



Rebate Mechanism (RM)

**Ensuring no net incidence on developing countries
from carbon pricing of international transport**

Panama Climate Change Talks

IMERS side event

2 Oct 2011

Dr Andre Stochniol

andre@imers.org



- Rationale for the proposal
- Rebate Mechanism options
 - Add-on
 - Integrated
- Convention compliance, and ‘no net incidence’:
 - Rebates for developing countries
 - Credits for developed countries
- Summary and Conclusions
- Panel Views, and Debate



- **Not whether, but how to reconcile**
 - Differentiated climate principles (CBDR), with
 - Uniform policies of shipping (IMO)
 - A global approach is needed, as regional or national approaches will not work
- Carbon price/MBM would be regressive, impacting less developed countries, often heavily relying on international transport, most
- RM is the only differentiation option being currently considered to compensate less developed countries the costs/impacts of a global MBM scheme
 - An alternative option based on exempting the less developed countries, by covering only goods carried to developed countries, is too complex, especially for container ships
 - RM with climate financing would make them better off



- Two RM options are defined:
 - **RM add-on** (applicable to any revenue-raising MBM)
 - **RM integrated** (IMERS), a standalone MBM
- “A number of delegations expressed interest in the RM proposal and supported its further development and consideration either as an integral or add-on element to a future MBM for international shipping under IMO”

Selected Documents (2010-2011):

- [MEPC 60/4/54](#), and [MEPC 61/5/33](#) (IUCN) - RM proposal, including the two options
- [MEPC 61/INF.2](#) (MBM-EG Report) – RM assessment in Chapter 18, 19.83-85, Annex 11
- [GHG WG 3/3/3](#) (CSC & WWF) – systematic analysis of CBDR in shipping, including RM
- [GHG WG 3/3/11](#) (WWF) – details on ‘optimal’ attribution key for RM; values for 190 countries
- MEPC 62/INF.3 (Secretariat) – The AGF Report: ‘no net incidence’ concept to ensure equity
 - The AGF’s analysis on International Transport highlights the RM
- MEPC 62/INF.6 (Republic of Korea) – RM at the fourth Seoul International Maritime Forum
- [MEPC 62/5/14](#) (WWF) – outlines how to ensure no net incidence through the RM

Add-on option (in 30 words)



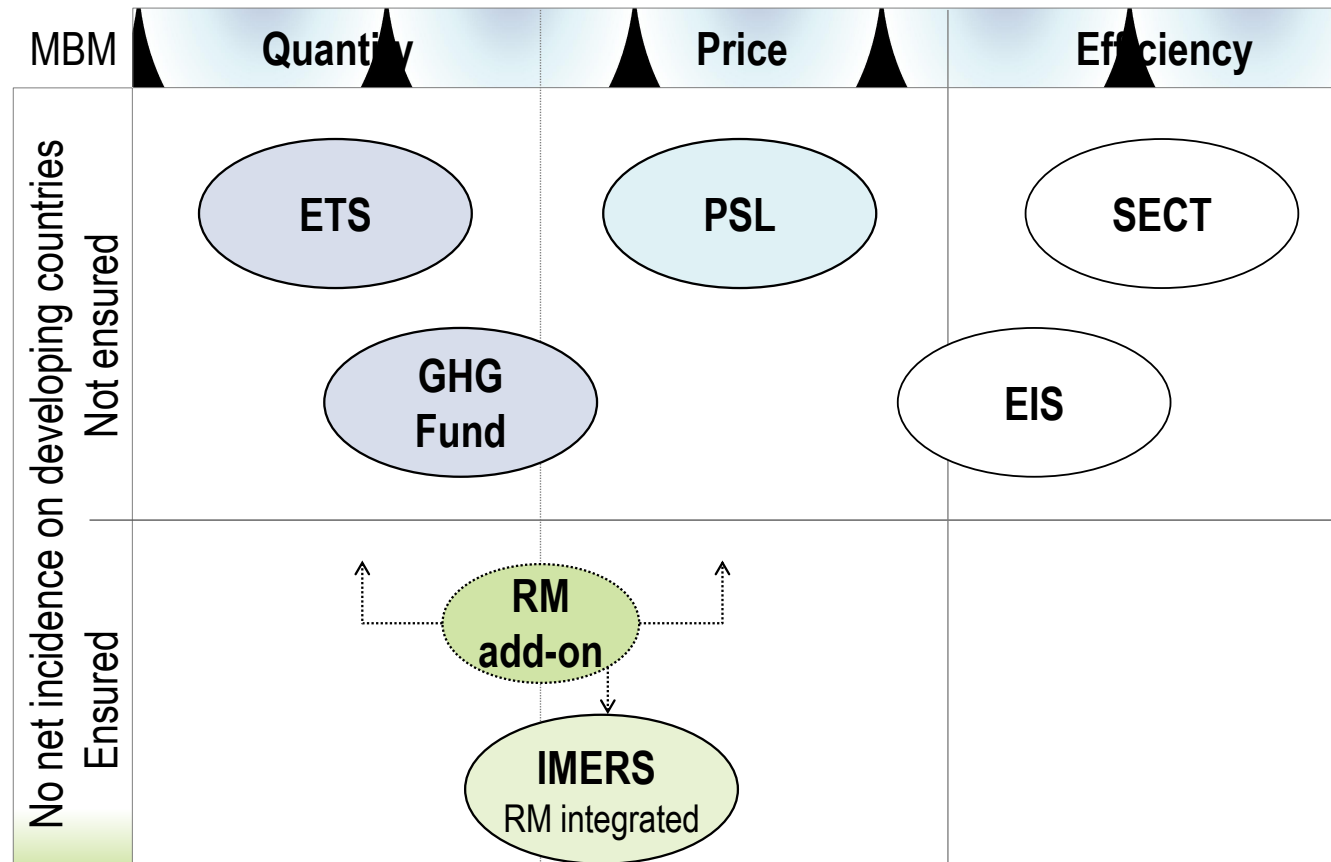
All ships pay for their emissions. A developing country obtains an annual rebate in relation to its share of global seaborne imports. Remaining revenue – from developed countries – goes to climate change action.

1. Ensures **no net incidence** on developing countries
2. **Reconciles a global approach**, which is required for international shipping, **with** the principles of equity and **CBDR**
3. **Can apply to any revenue raising MBM**
 1. Such as a levy/contribution and ETS
 2. Already integrated with the IMERS proposal
4. Highlighted **in the AGF, and the IMF/WB reports**
5. Rebates to developing countries may amount to 1/3 of revenue raised, the remaining 2/3 will be a **predictable and affordable source** of climate change financing and R&D for clean shipping

RM versions and applicability



1. **RM add-on** can apply to any revenue raising MBM, in principle



For more details see the [Study](#) issued or a [briefing note on maritime MBMs](#)

2. **RM integrated** (aka IMERS) is a complete proposal with the RM built-in

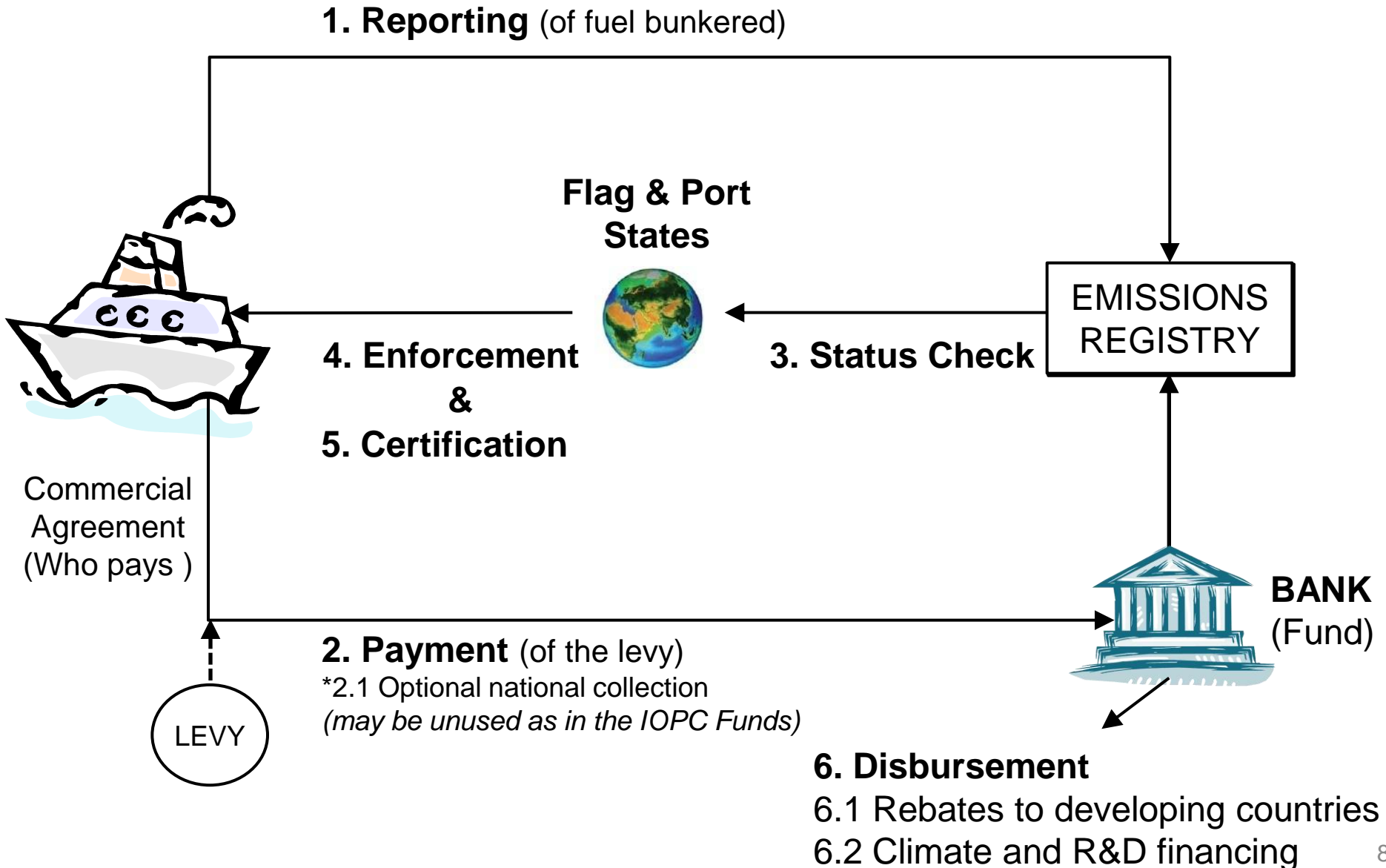
Integrated option (IMERS)



A levy on fuel for international shipping with a rebate mechanism for developing countries. Applied worldwide, collected centrally – bypassing national coffers* – raising \$10bn+ annually for climate change action.

1. The levy is **market-based** with shipping facing the same carbon price as other modes of transport
 - The levy is however **set constant for at least a quarter**, and bounded within a price floor and ceiling set for many years
 - There is no cap on emissions
2. The proposed scheme is based on a central **emissions registry**, holding an emission account for each ship, and **a global bank providing a payment account for each ship**
3. As per RM, a developing country is entitled to an **annual rebate** in relation to its **share of global seaborne imports**, and will further benefit from financing for climate change action

How would it work?





- Disbursement of MBM revenue is to comprise two steps:
 - Cost burden (incidence) incurred by a developing country Party participating in the MBM is rebated (paid) to it, unconditionally
 - The remaining revenue (net revenue), is disbursed by the agreed entity (i.e. GCF)
- Consequently, the net revenue for climate change action would come from consumers in developed countries only, complying with the UNFCCC principles
- Developing countries would be beneficiaries of the MBM, with the most vulnerable countries to benefit most through the relevant rules and provisions applied at the 2nd step (SIDS, LDCs, African countries) – **LDCs circa tenfold**
- The shipping sector would also benefit at the 2nd step, potentially through a new global Maritime Technology Fund, or similar

MBM Incidence on Developing Countries



	Initial Approach (MEPC 60/4/55)	Optimal* Rebate Key Study
Developing Country/region	Share of global imports, by <u>all</u> transport modes, %	Share of global imports, by <u>sea and air</u> , %
LDCs (all)	0.86	1.13
Ethiopia	0.04	0.06
All developing countries:	33.11	40.11

Thus total incidence on developing countries from a global maritime MBM is circa **40%** of its global costs

(rather than circa 30% used initially, and also in the AGF Report; the upcoming IMF/WB uses the 40% calculations).

* 'Optimal': striking the best balance between accuracy, simplicity of calculation and data availability. The key is based on share of global trade with non-adjacent partners, in 2007. The Study is available at: imers.org/docs/optimal_rebate_key.pdf (a previous version is in the document [GHG-WG 3/3/11](#)). Further calculations confirmed the choice.

Attribution Key's Usage



(1) Rebates for developing countries¹

Developing Country/region	Rebate Key, %
China	8.35
Korea, Republic of	3.68
Singapore	2.36
Taiwan Province of China	2.27
Hong Kong SAR, China	2.06
India	1.98
Next 30	15.31
Remaining 120+ countries	4.10
TOTAL non-Annex I	40.11

Equatorial Guinea	0.0288	Namibia	0.0089	Venezuela (Bolivarian Rep. of)	0.3620
Eritrea	0.0066	Nauru	0.0008	Viet Nam	0.5119
Ethiopia	0.0592	Nepal	0.0274	Yemen	0.0827
Fiji	0.0184	Nicaragua	0.0325	Zambia	0.0388
Gabon	0.0204	Niger	0.0090	Zimbabwe	0.0130

(2) Credits for developed countries (for climate financing raised)

Developed Country/region	Attribution Key, %
European Union*	28.54
United States of America	15.98
Japan	6.42
Canada	1.98
Turkey	1.64
Australia	1.60
Russian Federation	1.40
<i>Remaining 7 countries</i>	2.33
TOTAL Annex-I Parties	59.89

Country	Attribution Key, %
Italy	2.9651
Japan	6.4161
United Kingdom	3.9644
United States of America	15.9771

UK:4.0%

¹Developing country may forego rebate or a part of it, and be recognized for such action; Thus the rebates may amount to 30% or less (details in imers.org/docs/optimal_rebate_key.pdf). The additional (foregone) financing may go to South-South collaboration, if so decided.



- Reconciles CBDR with a global IMO regime, as the only proposal, through 'no net incidence' on developing countries
- Flexible to accommodate different national circumstances
 - A developing country/region may forego a rebate or part of it
 - Any country could account for its share of international shipping emissions through the attribution key, if needed
- Credits developed countries for financing raised in relation to the attribution key
- It is simple, and based on reliable data
 - It does require though political agreement, but the Cancun Agreements and the recent G20 Communiqué points that this could be reached



- The only proposal that integrates RM so far
- No global emission target/cap needed
- Proportionality of effort guaranteed – shipping would pay the same price as others, by linking to (transport) carbon price
- Simple constant levy (automatically adjusted quarterly or less often; thus no need for UN/governments to agree the level)
- Predictability of investment over 20+ years horizon through the predetermined levy price floor and ceiling
- Centralized, direct processes to minimize bureaucracy; but optional national collection possible (“pre-payment”)
- Mature (3rd generation; developed since 2007/MEPC 56)
- Proposed to be a part of the UNFCCC deal, and thus not requiring a separate IMO convention (implementation: yes)
- A notable share of funding proposed for clean shipping R&D



- The RM is practical and potentially transformative
 - It creatively reconciles the shipping and climate principles
 - Optimal attribution keys are calculated for all countries
 - It may generate \$10bn+ annually, from developed countries
- Can be implemented as:
 - **RM add-on**, by integrating with any revenue raising MBM
 - **RM integrated** (IMERS), with its unique features (price collar etc.)
- Call for action in Panama: Clarify how to reconcile the UNFCCC & IMO/ICAO principles, for instance under 1b(iv):
 - [COP 17] *Noting* that global frameworks for international maritime transport and aviation may both reduce emissions and generate financial resources for climate change actions, while **ensuring no net incidence on developing countries through appropriate provisions***, *invites* the IMO and ICAO to further develop such frameworks, and report progress at COP 18.

* appropriate provisions may mean “provision of direct financial transfers or rebates”



Backup slides

For Q&A

How Will the RM/MBM Reduce Emissions?



1. It will **stimulate energy efficiency** and bring additional **certainty** to invest in efficient engines, ships, and practices
2. It may collect data on ship efficiency, thereby giving charterers a **mechanism to choose more efficient ships** (working as part of the IMO toolbox)
3. Seed financing provided for R&D will **bring forward adoption of low-carbon technologies** (hydrogen ships) by a decade or so
4. Financing provided for **capacity building** of developing countries will increase their openness to globally applicable **efficiency measures** (through the IMO)
5. **Supplemental emission reductions** will be achieved through carbon markets, and forestry (REDD+)



1. It seems hard to determine what the extra costs for developing countries will be?
 - After detailed analysis, this is estimated as:
a country share of seaborne imports by value x global costs
 - For the full analysis see the full study: www.imers.org/docs/rebateKey.pdf

2. This is a negative price push, it maintains transport of foods all over the world instead of stimulation of food production in the country itself.
 - The opposite is true, as imported products will be more expensive, albeit by a very small amount of circa 0.2 – 0.3%
 - For details see the briefing notes on:
 - http://imers.org/docs/impact_on_trade.pdf
 - http://imers.org/docs/impacts_on_developing_countries.pdf
 - http://imers.org/docs/impacts_on_food_prices.pdf



3. What happens if a developing country imports a lot of basic materials, processes them and then exports products or half-products. Will they get compensation too?
 - Yes, they will but in fact such a country is somewhat undercompensated given that the rebates are based on value of seaborne imports.
 - Thereby the proposed approach implicitly reflects that some of the extra costs would be passed on with the exported products/half-products.

4. This compensatory mechanism may open the door for potential compensation for loss of sales of bunker fuels, etc.
 - This approach applies only to international transport, an inherently global and entirely unique international sector for which a global approach and unique implementation of CBDR is a must.



5. This will cause a huge bureaucratic burden: who will get which amount, which goods are included etc.
- It will not, given that the carbon price will apply to all ships in international trade (irrespective of type of ship or which cargo they carry).
 - Rebates will be calculated from a simple formula (rebate key x total costs), with rebate keys easily calculated from reliable trade data (see keys for 2007).
 - Then GCF or similar will make a single annual transfer to each qualifying country.
 - Circa 100 bank transfers is hardly bureaucratic (in comparison disbursing such funding to projects through World Bank and similar would be bureaucratic as this typically requires 25 full time employee per each \$100 million of disbursed funds, on the bank side alone).

Rebate Keys for Various Countries



LDCs

Least Developed Countries	R Key, %
Bangladesh	0.16
Sudan	0.10
Angola	0.09
Yemen	0.08
Tanzania, United Rep. of	0.06
Ethiopia	0.06
Senegal	0.05
Cambodia	0.05
Zambia	0.04
Uganda	0.03
Remaining LDCs	0.42
TOTAL LDCs	1.13
TOTAL non-Annex I	40.11

SIDS

Small Island Developing State	R Key, %
Singapore	2.36
Dominican Republic	0.14
Cuba	0.11
Trinidad and Tobago	0.08
Jamaica	0.07
Mauritius	0.04
Papua New Guinea	0.03
Fiji	0.02
Haiti	0.02
Barbados	0.01
Remaining SIDS	0.33
TOTAL SIDS	3.21
TOTAL non-Annex I	40.11

Developing

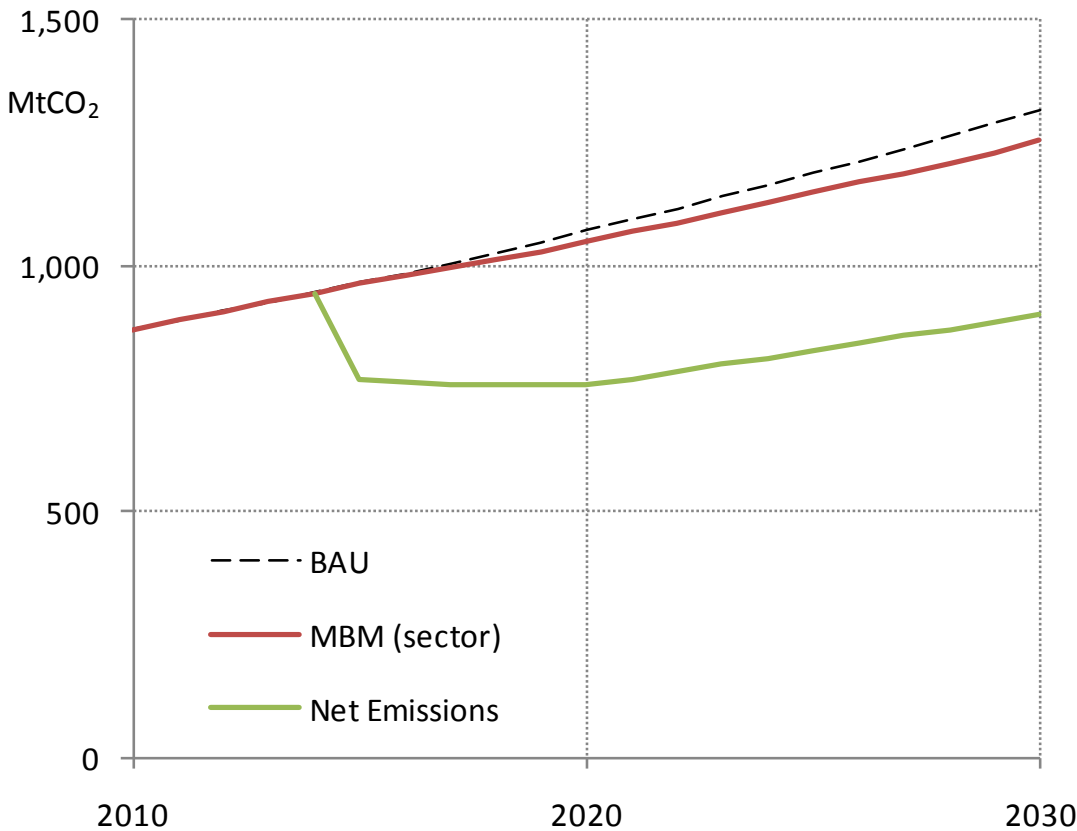
Developing Country/region	R Key, %
China	8.35
Korea, Republic of	3.68
Singapore	2.36
Taiwan Province of China	2.27
Hong Kong SAR, China	2.06
India	1.98
Next 30	15.31
Remaining 120+ countries	4.10
TOTAL non-Annex I	40.11

The study on the optimal rebate key is available at: imers.org/docs/optimal_rebate_key.pdf

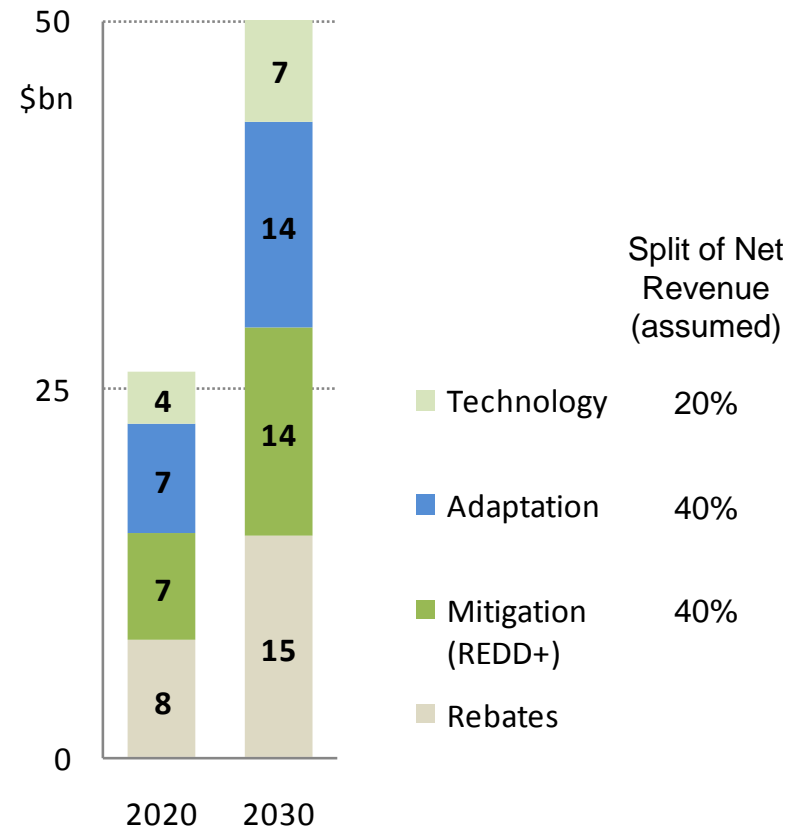
Average Scenario and Potential Financials (IMERS)



Emissions



Financial

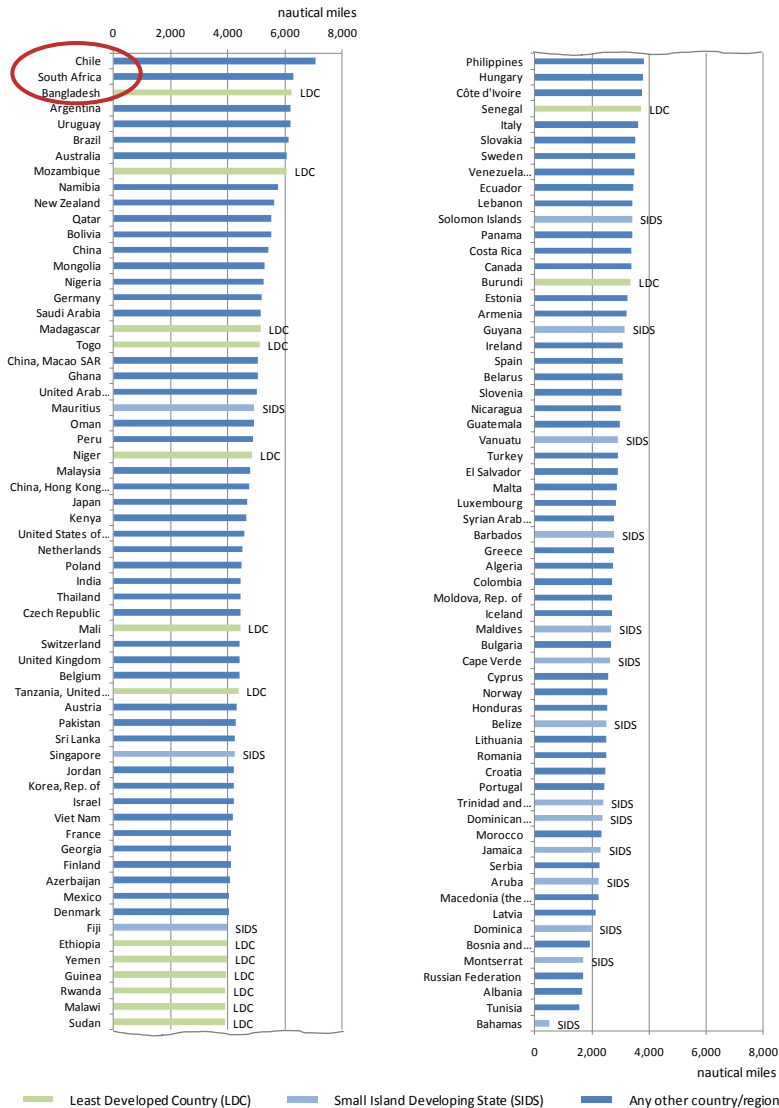


Easily affordable with cost impost estimated as circa **0.2% only** in 2020
 (0.16%, based on cost of \$26bn and seaborne trade of \$16.6 trillion; http://imers.org/docs/impact_on_trade.pdf)
 Detailed analysis confirmed the low impact on prices (Bangladesh: 0.19%, South Africa, 0.14%,
 and with a different data for dirty bulk: Australia: 0.16%, Chile: 0.26%)

Detailed Analysis Supports Global Action with RM



1. Country Trade-Weighted Distance

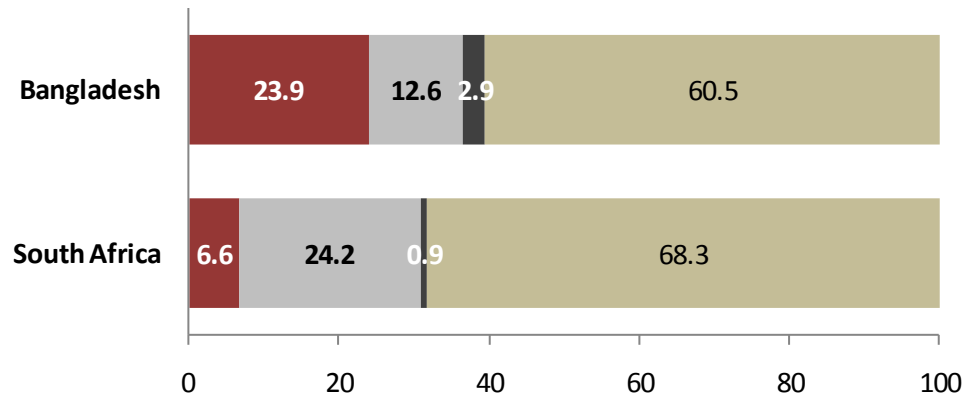


2. Impact analysis by country & regions

Seaborne imports by sector

Share of total value of seaborne imports (percent; estimated)

■ Food ■ Fuels ■ Minerals ■ Manufactures (HS 28-97)



Maximum cost impact on import prices (example; excluding rebates & any benefits)

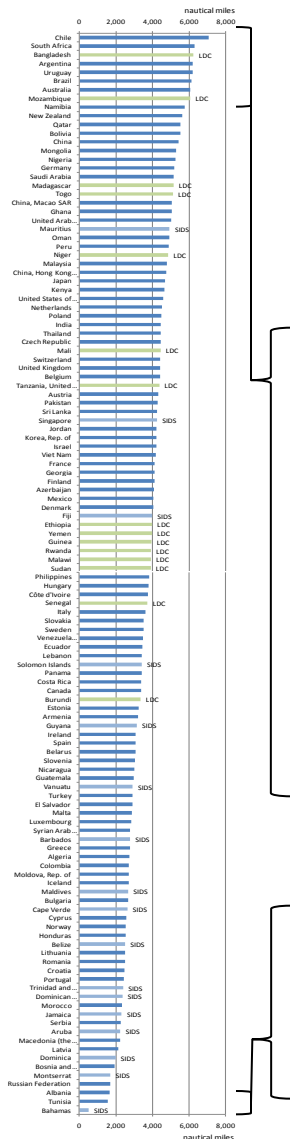
Bangladesh	South Africa
0.19%	0.14%

Details at: http://imers.org/docs/bottom-up_analysis_BGD_ZAF.pdf (includes analysis of exports as well).

Trade-Weighted Distance Analysis

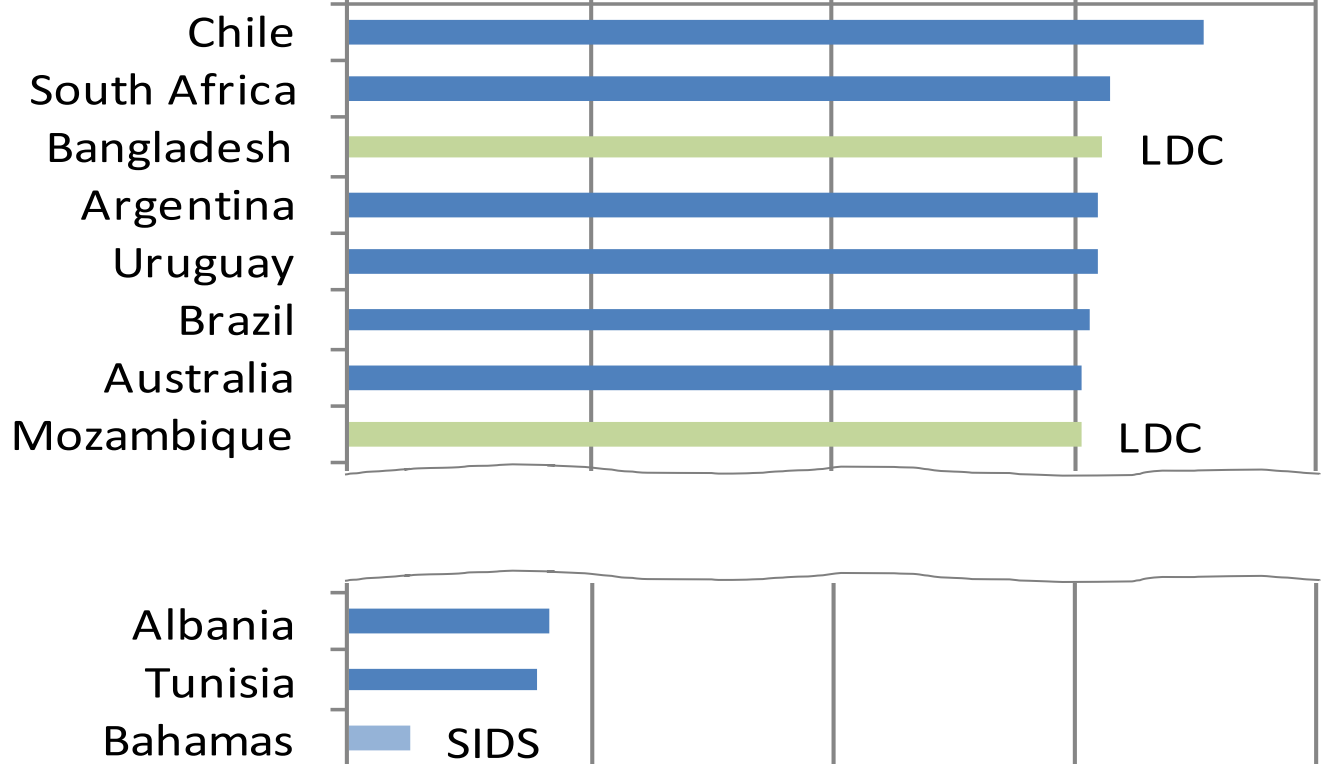


Trade-weighted distance (TWD) vary but much less than many expect; grouping of countries is not helpful; **TWD can be excluded from incidence calculations**, as justified in the [Study](#) on optimal rebate key.



nautical miles

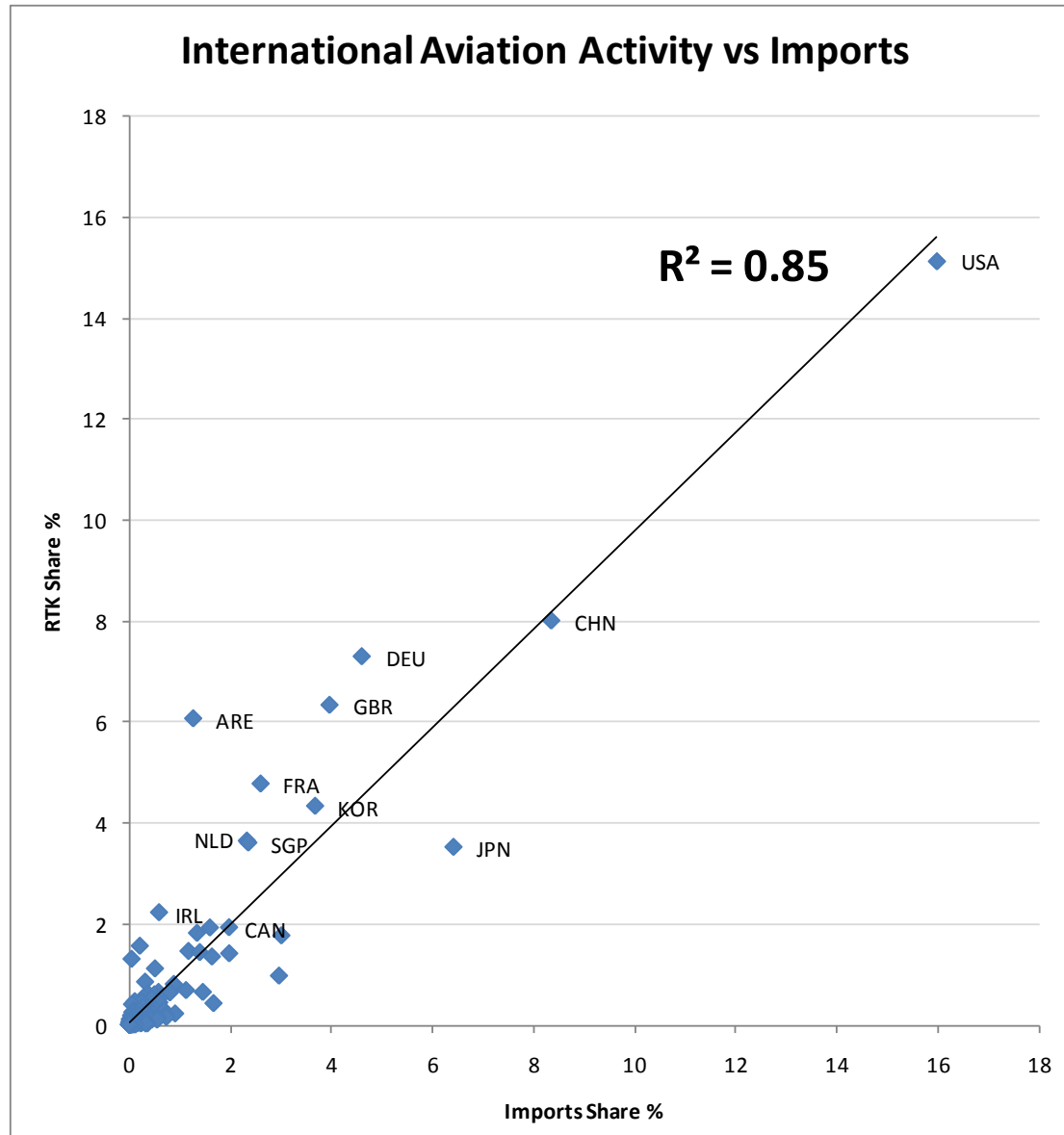
0 2,000 4,000 6,000 8,000



LEGEND: ■ Least Developed Country (LDC) ■ Small Island Developing State (SIDS) ■ Any other country/region

RM could also apply to aviation...

But not necessary the same keys



Imports by sea & air is well correlated to the international aviation activity, for great majority of countries (measured in revenue-ton kilometers, RTK).

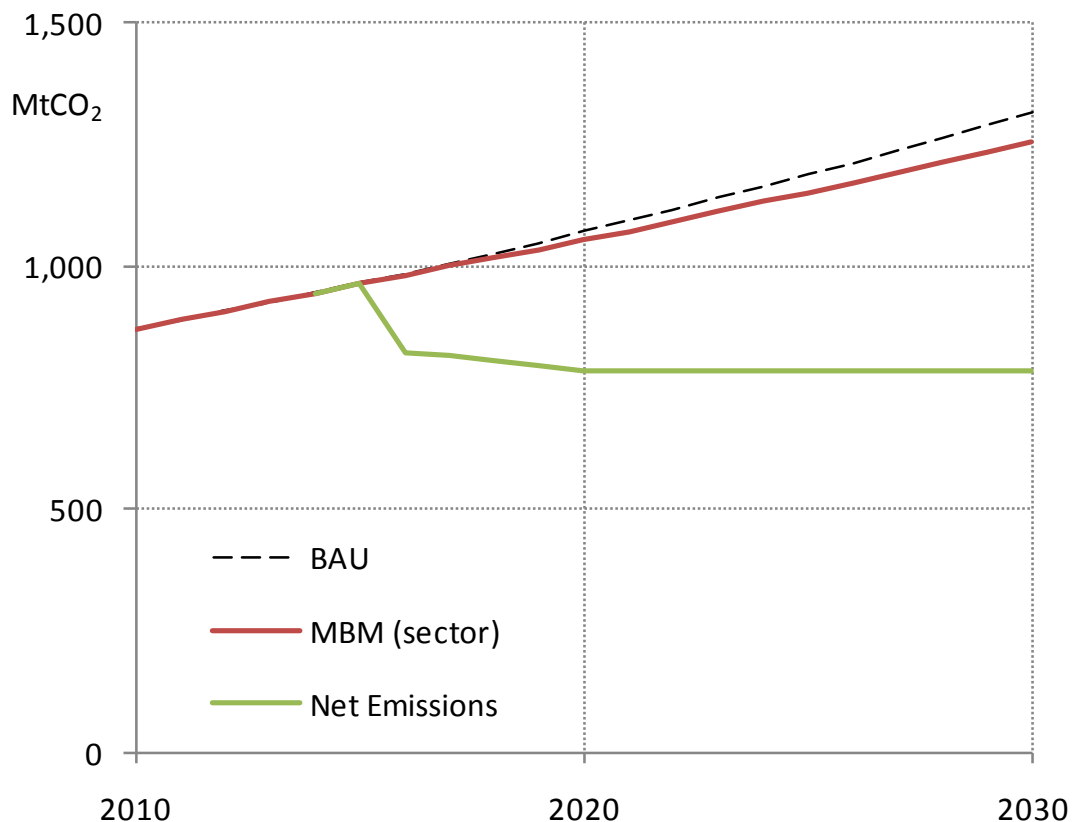
However, a simple approach based on fuel uplifted to the aircraft may be more appropriate.

ETS with RM

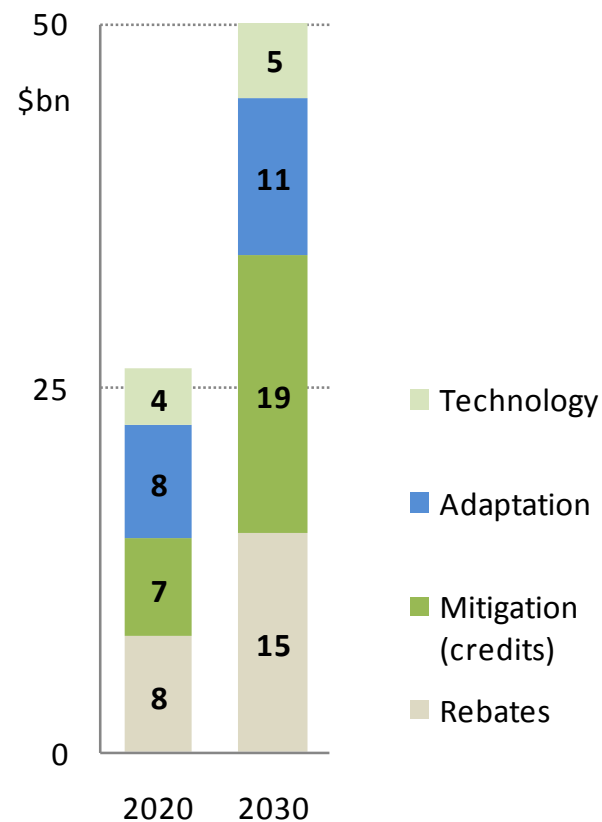
Average scenario and potential financials



Emissions



Financial



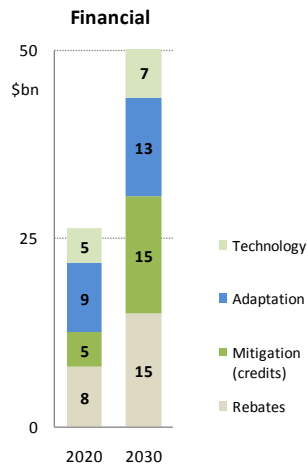
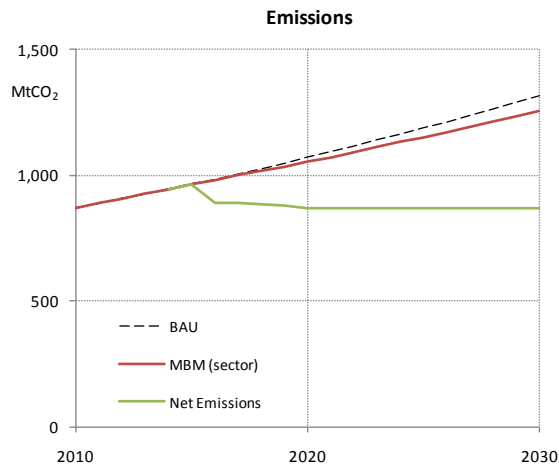
Assumptions: ETS **cap 10%** below 2007 level; 100% auctioning from 2020;
Financial: rebates to developing countries equals 30% of the total cost; mitigation credits as per the cap; remaining proceeds split between adaptation (2/3) and technology (1/3).

ETS with RM

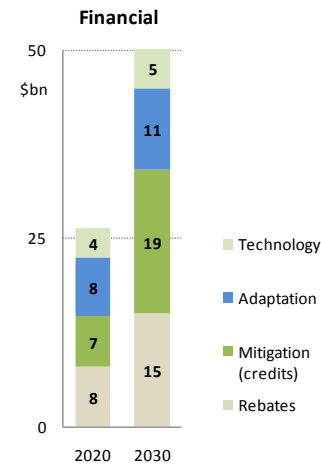
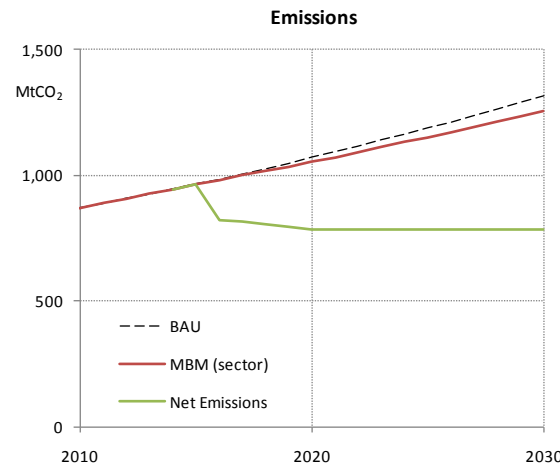
Finance dynamics vs different emission caps/goals



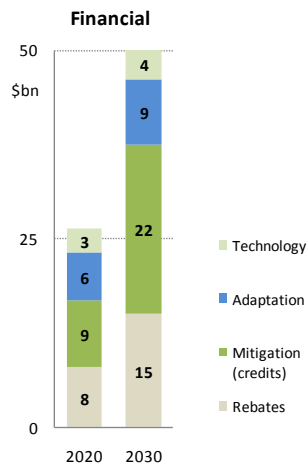
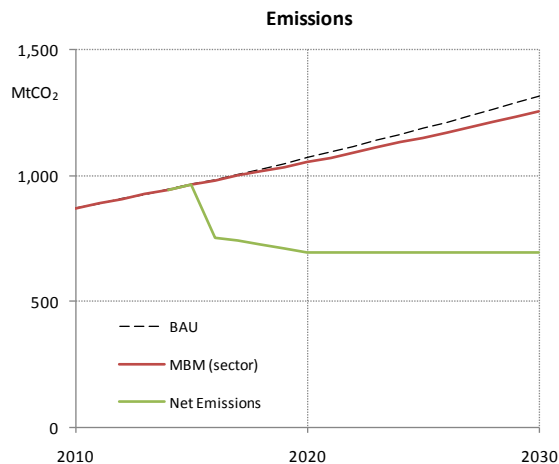
Cap = 2007 emissions



Cap = 10% below 2007



Cap = 20% below 2007



Assumptions: ETS **cap X%** below 2007 level; 100% auctioning from 2020;

Financial: rebates to developing countries equals 30% of the total cost; mitigation credits as per the cap; remaining proceeds split between adaptation (2/3) and technology (1/3).

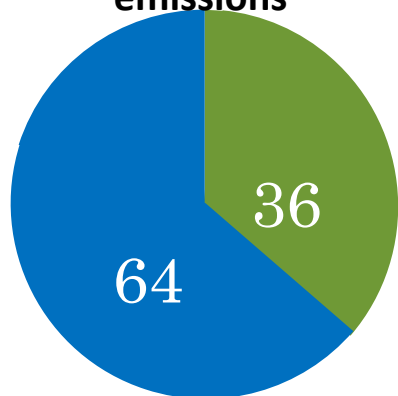
The Core Issue: Various Perspectives



- Not whether, **but how** to reconcile:
 - Differentiated climate principles (CBDR), with
 - Uniform policies of shipping (IMO)
- The traditional by flag, country of registration, etc cannot work

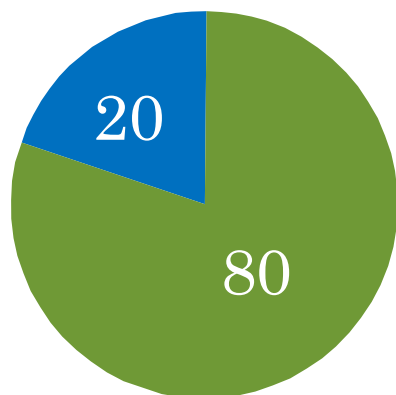
Differentiated

Historical cumulative emissions



■ High-income countries
1.1 billion people

Impact damage costs



■ Developing countries
5.6 billion people

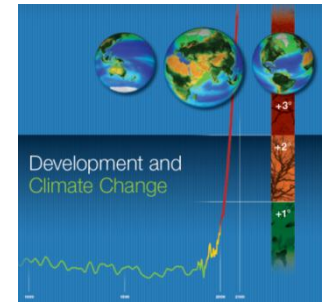
Uniform



Costs passed on to end-customers



- Developed countries:
 - Come out of downturn, and reduce budget deficit; reduce/mitigate emissions
- Less developed countries:
 - Develop, and reduce poverty; adapt to climate change
 - 1.4 billion people in poverty;
 - 1.6 billion people without modern energy
 - 25% of children malnourished
 - 1/6 people without clean water



World Development Report 2010

- Yet, most recognize the need to act on climate change:
 - Now, Together, and Differently

MBM Incidence on Developing Countries



	Optimal* Rebate Key Study	Initial Approach (MEPC 60/4/55)
Developing Country/region	Share of global imports, by <u>sea and air</u> , %	Share of global imports, by <u>all</u> transport modes, %
China	8.35	6.84
Korea, Republic of	3.68	2.55
Africa (all)	3.39	2.50
Singapore	2.36	1.88
India	1.98	1.56
Ethiopia	0.06	0.04
Guyana	0.01	0.01
...
All developing countries:	40.11	33.11

Thus total incidence on developing countries from a global maritime MBM is circa 40% of its global costs (rather than circa 30% used before).

* 'Optimal': striking the best balance between accuracy, simplicity of calculation and data availability. The key is based on share of global trade with non-adjacent partners, in 2007. The Study is available at: imers.org/docs/optimal_rebate_key.pdf (a previous version is in the document [GHG-WG 3/3/11](#)).