

December 2009

## PROJECT CATALYST BRIEF: Breaking the deadlock: Bunker Fuels

### Bunker regulation is needed to reduce emissions and raise funds

Emissions from aviation and shipping (collectively known as bunker fuels) are the fastest growing source of global emissions and will account for about 2.5 gigatonnes (Gt) per year by 2020—as much as the entire Middle East<sup>1</sup>. More than 12 years ago, the Kyoto Protocol identified the need to regulate bunker fuels and tasked the International Civil Aviation Organization (ICAO) and International Maritime Organization (IMO) with devising a strategy to reduce international emissions. Since then, bunker fuel emissions have increased by around 50 percent, and there is still no global sector scheme in place. The Conference of Parties (COP) meeting in Copenhagen presents a singular opportunity to break the decade-long impasse on this critical issue.

In addition to reducing emissions, a deal on bunker fuels could help fill the funding gap that lies between developing country needs and developed country commitments. Between \$100 billion to \$150 billion (€65-100 billion)<sup>2</sup> is needed to support mitigation and adaptation in developing countries, but based on current commitments, there will be a shortfall of \$80 billion to \$120 billion (€55-80 billion)<sup>3</sup>. Leaders have been slow to recognize bunker fuels as an innovative source of financing despite the enormous potential. While the Kyoto protocol only gives the ICAO and IMO authority over emissions from international flights and shipping, countries could still employ the same system or a variant to regulate domestic emissions. Adopting one system rather than a separate international system and patchwork of national schemes would also have the advantage of reducing transaction costs and complexity. Assuming charges of \$10 per ton of CO<sub>2</sub>, global aviation could generate an average of \$10 billion per year from 2010 to 2020, while global maritime shipping could bring in an average of \$14 billion per year.<sup>4</sup>

### Contention around the pathway can be resolved

A number of controversies continue to swirl around regulation of bunker fuels:

- Can a global scheme fit within the UNFCCC principle of “common but differentiated responsibilities”?
- Will trade and tourism, particularly of developing countries, be significantly affected?
- How best to collect and manage funds, particularly if domestic emissions are included?

These concerns are important, but not an excuse for inaction. With sound system design, the benefits of a bunker fuels scheme could far outweigh the costs for developing countries, and at a global level, emissions could be cost-effectively reduced.

### Developing country equity addressed through a multi-fold return supporting climate action

A global bunker fuel scheme would require all countries to take part. This is the only way to prevent transportation companies from gaming the system, such as registering or creating hubs in exempt nations to avoid bunker charges. But global participation raises equity concerns among developing nations that any scheme must be consistent with the UN Framework Convention on Climate Change (UNFCCC) principle of common but differentiated responsibilities (CBDR).

<sup>1</sup> McKinsey GHG Cost Curve v2.0

<sup>2</sup> Project Catalyst – “Scaling Up Climate Finance”

<sup>3</sup> Project Catalyst Brief: “Financing Needs”

<sup>4</sup> Calculation assumes aviation emissions of 0.66 gigatonnes (Gt) in 2005 growing to 1.1 Gt by 2020, and marine emissions of 1.1 Gt in 2005 growing to 1.5 Gt by 2020 (per McKinsey GHG cost curve v2.0). If only international emissions included, this number would fall by roughly 20 percent of marine shipping (IMO) and ~50 percent of aviation (OAG from Black Aviation Solutions)

While global coverage is necessary, developing countries worry that an unfair burden will be placed on their respective economies. But analysis of individual air and sea transport routes shows that the majority of the costs would be borne by developed countries. For aviation, about 65 percent of flights are either to, from, or within a developed country, and only 5 percent of the global population would be affected.<sup>5</sup> Assuming that \$10 billion would be generated annually by a bunker fuel charge on aviation, developed countries would therefore pay about \$6.5 billion per year of the cost. With shipping, about 60 percent of global trade is destined for developed economies.<sup>6</sup> Assuming that \$14 billion would be generated annually by a maritime bunker fuel charge, residents of developed countries would pay about \$8.5 billion per year through increased prices.

While developing economies might incur up to one-third of the cost, we propose that revenues from the scheme are channelled back to the developing world for adaptation and mitigation. This would imply a threefold ratio in the money received relative to the cost incurred, and this ratio could be even higher for least developed countries and small island developing states. In Africa, for example, imports in 2006 were about \$300 billion, or 2 percent of the \$12 trillion in global trade, so the continent would pay about \$280 million into a bunker fuel scheme.<sup>7</sup> In return, Africa could expect to receive as much as \$2.5 billion assistance for adaptation and \$0.5 billion for mitigation—a ten-fold return.<sup>8,9</sup>

In recognition of common but differentiated responsibilities (CBDR) developed countries should contribute their domestic emissions to a global scheme or pledge them for support of developing countries. Developing countries could earmark domestically generated bunkers towards self-financed climate action. Revenue generated in this way would then be applied towards public financing commitments made by either developed or developing countries.

Further recognition of CBDR could be made by a slower phasing in of regulation for developing countries. Such a mechanism was identified and accepted by all nations party to the Montreal Protocol, which set different targets and timeframes for developed and developing nations. Further allowances should also be made for particular least developed countries and small island developing states through exception of specific routes or one-off shipments of essential items, such as food or medicine. This system of exceptions should be subject to a review system that includes a petition mechanism for adding or removing routes.

### The effect on trade and tourism will be relatively small

Generating \$20 billion from aviation and marine bunker fuels may sound like a huge amount, but the tariff pales in comparison to the size of the relevant industries and will have little effect on trade and transport. In 2008, about \$12 trillion worth of goods were traded, with about 80 percent transported by ship.<sup>10</sup> A \$10 billion tariff on maritime fuels only implies a price increase of 0.1 percent.<sup>11</sup> Similarly, the global aviation industry has revenues of about \$500 billion per year, so a \$10 billion tariff on air transport only implies a price increase of 2 percent.<sup>12</sup> To date, international aviation fuel has been largely exempt from all tax and VAT.

<sup>5</sup> OAG from Black Aviation Solutions. About 65 percent of total seating capacity is either to, from, or between developed countries. Estimates also suggest only 5% of the global population flies.

<sup>6</sup> UNCTAD Handbook of Statistics gives 2006 results of value of imports to developed world as 60 percent of total world imported goods

<sup>7</sup> UNCTAD Handbook of Statistics

<sup>8</sup> We assume that 40 percent of funds would be devoted to adaptation, 40 percent would go toward mitigation, and 20 percent would pay for technology, as proposed by *International Maritime Emission Reduction Scheme*. As a proxy for Africa's share of adaptation monies, the OECD estimates that Africa receives 40-50 percent of total official development assistance (ODA).

<sup>9</sup> McKinsey & Company's greenhouse gas abatement cost curve estimates that 10-15 percent of total mitigation potential is located in Africa.

<sup>10</sup> UN review of Maritime Transport 2008

<sup>11</sup> Andre Stochniol with IMERS conducted a bottom-up estimate and returned similar results in his 2009 paper "Maritime Transport and the Climate Change Challenge."

<sup>12</sup> IATA – Financial Forecast September 2009; Global Revenue for 2008 was \$535 billion. [http://www.iata.org/NR/rdonlyres/9AF4AA8F-A7DB-47A2-AD4E-8374C8ECCB48/0/Industry\\_Outlook\\_Sep09.pdf](http://www.iata.org/NR/rdonlyres/9AF4AA8F-A7DB-47A2-AD4E-8374C8ECCB48/0/Industry_Outlook_Sep09.pdf)

The majority of funds generated must be pledged to support developed country action

To gain support from developing countries, some binding mechanism will be needed to reserve the majority of funds generated for climate action in developing countries. The most transparent method to collect and channel money would be through an internationally recognized body, but money could also be collected by national governments and earmarked by law for climate mitigation and adaptation in developing countries.

## Proposals on the table: Emissions trading or levy system

While the exact system should be left up to the IMO and ICAO, any agreement must have defined UNFCCC targets and deadlines to shift short-term offsetting towards long-term reduction of real emissions. The system also must dedicate a significant portion of funds to support action in developing countries.

### Emissions trading system

Under this system, emissions would be capped, allowances would be auctioned, and the UNFCCC would set up a new regulatory body to monitor and collect funds. Open trading would be allowed with other markets and industries, and credits would be surrendered at regulated intervals based on emissions.

**Advantages** of this approach include:

- Using market-based instruments to set prices
- Integrating with a global emissions trading system
- Preventing gaming, so long as there is a 100 percent auction of allowances (without a 100 percent auction, setting a baseline also becomes extremely complicated)
- Setting a global cap ensures long-term reductions in global emissions through the adoption of new technologies, more efficient operations, and offsets

**Disadvantages** of this approach include:

- Significant transaction costs for small companies, unless grouping is allowed
- Possibility of evasion if all countries do not participate
- Difficulties in agreeing on a cap since the global demand for shipping and aviation varies year

### Levy system

This approach would apply a flat levy on fuel purchased with the funds channelled to a regulatory body.

**Advantages** of this approach include:

- Relatively simple and transparent if there is global coverage (becomes more complicated if exceptions or phase-in is allowed)

**Disadvantages** of this approach include:

- Widespread evasion likely if all countries do not participate
- Without a cap, the levy might generate revenue, but fail to curb emissions
- Setting the levy price will be contentious due to significant political and industry pressure

Either system could also be linked to efficiency standards for specific types or sizes of ships and airplanes. Technical or operational efficiency could then be rewarded by recycling some portion of the funds generated back to industry. While linking to efficiency standards should be examined, the mechanism used must still reserve the largest portion of funds for actions in developing countries to have any chance of support.

## Consensus: control bunker emissions

There is regulatory, industry, developed, and developing country consensus that bunker emissions must be controlled – the issue is the approach. The EU has already passed legislation folding aviation emissions into its Emission Trading System (ETS) and the European Commission announced that an extension to marine bunkers will be considered if no international scheme is launched. Even so, the EU’s aviation sector ETS could be folded into a global aviation system, or the funds could be directed to an established COP body. In the US, further aircraft efficiency standards are being debated in Congress, which is also considering extending efficiency standards to the marine sector. The Federal Aviation Administration and Environmental Protection Agency also want to see global standards set through ICAO.

Bunker schemes have also been supported by various industry groups. The Aviation Global Deal Group, Singapore Shipping Association, Danish Shipowners’ Association, as well as other shipping organizations in Australia, Norway, Belgium, and Sweden have all backed schemes—so long as they have global coverage. The IMO and ICAO also have acknowledged the need for some sort of global bunker fuel regulation, though they have not endorsed any particular one.

Several developing countries have submitted proposals for aviation levies. As long as a scheme recognizes their unique circumstances and provides significant financial support, developing countries will likely come on board, as they did with the Montreal Protocol.

## The path forward

To make headway on the bunker fuel issue, we suggest the following:

- Nations must agree on global bunker emission targets and timelines with periodic measurement and review in meeting these targets. As industry experts, the ICAO and IMO should devise the most suitable mechanism for achieving these targets within a set timeframe.<sup>13</sup>
- To win support from developing countries, the mechanism chosen by ICAO and IMO must allow for the vast majority of funds to be channeled to climate-related actions in developing countries.
- Revenues collected must either be channeled through an international organization or pledged by national law (or some other innovative mechanism) to support climate action in developing countries.
- Bunker regulation should be global, with certain exceptions for routes or cargo to and from least developed nations and small island developing states, both of which could petition for additional exceptions in the future.
- Any action on bunker fuels should require global technology and operational efficiency standards. Existing technologies and operating standards could dramatically improve current marine fleet efficiencies, but companies have been slow to adopt these standards on their own.
- While the impact on trade is likely to be very limited, a credible third-party assessment is needed to address concerns. Further assurances should be made by including a petition and a periodic review clause in the agreement.

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*Project Catalyst is an initiative of the ClimateWorks Foundation and the European Climate Foundation. For more information see [www.project-catalyst.info](http://www.project-catalyst.info).*

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<sup>13</sup> Current options in Non-paper No. 49 call for a 10 percent and 20 percent global reduction in aviation and marine bunker fuel emissions, respectively, by 2020, leaving the particular the mechanism up to the respective technical expert bodies of ICAO and IMO.