

Risk Management, Emerging Risks

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 CO₂ 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 CO₂ 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:

Risk of manpower shortage engaged in airport related services due to working population decrease

Description:

Japan has a declining population. The working age population is expected to decrease by 40% over the next forty years.

In the future, if we are unable to secure necessary personnel, it would make it impossible for us to maintain our 133 domestic and 66 international routes (as of March 2023) and 29,000 contracted overseas passenger and cargo flights. This would have a tremendous impact on our finances and force us to scale back our operations.

In the near future, the demand for manpower in airport-related operations, such as ground handling, is expected to continue to increase as inbound flight demand recovers following COVID-19.

Additionally, we expect there will be a shortage of personnel in Japan with the necessary skill sets to handle the relevant tasks, skill sets that require significant time investment to train. This will lead to strong competition in the Japanese labor market.

For these reasons we expect that the risk to us of labor shortages will increase in the future.

Impact:

From the perspective of maintaining the production system as an airline in Japan, an island nation, the shortage of human resources engaged in airport related services such as ground handling services due to the decline in Japan's productive labor force will greatly affect JAL's business continuity. A shortage of human resources could have a significant impact on its ability to contribute to the Japanese government's goal of attracting 60 million inbound visitors to Japan by 2030.

Mitigating actions:

We are considering establishing an industry association for ground handling among Japanese airlines and developing common rules regarding qualifications and training. In addition, we are working on the introduction of airport DX such as mechanization, robotization, autonomous driving and remote control.

Since the number of employees from countries outside of Japan is expected to increase in the future, we are working to strengthen acceptance by formulating internal regulations regarding support for employment of specified skilled workers from outside of Japan to prevent cases involving human rights violations.