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UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

**Subsidiary Body for Scientific and Technological Advice**
**Fortieth session**
**Bonn, 4–15 June 2014**

Item 11(c) of the provisional agenda
**Methodological issues under the Convention**
**Emissions from fuel used for international aviation and maritime transport**

# Information relevant to emissions from fuel used for international aviation and maritime transport

## Submissions from international organizations

1. The Subsidiary Body for Scientific and Technological Advice, at its thirty-ninth session, invited the secretariats of the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) to continue to report, at its future sessions, on relevant work in relation to addressing emissions from fuel used for international aviation and maritime transport.[1]

2. The secretariat has received submissions from ICAO and IMO containing information on emissions from fuel used for international aviation and maritime transport. In accordance with the procedure for miscellaneous documents, these submissions are attached and reproduced* in the language in which they were received and without formal editing.[2]

[1] FCCC/SBSTA/2013/5, paragraph 94.

* These submissions have been electronically imported in order to make them available on electronic systems, including the World Wide Web. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

[2] Also available at <http://unfccc.int/7482.php>.

**FCCC/SBSTA/2014/MISC.5**

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Paper no. 1: International Civil Aviation Organization

**UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)**

**The Fortieth Session of the UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA40)**

**(4 to 15 June 2014 – Bonn, Germany)**

**Agenda Item 11 (c)**
**Emissions from fuel used for international aviation and maritime transport**

**(Submission by the International Civil Aviation Organization (ICAO))**


**Executive Summary**

Following the last triennial Assembly in October 2013, ICAO and Member States has been actively engaged in progressing on a comprehensive strategy to address $CO_2$ emissions from international aviation, with a view to achieving collective global aspirational goals for the sector's $CO_2$ emissions reduction. Key clusters of ICAO's work include the development and facilitation of mitigation measures, such as aircraft technology, operational improvements, sustainable alternative fuels, market-based measures (MBMs), as well as the implementation support for Member States' action plans to reduce $CO_2$ emissions from international aviation through assistance and capacity building .

The robust capacity building programme over the last triennium enabled the submission of action plans to reduce international aviation $CO_2$ emissions by Member States, representing over 80 per cent of global international air traffic. To provide further support in the development and refinement of their action plans. ICAO just held the first two seminars in Mexico and Peru in April 2014 and five more seminars in other regions are planned by early 2015. To facilitate access to financing for Member States' actions, ICAO has built partnerships with the Global Environmental Facility (GEF) and the United Nations Development Programme (UNDP), as well as with the European Union (EU).

The development of a global MBM scheme for international aviation, as requested by the Assembly, needs significant efforts of the Organization, and the ICAO Council in February 2014 defined a clear process and roadmap to achieve this objective. The newly established Environment Advisory Group (EAG) has been making progress using the approach of a "Srawman" which started with a simple and basic proposal for a global MBM scheme with a view to generating the discussion on advantages and disadvantages of its design elements and allowing for the improvements of the Strawman. This iterative approach will ensure the full engagement of States and other stakeholders, taking into account inputs from different sources.

The results of the 38th Assembly are a testimony of ICAO and its Member States' collective resolve to develop concrete and meaningful proposals to reach an environmentally sustainable future for air transport. Cooperating closely with its Member States and the aviation industry, ICAO is ready and committed to supporting this journey.

Full text of Resolution A38-18 adopted by the ICAO Assembly is provided in the Appendix.

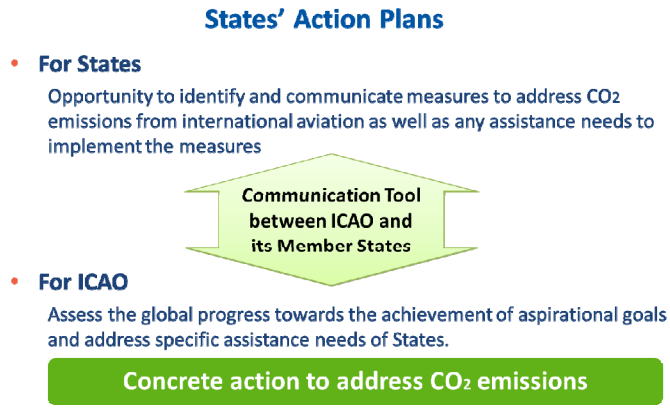
## 1. RECENT ICAO DEVELOPMENTS

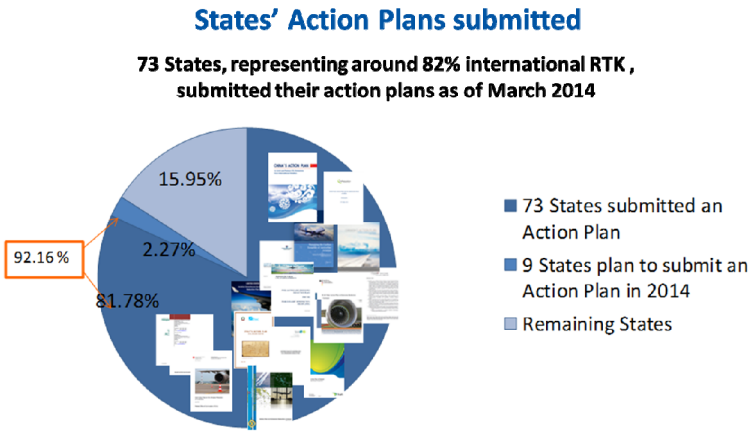
### States' Action Plans

1.1 The 38th ICAO Assembly in October 2013 acknowledged the successful outcome of the Organization's initiatives with respect to the development and submission of States' action plans on $CO_2$ emissions reduction from international aviation, by Member States that represent over 80 per cent of global international air traffic. The Assembly encouraged Member States to submit more complete and robust data in their action plans to facilitate the compilation of global emissions data by ICAO. It also encouraged the partnerships among ICAO, States and other organizations, and emphasized the need for the Secretariat to provide further guidance and other technical assistance.

1.2 Since the Assembly, ICAO Doc 9988, *Guidance on the Development of States' Action Plans on $CO_2$ Emissions Reduction Activities*, was refined including the provision of guidance on stakeholders' involvement and organizational arrangements needed. Improvements were also made to simplify the methodologies to assess the emissions calculation and reporting. In order to provide capacity building to States' focal points in the development and refinement of their action plans, ICAO held the first two seminars in Mexico and Peru in April 2014 and five more seminars in other regions are planned by early 2015

1.3 Voluntary submission of additional or updated action plans to ICAO are expected by the end of June 2015, as requested by the Assembly.




**Assistance to States**

1.4 As part of ICAO's efforts to provide further assistance to States and facilitate access to financing for the development and implementation of States' action plans, ICAO established partnerships with the Global Environmental Facility (GEF) and the United Nations Development Programme (UNDP), as well as with the European Union (EU).

1.5 The ICAO's joint project with the GEF-UNDP includes identifying and facilitating the implementation of measures to reduce international aviation $CO_2$ emissions. One important element of this project is a practical case study, consisting of the implementation of a $CO_2$ reduction measure that can be replicated in other States. These endeavour to facilitate States in pledging part of their domestic grant allocations be dedicated to green aviation related projects.

1.6 The ICAO's joint project with the EU involves 14 States from the African and Caribbean regions. The estimated duration of the project is 42 months, with the overarching objective of contributing to international, regional and national efforts to address growing $CO_2$ emissions from international aviation.

1.7 Recognizing that year 2014 is the international year of Small Island Developing States (SIDS) and the importance of air transport to the sustainable development of SIDS, ICAO has included SIDS in both joint climate change assistance projects with GEF-UNDP and with EU. ICAO will provide information to the third SIDS conference in September 2014, in Apia, Samoa, to showcase the work being undertaken by ICAO on providing assistance to SIDS.

1.8 In addition to the GEF-UNDP and EU projects, further opportunities to build partnerships with other international organizations and regional development banks have been explored by the Secretariat to facilitate more access to financing Member States' action to reduce aviation emissions.

**Sustainable Alternative Fuels for Aviation**

1.9 The 38th ICAO Assembly highlighted the progress achieved in promoting and facilitating the development and deployment of sustainable alternative fuels for aviation, including information sharing on best practices among States and other stakeholders and the ongoing update of the ICAO Global Framework for Aviation Alternative Fuels (GFAAF) website, as well as the promotion of global initiatives.

1.10 The Assembly also requested to provide a global view of the future use of alternative jet fuels and of the associated range of potential emissions reductions. With a view to developing such a projection, a new Alternative Fuels Task Force (AFTF) was established under the ICAO's Committee on Aviation Environmental Protection (CAEP) in November 2013.

1.11 The AFTF consists of 70 experts from 22 States and organizations, and is working to develop a methodology for the assessment of full life-cycle $CO_2$ emissions, assess the future production of alternative jet fuel, and apply the life-cycle methodology to evaluate the associated emissions reductions in future.

1.12 In addition, ICAO has been working with the Sustainable Energy for All (SE4ALL) initiative with a view to building partnership in promoting linkages and synergies between the aviation industry and governments on sustainable alternative fuels.


*ICAO Global Framework for Aviation Alternative Fuels (GFAAF) website (http://www.icao.int/environmental-protection/GFAAF/Pages/default.aspx)*

**Global Market-based Measure (MBM)**

1.13 The agreement of the 38th Assembly on the development of a global MBM scheme for international aviation, reflects the strong support of Member States for a global solution to the international aviation industry. Significant efforts need to be undertaken as the Organization moves forward in developing a recommendation for a global MBM scheme capable of being implemented from 2020, for decision by the 39th Session of the Assembly in 2016.

1.14 In this regard, in February 2014, the ICAO Council agreed on a clear process and roadmap, with expected milestones and necessary governance structure, including the establishment of the

Environment Advisory Group (EAG). The EAG has been working on a global MBM scheme under the direction of the Council, using the approach of a "Strawman" which started with a simple and basic proposal for a global MBM scheme with a view to generating the discussion on advantages and disadvantages of its design elements and allowing for the improvements of the Strawman. This iterative approach will also ensure the full engagement of States and other stakeholders, taking into account inputs from different sources.

1.15 To support work on some design elements of the Strawman, a new Global Market Based Measure Technical Task Force (GMTF) was established under CAEP to undertake technical work related to monitoring, reporting and verification (MRV) system, and the criteria for emissions units to be eligible for the global MBM scheme. In addition, the EAG's discussion on the Strawman identified the need to undertake a series of quantitative impact analyses which are expected to be undertaken during the 2014 summer period in order to facilitate more in-depth discussion and subsequent decision-making.

**ICAO Green Technology Seminar**

1.16 ICAO is organizing a seminar with exhibition entitled "Fuelling Aviation with Green Technology" from 9 to10 September 2014 in Montreal[1]. This seminar provides an opportunity to gain knowledge and share information on the latest and most innovative technologies to reduce aviation $CO_2$ emissions. The event will address topics such as next generation aircraft, airplane recycling, green operations, eco-airports, renewable energy for aviation, and financing.

1.17 Key driver of this Seminar is to create a platform in ICAO to bring and discuss novelty topics that would not be considered internationally, with a view to raising awareness, facilitating information sharing, and further discussing possible next steps by the Organization on these innovative topics.

## 2. UNFCCC – CLIMATE FINANCE

2.1 One of the areas where international aviation was considered under the UNFCCC process is the issue of long-term climate finance. The UNFCCC conferences adopted a series of decisions which included the work programme on long-term climate finance, to further analyse options for the mobilization of USD 100 billion per year by 2020 from a wide variety of potential sources.

2.2 Some Parties expressed concern with the proposals to use international aviation as a potential source for mobilizing such revenue. Such proposals include the report of the World Bank (WB) / International Monetary Fund (IMF) under the G20 process in 2011, which explored global carbon charges of USD 25 per tonne of $CO_2$ on international transport, which the report suggested could raise USD 12 billion per year by 2020 from international aviation.

2.3 It should be highlighted that the achievement of ICAO's global aspirational goals for the international aviation sector requires adequate financial resources within the sector itself, enabling it to effectively respond to the global climate change challenge. It is of utmost importance that the development of a global MBM scheme for international aviation be treated as one element of a basket of mitigation measures to achieve the global aspirational goals, and not in isolation.

2.4 In this regard, the 38th Assembly urged that ICAO and its Member States express a clear concern, through the UNFCCC process, on the use of international aviation as a potential source for

[1] http://www.icao.int/Meetings/EnvironmentalWorkshops/Pages/GreenTechnology.aspx

the mobilization of revenue for climate finance to the other sectors, in order to ensure that international aviation would not be targeted as a source of such revenue in a disproportionate manner.

2.5 The Assembly also requested Member States to communicate and coordinate with their delegations of Parties to the UNFCCC process regarding developments on international aviation and climate change under ICAO.

## 3. UN CLIMATE SUMMIT

3.1 As part of global efforts to mobilize action and ambition on climate change, UN Secretary-General Ban Ki-moon has invited Heads of State and Governments along with business, finance, civil society and local leaders to the UN Climate Summit on 23 September 2014.

3.2 ICAO fully recognizes the importance of the UN Climate Summit, which will take place one year before States aim to conclude a global climate agreement at the UNFCCC conference in December 2015 in Paris.

3.3 ICAO is involved in the preparation of the Summit on two fronts. The first is its cooperation with UNEP and the UNFCCC in helping the UN Secretary General to "green" the UN Summit and in organizing a climate neutral event. The ICAO Carbon Emissions Calculator can be used to estimate the air travel related component of the carbon emissions generated by the Summit and its delegates.

3.4 In addition, during the Summit, ICAO is planning to showcase concrete initiatives from States in the field of sustainable energy and alternative fuels, such as using sustainable biojet fuels on flights to New York, and showcasing the ongoing work in assisting States with the support of the aviation industry and in partnerships with the GEF-UNDP and EU.

## 4. CONCLUSIONS

4.1 With the increasing engagement of Members States, together in close cooperation with the aviation industry and other UN bodies and international organizations, ICAO has been working actively towards developing global solutions to address GHG emissions from international aviation.

4.2 ICAO Assembly Resolution A38-18 is a clear demonstration of the willingness of ICAO and its Member States to exercise continuous leadership on environmental issues related to international aviation, and provides concrete steps as ICAO moves forward in demonstrating how it intends to achieve the ultimate vision of sustainable international aviation.

Paper no. 2: International Maritime Organization

**Note by the International Maritime Organization to the fortieth session of the Subsidiary Body for Scientific and Technological Advice (SBSTA 40)**
**Bonn, Germany, 4 to 15 June 2014**

**Agenda item 11(c)**
**Emissions from fuel used for international aviation and maritime transport**

# UPDATE ON IMO'S WORK TO ADDRESS EMISSIONS FROM FUEL USED FOR INTERNATIONAL SHIPPING


**SUMMARY**

IMO's Marine Environment Protection Committee has been considering as an integral part of its agenda, actions to address greenhouse gas (GHG) emission from ships engaged in international trade. It met for its 66th session from 31 March to 4 April 2014 (MEPC 66), at IMO Headquarters in London and had the participation from 105 Member States, 3 United Nations bodies, 7 intergovernmental organizations and 50 non-governmental organizations.

Following the entry into force on 1 January 2013 of the new chapter 4 of MARPOL Annex VI which includes requirements mandating the Energy Efficiency Design Index (EEDI) for new ships, and the Ship Energy Efficiency Management Plan (SEEMP) for all ships, MEPC 66 considered further energy efficiency measures for ships.

MEPC 66 discussed various submissions relating to proposals to establish a framework for the collection and reporting of data on the fuel consumption of ships and established a Working Group on "Further technical and operational measures for enhancing energy efficiency of international shipping" to consider the development of a data collection system for ships, including identification of the core elements of such a system.

IMO is also focusing its efforts on technical co-operation and capacity building to ensure smooth and effective implementation and enforcement of the new regulations worldwide. In this regard, MEPC 66 discussed the implementation of resolution MEPC.229(65) on *Promotion of Technical Co-operation and Transfer of Technology relating to the Improvement of Energy Efficiency of Ships*.


## Introduction

1 International shipping plays a vital role in the facilitation of world trade as the most cost-effective and energy-efficient mode of mass transport, making a significant contribution to global prosperity in both developing and developed countries.

2 IMO was established by governments as a specialized agency under the United Nations to provide machinery for intergovernmental cooperation in the field of regulation of ships engaged in international trade. IMO is responsible for the global regulation of all facets pertaining to international shipping and has a key role in ensuring that lives at sea are not put at risk including security of shipping and that the environment is not polluted by ships' operations – as summed up in IMO's mission statement: **Safe, Secure and Efficient Shipping on Clean Oceans**.

3 This document provides an update to previous submissions by IMO to SBSTA including: FCCC/SBSTA/2013/MISC.20 and FCCC/SBSTA/2013/MISC.15.

**Work on control of GHG emissions from international shipping**

4 Measures to improve energy efficiency of international shipping were adopted by Parties to Annex VI of the Convention on the Prevention of Pollution from Ships (MARPOL) at MEPC 62 in July 2011 and entered into force on 1 January 2013. The *Regulations for energy efficiency of ships*, apply to internationally trading ships of 400 gross tonnage and above, and make mandatory:

.1 the Energy Efficiency Design Index (EEDI) for new ships; and

.2 the Ship Energy Efficiency Management Plan *(*SEEMP) for all ships.

5 The EEDI is a non-prescriptive, performance-based mechanism that leaves the choice of technologies to use in a specific ship design to the industry. So long as the required energy-efficiency level is attained, ship designers and builders are free to use the most cost-efficient solutions for the ship to comply with the regulations.

6 All ships of 400 gross tonnage and above engaged in international trade are required to implement and maintain a SEEMP which establishes a mechanism for operators to improve the energy efficiency of ships. This should be achieved by monitoring the energy efficiency performance of a ship's transportation work and at regular intervals considering new technologies and practices to improve energy efficiency.

7 With regard to mandatory energy efficiency regulations for ships, MEPC 66 took the following actions:

.1 adopted amendments to MARPOL Annex VI concerning the extension of the scope of application of the Energy Efficiency Design Index (EEDI) to LNG carriers, ro-ro cargo ships (vehicle carriers), ro-ro cargo ships, ro-ro passenger ships and cruise passenger ships with non-conventional propulsion;

.2 adopted the *2014 Guidelines on the method of calculation of the Attained Energy Efficiency Design Index (EEDI) for new ships (*resolution MEPC.245(66)); and

.3 agreed to the establishment of an EEDI database in order to support the review of the implementation of the EEDI provisions as detailed in regulation 21.6 of MARPOL Annex VI.

**Further technical and operational measures to enhance the energy efficiency of ships**

8 MEPC 65, in May 2013, considered the importance of enhancing energy efficiency and reducing fuel consumption with subsequent reductions of $CO_2$ emissions and other pollutants emitted to air and considered the use of a phased approach to implementation, with the focus of its initial work being on data collection.

9 MEPC 66 discussed various submissions relating to proposals to establish a framework for the collection and reporting of data on the fuel consumption of ships and established a Working Group on "Further technical and operational measures for enhancing energy efficiency of international shipping" to consider the development of a data collection system for ships, including identification of the core elements of such a system.

10 In discussing the possible scope of a data collection system the Working Group, inter alia, noted the view that a specific gross tonnage threshold for all ship types would be most appropriate with the following additional views that the scope should:

.1 be in line with the scope of the EEDI regulations, i.e. include all types of ships of 400 gross tonnage and above, with some delegations expressing the view that the administrative burden was not considered much different for ships of all sizes; and

.2 include ships of 5,000 gross tonnage and above as this is expected to encompass approximately 90% of the total energy consumption by international shipping but not present a disproportionate administrative burden on smaller ships.

11 The Working Group considered that a data collection system could include data elements as follows:

.1 identity of the ship (name, IMO number and flag State Administration);

.2 the shipowner and operator (name and address and principal place of business);

.3 technical characteristics of the ship including, for example, DWT, engine power, reference/design speed, EEDI, etc.;

.4 total annual fuel consumption per fuel type; and

.5 total annual transport work (tonne-miles) or transport work proxy, (e.g. distance or service hours).

12 MEPC 66, noting that further work should be undertaken intersessionally, agreed to establish a Correspondence Group and instructed it to consider the development of a data collection system for fuel consumption of ships, including identification of the core elements of such a system. The correspondence group will report to MEPC 67 in October 2014.

**Update of the GHG emissions estimate for international shipping**

13 MEPC 65 approved the Terms of Reference and agreed to initiate a study for an updated GHG emissions' estimate for international shipping. The new study will focus on updating key figures in the current (second) IMO GHG Study (2009), which estimated that international shipping emitted 870 million tonnes, or about 2.7%, of the global man-made emissions of $CO_2$ in 2007.

14 The update of the study is considered necessary, in general, to provide a better foundation for future work by IMO to address GHG emissions from international shipping. Sea transport is fuel-efficient and without updated figures it will be difficult to provide a meaningful baseline to illustrate the steadily on-going improvement in fuel efficiency due to improved hull design, more effective diesel engines and propulsion systems and more effective utilization of individual ships

resulting from the introduction of mandatory technical and operational measures, including other operational measures employed by ships as a consequence of the economic downturn.

15 There are three main tasks to the study: Recognizing that $CO_2$ is the most significant GHG emitted by ships, the first task of the study is an update of a $CO_2$ emission inventory from international shipping. A second task will constitute emission inventories from international shipping of GHGs (other than $CO_2$) considered under the UNFCCC process ($CH_4$, $N_2O$, HFCs, PFCs, $SF_6$) and other relevant substances (NOx, NMVOC, CO, PM, SOx). The third task is the modelling of future emission scenarios for all six GHGs and other relevant substances. These estimates represent a business as usual case, which takes into account the effects of MARPOL Annex VI requirements, as amended, e.g. inclusion of energy efficiency regulations and changes to the provisions for sulphur content of fuel oil.

16 MEPC 66 noted progress had been made on the update study and that the report of the third IMO GHG study 2014 is expected to be completed at MEPC 67 in October 2014.

**Technical co-operation and transfer of technology**

17 Regulation 23 of chapter 4 of MARPOL Annex VI on *Promotion of technical co-operation and transfer of technology relating to the improvement of energy efficiency of ships* requires Administrations, in co-operation with the Organization and other international bodies, to promote and provide, as appropriate, support directly or through IMO to Member States, especially developing States that request technical assistance. It also requires the Administration of a Party to MARPOL Annex VI to co-operate actively with other Parties, subject to its national laws, regulations and policies, to promote the development and transfer of technology and exchange of information to States which request technical assistance, particularly developing States.

18 Linked to the implementation of energy efficiency measures, MEPC 65 adopted an MEPC resolution MEPC.229(65) on *Promotion of Technical Co-operation and Transfer of Technology relating to the Improvement of Energy Efficiency of Ships*, which, among other things, requests the IMO, through its various programmes, to provide technical assistance to Member States to enable cooperation in the transfer of energy efficient technologies to developing countries in particular; and further assist in the sourcing of funding for capacity building and support to States, in particular developing States, which have requested technology transfer.

19 MEPC 66 discussed the implementation of resolution MEPC.229(65) and established, in accordance to the resolution, the Ad Hoc Expert Working Group on Facilitation of Transfer of Technology for Ships (AHEWG-TT). The AHEWG-TT agreed on the methodology for conducting its work, as well as a work plan which was endorsed by the Committee.

20 This work plan envisages: assessing the potential implications and impacts of the implementation of the energy efficiency regulations in chapter 4 of MARPOL Annex VI, in particular, on developing States, as a means to identify their technology transfer and financial needs; identifying and creating an inventory of energy efficiency technologies for ships; identifying barriers to transfer of technology, in particular to developing States, including associated costs, and possible sources of funding; and making recommendations, including the development of a model agreement enabling the transfer of financial and technological resources and capacity building between Parties, for the implementation of the energy efficiency regulations.

21 MEPC 66 agreed that a second meeting of the AHEWG-TT be held prior to MEPC 67 (scheduled to take place from 9 to 10 October 2014 at IMO Headquarters) in order for the Group to provide a progress report to the Committee at that session. The meeting will discuss the specific tasks under the AHEWG-TT work plan (document MEPC 66/WP.8).

***Technical cooperation activities***

22 MEPC 66 noted the information provided by the Secretariat (document MEPC 66/INF.24) informing the Committee of the technical cooperation activities that the Secretariat has undertaken, as well as planned future activities in relation to the implementation of MARPOL Annex VI, in particular chapter 4 thereof.

23 Under the 2014 to 2015 Integrated Technical Co-operation Programme (ITCP) of IMO, several national and regional capacity building activities are currently planned, in order to sustain the level of technical cooperation interventions in various regions for the effective implementation and enforcement of energy efficiency measures for ships. In this context, four regional workshops to raise awareness with regard to improving energy efficiency and the control of GHG emissions from ships are scheduled to take place in the biennium.

***GEF-UNDP-IMO Project: Transforming the Global Maritime Transport Industry towards a Low Carbon Future through Improved Energy Efficiency***

24 MEPC 66 noted that IMO, through the UNDP, submitted a Project Identification Form (PIF) to the Global Environment Facility (GEF) for funding a medium-size project entitled "Transforming the Global Maritime Transport Industry towards a Low Carbon Future through Improved Energy Efficiency" to assist the developing countries in the implementation of new energy efficiency measures adopted by IMO.

25 The PIF has received the GEF endorsement for funding of $2 million. This two-year global project builds on IMO's experience in delivering the project on capacity building in East Asia to address GHG emissions.

26 The proposed project, while focusing on legal, policy and institutional reforms (LPIR) and related tools development, will also help to enhance the technical knowledge and capacity for implementation of the new regulatory measures related to ships energy efficiency. Moreover, the project will facilitate creation and exchange of knowledge in developing countries on energy efficient shipping practices and opportunities, and provide a platform for sharing innovation and R&D, catalyse demonstrations of selected feasible energy efficiency measures and technologies by the private sector.

27 With the global tools developed and partnerships created by the project and the funding support by the project, pilot beneficiary countries, selected based on their level of interest and commitment to undertake a fast-track approach, are expected to initiate their legal, policy and institutional reforms and necessary capacity-building efforts – leading to creation of successful models and centres of excellences that can be replicated in other countries around the world.

28 The principal components of the project include: 1) legal, policy and institutional reforms for GHG reductions through improved energy efficiency within maritime transport sector in developing countries; 2) maritime sector energy efficiency related capacity building, awareness raising, knowledge creation and dissemination and; 3) public-private partnerships to catalyse maritime sector energy efficiency innovation and R&D.

29 The IMO Secretariat is currently preparing a detailed project implementation document (ProDoc) for which the GEF has already approved $100,000 as Project Preparation Grant (PPG). The PPG will allow IMO Secretariat to have detailed discussions with the pilot beneficiary countries as well as with other potential partners, including the private sector, before finalizing the ProDoc. Once the ProDoc is completed and approved by the GEF CEO, the implementation of the project activities can begin approximately by mid-2014.

**Summary**

30 Although international maritime transport is the most energy efficient mode of mass transport and only a modest contributor to worldwide $CO_2$ emissions (estimated as 2.7% in 2007), a global approach for further improvements in energy efficiency and emission reduction is considered necessary as sea transport is predicted to grow significantly in line with expected future growth in world trade.

31 IMO has developed and adopted a framework of technical and operational measures that now serves as mandatory performance standards for increased energy efficiency in international shipping. The framework builds on IMO's enforcement and control provisions (flag and port State controls) and includes also ship management aspects such as monitoring, verification and reporting, as well as guidelines for effective implementation.

32 IMO, as the global regulator of international shipping, will continue its endeavours to reduce environmental impacts from international maritime transport, a vital industry to world trade and sustainable development, and keep relevant bodies of the UNFCCC informed of its progress.