

## **Emerging Risk 1**

SAF procurement risk

### **Description**

As measures of addressing climate change, development of hydrogen engines and fuel conversion to SAF are beginning to be considered, and among the many possible measures, conversion to SAF is considered to be promising. If regulations requiring the use of SAF are implemented in many countries over the medium to long term, there is a risk that the route network may not be able to be maintained if overseas SAF procurement or domestic SAF procurement becomes difficult.

In a joint report published in October 2021, JAL estimated that SAF is an essential alternative fuel for achieving net zero CO<sub>2</sub> emissions in air transportation, but the current global production level of SAF is only 0.03% compared to demand and the maximum amount of SAF required for Japan to achieve net zero CO<sub>2</sub> emissions by 2050 would be approximately 23 million KL.

### **Impact**

Although SAF use is not currently required, it may become mandatory in the medium to long term, which would have a significant financial impact on our company, which has 133 domestic routes and 66 international routes, for a total of 199 routes (as of March 2023).

If a stable supply of domestically produced SAF cannot be secured, JAL will have to rely on relatively expensive procurement routes. In such a case, fuel would have a significant impact on the company's financial position, as it accounts for more than 15% of operating expenses. Therefore, we recognize this as an emerging risk.

### **Mitigating actions**

The JAL Group has set a goal of replacing 10% of fuel on board with SAF by 2030. In cooperation with public and private sectors, we will work with stakeholders in Japan and overseas to promote SAF commercialization.

In FY2021, we signed a joint agreement with the **oneworld** alliance members to purchase SAF from the U.S., a leading country in SAF production. SAF will be purchased from Aemetis, which produces SAF made from waste animal fats, and Gevo, which uses nonedible field corn to make SAF. This is the first initiative as an alliance, and by showing the need for SAF by multiple airlines, we will contribute to the diffusion and market expansion of SAF.

Furthermore, in 2022, JAL jointly established "ACT FOR SKY," a voluntary organization that works to commercialize, promote and expand the use of domestically produced SAF. Together with stakeholders, JAL will promote and expand the domestic production of SAF and continue to work toward our goal of replacing fuel to SAF.

## **Emerging Risk 2**

The risk of losing our competitiveness due to AI-related technological innovation developed by competitors.

### **Description**

We recognize the significant potential for AI applications within the aviation industry, given its complex business processes. Thus, as AI technology matures, its utilization will be crucial for maintaining long-term competitiveness. Therefore, there is a risk of losing out competitiveness due to AI-driven technological innovations developed by our competitors in the future.

Examples of potential areas of AI utilization are listed below:

1. Operational efficiency (such as assisting in searching for necessary information from a large volume of documents, including blueprints, in aircraft maintenance, or making appropriate decisions regarding the handling of hazardous materials at airports).
2. Safety enhancement (such as predictive maintenance to prevent accidents and anomaly detection during operations).
3. Improvement of customer satisfaction (such as providing optimal personalized services based on customers' past travel histories).

### **Impact**

It could lead to a decline in competitiveness with industry peers and a decrease in customer satisfaction, resulting in customer attrition. This could potentially have a significant impact on our company's financial performance in the future.

### **Mitigating actions**

We monitor the status of the development of AI-related technology and are working to introduce this technology into our business operations.

In the JAL Group, from the perspective of Customer Experience (CX), we will leverage AI to develop new marketing strategies that integrate customer data and marketing in the future. This includes predictive analytics using customer purchase forecasts, real-time offers, and CRM data. Additionally, we are working on new customer services utilizing AI-powered voice recognition functions, such as having AI handle part of customer interactions and quickly providing required information at call centers.

Furthermore, from the perspective of Employee Experience (EX), we are promoting the optimization of work improvement processes and the AI-driven replication of craftsmanship to enhance safety and quality in aircraft maintenance. We are also focusing on improving efficiency

through increased productivity by automating workflows and aggregating and transmitting necessary work information.

By transforming our retail business through the advanced utilization of customer data and new AI technologies, we aim to provide personalized services tailored to individual customer needs, thereby enhancing customer satisfaction. Additionally, by incorporating chatbots and various automation mechanisms, we will offer self-service and self-resolution services to our customers, providing a stress-free customer experience.