

**Multi-year Expert Meeting  
On Transport and Trade Facilitation:**

**Maritime Transport and  
the Climate Change Challenge**

16-18 February 2009

**The Climate Change  
&  
International Maritime Transport**

by

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## The Climate change & international maritime transport

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## Outline

- **Climate change and impacts observed**
- **GHG emissions**
- **International maritime transport**
- **The Bali Action Plan and Roadmap**
- **AWG-LCA**
- **AWG-KP**
- **The negotiation process in 2009**
- **Closing remarks**

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 **Examples of impacts observed** |  
**Temperature: melting of glaciers (1)**

Muir Glacier, Alaska, August 13, 1941, photo by W.O. Field



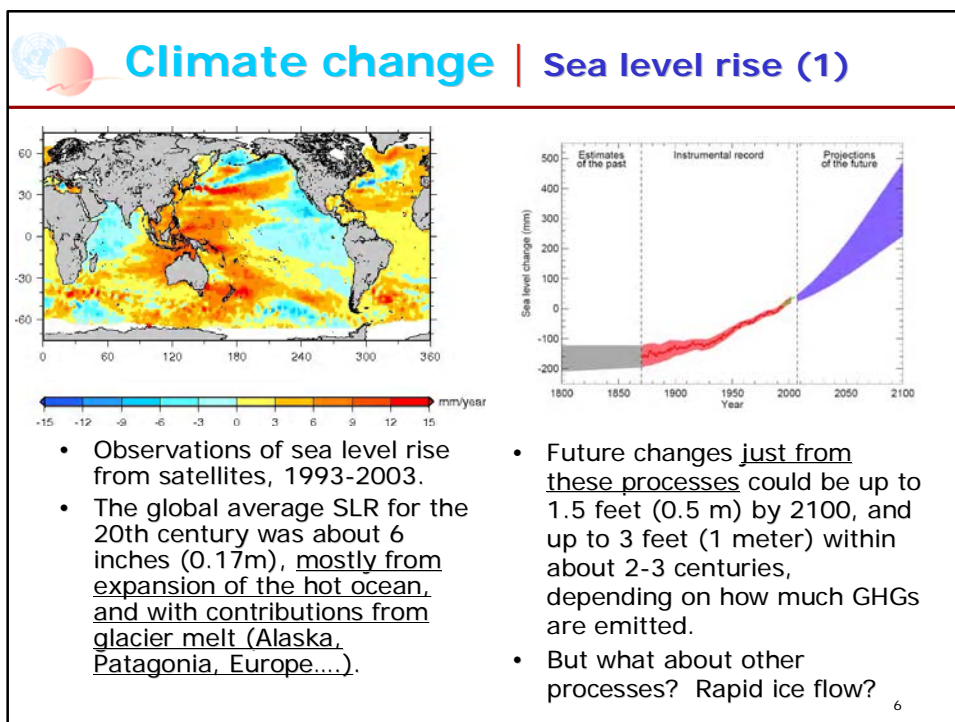
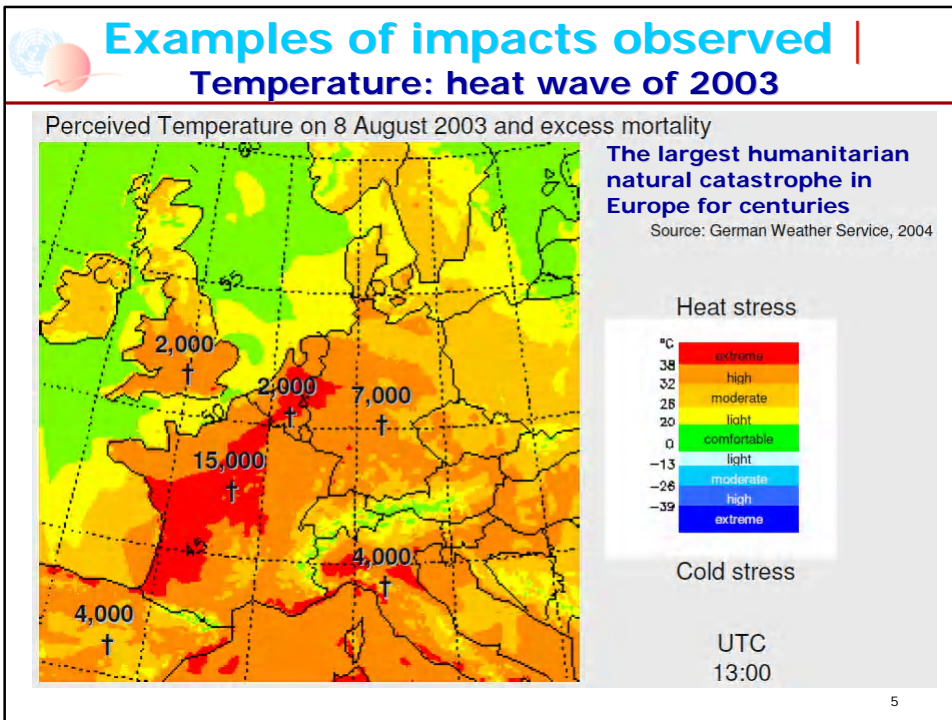
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 **Examples of impacts observed** |  
**Temperature: melting of glaciers (2)**

Muir Glacier, Alaska, August 31, 2004, photo by B.F. Molnia



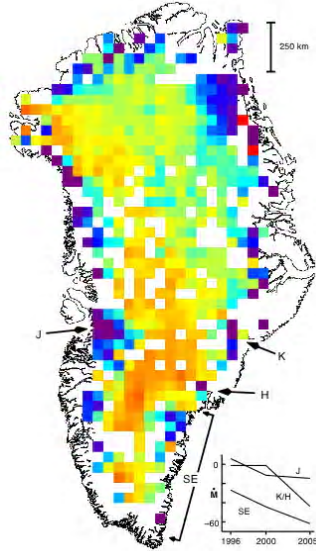
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## Climate change | Sea level rise (2)

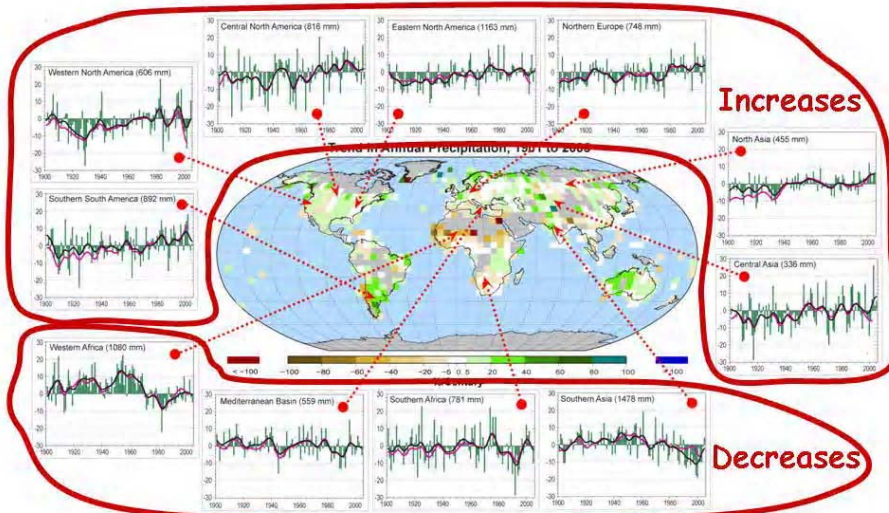
- 7m of SL equivalent is on Greenland. This is expected to melt slowly, and raise sea level on a time scale of millennia, for warming  $>2-5^{\circ}\text{C}$
- BUT rapid ice flow has been observed - and is not in current models. Could sea level rise be much faster than thought? Some glaciological studies suggest this is transient and will stop. Others suggest it may increase
- Future?



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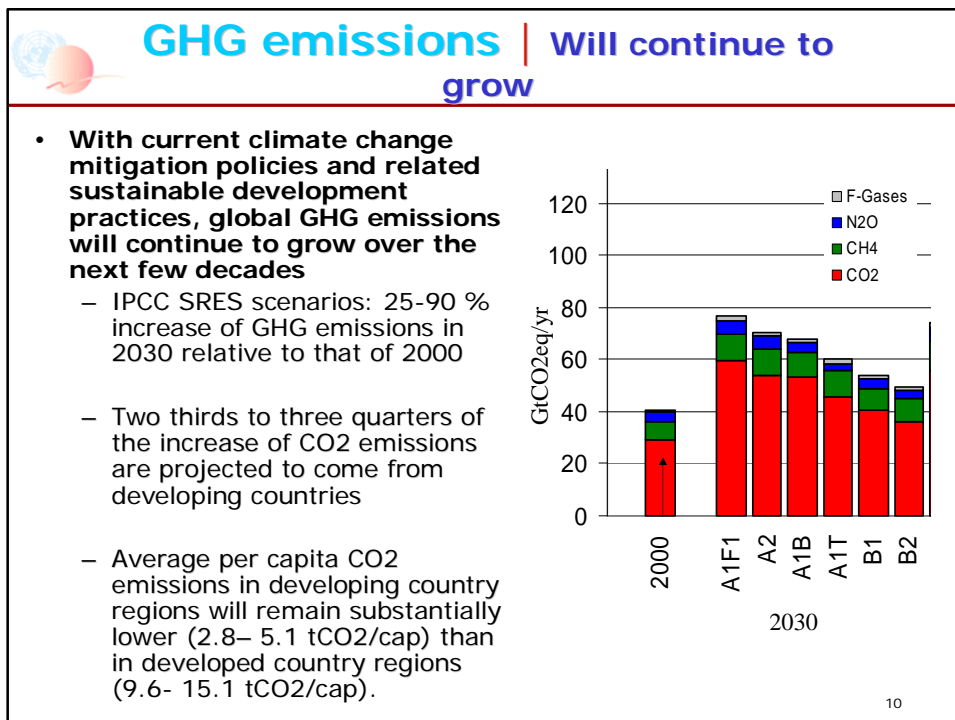
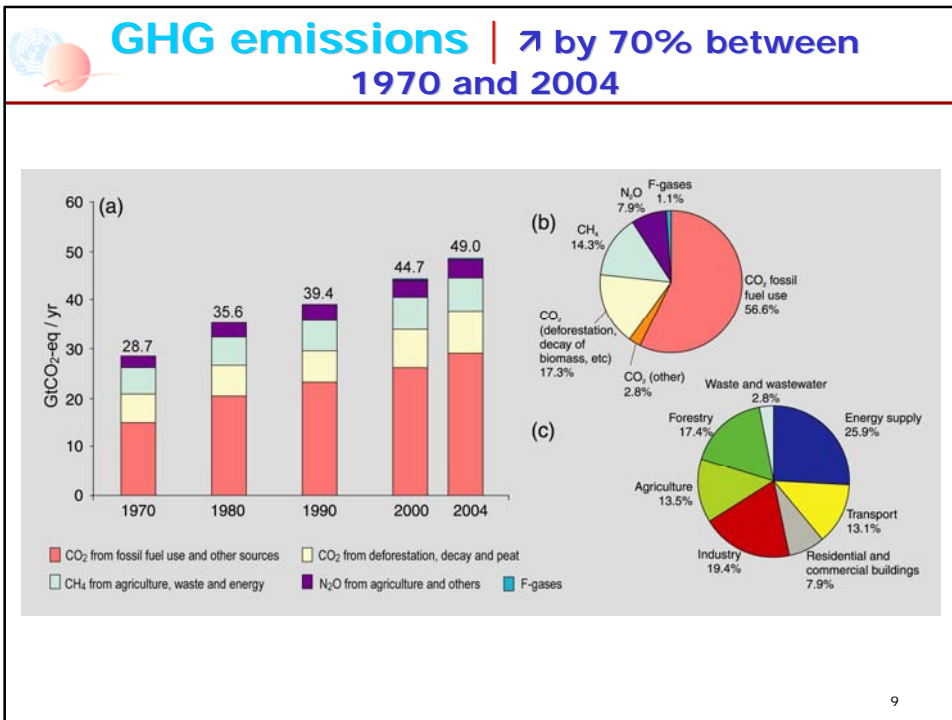


## Climate change | Land precipitation: changing significantly over broad areas



Smoothed annual anomalies for precipitation (%) over land from 1900 to 2005; other regions are dominated by variability







## GHG emissions | From international maritime transportation (1)

- CO<sub>2</sub> emissions from international shipping amounted to 843 million tonnes in 2007 (IMO) → equivalent to **approximately 2.7% of the global anthropogenic CO<sub>2</sub> emissions**
- Emissions expected to continue growing rapidly (by a factor of 2.4 to 3.0 by 2050)
- **A mix of Technical, Operational and Market-Based** measures could be necessary to reduce these emissions

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## GHG emissions | From international maritime transportation (2)

- 2006 CO<sub>2</sub> emissions for selected countries, in Gg (incl. LULUCF/LUCF)

Germany	843,432
UK	555,860
Italy	375,677
France	336,360
Poland	287,641
- **Africa represents approximately 3.6% of the total global GHG emissions**
  - Shipping CO<sub>2</sub> emissions, at its current growth rate, could surpass those of Africa in a few years
- **The pulp, paper and printing sector represents approximately 1% of global GHG emissions**
- **Landfills represent approximately 2% of global GHG emissions**
- **Regulating these emissions will contribute to achievement of long term emission reductions**

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## International maritime transport | under the UNFCCC process (1)

- The negotiations within the UNFCCC process have revolved around three aspects regarding the treatment of emissions from bunker fuels:
  - **Estimation and reporting** - IPCC methodologies for GHG inventories
    - Definition of domestic/international; calculation of emissions; data collection
  - **Allocation** - 8 options
  - **Control** - KP Article 2.2

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## International maritime transport | under the UNFCCC process (2)

- **Decision 4/CP.1 (1995)**
  - Requested SBSTA to address the **allocation and control** of emissions from international aviation and maritime transport
- **SBSTA 4 (1996)**
  - 8 options for allocation given, 5 to be considered (FCCC /SBSTA/1996/9/Add.1)
  - **Estimation and reporting**
    - International aviation is **reported separately** from other sectors in national emission inventories.
    - 1996 IPCC Guidelines
  - Note of the role of and opportunity of work through IMO

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## International maritime transport | under the UNFCCC process (3)

- **Decision 2/CP.3 (1997), para. 4**
  - Revised 1996 Guidelines for National Greenhouse Gas Inventories of the IPCC
  - International aviation emissions **not included in national totals**, but SBSTA to elaborate on their inclusion
- **Kyoto Protocol (Article 2.2)**
  - Annex I Parties shall pursue limitation or reduction of GHG emissions from international aviation and maritime bunker fuels working through ICAO and IMO
  - Emissions from international aviation and maritime transport are excluded in KP from Annex I targets

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## International maritime transport | under the UNFCCC process (4)

- **SBSTA 10 (1999)**
  - Methodological issues - informal paper: Methods used to collect data and to estimate and report emissions from international bunker fuels
- **SBSTA 11 to 22**
  - Update on IPCC Guidelines (2006)
  - Study on Greenhouse Gas Emissions from Ships – Report to the IMO

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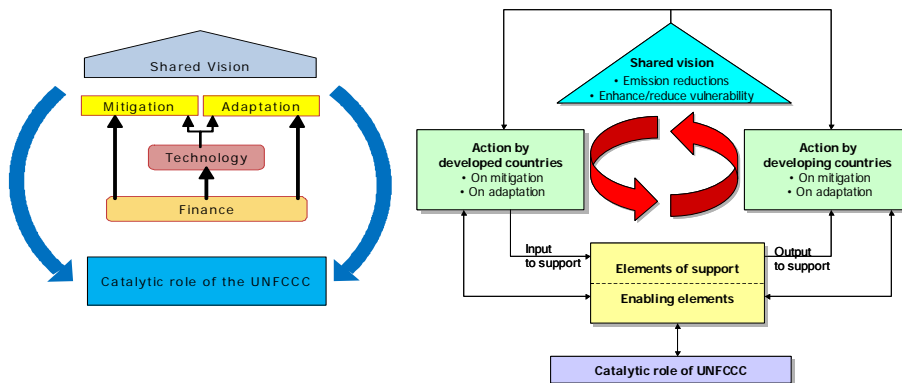
## International maritime transport | under the UNFCCC process (5)

- **SBSTA 22 to 26**
  - No full consideration of the issue:  
caused by procedural discussions
- **SBSTA 28 & 29**
  - SBSTA recognized the need for further  
collaboration between IMO and UNFCCC
  - Receive information from IMO on its  
work on GHG

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## The Bali Action Plan and Roadmap



**The Bali Roadmap is an agenda for full  
implementation of the Convention**

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## AWG-LCA | Poznan (1)

- **Demonstrated the determination to move towards a ratifiable Copenhagen outcome**
- **Focused the work on shared vision: relating it to all BAP elements**
- **Delivered concrete steps to enhance on-going work, in 4 Contact Groups:**
  - Shared vision for long-term cooperative action
  - Adaptation
  - Mitigation
  - Delivering on finance and technology, including institutional arrangements

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## AWG-LCA | Poznan (2)

- **The Chair received feedback on the proposals and refine them - Assembly paper updated (Rev.1)**
  - References relevant to international maritime transport in 12 separate paragraphs
- **Progress reported to the COP**
- **Work programme 2009: shift to full negotiation mode**

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## AWG-LCA | Poznan (3)

- **Assembly paper references – under shared vision (LTG); cooperative sectoral approaches; strengthening the catalytic role of the convention; technology and financing**
- **Example - on the scope of sectoral approaches (para. 68 (b)):**
  - Using sectoral approaches to target emissions that are not included in national totals (EC and its member States, MISC.4; Australia, MISC.4/Add.1).
  - Addressing, in particular, emissions from international transport (Norway, MISC.1 and MISC.5; EC and its member States, MISC.4; Australia, MISC.4/Add.1), for example:

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## AWG-LCA | Poznan (4)

- **Example - on the scope of sectoral approaches (para. 68 (b)):**
  - Agreeing on an emission target on total GHG emissions from international shipping and inviting IMO to develop a legally binding regime (Norway, MISC.2),
  - Including emissions from these sectors in “the global mitigation objective with clear and meaningful targets” (EC and its member States, MISC.5/Add.1), or
  - Accelerating progress within ICAO and IMO in cooperation with the processes under the UNFCCC and its KP (AOSIS, MISC.5/Add.2)

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## AWG-LCA | Poznan (5)

- **Assembly paper – reference to IMO work (para. 96):**
  - The MEPC of the IMO will continue work on a package of measures to increase fuel efficiency of ship design and operation, and consider possible market-based measures to reduce GHG emissions from ships engaged in international trade
  - ....

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## AWG-KP | (1)

- **In 2008, the AWG-KP focused on the “means and methodological issues” that will apply in the period beyond 2012:**
  - It agreed that the flexible mechanisms and LULUCF should continue in the post-2012 period and be supplemental to domestic actions in Annex I countries

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## AWG-KP | (2)

- **In Bonn and Accra, more issues and proposals were introduced for future negotiation:**
  - Lists of options were compiled and progress was made in defining these proposals and in clarifying how they could be implemented
  - Addressed other issues comprising: greenhouse gases, sectors and source categories, and methodological issues; approaches targeting sectoral emissions; and methodological issues and spillover effects

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## The negotiation process in 2009 | AWG-LCA (1)

- **2009 - shift into full negotiation mode; all elements of the BAP; Components paper:**
  - Identify areas of convergence (high degree of convergence, apparent convergence,..)
  - Explore options in areas of divergence
  - Identify gaps and possible ways to address them
- **AWG-LCA 5: 29 March/ 8 April 2009, Bonn, including workshops on:**
  - Para. 1(b) (i) & (ii)) of BAP including concepts of measurable, verifiable and reportable actions and support (MRV)
  - Para. 1 (b) (vi) of BAP: economic & social consequences of response measures

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## The negotiation process in 2009 | AWG-LCA (2)

- **AWG-LCA 6 & SB 30: 1- 12 June 2009, Bonn**
  - Negotiation text
- **AWG-LCA 7: August/September 2009**
- **[Possibility for other session]**
- **AWG-LCA 8 & AWG-KP COP , SB30 and COP 15 & CMP 5: 7 - 18 Dec 2009, Copenhagen!**

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## The negotiation process in 2009 | AWG-LCA (2)

- **There are three political essentials that need to be clearly determined in order to achieve a satisfactory outcome in Copenhagen**
  - The nature of the commitments by developed countries and possible action by developing countries supported by finance, technology and capacity building
  - How financial resources will be mobilised for developing countries to mitigate and to adapt
  - The institutional framework that will be needed to deliver the financial, technological and capacity building resources for both adaptation and mitigation

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## The negotiation process in 2009 | transport sector (1)

- **Concrete mitigation action is necessary**
- **Market-based and fiscal measures, if applied globally, may provide new and substantial funds, which:**
  - could benefit developing countries
  - could be used for mitigation, adaptation and technology purposes

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## The negotiation process in 2009 | transport sector (2)

- Need to address concerns relating to the application of principles under both UNFCCC and IMO in an “innovative way”:
  - Common but differentiated responsibilities (UNFCCC)
  - Equal treatment of all ships (IMO)

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## Closing remarks (1)

- **It is necessary to have a comprehensive, long-term climate change strategy**
- **Different options for international maritime transport are considered. Some basis:**
  - Reduction efficiency can be enhanced, if addressed as a whole
  - Would raise financial resources to assist developing countries adaptation and mitigation actions
    - I&F paper estimated that: additional investment and financial flows of USD 200–210 billion would be necessary to reduce CO<sub>2</sub> eq emissions by 25 per cent below 2000 levels in 2030; financial flows and investment needs for adaptation remain in the tens of billions, possibly hundreds of billions, of United States dollars per year
  - Address the concerns of CBDR while minimizing impacts on trade and competitiveness
  - Minimize impacts on vulnerable developing countries

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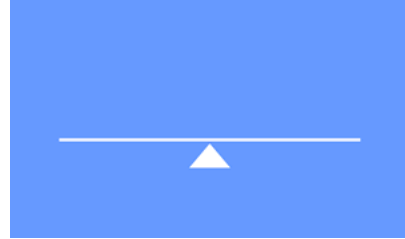
## Closing remarks (2)

- **Market-based measures may provide cost-effective opportunities for innovation, technology transfer and also for addressing GHG**
- **Under the AWG-LCA and AWG-KP Parties are working towards achieving a meaningful Copenhagen Agreed Outcome. IMO has an important role for achieving this agreed outcome, and could provide practical and effective solutions for limiting and reducing GHG emissions from international maritime transport**

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**Thank you**



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