

THE GLOBAL SUBSIDIES INITIATIVE

UNTOLD BILLIONS:

FOSSIL-FUEL SUBSIDIES, THEIR IMPACTS
AND THE PATH TO REFORM

3

Gaining Traction: The importance of transparency in accelerating the reform of fossil-fuel subsidies

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LIST OF ACRONYMS

AMS	Aggregate Measure of Support
APEC	Asia-Pacific Economic Cooperation ¹
ASCM	WTO Agreement on Subsidies and Countervailing Measures
ASEAN	Association of Southeast Asian Nations
CSE	consumer support estimate
CO ₂	carbon dioxide
DQAF	Data Quality Assessment Framework
EITI	Extractive Industries Transparency Initiative
ERRA	Energy Regulators Regional Association
G-20	Group of Twenty Countries ¹
GATT	General Agreement on Tariffs and Trade
GHG	greenhouse gas
GSI	Global Subsidies Initiative
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit/German Technical Cooperation
IASB	International Accounting Standards Board
IEA	International Energy Agency ¹
IFRSs	International Financial Reporting Standards
IGO	intergovernmental organization
IGO-4	four IGOs nominated by the G-20 to provide information on fossil-fuel subsidies (IEA, OECD, OPEC and the World Bank)
IISD	International Institute for Sustainable Development
IMF	International Monetary Fund
JODI	Joint Oil Data Initiative
MPS	market price support
NGO	non-governmental organization
PSE	Producer Support Estimate
OBI	Open Budget Initiative
OECD	Organisation for Economic Co-operation and Development ¹
OLADE	Latin American Energy Organization
OPEC	Organization of the Petroleum Exporting Countries
PSE	producer support estimate
R&D	research and development
ROSCs	Reports on the Observance of Standards and Codes
RD&D	research, development and demonstration
RWI	Revenue Watch Institute
UN	United Nations
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
URC	UNEP Risø Centre on Energy, Climate and Sustainable Development
VAT	value-added tax
WEO	World Energy Outlook
WTO	World Trade Organization

¹ See Annex I for membership.

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EXECUTIVE SUMMARY

Momentum is building for countries to eliminate their subsidies for fossil fuels. In recent decades, many countries have attempted to remove government support for the production or consumption of fossil fuels, with varying degrees of success. In late 2009, the leaders of both the Group of Twenty (G-20) countries and the Asia-Pacific Economic Cooperation (APEC) forum committed to phase out inefficient fossil-fuel subsidies. This will be easier said than done: subsidies are notoriously difficult to remove.

An accurate picture of the level and nature of subsidization is a necessary first step towards reform. Reliable information facilitates an assessment of the subsidy's costs, distribution and impacts, and the development of effective strategies for reform. At the international level, it provides a foundation for dialogue on reform and for monitoring of progress towards de-subsidization. But the current state of knowledge about fossil-fuel subsidies is less than desirable. There are major differences in the amount and quality of information among countries and types of subsidies. At the international level, the lack of information is partly the result of the absence of a system or protocol to comprehensively assess and monitor fossil-fuel subsidies.

Drawing on existing literature on transparency in public policy,ⁱ this paper describes how improved information could most usefully support reform and how this can be achieved given available time and resources. An analysis of previous efforts to improve transparency about subsidies—in energy and other sectors—is used to suggest options for a feasible international system for evaluating and reporting fossil-fuel subsidies. The paper concludes that improving transparency requires a two-track approach: better reporting within countries and a new international regime.

Domestic action: better accounting and reporting

One reason that governments are often non-transparent about fossil-fuel subsidies is that they simply do not know the full extent of subsidies offered in their jurisdiction. Improved national-level reporting, based on internationally consistent estimation methods and subsidy-accounting standards, would help countries better manage public spending. It would also facilitate compilation, aggregation and comparison of data across countries. Tracking subsidies is technically demanding and resource-consuming and therefore some countries might require expert assistance in the early stages of this process.

International action: a new data-gathering and management regime

An international regime is also needed to gather data across multiple countries. In its operation, such a regime could facilitate data gathering through a standard reporting template and guidelines that specify the scope of support to be included and standard methods for documenting subsidies. The secretariat of an intergovernmental organization could also perform detailed country studies in collaboration with national governments using recognized subsidy-accounting frameworks. Several existing international institutions could implement such a regime. Identifying the contribution that these organizations could make is important, but ultimately their roles and responsibilities will be determined by governments and available resources.

Overall, such national and international efforts would build a comprehensive picture of fossil-fuel subsidies over several years, providing a firm basis for assessing their impacts, developing reform strategies and monitoring progress.

ⁱ In the context of public policy, transparency refers to the openness and accountability of governments, particularly regarding expenditures and decision-making.

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1. INTRODUCTION

For many decades, and especially since the 1980s, economists and environmentalists have been calling on governments to stop subsidizing the production and consumption of fossil fuels in the interest of removing economic distortions, improving fiscal health or reducing air pollution.¹ Since then, some countries have cut their subsidies, notably in Europe following the collapse of the former Soviet Union and the formation of the European Union.

Internationally, governments have occasionally introduced language to encourage subsidy reform into multilateral agreements, such as the Kyoto Protocol. Despite some successful reforms at the national level, fossil-fuel subsidies remain widespread. Tentative attempts to spur reform at the international level have had little impact.

Reform has often been held back, in no small part, by the lack of good information on subsidy policies. Qualitative and quantitative information provides policy-makers with the necessary tools to develop effective strategies to reform subsidies and to counter the vested interests that seek to maintain them. And to coordinate reform internationally, consistent information must be available for a significant number of countries, and provided in a way that allows for meaningful comparison. Indeed, rarely has an international dialogue on reforming subsidies—whether agricultural, fisheries or energy subsidies—commenced without the interested countries having some rough idea of the nature, size and impact of the subsidies at issue.

That was the case when the leaders of the Group of Twenty (G-20) nations agreed, at their summit in Pittsburgh (U.S.) in September 2009, “to rationalize and phase out over the medium term inefficient fossil-fuel subsidies that encourage wasteful consumption,” an agreement echoed by the Asia-Pacific Economic Cooperation (APEC) leaders in November 2009 (APEC Leaders, 2009; G-20 Leaders, 2009).

Arguably, the G-20 and APEC agreements were enabled by the publication of subsidy estimates by the International Energy Agency (IEA) and of an analysis by the Organisation for Economic Co-operation and Development (OECD) and IEA (Burniaux et al., 2009) showing that eliminating those subsidies would significantly reduce global emissions of carbon dioxide (CO₂). The estimated level of subsidies, about \$310 billion U.S. per year, though incomplete in terms of both country and the types of subsidies covered in the estimate, was of sufficient magnitude to spur collective action.²

The G-20 communiqué also asks their Energy and Finance Ministers to develop implementation strategies and timeframes and report back to leaders at the next Summit (26–27 June 2010, Toronto, Canada). In March 2010, how individual countries were going to undertake reform remains unclear, as do the roles of the four intergovernmental organizations (IGO-4) named in the G-20 Communiqué: the IEA; the OECD; the Organization of the Petroleum Exporting Countries (OPEC); and the World Bank. But one thing is certain: before the initiative can progress much further, the quality and the amount of information on fossil-fuel subsidies will have to be substantially increased. The leaders of the G-20 made clear that increased

¹ A subsidy is defined here as any government policy that lowers end-user prices or transfers cash to producers, reduces their cost of operations, bears risk or increases their returns. Fossil fuels refer to peat, coal (including lignite, sub-bituminous coal, bituminous coal and anthracite), petroleum and natural gas (International Energy Agency, n.d.). Consumer subsidies for fossil-fuels typically stimulate fuel consumption by industry or the public. Producer subsidies promote domestic exploration, extraction or refining. See Section 3.1 for further discussion.

² The IEA figure of \$310 billion U.S. includes electricity subsidies. As such, it is somewhat broader than fossil-fuels given that electricity subsidies include support for transmission and distribution, and the countries included in the study do not generate 100 per cent of their electricity from fossil fuels.

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information was an important objective when it requested IGO-4 “to provide an analysis of the scope of energy subsidies and suggestions for the implementation of this initiative.”³

Currently, only subsidies observable in a gap between the domestic and international prices of fuels and electricity have been estimated systematically across countries, and then only on an *ad-hoc* basis by country and by fuel or electricity. Yet for any international agreement to reform fossil-fuel subsidies to succeed, all subsidies will have to be held up to scrutiny, including those supporting the production of fossil fuels.

The problem for the G-20 is that the prevailing knowledge about the scale of fossil-fuel subsidies is very limited. Although the IEA used to collect information on production subsidies to coal, it no longer does. Its main data on the production side relate to government expenditures on research and development (R&D). The other international source to which one would logically turn for subsidy-related data, the WTO, has a poor record of eliciting notifications of subsidies, other than agricultural subsidies, from its member economies. In studies by other intergovernmental organizations (IGOs) and non-governmental organizations (NGOs), data have been collected sporadically and not according to any standard subsidy definition, classification system or set of estimation methods.

A recent World Bank report on fossil-fuels noted that “The dearth of statistical information on subsidies is striking in view of their magnitude and economic and social importance” (World Bank, 2009, p. 44). No comprehensive estimate of global fossil-fuel subsidies has been attempted—even for one year, much less on a continuing basis. Most information is country-specific and contained in budget documents or country studies.

At the national level, the availability of information varies widely. Many countries do not know the full extent of subsidies offered in their jurisdiction. Data are often scattered across different ministries and sub-national jurisdictions, and many forms of support have never been quantified. The problem is exacerbated in developing countries that have poor budget transparency and fewer resources for gathering data and estimating subsidies.

What information is most needed to support the reform called for by G-20 leaders? What mechanisms can be developed to ensure this information is produced in an accurate and timely manner? This paper tries to address these questions.

A two-track approach is needed: promotion of national-level strategies; and the development of a new international information-sharing regime. Increasing information at the national level is necessary to inform debate within countries about fossil-fuel subsidies and to assist the development of individual implementation strategies for the G-20 initiative. But disparate national approaches will not yield data that are consistent across countries and, therefore, will have limited use as the foundation for future intergovernmental action on fossil-fuel subsidies or for monitoring progress on the G-20 initiative. The main focus of this paper, therefore, is on how to improve information at the international level.

Given the lack of existing information, a new, systematic approach to the collection and sharing of data is likely to be required. Several IGOs and a few NGOs have competence in the field. Identifying the contribution that these organizations could make to improving fossil-fuel subsidy data is important, but ultimately their roles and responsibilities will be determined by governments, in the case of IGOs, and by available funding, in the case of NGOs.

³ The APEC leaders’ declaration did not include a similar requirement for the development of implementation strategies and timeframes, nor for information on the scale of energy subsidies. Instead, leaders would “review progress on this [commitment] at our meeting in 2010” (APEC Leaders, 2009). The primary focus of this paper, therefore, is to advise the G-20 on the importance of transparency and to suggest ways to develop transparency mechanisms as part of their implementation plans. The majority of the text is also relevant to achieving the APEC commitment, should APEC choose to follow a similar path.

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Arguably of more importance than deciding which organizations will generate data is determining what new subsidy information would best support reform and how this can be achieved given available time and resources. The existing literature on transparency in public policy provides useful guidance about how increased information can support reform. And previous efforts to improve transparency about subsidies—in energy and other sectors—are instructive for the development of a feasible international system for evaluating and reporting fossil-fuel subsidies. Agreement will need to be reached among the relevant governments and institutions on the scope of the data to be collected and methods for estimating and aggregating the various subsidy elements. Such issues are contentious, but for the first time there is a powerful impetus to overcome such obstacles at the international level: the G-20 and APEC mandates.

2. WHY TRANSPARENCY IS A KEY ELEMENT OF ANY REFORM PROCESS

2.1 Definitions

In the context of public policy, transparency refers to the openness and accountability of governments, particularly regarding expenditure and decision-making. More specifically, the IMF defines fiscal transparency as the extent of the openness to the public about the government's past, present and future fiscal activities, and about the structure and functions of government that determine fiscal policies and outcomes (IMF, 2007). Transparent procedures include disclosure of financial transactions, budgets and audit reports. Such documents provide fundamental information about government activities.

In relation to trade policy, the WTO Glossary defines transparency as the "degree to which trade policies and practices, and the processes by which they are established, are open and predictable" (WTO, n.d.). It refers to how a regulation or a policy is developed, enforced, implemented and published (Wolfe and Collins-Williams, forthcoming). Transparency refers, therefore, to the generation of information and to agreed interpretations of the information.

2.2 Transparency as a foundation for reform

Transparency can influence reform in at least four ways (Hale, 2008):

1. by institutionalizing public discourse: the act of disclosure starts a dialogue between the discloser and interested parties;
2. by compelling actors to tell the truth, making it difficult for discourse to be manipulated by one "loud," deceitful actor;
3. by cutting through the flood of information and often contradictory claims to focus attention on facts; and
4. by promoting self-reflection within the organization or government, compelling actors to comply with their own standards and norms.

In considering the extent to which improving transparency could assist reform, the key consideration appears to be one of ensuring its relevance. For transparency to be useful, information users and providers must desire disclosure of the information and see how such transparency can help meet their objectives.

Improved information about fossil-fuel subsidies, in particular, can help governments meet their reform objectives. At the simplest level, information about the subsidy and its effects facilitates an assessment of its costs and benefits and, therefore, of the implications of reform. Making this information publicly available increases awareness of the effects of existing policies and allows public input to decision-making (Wolfe and Helmer, 2007).

Many governments understand the economic, social and environmental problems created by subsidies, but are under political pressure to maintain them. Transparency can expose those winners and losers created by subsidies and therefore help to broaden support for reform (Victor, 2009).⁴ Publicizing information on subsidies can lead to pressure from other industries seeking to level the playing field between competing sectors.

⁴ For a full discussion of political economy issues regarding fossil-fuel subsidies, see "The politics of fossil-fuel subsidies" by Professor David Victor, a sister document to this paper and one of the series in the GSI's *Untold billions: fossil-fuel subsidies, their impacts and the path to reform*, available at <http://www.globalsubsidies.org/en/research/political-economy>.

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Artificially low prices for fossil-fuels, for example, reduce the competitiveness of alternative fuels and their ability to gain market share. Pressure from non-fossil interests within the energy market is likely to be a large factor promoting reform domestically across energy resources, since most forms of renewable energy cannot compete with subsidized fossil-fuels.

The mainstream media are an important link between government information and the public. Public demands for greater transparency are frequently voiced through the media. Investigative journalists discover, interpret and disseminate information in a way that is readily accessible to the public.

The way that information is disseminated can also galvanize action. The reporting of large subsidies tends to attract public attention and lead to questions over whether the money is being well spent. The distribution of subsidies is also important. The public tends to be motivated by stories of inequality: large profitable companies receiving government hand-outs or subsidies for the poor landing in the hands of the rich. People are likely to support reform when subsidies are shown to be regressive or perverse rather than progressive.

When published on the Internet and in an international language such as English, media reports disseminate information—albeit unofficial—regarding subsidy levels or changes in government policy that might otherwise be only available locally. International analysts frequently rely on such sources for up-to-date information on subsidies (e.g., Kojima, 2009).

Media interest in a government subsidy reporting mechanism can also ensure that governments do not rescind their reporting responsibilities (for example, by removing legal requirements to report) when it becomes politically appealing to do so.

Transparency exposes the close relationship between provider and recipient, thus reducing opportunities for political favouritism, corruption or misappropriation (Koplow, 2004). While some governments may not find this a desirable effect of transparency, those wishing to reduce corruption or improve their image as a destination for foreign investment or donor funding will welcome the opportunity to have an incentive to expose corrupt practices. When a government is unwilling to share information on this relationship, the parliament, civil society, media and public can demand greater openness. In Nigeria, inconsistencies in government data regarding petroleum subsidies led to a federal audit of the Nigerian National Petroleum Corporation's expenditure on subsidies. The external auditing and verification of government information on subsidies is another mechanism to ensure the validity of the data being made available.

At the international level, transparency can improve the quality and outcomes of international discussions. An accurate and shared understanding of the status quo provides the foundation for negotiations (Lombardi and Woods, 2008). Typically, the wealthiest countries have access to greater information about their own and others' policies (by having the resources to research the policies of their competitors), meaning that they are better placed to promote their own aims and objectives within such negotiations (Steenblik and Simón, 2007). Transparency reduces asymmetries in knowledge among negotiating partners, thereby improving outcomes as parties are less likely to be defensive if they are not “negotiating in the dark” (Thomas, 2007).

Openness and transparency allow for sharing of best-practice policies, such as those that promote full disclosure of all subsidies and the harmonization of subsidy-estimation methods. It allows countries to review the policies of their peers. Countries appreciate the opportunity to compare their performance and learn from similar countries, particularly those in their region or fellow members of multilateral organizations.

Peer review can result in pressure to reform unsound policies, when neighbouring countries or the global community are negatively affected, or because countries can compare their performance with other countries. National comparisons could jolt countries out of their complacency regarding fossil-fuel subsidies and encourage reporting to a comparable standard of those countries with which they align themselves. However,

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there is a large gap between providing information and acting on that information. Countries typically try to justify their policies by citing different circumstances.

Finally, transparency is essential for monitoring and shaping compliance with obligations, such as commitments made under international agreements.

2.3 Transparency and subsidy reform in non-energy sectors

In sectors other than energy, substantial information about the size and nature of subsidies has been a prerequisite for international negotiations on reform to gain traction and see results. In the case of agriculture, unsuccessful attempts were made to discipline subsidies under successive rounds of the General Agreement on Tariffs and Trade (GATT) up until the mid-1980s. At that point, the OECD was given a mandate by its ministers to develop estimates of the sources of assistance to agriculture on a commodity-by-commodity basis in OECD countries. Methods were also developed for assessing the impact of a progressive and balanced reduction in assistance upon domestic and international markets (Steenblik, 1998). The OECD Secretariat undertook a series of country studies, which yielded comprehensive subsidy estimates for most of its members. These estimates facilitated the development of reduction commitments in the Uruguay Round of negotiations at the WTO.

By contrast, negotiations about disciplines on subsidies to marine capture fishing industries failed to gain traction in the Uruguay Round. However, by the time of the Doha meeting in November 2001, the OECD had produced a time series on fishing subsidies provided by its own member countries, and APEC had performed a similar exercise for its members. Concern regarding the depletion of fish stocks would no doubt have generated the necessary momentum for international action on fisheries at this time. However, the impetus for action on subsidies in particular—and their inclusion in the Doha Development Agenda—appears to have been better information on the extent of those subsidies.

One reason for the importance of subsidy data is that it allows an assessment of the economic distortions and inefficiencies created by these policies, as well as the links to environmental impacts, making it more likely that action will be taken in an economic forum. Experience in the WTO fisheries negotiation demonstrates, however, that improved availability of information will not necessarily lead to a successful negotiated outcome on subsidy disciplines. Like other aspects of the Doha Development Agenda, consensus on new fish subsidy rules has been elusive.

3. FOSSIL-FUEL SUBSIDIES

3.1 Definitions

This paper draws upon definitions for subsidies used by the IEA, the OECD and the WTO.

Article 1 of the WTO Agreement on Subsidies and Countervailing Measures (ASCM) defines a subsidy as a financial contribution by a government or any public body within the territory of a member that confers a benefit to a recipient (WTO, 1994). A more complete definition would also include market price support in the sense defined by the OECD.

Market price support (MPS) is an indicator of the annual monetary value of gross transfers from consumers and taxpayers to producers arising from policy measures creating a gap between domestic producer prices and reference prices of a specific commodity measured at the mine, factory or farm-gate level. MPS, combined with ASCM types of subsidies, is properly called “support.” The government need not be the conduit of payments: mandates that force consumers to pay more for fossil energy would also count.

Public policies that transfer risk from private entities to the government are another form of support. Failing to require adequate insurance for public risks—such as oil spills—reduces insurance costs for producers and therefore constitutes a subsidy. Another common form of risk transfer is a government guarantee on a credit borrowed from a private bank by a fossil-fuel producer. If the borrower does not default on the loan, the cost to the government may be nil; however, if the borrower does default, the government must cover the unpaid balance on the loan. Such government guarantees help recipients secure loans at lower rates of interest than they otherwise would.

The IEA provides a simple definition that encapsulates most of these various forms of support. In 1999 the IEA defined an energy subsidy as “any government action that concerns primarily the energy sector that lowers the cost of energy production, raises the price received by producers or lowers the price paid by consumers.” It is not clear whether this definition also covers support such as lump-sum transfers to energy producers, and forms of support to consumers (e.g., coupons) that do not directly affect the price paid by consumers for energy.

The WTO definition can be used to group subsidies into categories depending on how they are administered. Box 1 provides a non-exhaustive list of common types of subsidies in the energy sector.

In this paper, transparency about fossil-fuel subsidies refers to information about total government program expenditure or forgone revenue and market transfers. It does not include externalities such as the cost of environmental impacts (e.g., damage caused by atmospheric pollution as a result of increased emissions). As the providers of subsidies, it is national and sub-national governments who are called upon to be transparent in providing policy-relevant data on their subsidies.

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BOX 1: ILLUSTRATIVE LIST OF SUBSIDY TYPES

Direct transfer or potential direct transfer of funds:

- Direct payments linked to production volumes or sales
- Deficiency payments (the difference between target price and actual price, e.g., transfers from the government to compensate for the sale of fuel below cost)
- Subsidies to intermediate inputs
- Wage subsidies to assist individuals to prepare for and maintain employment (e.g., training)
- Grants for the acquisition of capital or land
- Government loans*: provided at below-market rates, low collateral requirements, lengthy repayment periods or deferred repayments
- Government spending on research and development
- Guarantees for security or credit*
- Government-provided insurance or indemnification*
- Assumption of occupational health and accident liabilities
- Assumption of liabilities for closure and post-closure risks (e.g., site cleanup)
- Caps on commercial liability
- Government use of tax-free bonds to fund private investments
- Government expenditure on creating and maintaining stockpiles

Government revenue forgone:

- Tax expenditures: reduced tax rates, tax credits, exemptions or deferrals (e.g., on income tax, VAT, excise tax, property tax)
- Accelerated depreciation allowances
- Reduced royalty payments
- Reduced resource rents

Government-provided or government-purchased goods or services:

- Under-pricing of government-provided goods or services
- Government procurement at above-market rates
- Government-provided infrastructure specific to the sector (e.g., private roads, storage facilities)
- Access to government-owned natural resources or land
- Government transfer of intellectual property rights

Income or price support, or relief from normal costs or procedures:

- Prices set at below market rates for consumers (including where there is no financial contribution by government)
- Above market prices for producers via government regulations or import barriers (e.g., tariffs)
- Mandated feed-in tariffs
- Consumption mandates
- Export taxes or restrictions
- Relief from costs that enterprises normally bear in the normal course of business (e.g., labour, environmental, health and safety)
- Exemption from government procedures normally followed by enterprises

Note: *Government-provided loans, loan guarantees and investment insurance are referred to collectively as “export credits” when granted for exports or foreign investment.

Source: The Global Subsidies Initiative (2010).

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3.2 International efforts to improve transparency

There have been numerous calls to reduce or remove fossil-fuel subsidies at the international level, but up until the G-20 (and, later, the APEC) commitments announced in 2009, none have resulted in significant reforms so far. Whether the G-20 and APEC commitments will lead to significant reforms is as yet unclear.

Unlike for agricultural and fisheries subsidies, there have been no attempts to reform fossil-fuel subsidies through the multilateral trade regime, and attempts at reform through the climate regime have been half-hearted. Article 2 of the Kyoto Protocol describes the types of measures Parties will take to achieve the Convention's objectives, and this includes lowering fossil-fuel subsidies (Article 2(1)(a): "Progressive reduction or phasing out of market imperfections, fiscal incentives, tax and duty exemptions and subsidies in all greenhouse gas emitting sectors that run counter to the objective of the Convention.")

Aspirational language has also been introduced in other forums. In 1993, the IEA adopted a set of "Shared Goals," which included a commitment to undistorted energy prices: "Energy prices should not be held artificially below the costs of supply to promote social or industrial goals" (IEA, n.d.). In 1996, APEC Energy Ministers endorsed Non-Binding Energy Policy Principles that included a recommendation for members to: "Consider reducing energy subsidies progressively and promote implementation of pricing practices which reflect the economic cost of supplying and using energy across the full energy cycle, having regard to environmental costs" (APEC Energy Ministers, 1996). A 2008 review of the project noted that progress had stalled, citing difficulties with data collection that had limited the depth of the analysis.

The commitment by G-20 leaders at their meeting in September 2009 to "rationalize and phase out inefficient fossil-fuel subsidies that encourage wasteful consumption" is also (so far) non-binding. However, it did include concrete steps aimed at bringing about results. In particular, the leaders instructed their Energy and Finance Ministers to develop implementation strategies and timeframes and report back at the June 2010 summit. They also requested relevant institutions, such as the IEA, OPEC, OECD and the World Bank (the "IGO-4"), "to provide *an analysis of the scope of energy subsidies* and suggestions for the implementation of this initiative" (emphasis added) and report back at the next summit (G-20 Leaders, 2009). This instruction was subsequently reinforced by G-20 Finance Ministers meeting at St. Andrews in November 2009.

In November 2009, APEC leaders echoed the commitment (also non-binding) to phase out fossil-fuel subsidies, which added 11 new countries to the group committing to the phase-out (Annex I provides a list of the membership of APEC, the G-20, the IEA and the OECD). However, APEC leaders did not call for further information on the scope of energy subsidies.

There is no indication at this stage that either the G-20 or APEC are open to developing binding disciplines. However, this could still transpire, as action on agricultural subsidies commenced in the WTO with non-binding principles for the reform of agricultural policies within the OECD countries. They became binding disciplines under the WTO Agreement on Agriculture (Steenblik, 1998). The important development signalled by the G-20 is the initiation of work to assess the size of energy subsidies. As we have seen in the context of negotiations to reduce subsidies to agriculture and fisheries, such information can instigate meaningful commitments from countries to undertake coordinated reform at the plurilateral or even the multilateral level.

The assessment of the scale of energy subsidies requested by G-20 leaders will determine, to some extent, the scope of the G-20-initiated reform. The subsidies included in the 2010 report being prepared by IGO-4 will help to establish the foundation for the development of implementation strategies and for monitoring progress. However, preparing a comprehensive assessment by the end of 2010 will be difficult.

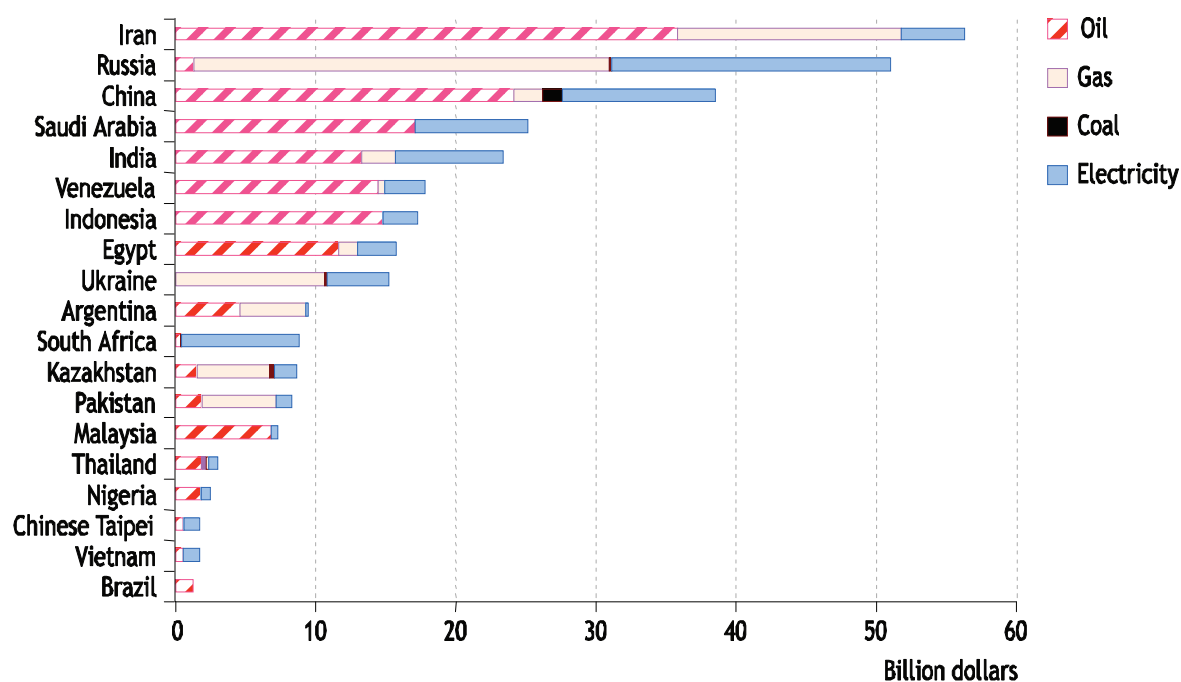
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3.2.1 Existing information on fossil-fuel subsidies

The 2009 G-20 Leaders' Communiqué cites work by the IEA that found that energy subsidies in 2007 exceeded \$310 billion U.S. in the 20 non-OECD countries that provide the largest consumer subsidies (Figure 1).⁵ Based on these data, the OECD estimated that eliminating these subsidies by 2020 would reduce global greenhouse gas emissions in 2050 by 10 per cent (Burniaux et al., 2009).⁶

The \$310 billion U.S. figure is based on an analysis of the gap between domestic prices and benchmark international prices for fossil fuels (coal, natural gas and petroleum), and for electricity. Estimating the benchmark requires that a set of assumptions be made, hence the resulting estimate of subsidies is incomplete. The estimate captures only subsidies that reduce the price of fuels to consumers or to industry and only in 20 countries (eight of which are G-20 economies; see Annex I).⁷ The “price gap” approach does not pick up government programs that support industries or individuals, but do not lower the final price to the consumer, notably subsidies to producers of fossil fuels (Koplow, 2009).⁸ Such subsidies can still affect investor and market decisions, notably the volume and type of fuel produced.

FIGURE 1: ESTIMATES OF CONSUMER SUBSIDIES FOR FOSSIL FUELS AND ELECTRICITY IN 19 NON-OECD COUNTRIES, IN 2007 (U.S. DOLLARS)



Source: International Energy Agency (2008a).

⁵ The IEA data also include subsidies for electricity, not all of which are attributable to fossil fuels.

⁶ See Ellis (2009) for a review of the impacts of fossil-fuel subsidies.

⁷ The chart shows only 19 countries, simply because the numbers for the Philippines were too small to show up on the chart but the \$310 billion number does include that country (whose estimated subsidy in 2007 was \$475 million U.S.).

⁸ For a full discussion on the strengths and limitations of the price-gap approach, see “Measuring energy subsidies using the price-gap approach: what does it leave out?” by Doug Koplow, prepared for the IISD’s “Bali to Copenhagen” Trade and Climate Change Project.

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What would a more complete picture of fossil-fuel subsidies look like, based on available data? The IEA estimated that extending its price-gap estimates of consumer subsidies to all developing countries and countries in transition would yield a total figure of approximately \$400 billion U.S. for price-gap subsidies in 2007 (IEA, 2008a). More accurate and comprehensive estimates are expected to become available in 2010, as the IEA is dedicating a chapter of its *World Energy Outlook 2010* to fossil-fuel subsidies, as well as updating and expanding its database on consumer subsidies to include recent data, more countries and more sectors (beyond oil, gas, coal and electricity) (Trevor Morgan, personal communication). Preliminary results will be reported in advance of the G-20 meeting of Finance Ministers in Washington, DC, in April 2010.

Information on subsidies to producers will be more difficult to assemble. The Global Subsidies Initiative (2009) has estimated that producer subsidies could total over \$100 billion U.S. per year worldwide. This rough estimate was based on disparate data from different sources over many years. The only regularly updated IEA statistics, on energy R&D, show OECD government spending of more than \$10 billion U.S. in 2008 (IEA, 2008b).

Existing country or regional studies by intergovernmental and non-governmental organizations yield some information. Energy subsidies in the United States (for consumers as well as producers) have been estimated to be around \$75 billion U.S. per year, the majority of which are to fossil fuels (Koplow, 2007). EU state aid to the coal sector alone averaged 3.3 billion EUR (\$5 billion U.S.) per year from 2006 to 2008 (EC Directorate-General for Energy and Transport, n.d.). In Australia, subsidies to fossil fuels were estimated to total in the order of \$9 billion AUS (\$6.8 billion U.S.) in 2006 (Reidy, 2007).⁹ Caution should be used in comparing these numbers, however, because of major differences in subsidy coverage.

The WTO hosts a subsidy notification system that could, in theory, be an important source of information on energy subsidies. Under Article 25.2 of the Agreement on Subsidies and Countervailing Measures (ASCM), countries are obliged to submit biannual notifications describing those subsidies that potentially could have an impact on trade. In practice, many fossil-fuel subsidies, because they stimulate domestic consumption, are not captured by this criterion.¹⁰ In addition, compliance with the WTO's obligations to notify subsidies is generally low, both in terms of the number of members submitting notifications and the completeness and timeliness of those notifications. In most years, information is only available for less than half of the WTO membership (WTO, 2006).

Several recent International Monetary Fund (IMF) studies have documented fuel subsidies and pricing in some developing countries (see, for example, Baig et al., 2007; Coady et al., 2006; Mati, 2008; Coady et al., 2010). For example, Mati (2008) found that less than half of 42 developing countries surveyed fully passed on the record high oil prices in 2007 of over \$100 U.S. per barrel. The remainder increased both explicit fuel subsidies (to 1.5 per cent of GDP) and implicit subsidies (to 4 per cent of GDP).¹¹ The World Bank has also undertaken in-depth research on energy pricing and subsidies in developing countries (see Bacon and Kojima, 2006; Kojima, 2009). Kojima (2009) found that, during the period of high world oil prices in 2007 and 2008, nearly all 49 developing countries that were examined reduced product taxes or subsidized product prices, or did both for at least one fuel.

⁹ U.S. dollar values calculated from average exchange rates for the given year, based on the U.S. Federal Reserve average exchange rate for the Euro and Australian dollar, and for Bank Indonesia for the Indonesian rupiah (<http://www.federalreserve.gov/Releases/g5a/Current/> and <http://www.bi.go.id/web/en/Moneter/Kurs+Bank+Indonesia/Kurs+Transaksi/>)

¹⁰ In principle, most if not all subsidies distort consumption or production and thus, ultimately, trade. But the WTO's concern is only with distortions that *decrease*, not *increase*, export opportunities to the subsidizing country.

¹¹ Implicit subsidies reflected domestic sales of fuels at below export prices, with no explicit compensation in the budget.

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The GTZ (German Technical Cooperation), regularly publishes retail fuel prices from about 170 countries (GTZ, 2009).¹² When compared with an international benchmark fuel price, the retail prices give an indication of the extent of net consumer fuel subsidies or taxes provided in those countries.

The level of information made available domestically by national and sub-national governments tends to be proportional to the quality and openness of their budget documents, which varies widely around the world. The Open Budget Index (OBI) provides an indication of the variability in budget transparency. The *OBI 2008* found that 68 of the 85 countries surveyed—80 per cent—did not provide the public with the information needed to understand and monitor the use of public funds (International Budget Partnership, 2008). Of the G-20 countries, France, South Africa, the United States and the United Kingdom ranked highest with index values of 80 or more. But half of the other G-20 countries received relatively low index values (66 or less).¹³

Germany and Switzerland have both adopted laws that require regular subsidy reporting (the *Subventionsbericht* and *Subventionsgesetz* reports, respectively). Other developed country governments periodically undertake sector-specific studies on industry support, including energy.

Further details on existing sources of information on fossil-fuel subsidies at the international, regional and national level are provided in Annex II.

3.3 Reasons for the gap in information

One major reason why governments are not transparent about their fossil-fuel subsidies, either within their country or to an international audience, is that they often do not know the full extent of the subsidies being offered in their jurisdiction. The amount of work needed to generate the data to calculate subsidies can be enormous, which can be a large burden on developing countries. Support is often provided by several different federal ministries and sub-national jurisdictions, without any central coordination or oversight. With the exception of on-budget subsidies (those that appear in the national accounts), many forms of support have never been calculated, such as the value of certain tax exemptions or the opportunity cost of providing access rights for extractive resources at low prices. Cross-subsidies provided by state-owned energy companies, for example, are rarely documented and make the calculation of net subsidies difficult. Table 1 lists the main subsidy types, ranked from high to low in terms of budget visibility and ease of quantification.

The situation is exacerbated by the fact that most governments do not allocate sufficient resources, if any, to collect comprehensive and timely data on their subsidies. Even countries with relatively good transparency practices do not provide information on all fossil-fuel subsidies. Koplou and Dernbach (2001) noted that, in the United States:

Although the federal budget provides an important starting point for assembling the fragmented spending and program data into a picture of the magnitude of support for particular activities, it leaves much out. Some subsidies aren't properly recognized in the budget; others require information that is contained only in the more detailed appropriation bills or internal agency documents or annual reports. Others, such as tax expenditures, are tracked in the analytical perspectives portion of the budget but are only cursorily

¹² GTZ (*Deutsche Gesellschaft für Technische Zusammenarbeit*), part of the German Federal Ministry for Economic Cooperation and Development, is an international cooperation enterprise for sustainable development with worldwide operations.

¹³ The Open Budget Index assigns to each country a score based on the average of the responses to 91 questions related to the public availability of information on the Open Budget Questionnaire. This score reflects the quantity of publicly available budget information in the eight key budget documents, in particular, the public availability and comprehensiveness of the Executive's Budget Proposal. For more information see on the methodology see <http://openbudgetindex.org/files/MethodologyEN.pdf>

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evaluated to assess the beneficiary sectors, and sometimes have a wide range of estimates for their monetary value. The absence of a single location where basic information about subsidies is collected makes it hard to say for certain how numerous they are, how much money they involve, which parties they help or harm, and even whether they are internally coherent.

The resource-intensive nature of calculating subsidies is problematic for developed countries but especially so for developing countries that have low budget transparency or accounting standards, where information is not be available electronically or state-owned energy companies can make energy pricing decisions opaque.

In addition, governments have little incentive to report subsidies beyond the level of public accountability that is acceptable domestically. Indeed, while some governments might welcome transparency as a way to reduce the political influence of subsidy recipients, those that receive political patronage as a result of subsidy policies have a disincentive to improve transparency (Victor, 2009).

In India, for example, approximately one-third of subsidized kerosene—intended for the poor—is diverted to the black market (Our Economy Bureau, 2005). The diversion of kerosene is a lucrative business for corrupt fuel distributors who in turn bribe officials to gain fuel distribution and blending dealerships and to maintain subsidy policies. Attempts to reform the flawed policy have failed because of the strong political pressure to maintain the subsidies exerted by the poor, who still have some access to the cheaper kerosene, and by the participants in the black market, who profit from reselling the subsidized fuel at a higher price (Shenoy, 2010).

TABLE 1: ENERGY SUBSIDY TYPES RANKED FROM HIGH TO LOW IN TERMS OF BUDGET VISIBILITY AND EASE OF QUANTIFICATION

HIGH	Government budgetary expenditure (grants, R&D support)
	Below-market provision of goods or services, including risk-bearing, intermediation benefits <ul style="list-style-type: none"> – Loans, loan guarantees – Indemnification of risks – Provision of market intelligence
	Transfers to government-owned enterprises
	Tax breaks for particular activities
	Subsidies provided through purchasing preferences in government procurement
	No accrual for predictable long-term consequences of production by current producers (e.g., decommissioning costs and clean-up costs)
LOW	Granting (or revoking) property right(s) at below market value

Source: Adapted from Koplou (2008).

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At the international level, the lack of information is partly the result of the absence of an international system or protocol to comprehensively assess and monitor fossil-fuel subsidies. It is also partly the result of WTO members failing to live up to existing commitments to notify production-related subsidies.

Even a well-organized international data-gathering effort cannot remedy the non-availability of data, which inevitably leaves gaps in understanding the full picture. In 2005, the European Commission reviewed the IEA's R&D statistics database and identified a number of problems encountered by countries in collecting data on energy-related R&D (EC, 2005). Among these were: funding is scattered among different funding entities; the rate of responses to questionnaires is low; reporting agencies are often uncertain about how to classify and aggregate estimates; reporting agencies often have inadequate financial or human resources that they can devote to data collection; and national data-collection systems may be incompatible with the format requested by the IEA.

3.4 Problems created by limited availability of data

There are clearly major differences in the amount and quality of information among countries and types of subsidies. The problem that will confront those trying to scope the scale and pattern of energy subsidies for the G-20 is therefore partly a lack of data and partly that existing data are patchy in their coverage and there is no consistency in the collection of information.

Does this state of affairs matter? Yes, because, as the saying goes, what you don't know can hurt you, and clearly there is much that we do not know about what is happening with fossil-fuel subsidies. Without an accurate picture of the level and nature of subsidization, G-20 governments will find it difficult to assess the impacts of these policies and to develop effective implementation strategies to achieve their stated objectives: improving energy efficiency and security, boosting investment in clean energy sources and addressing climate change.

Cross-country comparisons are also difficult when they are based on patchy data. The current picture is heavily biased towards those mainly developing countries for which consumer subsidies have been estimated by the IEA's and the IMF's price-gap analyses. This may partly be due to the relative ease of estimating these kinds of subsidies. But large developing countries are not the only subsidizers and should not be the only ones obliged to develop strategies for reform. A comprehensive approach would encompass consumer as well as producer subsidies.

4. IMPROVING TRANSPARENCY

For the first time, the G-20 commitments provide a meaningful impetus for countries to improve the availability of information about fossil-fuel subsidies at the international level. The first challenge is what subsidies should be included in a new regime? What policies should be made transparent and how? Answering these questions requires a detailed understanding of how greater information on fossil-fuel subsidies would help achieve the G-20 mandates.

4.1 The forms of transparency

The nature of transparency has evolved rapidly over the recent past; three generations can be defined (Fung et al., 2007):

- *right to know*: access is provided to most government processes and files;
- *targeted transparency*: information is structured to further particular policy objectives; and
- *collaborative transparency*: combines 1st and 2nd generation with a new, user-centred orientation.

First-generation transparency refers to information that is made available based on the principle that taxpayers have a right to know how their money is being spent. It is a policy objective in its own right. Second-generation policy tools try to go further by using increased information to achieve a specific policy objective (Fung et al., 2007). The principle is that decision-makers will be able to make better choices based on new information and the disclosers of information will improve practices or products in response to the changed behaviours of users (Wolfe and Collins-Williams, forthcoming).

A key role of many international organizations is to use transparency to improve policy-making by gathering, interpreting and disseminating information (Mitchell, 1998).¹⁴ This is because high-quality information is crucial to the process of cooperation and collective decision-making.

Transparency can occur through several mechanisms. Information can be self-reported by sub-national governments or national agencies to the federal government or by a national government to an international organization. This might be done either on an occasional or a regular basis. Information can also be reported by others—such as other parties to an international agreement or third-parties such as NGOs.

4.2 The criteria for transparency

Developing an effective system for measuring and reporting subsidies requires an assessment of how it can best assist policy reform. Wolfe and Collins-Williams (forthcoming), drawing on work by Bown and Hoekman (2007) and Weiss (2002), identified five criteria under which transparency can be a useful policy tool in a given context:

1. a specific policy purpose is addressed by the information;
2. the scope of the information is clearly defined;
3. targets can be specified regarding who should disclose what information;

¹⁴ Ghosh (2008) defines information systems in international regimes as “the sets of institutions, actors, and procedures involved in collecting, analysing and disseminating information about members’ actions and the regime’s effectiveness.”

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4. the providers of information see how doing so helps them to meet their own objectives (country “buy-in”); and
5. information can be delivered in a form that will be useful to users.

The analysis below discusses how each of these conditions are met, or can be met, to ensure that transparency would be a useful policy tool to help the G-20 (and APEC) to meet its objective to phase out fossil-fuel subsidies.

4.2.1 Specific policy purpose

The purpose addressed by comprehensive estimates of fossil-fuel subsidies would be to accurately quantify the impacts of those subsidies on the stated policy areas and to facilitate monitoring of national subsidy-reform efforts.

G-20 leaders made clear that their policy goals in reforming fossil-fuel subsidies are to increase energy efficiency and energy security, facilitate investment in renewable energy technologies and address climate change. A new regime or agreement on reducing subsidies would need to identify what kinds of fossil-fuel subsidies have the most impact on these policy areas. For example, subsidies that reduce the price of fuels to end-users would be expected to boost consumption, thus increasing CO₂ emissions (depending on the type of fossil-fuel) and reducing energy efficiency. Subsidies that facilitate the continued use of the most carbon-intensive fuels would be particularly relevant for climate change and reducing the competitiveness of renewable energy. Subsidies for R&D, such as those supporting the development of “clean-coal” technologies, appear to be a lower priority for analysis as their impact on these policy objectives is mixed.

While the G-20 has specified certain policy priorities, the resulting information on fossil-fuel subsidies would likely also inform discussions on energy trade, fiscal, competition and environmental policies (especially air pollution).

4.2.2 Scope

The quantification of global fossil-fuel subsidies is complicated due to the many different types of subsidies provided, the fact that governments often do not collect all the necessary data, and because of uncertainty among some analysts as to what information should be included in a subsidy inventory. Therefore, a key consideration in developing fossil-fuel subsidies information and monitoring systems is one of scope.

The level of resolution, disaggregation and accuracy of the data needs to fit the purpose. Reliable information is essential for good decision-making by all levels of governments. But it is not necessarily practical to spend years defining and calculating every type of subsidy. An incomplete, but rigorous, set of estimates might be sufficient initially to assess the magnitude of the subsidies and their broad implications on the budget, economy, society and environment.

For a global collation and comparison, a limited scope of assessment would be required. The type of comprehensive research done by Koplow and Martin (1998) in assessing all U.S. energy subsidies would take an enormous effort to replicate for all fossil fuels at a global scale, or even in most developing countries. Comprehensive assessments require detailed subsidy data and information on local government structures. Such a high level of resolution is arguably only feasible in the context of in-depth country reviews and even then is time consuming and resource intensive. The ability to carry out such case studies in the short term is limited by a shortage of experts who could undertake such work, and also the availability of data, especially in countries without a tradition of transparency. However, after the first inventory is produced for a country, subsequent updates would require less work.

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An example of a feasible scope for an initial international assessment might be to include only cash transfers by governments, given they are fairly visible on budget payments. Most tax subsidies are complex because of the need to establish net-of-tax prices. For example, developing countries such as China, India and Brazil have varying levels of sub-national taxes, which are difficult to ascertain. Establishing a *de minimus* threshold (a minimum value below which a subsidy would not have to be notified) would also reduce the reporting burden (Steenblik and Simon, 2007).

4.2.3 Subsidy-reporting targets

Given the variation in the availability of subsidy data in different countries and the complexity of gathering these data, one possible option is to begin with different subsidy-reporting targets, depending on the country's available data and ability to report. The targets could be expressed according to a hierarchy of subsidy information, from simplest to more complex. Analysts could generate cross-country comparisons for the more simple forms of subsidies, as well as for the sub-set of countries that provide additional levels of information.

Countries would be expected to increase the level of reporting over time to ensure that low provision of data does not become habitual or a way of obscuring subsidy policies.

In addition to data on specific subsidy types, ideally countries would also organize the information according to a consistent and comprehensive accounting framework, such as the OECD's Producer Support Estimate (PSE) and Consumer Support Estimate (CSE) framework, which captures all forms of officially sanctioned or provided support. However, many countries may require expert assistance to generate full subsidy accounts, at least initially.

4.2.4 Country buy-in

Perhaps most important, the suppliers of information (national governments) must feel that they can benefit from the improved information, thus "buy in" to the process. Many of the benefits of transparency occur at the domestic level. As discussed in detail in Section 2.2, transparency can help governments by:

- facilitating an accurate assessment of the impacts, costs and benefits of the subsidy;
- building and broadening support for reform; and
- reducing the possibility of corruption and misappropriation.

However, the incentives for providing information to an international body are less strong. Also discussed in Section 2.2 were the benefits of transparency at the international level: shared information can provide a foundation for international cooperation and peer review, and facilitate the sharing of best practice.

Experience with the WTO's ASCM demonstrates that even international obligations for reporting of subsidies will not be effective if governments do not see how transparency will meet their interests. Part of the problem with subsidy notification to the WTO is the disincentive to notify, as countries feel that disclosure could invite a trade dispute. Instead, governments must be convinced that the provision of information helps them, or that there are incentives to disclose data or meaningful penalties for under-reporting.

The motivations, incentives and penalties for reporting fossil-fuel subsidies depend on the purpose of an international agreement and how it is designed. For example, countries are motivated to adopt IMF standards for macro-economic statistics because doing so improves their rating as an investment destination (Lomardi and Woods, 2008). In the context of the WTO Agreement on Agriculture, countries committed to a percentage reduction over time in their Aggregate Measure of Support (AMS) for trade-distorting subsidies. Thus they had an incentive to notify all subsidies up-front to ensure they were included in their AMS.

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One possible lever to gain compliance for reporting fossil-fuel subsidies in the context of climate change would be to link reporting to any new funding for climate-change-mitigation efforts. The UNFCCC Copenhagen Accord states that mitigation actions taken by Non-Annex I Parties (mostly developing countries) seeking international support will be subject to international measurement, reporting and verification. Developed countries also committed to the goal of mobilizing \$100 billion U.S. to help developing countries cut carbon emissions (mitigation). A case could be made that funding should be withheld from countries that provide polluting fossil-fuel subsidies or do not provide reliable data on those subsidies. Such a lever would only work for developing countries that seek funding for mitigation efforts, however. A similar incentive mechanism would need to be in place for developed countries.

4.2.5 Delivering information in a form useful to users

Transparency requires not only that data are made available but that they are accurate, comprehensive and timely, and are made available in a form that allows users to interpret the information. In other words, the information should not be highly technical or encoded. Certain features of transparency mechanisms increase the accessibility of information to users. These include making information available on a regular basis and in a predictable form (such as annual budget documents); providing data electronically; and publishing information on the Internet. Other features will increase the quality and quantity of information and its usefulness to users. For example, a standardized data-collection method facilitates systematic storage of information. Such information is easier to retrieve, employ for cross-country analyses and develop meaningful aggregates.

Under an ideal but ambitious scenario, information would be provided in interactive and integrated databases that allow all types of instruments supporting any particular activity to be queried and tallied at once. Data also need to be made available in a format that allows entire data sets to be downloaded and queried by external non-governmental actors. Data should be easily sorted by a criterion, uniformly organized and accurately labelled. When data are made publicly available they should also be easy for a user to understand.

5. IMPLEMENTING A NEW TRANSPARENCY REGIME

Improving transparency about fossil-fuel subsidies requires a two track approach: better reporting within countries and a new international regime. Clearly all countries could do better in estimating and disclosing subsidies in their national budget accounts. And there is a strong incentive to do so, as many of the benefits of transparency arise at the national level. Thus governments have an incentive to improve transparency unilaterally, regardless of international action. Several options for improving national-level reporting are provided in Section 5.1 below.

Disparate national-level approaches will, however, not overcome the current difficulties facing the G-20 countries and the IGO-4 as they prepare their implementation strategies and analysis on the scope of fossil-fuel subsidies. Nor will uncoordinated approaches provide a foundation for future international discussions or for monitoring the G-20's (and APEC's) progress towards implementing their resolutions to phase out fossil-fuel subsidies. An international regime is needed to generate data that can be compiled across multiple countries, allowing a better understanding of the extent of subsidies, their impacts and progress towards de-subsidization.

5.1 Domestic actions

Improved reporting on subsidies in the annual budget documents is needed in most countries. It would benefit the governments concerned by increasing understanding of its financial flows (for example, by calculating all tax expenditures or depreciation allowances). Revenues could also be increased by assessing previously unquantified support, such as possible undervaluation of resource rents and royalties. Transparent practices for allocating extraction rights, such as auctions, could lead to better returns. A more comprehensive picture of total subsidies would be achieved by federal governments requiring sub-national jurisdictions to calculate and report fossil-fuel subsidies on a regular basis, as is done in Canada, Germany and Switzerland for all subsidies.

Governments can also commission detailed “one-off” examinations of subsidy levels in the fossil-fuels sector. In Australia, studies on industry assistance in the energy sector have been performed by the federal Productivity Commission and, in the United States, the U.S. Congress has periodically requested the Energy Information Administration to prepare reports on domestic fossil-fuel subsidies (see Annex II for further information). Several recent high-level committee reports have been commissioned by the Indian government to look into fossil-fuel pricing and subsidy issues (Shenoy, 2010).

5.2 An international transparency regime

There are several factors to consider when developing an international system for collecting and disseminating information on fossil-fuel subsidies. Choosing the right institutional home for subsidy data collection and analysis is obviously important. A standard set of estimation methods and a classification scheme would allow for consistent and cross-country approaches to data collection and aggregation whether subsidies are self-reported, assessed by a secretariat or reported by third parties. A standard template for reporting subsidies would assist self-reporting, along with capacity building among ministries tasked with its completion and submission.

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Where a multilateral or plurilateral commitment to subsidy reform exists (as was the case for OECD agricultural support in the 1980s and now among APEC and G-20 member economies for energy subsidies), information needs to be collected from a sufficiently large group of countries at the same time so that no individual country feels singled out or exposed to criticism. The approach to data collection should allow for, and encourage, regular monitoring. Countries also need to assume that there are outsiders that understand their subsidies and can quantify them independently, if necessary.

The sections below outline the prerequisites for developing an international system for monitoring fossil-fuel subsidies.

5.2.1 Maximizing the chance of success by selecting the right home

While several intergovernmental and non-governmental organizations have competence in the area of fossil-fuel subsidies (see section 2.3 and Annex II), ultimately one organization, or a small set of them sharing the work, will need to take the lead in coordinating a new transparency regime and serve as the main repository(ies) for information. As in the case national approaches, disparate action at the international level would reduce the quality of the information.

Which organization(s) will take this responsibility is a question for the G-20. However, the decision will have a bearing on the type of transparency regime that will ultimately evolve and therefore it is relevant to discuss here.

Ideally, the institution taking responsibility for the new transparency regime would not only have expertise in fossil-fuel subsidies but would also be widely accepted and trusted by the G-20 member governments and other countries willing to implement a phase-out of subsidies (APEC economies and others). Wide acceptance and country “buy-in” might be based on comprehensive membership (such as a United Nations organization) or perceptions that the organization does not pursue an issue-specific agenda (such as climate change). The organization would ideally also have access to ample resources and the option of a strong secretariat role to support data collection, collation and dissemination. It would have the competence and authority to ensure data are collected comprehensively and in a timely fashion.

Using these criteria, the sections below and Table 3 summarize the strengths and weaknesses of relevant IGOs and NGOs as potential homes to fossil-fuel subsidy transparency. In brief, no existing institution is perfect; all have strengths and weaknesses that could affect the quality and coverage of notifications.

5.2.1.1 Intergovernmental organizations

The WTO ASCM notification system leaves much to be desired and would not cover all forms of fossil-fuel subsidies. Most of the WTO’s current activities related to energy are concentrated on clarifying issues relating to transit trade and to energy-related services. While there is general recognition that energy is under-regulated in the WTO and its rules on energy are incomplete (Lamy, 2009), members have no plans to expand its role on energy issues. In the absence of agreed disciplines that require greater transparency, members are unlikely to agree to a fossil-fuel subsidies subsidy notification initiative going beyond current notification obligations.

Continuing to report on subsidies to fossil-fuel consumption, and to analyze these subsidies with its partial-equilibrium model of the world energy market, would fit well with the IEA’s existing mandate. While membership is limited to a sub-set of OECD countries, there is precedent for the IEA to examine countries outside of the OECD.¹⁵ And there is a precedent for developing countries to voluntarily provide the IEA with

¹⁵ These include the *World Energy Outlook 2007* and 2008 analyses of consumer subsidies in 20 non-OECD countries, the publication of statistics and energy balances for non-OECD countries, and *Energy Policy Reviews* (such as the 2008 report on Indonesia, which focused on subsidy issues).

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data on an ongoing basis. However, the IEA is perceived by some developing countries to follow a developed-country agenda and is more concerned about the aims of its members, though mutual understanding is improving through the organization's "enhanced engagement" with the other members of the G-20.¹⁶

The IEA could expand its work in the *World Energy Outlook* to include a regular report of OECD and non-OECD fossil-fuel subsidies. However, except for a period (1988–2002) in which it systematically tracked production subsidies for coal, the IEA has generally avoided identifying and measuring its member countries' energy-production subsidies. And it has had mixed experience in gathering data from non-member countries on a voluntary basis. Moreover, some member countries fill out the regular prices and taxes questionnaire but provide incomplete, out-of-date or poor quality data (IEA, 2009). Any special role for the IEA in the G-20 process would need to secure stronger cooperation from non-member countries. Securing such cooperation may not be possible unless the IEA alters its approach to calculating subsidies: some countries do not accept that using the world price is a suitably comprehensive method for calculating the opportunity cost of energy.

Alternatively, the IEA's existing work could be complemented by the International Monetary Fund (IMF), which has looked at consumer subsidies to petroleum fuels for a wide number of countries, and also on occasion at the "hidden costs" implicit in the gap between electric- and gas-utility revenues and costs. The World Bank has also looked at subsidies to petroleum products across the world. Its work on improving access to energy, environmental impacts of traditional and modern fuels used in the home in developing countries and analysis of social safety nets, allied to its global membership, suggest that it could make an important contribution.

The OECD itself, while not as specialized as the other organizations on energy, has considerable experience in measuring producer subsidies in other sectors, and particularly in tax expenditures, which are perhaps the main forms of support provided to fossil-fuel producers and consumers in OECD countries. It has also undertaken a large body of work on environmentally harmful subsidies, including fossil-fuel subsidies, as part of its work on policies to promote sustainable development. And it has built a computable general-equilibrium (CGE) model, ENV-Linkages, that has been used to analyze the macro-economic and GHG impacts of phasing out fossil-fuel subsidies. It might be appropriate for the OECD to build on that experience by monitoring its member countries' fossil-fuel subsidies (or energy subsidies more generally), just as it has for many years monitored its member countries' agricultural and fisheries subsidies, as well as those of selected non-member countries.

As substantial net exporters of crude petroleum, OPEC's members are likely to be the most affected by energy subsidy reform, whether it occurs outside or within their borders. OPEC facilitates a coordinating role between its members in order to stabilize the oil market. Such coordination may be necessary if OPEC's members are to reform certain of their pricing policies. In any event, OPEC acting as a repository for shared analysis and best practice studies may be an essential plank to support subsidy reform among its member countries.

A transparency mechanism under the United Nations Framework Convention on Climate Change (UNFCCC) could be an important precursor to negotiations on undertakings to reduce fossil-fuel subsidies as part of a multilateral climate change agreement to reduce emissions. The resulting comprehensive information on the magnitude of subsidies could help in accurately assessing their greenhouse gas (GHG) impacts. Developing countries could be defensive about such an activity as pressure to reform consumer subsidies could increase and policy space to support development goals might be seen as threatened. On the other hand, there is an appetite to identify initiatives for developing and emerging economies for reducing GHG emissions in ways that do not harm their growth prospects.

¹⁶ "Enhanced engagement" is an OECD initiative to strengthen cooperation with five major emerging economies (Brazil, China, India, Indonesia and South Africa). It provides support to countries within that group wishing to adhere to OECD practices, policies and standards, with a view to possible OECD membership (OECD Council, 2007).

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The United Nations Environment Programme (UNEP) has made fossil-fuel subsidies a focus of its research and information sharing since 2000. However, UNEP is unlikely to gain a mandate from its members to comprehensively quantify fossil-fuel subsidies, given that they would likely argue that such an endeavour goes beyond its expertise as an environmentally focused IGO.

UNEP's experience in other sectors is nonetheless instructive. UNEP has partnered with government and non-governmental organizations to develop new bodies that are mandated to collect, analyze and disseminate data on other environmentally related issues (see Annex II for examples). Such centres benefit from a UN mandate but have more freedom to recruit staff and establish their own policies and protocols. The semi-autonomous status allows them to move more quickly in data collection and analysis than a UN body. A similar IGO-private-partnership model could have promise for data collection and monitoring of fossil-fuel subsidies.

5.2.1.2 Non-governmental organizations

A major advantage of non-governmental organizations is their independence and ability to operate quickly, unbound by lengthy procedures for developing consensus and obtaining funding for work. This can speed up the collation and reporting of data. NGOs can also provide an independent audit of self-reported subsidies and assist in the development of methodologies to estimate different classes of subsidies. Greenpeace, the Global Subsidies Initiative (GSI) and Earth Track Inc. already have ongoing projects to comprehensively estimate fossil-fuel subsidies for individual countries and develop new approaches to quantifying and classifying subsidies. The Open Budget Initiative is working to improve domestic reporting of government revenues and expenditure.

However, NGOs do not have access to the necessary resources to fund a comprehensive, ongoing data-collection effort. And an independent data-collection approach often faces difficulty in accessing government data (particularly in countries with poor general budget transparency). Some countries may feel uncomfortable providing data to an NGO because the lack of control or oversight of how the data will be used or reported.

Information collected by a third party (i.e., not the relevant country or IGO) also risks being disregarded by the country concerned given their lack of ownership of the process or outcomes. In the context of international agreements, there is a verification problem with third-party notification of subsidy data. States need to be able to question and justify what the data mean, which may not be possible if there is no ownership by the country concerned for the information.

Government leadership or participation in the data-collection process is important because the experience of collating and analyzing data is a learning experience in itself and because country ownership of the data-collection outcomes is crucial. Advice from an international organization to which a government does not belong, if it does not fit with government plans, is easy to demonize and dismiss.

5.2.1.3 Tentative conclusions regarding a home for fossil-fuel subsidy transparency

Based on the simple and subjective analysis in Table 3, the IEA would be well placed to compile comprehensive data on consumption-related fossil-fuel subsidies for G-20 countries but only if the emerging economy members—non-members of the IEA—would be willing to engage in the process. The IEA's limited membership would be an impediment to the IEA coordinating a worldwide effort to assess fossil-fuel subsidies. The IMF or the World Bank might be better placed to coordinate an international data-collection effort based on their universal membership and experience in assessing energy policies in a wide range of countries. Support from key organizations representing important groups of countries—notably OPEC—would be very

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helpful. While the WTO is theoretically a prime candidate for this work, it is unlikely to take on expanded responsibilities for energy subsidies (as discussed in Section 5.3).

Under any scenario, the IEA and OECD would have a role in developing estimation methods and guidelines. NGOs clearly also have a role to play in promoting the standardization of these methods and guidelines, and as independent auditors of self-reporting of subsidies.

Another promising alternative is a partnership model between a relevant IGO, or IGOs, and an NGO or other private institution. A collaborative approach would offer the benefits of an IGO mandate and the speed of decision-making and data collection by an independent organization. The model would draw on the knowledge of all parties for the development of methods, data collection or case studies. A cooperative approach would be necessary with participating governments to ensure access to data and “buy-in.” Capacity building would be a necessary feature of engaging with countries.

TABLE 2: MATRIX OF POTENTIAL ORGANIZATIONS FOR MANAGING A NEW FOSSIL-FUEL SUBSIDY TRANSPARENCY INITIATIVE AGAINST DESIRABLE CRITERIA FOR AN INSTITUTIONAL HOME

Organization	Criteria					
	Competence in fossil-fuel subsidy transparency ¹	Comprehensive membership or international reach ²	Option for strong research role for the secretariat	Likely country buy-in ²	Potential access to necessary resources	Speed of data collection
Development Banks						
IMF		X	X	X	X	
World Bank		X	X	X	X	
International organizations						
IEA	X		X		X	
OECD			X		X	
OPEC			X		X	
UNFCCC		X	X	X	X	
UNEP		X	X	X	X	
WTO		X	X	X	X	
Independent organizations						
Earth Track Inc.	X		X			X
GSI	X		X			X
Greenpeace	X					X
OBI		X				X

¹ All organizations listed in the table have competence in fossil fuels, subsidies or budget transparency. This column only highlights those organizations with specific experience in all three areas.

² Country buy-in and membership could be increased through collaboration among organizations.

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5.3 A standard reporting template

There is a great deal of debate about what qualifies as a subsidy that is specific to a particular industry or product, and how various subsidy elements should be measured. A lack of clarity provided by governments about notification and reporting requirements is unlikely to be the primary cause of poor transparency but it could be a contributing factor. A shared understanding of the scope of coverage, and the specificity of support programs to be reported could remove an impediment to accurate reporting of subsidies.

An agreed template for reporting fossil-fuel subsidies would set out the scope, categories and timelines for the provision of data. Capacity building and training could be developed around the template to support parts of government contributing its completion and submission. The development of such a template would not need start from scratch. There are existing models that could be useful.

The GSI has proposed an alternative template for reporting subsidies to the WTO as a contribution towards improving notifications (Steenblik and Simón, 2007). The GSI Notification Template is intended to standardize the format in which WTO members can report subsidies, increase the quantity and quality of the information that they provide and enhance usability of the data to users. The mechanism is fully WTO-consistent and could be used to also report subsidies to the WTO ASCM, if desired, to reduce duplication in reporting procedures. It provides the opportunity to provide more information than the minimum WTO requirements. The template could be adapted and used in other contexts outside the WTO.

Separately, the GSI with Earth Track Inc. recently developed a questionnaire for country officials regarding fossil-fuel subsidies (Koplow, forthcoming).¹⁷ The questionnaire is organized as a checklist by categories, which could be a useful basis for organizing information in a template.

The ultimate design and content of a template would reflect G-20 members' decisions on issues discussed in Section 4.2: who should disclose what information; the scope of the information; the most relevant types of data; and how the resulting information can be delivered in a form that will be useful to users.

One way to overcome poor self-reporting is through data collection by a secretariat. However, secretariats are generally dependent on the information they receive from countries so the “garbage in, garbage out” risk still remains.

Information reported in such a template does not necessarily need to be reported outside the group of members reporting their subsidies. The decision on whether information remains confidential within the group or is publicly released depends on who would use the information and how they might use it. If the greatest sensitivity arises from members sharing subsidy information with peers within the group, then by comparison sharing the information more broadly is likely to be uncontroversial. There is an advantage of the information being disseminated (to promote research, for example), but this issue could be considered after reviewing initial notifications. The OECD's Working Party on Export Credits and Credit Guarantees, for example, ensures that its members' notifications are kept confidential within the group, though summaries of selected, collected data are made available, synthesized for public consumption.

¹⁷ The forthcoming paper by Doug Koplow is another in the GSI series *Untold billions: fossil-fuel subsidies, their impacts and the path to reform*. The paper undertakes a detailed survey of fossil-fuel subsidies and their characteristics across five significant and representative countries: China, Germany, Indonesia, Nigeria and the United States. It aims to promote improved transparency by showing people where they can find information, encouraging governments to share more data and generating new information about subsidies in selected countries. The paper outlines an internationally consistent approach to data collection on fossil-fuel subsidies.

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5.4 The development of standardized methodologies

Establishing a process for agreeing on common methods for estimating and aggregating various subsidy elements is an essential and important first step to producing more comprehensive and internationally comparable estimates of energy subsidies—or any subsidies.

To collect new subsidy data, agreement would need to be reached on these methods—not only among the governments from which the data would be collected but also with subsidy and energy experts to ensure consistency and harmonization with existing data.

An independent, international body could assist this goal by serving as a central institution for developing common methods for subsidy accounting, making subsidies most relevant to fossil fuels a priority if agreed. Such an institution would help bring together subsidy professionals from all types of institutions involved in estimating subsidies—intergovernmental agencies, national countervail authorities, competition authorities and interested academics.

The G-20 mandate could help establish such an institution, using the urgent need to develop common standards for energy subsidies as a catalyst. In developing such standards and establishing an appropriate regulatory body, experience could be drawn from the International Accounting Standards Board (IASB)¹⁸ and the IMF's standards for macro-economic statistics.¹⁹ The IMF-initiated standards and review mechanisms provide detailed guidance on implementing the standards and evaluating performance. Adding standards and criteria for subsidy reporting, coupled with appropriate supporting information and observance of compliance, would help to embed strong reporting standards within existing budget processes. Such standards could be developed in such a way as to allow international comparison and compilation of data.

The adoption of standards is not an end in itself. Lombardi and Woods (2008) found the formal process of implementing and evaluating compliance with IMF standards was a bureaucratic process that was not supported by effective enforcement or opportunities for political collaboration to improve policies. While many countries adopt IMF standards, they do not necessarily observe them.

The standards for subsidy accounting would, to the extent possible, harmonize with existing subsidy-accounting systems for calculating subsidy elements (such as accelerated depreciation, freely allocated carbon credits and government-provided insurance against accidents). Ideally the development and review of the standards would be collaborative but professional, with an emphasis on open dialogue, peer review, best practice and policy improvement.

5.5 Guidelines, manuals and capacity building

Several tools are available to help overcome the challenge of poor data availability and the complexity of subsidy estimation. Guidelines and manuals would facilitate data collection, and promote consistency and data quality. The OECD Best Practices on Budget Transparency, for example, provides a list of the budget documents that countries should issue at each stage of the budget process, together with a description of the information that should be contained in each document (OECD, 2002).

¹⁸ The IASB is a standard-setting body responsible for the development of International Financial Reporting Standards (IFRSs), permitted or required by over 100 countries. See <http://www.iasb.org>.

¹⁹ The IMF, in consultation with country experts and other international organizations, has developed standards for macro-economic statistics (IMF, 2007). These include standards for transparency in data, fiscal policy, monetary and financial policy, and market governance. Based on these standards, the IMF and World Bank prepare transparency assessments: Reports on the Observance of Standards and Codes (ROSCs). The reports are prepared and published at the request of participating countries and summarize observance of the standards and codes. The assessment of macro-economic data is based on an assessment of data quality using the Data Quality Assessment Framework (DQAF). The DQAF is based on the United Nations' Fundamental Principles of Official Statistics, drawing on best practices and internationally accepted concepts and definitions. A scorecard is used to measure the extent to which countries observe the standards.

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In 2007, the IEA developed a guidance manual for teams undertaking reviews of energy R&D expenditure and policies (IEA, 2007). Box 2 provides the types of questions that could be asked about R&D funding by a review team that has the time to make an extensive visit to a country. Such detailed questions on R&D funding are likely to be relevant mainly to developed and large, emerging countries. The example is provided to illustrate that practical guidance can be developed to assist implementation of a fossil-fuel subsidies transparency initiative.

Capacity building regarding data collection and analysis would also be useful, particularly if combined with efforts to build understanding in the community, including among journalists. As discussed in the Section 2.2, the media are an important link between government information and the public.

BOX 2: INTERNATIONAL ENERGY AGENCY: STANDARD QUESTIONS REGARDING ENERGY R&D FUNDING THAT COULD BE APPLIED DURING IN-DEPTH REVIEWS

What arrangements are in place to ensure an overview of the government's funding of energy R&D?

What is the current status of government funding for energy R&D? Please present the breakdown based on the categories below and indicate if further information is available, e.g., reports, brochures, links.

- a) Energy efficiency in industry, residential, commercial and transport sectors
- b) Oil and gas
- c) Coal
- d) CO₂ capture and storage
- e) Renewable energy sources
- f) Nuclear fission
- g) Nuclear fusion
- h) Hydrogen and fuel cells
- i) Other power and storage technologies
- j) Other cross-cutting technologies or research, including R&D on energy system analysis and forecasting

What is the funding of energy RD&D of different government ministries and institutions?

What is the current level of RD&D funding from private sector? If possible, split by technology.

What is the current level of other public funding (regional, state level) of energy RD&D? If possible, split by technology.

Does the level and focus of R&D funding match up to the aims that the government is setting for the deployment of advanced energy technology?

What is the present level of funding for basic science related to energy technology development?

What is the future expected trend for energy RD&D funding?

What is the level of funding of energy RD&D activities within international collaborative projects (bilaterals, multilaterals, EU programs, IEA Implementing Agreements)?

If these overviews are not available, discuss why they are not available and how coherence and added value is ensured. Discuss how lack of data influences R&D policy priority setting and evaluation opportunities.

Source: International Energy Agency, 2007

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5.6 Country studies

Detailed transparency becomes most meaningful at the national level. That is where thorough reporting of subsidies is feasible. It is also where reform takes place. Several analysts from international organizations that were interviewed for this study commented that country-specific studies are perhaps the most useful mechanism for improving transparency. Targeted studies have the opportunity to thoroughly investigate and understand the domestic circumstances surrounding subsidy policies and are therefore more likely to be practically useful in evaluating subsidies and developing reform strategies. Country studies, when undertaken in a systematic, comparable way, also allow benchmarking among countries (the adoption of minimum standards that can be improved over time), sharing of best practice and lessons learned, and peer review.

Country-specific studies can be a useful compliment to international data-collection systems. The IEA *Energy Policy Reviews*, for example, provide an in-depth analysis of a member's energy resources and policies, including subsidies when relevant. IEA reviews of non-members have also been undertaken and published (see Annex II for more information). Similarly, the WTO Trade Policy Reviews offer an opportunity for detailed analysis and peer review of a country's policies—of assistance to the member country as well as trading partners. OECD country studies on agricultural subsidies were a foundation for the development of initial, comprehensive subsidy estimates, which in turn supported negotiations on an Agreement on Agriculture in the Uruguay Round of the WTO.

If performed in collaboration with national governments, national assessments combine the advantages of applying international expertise and methodologies with greater access to data through in-country knowledge. The involvement of in-country experts, especially those within government, increases the likelihood that the national government will take ownership of the process and findings, improving the chance of reform. Close collaboration also builds capacity and shared understanding in the international and domestic organizations.

6. CONCLUSIONS

There is now clearly a mandate—thanks to the G-20 and APEC—to reform fossil-fuel subsidies. Unlike previous statements in international agreements that have encouraged members to eliminate fossil-fuel subsidies, G-20 leaders have specifically requested information on the scope of the subsidies—an important first-step towards reform.

However, it is virtually certain that the scope of fossil-fuel subsidies to be assessed before the meeting of G-20 leaders in June 2010 will not be comprehensive. There are not sufficient data available to assess all fossil-fuel subsidies nor is there time to collect such data. As such, G-20 leaders will have a better, but still incomplete foundation for developing strategies for implementing their commitment to phase out subsidies and for monitoring progress in achieving this goal.

If determined to reform fossil-fuel subsidies, the G-20 (and APEC) will need to instigate a thorough analysis of all the mechanisms of support and provide the necessary resources—at the national level and to relevant IGOs. Now is the time to start thinking about how a new system for collecting and reporting information on fossil-fuel subsidies should be designed. The major gap that needs to be filled is information on subsidies that cannot be measured simply through an analysis of price gaps—notably producer subsidies.

This paper shows that there are numerous institutions that have already collected some information on fossil-fuel subsidies, but these differ in terms of membership, independence from issue-specific mandates, knowledge of the energy sector, and experience with estimating subsidies. Initial work on estimating agriculture and fisheries subsidies as a foundation for WTO negotiations on disciplines was performed by the OECD.

In the case of energy subsidies, the IEA has the experience with collating data on consumer subsidies in developing countries and countries in transition to a market economy. If emerging country members of the G-20 were willing to cooperate with the IEA despite being non-members, the IEA would be well placed to coordinate data collection on fossil-fuel consumer subsidies under the G-20 initiative. Similarly, the OECD could serve as the coordinating agency for information on production-related subsidies.

The limited membership of the IEA would be an impediment to its implementation of an effective worldwide approach to measuring fossil-fuel subsidies, which would require cooperation and buy-in by all governments. A global approach would be better coordinated by the World Bank or the IMF, both of which have experience in analyzing fossil-fuel subsidies as well as comprehensive membership.

Non-governmental organizations also have a role to play in developing standardized estimation methods and, when appropriate, documenting subsidy levels independently as an audit of information provided by governments in self-reported country notifications.

This paper provides practical recommendations regarding how an international system for monitoring fossil-fuel subsidies could best support reform, including criteria that would need to be addressed and measures that would support such an initiative. Three particular information-gathering methods have promise, which could operate simultaneously:

1. Improved national-level reporting based on consistent estimation methods and subsidy-accounting standards, which would facilitate compilation, aggregation and comparison of cross-country data across multiple countries.
2. Data gathering for multiple countries through a standard reporting template supported guidelines that specify the scope of support to be included and standard methods for documenting subsidies.

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3. Detailed country case studies performed by the secretariat of an intergovernmental organization in collaboration with the national government using recognized subsidy-accounting framework, for example, the PSE and CSE frameworks.

Such an approach would build a comprehensive picture of G-20 (and APEC) subsidies over several years, providing a firm basis for assessing the impacts of the subsidies, negotiating subsidy elimination commitments and monitoring progress.

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ANNEX I: APEC, G-20, IEA AND OECD MEMBERSHIP

Countries	APEC	G-20	IEA	OECD
Australia	X	X	X	X
Argentina		X		
Austria			X	X
Belgium			X	X
Brazil		X		Enhanced engagement ¹
Brunei Darussalam	X			
Canada	X	X	X	X
Chile	X			X
China	X	X		Enhanced engagement ¹
Hong Kong	X			
Chinese Taipei	X			
Czech Republic			X	X
Denmark			X	X
Estonia				Accession country ²
Finland			X	X
France		X	X	X
Germany		X	X	X
Greece			X	X
Hungary			X	X
Iceland				X
Ireland			X	X
India		X		Enhanced engagement ¹
Indonesia	X	X		Enhanced engagement ¹
Israel				Accession country ²
Italy		X	X	X
Japan	X	X	X	X
Luxembourg			X	X
Republic of Korea	X	X	X	X
Malaysia	X			
Mexico	X	X		X
The Netherlands			X	X
New Zealand	X		X	X

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ANNEX I: APEC, G-20, IEA AND OECD MEMBERSHIP (CONTINUED)

Countries	APEC	G-20	IEA	OECD
Norway			X	X
Papua New Guinea	X			
Peru	X			
The Philippines	X			
Portugal			X	X
Poland			X	X
Russia	X	X		Accession country ²
Saudi Arabia		X		
Singapore	X			
Slovak Republic			X	X
Slovenia				Accession country ²
South Africa		X		Enhanced engagement ¹
Spain		Participates in the fossil-fuel subsidy initiative	X	X
Sweden			X	X
Switzerland			X	X
Thailand	X			
Turkey		X	X	
United Kingdom		X	X	X
United States	X	X	X	X
Vietnam	X			
The European Commission		X (with the European Central Bank)		X
The International Monetary Fund		Participates on an <i>ex-officio</i> basis	X	
The World Bank		Participates on an <i>ex-officio</i> basis		

Notes:

¹ “Enhanced engagement” is an OECD initiative to strengthen cooperation with five major emerging economies (Brazil, China, India, Indonesia and South Africa). It provides support to countries within that group wishing to adhere to OECD practices, policies and standards, with a view to possible OECD membership (OECD Council, 2007).

² In May 2007, the Meeting of the OECD Council at Ministerial Level decided to open discussions with Chile, Estonia, Israel, the Russian Federation and Slovenia regarding the accession of each of these countries to the OECD (OECD Council, 2007). Chile became a full member of the OECD in 2010.

Sources:

http://www.g20.org/about_what_is_g20.aspx; http://www.apec.org/apec/member_economies.html

<http://www.iea.org/about/membercountries.asp>; and http://www.oecd.org/pages/0,3417,en_36734052_36761800_1_1_1_1_1,00.html

ANNEX II: EXISTING SOURCES OF DATA ON FOSSIL-FUEL SUBSIDIES

The following is a summary of current sources of data on fossil-fuel subsidies available from intergovernmental and non-governmental organizations, and at the regional and national level.

International organizations

The **World Trade Organization (WTO)** Agreement on Subsidies and Countervailing Measures (ASCM) was the first multilateral agreement to establish disciplines on its members' use of subsidies. (The European Coal and Steel Community, founded in 1951, disciplined subsidies to the coal and steel industry at a regional level.) Under Article 25.2 of the ASCM, countries must submit biannual notifications describing those of their subsidies that have an impact on international trade. The types of subsidies captured are on-budget financial assistance, such as for R&D, structural adjustment and training. Consumption subsidies for fossil fuels are unlikely to reduce export opportunities and therefore would not be reported under the ASCM.

The **Organisation for Economic Co-operation and Development (OECD)** currently holds little information on fossil-fuel subsidies given that its International Energy Agency (IEA) has responsibility for energy issues. However, as one of the four IGOs tasked with preparing a report for the G-20 on energy subsidies, it has begun to collect information on producer subsidies in its own countries, especially those provided through tax expenditures. In addition, the OECD's International Transport Forum has some information on transport subsidies that is relevant to fossil fuels. While not as specialized as the other organizations on energy, the OECD has considerable experience in measuring producer subsidies in other sectors, and particularly in tax expenditures, which are perhaps the main forms of support provided to fossil-fuel producers and consumers in OECD countries. It has also undertaken a large body of work on environmentally harmful subsidies, including fossil-fuel subsidies, as part of its work on policies to promote sustainable development. And it has built a computable general-equilibrium (CGE) model, ENV-Linkages, that has been used to analyze the macro-economic and GHG effects of phasing out fossil-fuel subsidies.

The **IEA** periodically publishes information on consumption-related fossil-fuel subsidies in its *World Energy Outlook* (WEO). The 1999 WEO, which was dedicated to energy subsidies, quantified consumer subsidies measureable through a price-gap analysis in eight non-OECD countries. For these countries, subsidies totalled \$95 billion U.S. in 1998, with end-user pricing averaging 20 per cent below full market cost. Removing all subsidies was estimated to reduce overall demand in these countries by 13 per cent (3.5 per cent of world demand); increase their GDP by 1 per cent; and reduce their greenhouse gas emissions by 16 per cent (5 per cent of world emissions). The 2007 and 2008 WEOs reported consumption subsidies for fossil fuels in the largest 20 non-OECD subsidizing countries. Consumer subsidies in these countries were found to total over \$310 billion U.S. in 2007 (IEA, 2008a).

The IEA also maintains an Energy Technology R&D statistics database, based on responses to an annual questionnaire to members (IEA, 2008b).²⁰ The database includes budget data for 26 IEA member countries for several R&D activities in support of energy efficiency, fossil fuels, renewable energy sources, nuclear fission, nuclear fusion, hydrogen and fuel cells, and other power and storage technologies.

IEA *Energy Policy Reviews* provide an in-depth analysis of a member's energy resources and policies, including subsidy policies when relevant. Reviews of non-members have also been undertaken and published.

²⁰ <http://www.iea.org/textbase/stats/rd.asp>

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The review of Indonesia in 2008 provided detailed analysis of the country's subsidy policies (IEA, 2008c).²¹ Reviews normally draw on IEA data about a given country. When this information is limited, as it typically is for non-members, the review team works with relevant government agencies to gather data. The reviews provide detailed information and analysis about the country concerned, but also provide a forum for learning from other countries in the region with similar energy and policy challenges. Lessons learned, peer reviews and benchmarking are important outcomes of the studies.

The **United Nations Environment Programme (UNEP)** has made fossil-fuel subsidies a focus of its research and information sharing since 2000. A 2004 book published by UNEP considered how energy subsidies are defined and measured, their magnitude and impacts (von Moltke, McKee and Morgan, 2004). The book also included case studies documenting subsidy levels in several developing countries. In 2007, UNEP and Statistics Sweden co-hosted an experts meeting on energy subsidies. The meeting found that subsidy data collection needs to be more comprehensive and consistent. Current practices produce highly disparate estimates, which complicate policy reform (UNEP, 2007). UNEP also produced a summary report on the challenges of reforming energy subsidies in 2008, updating a report first published in 2002 (Morgan, 2008).

The **United Nations Framework Convention on Climate Change (UNFCCC)** published a summary report on the pervasiveness and impact of energy subsidies as part of a wider study of financing investments in greenhouse-gas mitigation measures in 2007 (Morgan, 2007).

The **International Monetary Fund (IMF)** discusses energy pricing and subsidies in its country reports, when pertinent to the country's economic status (e.g., IMF Staff Country Report, 2004; IMF, 2006). Several recent IMF studies have documented fuel subsidies and pricing in some developing countries, e.g., Coody et al. (2006); Baig et al. (2007) and Coody et al. (2010). In response to rapid oil price increases in 2007, the IMF undertook a selective rapid survey of fuel prices in order to assess the degree of pass-through of higher oil prices in that year (Mati, 2008).

Country studies by **the World Bank** have included in-depth research on energy pricing and subsidies in developing countries. Studies regarding fuel pricing have examined subsidy levels in developing countries (Bacon and Kojima, 2006; Kojima, 2009). The Latin America and Caribbean and Europe and Central Asia units have independently compiled summary tables of information on energy in their regions, drawing in part on reports by regional associations (World Bank, 2009).

The **Joint Oil Data Initiative (JODI)** was launched in 2001 to raise the awareness of the need for more transparency in oil market data. The initiative was established by six international organizations—APEC, Eurostat, IEA, the Latin American Energy Organization (OLADE), OPEC and the United Nations Statistics Division—and their member countries. The resulting database provides monthly data on production, demand, refinery intake and output, closing stock levels and stock changes across seven product categories (crude oil, LPG, gasoline, kerosene, diesel oil, fuel oil and total oil). Lack of data transparency is seen to contribute to excessive oil price fluctuations. For this reason, countries are motivated to share information on fuel supply, demand and inventories. Data are available for more than 90 participating countries. JODI does not currently cover subsidies but has the right membership and objectives to potentially expand into fossil-fuel subsidies.

²¹ The report noted that for 2008 the Indonesian Ministry of Finance projected compensation for oil product subsidies of around Rp 43 trillion (\$4.4 billion U.S.) and of around Rp 28 trillion (\$2.8 billion U.S.) for subsidized electricity prices (IEA, 2008c). The international oil price rise in the early months of 2008 increased the forecasted 2008 payout to around Rp 130 trillion (\$13 billion U.S.) and Rp 60 trillion (\$6 billion U.S.) respectively, forcing an increase in subsidized prices of some 30 per cent.

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GTZ (*Deutsche Gesellschaft für Technische Zusammenarbeit*) compiles data on retail transport fuel prices around the world from an impressive number of countries. Data for 2009 provide information on gasoline and diesel prices in about 170 countries (GTZ, 2009). When compared with an international benchmark price, the retail prices give an indication of the extent of net subsidies or taxation provided in those countries for transport fuels.

Non-governmental organizations

Non-governmental organizations play an important and increasing role in ensuring that governments are transparent. Civil society groups have paid considerable attention to improving transparency as a way to reduce corruption, including in the fossil-fuel sector. Initiatives such as the Revenue Watch Institute (RWI), Publish What You Pay and the Extractive Industries Transparency Initiative (EITI) have advocated that business and governments should disclose the amounts paid by companies to governments, such as for rights to access resources. Disclosure allows civil society to track revenue and expenditure to ensure it is not misappropriated. The primary focus is on the revenue side of government. Revenue Watch also “follows the money” to track expenditures to ensure that revenues are not diverted before they are spent on legitimate government programs. Direct fossil-fuel subsidies, such as expenditure programs, are generally not targeted in these anti-corruption initiatives.²² However, some indirect subsidies relate to revenue, such as forgone revenue due to low resource rents or royalties. By disclosing information on resource rents, civil society is better able to assess whether the government is receiving a fair price for access to public resources.

Several new **RWI** activities aim to help countries and citizens translate their resource wealth into prosperity by better managing and tracking government expenditures (Revenue Watch Institute, n.d.). Consumer subsidies in producing nations fail to harness effectively the potential windfall gains for development impact and therefore could potentially be captured in the expenditure review aspect of RWI’s work.

Indonesia, for example, has production-sharing agreements that provide both money and oil as payment from oil companies. The oil that Indonesia receives could be sold on the world market or it could be diverted to local refining and sale at a subsidized price (relative to world prices). Knowing how much oil has been delivered through the production-sharing arrangement is an important starting point in this equation. Revenue-related transparency initiatives can assist with this.

The **EITI** oversees the payments that companies make to governments for access to resources and the receipt of those payments by governments. The process has a technical foundation: the reconciliation of payments and receipts. However, an EITI model is unlikely to work for fossil-fuel subsidies. The EITI operates as a multi-stakeholder initiative where all stakeholders have something to gain from membership (e.g., perceptions of corporate responsibility for companies, increased information for civil society, perceptions of fighting corruption for governments). Fossil-fuel subsidies do not have these natural constituents, as governments are likely to be defensive about sharing information.

General efforts to encourage better budget documentation, such as the **Open Budget Initiative (OBI)**, could help improve transparency by encouraging countries to provide more information about financial decision-making across the whole economy.

²² Some corruption can arise due to opportunities for profiteering due to fossil-fuel subsidies, however, this could also occur with other subsidized products such as food or medicine.

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NGOs can pressure governments to release more information, but fundamentally they need to rely on gathering and interpreting existing data. This can still dramatically increase transparency. Earth Track Inc., for example, identified \$39 billion U.S. in American oil and gas subsidies in 2007, while the government's Energy Information Administration identified only \$2.25 billion U.S. (Leahy, 2008). However, the impact of these groups on global transparency in a sector as large as fossil fuels could be limited, as such groups have limited resources and unable to provide the real-time data needed to challenge subsidy policies as they are being made.

Greenpeace and **Friends of the Earth** have sponsored major studies of fossil-fuel subsidies in several countries. Comprehensive assessments of energy subsidies in Australia (Reidy, 2007), Europe (Greenpeace, 1997) and the United States (Koplow and Dernbach, 2001) have resulted from Greenpeace-sponsored projects. The Friends of the Earth funded work on U.K. aviation fuel subsidies (Friends of the Earth, 2003) and has targeted fossil-fuel subsidies in its outreach and communications work.

End Oil Aid is a coalition of organizations that seek to influence governments and multilateral lending institutions to cease using aid and other forms of foreign assistance to support the expansion of the international petroleum industry. An Oil Aid Database tracks aid for fossil-fuel-related projects. Total Oil Aid, not including coal or gas electricity, is estimated to be around \$75 billion U.S., which includes support from 13 multilateral financial institutions and 49 bilateral financial institutions from 20 countries from 2000 to 2009 (End Oil Aid, n.d.).²³

The **Global Subsidies Initiative (GSI)** of the International Institute for Sustainable Development (IISD) has undertaken independent research to examine the full extent of government subsidies and has revealed that support can be much higher than official government estimates. In documenting the subsidies provided by German governments in 2006, the GSI found that Germany notified 11 subsidies to the WTO with a total value of 1.25 billion EUR. The GSI's conservative approach yielded 180 specific subsidy programs that should have been notified, with a total value of 10.8 billion EUR (Thöne and Dobroschke, 2008). It must be noted that Germany was only taken as an example and many other countries under-report their subsidies (or do not report them at all).

The GSI also comprehensively documented government support for biofuels (ethanol and biodiesel) in the majority of biofuel-producing and consuming countries.²⁴ The research revealed, for the first time, the full extent of government support, thus facilitating an informed public debate over the cost-effectiveness and impacts of biofuel policies.

The GSI commenced a three-year program in 2008 to identify, measure and analyze the effects of fossil-fuel subsidies. The GSI aims to assist decision-makers by increasing the amount of accurate, accessible and detailed data on subsidies and by identifying priorities and pathways for reform. Research projects include assessments of the nature of subsidies worldwide, their magnitude, impacts, political economy and efforts at reform.

In other sectors, non-governmental actors have developed publicly-available databases on subsidy levels provided by key subsidizing countries. Examples include **farmsubsidy.org** and **fishsubsidy.org**. These organizations improve transparency by assembling, analyzing and interpreting existing data in a way that improves accessibility to the public. By publicizing the issue, they also pressure governments to release more information. Such initiatives demonstrate that governments and intergovernmental organizations do not have a monopoly on transparency mechanisms.

²³ The Oil Aid database includes financial assistance from: Export Credit Agencies (ECAs) which provide loans, insurance and guarantees to home-country companies that want to expand their operations overseas; bilateral aid agencies; and multilateral development banks. The forms of financing included in the database are primarily loans, grants, equity and loan guarantees.

²⁴ The GSI reports on biofuel subsidies in Australia, Canada, China, the European Union, Indonesia, Malaysia, Switzerland, the United States and selected OECD countries are available from <http://www.globalsubsidies.org/en/research/biofuel-subsidies>

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Intergovernmental and non-governmental partnerships

UNEP has established partnerships with government and non-governmental institutions to assist its work in data collection, analysis and dissemination, as well as capacity building and advocacy. While these do not focus on fossil-fuel subsidies, they could provide a model for future collaborative data-collection efforts.

- The **UNEP Risø Centre on Energy, Climate and Sustainable Development (URC)** operates under an agreement among UNEP, the Ministry of Foreign Affairs of Denmark and the Risø National Laboratory for Sustainable Energy (Denmark). Its main function is to facilitate the incorporation of environmental and development considerations into energy policy and planning.
- The **UNEP World Conservation Monitoring Centre (UNEP-WCMC)** is a collaboration between UNEP and WCMC 2000, a U.K.-based charity. The Centre has a mandate from the UNEP Governing Council to provide information on biodiversity for UNEP and relevant biodiversity conventions, member countries and interested organizations to use in the development and implementation of policies.
- **GRID-Arendal** is a collaborating centre of UNEP and the Government of Norway to provide environmental information, communications and capacity-building services on marine and polar issues.

Regional and supranational organizations

EU State aid is reported by the European Commission, including subsidies to coal production, on the basis of data obtained in the execution of aid-control policies according to Art. 87/88 EC-Treaty.

Statistics Sweden is working to include information on energy subsidies in its *System of Economic and Environmental Accounting*. The environmental accounts are a satellite system to the national accounts. They bring together economic and environmental information in a common framework to measure the contribution of the environment to the economy and the impact of the economy on the environment. The tool is intended to provide policy-makers with indicators and descriptive statistics to monitor these interactions as well as a database for strategic planning and policy analysis to identify more sustainable paths of development.

In Sweden, the production of yearly statistics on air-pollution emissions and energy use by industry is a standard component of official statistics, as are environmental taxes and environmentally motivated subsidies. Many European countries have developed several components of this system and Eurostat is coordinating the efforts to make a harmonized EU and European Free Trade Association system of accounts.

Statistics Sweden has taken the initiative to propose a method that would make it possible to measure the subsidies to fossil fuels by using the information available in the economic accounts and combining this with the energy use in the environmental accounts. This would make it possible to assess the direct subsidies to fossil fuels in an internationally harmonized way. However, production of these statistics is at the discretion of each country as there is no legal requirement to collect the data.

Eurostat provides data on gross domestic expenditure on R&D (the percentage of GDP spent on R&D) in EU countries. The data are prepared from companies' annual reports and accounts received by independent data providers. They relate to company expenditure rather than government subsidies for R&D.

Several regional organizations provide information on energy prices, which could be used to estimate subsidy levels. Europe's Energy Regulators Regional Association (ERRA) provides an Online Electricity and Natural Gas Tariff Database that presents data on prices in over 25 countries.²⁵ The composition of tariffs is broken

²⁵ <http://www.erranet.org/Products/TariffDatabase>

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down into wholesale and retail margins and taxes. The Latin American Energy Organization (OLADE) produces an energy statistics report that compiles historical information obtained from official sources of information. It includes data about production, potential reserves, exports, imports, prices and consumption of the difference energy resources in each of the countries of Latin America and the Caribbean.²⁶

In 1996, **APEC Energy Ministers** endorsed Non-Binding Energy Policy Principles that included a recommendation for members to “Consider reducing energy subsidies progressively and promote implementation of pricing practices which reflect the economic cost of supplying and using energy across the full energy cycle, having regard to environmental costs.” Among the initiatives under this program was a database of energy prices.²⁷ A 2008 review noted that the project had some difficulty with data collection and development of a standardized energy price database, which limited the depth of analysis. The most serious impediment to progress was that, in many cases, the data required to perform the analysis and establish the database simply did not exist. Some economies were also reluctant to release data, especially concerning taxes and energy subsidies.

ASEAN Energy Ministers meet regularly to discuss energy stability, security and sustainability. The communiqué from the 26th ASEAN Ministers of Energy Meeting in August 2008 noted a range of measures that Ministers could take in response to high oil prices, including energy conservation, alternative and renewable energy sources, and enhanced cooperation. Subsidy reform was not mentioned (ASEAN, 2008), despite the fact that fuel subsidies are prevalent in the region and contribute to poor energy balances.

National-level initiatives

Governments

Initiatives in some countries, independent of the budget process, significantly enhance transparency. The United States Congress, for example, periodically requests an assessment of energy subsidies from the Department of Energy, including fossil-fuel subsidies (for example, see EIA, 2008).

The German federal government has a legislated requirement to produce a biannual subsidy report, the *Subventionsbericht*, on the total volume of subsidies, revenue forgone due to tax expenditures, and subsidies granted at the national level and by the Länder. The Ministry of Finance is responsible for the report, which provides neutral oversight of the process, rather than being led by portfolio departments that tend to be the providers of the subsidies.

Similarly, the Swiss *Subventionsgesetz* (“Subsidy Act”) requires a comprehensive assessment of all federal subsidies every six years, including an assessment of the pros and cons of the subsidy policies. The report, which is made by the Ministry of Finance to Parliament, includes mechanisms to ensure that the conclusions are addressed.

The Australian Productivity Commission is an independent federal government research and advisory body that performs detailed economic analysis regarding government programs, with the aim of improving policy approaches. Recent fossil-fuel-related studies have included reviews of the regulation of the upstream petroleum sector, gas pricing, and the private costs of energy efficiency and electricity pricing (Productivity Commission, n.d.).

²⁶ <http://www.olade.org/periodicasEn.html>

²⁷ http://www.ewg.apec.org/assets/documents/apecinternet/EWG_2008_CrossleyFINALREPORT20080602121305.pdf

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Non-governmental organizations

National NGOs and academic research institutes will have a large and increasing role to play in advocating and augmenting transparency. In the United States, for example, SubsidyScope (an initiative of The Pew Charitable Trusts) is building a comprehensive source for subsidy data in order to stimulate debate about the scope of federal subsidies and to help improve policies (SubsidyScope, n.d.). Friends of the Earth has undertaken specific research on fossil-fuel subsidies in the United States. A 2008 paper provides an analysis of \$33 billion U.S. in tax breaks and other subsidies that the oil and gas industry will receive by 2013 (Friends of the Earth, 2008).

Green Budget Germany was founded in 1994 to lobby for the introduction of an environmental tax reform in Germany (Green Budget Germany, n.d.). The NGO has since extended its focus to include all elements of market-oriented environmentally relevant fiscal policy: environmental taxation, emission trading, removal of environmentally harmful subsidies, promotion of renewable energies and green growth.

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THE GLOBAL SUBSIDIES INITIATIVE (GSI) OF THE INTERNATIONAL INSTITUTE FOR SUSTAINABLE DEVELOPMENT (IISD)

The International Institute for Sustainable Development (IISD) launched the Global Subsidies Initiative (GSI) in December 2005 to put a spotlight on subsidies—transfers of public money to private interests—and how they undermine efforts to put the world economy on a path toward sustainable development.

Subsidies are powerful instruments. They can play a legitimate role in securing public goods that would otherwise remain beyond reach. But they can also be easily subverted. The interests of lobbyists and the electoral ambitions of officeholders can hijack public policy. Therefore, the GSI starts from the premise that full transparency and public accountability for the stated aims of public expenditure must be the cornerstones of any subsidy program.

But the case for scrutiny goes further. Even when subsidies are legitimate instruments of public policy, their efficacy—their fitness for purpose—must still be demonstrated. All too often, the unintended and unforeseen consequences of poorly designed subsidies overwhelm the benefits claimed for these programs. Meanwhile, the citizens who foot the bills remain in the dark.

When subsidies are the principal cause of the perpetuation of a fundamentally unfair trading system, and lie at the root of serious environmental degradation, the questions have to be asked: Is this how taxpayers want their money spent? And should they, through their taxes, support such counterproductive outcomes?

Eliminating harmful subsidies would free up scarce funds to support more worthy causes. The GSI's challenge to those who advocate creating or maintaining particular subsidies is that they should be able to demonstrate that the subsidies are environmentally, socially and economically sustainable—and that they do not undermine the development chances of some of the poorest producers in the world.

To encourage this, the GSI, in cooperation with a growing international network of research and media partners, seeks to lay bare just what good or harm public subsidies are doing; to encourage public debate and awareness of the options that are available; and to help provide policy-makers with the tools they need to secure sustainable outcomes for our societies and our planet.

www.globalsubsidies.org

The GSI is an initiative of the International Institute for Sustainable Development (IISD). Established in 1990, the IISD is a Canadian-based not-for-profit organization with a diverse team of more than 150 people located in more than 30 countries. The GSI is headquartered in Geneva, Switzerland and works with partners located around the world. Its principal funders have included the governments of Denmark, the Netherlands, New Zealand, Norway, Sweden and the United Kingdom. The William and Flora Hewlett Foundation have also contributed to funding GSI research and communications activities.

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