

Zurich Airport Brasil



Airport Name: Aeroporto Internacional de Florianópolis | Aeroporto Internacional de Vitória

Airport Group: Zurich Airport Brasil

Responsible: Anderson da Silva Pinheiro, Engineering, Maintenance, Infrastructure and Sustainability Manager

Project Name: 400 Hertz

Executive Summary

The **400 Hertz** project offers a sustainable solution for providing renewable energy to aircraft on the ground, effectively replacing fossil fuels. This initiative has successfully installed the equipment's at nine bridges in Florianópolis/SC and 5 in Vitória/ES, allowing the airlines to stop using APUs (Auxiliary Power Units) and GPUs (Ground Power Units), which consumed around 106 liters of kerosene from APUs and 40 liters of diesel from GPUs while the aircraft were on the ground (50 minutes in average).

A key component of this project that represents an important innovation is the incorporation of the system of water reservoirs of 10.000 liters designed to collect condensate water from the air conditioning systems of the aircraft and boarding bridges. The collected water will be reused in airport operations for irrigation or toilet flushing, promoting a sustainable management of water resources.

With the project implementation, we already **reduced 3118 tons of CO² from airlines carbon footprints in 2024 (February-September)**, a significant step towards mitigating the impact of aviation operations on climate change. Additionally, we expect to **save 5110 liters of potable water annually** at the airports.

Moreover, the new 400 Hertz and PCA systems not only enhance operational efficiency and safety but also yield financial savings on fuel costs, improve resource efficiency, reduce operational noise, and enhance both worker and passenger safety. Once the aircraft lands, connecting the equipment is all that is needed to provide necessary energy without additional fuel consumption.

The **investment of R\$21 million** for installing this technology at the airports in Florianópolis and Vitória represents a substantial technological advancement in airport infrastructure. It is crucial for the decarbonization of the sector and the sustainable management of water resources.

With the project's success, ZAB will replicate this project at Natal Airport until the end of 2024. This initiative demonstrates how sustainability can be integrated into airport operations, yielding operational efficiency and cost savings. We encourage other airport operators in Brazil

to adopt similar initiatives to contribute to a more sustainable future for aviation.

Results and Benefits of the Project

The 400 Hertz project has generated significant positive impacts, reinforcing sustainable aviation practices. One of the most notable achievements is the projected reduction of **reduced 3118 tons of CO² from airlines carbon footprints in 2024 (February-September)**. This reduction encompasses both Scope 1 emissions from airlines and Scope 3 emissions from airport operations, marking a substantial advancement toward decarbonization and aligning with global climate targets set by the Paris Agreement.

Regarding water conservation, the project expects to **save around 5.11 million liters of potable water annually** across the airports in Florianópolis and Vitória. By reusing condensate water for non-potable purposes, such as toilet flushing and irrigation, the initiative exemplifies a strong commitment to sustainable water resource management.

The project also reduces noise pollution and atmospheric emissions, creating a safer and more comfortable environment for airport workers, passengers, and surrounding communities. Enhanced operational efficiency and safety have resulted from reduced coupling time and lower emissions of pollutants.

This project stands as a pioneering example of how sustainability can be integrated into airport operations. It demonstrates that operational efficiency and significant environmental benefits can coexist, inspiring a more sustainable future for the aviation sector. While it required a notable initial investment and commitment to sustainability, the project's replication is highly recommended for other airports and is crucial for the aviation sector's decarbonization.

Overall, the 400 Hertz and PCA project aligns with the United Nations Sustainable Development Goals (SDGs), particularly Goal 13 (Climate Action). It showcases innovative practices that foster a greener future while delivering tangible environmental and economic benefits. Zurich Airport Brasil is dedicated to leading this transformation and encourages other airport operators to implement similar solutions, ensuring a more sustainable and economically viable future for global aviation.

