Singapore Airlines AppChallenge 2019

Challenge statement Infobrief – Sustainability: Resource Management

How might we leverage new technologies and data to improve SIA's green impact?

Opportunity Areas

○ To optimise water usage and recyclability through data analytics

○ To invite staff as well as customers to actively participate in SIA's sustainability journey

○ To explore new improvements in the verticals of sustainability from saving and optimising usage of water, electricity, waste, and more.

Detailed information

1. Background

SIA Facilities Section is responsible for the building maintenance and energy conservation program.

Over the years, SIA has continuously upgrade current equipment to achieve greater energy and water efficiency.

Some implementations include the installation of new chillers, energy efficient LED lightings, water efficient flushing system / tap, rain water tank are efforts that have been installed at office areas and the hangar.

However, this current approach of solely focusing of equipment upgrade is not sustainable, and we would like to look beyond just hardware alone to improvement our water and energy utility and management.

In parallel we would also like to explore ways where we can involve and encourage staff and customers to be part of our sustainability efforts and help our company to be greener as every individual count.

2. Business Impact

Singapore Airlines is committed to environmental sustainability and ensure that our operations are carried out in a responsible manner. These figures are tracked and compared across the years to ensure that we match or lower our utilities consumption as a company.

A clear understanding of the optimum resource savings will be beneficial for short-term and long-term planning to increase SIA's green footprint.

By engaging a wider community such as our staff and customers through spreading awareness and being involve with the conservation process, we may be able to improve our resource utilisation across the group and at the various touchpoint of our employee and customer journey.

3. Current processes, pain points, constraints, and opportunity pockets

Below are just some examples of the initiatives that has been carried out for energy/water savings:

Air-Conditioning
- *Modifications to the existing heat rejection source*
- *Ongoing replacement of more efficient Fan Coil Units (FCUs)*

Lighting
- *Completion of replacement of high bay lights dimmable LED high bay lights*
- *Submeters are used to track the difference in electricity consumption*

Water
- *Harvesting rain water in SIA's Head Office, to water plants and flush toilets.*
- *Introducing submetering at areas with high water consumption within SIA's premises*

The utilisation for the past 3 years as follows:

Resources Utilisation	FY 18-19	FY 17-18	FY 16-17
Water (,000 m³)	223.5	226.8	234.0
Electricity (Gwh)	48.2	48.9	48.8

Currently, these initiatives are operating in silos, hence not achieving the full potential of energy/water savings. And there are also many other possible untapped areas where electric and water utility can be optimised or even recycled.

The SIA Facilities Section are open to solutions that:

- *Leverages on sensors and data analytics to monitor and optimize utility, with benchmarks against best practices and metrics*
- *Integrate social interactions through digital means, to encourage energy/water saving behavior amongst staff and customers*
- *Explore other innovative solutions that helps in improving energy/water/resource management*

Above these, people are usually less involved in the process as well, leaving the sustainability work to systems and machines. We need a new view on sustainability, beyond just hardware upgrades, and to make these new green efforts an active role they people are involved in and are aware of.