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Renewable energy subsidies and the WTO: The wrong law and the wrong venue

COMMENTARY:

Renewable energy subsidies and the WTO: The wrong law and the wrong venue

by Aaron Cosbey, Senior Associate, the International Institute for Sustainable Development

Japan recently announced that consultations had failed to resolve its dispute with Canada over the Province of Ontario's feed-in-tariffs for renewable energy, and that in mid-June it will be asking the WTO to establish a dispute settlement panel. This is awful news for the multilateral trade system, for which the dispute will be corrosive, seemingly pitting trade against the environment. It is clear that the WTO's dispute settlement system is the wrong place to forge international consensus on renewable energy support measures, but it is also clear that the right place needs to be found, and quickly.

The Japan-Canada dispute began in September 2010, when Japan complained that the province of Ontario had established a feed-in tariff program, several aspects of which violated Canada's commitments under the WTO's Agreement on Subsidies and Countervailing Measures (SCM Agreement) and its Agreement on Trade-Related Investment Measures (TRIMS Agreement) (WTO, 2010). Among other things, Japan objected to the fact that the preferential tariffs went only to those power producers that used at least a specified percentage of domestic content. A similar dispute between the US and China, over Chinese wind power subsidies that required domestic content (WTO, 2011), has now been announced as amicably settled in consultations. The terms of the agreement involve China's termination of the program in question (which in any case had probably served its purpose).

There is, however, no shortage of other potential disputes of this sort. The US complaint was chosen from a petition compiled by the U.S. United

"While there has been much speculation on the legal rights and wrongs in these cases, there has not been enough on what the law should say. What forms of support for renewables are appropriate as countries worldwide strive to green their economies? What WTO rules are appropriate?"

Steelworkers that covers a wide range of alleged Chinese violations of trade law in support of renewables. The practice of domestic content requirements is widespread as a condition of support for renewables in both developed and developing countries; in many cases the green jobs argument is the deciding factor that convinces governments to dole out support. And such requirements, if attached to subsidies or investment privileges, violate WTO obligations (Wilke, 2011; Howse, 2009).

While there has been much speculation on the legal rights and wrongs in these

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cases, there has not been enough on what the law *should* say. What forms of support for renewables are appropriate as countries worldwide strive to green their economies? What WTO rules are appropriate? There are at least four compelling reasons for the international community to answer these questions before more formal disputes crop up:

1. *It is critical that green industrial policy be done, and done right*

The pace of technological transformation needed to avoid global crises such as climate change is unprecedented, looking like a new industrial revolution. In that context, any policies that successfully foster new entrants and innovators in sectors contributing to the green economy are not only good industrial policy for the home country, but also constitute a global public good.

Seen in that light, these are not trade-environment disputes at all; in fact they have no environment-economic tension. The disputed measures are clearly designed to pursue both *environmental* objectives (reducing the environmental impact of generating electricity) and *industrial* policy objectives (fostering a competitive domestic renewables sector), and they will either succeed or fail on both objectives in tandem. If the measures are unsuccessful at creating competitive global players in the sector, they will have been a waste of government funds – an economic failure. They will *also* have been a failure environmentally, since it would have been possible to spend those same funds to greater environmental effect on technologies from more efficient foreign producers. Point Carbon (2008) offers the sobering example of the pursuit of national excellence in wind energy by the Ukraine, the result of which was that as of 2007 the average cost of installed capacity in wind power was 2-3 times higher than average global costs.

“Whatever the merits of any particular case, if the WTO rules against renewable energy subsidies it will be accused of being anti-environment. At this delicate point in its history, the Organization can ill afford to alienate major constituencies such as environmentalists in both developing and developed member states.”

Clearly not all countries can blossom into globally competitive exporters of the same green technologies, and for some it would be a waste of resources to try.

On the other hand, if the measures are *successful* in creating competitive domestic players in the sector, there are obvious domestic economic benefits, direct and indirect, in terms of jobs and foreign exchange. Environmentally, a viable new player means more competition in the sector, which inevitably speeds up dissemination. From a global perspective, it may also mean more agents of innovation, at a time when innovation in renewable energy technology is a critically important global public good.

2. *The existing WTO rules on industrial policy are based on out-dated assumptions*

If it is true that successful green industrial policy is a global public good, the key question is whether it is possible to successfully pursue industrial policy for renewables, and if so, how. It is worth noting that the predecessor to the SCM—the Tokyo Round Subsidies

Code—did not prohibit domestic content requirements, focusing instead on trade-distorting subsidies. The SCM, by contrast, and the TRIMS Agreement, were the product of a policy-making community that had “bought” the Washington Consensus, believing that governments tended to botch industrial policy, and it was better for all if they agreed multilaterally to remove those measures from their toolkits. This despite the fact that many of today’s economic successes in the OECD made judicious use of many tools that are now prohibited by TRIPS, TRIMS and the SCM in their journey to industrialization (Chang, 2002).

But we have learned much on the subject of how to do industrial policy in the last three decades, not least from the contrast between successful policies in South-East Asia and the less successful policies of most Latin American countries (Amsden, 2001; Cimoli *et al.*, 2009; Gallagher, 2010). Rodrik (2004) lays out a number of important guiding principles, based on the wealth of research into what works and what doesn’t:

- **Incentives should be provided only to “new” activities:** If the objective is to support activities that will lead to economic growth, it is important to distinguish between support for existing sectors and those that are genuinely new, and which face a number of barriers specific to new activities.
- **There should be clear criteria for success and failure:** Industrial policy is inherently experimental, and will generate mistakes as well as successes. It is critical to lay out explicit criteria for distinguishing between the two, and for eventually revoking support to those efforts that are obviously dead ends.
- **There should be sunset clauses for support:** One way to ensure that

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long-term support is not provided where it is not needed is to limit the timeline for support.

- **Support should target activities, not sectors:** Public support should aim to correct particular market failures, such as lack of incentive to train new staff, or lack of necessary infrastructure. Support to an entire sector is a waste of resources, but support in areas that are the root of market failure – training, infrastructure development, feasibility studies – is an efficient use of resources.
- **Supported activities must have good potential for spill-over benefits:** Spill-over benefits in terms of knowledge and information should be possible not only to other sectors within the economy, but to subsequent entrants to the new sector.

Based on distant and recent historical experience, it is possible to successfully pursue industrial policy (though, as noted above, there will inevitably be losers as well as winners).

3. Some green industrial support can actually be thought of as market correcting, rather than market distorting

Another rationale for prohibiting subsidies in service of industrial policy is that they are trade distorting, moving market share and investment away from those countries that do not or cannot match the subsidies offered. But subsidies for green industrial policy arguably internalize environmental benefits not captured in the market price for green energy: primarily clean air and reduced GHG emissions. It is an empirical question whether the subsidies in any given case match the external environmental benefits, but at some

level they will actually correct market distortions caused by under-pricing of environmental benefits.

4. Allowing more such disputes to come to the WTO is not in anyone's interest

The current rules with respect to these sorts of green subsidies are clear. Many of the types of support used to foster renewable energy would probably be found to be WTO-illegal. There are particularly strong grounds to question those that are conditional on domestic content, or export performance. Whatever the merits of any particular case, if the WTO rules against renewable energy subsidies it will be accused of being anti-environment. At this delicate point in its history, the Organization can ill afford to alienate major constituencies such as environmentalists in both developing and developed member states.

Furthermore, following the arguments made above, and in view of prevailing practice, there is an urgent need to revisit the existing rules. But the WTO's dispute settlement regime can only function on the basis of the rules as they are; it is not a negotiating forum. It is absolutely the wrong place to address issues of law where there is no international consensus on what the law should say.

Where does this leave us?

None of these four arguments suggest we need carve outs for any and all subsidies claiming to be green. Rather, the point is that the current rules need to be revisited in the light of what we now know about how to do industrial policy, and about the growing urgency of global environmental challenges.

The WTO's objectives are rooted in the desire to improve human welfare. As

such, in the face of one of the greatest challenges in human history—climate change—we need to think long and hard about what kind of trade regime can help foster the needed transition to a low-carbon economy. The rules governing support for green industrial policy are a particularly salient case in point. Whether and how the multilateral trading system can reach such agreement, in light of its current difficulties, is the subject of another essay entirely. But the need is undeniable.

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COMMENTARY:

Fossil-fuel subsidies and the UN Climate Convention: A way forward on reporting

By Stephen Kretzmann, Executive Director, Oil Change International

As progress towards the G-20's commitment to reform fossil-fuel subsidies remains slow, advocates and champions of reform have begun to look for next steps and alternative paths. One of the most promising venues where progress is already happening is the United Nations Framework Convention on Climate Change (UNFCCC).

This March, Norway and New Zealand, members of the group of nations known as the Friends of Fossil-Fuel Subsidy Reform, indicated in formal UNFCCC submissions that they wished to see Parties submit information on their fossil-fuel subsidies as part of national communications obligations ([see the Global Subsidies Initiative interactive G-20 Timeline](#)). The submissions were widely applauded by subsidy reform advocates globally.

Fossil-fuel subsidies of all kinds have impacts on energy consumption and thus on emissions. The International Energy Agency has estimated that consumer subsidy removal in the 37 largest developing countries alone would reduce emissions by at least 5.8% by 2020. Higher rates of per capita fuel consumption and emissions in OECD countries suggest that much higher emissions reductions are possible with a global phase out of both production and consumption subsidies.

And although some reporting already takes place as part of the G-20 process, it has varied in approach and quality. Each country, with regard to their own national circumstances, has defined "inefficient fossil-fuel subsidies that encourage wasteful consumption" as they see fit. In addition, the submissions are not reviewed before their acceptance and [independent monitoring](#)

"Since the provision of subsidies uses up scarce public funds, and because the global allocation of funds for climate change mitigation and adaptation is a central issue, the redirection of existing fossil-fuel subsidies in developed countries is one of several ideas for so-called "innovative sources" of public finance."

and [evaluation](#) has identified many potential omissions.

Making subsidy reporting part of the existing UNFCCC process would have some distinct advantages. National communications and reporting is widely regarded to be one of the success stories of the UNFCCC, as regular submissions by both developed and developing country Parties paint a reliably robust picture of the sources of greenhouse gases globally. Parties submit their reports to the UNFCCC Secretariat, who, with the assistance of experts, review the submissions and give guidance on how reports might be improved.

Currently, Annex 1 (developed country) Parties to the UNFCCC have a general, but not specific, obligation to report on policies and measures that "encourage activities that lead to greater levels of anthropogenic emissions...than would otherwise

occur". In other words, under their current obligations, developed countries *could* be reporting on fossil-fuel subsidies, but they have not been.

Guidelines are of course different with regard to developing countries, which have less specific reporting obligations, in part due to concerns about the capacity in developing country governments for increased reporting. With regard to consumer fossil-fuel subsidies, this concern can be partially alleviated by the fact that the IEA already provides ongoing data on the size and scope of consumption subsidies. Advocates of subsidy reform efforts should help ensure that sufficient technical capacity exists to meet reporting requirements.

Norway and New Zealand's recommendations have been submitted as part of a process agreed in Cancun last December to revise and update guidelines for national communications.

In its submission to the Secretariat, Norway noted that, "...guidelines should encourage reporting of action that might not have mitigation as primary objective but still have mitigation benefits. Reform of fossil-fuel subsidies is one example in this regard."

New Zealand further noted that reporting on fossil-fuel subsidies "is also helpful from a domestic policy perspective as it clarifies for governments the cross-linkages and impacts between policies with different objectives, but which have mutually reinforcing outcomes."

The official timeline for this process aims to approve the revised guidelines by the time Parties meet in Durban, South Africa, this December. It is quite likely

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that the specifics will be discussed at a forthcoming workshop, perhaps in October 2011.

Beyond reporting alone, there are other discussions in the UNFCCC where the inclusion of fossil-fuel subsidies could be helpful. One potentially important area is climate finance.

Under the UNFCCC, developed country Parties have an obligation to provide global climate finance. In Copenhagen in 2009, U.S. Secretary of State Hillary Clinton pledged US\$ 100 billion annually would be found by the end of this decade by developed countries. But where is this money going to come from?

Since the provision of subsidies uses up scarce public funds, and because the global allocation of funds for climate change mitigation and adaptation is a central issue, the redirection of existing fossil-fuel subsidies in developed countries is one of several ideas for so-called “innovative sources” of public finance. Last year, the High Level Advisory Group on Climate Change Financing (AGF) examined the issue and noted:

“Phasing out fossil energy subsidies has political momentum among G-20 countries. It could be politically acceptable in some of these countries to redirect a portion of their subsidies to international climate finance. Depending on the number of countries that participate, the speed at which they remove their subsidies, and the amount that they choose to redirect for climate finance, this approach could lead to a predictable source of a few billion up to US\$ 8 billion dollars a year.”

While it should be noted that most observers consider the US\$ 8 billion per annum estimate to be quite low (thus stressing the need for accurate reporting), the idea is sound in concept.

On the other side of the finance equation, developing countries are expected to produce Nationally Appropriate Mitigation Actions (NAMAs). Reform of existing consumer subsidies seems ideally suited to being described as a NAMA, and doing so could potentially entail financial and technical support to make price reform politically possible. Such actions would be win-win for national budgets and the climate.

In short, there are multiple paths forward for subsidy reform advocates in the UNFCCC. Because the Climate Convention has a Secretariat and a functioning reporting arm, it should be used to augment the existing processes in the interests of transparency. Subsidy reform is in fact too important an issue to leave to one institution. Its progress in any or all forums will require the engagement of country champions, and there is a thriving community of subsidy reform advocates ready and willing to support them in their efforts.

Stephen Kretzmann is Executive Director of Oil Change International. He has worked on energy and climate issues for more than twenty years. He served as an environmental advisor to the Movement for the Survival of the Ogoni People in Nigeria and has worked with communities and organizations around the world concerned with the environmental, social, and economic impacts of the energy industry. Since 1994 he has also represented various organizations at the United Nations Framework Convention on Climate Change.

ANALYSIS:

Country profile: petroleum-product subsidies in India

By Anmol Soni, Research Associate, The Energy and Resources Institute (TERI)

In 2009, 32% of India’s primary commercial energy consumption was derived from petroleum (BP, 2010) and almost 79% of the domestic crude oil demand was met from imports (TERI, 2010). According to current estimates, this percentage will increase to 91% by 2030/31 (TERI, 2009).

Until the late 1990s, the country’s fuel prices were controlled by the government through a policy called

the Administered Pricing Mechanism (APM). Despite dismantling the APM, and ambitions to entirely liberalize prices between 1997 and 2002, subsidies on four sensitive products were never given up for long – Motor Spirit (MS), High Speed Diesel (HSD), domestic liquefied petroleum gas (LPG) sold to households, referred to in India as ‘domestic LPG’, and Superior Kerosene Oil (SKO) targeted to the poor through the country’s

public distribution system (PDS), commonly referred to as ‘PDS kerosene’. Subsidies to these products were particularly costly in the period after 2004, when rising international crude oil prices led the government to introduce a price-band mechanism and thereafter ad-hoc pricing mechanisms.

Various expert groups and government-appointed committees have, from time to time, suggested

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that the prices of these products be decontrolled. The government, however, has only ever partially implemented the recommendations of these expert groups and was never able to fully decontrol the final retail prices of these products. The latest in this series of efforts took place in June 2010, following the recommendations of an expert group headed by Dr. Kirit S. Parikh (Gol, 2010), when the government decided to decontrol the price of petroleum products and as a first step deregulated the price of petrol. An in-principle decision was also taken to liberalize diesel prices at some unspecified future date.

Further action, however, has not yet taken place, with the government continuing to control the price of diesel, domestic LPG and PDS kerosene, and seeming to waver on its commitment regarding petrol. In the last few months, even as international crude prices rose by more than 12% between January and March 2011, it was only on 15th May that the prices of petrol were raised by INR 5 (US\$ 0.1) per litre thereby taking the prices of petrol to INR 63.37 (US\$ 1.4) per litre in Delhi (prices vary across states, mostly due to differential tax structures).

Current pricing and subsidy regime

The Indian government controls prices by requiring downstream companies, commonly referred to as Oil Marketing Companies (OMCs), to sell petroleum products at below-market prices. This, of course, results in 'under-recoveries' – which the Rangarajan Committee (Gol, 2006) defines as "the difference between the cost price and the realized price". Here market prices

refer to import trade parity prices that reflect the costs that would be incurred if the refined products were being imported rather than being refined and marketed domestically.

“Various expert groups and government-appointed committees have, from time to time, suggested that the prices of these products be decontrolled. The government, however, has only ever partially implemented these recommendations...”

These financial losses are paid for in three main ways:

- First, the government has a scheme of providing budgetary subsidies on the sales of domestic LPG and PDS kerosene, equal in 2009-2010 to INR 22.58 (US\$ 0.50) per cylinder of LPG and INR 0.82 (US\$ 0.02) per litre of kerosene. In addition to this, a sum of INR 220 million (US\$ 5 million) was also provided to lower the cost of freighting these products to remote areas under the Freight Subsidy (For Far Flung Areas) Scheme introduced in 2002. The total budgetary subsidies in 2009-10 were INR 27,920 million (US\$ 624 million).
- Second, until 2008-09, the government also provided off-budget assistance in the form of special bonds called 'oil bonds' that were issued to OMCs. These were issued in tranches over the course of a financial year and accounted

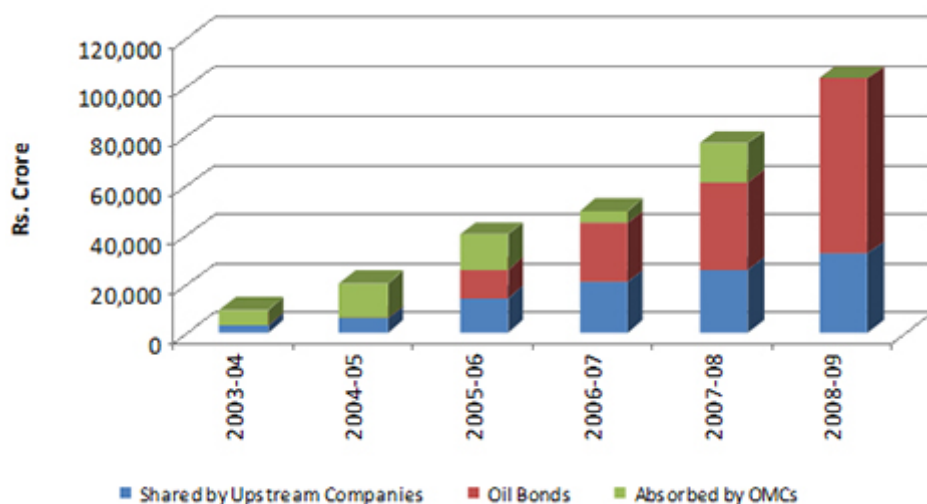
as income in the OMCs' profit and loss statements. Interest rates were set anywhere between 6% and 9% and the bonds were given a period of maturity of up to 20 years. Since only their interest payments are accounted for as spending in the budget, oil bonds do not have any significant fiscal impacts at the point of issue. However, once the bonds are due, the repayment costs will have to be met from budgetary allocations. In the last two years, the government has not issued any oil bonds, with the finance minister having declared in his 2010-11 budget speech that no further oil bonds will be issued and that any subsidies allocated to the sector will from now on be explicitly met from budgetary allocations.

- Third, the government has forced some proportion of the losses to be absorbed by the oil industry. For example, the recent budgetary allocations for LPG and kerosene have been too low to cover the difference between the actual and realized price, such that in 2009-10 marketing companies had to bear under-recovery costs of INR 14.85 (US\$ 0.33) per litre of kerosene and INR 178.13 (US\$ 4.00) per cylinder of domestic LPG. One variant on this option has been to direct upstream oil companies to sell their crude to OMCs at discounted rates, thus sharing the burden more widely across the industry. In 2008-09 and 2009-10, upstream companies contributed a total of INR 320 billion (US\$ 7.2 billion) and INR 144.3 billion (US\$ 3.2 billion), respectively, as assistance to the OMCs. The sharing of the under-recoveries between oil bonds and industry actors is as shown in the figure overleaf.

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Source: Gol, 2010. Note that 'crore', the unit of measurement on the y-axis, is equal to 10,000,000.

Over time, the share of costs met by budgetary subsidies has declined, whereas the difference between the actual price and the realized price of subsidized products has increased. According to recent estimates by the Petroleum Planning and Analysis Cell (PPAC), a government appointed agency responsible for collecting information related to oil companies, firms are currently incurring a daily under-recovery of INR 4.45 billion (US\$ 0.1 billion) on the sale of subsidized diesel, kerosene and LPG (PPAC, 2011).

It should be noted that the government controls the prices of only the National Oil Marketing Companies and therefore the subsidies are also allocated to only these companies. Although private companies are free to charge import-parity based prices, in reality they struggle to compete against the sales of subsidized fuel. There is currently only very limited participation from these private companies in marketing oil products.

Impact of subsidies

The two major impacts of the

subsidies are on consumers and the fiscal situation of oil companies and the Indian government.

At the level of consumers, subsidies can lead to a number of perverse outcomes. Kerosene, for example, is mostly used for lighting in rural households, despite being an inefficient fuel for lighting. In case of automotive fuels, the pricing regime leads to wasteful consumption of fuel – indeed, the country's shift away from public transport towards privately owned transport is essentially leading to an excessive and inefficient usage of fuel.

There are also questions of access for marginalized areas of society. A significant share of the subsidized kerosene actually gets diverted to the black market and is used to adulterate diesel (NCAER, 2005). And despite recent efforts to convert rural households to LPG-use, adoption of LPG remains limited. According to the 64th Round of the National Sample Survey, only 9% of the rural households used LPG for cooking (NSSO, 2007), suggesting that many households are unable to avail

“According to recent estimates by the Petroleum Planning and Analysis Cell (PPAC), a government appointed agency responsible for collecting information related to oil companies, firms are currently incurring a daily under-recovery of INR 4.45 billion (US\$ 0.1 billion) on the sale of subsidized diesel, kerosene and LPG (PPAC, 2011).”

themselves to the supposed welfare gains of cheap fuel.

At the financial level, oil marketing companies have in the past few years suffered from a liquidity crunch because oil bonds are long term in nature and do not provide adequate cover in terms of short-term working capital requirements. Although the OMCs have from time to time sold parts of these bonds in the secondary market, the low interest rates and the fact that these have not been given a Statutory Liquidity Ratio (SLR) status – allowing banks to count them as part of their mandatory liquid reserves – reduces their marketability (IEA, 2010), such that companies have often sold them at discounted rates. This means that in times of high oil prices, oil companies have tended to experience a decline in profits, an increase in interest payments and a rise in their debt-to-equity ratios. These changes were particularly apparent in the period from 2006-07 to 2008-09, as illustrated in the table overleaf.

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Financial performance of the oil marketing companies

		2005-06	2006-07	2007-08	2008-09	2009-10
Debt/Equity Ratio	IOCL	0.9	0.78	0.86	1.02	0.88
	BPCL	0.92	1.05	1.29	1.75	1.7
	HPCL	0.76	1.1	1.59	2.12	1.84
Interest payments (INR million)	IOCL	10,220	15,050	15,460	39,520	15,260
	BPCL	2,470	5,330	6,730	21,660	10,110
	HPCL	1,760	4,230	7,660	20,820	9,040
Profit after tax (INR million)	IOCL	49,150	74,990	69,630	29,500	102,210
	BPCL	2,920	18,060	15,810	7,360	15,380
	HPCL	4,060	15,710	11,340	5,750	13,010

Source: Compiled from the financial statements of the respective oil companies,

IOCL: Indian oil Corporation limited;

BPCL: Bharat Petroleum Corporation Limited;

and HPCL: Hindustan Petroleum Corporation Limited.

The Debt/Equity Ratio has been calculated by using the formula: (Total Borrowings/Net Worth), where Net Worth is the sum of the Share Capital and Reserves and Surplus of the company.

The impact of oil subsidies is not limited to the downstream companies alone. Since upstream companies also share the burden of petroleum product subsidies, they have fewer funds available for investment in their core activities. The imposition of subsidies has also had an adverse impact on the level of competition in the sector as it has resulted in very limited private participation in the national market.

Finally, the subsidy regime also has an impact on government finances, because in the long-run the oil bonds will have to be repaid. Even in the short-run, as the government has decided to stop issuing oil bonds, it is likely that the burden of any future fuel subsidies would put significant pressure on India's budgetary finances.

Possible interventions

As the aim of the subsidies is to improve the welfare of marginalized sections of society, the most direct intervention would be to better target the subsidy to reach this population.

One proposal in this respect has been to link subsidy provision to India's Unique Identification (UID) scheme, allowing subsidies to be individually targeted to unique identity numbers for each individual in the country. According to an interview in May with Planning Commission member Saumitra Chaudhuri, such reforms to food, fertiliser and fuel subsidies will be outlined in the approach paper to India's 12th Five Year Plan (2012–17), though it remains to be seen how effective the measure will be in the times to come.

More strategic possibilities include reducing the need for fossil-fuel consumption. In the short term, this might take the form of safer and more reliable forms of public transport. In the long-term, research and development of alternative fuels and renewable sources of energy will help wean away the economy from excessive dependence on petroleum.

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areas related to petroleum and natural gas in India.

This article draws on the larger work currently being conducted on subsidies on petroleum products by the Centre for Research on Energy Security, TERI.

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ANALYSIS:

Fukushima disaster puts focus on hidden subsidies to nuclear power

The ongoing disaster at Japan's Fukushima Daiichi nuclear plant has put the risks of nuclear power in stark relief. In so doing, it has sparked public debate about the little-known subsidies that let nuclear plants operate in spite of such risks.

In the most comprehensive study to be conducted on nuclear power subsidies in the United States, *Nuclear Power: Still Not Viable Without Subsidies*, published this February, Earth Track's Doug Koplou identified a host of government subsidies benefitting the nuclear industry, including loan guarantees, production tax credits, low royalties for uranium mining on government land and under-priced cooling water. But one of the most important subsidies detailed in the analysis – not widely known and difficult to quantify – is conferred through the laws that cap the liability of nuclear plant operators in the case of a serious nuclear accident.

According to the Inter Press Service, this cap on liability varies in different countries: it is set at US\$ 75 million in Canada, US\$ 110 million in India, US\$ 220 million in the UK and US\$ 1.2 billion in Japan. In other countries, the mechanism is more complicated. As detailed by Koplou, the United States has a multi-tiered cap, governed by a piece of legislation called the Price-Anderson Act (PAA). The PAA requires nuclear reactor operators to obtain the highest amount of nuclear accident

insurance privately available, currently about US\$ 375 million per reactor. If an accident occurs with costs exceeding this amount, up to US\$ 117.5 million can be demanded from each of the United States 104 operating nuclear reactors. Including the upcoming Calvert Cliffs 3 reactor, this would yield total nominal funds of around US\$ 12.7 billion – although with payments being spread over seven years, Koplou estimates this to have a net present value of US\$ 8.5 billion. The U.S. government is then responsible for sourcing additional funds for damages. The Act allows Congress to demand additional payments from nuclear plant operators, but in reality the compensation costs of even a moderate accident would quickly leave any individual firm bankrupt.

While the upper range of US\$ 12.7 billion as a nominal cap may seem like a large amount, evidence from the disasters at Fukushima and Chernobyl suggests that it is far from sufficient to cover the costs of a nuclear accident. Kazumasa Iwata, President of the Japan Center for Economic Research, has estimated the costs of the Fukushima Daiichi accident to be ¥ 5.7–20 trillion (US\$ 71 – 250 billion). According to a 2006 report by the International Atomic Energy Association, though difficult to measure, the total costs of the Chernobyl disaster were in the hundreds of billions of dollars, Belarus having estimated losses of US\$ 235 billion over 30 years.

Even though this form of support involves no immediate government spending, it has a direct effect on the day-to-day financial situation of nuclear power firms, according to Joshua Pearce, Associate Professor at Queens University and the co-author of a recent paper on liability subsidies. "An artificial cap on insurance liability reduces the costs of nuclear energy both directly, by reducing insurance premiums, and indirectly, by reducing the cost of borrowing money. These reductions in costs represent a subsidy – and it is an indirect subsidy from government because no money actually changes hands unless a large disaster occurs," said Pearce in an interview with *Subsidy Watch*.

This also means that the financial value of the subsidies is hard to measure. The subsidy should be calculated as the difference between premiums today and premiums in a market that included the full cost of risk, but what these premiums might be – and indeed, even estimating the likely cost of a nuclear accident – is extremely difficult to determine. Calculating the indirect effects on the cost of capital for nuclear power firms is similarly challenging. These technical difficulties have significant political implications, as the lack of hard numbers makes it easy for governments to provide liability subsidies without opposition from deficit hawks.



Fukushima disaster puts focus on hidden subsidies...

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Koplow's study estimates that the liability subsidy in the U.S. could fall anywhere in an extremely broad range, from 0.10–2.5 ¢ per kilowatt-hour of nuclear energy produced. Taking into account World Nuclear Association figures that U.S. reactors produced 799 billion kWh in 2009, this equates to a liability subsidy of US\$ 0.8–20 billion.

By contrast, Pearce estimates that liability subsidies are around US\$ 33 million per reactor-year, which, across

the United States's 104 currently operating reactors, would equate to a total of around US\$ 3.4 billion per year. He cautions, however, that this is a conservative estimate, on the basis that many of the costs of major nuclear accidents simply cannot be measured, and that the scale of liability subsidies is so large that their removal would threaten the entire nuclear industry.

"I even have to wait to buy a Prius today as a direct result of the nuclear

disaster [in Japan]. So instead I and everyone else interested in a Prius will probably buy a non-Japanese made automobile. How is that cost factored in? Nuclear power is not economically viable without insurance liability caps. Period. Unless government shoulders the enormous risk associated with nuclear power, the free market would never accept it as an energy source. Nuclear power simply makes no economic sense."

NEWS:

Fossil-fuel subsidies round-up: April and May 2011

Following announcements that fossil-fuel subsidies will be phased out, from the G-20, the Asian-Pacific Economic Cooperation (APEC) and a number of independent countries, including Iran, Nigeria and Bahrain, Subsidy Watch has decided each month to highlight important news stories that touch on this theme...

6 April Fossil-fuel subsidies worth US\$ 312 billion should be realigned to ensure the growth of renewable energy and curb the world's reliance on carbon-intensive fuels, says the latest International Energy Agency (IEA) [Clean Energy Progress Report](#). According to the report, demand for fossil fuels is outstripping the deployment of cleaner technologies. Several newswires and websites report on the IEA's findings, including [Reuters](#), [Business Green](#), [Independent Online](#), and [Energy Efficiency News](#).

8 April Bangladesh raises the price of furnace oil by 14% to BDT 40 (US\$ 0.55) per litre, the second rise since January, to ease the subsidy burden of the state-owned Bangladesh Petroleum Corporation, [reports Reuters news agency](#).

8 April In cooperation with the International Budget Partnership (IBP), the International Institute for Sustainable Development's Global Subsidies Initiative [releases a policy brief](#) describing how 80 governments responded when asked "What was the total amount actually incurred during the past three fiscal years on subsidies for oil, gas and coal production and consumption?" The results show that only half of the governments provided a response and most answers were incomplete. It concludes that this illustrates the opacity of fossil-fuel subsidy policies and the lack of information available about how governments are spending public money.

11 April The Philippines government's fuel subsidy for tricycle and jeepney drivers commences, [according to the newspaper The Philippines Star](#). The government has initially allocated PHP 450 million (US\$ 10.5 million) to the subsidy.

12 April [In an interview in the last edition of Subsidy Watch](#), the IEA's Senior Energy Analyst Amos Bromhead outlines the IEA's latest work on energy

subsidies and discusses the relationship between fossil-fuel subsidies and oil price volatility.

15 April Black & Veatch Corp., an international engineering, consulting and construction company, wins preliminary approval for US\$ 805.6 million in financing from the U.S. government-backed Export-Import Bank for a coal-fired power plant in South Africa, [reports news website Bloomberg](#). The financing will support construction of a 4,800-megawatt plant that will be one of the world's largest coal-fuelled stations.

18 April [The Financial Times provides a review](#) of fuel subsidies in the Asia region, noting that subsidies are placing governments under increasing fiscal pressure as oil prices rise. The article says that subsidies are cushioning consumers in emerging countries from high wholesale prices, further boosting oil demand and helping to drive prices even higher.

20 April A report commissioned by the European Gas Advocacy Forum, an industry lobbying group, states that the EU could save €900 billion (US\$ 1,332 billion) in meeting its 2050

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Fossil-fuel subsidies round up: April and May 2011...

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climate targets if it uses gas instead of subsidizing renewable energy, [reports UK newspaper the Guardian](#). The report is based in part on analysis by consultancy firm McKinsey, [Making the Green Journey Work](#).

25 April U.S. President Barack Obama's proposal to reduce U.S. federal subsidies to the fossil-fuel industry by US\$ 4 billion per year gains momentum when U.S. House of Representatives Speaker John Boehner (Republican, Ohio) [comments to ABC News](#) that oil companies ought to pay "their fair share" toward government revenue. The Speaker went on to say that the U.S. Congress should consider cutting subsidies to oil companies. His comments were spurred by high gasoline prices and reports of large profits by oil companies. On 26 April, [President Obama sends a letter to congressional leaders](#) urging them to support his proposed subsidy cuts and on 28 April, House Budget Committee Chairman Paul Ryan lends his support, [as reported by Reuters](#). On 29 April, however, Speaker Boehner rejects calls by Democrats for a vote on the proposal, [according to website The Daily Caller](#). Not deterred, [President Obama's weekly address to the nation](#) on 30 April urges Congress to take action to reduce the subsidies.

26 April The Nigerian Government is providing a NGN 91 (US\$ 0.59) per litre subsidy for gasoline, up 25% since last February, [according to Nigerian newspaper The Nation](#). Over NGN 650 billion (US\$ 4.2 billion) was spent by the federal government on subsidies in 2010, a total which is expected to rise this year.

29 April The government of Taiwan announces a three-month fuel subsidy for specific consumers, [the Taipei Times reports](#). Eligible groups include taxis, public transport services, cargo

transporters, tour buses, fishers and farmers, who will be provided a subsidy on the differential between the actual price of fuel and government benchmark prices – set at US\$ 118 per barrel, or TWD 30.4 (US\$ 1.05) per litre for diesel and TWD 33.1 (US\$ 1.16) per litre for 95-octane unleaded gasoline. Guidelines vary for each group but taxis are eligible for a TWD 3 (US\$ 0.10) per litre reduction, with a maximum of 100 litres per week, and public transport services for people with disabilities are eligible for a TWD 5 (US\$ 0.17) reduction, with a maximum of 825 litres per month. The government also announced that it would consider extending the subsidy if oil prices rose above US\$ 130 per barrel.

1 May On the eve of Canada's federal election, the President of the International Institute for Sustainable Development Franz Tattenbach calls on the next Canadian government to act as a champion for the global cause to phase out fossil-fuel subsidies. [His editorial opinion published in newspaper the Toronto Star](#) encourages the incoming government to actively pursue reform domestically and internationally as a means to combat climate change, improve energy efficiency, remove market distortions and encourage investment in clean energy.

4 May Sierra Leone's government has slashed petrol subsidies to help meet its debt obligations, leading to an overnight 30% price spike for consumers, [reports Reuters](#). Sierra Leone Minister of Trade and Industry Richard Konteh said the move would cut the country's annual fuel subsidy bill from US\$ 50 million to US\$ 25 million and will help it repay debt.

6 May [The Australian Federal Government's 2011-12 Budget](#) cuts

fossil-fuel subsidies that will save A\$ 1 billion per year (roughly one-to-one with US\$). The Fringe Benefits Tax concession provides bigger tax breaks for company cars that travel more kilometres, encouraging wasteful fuel consumption. [The Australian Conservation Foundation \(ACF\) calculates](#) that reforming the tax break will cut as much pollution as closing a small coal fired power station. It also recommends that the government should turn its attention to the reform of other subsidies such as the Fuel Tax Credits scheme, which costs Australian taxpayers A\$ 5 billion a year, A\$ 1.7 billion of which benefits big mining companies.

6 May C. Rangarajan, chairman of the Indian Prime Minister's Economic Advisory Council, warns that ballooning subsidy costs are a risk to the government's budget deficit target, [reports The Wall Street Journal](#). India subsidizes diesel, cooking gas, fertilizers and food to shield consumers from global price shocks. The subsidy bill is budgeted at INR 1.44 trillion (US\$ 32.21 billion) this fiscal year but could be exceeded due to rising international oil prices. The growing subsidy burden makes it difficult to adhere to the fiscal deficit aim of 4.6% of gross domestic product. Later in the month, on 30 May, the country's biggest refiner and oil retailer Indian Oil Corp reports a 30% slump in fourth-quarter profit, weighed by rising under-recoveries on petroleum products sold at subsidised rates. The state-run firm said it was currently incurring a revenue loss of INR 2.61 billion (US\$ 57.8 million) daily on account of fuel sales at below-market prices.

8 May Indian [Planning Commission member Saumitra Chaudhuri](#) tells [Indian newspaper the Business Standard](#) that the 12th Five Year Plan (2012-17) will include a plan for cash transfers to

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Fossil-fuel subsidies round up: April and May 2011...

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replace food, fertiliser and fuel subsidies, using 'smart' cards. Later, on 29 May, chief minister Sheila Dikshit puts forward a proposal for cash payments to replace kerosene subsidies, [reports the Times of India](#). Under the proposal, the cash equivalent of the monthly kerosene subsidy will be directly transferred to the bank account of the female head of the family.

10 May Director of the International Monetary Fund's Middle East and Central Asia Department Masood Ahmed calls for food and fuel subsidies in the region to be better targeted, [in an article published in the financial news website Seeking Alpha](#). He notes that although countries in the Middle East and North Africa have relied heavily on food and fuel price subsidies as a form of social protection, subsidies should be targeted to help those most in need and often there will be better alternatives for protecting the poor.

12 May Fatih Birol, chief economist of the International Energy Agency, [tells the Financial Times](#) that rising oil prices have more than cancelled out efforts by several developing countries (notably India, Malaysia and Iran) to reform national subsidy regimes. The cost of a barrel of oil averaged US\$ 80 last year, compared with US\$ 61 in 2009,

rendering it more expensive to hold down retail prices for consumers. Governments around the world spent US\$ 342 billion on holding down the prices of petrol and domestic fuel in 2009 – six times more than the US\$ 57 billion they devoted to subsidising renewable energy.

17 May The United States Senate votes against further consideration of a Democratic proposal to end US\$ 2 billion in annual tax subsidies for five major oil companies, [reports newswire The Associated Press](#). The vote was on a procedural question: whether to bring the bill to the floor for debate. Such motions require 60 votes to pass, so although the bill earned a majority, 52 to 48, it still fell short.

17 May Deputy Malaysian Prime Minister Tan Sri Muhyiddin Yassin says that the value of Malaysia's subsidies this year is expected to rise to MYR 20.58 billion (US\$ 6.8 billion) from MYR 10.32 billion (US\$ 3.4 billion) in 2010, [reports online news service Malaysia Today](#). Mr Muhyiddin said that MYR 18 billion (US\$ 5.9 billion) of this amount was allocated just for petroleum products — regular, diesel and liquid petroleum gas.

31 May Malaysian Energy Minister Peter Chin says that in an effort to reduce subsidy costs about 25% of all residential

customers—those consuming the most electricity—will face an average increase of 7% in their electricity bill, [reports Singapore online newspaper TODAYonline](#).

31 May A top official in Saudi Arabia's power regulator says that the country's subsidies cost as much as SAR 50 billion (US\$ 13.3 billion) every year, [according to news website gulfnews.com](#). The figure is said to take into account both gasoline and electricity production but it is not clear what benchmark was used to assess the total value of the energy consumed. The article adds that around half of Saudi Arabia's electricity production is currently produced from liquid fuel and that gas reserves are in high demand from its petrochemicals industry. The kingdom is said to be developing a long-term energy strategy including nuclear power, to be made public at the end of the year.

For readers interested in keeping track of fuel-pricing developments worldwide, GTZ's monthly Fuel Price News is an invaluable resource that announces publications and events, and major fuel-pricing news stories in different regions of the world. For more information see: <http://www.gtz.de/en/themen/29957.htm>

NEWS:

GSI interactive G-20 Timeline goes live

This May, the Global Subsidies Initiative (GSI) published an interactive timeline that documents the development of the international process to reform fossil-fuel subsidies.

The timeline tracks developments across five categories: the G-20; APEC; the 'Friends' Group; climate change talks; and perspectives

of third parties on reforms. It links users to all publically available relevant documentation underlying major events and will be updated as international efforts to reform fossil-fuel subsidies continue. It forms part of a new section of the GSI website dedicated to such efforts, which also collects together the GSI's analysis of the first year of the G-20 commitment,

policy briefs on each of the G-20 Summits since Pittsburgh 2009 and a library of official G-20 documents and related reports.

The timeline can be accessed on the GSI's website: <http://www.globalsubsidies.org/content/timeline/>



STUDIES:

Farm subsidy data harvest 2011

This May, farmsubsidy.org, a non-profit project that monitors farm subsidies in the EU, launched its newest data review of the subsidies granted under the EU's Common Agricultural Policy (CAP).

The so-called 'Subsidy Data Harvest' revealed that only € 15.4 billion (US\$ 21.8 billion) of agricultural subsidies have so far been published by EU Member countries for the year 2010, despite expectations that around € 55 billion (US\$ 77.8 billion) has actually been spent.

Farmsubsidy.org attributes this to large amounts of data having been kept secret. Of the 21 EU Member countries who had released results, only 3 were found to have been highly committed to budget transparency by publishing all their data: Denmark, Hungary and

Sweden. By contrast, it is thought that Ireland failed to disclose 98% of its farm subsidies, with the Netherlands at the lower end of the range, having omitted 25% of spending.

The lack of disclosure is due to a European Union Court of Justice ruling in November 2010 which decided that payment disclosures relating to 'natural persons' was a violation of personal privacy. The European Commission responded by ordering Member States to stop publishing data, although an interim regulation this April ruled that they were still required to publish data on 'legal persons' – companies and partnerships. Farmsubsidy.org co-founder Jack Thurston was highly critical of this decision, calling it a "poor ruling" and observing that "secrecy is back with a vengeance".

Nonetheless, the data harvest still yielded striking findings. In 2010, more than 1,330 payments were over € 1 million (US\$ 1.4 million) and state-owned companies, ministries and regional governments dominated the top recipients. For example, the state-owned bank in Romania and state-owned water company in Portugal shared the first and the second place.

According to farmsubsidy.org, every year the CAP represents around 40% of total EU's total budget.

The overview of the farm subsidy data is available at: <http://farmsubsidy.org/news/features/2011-farm-subsidy-data-harvest/>

STUDY:

Journalist Yuan Ying uncovers unintended impacts of Chinese solar subsidy scheme

This March, investigative journalist Yuan Ying won the 'most influential' category at the China Environment Press Awards with an article on the failure of China's photovoltaic (PV) subsidy program 'Golden Sun'. The award was organized by UK newspaper the *Guardian*, www.chinadialogue.net, a bilingual website on environmental issues in China, and Sina, a leading Chinese web portal.

In her article, Ying analyses the shortcomings of the Chinese government's "strongest ever show of support for the solar PV industry" and argues that it has in fact ended up threatening to destroy many of the businesses it initially aimed to support.

The program was originally launched in 2009 as a response to the evolving

financial crisis, with the aim of preventing the closure of 10,000 domestic solar PV plants. It offered to pay 50% of the investment costs for qualifying plants and 70% for projects in remote regions not connected to the grid. According to Ying, many enterprises declared their material costs to be artificially high in order to receive higher subsidies. At the same time, it appears that parts of the solar PV supply chain also competed to win contracts by offering prices lower than production cost, with the result that some are struggling to remain viable and others are supplying second-class components and defective stock, including discarded returns from overseas.

Although the program appears to have had the desired impact for large-scale

solar firms – providing a welcome boost for demonstration plants and buoying up share prices – Ying found that small- and medium-sized companies, representing just under half of the 200 enterprises with qualifying projects under Golden Sun, have not been so well served. Many have commenced ambitious construction projects with little capital on hand and are still waiting on the government to transfer the promised funds. Moreover, it is far from clear that their solar PV plants will be viable once constructed, with one business chairman stating "I do not know who we should sell the electricity to, I do not know who will pay for it or what the price of electricity will be". The industry is hoping that China will announce a feed-in tariff for solar PV but this is thought to be several years away.

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Journalist Yuan Ying uncovers unintended impacts...

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Ying reports that the Chinese Finance Ministry has promised to conduct inspections to ensure that no fraud is taking place, but mentions no official statements regarding the uncertainty facing small- and medium-sized

enterprises.

Although the original version of the article has not been published in English, Ying's findings are described in the article 'Burned by the sun', first

published in weekly newspaper *Southern Weekend*, and available at: <http://www.chinadialogue.net/article/show/single/en/4232>

STUDY:

Nuffield Council of Bioethics publishes report on the ethics of biofuels

In mid-April, the Nuffield Council of Bioethics, an independent body that examines ethical issues in biology and medicine, launched the report *Biofuels: ethical issues*. The report focuses on policies, technologies and other drivers that promote liquid biofuels for transport, outlining the ethical challenges that arise in the biofuel production process.

The study offers qualitative insights into the core driving forces behind biofuels policies, such as energy security, economic development and climate change. It also illustrates some of the problems that might arise from biofuel promotion through case studies. The authors express concerns about the negative effects of biofuel production can have on the environment, food security and food prices, as well as the human rights of agricultural workers and communities.

The report criticises European energy policies for setting high goals that lead to unethical practices. For example, the European Renewable Energy Directive defines that 10% of the transport fuels must come from renewable sources by 2020. But to meet these goals, biofuels are imported from countries without responsible climate policies.

In order to mitigate the ethical risks faced in the biofuels production, the report suggests ethical principles that policy makers must be able to meet

to make the promotion of biofuels "permissible". These guidelines are:

- Biofuels should not be developed at the cost of human rights, such as access to sufficient food and water, health rights, work rights and land entitlements.
- Biofuels should be environmentally sustainable. Currently, biofuel production is unlikely to meet this condition for various reasons, including links with the loss of biodiversity due to clearing of forests, grassland and peatlands, and the lack of strict environmental sustainability regulations in many of the countries producing biofuels.
- Biofuels should reduce greenhouse gas (GHG) emissions. This means that the net emissions caused throughout the entire production lifecycle (such as land-use changes, inputs for growing and processing crops as well as distribution) should offer GHG savings.
- Biofuels should be developed in accordance with trade principles that are fair and recognise the rights of people to just reward (including labor rights and intellectual property rights).
- The costs and benefits of biofuels should be distributed in an equitable way.

The authors recommend establishing a certification scheme to ensure these principles are met, similar to the existing Fair Trade scheme. They conclude that this would "be most effective if... accompanied by elements from regulatory systems, for example financial sanctions, and incentives such as subsidies or assured markets".

The report also strongly recommends developing new biofuel technologies, such as lignocellulosic and algal biofuels, on the grounds that they could potentially represent more economically viable and climate friendly production, at the same time as using less natural resources.

The full report and a summary of key findings and recommendations is available at <http://www.nuffieldbioethics.org/biofuels-0>

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