



HIGH-LEVEL MEETING ON INTERNATIONAL AVIATION AND CLIMATE CHANGE

Montréal, 7 to 9 October 2009

Agenda Item 2: Proposals for strategies and measures to achieve emissions reductions

EMISSIONS REDUCTIONS: UNITED ARAB EMIRATES CONTRIBUTION

(Presented by the United Arab Emirates)

INFORMATION PAPER

1. INTRODUCTION

1.1 The United Arab Emirates (UAE) was formed on 2 December 1971 as a federation of the emirates of Abu Dhabi, Ajman, Dubai, Fujairah, Ras Al-Khaimah, Sharjah and Umm Al-Quwain. His Highness the late Sheikh Zayed bin Sultan al Nahyan, in guiding the formation of this new country was acclaimed globally for his initiatives to promote sustainability and for making conservation of wildlife and preservation of the environment a key part of government policy. For example, his foresight led to the introduction of legislation as early as 1978 to drive improvements in operations and reduce waste gas flaring with consequent reductions in CO₂ emissions in the petroleum sector. In another demonstration of his leadership His Highness established the Zayed International Prize for the Environment in 2001, and its first recipient was former US President and Nobel Peace Prize Winner Jimmy Carter.

1.2 The UAE already faces extreme climatic conditions and it recognizes the possibility that even small long-term variations in temperature and precipitation could have serious adverse effects on its fragile natural environment and its productive activities. The Governments of the UAE and its constituent Emirates have given high priority to sustainable development policies. The UAE acceded to the United Nations Framework Convention on Climate Change (UNFCCC) in December 1995 and became an official UNFCCC party in March 1996. When the UAE ratified the Kyoto Protocol to the UN Convention on Climate Change in 2005 it became one of the world's first major oil-producing countries to do so. The UAE is actively sharing the global commitment to stabilize the climate system and its commitment is evidenced by substantial investments in technology and infrastructure changes.

1.3 Long before the formation of the UAE the predecessors of its modern airports played important roles in the development of international civil aviation. But the performance characteristics of modern aircraft and the rapid economic development occurring in the Middle East and Asia have given the UAE confidence that it has the necessary conditions to support competitive and sustainable airlines

¹ Arabic version provided by the United Arab Emirates.

operating from its centrally located hubs. Indeed, aviation has been identified as a core driver of economic diversification, greater participation by the private sector, and a reduced dependence on petrochemicals.

1.4 The imperative to operate efficient, commercially-driven airlines and airports is a key dimension of “sustainability” and the UAE’s commitment to stabilize climate change is no less important. This paper reaffirms that commitment and it presents information about the UAE’s comprehensive approach to climate change and its investments in a sustainable future - especially in renewable and alternative energy initiatives. The UAE is already pursuing a basket of measures to reduce international aviation emissions as identified by the GIACC including aircraft-related technology development, improved air traffic management and infrastructure use, more efficient operations, economic/market-based measures, and regulatory measures.

2. GOVERNMENT POLICIES AND PROGRAMMES

2.1 The UAE believes that all signatories to the UNFCCC must do their part to contribute to urgent action to achieve necessary reductions in greenhouse gas (GHG) emissions. It has expressed this perspective in the climate change action plan included in its Initial National Communications, submitted to the UNFCCC Secretariat in 2006.

2.2 This action plan builds on the work already completed in GHG inventory development, vulnerability assessment, and GHG mitigation analysis. Its core elements include awareness and capacity building, recognition of characteristics that distinguish the UAE from other countries, and specific strategies for adaptation and GHG mitigation. Consistent with its path of economic development and its emergence as one of the most open economies in the region, the UAE places emphasis on the identification of investment opportunities within the Clean Development Mechanism (CDM) framework.

2.3 In October 2007, the Al Basama Al Beeiya initiative was launched in order to measure and understand the UAE's Ecological Footprint and to develop guidelines for a more sustainable use of resources. The effort focuses on CO₂ emissions which contribute about 80% of the UAE’s footprint. The initiative involves collaboration across multiple governmental and non-governmental partners (i.e. the Federal Ministry of Environment and Water, the Abu Dhabi Environment Agency’s Global Environmental Data Initiative, the Emirates Wildlife Society – WWF, the Masdar Institute and Masdar Initiative, and the Global Footprint Network). The outcomes will contribute towards the development of strategies to reduce GHG emissions. In taking this action the UAE became only the third country in the world, after Switzerland and Japan, to embark on such collaboration with the Global Footprint Network.

2.4 Specific actions are evident, for example, in the environmental priorities contained in the Urban Structure Framework Plan prepared by the Abu Dhabi Urban Planning Council in September 2007. This plan has been prepared within the context of the overall vision for Abu Dhabi as outlined in Plan Abu Dhabi 2030 with its emphasis on preserving the emirate’s islands, sand dunes, coastlines, and wildlife. The Plan lays out an approach to integrate green building design, sustainable transportation strategies, and industrial planning that contribute toward GHG mitigation and climate change adaptation objectives.

2.5 Another substantial commitment has been made by the Government of the Emirate of Abu Dhabi in Masdar (meaning “the source” in Arabic). This \$15 billion US initiative links climate change, economic opportunity, and clean energy. The funding will go into infrastructure, manufacturing, and renewable energy projects such as solar power, hydrogen, wind power, carbon reduction and management technologies, and carbon capture and storage (CCS), a measure to reduce GHG emissions. The aim is to position Abu Dhabi as a leader in global clean energy markets. Through partnerships with

the world's leading companies, universities and investment companies, Masdar will act as a catalyst to fuse research and innovation and has the potential to fundamentally alter the world's concept of energy. It will launch an historic global transition to new, clean energy sources and sustainable human development.

2.6 When completed in 2016, Masdar City will be the world's first carbon-neutral, zero-waste city. It will be 100% powered by renewable energy and will sustain a population of 50,000 and host 1,500 companies. The city will feature compact high density development, a photovoltaic power plant, and will exemplify how energy and water conservation can be achieved while enhancing the quality of life. Masdar City will show how growth can be fuelled while simultaneously reducing greenhouse gas emissions.

2.7 The recently established International Renewable Energy Agency (IRENA) will be hosted in Masdar City, Abu Dhabi. IRENA's mandate is to promote sustainable use of renewable energy sources globally. It's location in Abu Dhabi acts as a bridge between developed and developing countries and underscores the importance of developing countries' participation in this effort.

3. AVIATION ENVIRONMENT INITIATIVES

3.1 The UAE's airlines, as relative newcomers to international aviation, have seized the opportunities presented by their centrally located hub airports and modern aircraft technology. Without the economic burdens of "legacy" carriers they have adopted efficient hub-and-spoke networks that minimize the available seat kilometres necessary to transport a given number of passengers around the globe. The UAE's airlines have invested heavily in the most modern aircraft equipment with their vastly superior performance in terms of fuel consumed and environmental impacts. In addition, our aviation sector has been aggressive in its pursuit of reductions in fuel usage and emissions and in other ways to promote sustainability.

3.2 The UAE is already pursuing a basket of measures as envisaged by GIACC and this is particularly notable in relation to aircraft-related technology development. Emirates led and promoted the development of the A380 aircraft to help ensure its realisation and ordered 58 of these ultra-efficient aircraft. It is also in possession of the largest ever fleet of the new B777 aircraft considered one of the most fuel-efficient aircraft ever produced. Etihad placed one of the largest orders of aircraft in 2008 with 100 firm aircraft orders and options and purchase rights for a further 105 aircraft which will be delivered between 2011 and 2020. This was followed up in 2009 with confirmation of the 239 engines needed to maximise the efficiency of these aircraft in the long-term.

3.3 The UAE is following ICAO's strategy for operational measures as contained in the *Global Air Navigation Plan* (Doc 9750). For example, Emirates has taken advantage of instrument approach procedures using RNAV (Area Navigation) with GPS positioning into destinations such as Male/Sana'a/Karachi. Similar work is being pursued with IATA to design new data-based approaches at Khartoum and Damascus. These will allow substantial fuel savings for flights to those destinations over the normal slow, low altitude and noisy ILS (Instrument Landing System) approaches. Cooperation with the air services providers in Australia, the Maldives and Indonesia has resulted in the introduction of Flex Track routing solutions saving up to 8% of fuel depending on conditions. Additional fuel savings have been made possible as a result of improved routing in Nigeria, Russia, the Ukraine and Yemen.

3.4 The Flight Operations groups of the airlines are pursuing every opportunity to reduce fuel consumption through, for example, centre of gravity optimisation, aircraft loading, climb procedures, cruise speeds and altitudes, single engine taxiing, flight planning improvements, as well as trend and post flight analysis of actual flight parameters. All parties are working together to improve on-time departures

to limit the need for crew to speed up flights, and burn more fuel to meet schedules. Coordinated planning involving the airlines, the General Civil Aviation Authority (GCAA) and the UAE's airport operators is reducing aircraft taxiing times.

3.5 In March 2009 Etihad Airways entered into a partnership with Masdar aimed at establishing a range of activities to reduce the airline's carbon footprint through sustainable and energy efficient measures initiatives. Masdar will support the development of carbon management solutions to ensure Etihad's compliance with the European Union Emissions Trading Scheme (EU ETS) as well as to support the airline's voluntary carbon reduction initiatives. In addition, Masdar will work with Etihad Airways to enhance the airline's waste management plans and energy saving initiatives.

3.6 Attention is being paid in ground handling operations and catering to reduce environmental impacts through recycling, waste management and community partnerships. Energy saving and waste reduction measures have been introduced by the operators and Emirates and Etihad have incorporated sound environmental principles in the design of their corporate headquarters. The opening of the Metro in Dubai in 2009 will improve ground access arrangements for passengers as well as people working at the airport. The Emirates Group, along with the Dubai Government, developed the Dubai Desert Conservation Reserve (DDCR), the first UAE conservation area officially protected with a constitution and environmental law dedicated to ensuring its operation as a National Park. The DDCR, which also houses the conservation-based Al Maha Desert Resort, occupies 225 km², or almost 5% of Dubai's total land.

3.7 The UAE's airlines recognize the imperatives of competitive and environmental sustainability. The correlation between fuel usage, costs, and CO₂ emissions provides a strong incentive to adopt business strategies that yield low fuel consumption while achieving high load factors. The UAE's airlines belief in their strategies and their competitive strengths makes them advocates for further liberalisation of international civil aviation. The UAE observes that, given the freedom to design optimal networks, those airlines with successful network strategies and modern airline fleets will be able to make a sizeable contribution to reductions in emissions.

— END —