THE GLOBAL SUBSIDIES INITIATIVE

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POLICY *Brief*

Defining Fossil-Fuel Subsidies for the G-20: Which Approach is Best?

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RECOMMENDATIONS FOR THE G-20

In September 2009, leaders of the Group of Twenty (G-20) largest industrialized and developing economies made a groundbreaking commitment to reform their fossil-fuel subsidies, in a bid to advance their energy security and climate change agendas (G-20 Leaders, 2009). In doing so, leaders called upon their finance and energy ministers to prepare implementation plans and timelines and asked international organizations to prepare an analytical background paper; both are to report back to the next Leaders' Summit, to be held 26–27 June 2010, in Toronto, Canada.

The concept of subsidy can be rather murky and the reform process can easily become bogged down in the attempt to find a suitable definition. As part of their efforts to progress fossil-fuel subsidy reform, G-20 energy and finance officials, along with the international community, have revived a debate to agree on a definition of "subsidy." This is by no means a new debate—subsidies have been negotiated multilaterally since the 1947 General Agreement on Tariffs and Trade (GATT). But because the very nature of subsidies goes to the heart of sensitive issues such as government spending, sovereignty of governments to use natural resources as they see fit, trade competition and poverty alleviation, finding a commonly agreed-upon definition and scope has proven difficult. Resolution of the debate within the G-20 will set the parameters for national reform actions and could determine whether the leaders' commitment will courageously advance or merely pay lip service to development, climate change and energy security goals.

The Global Subsidies Initiative (GSI) recommends a three-step process to *define*, *measure* and *evaluate* subsidies;[1] this process starts with a broad, cross-sectoral application that narrows throughout the process. The benefits of this approach are that it is flexible enough to cover different national priorities and varying subsidy profiles, it is practical (with illustrative lists for policy-makers and subsidy estimation challenges taken into account), it is aligned with existing international obligations such as the World Trade Organization (WTO) and it paves the way for providing consistent treatment across sectors. This paper outlines a three-step process that could be applied to any sector, but draws on examples from the energy sector in particular and makes recommendations for how the G-20 could adopt the process for fossil-fuel subsidy reform.

[1] This process follows Dr Luca Rubini's reasoning for separating the definition of a subsidy from circumstances in which its use is justified (Rubini, 2009).

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STEP 1: DEFINE "SUBSIDY"

Define

A broad definition of "subsidy" should cover preferential treatment in all forms—financial and otherwise—provided to consumers and producers. Preferential treatment for producers can be provided in three forms:

a. To selected companies;

b. To one sector or product when compared with other sectors;

c. To sectors or products in one country when compared internationally (e.g., government incentives to attract foreign investment).

What definitions are available?

The international community has a multitude of definitions from which to draw. The WTO provides a legal definition of subsidy within the Agreement on Subsidies and Countervailing Measures, or ASCM, Article 1 (Uruguay Round Agreements, 1994). Alternative definitions are provided, for example, by the International Monetary Fund (IMF, 2001) and United Nations Statistics Division (UNSD, 2010). The European Commission (1998) developed a legal definition of "State aid" in the European Commission Treaty, Article 87(1). Common definitions can be found in any dictionary or encyclopaedia (e.g., Encyclopaedia Britannica, 2010). In addition, sector-specific definitions have been developed, for example, by the International Energy Agency (IEA) for energy,[2] by the Organisation for Economic Co-operation and Development (OECD) for agriculture,[3] and by the Food and Agriculture Organization (FAO) for fisheries.[4]

Definitions generally take one of two approaches. Many definitions apply an "effects test" that determines a subsidy exists if it has a certain effect, for example, changing prices; the limitation of these definitions is that often the effect may be the result of more than one government intervention. The second, and more accurate, approach focuses on the transfer mechanisms—the types of policy instruments used to pass the subsidy benefit to the recipient.

Recommended definition

The ASCM provides a good basis for defining subsidies across all sectors. It has the widest support (the WTO has 153 members), has been tried and tested through a rigourous negotiating process and is supported by extensive legal analysis and jurisprudence from the Dispute Settlement Body and the Appellate Body. As such, it has distinct advantages over any new definition, which would need to establish support, be negotiated and be tested through jurisprudence. The ASCM definition also offers a wide scope, is based on the transfer mechanism approach, and clearly distinguishes between defining a subsidy and evaluating whether its use is justified.

2 The IEA (1999) defines 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 energy producers or lowers the price paid by energy consumers."

3 The OECD (2010) defines "producer support estimates and consumer support estimates" in *The PSE Manual*.

4 The FAO (2003) defines fisheries subsidies as follows: "Fisheries subsidies are government actions or inactions that are specific to the fisheries industry and that modifies—by increasing or decreasing—the potential profits by the industry in the short-, medium- or long-term."

Under the ASCM:

A subsidy shall be deemed to exist if:

(a)(1) there is a financial contribution by a government or any public body within the territory of a Member (referred to in this Agreement as "government"), i.e. where:

- (i) a government practice involves a direct transfer of funds (e.g. grants, loans, and equity infusion), potential direct transfers of funds or liabilities (e.g. loan guarantees);
- (ii) government revenue that is otherwise due is foregone or not collected (e.g. fiscal incentives such as tax credits);
- (iii) a government provides goods or services other than general infrastructure, or purchases goods;
- (iv) a government makes payments to a funding mechanism, or entrusts or directs a private body to carry out one or more of the type of functions illustrated in (i) to (iii) above which would normally be vested in the government and the practice, in no real sense, differs from practices normally followed by governments;

or

(a)(2) there is any form of income or price support in the sense of Article XVI of GATT 1994;

and

(b) a benefit is thereby conferred.

As broad as the ASCM definition is, it has some limitations. In particular, it excludes some measures, notably market transfers (i.e., those between consumers and producers or vice-versa) created by government policies.

For the purposes of the G-20, the GSI recommends adoption of the ASCM definition, supplemented by an illustrative list of subsidy types to capture some of the transfers not covered by the ASCM. Negotiating a more comprehensive definition is not essential for G-20 members, because their nationally-driven process is neither legally binding nor subject to dispute settlement.

Using the ASCM definition in the G-20 process may draw more attention to WTO members' subsidy notifications under the ASCM; however, this could transpire simply by bringing to light more information about their fossil-fuel subsidies, whichever definition is used by the G-20.

Illustrative list of subsidy types

An illustrative list of the types of measures that are considered subsidies can add clarity to what is covered by the definition (note that a list approach is used within the ASCM to provide a supplementary, non-exhaustive list of prohibited subsidies, albeit covering export subsidies only). An illustrative list is useful for providing examples of the types of subsidies that may not be captured by the definition but that should be considered for reform.

Through the GSI's consultations with G-20 governments, it has become clear that officials tasked with identifying subsidies for reform would find further guidance useful in their consideration of the different types of subsidies to be included in their national action plans. This list (Table 1) could be used in a number of ways. The G-20 could agree that all subsidies on the list should be considered within the scope of subsidy reform, or each member could simply use the list to select the types of subsidies they would include in the reform process and to check that no subsidy types have been overlooked.

TABLE 1: ILLUSTRATIVE LIST OF SUBSIDY TYPES.

This list follows the categories of transfer mechanisms provided by the ASCM definition but may include some types of support that are not captured in the ASCM. The list is not intended to be exhaustive or prescriptive.

Direct transfer or potential direct transfer of funds	Government revenue foregone
• Direct payments linked to production volumes or sales • Deficiency payments (the difference between target price and actual price) • Grants for the acquisition of capital or land • Subsidies to intermediate inputs • Wage subsidies to assist individuals in preparing for and maintaining employment (e.g., training) • Government loans: provided at below-market rates, low collateral requirements, lengthy repayment periods or deferred repayments* • Government spending on research and development • Guarantees for loans, 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	• Tax expenditure: 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	Income or price support, or relief from normal costs or procedures
• Underpricing 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	• Prices set at below-market rates for consumers (including where there is no financial contribution by government) • Above-market rate 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 enterprises normally bear in the normal course of business (e.g., labour, environmental, health and safety) • Exemption from government procedures normally followed by enterprises

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

STEP 2: MEASURE SUBSIDIES

Measure

A forthcoming GSI study shows that data for measuring subsidies are not always available, standardized, validated or accurate (Koplow, forthcoming). Information is often highly fragmented across many government bodies at national, subnational and local levels. In addition, the financial flows of, particularly, off-budget subsidies are not always visible and can require additional investigative work. These data deficits present difficulties for subsidy reformers. If a broad definition of subsidy is adopted, not all types of subsidies provided by the government will necessarily be quantifiable immediately. Therefore, data collection may provide delays for some types of subsidies to be evaluated (step 3), and implementation may need to be planned in stages.

Information and guidance on how to measure subsidies is, at present, incomplete. The GSI is developing a number of tools that provide further advice on how to estimate the value of subsidies, including a review of what techniques have previously been developed (see Box 1). In order to produce comprehensive and comparable subsidies data, however, internationally agreed-upon methods for calculating subsidies will be needed. In the longer term, this may best be provided through an expert advisory board or through formal agreement.

When preparing subsidy estimates, it is important to break down the value of benefits going to different recipients so that the full impact of the subsidy and its elimination can be evaluated. As much as possible, reports should show the value of subsidies

- provided by types of government instrument (e.g., tax, direct spending);
- received by different beneficiaries (e.g., to state-owned companies, private firms or the public); and
- granted to different economic activities along the supply chain (e.g., for oil this would include exploration, extraction, refining, transport and storage, and consumption).

Box 1: GSI tools to measure subsidies.

- *Subsidy Estimation: A Survey of Current Practice* is a forthcoming manual of best practice for measuring the value of subsidies. It draws on methods developed or used by inter-governmental organizations (FAO, IEA, OECD, World Bank and WTO); countervailing authorities (Canada, the European Commission, India, Korea and the United States); other government agencies (Australia, Canada, the European Commission and the United States) and non-governmental organizations (Earth Track and the Environmental Working Group).
- *A new template for notifying subsidies to the WTO* is designed to address some of the problems inherent in the notification format that contribute to poor compliance. It can be downloaded from: <http://www.globalsubsidies.org/en/research/trade-related-research>.
- *Mapping the characteristics of fossil-fuel subsidies* surveys the availability and quality of subsidy information in the United States, China, Germany and Indonesia.
- The GSI is also undertaking a series of country case studies to identify and quantify producer subsidies, starting with Indonesia and Canada.

Reporting and monitoring

G-20 members should regularly report their subsidies so that the process remains transparent and so that progress with implementation can be monitored. Most of the G-20 members have existing notification obligations under the WTO's ASCM framework; however, current practice is to significantly under-report, with low rates of notifications, reports often submitted late, and problems with the accuracy and completeness of data provided.[5]

The G-20 will need to consider a mechanism for monitoring their progress of subsidy reform. Options could include self-reporting back to G-20 meetings, improving reporting within the WTO, establishing a secretariat to share information and reports, or reporting through an existing organization—either a membership-based organization like the OECD, or an independent, non-governmental organization like the GSI.

5 Find more information on WTO Subsidy Notifications on the GSI's website, at <http://www.globalsubsidies.org/en/research/wto-subsidy-notifications>.

STEP 3: EVALUATE SUBSIDIES

Evaluate

The third step of the process is to evaluate subsidies against the objectives of reform in order to identify which subsidies should be reformed and to determine priorities for implementation. For instance, if the objective of a government's reform strategy is to reduce environmentally harmful subsidies, then all subsidies should be evaluated according to their environmental impact, and those with the most significant negative impacts prioritized for reform. The evaluation of subsidies may be categorized into the following three classes (again, illustrated using the example of environmentally harmful subsidies):

1. The subsidy does not meet the criteria (e.g., it has no negative environmental impacts).
2. The subsidy does meet the criteria but the subsidy is justified as an exception (e.g., it is an effective poverty-reduction policy).
3. The subsidy does meet the criteria and should be phased out. These subsidies should be further prioritized according to the significance of their negative impact on the economy, environment or social welfare.

What are the G-20 criteria?

> We commit to…*rationalize* and phase out over the *medium term inefficient* fossil-fuel subsidies that encourage *wasteful consumption*.

This statement, in which the G-20 leaders announced the commitment to phase out fossil-fuel subsidies, sets clear qualifiers for reform. The scope of the initiative should cover "inefficient" fossil-fuel subsidies that encourage "wasteful consumption." It also says that G-20 members will "rationalize" as well as phase out their subsidies over the "medium term." It is worth noting that there is nothing within the leaders' statement that would prevent G-20 members from widening the scope of the reform if they wished. The four qualifiers and how they could be used to evaluate G-20 members' subsidy lists are discussed in Table 2.

TABLE 2: ANALYSIS OF THE G-20'S CRITERIA FOR FOSSIL-FUEL SUBSIDY REFORM.

Inefficient	There are two types of economic efficiency that subsidies should be evaluated against: transfer efficiency and allocative efficiency. 1. *Transfer efficiency* is the ratio of income gain of targeted beneficiaries and the sum of associated government expenditure and consumer costs (Dewbre, Antón & Thompson, 2001)—for example, if 20 per cent of the financial cost of a policy went to its stated target population, we would say the policy was "20 per cent efficient." 2. *Allocative efficiency* refers to the efficiency with which resources are allocated. Evaluating whether a subsidy policy is efficient or inefficient requires considering whether it is the most cost-effective use of the government's resource when compared with other policy options. Challenges will arise, for example, where subsidies that encourage switching to cleaner burning fuels (e.g., natural gas) contribute toward government objectives to reduce carbon emissions but may not meet transfer efficiency objectives. Therefore, a comprehensive test for determining whether a subsidy is inefficient should include both transfer and allocative efficiency.
Wasteful consumption	Within the literature on consumption patterns, wasteful consumption has been defined as "where people consume in excess of any reasonable definition of need" (Hamilton, Denniss & Baker, 2005). It is extremely difficult—technically and politically—to develop benchmarks for determining what reasonable energy needs are. Countries at different stages of development (such as those represented in the G-20 membership) use energy in different ways and at varying intensity levels (e.g., per capita). It is not immediately clear what the difference between inefficient and wasteful in the context of the G-20 statement means, but there do appear to be significant overlaps between the two criteria.
Rationalize	Using the term "rationalize" in conjunction with "phase out" could be interpreted in two ways. G-20 members may choose to rationalize their full set of fossil-fuel subsidies by selecting some for phase out. They could also suggest that some subsidies meeting the criteria for reform could be retained if their designs are improved. This may include: reducing the size of the subsidy or setting caps, better targeting of beneficiaries, reducing the period over which the subsidy is granted, introducing complementary policies, or undertaking regular monitoring and evaluation.
Medium term	There is no common definition of medium term except that it will be greater than the short term (e.g., 5 years) but less than the long term (e.g., 25 years). G-20 countries could either agree to a timeframe for reform or choose different time periods within those bounds. The extended period may mean that subsidies are phased out gradually over time, or that some subsidy policies are eliminated at once, while other subsidy policies need more time (e.g., to collect the relevant data).

There are other qualifiers for subsidies that occur in the literature that may be useful for the G-20 process. *Perverse subsidies* are defined as being harmful to both the economy and the environment.[6] The term *environmentally harmful subsidies* is defined as "a result of a government action that confers an advantage on consumers or producers, in order to supplement their income or lower their costs, but in doing so, discriminates against sound environmental practices" (Institute for European Environmental Policy, 2007). Fossil-fuel subsidies, however, may be considered inherently environmentally harmful due to the associated greenhouse gas emissions.

What are the exclusions and exceptions?

The G-20 leaders' Pittsburgh statement also clearly excludes support for "clean energy, renewables, and technologies that dramatically reduce greenhouse gas emissions." This blanket exclusion is somewhat simplistic: not all support measures for the technologies mentioned will achieve their goals in an efficient manner. Recent studies have questioned whether German subsidies to solar power generation are an efficient use of resources;[7] debates continue as to whether governments should support the use of coal even when it is considered clean and over the development and deployment of carbon capture and sequestration (CCS). The biofuels experience is instructive. Biofuel support measures have been shown to be highly distortive of agricultural markets and to score low in terms of their cost-effectiveness in achieving policy goals, such as reducing greenhouse gas emissions.[8] In addition, the term "dramatically reduce" infuses uncertainty into the exemption; for example, different countries have adopted different percentage thresholds for biofuels (the United States requires only a 20 per cent reduction in life-cycle greenhouse gas emissions compared with petroleum, whereas the European Union requires at least a 35 per cent reduction.)

More generally, detailed exceptions may include subsidies that contribute to legitimate objectives of economic and social policy. Even when exceptions are intended to achieve legitimate policy objectives, the subsidies are not necessarily the most efficient mechanisms for achieving those objectives. Governments should consider periodically re-evaluating all energy subsidies to ensure they are designed well (see discussion under "rationalize" above).

6 See the work of Norman Myers; for example, *Perverse subsidies*, retrieved February 2010 from The Encyclopedia of Earth website, <http://www.eoearth.org/article/Perverse_subsidies>.

7 For example, see the articles by Stefan Theil (2009) or Frondel, Ritter and Schmidt (2008).

8 The Global Subsidies Initiative's program of work on biofuels subsidies is freely available on the Web at <http://www.globalsubsidies.org/en/research/biofuel-subsidies>.

RECOMMENDATIONS FOR THE G-20

The GSI recommends following a clear, three-step process to *define*, *measure* and *evaluate* subsidies for reform:

Define

Adopt the ASCM definition, supplemented by an illustrative list of subsidy types for guidance.

Measure

1. List all subsidies related to the fossil-fuel sector, using the definition and list in step 1.
2. Identify options for calculating the value of each subsidy using, for example, the GSI's forthcoming manual, *Subsidy Estimation: A Survey of Current Practice*.
3. Where more than one estimation method exists, identify a preference, perhaps in conjunction with other G-20 countries.
4. Identify and collect additional information for completing subsidy estimations.
5. Total the estimations to show the value of subsidies
   i. provided by types of government instrument;
   ii. received by different beneficiaries; and
   iii. granted to different economic activities along the supply chain.
6. Update and report subsidy data on a regular basis to monitor progress.

Evaluate

1. Assess all subsidy policies against the criteria for reform, notably the efficiency tests, to determine whether a subsidy qualifies for reform.
2. For those subsidies that qualify for reform, assess whether any fall within an exclusion or exception:
   i. If so, consider whether the subsidy could be "rationalized" or better designed to be more effective.
3. For those subsidies that qualify for reform, set priorities for phase out, taking into consideration their impacts on the economy, environment and social welfare.
4. Establish timelines for developing the reform plans and determining the implementation period.

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FURTHER DETAILS AND CONTACT INFORMATION

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.

See the GSI's *Subsidy Primer* for a plain-language guide to subsidies on: www.globalsubsidies.org.

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