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Benchmarking Key Success Factors for the Future Green Airline Industry

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Abstract

The airline industry is one of the fastest growing industries as well as transportation modes in the world. Global airline contributes about 2% of global greenhouse gas emissions and supports 8% of the world economic activity in terms of GDP. Along with the rapid growth of the airline service industry, climate change issue is getting more attention due to its increasing adverse effects on human and earth. Competing and winning in today's economy required a strategy that incorporates environment sustainability. In recent decades, airlines and aircraft manufacturers have become increasingly committed to becoming more "green," or environmentally friendly. To close the gaps, a research has been done in order to eliminate as much potential harm to the environment as possible and make air travel as efficient and economical as it can be by identifying the key success factors toward Green Airlines. A research was conducted based on the secondary data from the Green Airlines international data sample to provide airlines and aircraft operators a common framework for identifying and implementing practical and measurable processes, innovative practices, and operations. The operation of Green Airlines only focuses from gate to gate destination with giving impact on the customer experience on the services. Through the benchmarking for high performing green airlines, a green airline framework can be a solution for future Green Airline Industry. The research highlights and demonstrates the need for a degree of understanding of key success factors when comparing airline performance measures with each other.

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1. Introduction

Airline is a critical part of our national economy, providing for the movement of people and goods throughout the world, enabling our economic growth. Because of strong growth in demand, emissions of some pollutants from airline are increasing against a background of emissions reductions from many other sources. In addition, progress on noise reduction has slowed. Millions of people are adversely affected by these side effects of airline. As a result of these factors and the rising value being placed on environmental quality, there are increasing constraints on the mobility, economic vitality and security of the nation (Waitz, Townsend, Cutcher-Gershenfeld, Greitzer & Kerrebrock, 2004), Green Airline is a new concept – an initiative to support sustainable social and economic development without forfeiting the local and global environment (Sarkar, 2012). Green Airline aims to provide green society with a transport system that reduces carbon footprint, uses renewable energy and produces less CO₂ and other harmful pollutants. Proper planning and design is the key service excellent to make it possible to decrease land use, especially farm land, increase energy efficiency through operational improvements and reduce harmful pollutants by improved energy pricing and socially responsible economic assessment of alternatives (ADB, 2009). The public awareness of the environmental issues surrounding transport is very significant but the air transport sector attracts particular attention. Airline technologies, airport planning (including the supporting transport infrastructure) and air traffic management are all vital components in a complex multifaceted challenge that the air transport sector must address to deliver greener air travel for future generations. According to the Transport and Environment (2013), aviation emissions account for about 5% of cumulative global warming and some 2% of worldwide annual CO2 emissions.

1.1. Environmental impact of airline on climate change

| Carbon Dioxide (CO2) | • Aviation contributes about 2% to global man-made CO2 emissions. |
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| Oxide Nitrogen (NOx) | At the high altitudes flown by large jet airlines around the tropopause, emissions of NOx are particularly effective in forming ozone in the upper troposphere. High altitude (8-13km) NOx emissions result in greater concentrations of O3 that surface NOx emissions and these in turn have a greater global warming effect. |
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| Water Vapour (H2O) | One of the products of burning hydrocarbons in oxygen is water vapour, a greenhouse gas. It is produced by aircraft engines at high altitude under certain atmospheric conditions, condenses into droplets to form consideration trails or contrails. Contrails are visible line clouds that form in cold, humid atmospheres and are thought to have global warming effect. |
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| Sulphate and soot particles | • Have a smaller direct effect compound with other aircraft emissions. Soot absorbs heat and has a warming effect; sulphate particles reflect radiation and have a small cooling effect. In addition, they can influence the formation and properties of clouds. |
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Fig. 1. Breakdown of emissions and its impact on environment. Source: Maria (2014).

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