Table of Contents

Foreword
1 BAN Ki-moon, Secretary General of the United Nations

Introductory Messages
2 Roberto Kobeh González, President of the Council of ICAO
3 Raymond Benjamin, Secretary General of ICAO

ICAO Environmental Protection Programme
4 Folasade Odutola, Director of the Air Transport Bureau

Report Overview
5 Jane Hupe, Chief of the Environment Branch

Introduction to ICAO Environmental Activities
8 ICAO Programme of Action on International Aviation and Climate Change
A1 Assembly Resolution on International Aviation and Climate Change (A37-19)
13 The Committee on Aviation Environmental Protection (CAEP)

AVIATION OUTLOOK
18 Aviation Outlook Overview
19 Air Traffic Outlook
22 Noise Outlook
27 Local Air Quality Outlook
31 Climate Change Outlook

Chapter 1 AVIATION’S CONTRIBUTION TO CLIMATE CHANGE
38 Aviation’s Contribution to Climate Change – Overview
42 Aviation Greenhouse Gas Emissions
47 Meeting the UK Aviation Target – Options for Reducing Emissions to 2050
51 Greenhouse Gas Management at Airports
56 Models and Databases – Review and Recommendations
59 The ICAO Carbon Emissions Calculator
62 Building on the ICAO Carbon Emissions Calculator to Generate Aviation Network Carbon Footprint Reports

Chapter 2 AIRCRAFT TECHNOLOGY IMPROVEMENTS
68 Technology Improvements – Overview
72 Pushing the Technology Envelope
79 ICAO Technology Goals for NOx - Second Independent Expert Review
83 Environmental and Economic Assessment of NOx Stringency Scenarios
87 Development of an Aircraft CO2 Emissions Standard
91 Subsonic Civil Transport Aircraft for a 2035 Time Frame