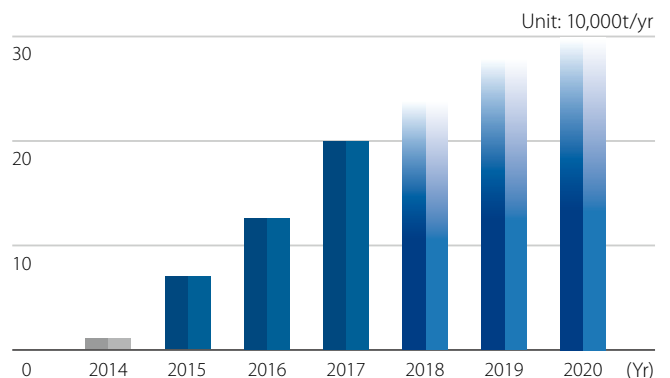
In Thailand, many automobile manufacturers and canned beverage companies—enterprises whose businesses result in a strong demand for flat rolled products—have entered the market. Previously, the majority of flat rolled products used by such companies were imported. However, the UATH Rayong Works will be able to supply approximately 40% of this domestic demand.

We plan to use the Rayong Works to manufacture and supply UACJ Group products that are known for their superior quality and technologies utilized to make them; for example, materials used to manufacture heat exchangers for automobiles and can ends. In addition to Japanese companies, there are many multinational companies moving into the local market. While serving the demand created by those companies, we also foresee supplying products to surrounding countries that are experiencing remarkable growth, and even to other areas such as North America.

We anticipate that the Rayong Works will become the core of our global supply network in Asia. Accordingly, further investment is already under consideration. Plans are to increase the works' annual production capacity from the current 180,000t to 200,000t by 2017. With the additional investment being considered, we could raise capacity to 300,000t per year.

By gradually increasing capacity, we will be able to expand supply from Asia to other regions in the future, thus making significant contributions to the economy of Southeast Asia.

Production Capacity Forecast for UATH Rayong Works





# Answering the Growing Demand for Beverage Cans and BiW Panels

The UACJ Group has been jointly operating one of the largest rolling mills in the world since 2011. The mill is located in North America, the world's largest market for aluminum cans. Additionally, in 2014, anticipating an increase in demand for aluminum BiW panels utilized to manufacture lighter vehicles, UACJ announced it and a European company will establish a joint venture in the USA to produce and sell BiW panels. Promoting business through these two bases, we will increase the Group's presence in the US market.

### Capitalizing on Production Scale and Stable Demand in the Can Stock Market

Together the US and Canadian markets use approximately 94 billion aluminum cans per year, making North America the largest market for can stock in the world. Two-thirds of that amount are cans for carbonated beverages, the consumption of which has been declining in recent years, thereby resulting in sluggish demand. The remaining one-third, however, are cans for beer, the demand for which remains strong. As a result, market scale continues to be good.

In order to respond to this intense demand, all American aluminum rolling companies combined manufacture more than 1.9 million tons of can stock each year, of which 1.6 million tons are used in North America. Compared to the Japanese can stock market, the size of the American market is readily apparent, being four times larger.

Aluminum cans are one of the most important products for the UACJ Group. In order to strengthen our presence as a global player in the aluminum can market, especially in North America, UACJ acquired a flat rolled products manufacturing and sales company from global oil giant British Petroleum in August 2011. Now named Tri-Arrows Aluminum Inc., together with Novelis, the world's largest can stock manufacturer, the companies jointly operate Logan Aluminum Inc., the world's largest aluminum can producer.

The mill's biggest strength is that it has focused solely on producing can stock for over 30 years, leading to a wealth of experience and sophisticated production expertise. Due to the high production levels and efficient operations achieved through joint operation with Novelis, the mill has also garnered praise as one of the most cost-competitive aluminum rolling mills in the world.

### Responding to Increasing Use of Aluminum by Automobile Manufacturers Due to Stricter Fuel Efficiency Regulations

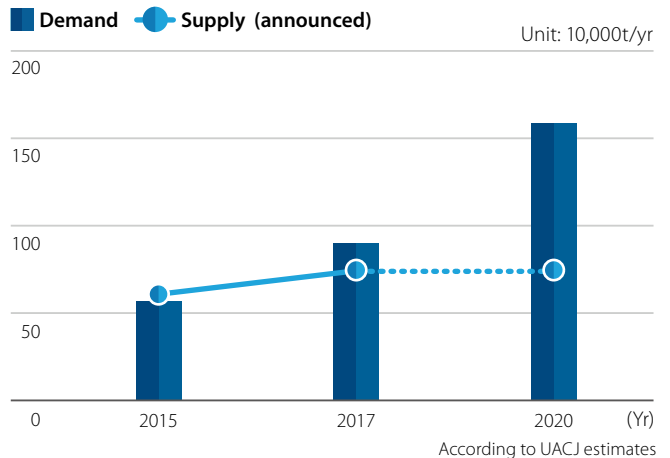
In the North American automotive market, stricter fuel efficiency regulations require that all automobile manufacturers achieve a fixed standard of improvement by 2020. As a result, in order to produce lighter vehicles, manufacturers are rapidly changing to aluminum for BiW panels. In recent years, aluminum alternatives for other parts such as doors and fenders are also being developed,

and total aluminum usage per vehicle is expected to increase. Currently, the strong demand for automotive aluminum sheet materials is expected to rise from its 2015 level of approximately 500,000 tons to large-scale use of around 1.5 million tons in 2020.

To respond to the increasing demand, in May 2014, Japan's No. 1 aluminum manufacturer, UACJ, entered a formal agreement with European company Constellium N.V. to establish a joint venture in the USA and start producing aluminum materials for BiW panels. The joint venture was established in December 2014 to manufacture and sell BiW panels in the USA. Plans are for this company to meet the needs of Japanese, American and European automobile manufacturers in the North American market by supplying high-quality products.

As the first stage of investment, construction has begun on a mill in Kentucky, which is scheduled to have an annual capacity of 100,000t when operations begin in fiscal 2016. It will have a state-of-the-art surface treatment line similar to those currently used by European and US automobile manufacturers. Additionally, base materials will be supplied from the Logan mill, also located in

#### Supply and Demand of BiW Panels in North America



Plant construction is moving ahead on schedule with a view to commencing operations in fiscal 2016

Kentucky, or mills of the joint venture. This will ensure the quick procurement and stable supply materials, thus enabling us to meet the needs of the US market in a timely fashion.

In order to ensure operations start smoothly at the new mill, we are currently negotiating with customers and working to obtain the automobile materials manufacturing certifications required for Logan Aluminum Inc., which will be supplying the base materials.

### **Team Concept – Employee Participation in Mill Management**

Located on the outskirts of Russellville, Kentucky, the Logan mill is able to secure a reliable, high-quality workforce from the surrounding area. It has a positive, efficient work environment and employee participation management style that we refer to as the “Team Concept.” Through this method, everyday operations and improvements, including those of quality, safety, productivity and cost management, are driven by voluntary initiatives on the part of employees. This bottom-up approach to management is the result of employee training and education in place since the mill’s founding over 30 years ago.

### **Thorough Commitment to Eco-conscious Mill Management and Construction**

In order to achieve and maintain sustainable operations, the Logan mill engages in energy conservation and other ongoing environmental initiatives. In 2013, an exhaust recovery system was installed for the hot and cold rolling mills, enabling rolling oil contained in the exhaust to be recycled. Negative environmental impact has been reduced in a variety of other ways as well. For example, the mill engages in a range of successful daily projects to conserve and recycle industrial water, and has implemented measures to recycle wood packaging materials and other materials used internally.

## **UACJ Global Strategy**

### **Expanding the Global Supply Network with Hubs in Japan, Thailand and USA**

UACJ overseas production bases, including UACJ (Thailand) Co., Ltd. and Tri-Arrows Aluminum Inc. in the USA, focus on supplying primary products such as can stock, automotive heat exchanger materials and BiW panels. With three hubs in Japan, Thailand and the USA, we have built a complimentary supply network crossing multiple regions. This enables us to provide optimal responses to changes in global demand and expand sales in the global market.

#### **Global Supply Network with Hubs in Japan, Thailand and USA**

