



# PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: MEDIUM-SIZED PROJECT

TYPE OF TRUST FUND: GEF TRUST FUND

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## PART I: PROJECT INFORMATION

Project Title:	Transforming the global aviation sector: Emissions Reductions from International Aviation		
Country(ies):	Global	GEF Project ID: <sup>1</sup>	5450
GEF Agency(ies):	UNDP (select) (select)	GEF Agency Project ID:	5254
Other Executing Partner(s):	International Civil Aviation Organization (ICAO)	Re-Submission Date:	August 14,2013
GEF Focal Area (s):	Climate Change	Project Duration (Months)	36
Name of parent program (if applicable):		Agency Fee (\$):	185,250
<ul style="list-style-type: none"> <li>For SFM/REDD+ <input type="checkbox"/></li> <li>For SGP <input type="checkbox"/></li> </ul>			

## A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK<sup>2</sup>:

Focal Area Objectives	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
CCM – 1	GEF TF	500,000	3,000,000
CCM – 4	GEF TF	1,450,000	5,300,000
(select) (select)	(select)		
(select) (select)	(select)		
(select) (select)	(select)		
(select) (select)	(select)		
(select) (select)	(select)		
Total Project Cost		1,950,000	8,300,000

## B. INDICATIVE PROJECT FRAMEWORK

<b>Project Objective:</b> To support the building of capacity in developing countries for implementing technical and operational measures for reducing CO2 emissions from the international aviation sector.						
Project Component	Grant Type <sup>3</sup>	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Cofinancing (\$)
Identification of implementation needs through State Action Plans	TA	Low emission aviation measures in developing ICAO member States are identified through State Action Plans	-Establishment of support platform to assist the development of high quality State Action Plans in developing countries. - Identification of State level specific technological, operational and Performance Based Aviation measures to be implemented in ICAO developing member states (See Annex 1 for basket of measures) - Identification of technical and financial needs for the implementation of such measures	GEFTF	300,000	1,250,000

<sup>1</sup> Project ID number will be assigned by GEFSEC.

<sup>2</sup> Refer to the reference attached on the [Focal Area Results Framework](#) when completing Table A.

<sup>3</sup> TA includes capacity building, and research and development.

			- Assessment of baseline and expected emission reductions based on State action plans.			
Support to States in enhancing national capacities and developing processes and mechanisms for low emissions aviation	TA	National capacities are strengthened and improved national processes and mechanisms for aviation emissions reductions are adopted by ICAO developing member states	<ul style="list-style-type: none"> <li>- Issuance and revision of guidelines for state level improved regulation, processes, and mechanisms, based on existing ICAP/CAEP guidance</li> <li>- Identification of regulatory and organizational improvements to promote low emissions aviation in ICAO developing member states</li> <li>- Analysis and policy recommendations for cross boundary emission reductions from international aviation</li> <li>- Strengthening of national capacities and information dissemination regarding benefits of regulatory and organizational reform</li> </ul>	GEFTF	400,000	1,500,000
Technical support platform for the implementation of low emission operational measures	TA	ICAO developing states have access to technical support for investment in low emissions aviation measures	<ul style="list-style-type: none"> <li>- Establishment of technical support platform, in partnership with airlines and other international aviation stakeholders, to support the implementation of low emission measures in the aviation sector.</li> <li>- Development of CO<sub>2</sub> emission reductions measurement and audit protocol for international aviation.</li> <li>- Assistance in the adoption of technical ICAO standards and recommended practices for CO<sub>2</sub> reduction.</li> <li>- Provision of technical advice for the implementation of low emission aviation measures in developing member states, according to the basket of measures to limit or reduce CO<sub>2</sub> emissions from international civil aviation.</li> <li>- Development and implementation of communication and outreach programmes.</li> </ul>	GEFTF	650,000	2,000,000
Demonstration of low emission aviation measures in developing states	TA	Low emissions aviation measures are demonstrated in developing ICAO member states	<ul style="list-style-type: none"> <li>- Development of action plan budgets and work plans for implementation of low emission aviation measures</li> <li>- Implementation of</li> </ul>	GEFTF	500,000	3,000,000

			pilot/demonstration emission reduction measures in globally representative developing state aviation centers. - Measurement of emission reductions from aviation resulting from implementation of pilot/demonstration measures.			
		Subtotal			1,850,000	7,750,000
		Project Management Cost (PMC) <sup>4</sup>		GEFTF	100,000	550,000
		Total Project Cost			1,950,000	8,300,000

**C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)<sup>5</sup>**

Sources of Cofinancing	Name of Cofinancier	Type of Cofinancing	Amount (\$)
1. National allocations	CAEP Member States	In Kind	1,400,000
2. Other multilateral agencies	International Organizations	Cash	3,000,000
3. ICAO Budget	Member States through contribution to ICAO Work Program	Cash	1,500,000
4. National Allocations	Member States	In Kind	2,100,000
5. Implementing Agency	UNDP	In Kind	300,000
			8,300,000

**D. INDICATIVE TRUST FUND RESOURCES (\$) REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY<sup>1</sup>**

GEF Agency	Type of Trust Fund	Focal Area	Country Name/Global	Grant Amount (\$) (a)	Agency Fee (\$) (b) <sup>2</sup>	Total (\$) c=a+b
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
<b>Total Grant Resources</b>						

<sup>1</sup> In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table. PMC amount from Table B should be included proportionately to the focal area amount in this table.

<sup>2</sup> Indicate fees related to this project.

**E. PROJECT PREPARATION GRANT (PPG)<sup>6</sup>**

Please check on the appropriate box for PPG as needed for the project according to the GEF Project Grant:

Amount  
Requested (\$)

Agency Fee  
for PPG (\$)<sup>7</sup>

<sup>4</sup> To be calculated as percent of subtotal.

<sup>5</sup> See Annex 3 for details of co-financing. In kind denotes spends by stakeholders that are related to the environment assistance program. In cash denotes contributions made and expended through ICAO towards the assistance program.

<sup>6</sup> On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

<sup>7</sup> PPG fee percentage follows the percentage of the GEF Project Grant amount requested.

- No PPG required. \_\_\_\_\_
- (upto) \$50k for projects up to & including \$1 million \_\_\_\_\_
- (upto)\$100k for projects up to & including \$3 million 50,000 4,750
- (upto)\$150k for projects up to & including \$6 million \_\_\_\_\_
- (upto)\$200k for projects up to & including \$10 million \_\_\_\_\_
- (upto)\$300k for projects above \$10 million \_\_\_\_\_

**PPG AMOUNT REQUESTED BY AGENCY(IES), FOCAL AREA(S) AND COUNTRY(IES) FOR MFA AND/OR MTF PROJECT ONLY**

Trust Fund	GEF Agency	Focal Area	Country Name/ Global	(in \$)		
				PPG (a)	Agency Fee (b)	Total c = a + b
(select)	(select)	(select)				0
<b>Total PPG Amount</b>				<b>0</b>	<b>0</b>	<b>0</b>

MFA: Multi-focal area projects; MTF: Multi-Trust Fund projects.

## **PART II: PROJECT JUSTIFICATION<sup>8</sup>**

### **A. PROJECT OVERVIEW**

#### **A.1. Project Description.**

##### **Background and global environmental problem**

In 2011, global air travel resulted in emissions of approximately 676 million tonnes of CO<sub>2</sub> equivalent; approximately 2 per cent of total global emissions and 12 per cent of transport related emissions. Despite increased efficiency, emissions from aviation will continue to rise in the future, primarily due to a projected growth rate of approximately 5% per year. Even if the current trend of a 2 per cent annual increase in efficiency continues in the medium term, annual emissions will still reach 1 billion tonnes of CO<sub>2</sub> per year by 2035. The International Civil Aviation Organization (ICAO) acknowledges that the current growth trends of international air traffic outweigh the gains made by fuel efficiency improvements, and recognizes the need for further remission reduction measures to significantly contribute to the IPCC's goal of maintaining the increase in global temperature from human induced climate change below 2°C.

Emissions from fuel used for international aviation and maritime transport have been addressed under the United Nations Framework Convention on Climate Change (UNFCCC) process since the first meeting of the Conference of the Parties (COP). At its first meeting in 1995 the COP requested the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI) to address the issue of allocation and control of emissions from international bunker fuels and to report on this work to COP 2. In response to this request, emissions from fuel used for international aviation and maritime transport have been continuously addressed under the SBSTA. In addition the Kyoto Protocol addresses emissions from fuel used for international aviation and maritime transport in its Article 2, paragraph 2. Article 2.2 of the Kyoto Protocol states that the Parties included in Annex I shall pursue limitation or reduction of emissions of greenhouse gas emissions not controlled by the Montreal Protocol from aviation and marine bunker fuels, working through the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO), respectively<sup>9</sup>.

The ICAO Resolution on International Aviation and Climate Change is a landmark agreement reached at the 37th Session of the ICAO General Assembly in September 2010 that establishes short, medium and long term goals for the sector. The resolution agrees to an annual 2 per cent fuel efficiency improvement until 2020, with a further aspirational goal of 2 per cent efficiency improvement from 2020 to 2050. In addition, it establishes a medium term goal of achieving carbon neutral growth from 2020, which would result in an emissions growth path peaking in 2020. Finally, the aviation industry has agreed on a long term target of halving net CO<sub>2</sub> emissions by 2050, based on 2005 emissions. The Resolution requests the ICAO Council to study, identify and develop processes and mechanisms to facilitate the provision of technical and financial assistance as well as financial access to existing and new financial resources, technology transfer and capacity building to member States.

##### **Baseline program**

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<sup>8</sup> Part II should not be longer than 5 pages.

<sup>9</sup> Based on text from UNFCCC website ([http://unfccc.int/methods/emissions\\_from\\_intl\\_transport/items/1057.php](http://unfccc.int/methods/emissions_from_intl_transport/items/1057.php))

The baseline program consists of the on-going and forthcoming activities that arise from the ICAO Resolution on International Aviation and Climate Change. The resolution encourages States to submit national action plans outlining their respective policies and actions, and annual reporting on international aviation CO<sub>2</sub> emissions to ICAO. It also invites those States that choose to prepare their action plans to submit them to ICAO as soon as possible, preferably by the end of June 2012, in order for ICAO to compile the information related to the achievement of the global aspirational goals. The action plans should include information on the measures considered by States, reflecting their respective national capacities and circumstances, and information on any specific assistance needs (A37-19, paragraph 10). To date, of the 191 ICAO Contracting States, ICAO has received 60 Action Plans of which 25 have been submitted by GEF eligible States. Of the action plans submitted, approximately 2/3 are incomplete and lack the data needed to assess their CO<sub>2</sub> emissions reduction potential. 15 additional countries have initiated the development of an Action Plan; and the remaining countries have not yet begun the process.

ICAO has an on-going program that provides technical guidance to its Member States to reduce CO<sub>2</sub> emissions from international civil aviation. Furthermore, ICAO has developed, in collaboration with an ad-hoc group of experts from the ICAO Committee on Aviation Environment Protection (CAEP) composed of States and stakeholders, the *Guidance on the Development of States' Action Plans on Emission Reduction*, which serves to guide States, step-by step, through the process of preparing and submitting a national action plan for emission reductions from international aviation. A dedicated interactive web interface was also developed to facilitate the submission of States' action plans to ICAO. The action plan development process establishes a framework to work with ICAO member States in identifying assistance, capacity building and implementation measures to contribute to the achievement of the above mentioned goals. States are encouraged to develop country specific action plans that calculate emission reductions and establish specific measures to be implemented, selected from a "basket of measures"<sup>10</sup>, which includes:

- 1- *Aircraft related technology development* - This category includes medium-term, long-term, and longer-term measures. Work is underway to develop a global CO<sub>2</sub> certification Standard for aircraft. Medium-term measures include retrofits and upgrade improvements on existing aircraft, optimizing improvements in aircraft produced in the near to mid-term. Long-term measures include purchase of new aircraft, while longer-term measures include the adoption of revolutionary new designs in aircraft/engines and the setting of more ambitious Standards.
- 2- *Alternative fuels* - The use of alternative fuels may lead to significant emissions reductions if implemented. However, their production requires significant investments by producers and possibly distributors. As a result, States would be required to provide incentives and support to such initiatives. Benefits will depend on the timely availability of such fuels, their lifecycle emissions reduction and the time profile of their introduction.
- 3- *Improved air traffic management and infrastructure use* - Improved use of communication, navigation and surveillance/air transport management (CNS/ATM) can improve the efficiency of air traffic management, leading to reduction in fuel burn and emissions. Problems associated with the provision of air navigation services using conventional CNS systems relate, among other things, to airspace fragmentation and lack of homogeneity, inefficient routing and ATM planning leading to possible congestion with related fuel burn penalties. Environmental benefits can be derived from more efficient air traffic management, ground operations, terminal operations (departure, approach and arrival), en-route operations,

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<sup>10</sup> Please refer to Annex 1 for the complete list of activities contemplated in the Basket of measures to limit or reduce CO<sub>2</sub> emissions from international civil aviation

airspace design and usage, aircraft equipment and capabilities. Airport infrastructure measures related to reducing aircraft emissions at airports include measures such as improving the efficient use and planning of airport capacities, the installation and use of terminal support to reduce aircraft Auxiliary Power Unit usage and the construction of additional taxiways and runways to provide direct terminal access and reduce congestion.

4- *More efficient operations* - Emissions reduction may be achieved in the short-term and with minimum investment through improved aircraft operations and management. Improvements can be introduced in pre-flight procedures (centre of gravity, take-off weight, flight planning, taxiing, APU) as well as in-flight procedures (take-off and climb), cruise, descent, holding and approach) and post-flight maintenance procedures (airframe and engine maintenance and aerodynamic deterioration).

5- *Economic/market based measures* - Economic and market-based measures are policy tools that are designed to achieve environmental goals at a lower cost and in a more flexible manner than traditional regulatory measures. ICAO has been developing policies and guidance material, as well as collecting information on various MBMs, including emissions trading, emission-related levies (charges and taxes), and emissions offsetting.

6- *Regulatory Measures/other* - These measures include airport movement caps/slot management, requirements for the use of sustainable alternative fuels, and enhancing weather forecasting services, among others. Proper assessment would be needed to assess the feasibility and emission reduction potential of each measure.

#### Proposed Alternative Scenario and Program strategy

Achieving a sector wide transformation toward a low carbon aviation industry requires concerted action at the global and national levels. While technical innovation is clearly necessary for improved efficiency, a global transformation to a low emissions aviation industry that fully incorporates developing countries must also include technical support, strengthening of national capacities, and the creation of a policy and market environment that rewards investment in low emission technologies. The UNDP/ICAO partnership, supported with GEF resources, will establish a framework that allows the international aviation sector in developing countries to fully engage in low emissions aviation and fulfill its vast greenhouse gas emission reduction potential. This will be done by the implementation of the following project components, designed to stimulate the implementation of low emission aviation measures in developing states.

1) *Identification of implementation needs through State Action Plans* The project will provide technical support to countries in developing, improving, and updating their state action plans, as necessary. Developing high quality state action plans is a crucial first step to secure national participation and ownership, as well as ensuring methodological consistency across states. Technical support will include the development of national baselines, identification of measures that will reduce emissions from international aviation, and determining and documenting technical and financial aspects of the identified measures and key constraints and assistance needs. The project will also foster collaboration between ICAO and GEF focal points at the country level to identify potential programming opportunities.

2) *Support to States in enhancing national capacities and developing processes and mechanisms for low emissions aviation* The program will support the strengthening of capacities for implementing low emissions processes and mechanisms. Building upon the ICAO CAEP support documents issued to date, the project will develop guidance specifically targeted to developing states to promote emission reductions from international aviation

through instruments such as policies, regulations, market based mechanisms, and streamlined processes. The project will also provide support to States to better use the guidance documents, the template developed and the Action Plan for Emission Reduction (APER) website. This component will support both the development of cross boundary (global and/or regional) regulatory and organizational measures, as well as the implementation of country specific measures identified by States in their action plans, such as airport management operations, air traffic control, and minimum efficiency requirements. Given that sustainable liquid biofuels are a key measure for reducing emissions from the sector, the project will take into account the measures recommended in Guidelines for Sustainable Liquid Biofuels Production in Developing Countries<sup>11</sup>.

3) *Establishment of a technical support platform for the implementation of low emission operational measures.* The program will provide technical support to member states on the implementation and update of operational measures. A technical support group will be established to oversee the implementation of the measures identified in State action plans selected from the basket of measures (Please see Annex1 for specific activities contained in the basket of measures). The program will also develop measurement and audit protocol to monitor the efficacy and impact of the implemented measures implementation and provided assistance. The development of emissions reductions measurement and audit protocol for international aviation is critical to ensure that the project is meeting its target outcome in terms of reduction in emissions from international aviation. ICAO proposes to use the wealth of expertise it has at its disposal in terms of technical knowledge, CAEP approved models and tools for this purpose. A key aspect will be the incorporation of all relevant industry stakeholders, including airlines, civil aviation authorities, and airport operators, to ensure consistency and coordination for technical support services. Likewise, this component will include a communications and outreach program to raise awareness in developing countries regarding the importance of engaging in low emissions aviation.

4) *Demonstration of low emission aviation measures in developing states.* A key component of the project is to stimulate the implementation of measures identified in the State action plans in developing countries. The ICAO-UNDP-GEF program will implement pilot low emission measures in developing country aviation centers representative of the global aviation sector. These measures will serve the dual purpose of reducing global emissions (as in the aviation sector any mitigation measures taken by one State has a cross boundary impact) and demonstrating the feasibility of implementing such measures in developing states. Additionally, the project will work with ICAO and GEF focal points in identifying potential climate change mitigation programming opportunities to develop national low emission aviation projects. Furthermore, in line with the basket of measures described above, the program will support the transfer of best practices through capacity building and assistance in the development and implementation regulations and operational measures.

#### GEF incremental reasoning

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<sup>11</sup> Global Assessments and Guidelines for Sustainable Liquid Biofuels Production in Developing Countries is a targeted research project funded by the Global Environment Facility (GEF), and carried out in collaboration between UNEP, the Food and Agriculture Organization, UNIDO, and the International Energy Agency. The guidance material is available at <http://www.unep.org/Bioenergy/>



The ICAO Resolution on International Aviation and Climate Change and the commitment from ICAO's Member States and the aviation industry to implement a strategy for environmentally sustainable growth is a strong baseline for the GEF project. Furthermore, the roadmap established by ICAO is a solid foundation for action. However, to date there is a noticeable difference between the level of engagement demonstrated by developing nations and large developing states, when compared to the majority of the developing world. The current submission status of State Action Plans mirrors this breach, since a large majority of those presented to date are from developed countries. There is a risk that, without additional support and encouragement, this gap will widen, and developing states will fall significantly behind in their low emission aviation programs. As a global sector in which the majority of growth is expected to occur in developing countries, it is essential for all states to fully engage in reducing emissions from aviation in order to meet ICAO's climate change aspirations and goals.

The GEF project is designed to support GEF-eligible ICAO member states in engaging further in low emissions aviation planning and implementation. Several developing countries require financial and technical support to implement the measures outlined in their action plans. The incremental adoption of technical guidance and activities faces constraints of financial feasibility, since many measures bring about CO<sub>2</sub> reductions at costs of capital that could be used elsewhere in the business cycle with better returns. This is of significant concern, especially to developing countries who are already constrained due to access to capital and or high borrowing costs. Likewise, there are significant technical and capacity constraints in developing countries that prevent the adoption of aviation regulations and procedures that can significantly reduce CO<sub>2</sub> emissions.

The principal added value of the proposed ICAO/UNDP/GEF program is that it will allow for an enhanced involvement of developing ICAO states in reducing emissions from international aviation. By providing a strengthened technical assistance and capacity development program to developing countries, the project will ensure that such countries develop high quality State Action Plans with feasible, nationally appropriate measures to reduce emissions from the sector. The GEF project will also support countries in developing national implementation programmes that ensure on the ground investment in emission reducing measures. Through the demonstration of feasible low emission aviation measures in developing states, the project will encourage technology transfer and knowledge sharing, leading to a more rapid adoption of state of the art technology. The program will also facilitate the incremental adoption of emissions reductions technological, operational and Air Traffic Management activities in developing countries.

Given the global nature of international aviation, the support provided by this project for active participation of developing countries will significantly boost the efforts of ICAO states, the aviation industry, and all associated stakeholders to decrease the carbon intensity of the sector. For ICAO, the GEF is a key partner in implementing the Resolution on International Aviation and Climate Change, specifically by providing technical and financial assistance to developing countries.

#### Global Environmental Benefits

The implementation of technological, operational and Air Traffic Management improvements in the aviation sector will lead to a reduction in CO<sub>2</sub> emissions that will continue as long as operations with the measures are carried out. On a global level, based on the latest CAEP analysis, the baseline CO<sub>2</sub> emissions from International Aviation in 2010 was estimated at around 450 MT/year. The CAEP analysis estimates a global savings due to adoption of the basket of measures of around 5% - 7% of emissions under the optimistic technology and operational improvements scenario by the year 2020, and around 14% - 18% by the year 2030. This is equivalent to an emission reduction could ranging from 19 – 34 MT/year by 2020 and 79

– 160 MT/ year by 2030. These projected savings are the result of the emissions reduction measures being implemented in States in the periods starting from now and leading to 2020 and 2030.

These projections include the engagement of the developing countries participating in this global initiative, which is where the majority of the sector's growth is expected to occur over the next decades. As such, the ICAO/UNDP/GEF program will have a significant influence in ensuring that these emission reductions are achieved. A more detailed analysis of indirect emission reductions attributed to the GEF project will be presented at the CEO Approval stage.

The direct GHG emission reductions attributable to the ICAO/UNDP/GEF program will be the result of the project's support to the implementation of emission reduction measures in developing countries. These demonstration/pilot facilities will serve as a showcase for low emissions aviation in the developing world and are expected to spawn replication across the sector. The direct emission reductions and estimated replication potential will be presented at the CEO Approval stage.

### Innovativeness, Sustainability and Potential for Scaling Up

This project is highly innovative as there has not been a GEF project targeted at reducing emissions from aviation to date. Furthermore, the will foster a promising partnership between the GEF and the aviation sector both at the global and country level. The impact of this project will be mostly systemic, as the strategy is to engage developing countries in a medium and long term process to initially stabilize and then reduce emissions from the aviation sector. The ICAO aspirational goals set clear targets for the entire sector, and the GEF project builds upon this momentum to work with developing countries in defining precisely how, and by which means, they can contribute to the achievement of these goals. The aviation sector is symbolic of global connectivity and integration, and as such, is a rapid disseminator of technological innovation, and best practices across the world. The project will create a platform to ensure such that the transfer of technology and know-how reaches out across all ICAO developing member states. As such, the project will significantly contribute to a long term and high impact emission reduction process that will result in transformation of the aviation sector to a sustainable path.

#### A.2. Stakeholders.

The programme is based upon a partnership between UNDP the International Civil Aviation Organization (ICAO), and its 191 member States. Through ICAO the programmes will be part of an extensive network that covers environmental organizations, International Coalition for Sustainable Aviation (ICSA), Civil Aviation authorities, airspace regulators, Airport Council International (ACI), International Air Transport Association (IATA), International Coordinating Council of Aerospace Industries Association (ICCAIA), Civil Air Navigation Services Organization (CANSO) and Industries providing emissions reduction services and product to the users. ICAO will serve as a platform for engaging these stakeholders during project design, ensuring that the program reflects their points of view and secures their ownership to deliver coordinated and reliable support.

The project will engage with the Industry through their associations; IATA for air carriers, CANSO for air navigation service providers, ACI for airports and ICCAIA for airspace industries. The members of these Organizations from the Industry are well represented in the various CAEP working group and steering group meetings, providing active support to the various environmental tasks of ICAO that bring about reduction in emissions from international aviation. In addition the international organizations themselves are all observers in CAEP meetings and provide support and valuable inputs regarding the emissions reduction services

and products being developed by the industry. This, in turn, feeds into the policy making process at ICAO.

### A.3 Risks.

Risk	Remedial Action
Developing countries do not prioritize emission reductions from international aviation.	The project is embedded in a framework of multiple stakeholder discussions on emission reductions facilitated by ICAO, which has made significant progress in engaging all member states. The agreement to develop State Action Plans demonstrates a willingness to identify actions to reduce emissions, subject to national circumstances. The possibility of engaging GEF and additional support for the implementation of such measures provides a great incentive to entice developing countries to join this effort.
The aviation industry does not embrace the measures needed to achieve significant emission reductions from the sector.	The commitments and voluntary targets established by the industry are a strong indicator that there is willingness to engage in low emissions aviation. A key aspect is to ensure concerted action across the industry, in order to ensure that the potential financial impact is not imbalanced across regions, thus affecting the competitiveness of the industry. ICAO is at the forefront of this concerted action and has a successful track record of engaging the industry, which provides reassurance on the continued commitment of all associated stakeholders.
Global economic conditions do not allow developing states and/or the aviation industry to invest in low emissions aviation.	International aviation is a highly competitive industry which is particularly vulnerable to the state of the global economy. As such, the commitment to additional investment fluctuates according to global economic conditions. The project seeks to minimize this risk by creating medium and long term market and regulatory conditions that establish a stable framework for investment in low emissions measures, regardless of global economic fluctuations. Furthermore, state action plans will identify the most cost effective measures for implementation, thus creating a potential for increased competitiveness and costs savings through emission reductions.

#### A.4. Coordination

There are no prior or ongoing GEF initiatives related to the international aviation sector.

### **B. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

**B.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NCSAs, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.:**

This global initiative is fully consistent with the ICAO Resolution on International Aviation and Climate Change adopted by the ICAO General Assembly. GEF support is in line with the Resolution's specific request to the ICAO Council to study, identify and develop processes and mechanisms to facilitate the provision of technical and financial assistance as well as financial access to existing and new financial resources, technology transfer and capacity building to member States. The project supports developing countries in meeting their obligations under the UNFCCC by addressing a significant source of global GHG emissions.

**B.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities:**

The project is designed to reduce GHG emissions from the international transport sector, and is therefore presented under GEF CCM Strategic Objective 4 - Promote energy efficient, low carbon transport and urban systems. Given the trans-boundary nature of the international aviation industry, the project promotes a global framework supportive of the adoption of low emission practices in international transport, facilitating and encouraging the participation of developing states.

Likewise, the implementation of low emission measures in developing states ensures investment and adoption of innovative technologies. As such, the demonstration component of the project is presented under CCM-1 – Promote the demonstration, deployment and transfer of low-carbon innovative technologies.

**B.3 The GEF Agency's comparative advantage for implementing this project:**

UNDP and ICAO have a long standing collaboration agreement and working relationship for activities related to international civil aviation, thus providing an established framework for the implementation of this programme. UNDP has a proven record in working with developing countries to achieve greenhouse gas emission reductions through a combination of technical assistance, support in development of policy and regulatory measures, and implementation of market based mechanisms. The program is designed to combine these strengths with ICAO's aviation environment policy, regulatory and technical expertise and mandate in aviation to achieve a sector wide transformation to a low carbon industry. The execution of the project will be carried out by Technical Cooperation Bureau of ICAO with UNDP being the implementing agency. UNDP's country level presence in developing nations

will facilitate the implementation of State action plans at the national level. Furthermore, UNDP will leverage its high level political in country presence to promote further collaboration between GEF and ICAO focal points, as well as with other national stakeholders, with the aim of fostering partnerships that lead to strong national low emission aviation programs.


UNDP has substantial experience in working on transformation of global shipping practices, in particular through the UNDP/GEF GloBallast International Waters initiative, which has successfully transformers the way the shilling industry manages ballast water to reduce cross boundary pollution and the introduction of invasive species. The GloBallast project worked at both global and national levels, and was founded on a strong relationship between the International Maritime Organization (IMO), UNDP, and the GEF. The current proposal aims to replicate this experience in the aviation sector, building upon each agency's comparative strength and building strong links between the global level, where discussions are held agreements are reached, and national level, which is where the actual emission reduction activities take place.

**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

- A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):** (Please attach the [Operational Focal Point endorsement letter\(s\)](#) with this template. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)

- B. GEF AGENCY(IES) CERTIFICATION**

<b>This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.</b>					
Agency Coordinator, Agency name	Signature	DATE (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Adriana Dinu UNDP/GEF Officer-in-Charge and Deputy Executive Coordinator		August 14, 2013	Oliver Page Regional Technical Advisor EITT	(507)302- 4548	Oliver.page@undp.org

## **Annex 1- International Civil Aviation Organization / Group on International Aviation and Climate Basket of Measures**

### **Basket of measures to limit or reduce CO2 emissions from international civil aviation**

#### **1) Aircraft related technology development**

- a. Aircraft minimum fuel efficiency standards
- b. Aggressive aircraft fuel efficiency standards, setting standards for the future
- c. Purchase of new aircraft
- d. Retrofitting and upgrade improvements on existing aircraft
  - i. Improve fuel efficiency through development of modification such as winglets, riblets, etc.
  - ii. Replacement of engines
  - iii. Replacement or modification of avionics
  - iv. Other
- e. Optimizing improvements in aircraft produced in the near to mid-term
  - i. Maximising contribution of lightweight materials in aircraft planned for the near future
  - ii. Maximising contribution of engine technology in aircraft planned for the near future
  - iii. Maximising contribution of auxiliary power sources in aircraft planned for the near future
- f. Avionics
- g. Adoption of revolutionary new designs in aircraft/engines
  - i. Open rotor
  - ii. Blended wing body
  - iii. Improved laminar flow
  - iv. Other
- h. Alternative Fuels

#### **2) Alternative Fuels**

- a. Development of biofuels
- b. Development of other fuels with lower lifecycle CO2 emissions
- c. Standards/requirements for alternative fuel use

#### **3) Improved air traffic management and infrastructure use**

- a. More efficient ATM planning, ground operations, terminal operations (departure and arrivals), en-route operations, airspace design and usage, aircraft air navigation capabilities
  - i. Measures to improve pre-departure planning
  - ii. Measures to improve ground operations
  - iii. Measures to improve collaborative decision making
  - iv. Measures to improve the use of optimum flight levels
  - ix. Measures to improve flexible use of civil-military airspace
  - v. Measures to improve the use of optimum routings
  - vi. Measures to improve flexible tracks
  - vii. Measures to improve fuel efficient departure and approach procedures
  - viii. Measures to fully utilize RNAV/RNP capabilities
- b. More efficient use and planning of airport capacities

- i. Measures to improve taxiing
- ii. Measures to improve parking
- iii. Measures to enhance terminal support facilities
- iv. Measures to plan new capacity when bottlenecks cause environmental problems.
- c. Conversion of airport infrastructure and ground support equipment to cleaner fuels
  - i. Electrical operated ground vehicles
  - ii. Gas operated ground vehicles
  - iii. biofuel operated ground vehicles
- d. Construction of additional runways
- e. Enhanced terminal support facilities
  - i. GPUs(replacement by direct electrical supply)
  - ii. Preconditioned air
- f. Improved public transport access
- g. Collaborative research endeavours
  - i. AIRE
  - ii. ASPIRE
  - iii. Other

#### **4) More efficient operations**

- a. Best practices in operations – ICAO Circular 303
  - i. Minimising weight
  - ii. Improving load factors
  - iii. Reduced speed
  - iv. Improved ground operations
  - v. Training pilots
- b. Optimised aircraft maintenance (including jet engine cleaning/washing)
- c. Selecting aircraft best suited to mission: Tailoring aircraft selection to use on particular routes/missions (long haul, short haul, etc.)

#### **5) Economic/ market-based measures**

- a. Voluntary inclusion of aviation sector in emissions trading scheme
- b. Incorporation of emissions from the international aviation into regional or national emissions trading schemes, in accordance with relevant international instruments – ICAO Guidance 9885
- c. Establishment of a multilateral emissions trading scheme for aviation which allows trading permits with other sectors, in accordance with relevant international instruments
- d. Establishment of a framework for linking existing emissions trading schemes and providing for their extension to international aviation, in accordance with relevant international instruments - ICAO Manual when available
- e. Emissions charges or modulation of LTO charges, in accordance with relevant international instruments
  - i. NOx charges
  - ii. Fuel charges
  - iii. Other
- f. Positive economic stimulation by regulator:
  - i. Research programs



- ii. Special consideration and government programs/legislation
- iv. Accelerated depreciation of aircraft
- iv. Other
- g. Accredited offset schemes
- h. Explore extension of CDM
- i. Taxation of aviation fuel in accordance with relevant international instrument

**6) Regulatory measures**

- a. Airport movement caps/slot management
- b. Enhancing weather forecasting services
- c. Requiring transparent carbon reporting
- d. Conferences/workshops

**7. Other**

- a. other

## Annex 2 – Preliminary Budget for use of GEF Funds

The table below provides an initial estimate of the GEF budget. Please note a detailed budget will be defined during the PPG phase, as is standard for GEF project design. It is likely that the breakdown of the budget presented for CEO Approval will vary from this presentation, reflecting a more accurate assessment of the resource allocation based on the project design.

<b>Project Component</b>	<b>Expenditure Description</b>	<b>Budget (US\$)</b>
Identification of implementation needs through State Action Plans	Individual Consultancy	150,000
	Company contractual services	60,000
	Travel	20,000
	Training	20,000
	A/V Material and publishing	30,000
	Hardware	
	Software	20,000
	<b>Subtotal</b>	<b>300,000</b>
Support to States in enhancing national capacities and developing processes and mechanisms for low emissions aviation	Individual Consultancy	150,000
	Company contractual services	50,000
	Travel	30,000
	Training	100,000
	A/V Material and publishing	50,000
	Hardware	
	Software	20,000
	<b>Subtotal</b>	<b>400,000</b>
Technical support platform for the implementation of low emission operational measures	Individual Consultancy	200,000
	Company contractual services	280,000
	Travel	50,000
	Training	50,000
	A/V Material and publishing	20,000
	Hardware	
	Software	50,000
	<b>Subtotal</b>	<b>650,000</b>
Demonstration of low emission aviation measures in developing states	Individual Consultancy	
	Company contractual services	80,000
	Travel	20,000
	Training	
	A/V Material and publishing	
	Hardware	300,000
	Software	100,000
	<b>Subtotal</b>	<b>500,000</b>
Project Management Cost	<b>Subtotal</b>	<b>100,000</b>
<b>Total</b>		<b>1,950,000</b>

### Project Budget summary

<b>Expenditure Description</b>	<b>Budget (US\$)</b>
Individual Consultancy and Direct Staff costs	500,000
Company contractual services	470,000
Travel	120,000
Training	170,000
A/V Material and publishing	90,000
Hardware	290,000
Software	180,000
<b><i>Subtotal</i></b>	<b><i>1,820,000</i></b>
Administrative overheads	130,000
<b>Total</b>	<b>1,950,000</b>

### Annex 3 – Estimates of Co-financing indicated in Table C

1. The in kind co-financing of US\$ 1.4 million from ICAO/CAEP is a conservative estimate arrived at after considering the monetization of time and resources provided by ICAO CAEP members towards the climate change activities undertaken as part of the Environmental Protection strategic objective of ICAO.
2. The in cash US\$ 3 million co-financing is an indicative provisional amount that is expected from international organizations with whom ICAO is coordinating to secure funding related to the development of the action plans and implementation of emissions reduction measures.
3. The US 1.5 million co-financing is an estimate arrived at after considering the allocations from national governments to ICAO work program assessed budgets, attributable to assistance, action plans and related activities. These include staff costs, consultant costs, travel, meeting costs , hardware and software costs to develop tools and other administrative overheads.
4. The in kind US 2.1 million co-financing is an estimate arrived at after considering the allocations from national governments to environment related activities attributable to assistance, action plans and related activities. These include staff costs, consultant costs, provision of expert and specialists, travel, meeting costs , hardware and software costs to run tools and other administrative overheads.