The CO_2 Taxation Option for an EU Shipping Measure

Marine Fuel Taxation

At ECCP 1WG on shipping, attendees provided ideas for a possible EU market-based measure to tackle GHG emissions from ships in the event that the IMO failed to agree a global measure by the end of 2011. This paper considers fuel taxation as a possible option.

The road fuel tax precedent

Excise duty on road fuel was originally established in order to raise revenue. The focus is now shifting onto the additional need to reduce emissions and dependence on imported oil. Europe's oil import bill approaches €300bn per year, half of which is spent on road transport. The Energy Tax Directive (ETD) sets the minimum levels of tax that member states must apply. The minimum is €0.33cents/litre for diesel and €0.36cents/litre for petrol. The average road fuel tax actually levied is €0.48 cents/litre. EU road fuel tax revenues total about €170bnannually.Aviation and marine fuels have always been exempted from fuel tax under the ETD.

The Commission recently published a proposed revision to the Energy Tax Directive (COM(2011) 169/3) which calls for road fuel taxes to be split into mandatory CO_2 and energy components. If the proposal is agreed, it will require member states to apply, from 01 January 2013,a CO_2 tax of at least €20 per tonne (4-5€cents/litre) on all fossil 'energy carriers', independent of use except that activities (sectors) already covered by the EU ETS are exempted. The proposal also stipulates that should a minimum CO_2tax be agreed, it could only be changed by a unanimous decision in Council. The energy related minimum tax would be corrected automatically for inflation every third year.

From 2023, member states would have to apply the CO_2 related tax factor as well as the same energy content based tax factor to all fuels. This revised ETD proposal intends to address road transport emissions by ascribing a CO_2 tax element within the existing tax minima. There is no attempt however, to cap emissions from EU road transport nor to monitor emissions by vehicle.

Tax on Bunker Fuels for intra EU shipping

In a similar way to for road fuels in the ETD, a CO_2 tax could be levied on bunker fuels supplied to EU shipping. Taxation of marine fuel is currently banned in the ETD (Article 14), so to do so, would require that the ETD be amended.

The tax would best be levied on fuel suppliers and collected at the point of sale to distributors (not end users) i.e. an excise tax. Bunker fuel sales would be taxed with revenues collected and paid to governments by fuel suppliers in exactly the same way as currently applies for road fuel.

Advantages

An EU bunker fuel tax has a number of advantages; administrative simplicity, environmental effectiveness, and predictability, facilitating long-term decisions on mitigation measures.

Upstream bunker fuel taxation is administratively simple, requiring only an extension of the existing fuel excise system to the EU sale of bunker fuels.

A CO_2 tax also has the advantage for operators that no tracking of emissions or bunker sales by individual ships or shipping companies would be required. Nor would the purchasing and surrender of permits be necessary. No auctions or emissions baselines would need to be established although this of course also means there would be no cap on emissions.

One of industry concerns about aviation's inclusion in the EU ETS remains the administrative burden it places on airlines; there are a relatively small number of actors (airlines) to be regulated but a large number of flights to be monitored.

A tax is also environmentally effective because it provides a direct incentive to the operator to reduce costs by reducing fuel consumption and therefore emissions. The split incentive issue is a separate problem that will arise whatever the market based measure. How effective such a tax may be in reducing emissions could depend on the use of the tax revenues.

The tax would need to be set at the external CO_2 price or higher. The minimum tax level would be prescribed in the ETD - €20/tonne. As with road fuels, member states would be free to set marine fuel CO_2 taxes at higher levels but their ability to do so would be constrained by the danger that ships might decide to bunker at neighbouring ports if fuel there was cheaper, a practice which would also result in extra emissions. Price is already an important factor in choice of European bunkering port. The extreme example of this price sensitivity was California's 1991 decision to lift the fuel tax exemption and to tax interstate bunker fuel sales. Within a year, Californian bunker sales had collapsed as ships bunkered elsewhere especially Panama. The decision to impose a tax was reversed but California's bunker business never recovered.

Disadvantages

There are a number of potential disadvantages – most can be overcome.

Although a cap on emissions would not be set, if the tax was sufficiently high or was increased over time in line with rises in the price of CO_2,it would provide a strong incentive to ship owners to reduce emissions.

Ship owners would not be required to monitor fuel consumption to calculate emissions as would be necessary with a levy or an ETS where allowances needed to be purchased. This might lessen the focus on fuel consumption.

The main concern with a tax on EU shipping is how to avoid evasion – ships bunkering at nearby non-EU ports, from offshore barges or avoiding bunkering in Europe altogether – as with the California example. Many EU ships are currently bunkered not at harbour but from barges as for example occur at Rotterdam. These barges are restricted to operations within the port area and offshore deliveries are not permitted by Dutch law. Similar restrictions could be applied to barge distributors by other ports/countries.

Denmark and Sweden, on the other hand, operate an extensive bunkering operation by barge for international shipping passing through the Baltic. These operations nevertheless take place exclusively within the territorial seas and could, again, be strictly controlled by law at member state level. (Ref COM 2003). There is said to be no bunkering outside territorial waters in the Mediterranean. Many European ports operate bunkering at the anchorage – i.e. withina 3-4 miles maximum distance from the coast.
Even so, there is the danger that a large bunkering business might develop outside EU territorial waters to facilitate evasion of the fuel tax. And many ocean-going vessels could easily arrange to bunker entirely outside the EU.

To overcome this, the tax would need to be limited to intra-EU shipping only and, possibly, ships which never leave European waters. Ocean-going vessels including those involved in intra-EU trade would not pay the tax. This would require EU fuel suppliers/distributors to manage a two tier system; taxed fuel sold to intra-EU and domestic shipping – possibly involving an EU register - and non-taxed fuel sold to international shipping. Member states would probably need to establish a ship registration and monitoring system to show, via bunker notes, that the fuel tax had been paid.

Domestic and inland shipping could also be required to pay the tax. These emissions are already included in member states' Kyoto reduction inventories yet there is no policy in place to reduce them. Their inclusion in the fuel tax scheme would be the simplest way of rectifying this and would mirror the inclusion of EU 27 domestic aviation emissions in the EU ETS.

Such a taxation system should not be difficult to implement or manage. The United States has had a two-tier fuel tax system for aviation for many years; US states levy a fuel tax on domestic flights while all international flights including US carriers are exempt from the fuel tax. Modern IT takes care of the details easily. The key would be to ensure that ships in the taxed category did not obtain access to untaxed fuel. There is precedent for such schemes in the EU e.g. where untaxed heating oil was coloured.

Two categories of ships would need to be created and managed; let's call them" blue" ships and "red" ships.

Intra-EU and domestic "blue" ships
Blue ships would be defined as those ships operating entirely or to a great extent domestically or between EU ports. They never leave European waters (at least not for bunkering purposes) and would be included in an EU register of blue ships which bunker exclusively at EU ports with bunker notes or sales receipts suitably recording their blue – i.e. tax paid – status.

Non-EU "red" ships

All other ships calling at EU ports would be categorised as red – i.e. non-taxed ships. They could bunker at EU ports and would be sold non-taxed fuel – this being recorded on the bunker fuel note.
All red ships would be subject to some other market based measure as this taxation scheme is not suitable for ocean-going vessels unless it was part of an all-encompassing global scheme for taxing bunker fuel which prevented evasion.

The attraction of an excise fuel tax on intra-EU 'blue' shipping is that it captures a large proportion of, typically small, ships involved in EU shipping with a simple and administratively un-burdensome measure. It is difficult to cite numbers without access to proprietary databases, but there are very many more small ships operating than large vessels.

Lloyds commercial ships database (Entec 2005) shows that there are 31,000 ships worldwide >500GT. Within the 100-500GT range there are 47,000 ships worldwide with 8% of global fuel consumption. The <100GT category includes small ferries, fishing vessels, pleasure craft etc. Entec (2002 p7) put the global merchant vessels fleet over 100GT at 87,000 (Entec 2002 p7)Entec (2002 report p4 – within 1% accuracy)) also says that there were over 1.8m ship movements within European waters in 2000.

The CE Delft consortium study for the Commission on ship GHG in 2009 estimated that CO2 emissions from ships on intra EU voyages was about a third (112Mt) of all emissions from ships sailing to and from EU harbours. It also noted that 29% of emissions on voyages to EU ports are from non-cargo ships; i.e. from passenger (ferry and cruise) ships, fishing vessels and 'other' ships such as dredgers, offshore support vessels and tugs and that 'a relatively large share of emissions on routes to EU ports are from small ships'. So a tax would cover a good proportion of ships/emissions.

What "blue" ships could be covered?

Inland waterways
Pleasure craft
Fishing vessels
All other vessels under say a500 GT or 100 GT threshold.

A tonnage threshold could be set whereby fuel suppliers/distributors were required by law only to supply taxed fuel. The burden of proof permitting a red ship below the threshold to purchase tax exempt fuel would be placed on the ship's master.

Inland waterways

GHG emissions are currently not internalised for inland waterways in Europe.
A major part of inland waterways navigation in Europe takes place on the Rhine and its tributaries where it is subject to the rules of the Mannheim Convention of 1868. Article 3 thereof, states that "no duty based solely on navigation may be levied on vessels or their cargoes or on rafts navigating on the Rhine or its tributaries". This has been interpreted as forbidding any charges on navigation – including internalisation of external costs.

Any tax on fuel for inland waterways would therefore, it is said, need to be agreed by countries parties to the Mannheim Convention and any revisions of these rules would need to go through international negotiations, as contracting parties to the Convention include Switzerland which is not an EU Member State.

Similar problems exist on the Danube – another important trans-European inland waterway, the navigation on which is governed by a Commission to which Croatia, Moldova, Russia, Ukraine and Serbia take part alongside EU countries.

To get an idea of the numbers involved, some 30,000 seagoing vessels call at the port of Rotterdam each year (COM2002, p28) while there are 110-120,000 port calls by inland vessels. So an upstream CO_2 fuel tax could be a very efficient means of charging smaller ships for external costs.

There is no reason why fuel for pleasure craft or fishing vessels should not be subject to a CO_2 tax. In fact under the current (2003) ETD, pleasure craft are not exempt from fuel taxes. Many use taxed road fuel.

What would be the legal basis of such a tax?
The legal basis would be the EU Directive transposed into law by the 27 member states. All ships operating domestically or intra-EU would be required by law only to purchase taxed fuel. An exemption would be possible for ships registering as “red” ships. Placing on the market restrictions might also be applied to bind fuel suppliers.
There are no prohibitions/restrictions at IMO level on member states or groups of states from levying fuel taxes so there would be no requirement to refer the issue to the IMO.
There would also be nothing preventing member states from levying an additional energy tax on ship fuel similar to that proposed for road fuels in the revision to the ETD now circulating, but this would need to be agreed first at EU level.

Revenues
Since the tax is an excise duty, tax revenues would be retained by the member state where the bunker fuel was sold and the tax collected. Provided tax rates were not sufficiently different between member states so as to encourage “fuel tourism", sales of taxed bunker fuels would presumably not differ significantly from today’s sales levels of untaxed fuel to the same ship categories. The distribution of tax revenues amongst member states would then reflect existing bunker sales patterns for intra-EU ships. The sale of bunker fuels in the EU is dominated by a few ports in a few countries. The graph below show the distribution of bunker sales within the EU 15 in 1999.The Netherlands dominates with over 30% of all sales.

However bunker sales for internal/coastal EU shipping are somewhat more evenly balanced, this time with Spanish sales predominating (27%).

Bunker Sales in EU-15 countries						
Country	International navigation		Domestic navigation (inland and coastal)		Total	% of Total
Austria	N/A		0.00	0%	0.00	0.00
Belgium	4.52	11%	0.27	5%	4.79	10.30
Denmark	1.31	3%	0.12	2%	1.43	3.08
Finland	0.57	1%	0.13	2%	0.70	1.51
France	2.94	7%	0.49	8%	3.44	7.40
Germany	2.10	5%	0.30	5%	2.39	5.14
Greece	3.16	8%	0.88	15%	4.04	8.69
Ireland	0.17	0.1%	0.04	1%	0.21	0.45
Italy	2.43	6%	0.22	4%	2.65	5.70
Luxembourg	N/A	-	0.00	-	0.00	0.00
Netherlands	12.94	32%	0.66	11%	13.6	29.25
Portugal	0.60	0.1%	0.04	1%	0.64	1.38
Spain	6.02	15%	1.58	27%	7.60	16.35
Sweden	1.55	4%	0.14	2%	1.69	3.64
UK	2.33	6%	0.99	17%	3.32	7.14
Total EU-15	40.63		5.86		46.49	-

Source Beicip-Franlab 2002

Tax revenues would be retained by the country where the bunker fuel was sold. If member states felt strongly about the issue of an even distribution of tax revenues, and could not resolve the issue through unanimity in Council, one alternative would be to introduce an upstream fuel levy rather than a tax and have the levy proceeds divided amongst the EU27 according to a distribution key that could be agreed by a majority decision in Council. There will be a similar imbalance in revenues collected under the aviation ETS because some countries have been allocated larger responsibilities for managing and collecting airline emission allowances. A fair redistribution among member states has been agreed through the use of just such a distribution key. Unanimity will be required in any case to amend the ETD to facilitate CO_2 taxation of shipping so an additional agreement on the distribution of revenues might well form part of any such decision.

Level of the tax

If ships were to have the option of changing from blue to red status because they were sailing outside the EU, and to prevent operators deliberately switching to the cheaper option, the fuel tax would need to be set close to the CO_2 price of the red system and be regularly adjusted to maintain this.

Disadvantages

Shipowners will have no access to offsets or sectors with lower abatement costs or where the offset price is lower than the tax.

Tax revenues remain with member states as excise revenue i.e. cannot be directly allocated to an international fund for climate change action. This need not be the case with an upstream levy.

Summary

An upstream CO_2 tax on bunker fuel sales for intra-EU, coastal and inland shipping would be an administratively simple and environmentally effective way to address the climate costs of a large number of ships operating in European waters. It would need to operate as a complement to a more complicated scheme covering ocean-going vessels.

Fuel taxation is not a complete option for addressing all EU shipping emissions because of leakage issues, but it could cover a large number of ships in a way which is process and administratively far simpler than other options while at the same time being environmentally effective. The required unanimity in Council to agree such a measure is a not insignificant political hurdle.