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## Fuel Tax Concessions in the Fisheries Sector

Roger Martini

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## **Abstract**

# **FUEL TAX CONCESSIONS IN THE FISHERIES SECTOR**

**Roger Martini, OECD**

At the 2009 Pittsburgh Summit, G20 leaders requested an analysis of the scope of energy subsidies and suggestions regarding how they may be phased out and rationalised. This report responds to this request by identifying and measuring fuel tax concessions in the fisheries sector. It provides data on fuel use, tax concessions, and related information for OECD countries and partners, as well as describing some of the key challenges in measuring data of this type.

*Keywords:* Environmentally harmful subsidies, fossil fuel subsidies, tax concessions, tax exemptions, fisheries, fuel use.

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## Fuel Tax Concessions

### Context

In September 2009, leaders from the Group of Twenty (G-20) nations gathered in Pittsburgh for a summit. Among other things, they agreed to “phase out and rationalise over the medium term inefficient fossil fuel subsidies while providing targeted support for the poorest”. In their joint communiqué, they “request relevant institutions, such as the IEA, OPEC, OECD, and World Bank, provide an analysis of the scope of energy subsidies and suggestions for the implementation of this initiative and report back at the next summit”.

In October 2009, at its 104<sup>th</sup> session, the OECD Committee for Fisheries identified an interest in assessing the long-term impacts to fishing fleets of phasing out fuel support. In this regard, the Committee agreed to an immediate effort that would both contribute to this interest while also providing timely input to the G-20 process. This analysis responds to that request by providing:

- an approximation of the value of government transfers related to fuel use for fishing fleets in OECD Member countries, as well as non-member economies where data was made available.
- an initial assessment of the impacts of such support and the implications for the fishing industry of phasing them out.

At the 2009 Pittsburgh Summit, G-20 Leaders recognised that “inefficient fossil fuel subsidies encourage wasteful consumption, reduce our energy security, impede investment in clean energy sources and undermine efforts to deal with the threat of climate change”. The presence of policies whose side effects encourage carbon emissions (e.g. budgetary transfers, tax exemptions) can undermine the effectiveness of climate policy instruments. This context is important as it points to the reason for undertaking this exercise: to reduce inefficient fossil fuel consumption with a view to reducing greenhouse-gas emissions.

This document provides a starting point in determining the extent of fuel tax concessions and fuel consumption in the fisheries sector for those countries (primarily OECD member countries) participating in the exercise. To what extent the various fuel tax exemptions/concessions reported in this document can be equated to a “fuel subsidy” is still debated in various forums (in particular WTO). This is further underscored by difficulties in measurement that make comparisons across fisheries and countries a very challenging task. However, the report provides an indication of the potential contribution to reducing greenhouse-gas emissions and other impacts that phasing out fuel support policies would yield.

## Identification and measurement of tax concessions

### *Measuring support to the fisheries sector*

The international debate over financial support to the fisheries sector has resulted in a variety of definitions and classification frameworks to measure and evaluate support. In the context of the WTO, these definitions have implications for trade negotiations. For example, the term subsidy has a particular definition in the context of the WTO that is very specific and serves a role that more vernacular uses of the term do not.<sup>1</sup>

OECD work on measuring policies in agriculture and fisheries has come to use the terms “transfer” or “support” as interchangeable terms describing the level and nature of policy efforts made with respect to specific recipient groups and has thus deliberately chosen not to apply the WTO definitions. Apart from the WTO dimension, the reason for this is that the term subsidy has come to imply a certain degree of impact on production or trade, a presumption that the more neutral term transfers avoids. The OECD’s Committee for Fisheries has developed an analytical framework to define and catalogue all governmental financial transfers (GFT) to the fishing industry, specifically the monetary value of government interventions associated with fisheries policies (Box 1). The GFT framework is intended to lead to a dataset of transfer-generating policies directed to the fishing sector and a better understanding of the effects of such transfers on fisheries.

#### **Box 1. OECD’s GFT Analytical Framework**

The OECD’s Committee for Fisheries has undertaken a systematic effort to define and measure GFTs to the fisheries sector in Member countries. The development of a GFT classification system and the collection of detailed information on GFTs in OECD Member countries were undertaken as part of the OECD’s project on the *Transition to Responsible Fisheries*. As a result, country-level data have been collected by the OECD on an annual basis, and results included in its regular statistical publications, *The Review of Fisheries in OECD Countries: Country Statistics*. GFTs are defined as “the monetary value of government interventions associated with fisheries policies” and covers transfers from central, regional and local governments.

The analytical framework used to develop the GFT framework is based on the sustainable development concept. Government implementation of a transfer policy will impact firstly on the economic dimension as it is an economic policy instrument designed to change the prices faced by agents in the sector, or to change the relative wealth of participants. The effects on the economic dimension will then flow through to the environmental and social dimensions, which will in turn generate dynamic feedback effects among the three dimensions. The main advantage of taking a sustainable-development approach is that it allows the full range of short-term and long-term effects of transfer policies to be addressed, potentially identifying and avoiding unintended or unforeseen consequences.

Sources : OECD (2000, 2006)

GFTs may arise as a result of budgetary expenditure. In addition support may come through market interventions such as tariffs or other price interventions which are not captured in the case of fisheries which is different from the case in agriculture [see *Financial Support to Fisheries: Implications for Sustainable Development* (OECD,

1. The Norwegian submission to this exercise specifically notes that “... in the context of subsidies within the framework of the WTO, tax relief systems may or may not be considered as subsidies. The purpose of such systems is primarily to regulate or ‘improve’ the conditions of competition between different national sectors and the WTO does not take as a premise that possible countervailing measures will even out different conditions of competition between like sectors in different countries. To the contrary, the situation where a country taking countervailing measures subsidises its own sector (for the ‘like product’) is not addressed by the WTO Agreement.”

2006)]. GFTs may occur in the market for output (fish) or inputs (fuel and other factors of production). For example, the GFT system classifies fuel-tax exemptions as: “Other cost-reducing transfers and direct payments”. This category refers to all transfers that are intended to reduce the costs of fishers that are not elsewhere captured in the classification system with the exception of market base price support.

The objective of this exercise is to better understand the different public policies related to fossil fuel consumption by fisheries. While budgetary policies are used in some cases, the majority of support to fuel use comes in the form of tax concessions (Box 2).<sup>2</sup>

Many countries have well-established procedures for measuring and reporting tax expenditures in personal and corporate income taxes as well as for broad consumption taxes like the VAT (OECD, 2010). All OECD countries apply excise taxes to some fossil fuels. But the tax rates that apply for some transport fuels are typically different than for other use, e.g. private transport fuels or fossil fuels used for residential heating, for industrial processes or for other purposes. The tax expenditures that fiscal authorities report for reduced rates, refunds or exemptions can represent substantial amounts in many countries.

#### Box 2. What are tax expenditures?

Tax expenditures are defined as “a transfer of public resources that is achieved by reducing tax obligations with respect to a benchmark tax, rather than by a direct expenditure” (Kraan 2004) – cited in *Tax Expenditures in OECD Countries* (OECD 2010). Tax expenditures can be used as an incentive to change behaviour or to provide an income transfer. While the terms “tax expenditure” and “tax concession” are synonymous, the term “tax expenditure” emphasises the similarity to direct budgetary outlays.

Tax expenditures take many different forms. They can be difficult to measure as “some tax measures may not be readily classified as part of the benchmark or an exception to it” (Whitehouse 1999). Tax expenditure estimates measure the benefit of the tax concession to the recipient, whereas direct expenditure estimates measure the impact of the expenditure on the budget on a pre-tax basis (AT 2005). Unlike budgetary outlays, tax expenditures are not always estimated by governments and depend in part on how beneficiaries respond to them. Some examples of tax expenditures are:

- **allowances:** amounts deducted from the benchmark to arrive at the tax base;
- **exemptions:** amounts excluded from the tax base;
- **rate relief:** a reduced rate of tax applied to a class of taxpayer or taxable transactions;
- **tax deferral:** a delay in paying tax;
- **credits:** amounts deducted from tax liability (Anderson, 2008).

Tax concessions for fisheries are usually provided through lower rates, exemptions, or rebates with respect to the two main types of consumption taxes:

- *Value added taxes (VAT)* which are broad-based taxes levied at each stage of the value chain, representing a percentage of the value of the good or service sold.
- *Excise taxes directed at specific fuels.* These are generally the most visible form of tax concessions related to fossil fuels, as they have a direct effect on prices and therefore consumption, though they can be difficult to measure.

2. Several countries (Canada, Denmark, Japan, Korea, New Zealand, Norway and the United States) specified that they do not consider fuel-tax exemptions or other relief reported here as subsidies, but nevertheless provided data, in keeping with the G-20 Leaders’ request.

Tax concessions directed at fisheries usually are targeted either at fisheries as a specifically-identified industry or part of a group of industries (either as targeted support for the sector or the fact that fuel is used as an input to production rather than for final consumption), or to fisheries by virtue of the type of fuel that is used. In the first case, fuel used in fisheries is taxed less heavily than for users subject to the standard rate of tax. In the second case, specific fuels can be subject to reduced rates or exempted from tax altogether. A common example is a lower tax rate (or exemption) on diesel relative to gasoline.

An important point to bear in mind when reviewing any tax concessions relating to VAT and excise taxes on fuel is that, in most OECD countries, the majority of the fuel that is consumed is taxed to some degree, but the rate of taxation and its application can vary widely across countries. The differential treatment of fisheries relative to the standard tax rate reported for a specific country will be reflected in relative prices *within* an economy, but does not by itself provide an indication of differences in fuel costs *between* countries.

Cross-country comparisons of the impact of tax concessions for fisheries cannot be made because a benchmark for comparison does not exist. Within a country there will be many different prices paid for fuels of different types and for different uses according to tax concessions granted to different users (Figure 1). Should the price for fuel paid by fishers be compared to consumers or other industrial users? If so, which ones? Between countries, differences in tariffs and transport costs as well as in VAT and excise taxes will lead to different prices faced by fishers, consumers and others in different countries<sup>3</sup>. The level of the tax expenditure is only part of the story if one is interested in evaluating the impact of tax concessions on fisheries, and is not by itself sufficient to draw conclusions about the relative prices paid by fishers in different regions, or the impacts of that price differential.

Tax concessions represent real transfers in the domestic economy, from taxpayers to fishers, and in this context the fact that other transfers to other users exist is less important. The size of the transfer reflects, along with other components of the GFT, the level of policy effort expended on the fisheries sector. Measuring the level of policy transfer is a necessary first step in an analysis that may lead to an estimate of their impact.

Tax concessions are one of the less transparent ways to deliver such transfers, such that their scale and importance may not be appreciated by policy makers, i.e. such exemptions are less visible than a direct transfer with a budget line. This is important for policy coherence as well as policy review and evaluation. However, in the context of efforts to reduce emissions related to climate change, a good understanding of all policies that may affect emissions is essential. Understanding the scale of these expenditures is also important to contributing to fiscal reform.

A challenge for this report is determining the scope of policies to be considered as directed to fisheries. VAT exemptions can be available for a variety of activities and so may not be exclusive to fisheries. In this case, it can be difficult to claim such an exemption as targeted support to the fisheries sector.

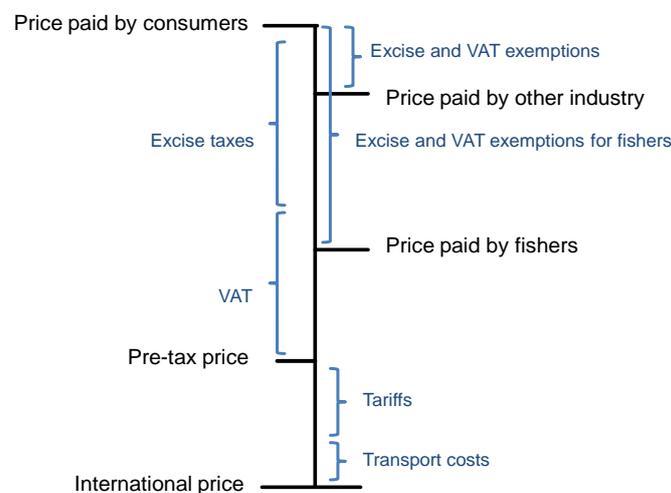
Excise taxes, however, intentionally raise the price of the taxed item, e.g. because its use is deemed harmful to society, or because governments can raise revenues easily and

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3. In addition, different tax regimes may allow for wide differences in the definition of income and allowable deductions.

relatively efficiently on their consumption. Given this intent, there is much less rationale for exempting the fisheries sector and exemptions are usually justified for reasons of competitiveness or social equity. Fuel used by producers in primary sectors (agriculture, fishing, forestry and mining) is exempted because users do not operate on publicly financed roads, on the argument that at least part of the tax serves as a means for recovering the cost of building and maintaining those roads. On the other hand, excise taxes may be applied with the intention of internalising the environmental costs of fuel use or to raise revenues, in which case the tax exemptions may limit the effectiveness of the tax.

**Figure 1. Tax concessions and price formation**



### ***Data collection***

For the purposes of collecting data for this exercise, a questionnaire was developed and circulated to Delegates of the Committee for Fisheries (COFI) in December 2009, which includes OECD member countries as well as some non-member economies (Annex 1). This questionnaire asked about any government intervention relating to fossil fuels that reduces the cost and increases the revenues of commercial fishers, regardless of whether or not they involve direct financial transfers. This would include a rebate, refund, expenditure or reduction (to fishers) from Value Added Taxes (VAT) and other such direct fuel taxes that are normally levied by the government on fuel users in the economy; price controls that suppress fuel prices below market prices; and programmes that provide direct transfers or payments.

Data on fossil fuel consumption by the fisheries sector, budgetary support and tax concessions were provided through the voluntary responses of OECD member, accession and observer economies. The most recent data were requested, with a focus on 2007 and 2008 and for both the national and sub-national levels as feasible. Information was also requested on any specific budgetary or tax concession implemented as a result of the increase in fuel prices in 2008 (see Figure 2 below). Existing data collected as part of the annual statistical collection on GFTs was also examined.

This information was supplemented by the data collected on fuel taxes, which are compiled in a database of instruments used for environmental policy and natural

resources management by the OECD and the European Environment Agency, as well as a desktop review of the literature.<sup>4</sup> The market price paid for fuel by fishers was supplemented using data from the International Energy Agency where necessary (OECD/IEA, 2009) (Annex 3).

The methods used by countries for calculating the total value of fuel-tax concessions depends on how the tax concessions are applied in each case: this may be through a tax refund where an individual pays the fuel tax and the government refunds part or all of it. In such cases, the amount of the refund the government makes (i.e. forgone revenue) is the value of the tax concession. Alternatively, there may be a tax reduction or an immediate exemption; this refers to instances in which an individual pays less or no tax at the time fuel is purchased. Budgetary payments related to fuel use are relatively rare; only Russia reports the use of these during the study period.

### *Summary of results*

While the rate of the fuel-tax concession per litre varies across countries, in the majority of instances, a full tax exemption is applied to the fisheries sector. In some countries, fuel-tax concessions vary depending on the level of government. For example in Canada and the United States, fuel taxes, and therefore their value to users, vary at the sub-national (provincial or state) level, as well as from those at the federal level. These sub-national tax concessions or other relief are not fully captured in this exercise.

All OECD Member countries but one were able to complete the survey in the timeframe of the development of this report. Of these countries, the questionnaire was not applicable to seven OECD economies as they do not have commercial fishing fleets (Table 1). Some comments on the method and ancillary information are presented in the country reviews section.

**Table 1. Summary of country submissions**

Fuel tax concession	Australia, Belgium, Canada, Denmark, Estonia, Finland, France, Greece, Italy, Korea, Japan, Latvia, Mexico, Netherlands, New Zealand, Norway, Slovenia, Spain, Sweden, Turkey, United Kingdom, United States
Budgetary support	Russian Federation
No fuel tax concession or other support	Chile, Germany, Iceland, Poland, Portugal, Thailand
Not applicable	Austria, Czech Republic, Hungary, Israel, Luxembourg, Slovak Republic, Switzerland

Based on the data submitted, the estimated total value of fuel-tax concessions for OECD countries was USD 2 billion in 2008, with a total amount of fuel consumed of 9.3 billion litres; this latter figure also includes fuel consumed by fishing vessels that were not eligible for a tax concession or other form of support (Table 2). Not all countries report the use of tax concessions, and not all countries have responded to the data request for this report.

4. The database is located at <http://www2.oecd.org/ecoinst/queries/index.htm>

The European Union also provides other payments which may be linked to fuel use, but are not captured here. Specifically, the "*de minimis*" regulation for fisheries, EC Reg. 875/2007, allows a maximum support of EUR 30 000 per firm for each three-year period during 2007-13. These funds cannot be used to increase fishing capacity, though they may be used to finance variable costs of fishing vessels, including fuel (see the discussion of the European Union in the Country Review section for more details).

The estimate of total value of fuel tax concessions under-estimates the total value of fuel-tax concessions in OECD countries, because:

- not all countries have responded;
- there are sub-national tax concessions that have not been reported; and,
- in some cases, a reasonable estimate of the total value of fuel-tax concessions could not be estimated because fuel-consumption data were not available, though the tax and exemption rates were known.<sup>5</sup>

The previous section cautioned against international comparisons of this data, because of the lack of appropriate benchmarks for comparison. To this should be added the issue of the different methods of estimation seen in the data submissions (Box 3).

### **Box 3. International comparability**

Tax expenditure accounting was never designed with international comparability in mind. The main challenge in any analysis of tax expenditures is to identify the reference point or benchmark tax system to be used in order to establish the nature and extent of any concession. Even where countries have adopted broadly the same methodological approach, the way in which they have implemented it in response to practical issues such as how far a relief should be regarded as a structural part of the tax regime may well differ (e.g. depreciation allowances used in calculating taxable profits). Moreover, differences in reporting in nominal versus present values can impede comparability. Without definitive answers to many of the issues outlined above, countries have either taken different approaches in measuring their tax expenditures or have simply not measured them at all. Ensuring a consistent approach across countries in this regard is a first step.

Leaving aside conceptual difficulties, cross-country comparison of tax expenditures remain a poor measure of how "green" is a country's tax system. Tax expenditures are dependent on two important factors: (i) the level of the standard or "optimal" tax rate and (ii) the existence of taxes on fossil fuels. As an example of the first issue, if two countries each applied a reduced rate of VAT of 10% to domestic consumption of fuel and power, but the standard VAT rate in one was 20% and in the other it was 25%, the latter would show a higher tax expenditure (in relation to GDP). In the case of the second issue where there are few taxes on fossil fuels, a country that applies a carbon tax with some tax breaks would have more tax expenditures than another country with no carbon tax in an analysis where the baseline was a standard tax and not an "optimal" tax. Clearly, any final statistic must be taken in the context of other statistics.

*Source* : Extracted from OECD (2010b).

5. For example, in Canada, relief of the federal excise tax of 4 cents per litre of diesel is generally available to fishing vessels that fish outside 12 nautical miles offshore (i.e. outside Canada's territorial sea). However, data on how many vessels proceed beyond 12 nautical miles from shore is not available, so the total value of this relief is not calculated here.

Table 1. Fuel Tax Concessions and related statistics, 2008

	National Currency (NTC)	Fuel price	Rate of fuel tax concession	Net fuel price for fishers	Total volume of fuel consumed	Total value of all fuel support	Volume caught, metric tons	Landed value	FTC as % of total landed value	GFT	FTC+GFT	FTC as % of all support
	ISO symbol	per litre	per litre	per litre	million litres	NTC millions	thousand tonnes	NTC millions	per cent	NTC millions		
		a	b	a-b	c	b*c	d	e	(b*c)/e	f	b*c+f	(b*c)/(b*c+f)
Australia <sup>1</sup>	AUD	1.49	0.38	1.10	196.7	75.0	180.7	1 426.2	5%	37.8	112.8	66%
Belgium	EUR	0.74	0.00	0.74	45.6	0.1	22.6	84.1	0%	3.4	3.5	3%
Canada	CAD	1.25	0.14	1.11	82.7	11.4	950.0	1 873.6	1%	748.2	759.6	1%
Chile	CLP	440.50	0.00	440.50	167.3	0.0	3 939.4	855 827.5	0%	25 259.3	25 259.3	0%
Denmark	DKK	7.04	2.73	4.31	92.8	253.7	690.2	2 503.6	10%	586.2	839.9	30%
Estonia <sup>3</sup>	EEK	17.48	5.17	12.32	4.1	21.0	102.5	231.1	9%	68.3	89.3	24%
Finland	EUR	1.04	0.25	0.78	1.2	0.3	158.4	18.5	2%	23.9	24.2	1%
France	EUR	1.27	0.63	0.64	285.0	179.6	496.9	958.9	19%	216.4	396.0	45%
Germany	EUR	1.12	0.00	1.12		0.0	229.5	206.6	0%	6.1	6.1	0%
Greece <sup>2</sup>	EUR	1.22	0.29	0.93	100.3	29.4	89.4	299.1	10%	56.8	86.2	34%
Iceland	ISK	115.28	0.00	115.28	164.0	0.0	1 306.6	111 670.9	0%	4 159.0	4 159.0	0%
Italy	EUR	1.34	0.65	0.69	422.0	274.3	237.2	1 236.0	22%	47.5	321.8	85%
Japan <sup>1</sup>	JPY	119.41	8.45	110.96	2 021.0	17 078.7	4 354.7	978 258.7	2%	211 290.0	228 368.7	7%
Korea	KRW	1 615.0	605.63	1 009.34	836.8	506 799.6	1 957.7	3 439 092.4	15%	968 183.0	1 474 982.6	34%
Latvia	LVL	0.76	0.19	0.57	17.9	3.4	157.9					
Mexico <sup>1</sup>	MXN	6.42	2.00	4.42	467.5	935.0		596 759.2	0%	931.9	1 866.8	50%
The Netherlands <sup>3,4</sup>	EUR	0.90	0.36	0.54	193.0	70.4	416.7	452.1	16%	29.7	100.1	70%
New Zealand	NZD	1.29	0.00	1.29	216.0	0.4	451.2	300.8	0%	61.7	62.1	1%
Norway <sup>4</sup>	NOK	6.25	1.40	4.86	238.1	332.1	2 430.8	11 611.9	3%	1 713.9	2 046.0	16%
Poland <sup>1</sup>	PLN	3.37	1.05	2.33	16.0	16.7	142.5	185.6	9%	56.6	73.4	23%
Portugal	EUR	1.13	0.00	1.13		0.0	240.4	256.5	0%	39.1	39.1	0%
Slovenia	EUR	1.13	0.30	0.82	0.2	0.1	0.9					
Spain <sup>4</sup>	EUR	0.58	0.10	0.48	334.5	31.8	917.3	1 728.3	2%	168.1	199.9	16%
Sweden <sup>3</sup>	SEK	9.22	3.90	5.32	47.5	185.6	231.3	968.4	19%	638.6	824.2	23%
Turkey	TRY	3.23	0.94	2.29	93.6	88.3	494.1	207.8	42%	357.0	445.3	20%
United Kingdom	GBP	0.83	0.09	0.74	338.6	30.5	596.0	501.9	6%	19.7	50.1	61%
United States	USA	1.00	0.06	0.94	1 337.5	85.6	4 357.0	1 150.0	7%	2 149.9	2 235.5	4%
Russian Federation	RUB		18.46		1 590.0	29 351.4	3 394.0					
Thailand			0.00			0.0		42 147.0				

**Notes to Table 2**

1. Data for 2008 except as noted: 2007 for Australia and Japan; New Zealand fuel consumption estimate 2005; GFT estimate for Mexico and Poland from 2007.
2. Total landings and values for Greece are for vessels of more than 19HP.
3. Rate of FTC calculated as weighted average of exemption for different types of fuel.
4. Volume of fuel reported is amount benefiting from FTC. Total fleet consumption may be higher.
5. When not otherwise available, data on fuel price is from IEA - Automotive Diesel Oil Prices for Commercial Use. For Iceland, GTZ data was used.
6. Cross-country comparisons are not possible due to differences in baselines and definitions across countries.

*Source:* Country submissions to the OECD, IEA, OECD.Stat

The data in Table 2 are assembled from a number of different sources. The primary source of data is the country submissions, with other data sources used where the submissions are incomplete. For example, when domestic fuel price is not available, IEA data on “Automotive Diesel Prices for Commercial” is used. However, comparing fuel prices submitted by countries with the IEA data reveals significant differences which can complicate analysis of the data. Part of the problem may be the definition of “Commercial” in the IEA data, which may or may not already include tax concessions available to fishers. Moreover, while the data reported in Table 2 is nominally for 2008, some of the data is for earlier years when 2008 data was not available. Even using this approach, there are number of empty cells in the table where data was not available.

The importance of fuel tax concessions as a share of landed value varies considerably across countries. Fuel tax concessions accounting for less than 3% of the total landed value in a majority of cases, of which seven countries report no concessions and seven others do not have commercial fleets (Table 1). Six countries provide concessions worth between 3% and 9% of landed value, while seven countries offered concessions worth more than 10% of landed value. This statistic is only as good as the underlying data, and some of the variation is likely due to data problems such as under-reported landings.

Fuel use per tonne of fish landed also shows strong variation across countries. This statistic is obtained by dividing the total amount of fuel consumed by the total landed volume in each country in 2008. Fuel use per tonne of fish landed shows little correlation with the value of tax concessions as a share of output, with only France and Italy showing both high levels of concessions and high fuel use per tonne of landings.

Some of the variation is to be expected, due to the variety of fishing patterns in place. These are determined by, *inter alia*, access to stocks, gear use, management system and price. On the other hand, some of this variation is likely due to data limitations or errors. For example, Greece does not keep records of fishing vessels that may benefit from fuel tax concessions. At the same time, official records of landings exclude small vessels of less than 19 HP which make up 60% of the total fleet, so official records under-report actual landings. It can also be difficult to separate fuel sales to the petroleum industry, shipping, fisheries and distributors. Moreover, statistics on landings may be reported on different weight bases.<sup>6</sup>

Prior to this study, the value of fuel-tax concessions (exemptions and rebates for fossil fuels) was not systematically reported in the fisheries Government Financial Transfer database or the Review of Fisheries. Fuel tax expenditures are an important component of overall support and their inclusion will improve the quality and utility of the GFT database. Fuel-tax concessions can form a large or small share of GFTs in different countries. In Italy and Australia, FTCs comprise more than half of all measured support.

In the countries where fuel prices are higher due to higher country-wide taxes or fees, the impact of fuel-tax exemptions is to bring the cost of fuel for fishers closer to the international average. In countries where there are no fuel-tax exemptions or very low fuel-tax exemptions, the costs of fuel to fishers will be higher if country-wide fuel tax rates are high (e.g. Belgium, Germany, The Netherlands, Portugal) or close to the cross-country average if country-wide tax rates are low (e.g. New Zealand and the

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6. Green weight, live weight, landed (processed) weight, and weight recalculated to live weight are all used. The composition of catch (fish, crustaceans and algae) may also influence the analysis.

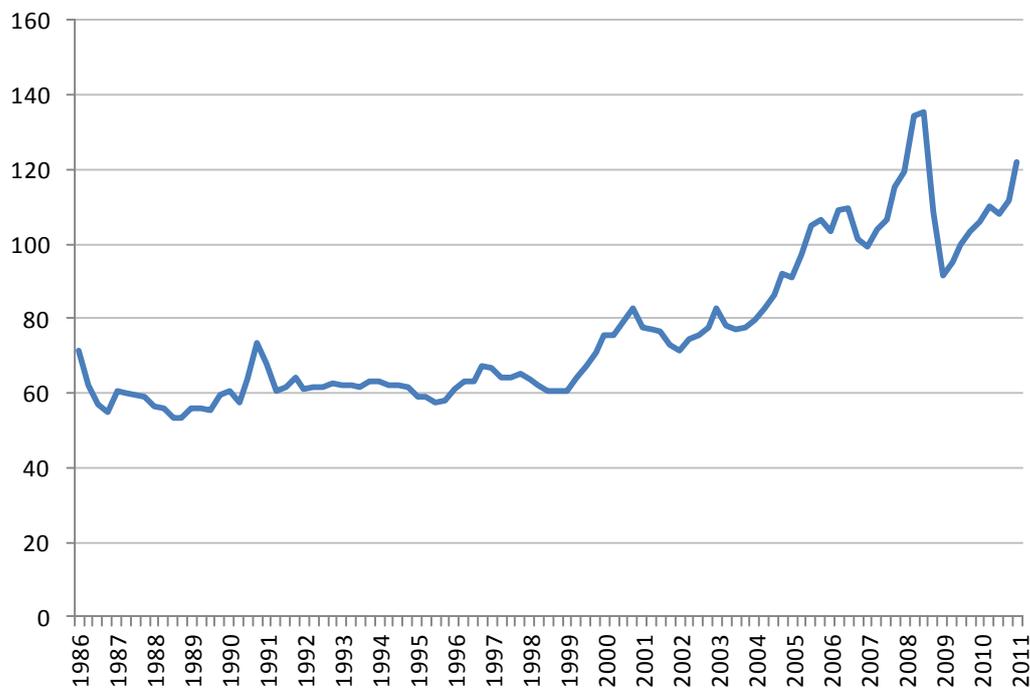
United States). Differences in fuel prices are also explained by country-specific factors other than tax concessions such as domestic supply and demand balance, refining capacity, degree of competition and relative transportation costs.

### *The impacts of fuel support*

Overall, the fuel consumption of fishing vessels has been estimated to be 1.2% of the world oil use, and fuel represents a large share of variable costs in most fisheries.<sup>7</sup> Fuel prices have been particularly volatile in recent years. The index of OECD real energy prices for end-users of oil products shows substantial price movements after 2004, in particular increases between 2004 and 2005 and a spike in prices followed by a downward correction in 2008-09 (Figure 2). High fuel prices have motivated fuel tax concessions in the past, and the current fuel price volatility can make removing fuel tax concessions more difficult.

**Figure 2. Real price of oil products to industry**

Quarterly data, 2005=100



Source: IEA.

Reducing support to fuel use has received particular attention from the G20 and others because it has the potential to generate both environmental and economic benefits (OECD, 2005). While the analysis of the impacts of similar forms of support demonstrates that they can be some of the most production distorting and inefficient

7. Tyedmers, Watson and Pauly (2005) “Fuelling global fishing fleets”, *Ambio* vol 34. In particular “As a consequence of burning almost 42.4 million t of fuel in 2000, representing approximately 1.2% of total global oil consumption, fishing boats released approximately 134 million t of CO<sub>2</sub> into the atmosphere at an average rate of 1.7 t of CO<sub>2</sub> per tonne of live-weight landed product.” See [sres.management.dal.ca/Files/Tyedmers/Fueling\\_Fleets1.pdf](http://sres.management.dal.ca/Files/Tyedmers/Fueling_Fleets1.pdf).

means of transferring income to producers (OECD 2010, 2011), their impact on fisheries is less clear. Central to understanding the impact in the fisheries sector is how the management system operates for the fishery in question. While fuel is an important input and tax concessions can have a significant impact on the fuel price paid by fishers, the impact of such support will be contingent on the management system constraints faced by and alternatives available to the fisher.

### *Theoretical relationship between management systems and fuel support*

The classic analysis of the impact of support to variable input use such as a fuel tax concession is in the context of an **open access fishery**.<sup>8</sup> An open access fishery places no restraints on fishing effort. In this case, support lowers the cost of effort, leading to more effort and a smaller fish stock in equilibrium. Depending on the initial situation, total harvest can be lower than before the support if catch-per-unit-effort declines sufficiently (Figure 3). In this case, the fuel tax concession gives no benefit to the fisher; the benefits are competed away through increased effort. The concession can produce increased effort in the fishery, but not increased profits. In the case of inefficient fleets with low profitability, the removal of fuel support could drive the less efficient firms out of the fishery, further reducing pressures on the resource and increasing the profitability of the remaining firms. As drawn, Figure 3 shows the initial stock above the MSY level, such that the increased support to fuel use lowers revenue in the fishery.<sup>9</sup>

Fisheries management using **output controls with limited entry** offers something of an opposite example. In the situation where the TAC is set to the MSY level and is effectively controlled, fishers earn positive profits of  $R1-C1$  in the initial situation (Figure 4). When a tax concession is introduced that lowers cost, there is no effort response due to the TAC as effort is assumed to be effectively controlled by the TAC. The fuel support leads to higher profits as costs are lower with no changes to stock or effort level. This implies that fuel tax concessions under a binding TAC are transfer efficient - the value of the support tends to be reflected in increased profits. This is a consequence of the management regime; effective control means that support cannot impact effort or stocks and limited access means that positive profits are possible<sup>10</sup>. The result would hold for any form of support that lowers cost.

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8. The concept of “open-access fisheries”, while theoretical important, is largely non-existent in OECD fisheries in practice. In OECD countries most fisheries are characterised as “regulated open access” (e.g. TAC, permissions, technical regulations) and, increasingly as rights-based fisheries, where access has been curtailed and the allowable catch has been given to individual fishers, their vessels or groups of fishers or vessels. A detailed and complete modelling of the impacts of fuel support and tax concessions therefore needs to be based on individual fisheries regimes in place.
  9. This is an equilibrium-based analysis; the hill-shaped curve relating effort and revenue defines the long-term relationship between these two things. What is missing is the short-term effects that may be prompted by an FTC before that new equilibrium relationship is established. The effects of an FTC along the time-path of adjustment may be different than that shown in the equilibrium.
  10. It is possible that the higher profits earned by fishers could lead to higher input costs as input suppliers increase prices to try to capture some of the rents. The ability of input suppliers to do this depends on how competitive the market for inputs is.

Figure 3. Fuel tax concessions in an open-access fishery

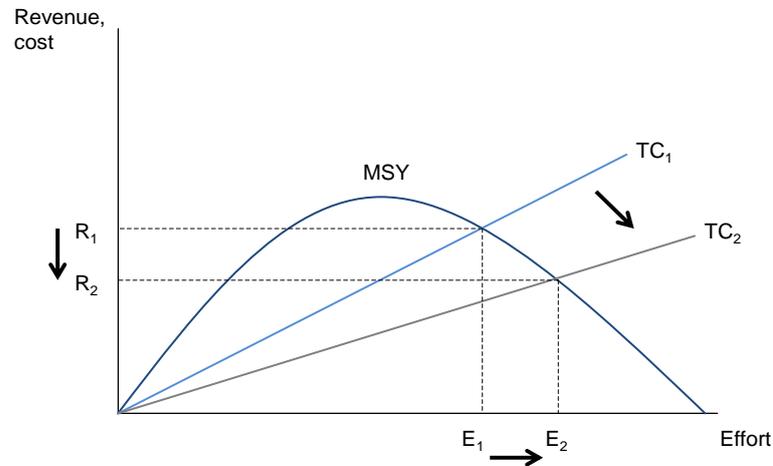
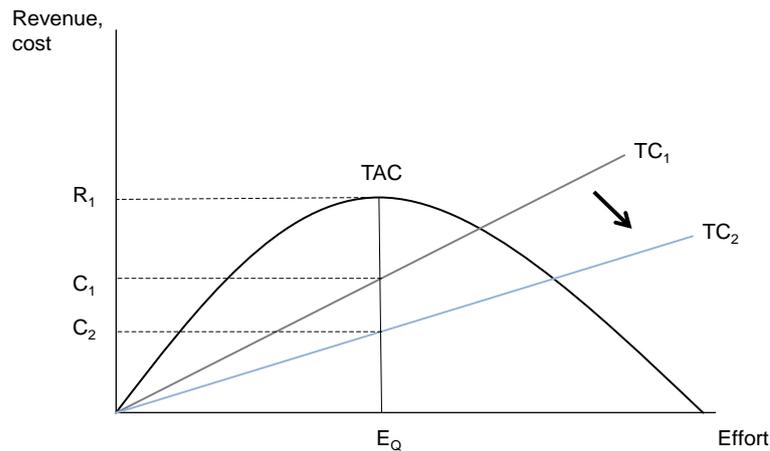


Figure 4. Fuel tax concessions with a TAC



Under **rights-based regimes** (such as ITQs), support to fuel use would generally not have any effect on the volume caught, but could distort the choice of production inputs compared with a cost-minimising choice at market prices. The degree to which this effect will produce new outcomes will depend on the extent to which production inputs, or factors of production, are substitutable and whether it is economically efficient to do so. While fishers will not have an incentive to fish more under fixed individual quotas, they may elect, for example, to fish for longer periods of time and with less gear or manpower. Any additional profits deriving from the fuel support should become capitalised in the value of the quota right (OECD, 2006).

In the situation of a **binding TAC but unlimited entry**, the TC curve touches the revenue curve at the TAC level. Fishers compete away profits not by increasing effort as in the open access case, but by bidding up the cost of inputs such as fishing vessels or licenses such that profits are capitalised into the value of these inputs. Adding a fuel tax concession would lower variable costs, but this benefit would also become capitalised in

the value of other (fixed) inputs. The result is no change in stock, effort or profits, but higher values for fixed inputs such as fishing vessels. This capitalisation effect may make it difficult to remove tax concessions once they are in place; fishers will have already invested the value of the support in capital and would suffer a real loss if the tax concession were removed (this is also true for rights-based regimes).

Under a fishery managed through **effort controls**, the impact of fuel tax exemptions will be similar to that which occurs under a rights-based regime, and will depend on how effort is controlled. If the number of days at sea is limited, for example, with reduced fuel costs could enable fishers to switch to more powerful engines or bigger boats, which may lead to raising the total real effort of the fleet despite the controls.

### *Empirical evidence*

The data collected here can help understand how support affects relative fuel costs for fishers in different countries and its impact on the overall competitive picture for fishing. This can be evaluated by measuring the impact of fuel tax concessions on the variability and distribution of fuel prices.

The data suggests that fuel support does reduce the amount of variation in fuel prices across countries. That is, the distribution of fuel prices paid by fishers is smoother than the distribution of national commercial prices. The standard deviation of the former in the data is 0.3, vs 0.4 for the commercial price. The distribution of prices paid by fishers is also flatter, meaning that generally speaking, fishers in different countries pay more similar prices for fuel after FTCs are taken into account (Figure 5). This is calculated by ordering fuel prices from least to most expensive and measuring the slope of the resulting price distribution, for both the commercial price and the net price for fishers.<sup>11</sup>

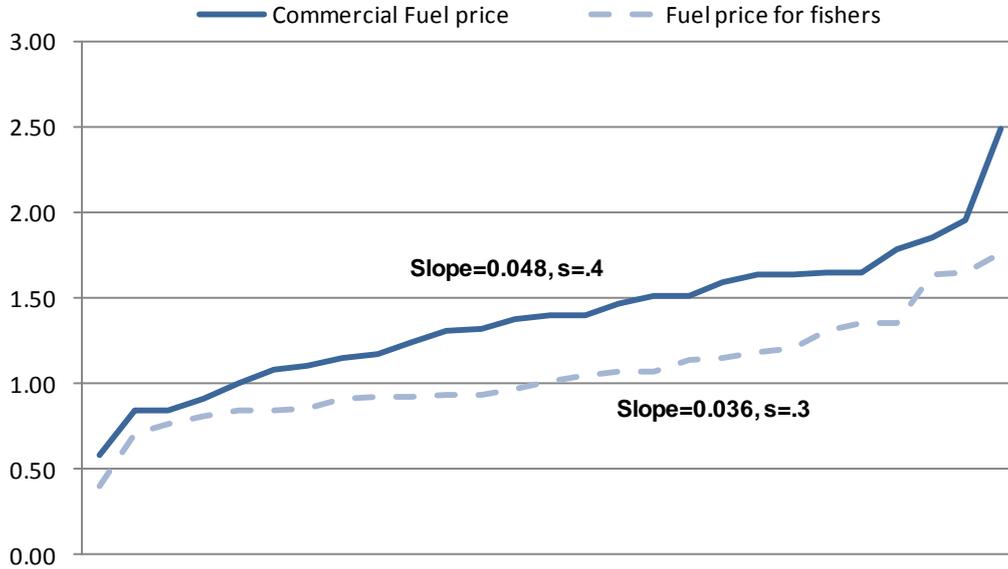
That fuel tax concessions flatten the price distribution for fishers is not surprising. When higher national fuel prices are the result of high excise taxes, the possible value of an exemption is also higher. That is, price differences driven by differences in the tax regime are likely to be eliminated when FTCs are used and higher taxes are a precondition for higher FTCs. This can be seen by looking at the rate of FTC and resulting net price for fishers by country, ordered by the prevailing domestic fuel price (Figure 6). This does not mean that all fuel tax concessions act to equalise relative prices across countries. While fuel concessions in Italy and France (for example) bring the fuel price paid by fishers closer to the OECD average, in some countries where commercial prices are already relatively low FTCs lower fuel prices further below the OECD average (Figure 6).

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11. As calculated here, slope and smoothness are complementary measures. That is, they are alternative ways of measuring the same change in price distribution, such that a flatter slope measure implies a smaller  $\sigma$  and conversely. Calculations are made on the basis of the price in USD in 2008. Both lines in Figure 5 are sorted by value separately, such that any point on the horizontal axis can reflect data for two different countries. Compare this to Figure 6, where the data is sorted by the commercial fuel price only, preserving the relationship in the figure between the commercial price and the price paid by fishers by country.

**Figure 5. Fuel price distribution, commercial and net of FTC, 2008**

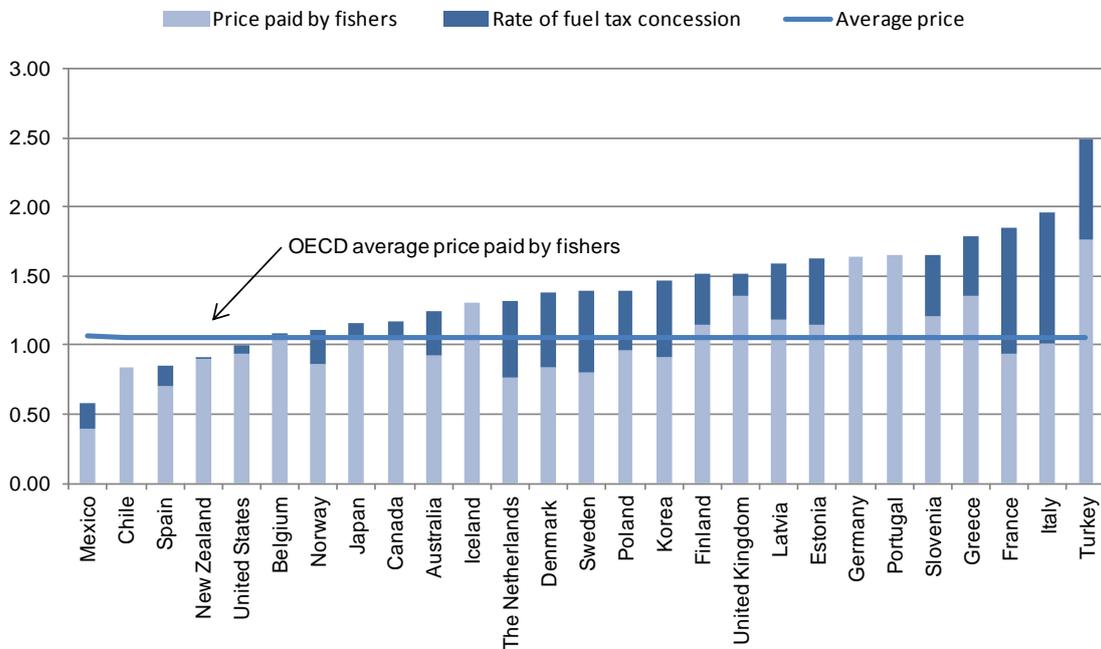
Price per litre in USD



Source: OECD FTC database 2011.

**Figure 6. FTC and net fuel price for fishers, 2008**

USD per litre



Source: OECD FTC database 2011.

While the need to bring the fuel costs of domestic fishers more in line with their competitors has been put forward as an argument justifying fuel tax concessions, fuel costs are only one part of the story. Whether domestic fisheries are competitive or not depends on a wide range of market and regulatory factors, including the fisheries management regime. In particular, whether fishers participate in domestic or international markets and whether the fleet has fuelling opportunities in other countries are important factors. Moreover, whether tax concessions (or support generally speaking) raise or hinder competitiveness in the long term is an open question. Central to understanding the cost structure in fisheries remains the management regime and in particular the existence or not of over-capacity and the use of rights-based management regimes.

There are very few empirical studies of the effects of varying fuel-tax concessions on fishing operations. One such study was undertaken of the Senegalese fishery (UNEP, 2002). Based on the operating accounts of small-scale fishing units, a reduction in the fuel subsidy by one-half was estimated to result in a substantial reduction in the operating profits of boats, possibly leading to losses. That notwithstanding, the elimination of such support would not necessarily put an end to small-scale fishing, but it would certainly cause some boats to leave the fishery and so reduce fishing effort. The lower effort would, however, most likely result in a higher catch per unit of effort as fish stocks increase. The study shows that, over time, the catch per unit of effort has declined drastically for most Senegalese stocks, which most likely is due to the increase in effort and the resulting depletion of fish stocks over the same period.

Isaksen and Hermansen (2009) estimated that the Norwegian fishing fleet has limited possibilities for fuel substitution. In response to reduced refunds for CO<sub>2</sub> and mineral oil base tax, vessels would be able to adjust their operations (e.g. reduce the time of travel between fishing areas, more seasonal fisheries, higher capacity for storing fish on each tour) but these modifications would be of minor significance. However, the possibilities of substitution between different vessel groups requires further consideration. In the Norwegian case, it appears that the larger vessels (i.e. the ocean going fleet) will not necessarily adjust or change their input mix to lower the proportion of more costly fuel input if the refunds are terminated but go abroad to purchase fuel at lower cost.<sup>12</sup> Some larger vessels already fuel abroad, and this practice could increase if the refunds are terminated. The vessels that have least flexibility for adaptation, and limited possibilities for fuel consumption reduction or fuelling abroad, are the smaller vessels (coastal fleet). In most cases the coastal vessels have the most favourable operation pattern with least fuel consumption per kg harvested.

### ***Conclusion***

The objective of this report is to improve the quality of information regarding fuel tax concessions in fisheries. The motivation for this was the call by G20 leaders for reductions in support to fossil fuel use as part of climate change mitigation efforts. The review of information shows that fuel tax concessions are a common though not universal feature of the fisheries policy landscape.

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12. As an extension of this particular case it may be worthwhile to ascertain if similar possibilities are available in other fishing areas characterised by short distances to foreign harbours e.g. the Baltic Sea, the Southern part of the North Sea, etc. A key issue is if such practices provide a competitive edge to certain types and sizes of vessels that can fuel abroad.

The importance of this data lies in its ability to clarify the role and relative importance of tax concessions in the overall policy framework, not in its ability to determine their impacts. The first step in policy reform is measurement, and tax concessions are a form of support that is less transparent and more challenging to measure in practice. Such support is no different from budgetary support in terms of the transfer it provides from taxpayers to the fisheries sector, but can fall under less scrutiny by virtue of its seemingly smaller fiscal implications and due to the fact that tax concessions are less transparent compared to other GFTs.

Reducing support to fuel use can be an attractive policy option as it has the potential to generate both environmental and economic benefits. The extent to which this is true depends largely on the nature of the fisheries management regime in place. In any case, tax-based policies should be considered as part of the overall management framework, and merit the same level of attention as other forms of support in the policy reform process.<sup>13</sup>

Concerns regarding competitiveness have motivated support reducing fuel costs, under the theory that reducing fuel costs through support are necessary to mitigate any competitive disadvantages of domestic fisheries. However, the ability of the New Zealand fisheries sector to remain competitive following the phasing out of most policy support has shown that this need not be the case. The analysis in this report has shown that the effect of fuel support policies can only be understood in the context of the fisheries management regime. In general, successful policy reform initiatives in the fisheries sector will be done in concert with reform of the fisheries management regime.<sup>14</sup>

When making the case for reform, it may be more useful to consider the policy objectives motivating support than the impacts of such support. While the impacts of fuel support are uncertain, there is considerable evidence in OECD policy research that better options exist to achieve most common policy objectives. Transfers that are not contingent on production or use of inputs can be much more effective in transferring income to recipients, as they impose less market distortions and don't require fishers to take costly decisions to receive them. Support based on income can also be relatively efficient while at the same time addressing issues of fairness, especially when systems based on or using commonly available social-security frameworks are used. Regional development objectives are likely best met through targeted programs that are not sector-specific, such as infrastructure development or retraining. If the objective is improving competitiveness, in the long run support can be counter-productive as it delays adjustment and masks structural problems.

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13. See OECD work on Liberalising Fisheries Markets: Scope and Effects (2003), Using Market Mechanisms to Manage Fisheries (2006), and Fisheries Policy Reform: National Experiences (2011).

14. See footnote 13 and work on capacity reduction, i.e. *Reducing Fishing Capacity: Best Practices for Decommissioning Schemes* (OECD, 2009).

### *Possible future work*

This report contains first results from a survey of support instruments to fossil fuel use in fisheries. As such, it opens the possibility for future work to improve the understanding of the nature, objectives, and impacts of such support. Future work could be undertaken with respect to the following:

- **Improving estimates of fuel prices and support.** While tax concession data by itself is not an indicator of the impacts of that support, the question of what impact tax concessions have on prices and income remains important. This report highlights some remaining limitations in the data concerning FTCs and demonstrates the value of improving the quality and completeness of the data over time.
- **Modelling the impacts of reform.** Gaining further understanding as to the impacts of fuel tax concessions and other forms of support to fuel use will require investment in more rigorous analytical tools that can investigate the effects of FTCs in the context of different fisheries management systems.
- **Understanding energy use in fisheries.** Fuel tax concessions and their impact are just a part of a larger question regarding energy efficiency in fisheries and ensuring that fisheries are placed on a green growth trajectory in the future. Improving the efficiency of energy use in fisheries, which remains predominantly fossil fuels, will contribute to national objectives with respect to climate change while offering the potential to improve profitability and sustainability of the fishing sector.

## Country Reviews

This section provides an overview of the methods used to calculate or estimate the total value of fuel-tax concessions for fishing vessels. For most countries, this information is drawn largely from country submissions to the OECD, based on the questionnaire circulated in December 2009 (Annex 1).<sup>15</sup> Possible fuel-tax concessions applicable to fishing vessels were also extracted from the OECD and the European Environment Agency database on instruments used for environmental policy and natural resources management. Finally, reference is made as to whether an OECD member country has supplied this information for previous years as part the annual submission on GFTs.

### *European Union OECD Member Countries*

The Council of the European Union issued a directive in 2003 (Directive 2003/96/EC) which restructured the Community framework for the taxation of energy products and electricity and established minimum tax rates and tax exemptions. Article 14 (1) (b) of this Directive states that fishing activities can be exempted from fuel taxes in Community waters as follows:

In addition to the general provisions set out in Directive 92/12/EEC on exempt uses of taxable products, and without prejudice to other Community provisions, Member States shall exempt the following from taxation under conditions which they shall lay down for the purpose of ensuring the correct and straightforward application of such exemptions and of preventing any evasion, avoidance or abuse:

(c) Energy products supplied for use as fuel for the purposes of navigation within Community waters (including fishing), other than private pleasure craft, and electricity produced on board a craft.

Data on fuel consumption in the marine fishing fleet is gathered according to the data collection framework, Council regulation (EC) No 199/2008 of 25 February 2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy, Commission regulation (EC) No 665/2008 of 14 July 2008 laying down detailed rules for the application of Council Regulation (EC) No 199/2008 and the Commission decision of 6 November 2008 adopting a multiannual Community programme pursuant to Council Regulation (EC) No 199/2008.

The European Union also provides other payments which may be linked to fuel use. Specifically, the *de minimis* regulation for fisheries, EC Reg. 875/2007, allows a maximum support of EUR 30 000 per firm for each three-year period during 2007-2013 for which the Commission does not require prior-notification. Nevertheless they are subject to a monitoring mechanism, including ex-post reporting to the Commission, if it so requires these funds cannot be used to increase fishing capacity, though they may be used to finance variable costs of fishing vessels, including fuel. A recent study indicates

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15. As currently defined, this questionnaire is not applicable to Austria, Czech Republic, Hungary, Israel, Luxembourg, Slovak Republic or Switzerland as they do not have commercial fishing fleets, and are such, not included here. Data included in the submissions are not repeated here, but are included in Table 2.

that EUR 1.3 billion was spent on fuel by EU fishers in 2006 (based on information from 53 700 vessels). This amount has been estimated to have increased to EUR 1.7 to 1.8 billion under the average fuel price of 2008. As a result, the aid that could be provided by way of *de minimis* resources would represent approximately 13% of the 2008 fuel costs of the EU fleet (Framian BV in co-operation with Symbeyond Research Group, 2009).

This aid can be made available to fishing enterprises as well as to fish processing, trade and aquaculture companies. Eligibility rules are determined and set by the individual EU Member States. Box 4 provides a summary of a recent assessment of the “*de minimis*” aid and the link to fuel for fishing vessels.

#### Box 4. EU *de minimis* aid and fuel costs

In July 2008, the European Commission agreed to a package of measures to promote the restructuring of fishing fleets most affected by the fuel-price increases, allowing short-term support to fishers who undertake restructuring (European Commission 2008b, 2008c). As part of this effort, a study was commissioned to examine the effects of amending the regulation to allow for EUR 30 000 *de minimis* aid per vessel instead of per firm, with a limit of EUR 100 000 per enterprise. Below is an extract from the Commission funded study assessing *de minimis* aid and fuel costs:

“The maximum amount per firm allowed under the present regime leads to highly different impacts on fishing firm firms, depending on the size of the vessels they operate. On one hand, for small vessels below 12m, EUR 30 000 would often represent a very significant contribution to their annual production value and income. On the other hand, for vessels over 24m, and even more strongly for those over 40m, the maximum *de minimis* represents less than 10% of their gross value added over the total period of three years. Consequently, the present regime over-compensates the higher fuel costs, for the purpose of which it was set up, for small vessels, which are not very energy dependent. At the same time, the contribution to the alleviation of high fuel costs for the larger vessels remains uncertain because of the constrained ceilings.

The total fuel costs of the European fishing fleets have been estimated at about EUR 1.8 billion, at average 2008 price level. The fuel price increased between 2006 and 2008 by 29%. This implies that in 2008 fuel costs were about EUR 400 million higher than two years earlier. The *de minimis* budget could on average compensate 60% of this increase over the three year period for which it is set. However, it must be stressed that 58% of the total fuel costs are incurred by 6% of the fleet (in terms of numbers), being vessels over 24m. This illustrates to which extent the increase of fuel costs of small vessels is over-compensated and of the larger vessels under-compensated, unless additional eligibility criteria in this respect would be introduced.”

Source : Adapted from Framian BV in co-operation with Symbeyond Research Group. (2009) *Economic analysis of raising De Minimis aid for fisheries* (MARE/2008/12).

### Belgium

Belgium reports that its fuel support consists of an excise-duty exemption, granted at the national level, for gasoline - light fuel oil [HS code 2710 1945]. This type of fuel is differentiated in the tax codes according to its final use. The level of excise duty for the type of fuel used by the Belgian fleet is 21/1000 litres. Fishers are exempted from this excise tax on the basis of “Energy products supplied for use as motor fuel or heating fuel for the purposes of navigation within Community waters (including fishing) and electricity produced on board a craft” (OECD and the European Environment Agency database on instruments used for environmental policy and natural resources management). Data provided by companies that supply the Belgian fishing fleet with fuel indicate that fishers use gasoline of 0.1% sulphur content (with 0.86 density); this is also known as marine gas oil.

### Denmark

No direct support to fuel use is paid to fisheries. The calculated support provided to the OECD Secretariat represents tax-exemptions (e.g. taxes that *would* have to be paid if fisheries were subject to the same tax regime as road transport). Processing of fish etc. is not included. The taxes consist of a direct tax on fuel, a CO<sub>2</sub> tax on fuel and 25% VAT. These fuel-taxes are not paid by fishing vessels. The VAT is calculated as 25% of the value of the fuel including other taxes. In its submission, Denmark specifies that “In general it should be noted that this type of calculation tends to overstate the value of the support because it does not take into consideration the substitution which would take place at higher prices. Moreover VAT, if it was imposed, would be a tax on the added value not a fuel tax”.

The volume of fuel consumed is calculated from the “Account Statistics for Fishery 2008”. The statistics cover 97% of the fishing fleet measured in landings and revenue. Some fuel is bought abroad and foreign fishing vessels buy fuel in Danish ports. These quantities are not known. The fuel market price is based on information from SHELL DANMARK on diesel fuel for transport.

### Estonia

Data provided has been included in Table 2.

### Finland

Article 9 of the Law of the Liquid Fuel Excise (no 1472/1994) notes that fuel used by commercial vessels (including fishing vessels to the extent they are used in commercial fisheries) are exempt from the fuel-excise taxes. This tax-exemption represents the full value of the excise tax.

Finland distinguishes three types of fuel (petrol, diesel and domestic fuel oil) consumed by fishing fleets along with the respective fuel-tax concession rates (see below).

**Table 3. Fuel Types used in Finland, 2008**

Fuel type	Tax rate	Tax concession value, EUR	Fuel consumed
Petrol	0.63	234 600	374 400
Diesel oil	0.36	5 700	15 800
Domestic fuel oil	0.09	72 400	836 500

### France

For the year 2008, the Ministry of Food, Agriculture and Fisheries estimated the annual fuel consumption of the continental French fishing fleet to have amounted to 285 000 tonnes, while it was estimated that the cost of granting exemption from the TIPP (domestic duty on petroleum products) that year had amounted to EUR 179.55 million. The cost of exemption from VAT was considered to be negligible due to the tax deductions for which enterprises would have been eligible

### *Germany*

Through a separate exercise, Germany reported a fuel-tax concession for the OECD and European Environment Agency *database on instruments used for environmental policy and natural resources management - an Exemption for Navigation* specified as “Use as fuel for the purpose of navigation, except private pleasure craft”.

The German Delegation has clarified that this tax concession does not apply to its fishing fleet, and as such, Germany does not provide any fuel tax concessions to its fishing sector.

### *Greece*

Professional fisheries are exempted from the *Special Consumption Tax* on fuel under Law 2960/2001 (article 78, paragraph 1b) “National Customs Code” (O.G.J. 265 A’), as amended by Law 3366/2005 (O.G.J. 96 A’) and according to the provisions of Decision T1940/41/14.4.2003 of the Ministry of Economy and Finance. Greece also routinely reports the value of its fuel-tax exemption as part of its notification to the OECD on its Government Financial Transfers.

### *Italy*

In Italy, a fuel tax concession for fishing vessels consists of an exemption from Value Added Taxes (VAT) and other direct fuel taxes, in accordance with the Council Directive 2003/96/EC of 27 October 2003. Italy has one fuel-tax rate for all fleets, but provided a breakdown of fuel consumption (and total value of the fuel-tax concession) by fleet; the total values are reported in Table 2.

Between 2007 and 2008 the cost of a litre of diesel fuel for fishing vessels rose from EUR 0.55 to EUR 0.70. Italian authorities have not undertaken any special measures to mitigate the consequences of the fuel-price rises.

### *Netherlands*

No exemptions for navigation with respect to petrol used for propelling of ships (other than pleasure crafts). Exemptions exist for navigation for mineral oils used for propelling of ships (other than pleasure craft). In 2008, 66% of the fuel oil for Dutch fishing vessels was purchased outside the country.

### *Poland*

Fuel used for commercial navigation purposes (including commercial fishing trips) are exempt from the fuel-excise tax under the Law on Excise Tax of 6 December 2008. The fuel-excise tax in 2007 and 2008 year was 1048pln/1000 litres (Law on Excise Tax of 23 January 2004).

### *Portugal*

Through a separate exercise, Portugal reported the following fuel-tax concession to the OECD and European Environment Agency *database on instruments used for environmental policy and natural resources management - an Exemption for Navigation* specified as “Gas oil and fuel oils for consumption in sea-coast and inland waterways navigation.”

However, the submission from Portugal to this exercise indicates that there is no budgetary support to fuel use or tax concessions available to their fishing vessels.

### *Slovenia*

Fossil fuel tax concessions in Slovenia are regulated by the Excise Duty Act (Official Journal of the RS, No 2/07, 25/09 and 41/09). Article 55(1) of this Act states that excise duties for fossil fuels shall not be paid for fossil fuels that are used to power fishing vessels. The implementation of the Excise Duty Act is regulated by Rules on the Implementation of the Excise Duty Act (Official Journal of the RS, No 49/04, 47/05 and 17/07). Article 42(1) of these Rules provides that natural persons that are in position of a valid fishing license and perform fishing activities can assert the right to the use of fuel from Article 55(1) of the Excise Duty Act in the form of the return of the excise duty that was paid.

No quantity of fuel was acquired out of the country for national fishing vessels. The conditions for granting the fuel-tax exemption do not distinguish between certain fleet segments or gear types.

### *Spain*

In Spain, fuel-tax exemptions relevant to fishing vessels are governed by *Real decreto* 1517/2007 of 16 November (Aids granted to undertakings with fuel consumption between 1/11/2004-31/10/2005). Due to exceptional circumstances in 2008 measures to help the fleet were in place. These exemptions were applied on a temporary basis and only during 2008.

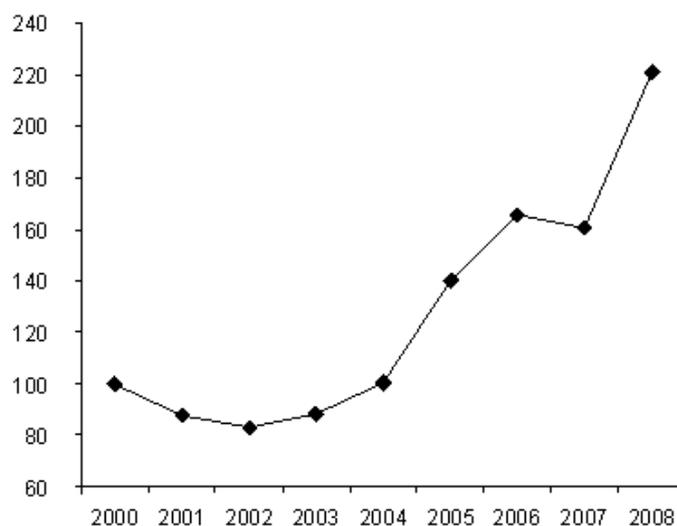
### *Sweden*

Registered fishing vessels are exempted from the carbon-dioxide levy and from the energy tax on fuel. Most fishing vessels are able to buy tax-free fuel directly from the fuel suppliers and the suppliers have the right to make a reduction in their specific tax declarations. The Swedish tax authority does not collect any separate data on tax concessions attributable to fishing vessels specifically, since other businesses such as trains and aircrafts as well as other maritime shipping are also exempted from the tax. For vessels other than fishing vessels, the owners pay the tax directly and request reimbursement in their declaration for tax on vessel fuel. The Swedish tax authority does not distinguish fishing vessels from other reimbursement claims. The only available data therefore refers to all professional shipping.

The fuel-tax concession is divided into two parts, the carbon-dioxide tax which is the same for all fuel types, SEK 2883 per m<sup>3</sup>. The other part, the special energy tax, differs depending on fuel type. For vessels allowed to buy green-coloured diesel the energy tax is SEK 764 per m<sup>3</sup>. For highly taxed fuel the energy tax differs depending on the environmental standard of the fuel type. For the highest environmental standard, MK1 the energy tax is SEK 1277 per m<sup>3</sup>. Because of this the rate of fuel tax concession and its total value are given as a range. The range is compiled by multiplying the estimated fuel consumption with the tax range  $((2883+764)/1000) = \text{SEK } 3.647$  per litre of fuel,  $(2883+1277)/1000 = \text{SEK } 4.16$  per litre fuel). The number reported in Table 2 is an average of this calculated range. Sweden did not provide any additional fuel price support to its fishing fleet in response to the recent fuel price rises of 2008.

**Figure 7. Index of fuel-prices in Sweden**

Year 2000=100



Data on fuel consumption are collected and estimated from a yearly survey distributed to a random sample of fishing vessels. The fuel consumption is extrapolated to the total fleet by using an extrapolation based on the number of days at sea in the population related to the days at sea in the sample.

Data are not compiled per type of fuel. Most of the fuel consumption, however, consists of diesel. Gasoline is only used for some smaller vessels.

Information on the average national fuel price is gathered and compiled from the Swedish Board of Fisheries for research vessels bunkering of diesel. The research vessels buy their diesel from the same places as other fishing vessels and also receive the fuel tax concession. There have been two major shocks in fuel price in recent years (Figure 7).

### *United Kingdom*

Weekly fuel prices are collected from a number of suppliers to the fishing industry around the United Kingdom. From this information, an annual average duty-free price is produced. UK-wide averages are available only, as prices from Welsh and Northern Ireland suppliers are not available.

A combination of bottom-up techniques (from a 2005 and 2006 fleet survey) and a top-down estimation using MFA figures for 2007 and 2008 fleet activity, was used to estimate the volume of fuel consumed. The United Kingdom estimates were calculated as follows:

- The Seafish fleet survey for 2005 and 2006 give estimates of total expenditures by the UK fleet on fuel.
- For 2005 and 2006, the estimated total UK fleet spent on fuel was divided by the price per litre, to provide an estimate of total litres used by UK fleet in those years.
- MFA fisheries statistics contain figures giving total kW days at sea expended by the whole UK fleet, per year.

- The United Kingdom’s estimate of fuel volume for the United Kingdom, divided by total UK kW days at sea in the same year (2005/2006 average), provides an estimated average of fuel volume required per kW day at sea for the UK fleet, with the assumption that figure remained stable for 2007/2008.

National estimates of fuel consumption were derived through MFA fisheries statistics that indicate the volume of landings into each of the UK nations. It was assumed that vessels from one nation landing into another will even out to a net effect of zero. The total UK volume of landings per kW day at sea were estimated from the MFA figures for 2007 and 2008. Each UK nation’s volume of landings then provides the required kW days at sea per nation, for 2007 and 2008. The figure for average UK fuel volume per kW day at sea (2006 figure, assumed to remain stable in 2007 and 2008) was applied to give estimated fuel volume per nation.

### *Australia*<sup>16</sup>

The fuel tax credit rate for the following activities is 38.143 cents per litre.

If the fisher is undertaking commercial fishing operations, you can claim for taxable fuel (for example, diesel or petrol) the fisher uses for any of the following activities, provided these activities are not connected with sport, recreation or tourism:

- Taking, catching, capturing of fish;
- Processing fish on board vessels;
- Fish farming;
- Constructing ponds and tanks or other structure to contain fish to be farmed, as long as this is done by the fish farmer or a contractor or subcontractor to the farmer;
- Pearling;
- Operating a dedicated mother vessel in connection with eligible fishing operations;
- Sailing a vessel to or from a port for the purpose of refitting or repairing the vessel or its equipment;
- Undertaking trials connected with the repair or refit.

### *Canada*

Both federal and provincial taxes apply to fuel in Canada. The federal excise tax rate is 4 cents per litre on diesel and is imposed at the time of production or importation, while exports are generally exempt. For vessels relief of this federal excise tax is generally available when they proceed outside of Canadian territorial sea (i.e. further than 12 nautical miles from the Canadian coast). However, data on how many vessels proceed beyond 12 nautical miles from shore are not available, so the total value of this relief is not calculated here.

Canada manages its fisheries in six Regions: Newfoundland and Labrador, Maritimes, Gulf, Quebec, Central and Arctic, and Pacific. The Maritimes and Gulf Regions do not align exactly with provinces. Each province levies its own taxes on diesel fuel, and a general fuel tax concession available to many sectors (to be defined), including fisheries. The exemption is from the full amount of the excise tax in four regions (Newfoundland

16. *Source* : Australian Taxation Office (2009). Fuel tax credits for business. Available at: [www.ato.gov.au/content/downloads/BUS76594nat14584.pdf](http://www.ato.gov.au/content/downloads/BUS76594nat14584.pdf).

and Labrador, Maritimes, Gulf, Québec). In the Pacific Region, there is also a general fuel tax exemption available to many sectors, including fisheries, for diesel fuel.

As data on fuel consumption by fleets is available by region, Canada has approximated each Region's tax relief by taking the average of the rates (per litre) in its constituent provinces. The Maritimes Region includes parts of both New Brunswick and Nova Scotia, so the tax exemption rate was calculated using the average of the rates in these two provinces. The Gulf Region includes parts of New Brunswick, Nova Scotia and Prince Edward Island. The tax exemption rate was estimated using the average of the rates in these three provinces. Fuel consumption values are estimates only. Those on the Atlantic coast (all Regions except the Pacific) are based on surveys of fishers in 2004. Those in the Pacific Region are based on surveys and economic models from 2007. Estimates from those years are used for both 2007 and 2008.

### *Chile*

Chile responded that no support policies are applied to fossil fuels in the fishing sector. In order to obtain an estimate of the fuel consumption of the fleet, a fuel consumption model for the industrial fleet was used (Box 5). No estimate has been made for the small-scale fleet, as there is not sufficient data to make a sound and reliable estimate.

The total fuel consumption corresponds to the annual consumption of each vessel operating in the national fishing fleet. The consumption of each vessel is estimated on two components. The first is the fuel consumption when the vessel is conducting fishing operations; the second is the consumption of the vessel when in port (basic consumption).

#### **Box 5. Estimating fuel consumption in Chile**

Chile estimated fuel consumption in the fishing sector as described below; validation of the model was carried out by evaluating real data of a 10-vessel fleet, which was compared with real consumption regarding the consumption determined by the model.

$$\text{Consumption in operation} = \frac{(\text{N}^\circ \text{days} * 24 * \text{Const Yield} * \text{Main Engine Power} * 0.85)}{1000}$$

Where,

- N° days= Number of days in operation
- Constant Yield= Yield of fuel of the main engine (115 gr./HP\*hrs.)
- Main Engine Power= Main Engine Power (HP)
- 24= day-to-hour-conversion constant (hr/day)
- 0.85= fuel density constant (0.85 gr/cm<sup>3</sup>)
- 1000= conversion constant (cm<sup>3</sup> to lts)

$$\text{Consumption in port} = \frac{(\text{N}^\circ \text{days} * 24 * \text{Const Yield} * \text{Aux Engine Power} * 0.85)}{1000}$$

Where,

- N° days= Number of days in port
- Constant Yield= Yield of fuel of the engine (115 gr./HP\*hrs.)
- Aux Engine Power= Auxiliary Engine Power (HP)
- 24= day-to-hour-conversion constant (hr/day)
- 0.85= fuel density constant (0.85 gr/cm<sup>3</sup>)
- 1000= conversion constant (cm<sup>3</sup> to lts)

Source : Chilean country submission (2010).

### *Iceland*

Iceland provided data on the fossil fuel usage of domestic fishing vessels (marine diesel oil and heavy fuel oil) from the Icelandic National Energy Authority ([www.nea.is/](http://www.nea.is/)) on. The figures apply to fuel sold, but would reflect fuel usage in general.

The Icelandic submission notes that no fuel-tax concessions or exemptions apply to the fishing fleet. Vessels as well as other vehicles that do not use the road system in Iceland are not subject to a levy/tax for road usage. This is not considered an exemption, but a special levy on vehicles using roads.

### *Japan*

A tax exemption for heavy fuel oil (type A) in Japan is applied not only to fishing activities, but also to the use of heavy fuel oil by the agriculture and forestry sectors. There is also a special-purpose tax on light oil; the revenue generated is used for the construction and maintenance for public roads in Japan. For this reason, light oil consumed by any industrial activity that does not use roads is exempt from this tax. This exemption is available to all vessels (not only fishing vessels), as well as other industrial activities such as agriculture, forestry, and railways that are not road users.

**Tabl e4. Annual Consumption of fuel by the fishing sector, by fuel type**

Thousand kilolitres

	1990	1995	2000	2005	2007
Heavy fuel oil type A	3 934	2 782	2 803	1 730	1 590
Light [diesel] oil	848	930	856	486	431

*Source:* Fisheries Agency of Japan.

As noted above, the tax exemption for fossil fuels is applied to various sectors of the economy, including agriculture and forestry; it does not target the fisheries sector. In particular, the tax on light oil in Japan is a special-purpose tax whose revenue is used for the construction and maintenance for public roads in Japan. Based on this institutional taxation arrangement, this exemption is applied to all vessels that do not use public roads, and is not granted exclusively to fishing sectors. The Japanese submission notes that this means that this fuel-tax exemption has not been established to promote or support any particular industry. This treatment is closely related to the national financial and administrative system including its overall taxation system. In this respect, the Japanese submission states that whether the analysis is intended for overfishing or climate change, singling out the fisheries sector and dealing with it separately from the national financial system upon which the tax exemption is based, is not considered to be fair and appropriate treatment.

Observations included in the Japanese submission regarding taxation and the fishing industry:

- As noted above, the fuel-tax exemption is not aimed at increasing fish production. It neither contributes to overcapacity nor to over-fishing.
- Annual consumption of fuel by the Japanese fishing fleet has declined over time despite the fuel-tax exemption.

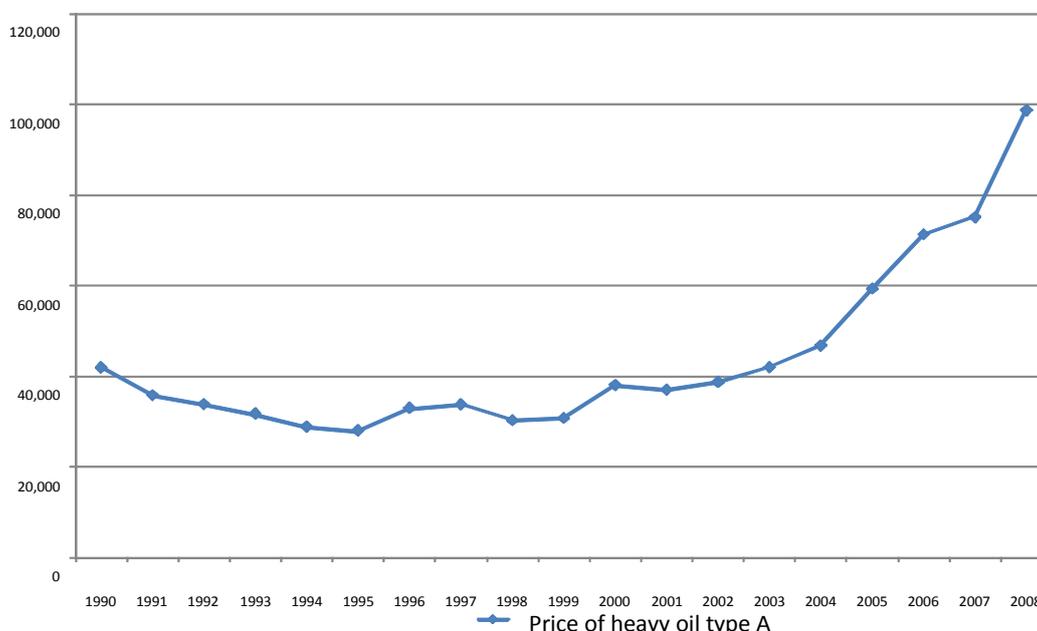
In response to the steep rise in the price of fuel between 2004 and 2007, the government of Japan introduced an emergency programme to encourage energy-efficient fishing operations. This was introduced in the second half of 2007 in order to prevent the collapse of fishing operations. Under certain conditions, this programme can support up to 90% of the incremental increase in the oil price, compared with the base-price of December 2007. As the price of fuel oil significantly declined after the introduction of this program, the number of fishers which participated in this programme was very limited. Consequently, the total amount of the nominal financial transfer from the government to fishers under this programme was limited to about JPY 30 million (approximately USD 0.33 million). In a general sense, however, the share of the fuel cost in fishers' operations remains significantly high throughout the marine capture fishery sectors (Table 5). In addition, the retail price of fuel oil doubled from 2004 to 2007 (Figure 8). The Japanese submission claims that there was a strong and legitimate need for the government to introduce such an emergency measure in order to prevent the collapse of fishers operations.

**Table 5. Ratio of fuel price in fisher's operations (Japan)**

Type of Fishing	Small trawler	Gillnet	Offshore trawler	Coastal squid
Proportion of vessels using oil, 2005	22.6	16.6	18.7	23.3
Fuel cost as % of total expenditure, 2007	29.6	22.4	25	30.5

Source: Fisheries Agency of Japan

**Figure 8. Trends in the price of heavy fuel oil Type A in Japan**



Source: The National Federation of Fisheries Co-operative Associations.

### *Korea*

In Korea, tariff and fossil fuel import levies are imposed on fuel for fishing vessels. However, in accordance with the “Special Tax Treatment Control Act (1965)”, value-added taxes (VAT), special consumption taxes, transportation, energy, and environmental taxes, educational taxes and mileage taxes on fuels (light fuels, heavy fuels and others) for agriculture, livestock farming, forestry and fisheries are exempted. These tax concessions are given not only to the fisheries sector but also to other primary production sectors as well.

Fuel-tax exemptions for fishing vessels are given when the tax on such fuel does not conform to the purpose of the tax law or when there is a need to protect the socially and economically vulnerable groups. These exemptions are legitimate in line with Korea’s tax legislation system. For example, the purpose of transportation, energy, and environmental taxes is to secure financial resources that are needed to improve transportation infrastructure, promote public transportation and implement energy-related projects. Therefore, it is reasonable to exempt such taxes for fuels for fishing vessels. Also, mileage taxes are imposed to discourage the use of cars and mitigate traffic congestions which are not related to fisheries and thus not applicable to fuels for fishing vessels.

The amount of fuel used by fishing vessels has been on the decline in recent years (1.51 billion litres in 2000 compared to 830 million litres in 2008). Also, the Korean government, with the national vision of “low carbon green growth”, is taking various measures to reduce the fuel consumption by the fisheries sector. For instance, with the government’s support, Korean fishers are encouraged to use fuel saving devices and LED (light) fish aggregating devices. The government is also supporting the establishment of seaweeds forests as carbon sinks.

### *New Zealand*

New Zealand does not provide any sector-specific fuel support policies for its fishing sector, but in the interests of transparency they have provided some details on a refund (Motor Vehicle Excise Duty Refund) for which fishing vessels may be eligible. The New Zealand submission notes that it will be apparent from the nature of the programme, and the very small proportion of estimated refunds to the fishing sector, that the design and application of the programme is directed elsewhere; namely across the economy as a whole and to all forms of commercial transport within the economy. Operators of commercial fishing vessels may be eligible for a Motor Spirits Excise Duty Refund.<sup>17</sup> This is an economy-wide programme which provides for a refund on the excise duty and the goods and services tax charged on motor spirits that are used:

- as fuel in an exempted vehicle;
- as fuel in a road user charges-licensed vehicle;
- as fuel in a commercial vessel;
- for commercial purposes other than as fuel in any motor vehicle, vessel, or aircraft.

Diesel, the principle fuel used in fishing vessels, is not eligible for a refund. The refund is only available for petrol, LPG and CNG.

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17. Further information on this programme is available at:  
[www.nzta.govt.nz/resources/factsheets/14/excise-duty.html](http://www.nzta.govt.nz/resources/factsheets/14/excise-duty.html).

A maximum estimate for refunds for commercial fishing vessels is NZD 435 306 in 2007, and NZD 436 681 in 2008, representing approximately 1.25% of the total of the programme.

Estimates are not available for total fuel use of the New Zealand fishing fleet in 2007 or 2008, but total fuel use in 2005 is estimated to have been 216 million litres. This figure was determined in 2009 using the following two converging methods:

- Direct method. A letter was sent to every vessel operator in the fishing industry seeking quantitative data on 2005 fuel consumption. The replies that were received represented nearly two thirds of the industry's installed capacity when expressed in terms of kilowatt-hours. Based on calculated estimates of total consumption, nearly 70% of the total consumption for 2005 is known from actual figures derived from this survey.
- Indirect method. The Ministry of Fisheries holds information on the engine size (the kilowatt output) and the time spent at sea for each vessel in the fishing fleet. This information was compared with the actual fuel consumption of vessels, where that information was known from the direct survey. This comparison allowed a correlation to be drawn between kilowatt-hours and actual litres consumed, from which a conversion factor was derived to allow the calculation of fuel use where only kilowatt hours are known.

These two approaches were drawn together by using the conversion factor to estimate consumption from kilowatt-hours, based on information held by the Ministry of Fisheries, where direct survey information was not available.

### *Norway*<sup>18</sup>

Fuel taxation in Norway consists of several different elements, each meant to address different issues within the overall taxation policy. The rate of fuel tax concessions provided in Norway's submission includes the base tax on mineral oil and the carbon-dioxide tax, which are both refunded for fishing within the Norwegian economic zone; fishing vessels are completely exempt from the base tax on mineral oil and the carbon-dioxide tax. The taxes are described below.

- Base tax on mineral oil: The base tax is intended to correct any adverse effects arising from the introduction of an electricity tax in the year 2000. The base tax thus counteracts the tax incentives to the use of fossil fuels for heating. The tax is levied on all mineral oil, with the following exceptions: all mineral oil where a diesel tax applies, and jet fuel. Mineral oil used for the following purposes is also exempt: international shipping, goods and passengers traffic in international waters, construction on the continental shelf, supply shipping, high-seas fishing, and production in the fishmeal industry. The tax is refunded for fishing within the economic zone. High-sea fishing is exempted from these taxes. (Source: Garantikassen for fiskere).
- Carbon dioxide tax: A carbon dioxide tax is levied on all mineral oil, with the exemption of mineral oil used for international shipping, international flight, and

18. The figures and description given below is without prejudice to Norway's view on whether or not these constitute a subsidy within the meaning of the WTO Agreement on Subsidies and Countervailing Measures.

fishing within the economic zone and high-seas fishing. The tax is fully refunded for fishing within the economic zone, whereas vessels fishing in high-seas are exempt from the tax.

- **Petrol and diesel tax:** A petrol tax is levied on all petrol. This tax is intended to capture the negative externalities from the use of motor vehicles such as: accidents; congestion; noise pollution; road wear; and environmental pollution (except carbon dioxide emissions). A complete exemption from the tax is given for all petrol used by airplanes, boats, and snowmobiles in areas without roads. Petrol used for technical purposes, medical purposes and for the exploitation of national resources in the oceans outside of Norwegian territory is also exempt from the petrol tax.

The tax rate on petrol and diesel tax was not included in the Norwegian submission to the OECD. This tax is intended to capture the negative externalities arising from the use of land-based motor vehicles such as: accidents; congestion; noise pollution; road wear; and environmental pollution (except carbon dioxide emissions). All petrol used by airplanes, boats, and snowmobiles in areas without roads is exempt from the tax. Similarly, the diesel tax is levied on all diesel used for the propulsion of motor vehicles and is also meant to capture the negative externalities from the use of motor vehicles. In the Norwegian tax structure, these taxes are not levied on the use of fossil fuel as such, but on the use of the national road network. Thus, no relevant data regarding fishing vessels exists for these taxes.

The NO<sub>x</sub> tax applicable for each undertaking is based on calculated emissions with the rate in 2008 being NOK 15.39 /kg, and for propulsion engines it applies only to those with an installed engine power over 750 kW. High-seas fishing, international shipping and international air transport are completely exempt from the tax. In addition, an agreement to reduce emissions was signed by the authorities and several industry organisations, effective from 2008. This agreement allows undertakings whose activity falls within the limits of the agreement to pay a reduced tax rate of NOK 11 /kg for offshore oil activity and NOK 4 /kg for fishing, national and international shipping, supply shipping, industrial production, air transport and other sectors included in the agreement. Revenues from this tax are placed in a fund that financially supports investments in emission-reducing measures. The agreement is set to expire in 2011. It has not been possible to calculate the value of support to the fishing fleet.

The consumption figures reported in Table 2 are estimates of the total volume of fuel consumed in Norway and include foreign vessels fuelling in Norway and Norwegian vessels fuelling for fishing in the high-seas. Estimates of fuel acquired in third countries by Norwegian vessels are 29 million litres for 2007 and 28 million litres for 2008. The reliability of the estimates is uncertain and stem from changes in reporting procedures from the oil companies where, inter alia, it is difficult to distinguish the sales between the petroleum industry, shipping, fisheries and distributors. The estimate of the fuel acquired abroad is based on a 30-year analysis, and the reliability of the estimate is uncertain. (*Source:* Statistics Norway - SSB).

### *Turkey*

Fuel tax concessions, in the form of fuel-tax relief have been provided since 2004. The fossil fuels used are subject to a special tax, namely the Private Consumption Tax. No tax relief was launched due to economic crisis. National level fuel market price reported is the average price on 2 July 2007 and average price on 1 July 2008, in Istanbul.

**Table 6. Value of tax concessions and number of vessels benefitting, Turkey**

	2004	2005	2006	2007	2008
Value of tax concession as a % of fuel oil consumption	28%	31%	32%	30%	30%
Number of fishing vessels receiving tax concession	2 357	3 195	3 674	3 907	4 131

Source: OECD FTC database, 2011

### *United States*

The Amount of Fuel Used By U.S. Commercial Fishing Vessels in 2007 and 2008: Economists at each of the six National Marine Fisheries Service (NMFS) Fisheries Science Centres and at the Office of Sustainable Fisheries provided estimates of the amount of fuel used and landings by fishery for the most recent year(s) that fuel use or expense data were available. In most cases, the fisheries were defined by species or species group and gear. That information was used to calculate the litres of fuel used per metric tonne of landings by fishery, and those estimates were used with fishery-specific landings estimates for 2007 and 2008 to estimate the amount of fuel used in each of those two years. Although the litres per metric tonne of landings can vary by year, better proxies of the litres of fuel used in 2007 and 2008 for those fisheries were not available.

The estimates for some fisheries are based on trip level data on the amount of fuel used and/or expenses on fuel that are collected on an ongoing basis. This is done with economic add-ons either to at-sea observer programs or to logbook programs. The estimates for the other fisheries for which fuel data were provided for this report are based on annual fuel use and/or expense data that are collected each year, periodically (e.g. each two to three years), on a less frequent but regular basis, or on an ad-hoc basis. In addition, there are some fisheries for which such data were not provided for this report. The fisheries for which no fuel use data were provided for this report presented more of a problem. Those fisheries include a number of Federally-managed commercial fisheries and most commercial fisheries that are not Federally managed. The fuel use estimates for the two largest components of those fisheries (i.e. the Gulf of Mexico and Atlantic menhaden fisheries and much of the groundfish fishery off Alaska) were estimated using the landings from those fisheries and estimates of the litres per metric tonne of landings from somewhat comparable fisheries. The fuel use estimates for all other commercial fisheries combined were generated using the aggregate landings for those fisheries and the median of the estimated litres of fuel per metric tonne of landings for all the fisheries for which fuel use data had been provided. The landings estimate for all other fisheries is the difference between the total landings of US commercial fishing vessels as reported in Fisheries of the United States, 2008 (FUS 2008) and the sum of the landings for the individual fisheries with fuel estimates in Table 2 for 2007 and 2008. Before determining that difference, the landings for scallops and clams were converted from the round (live)

weights used in this assessment to be comparable with the landings reported in FUS 2008 that typically are reported in round (live) weight for all items except univalve and bivalve molluscs, such as clams, oysters, and scallops, which were reported in weight of meats (excluding the shell). The other fisheries accounted for about 21% of the total commercial landings by US commercial fishing vessels in 2007 and about 23% of that total for 2008; and the fuel use estimates for the other fisheries, which probably are the least certain part of the total fuel use estimates, accounted for about 41% of the total fuel use estimate for 2007 and 43% of that total for 2008. It is estimated that about 1.4 billion litres (L) and 1.3 billion L of fuel were used by US commercial fishing vessels in 2007 and 2008, respectively. This was predominantly diesel fuel.

The estimates of the fuel used per metric tonne of landings ranged from less than 10 L for the West Coast coastal pelagic species fishery, which is principally a purse seine fishery, to about 3 000 L for the Federally managed (i.e. offshore) Gulf of Mexico shrimp trawl fishery. In their 2005 article, *Fuelling Global Fishing Fleets*, Peter Tyedmers, Reg Watson and Daniel Pauly note a similar variability across fisheries.

The scale of direct fuel inputs, however, can range widely. Purse seine fisheries for small pelagic species, such as herring and menhaden, that are destined for reduction to fish meal and oil, typically use under 50 L of fuel per tonne of fish landed. In contrast, fisheries targeting high value species like shrimp, tuna, or swordfish frequently consume in excess of 2000 L per tonne of landings.

Federal taxes paid on fuels are credited to the Highway Trust Fund (HTF). The HTF was established by the Highway Revenue Act of 1956 as a mechanism to finance an accelerated highway program, including construction of the Interstate Highway System. Initially, the revenues of the HTF were intended for financing highways, with the taxes dedicated to the HTF paid by the users of highways. Now, tax revenues directed to the HTF are derived from excise taxes on highway motor fuel and truck related taxes on truck tires, sales of trucks and trailers, and heavy vehicle use; and those tax revenues are also used for the Mass Transit Account and the Leaking Underground Storage Tank Trust Fund.

Because the Federal fuel tax is in principle a highway user tax, those that use diesel or other fuels for non-highway use can receive an income tax credit for most of the Federal fuel taxes they pay as part of the cost of the fuel they purchase for non-taxable purposes. That tax credit can be claimed using the Internal Revenue Service Form 4136 (Credit for Federal Tax Paid on Fuels). The following types of non-taxable uses, including a boat engaged in commercial fishing, are identified in the instructions for that tax form:

- On a farm for farming purposes.
- Off-highway business use (for business use other than in a highway vehicle registered or required to be registered for highway use).
- Export.
- In a boat engaged in commercial fishing.
- In certain intercity and local buses.
- In a qualified local bus.
- In a bus transporting students and employees of schools (school buses).

- For diesel fuel and kerosene (other than kerosene used in aviation) used other than as a fuel in the propulsion engine of a train or diesel-powered highway vehicle (but not off-highway business use).
- In foreign trade.
- Certain helicopter and fixed-wing aircraft uses.
- Exclusive use by a qualified blood collector organisation.
- In a highway vehicle owned by the United States that is not used on a highway.
- Exclusive use by a non-profit educational organisation.
- Exclusive use by a state, political subdivision of a state, or the District of Columbia.
- In an aircraft or vehicle owned by an aircraft museum.
- In military aircraft.

The Federal fuel tax is now USD 0.244 per gallon of diesel fuel and USD 0.184 per gallon of gasoline. This includes a USD 0.001 tax per gallon that goes to the Leaking Underground Storage Tank Trust Fund. However, the tax credit per gallon is USD 0.243 and USD 0.183, respectively, for diesel fuel and gasoline because there is no tax credit for the USD 0.001 per gallon tax levied to support the Leaking Underground Storage Tank Trust Fund. The income tax credit received by fishers is intended to exempt them from the part of the Federal fuel tax that is a highway use tax, just as it exempts other non-highway uses of most of the Federal fuel tax.

State and local motor fuel excise tax rates in coastal states ranged from about USD 0.08 to USD 0.32 per gallon for diesel fuel and gasoline as of 1 January 2008. Typically, these fuel taxes are intended to be road or highway use taxes; therefore, to the extent that they do not apply to commercial fishing vessels or other non-road uses, such concessions are not considered as support. However, an assessment of any policies associated with state and local fuel taxes was beyond the scope of this report.

### ***Russia (Accession Country)***

Budgetary payments to fisheries organizations (legal entities) and individuals have been provided for a one-year period to partially compensate their expenses on loan interest payment received from Russian credit institutions in 2009 for material and technical supplies and fishing vessel equipment.

A considerable number of the vessels in the Russian fishing fleet have reached a critical level of depreciation. Russian fishing vessels consume far more volumes of diesel oil when conducting fishing operations as compared to modern, technologically advanced vessels of foreign fishing companies. For example, a domestic fishing vessel consumes about 400 litres of diesel oil to harvest one tonne of resources, whereas the corresponding figure for foreign fishing vessels is about 200 litres of diesel per tonne of catch.

The Russian submission notes that there has been a recent increase in the price of diesel oil used by fishing vessels. This has resulted in the escalation of costs incurred by Russian fishing organizations during fish harvesting, which in turn leads to an appreciation of domestic fishery products (price) and a decrease in their competitiveness as compared to the same seafood products produced abroad.

***Latvia (EU member state)***

The law “On excise tax” exempts marked oil products used by ships from taxation, other than those used for private recreation and entertainment purposes. The State Revenue Service is responsible for the collection of excise taxes.

The information provided as part of this exercise includes only uncollected excise taxes from marked diesel sold to ships in the country; the ships eligible to use marked fuel without paying the tax include not only the national fishing fleet, but also warships, transport ships, and pilot boats. Ships used for private and recreational purposes are not eligible for this rebate. There is no data on value of tax concessions for the amount of fuel consumed on the high-seas.

***Thailand (COFI Observer)***

Thailand stated that no support to fuel uses outlined in the OECD questionnaire has been available to fishing vessels in 2007 and 2008.

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## Annex 1.

### Data Request

#### General comments and definitions

The goal of this exercise is to estimate the total benefit fishers may receive from governments regarding the price of fossil fuels. The term “fuel subsidy” (to fishers) refers to any government intervention regarding fossil fuels that reduce the cost and/or increase revenues of commercial fishers, regardless of whether or not they involve direct financial transfers.

For the purpose of this exercise, a fuel subsidy (to fishers) is defined broadly as a rebate, refund, expenditure<sup>1</sup> or reduction (to fishers) from Value Added Taxes (VAT) and other such direct fuel taxes that are normally levied by the government on fuel users in the economy; price controls that suppress fuel prices below normal market prices; and, programs that provide direct transfers or payments.

It is recognised that there will be cases of support to fossil fuel use as defined here that may be considered as working towards “green purposes” and not be considered as such inefficient; should this case arise for any country, it would nevertheless be appreciated if countries would provide the data specified in this request, along with the description of the program.<sup>2</sup>

This analysis is focussed on the commercial fishing sector; the term “fishing fleet” refers to vessels in the fish harvesting sector (marine and inland).

Data is requested for the years 2007 and 2008, or the most recent years for which data is available. Data is requested as whole numbers in national currency; any conversion of monetary values into another currency or unit (e.g. millions, thousands) will be undertaken by the Secretariat. Volume (weight) is requested in litres.

Support to fuel use should be reported at both the national and sub-national levels. The type of fuel used by the fishing fleets should also be specified (diesel, gasoline, biofuels, etc.).

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1. An expenditure from a fuel tax to fishers may either be specified directly in the legislation or may be represented by cases where there is an economy wide tax that is not applied to fishing vessels.
  2. This may include programs whereby authorities allow fishers to make payments to a general fund for a specific purpose (e.g. use of greener technology for fishing vessels) in lieu of a tax collected by government that reverts to the state’s treasury.

## Specific request

Member countries are requested to provide data as outlined in Table 1, based on the information detailed in this section. A brief description of each type of subsidy/programme is also requested (e.g. its nature and how it operates).

### *1. Value of the fossil fuel subsidy*

The value of the fuel subsidy to all fishing fleets and the relevant authority as indicated in legislation or otherwise should be provided. This value may be represented as follows, depending on data capture and availability in Member countries; where possible, responses to both Option A and Option B is requested:

**Option 1.A:** The rate of the fuel subsidy per litre of fuel. In cases where there are different and varying sub-national level fuel support policies in addition to a national level subsidy, these should be provided as well, with a distinct accounting for each level.

and

**Option 1.B:** The aggregate foregone revenue to the national accounts for taxes not collected.

### *Considerations*

Where available, further details regarding the breakdown of the fuel subsidy by fishing fleet (e.g. inshore, offshore, high seas) or by gear type etc. can be provided, should the fuel subsidy be applicable in only certain cases.

Any additional one off fuel price supports provided to the fishing fleet, for example in response to the recent fuel crisis of 2008, should be reported separately and indicated as such, including the end date of such programmes.

### *2. Volume of fuel consumed*

The total amount [volume] of fuel consumed by all fleets, expressed in litres should be provided. Should the volume be estimated, the details of the methodological approach taken should be provided.

### *Consideration*

In cases where there may be different and varying sub-national level fuel support policies, the breakdown in the volume per jurisdiction should be provided, if possible.

### 3. National level market price for fuel (Optional)

If readily available, countries are requested to provide a national average market price for fuel.

Country	Country level	Unit (currency)	1.A. Rate of fuel support (price per litre)		1.B. Total value of all fuel support		2. Total volume of fuel consumed by national fishing fleets (litres)		3. National level fuel market price (price per litre)		Brief description of subsidy and scope
			2007	2008	2007	2008	2007	2008	2007	2008	
Country A	National	ABC									
	Region 1	ABC									
	Region 2	ABC									

1. Where applicable and if known, indicate through a footnote whether or not some quantity of fuel is acquired out of country for national fishing vessels and an approximation of that amount (%).
2. Please provide additional information if the fuel subsidy is applicable only to certain fleet segments/gear type and duration of the programme (start and end dates).
3. Please attach a description of each subsidy/program, the type of fuel used (e.g. diesel).
4. This includes budgeted (direct transfers) and unbudgeted (market mechanisms) transfers.

## Annex 2.

### G-20 Leaders' Statement: The Pittsburgh Summit

#### *Preamble*

*(Agreement ...)* To phase out and rationalise over the medium term inefficient fossil fuel subsidies while providing targeted support for the poorest. Inefficient fossil fuel subsidies encourage wasteful consumption, reduce our energy security, impede investment in clean energy sources and undermine efforts to deal with the threat of climate change. [paragraph 24].

#### *Main Text*

Enhancing our energy efficiency can play an important, positive role in promoting energy security and fighting climate change. Inefficient fossil fuel subsidies encourage wasteful consumption, distort markets, impede investment in clean energy sources and undermine efforts to deal with climate change. The Organisation for Economic Co-operation and Development (OECD) and the IEA have found that eliminating fossil fuel subsidies by 2020 would reduce global greenhouse gas emissions in 2050 by 10%. Many countries are reducing fossil fuel subsidies while preventing adverse impact on the poorest. Building on these efforts and recognizing the challenges of populations suffering from energy poverty, we commit to [paragraph 29]:

Rationalise and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption. As we do that, we recognise the importance of providing those in need with essential energy services, including through the use of targeted cash transfers and other appropriate mechanisms. This reform will not apply to our support for clean energy, renewables, and technologies that dramatically reduce greenhouse gas emissions. We will have our Energy and Finance Ministers, based on their national circumstances, develop implementation strategies and timeframes, and report back to Leaders at the next Summit. We ask the international financial institutions to offer support to countries in this process. We call on all nations to adopt policies that will phase out such subsidies worldwide.

We request relevant institutions, such as the IEA, OPEC, OECD, and World Bank, provide an analysis of the scope of energy subsidies and suggestions for the implementation of this initiative and report back at the next summit [paragraph 30].

### Annex 3.

## Diesel oil prices for commercial use

Table A3.1. Automotive diesel fuel prices for industry use

	USD/litre										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Australia	-	-	-	-	-	-	-	-	-	-	-
Austria	0.60	0.56	0.57	0.65	0.75	0.81	0.89	0.98	1.12	0.89	0.97
Belgium	0.60	0.56	0.56	0.71	0.91	1.07	1.12	1.24	1.51	1.17	1.32
Canada	0.46	0.44	0.41	0.49	0.58	0.77	0.85	0.92	1.16	0.78	0.97
Chile	-	-	-	-	-	-	-	-	-	-	-
Cyprus <sup>1</sup>	-	-	-	-	-	0.90	0.98	1.07	1.38	1.01	1.16
Czech Republic	0.52	0.52	0.54	0.64	0.81	0.98	1.08	1.19	1.56	1.16	1.34
Denmark	0.70	0.67	0.69	0.82	0.91	1.02	1.10	1.21	1.49	1.17	1.28
Estonia	-	-	-	-	-	0.85	0.92	1.01	1.42	1.06	1.22
Finland	0.64	0.60	0.61	0.75	0.86	0.99	1.05	1.14	1.51	1.13	1.22
France	0.65	0.60	0.61	0.75	0.92	1.06	1.13	1.25	1.55	1.16	1.27
Germany	0.64	0.63	0.68	0.86	1.00	1.14	1.21	1.35	1.64	1.27	1.37
Greece	0.53	0.48	0.50	0.61	0.78	0.92	1.01	1.13	1.48	1.12	1.34
Hungary	0.61	0.58	0.62	0.75	0.86	1.03	1.08	1.20	1.49	1.09	1.24
Ireland	0.63	0.61	0.60	0.75	0.90	1.07	1.14	1.22	1.54	1.17	1.32
Israel	-	-	-	-	-	-	-	-	-	-	-
Italy	0.68	0.65	0.67	0.83	0.97	1.15	1.22	1.33	1.63	1.25	1.34
Japan	0.58	0.53	0.50	0.56	0.65	0.74	0.80	0.82	1.15	0.87	1.03
Luxembourg	0.55	0.51	0.52	0.63	0.75	0.91	1.00	1.11	1.41	1.02	1.15
Malta	-	-	-	-	-	0.92	1.05	1.09	1.39	1.13	1.17
Mexico	0.38	0.42	0.43	0.40	0.39	0.42	0.43	0.47	0.49	0.50	0.59
Netherlands	0.66	0.62	0.63	0.75	0.94	1.07	1.15	1.26	1.58	1.16	1.30
New Zealand	0.29	0.27	0.27	0.32	0.43	0.56	0.65	0.68	0.91	0.57	0.75
Norway	0.91	0.78	0.82	0.96	1.04	1.22	1.28	1.41	1.74	1.36	1.56
Poland	0.48	0.51	0.52	0.60	0.71	0.93	1.01	1.12	1.43	0.96	1.16
Portugal	0.56	0.56	0.56	0.74	0.90	1.07	1.20	1.35	1.69	1.28	1.40
Republic of Korea	-	-	-	-	-	-	-	-	-	-	-
Slovak Republic	0.56	0.52	0.50	0.68	0.88	1.02	1.13	1.29	1.64	1.29	1.26
Slovenia	-	-	-	-	-	0.95	1.01	1.11	1.37	1.17	1.27
Spain	0.55	0.53	0.56	0.68	0.81	0.96	1.02	1.13	1.42	1.09	1.22
Sweden	0.74	0.67	0.69	0.80	0.93	1.11	1.21	1.30	1.62	1.21	1.39
Switzerland	0.72	0.69	0.71	0.85	0.99	1.13	1.20	1.27	1.62	1.25	1.40
Turkey	0.70	0.60	0.72	0.93	1.08	1.46	1.55	1.77	2.21	1.68	2.04
United Kingdom	1.05	0.95	0.96	1.08	1.28	1.41	1.49	1.65	1.83	1.41	1.57
United States	0.39	0.37	0.35	0.40	0.48	0.63	0.71	0.76	1.00	0.65	0.79
OECD Europe	0.68	0.64	0.66	0.80	0.95	1.11	1.18	1.31	1.60	1.22	1.35
OECD Total	0.55	0.52	0.52	0.61	0.73	0.88	0.96	1.05	1.31	0.96	1.10

1. Note by Turkey:

The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

2. Note by all the European Union Member States of the OECD and the European Commission:

The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Source: OECD.Stat.