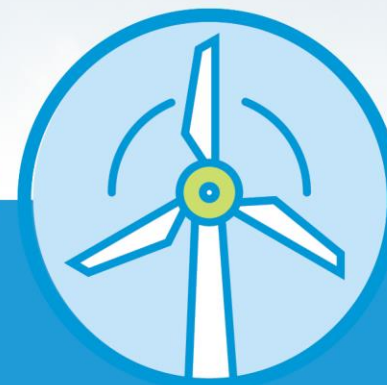
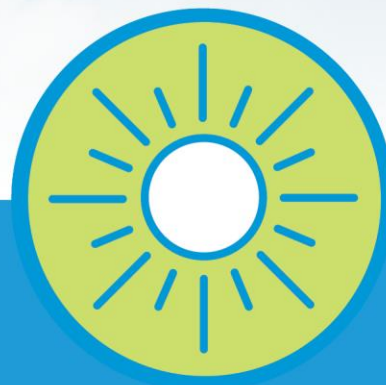


SDG INDICATOR 12.C.1:

Training materials



Acknowledgements

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If not stated otherwise, all information given as part of this training material was taken from the following report:

UNEP, OECD and IISD (2019). Measuring Fossil Fuel Subsidies in the Context of the Sustainable Development Goals.

1. INTRODUCTION

Fossil fuel subsidies and the Sustainable Development Goals

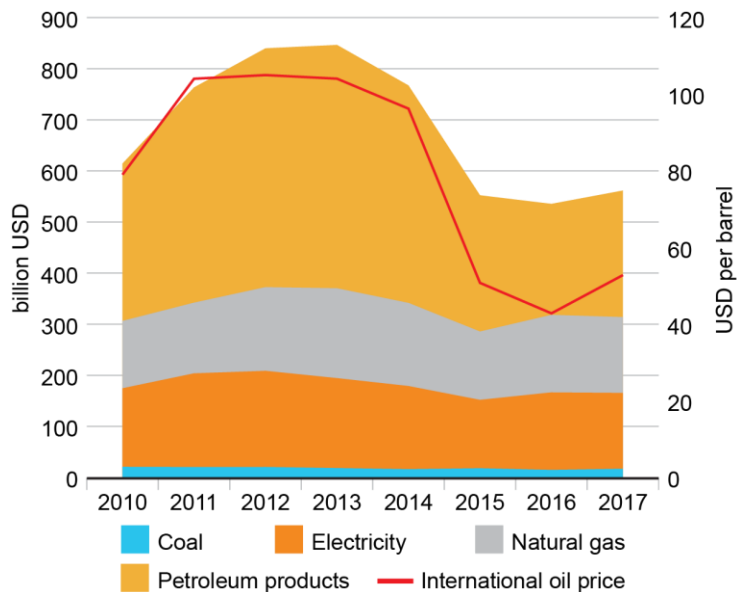


1. INTRODUCTION: FOSSIL FUEL SUBSIDIES AND THE SUSTAINABLE DEVELOPMENT GOALS



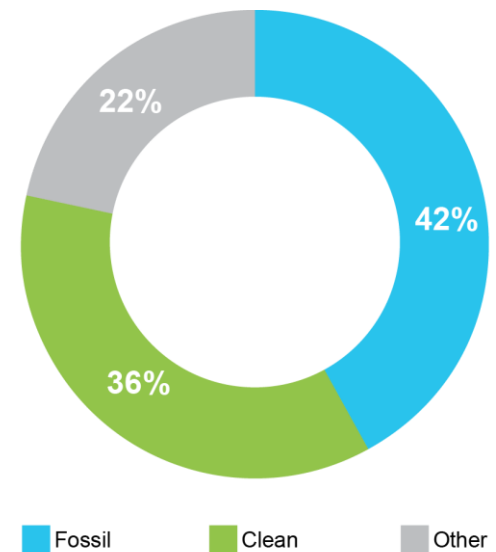
ECONOMIC VALUE OF FFS AND PUBLIC MONEY FOR COVID-19 RECOVERY

Evolution of global FFS and the international oil price



This graph includes data on consumer subsidies from across 194 economies. For a limited number of economies (about 40), the graph also includes data on producer subsidies.

Global energy COVID-19 recovery spending (until May 2021)



This graph includes data on public recovery commitments from 31 major economies and eight multilateral development banks.

1. INTRODUCTION: FOSSIL FUEL SUBSIDIES AND THE SUSTAINABLE DEVELOPMENT GOALS



INTERNATIONAL PROCESSES ON REFORMING FFS

Efforts to reform FFS have gained considerable momentum over the past decade and several international processes have stimulated coordinated action.



1. INTRODUCTION: FOSSIL FUEL SUBSIDIES AND THE SUSTAINABLE DEVELOPMENT GOALS



THE 2030 AGENDA AND FFS

- The 2030 Agenda for Sustainable Development is an ambitious plan of action for people, planet and prosperity adopted in 2015.
- FFS have negative impacts on several SDGs, as well as on the financing of the SDGs.



- The importance of FFS is reflected in SDG Target 12.c:

“Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities.”

1. INTRODUCTION: FOSSIL FUEL SUBSIDIES AND THE SUSTAINABLE DEVELOPMENT GOALS



THE SDG MONITORING PROCESS AND SDG INDICATOR 12.C.1

- The UN General Assembly adopted a global SDG review framework in 2017 that includes 231 indicators.
- The aim is to generate high-quality, timely, reliable and disaggregated data at a global scale based on national data, and to play a coordinating role with national statistical offices.
- Each SDG indicator is assigned to a custodian agency that is responsible for leading the development of an internationally established methodology and the design of a data collection and reporting system for the indicators. UN Environment is the custodian of SDG indicator 12.c.1.
- Awareness and understanding of existing FFS based on credible data is necessary to increase transparency, which is reflected in SDG indicator 12.c.1:

”Amount of fossil fuel subsidies per unit of GDP (production and consumption).”

1. INTRODUCTION: FOSSIL FUEL SUBSIDIES AND THE SUSTAINABLE DEVELOPMENT GOALS



THE SDG MONITORING PROCESS AND SDG INDICATOR 12.C.1



Legend:

Green = Official metrics available

Yellow = Official metrics available but data is incomplete or outdated

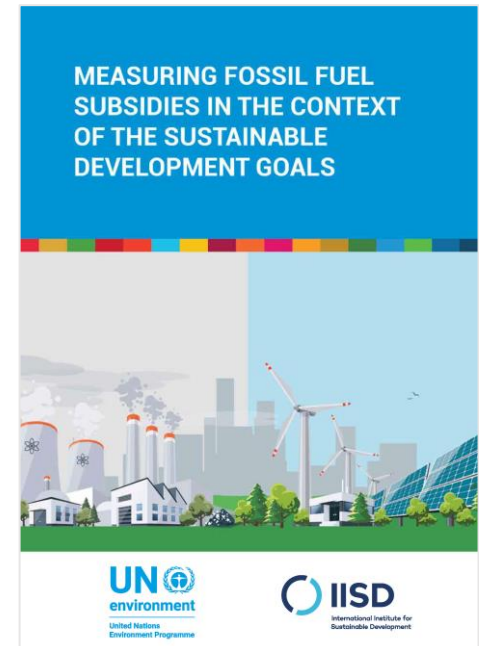
Red = Official metrics not available

1. INTRODUCTION: FOSSIL FUEL SUBSIDIES AND THE SUSTAINABLE DEVELOPMENT GOALS



THE SDG MONITORING PROCESS AND SDG INDICATOR 12.C.1

- UN Environment is the custodian agency for 26 indicators, including for SDG indicator 12.c.1.
- The first internationally agreed-upon methodology for measuring FFS was developed under UN Environment's leadership to provide guidance to UN member countries reporting on this indicator.
- SDG Indicator 12.c.1 will provide the first comprehensive global picture of FFS with data directly provided by countries.



2. SDG INDICATOR 12.C.1

Understanding the basics



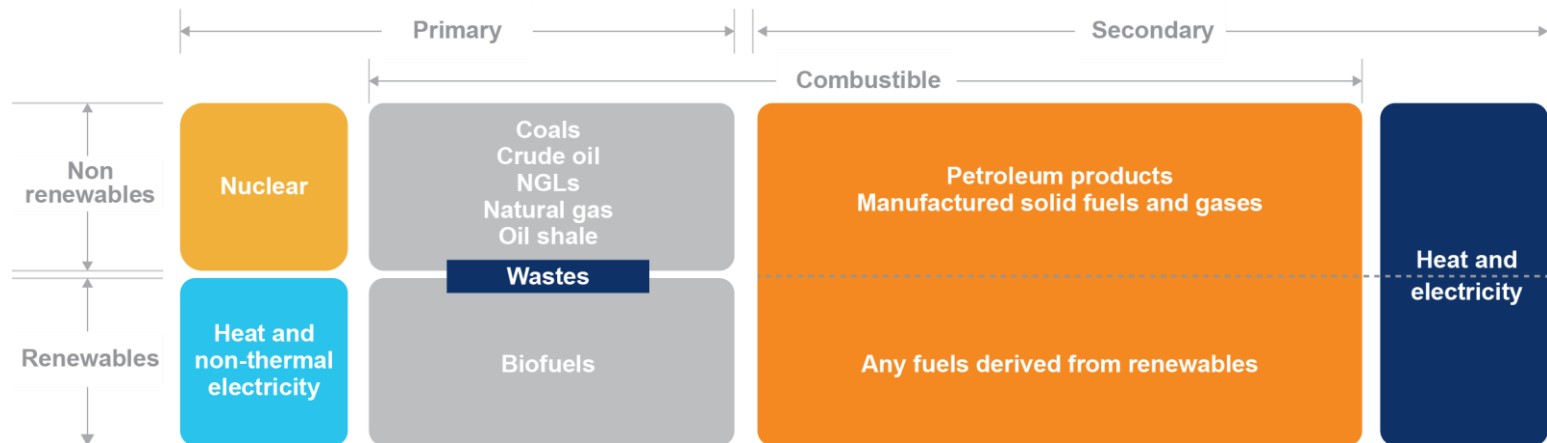
2. SDG INDICATOR 12.C.1: UNDERSTANDING THE BASICS



DEFINITION OF FOSSIL FUELS

- IEA definition of fossil fuels:

“Fossil fuels are taken from natural resources which were formed from biomass in the geological past. By extension, the term fossil is also applied to any secondary fuel manufactured from a fossil fuel.”



Source: IEA Statistics Manual

- The UN Statistical Office’s Central Product Classification should be used for the classification of individual products (Methodology: Annex 5).

2. SDG INDICATOR 12.C.1: UNDERSTANDING THE BASICS



DEFINITION OF FOSSIL FUELS: NOTES TO CONSIDER

- Fossil fuels are also used as feedstock for industrial products.
- These processes have different environmental impacts (no combustion of fossil fuel inputs), but still incentivize the overconsumption of fossil fuels and increase the competitiveness of fossil fuel production.
- **Non-energy uses of fossil fuels are encouraged** to be included in the scope of reporting, **but inclusion is not mandatory** because the portion of FFS to non-energy uses of fossil fuels has not been widely reported as a separate category.

2. SDG INDICATOR 12.C.1: UNDERSTANDING THE BASICS



DEFINITION OF FFS

- The WTO Agreement on Subsidies and Countervailing Measures considers the following forms of government support as “subsidies”:
 - 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)¹;
 - 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

¹ In accordance with the provisions of Article XVI of GATT 1994 (Note to Article XVI) and the provisions of Annexes I through III of this Agreement, the exemption of an exported product from duties or taxes borne by the like product when destined for domestic consumption, or the remission of such duties or taxes in amounts not in excess of those which have accrued, shall not be deemed to be a subsidy.

2. SDG INDICATOR 12.C.1: UNDERSTANDING THE BASICS



DEFINITION OF FFS

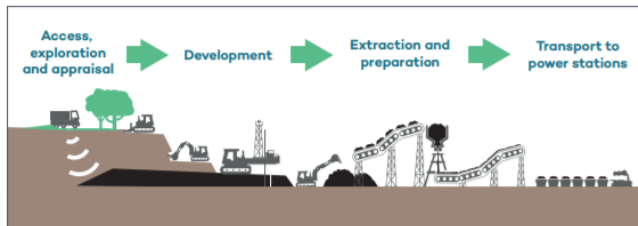
- Based on this definition, the following typology of FFS can be distinguished:
 1. Direct transfer of government funds
 2. Tax expenditure, other revenue foregone, and underpricing of goods and services
 3. Induced transfers (price support)
 4. Transfer of risk to government
- This categorization will be used in the reporting of SDG Indicator 12.c.1, in addition to type of fuel and the distinction between consumption and production.

2. SDG INDICATOR 12.C.1: UNDERSTANDING THE BASICS

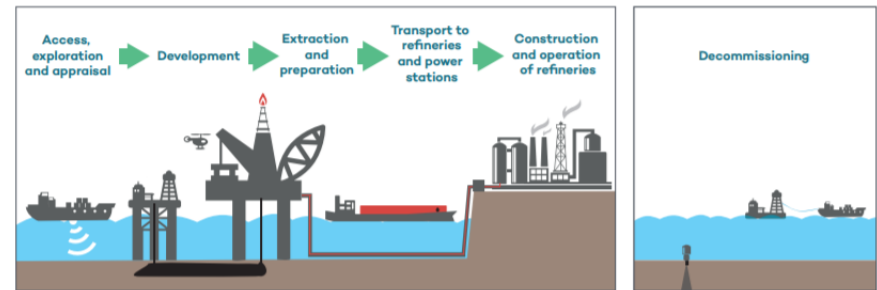


DEFINITION OF FFS

- Consumer and producer FFS should be reported separately to increase transparency.
- Consumer FFS = measures that benefit individual consumers.
 - Consumer subsidies typically lower the price of fossil fuels for the private sector, the public sector or households below what they would be if all financial costs and the value of energy commodities were reflected in the price.
- Producer FFS = measures that benefit individual producers.
 - Producer subsidies support fossil fuel production and can occur along all stages of fossil fuel production, including exploration, development, extraction, transportation and the construction of power plants.



Source: IISD



Source: IISD

2. SDG INDICATOR 12.C.1: UNDERSTANDING THE BASICS



DEFINITION OF FFS

- Incidence = aspect of production or consumption that the FFS targets.

STATUTORY OR FORMAL INCIDENCE (TO WHOM OR WHAT A TRANSFER IS FIRST GIVEN)										
	PRODUCTION							DIRECT CONSUMPTION		
	Output returns	Enterprise income	Cost of immediate inputs	Costs of production factors				Unit cost of consumption	Household or enterprise income	
				Labour	Land and natural resources	Capital	Knowledge			
TRANSFER MECHANISM (HOW A TRANSFER IS CREATED)	Direct transfer of funds	Output bounty or deficiency payment	Operating grant	Input-price subsidy	Wage subsidy	Capital grant linked to acquisition of land	Capital grant linked to capital	Government R&D	Unit subsidy	Government-subsidized lifeline electricity rate
	Tax revenue foregone	Production Tax credit	Reduced rate of income tax	Reduction in excise tax on input	Reduction in social charges (payroll taxes)	Property tax reduction or exemption	Investment tax credit	Tax credit for private R&D	VAT or excise tax concession on fuel	Tax deduction related to energy purchases that exceed given share of income
	Other government revenue foregone			Under-pricing of a government good or service		Under-pricing of access to government land or natural resources; reduction in resource royalty or extraction tax		Government transfer of intellectual property right	Under-pricing of access to a natural resource harvested by final consumer	
	Transfer of risk to government	Government buffer stock	Third-party liability limit for producers	Provision of security (e.g., military protection of supply lines)	Assumption of occupational health and accident liabilities	Credit guarantee linked to acquisition of land	Credit guarantee linked to capital		Price-triggered subsidy	Means-tested cold-weather grant
	Induced transfers	Import tariff or export subsidy	Monopoly concession	Monopoly concession; export restriction	Wage control	Land-use control	Credit control (sector-specific)	Deviations from standard IPR rules	Regulated price; cross-subsidy	Mandated lifeline electricity rate

2. SDG INDICATOR 12.C.1: UNDERSTANDING THE BASICS



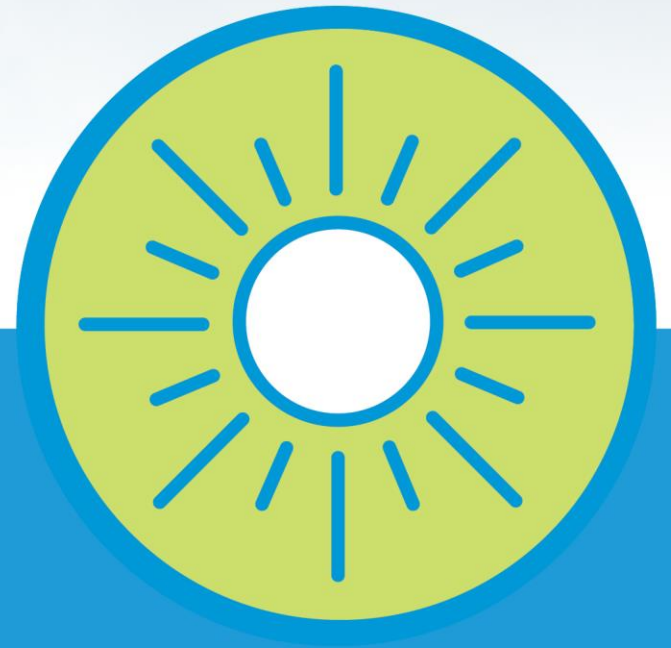
THE REPORTING TEMPLATE

- [Add link to the reporting template here](#)

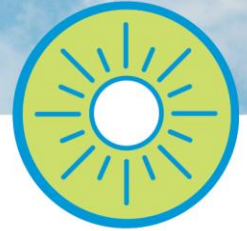


3. SDG INDICATOR 12.C.1

Identifying and estimating FFS



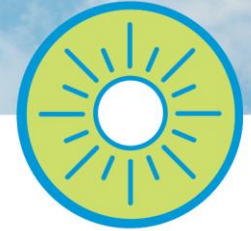
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



APPROACHES TO ESTIMATING FFS AND EXISTING INTERNATIONAL DATABASES OF FFS

1. Calculating price gaps to detect subsidies to consumers
 - Quantifying the difference between the price set by the government or fuel seller and the price prevailing in a competitive market
 - Used for the following FFS category:
 - Induced transfers
 - Existing international databases:
 - IEA consumer price support (about 40 countries)
 - IMF consumer price support (about 150 countries)
2. Identifying and quantifying individual support measures in an inventory
 - Identifying measures that have no effect on prices as well
 - Used for the following FFS categories:
 - Direct transfer of government funds
 - Tax expenditure, other revenue foregone, and underpricing of goods and services
 - Transfer of risk to government
 - Existing international database:
 - OECD online Inventory of Support Measures for Fossil Fuels (about 40 countries)

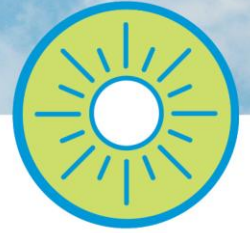
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



APPROACHES TO ESTIMATING FFS AND EXISTING INTERNATIONAL DATABASES OF FFS

- Both approaches complement each other and are necessary to provide a complete picture of FFS.
 - They look at the same phenomenon from two different angles.
- It is not recommended to use only price-gap calculation.
 - It does not detect specific subsidies that do not directly affect prices.
- There is a close relationship between direct transfers (estimated by inventory) and price support (induced transfers, estimated by price gap approach).
 - All direct transfers of government funds to producers have the potential to reduce production costs (and therefore prices) → impact on the price gap
 - Budgetary transfers may be necessary simply to compensate suppliers for the effects of regulated producer or consumer prices → look at related measures in the inventory
 - Government expenditures can also be used to prop up producer prices → eventual impact on end prices captured by price gap approach

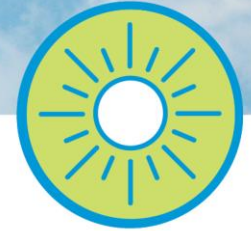
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TYOLOGY OF FFS

1. Direct transfer of government funds
2. Tax expenditure, other revenue foregone, and underpricing of goods and services
3. Induced transfers (price support)
4. Transfer of risk to government

3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS

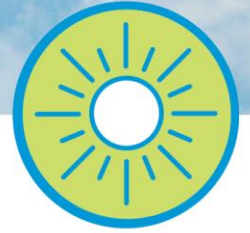


DIRECT TRANSFER OF GOVERNMENT FUNDS, PART 1: BASICS

- Direct transfers of government funds are payments made by governments, or bodies acting on behalf of governments, to individual recipients to cover some or all of their general costs or the costs of undertaking a specific activity.

SUB-CATEGORY	EXAMPLE
Direct spending, budget and off-budget transfers	<ul style="list-style-type: none">• Agency appropriations: Targeted spending on the sector through government budgets of different levels and budgets of individual government agencies• Equity infusions• Government procurement of energy at above-market rates
Government ownership of energy-related enterprises if on terms and conditions more favourable for business than in cases of private ownership	<ul style="list-style-type: none">• Government ownership of strategic and other energy assets that provides returns on investment at rates below market

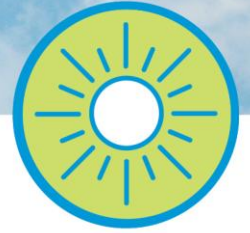
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



DIRECT TRANSFER OF GOVERNMENT FUNDS, PART 1: BASICS

- Measurement:
 - Direct transfers are normally reported by governments in their budgets and generally do not need to be estimated, but only reported (e.g. spending on specific programs or financial transfers to state-owned enterprises).
 - Identify all budgetary expenditures underlying policies that support production or consumption.
 - Be aware of different public financing institutions, administrative levels and extra-budget funds.
 - Direct transfers can also be made to a range of industries (ex: extractive industries).
 - Analyst may be required to do some calculations to allocate the amounts of payments (quasi-)specific to fossil fuel-related industries.
 - Payments should be attributed in full to the fiscal year in which they are made.

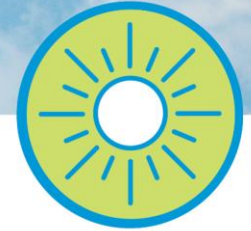
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



DIRECT TRANSFER OF GOVERNMENT FUNDS, PART 1: BASICS

- Data availability:
 - Direct transfers are generally well documented in government budgets.
 - Budget documents are publicly available for more than 100 countries but the degree to which information on individual programs is itemized is highly variable.
 - They can also be found in a country's System of National Accounts.
 - Support to corporations involved in energy production or transformation can sometimes be found in their annual reports; unpublished data may also be obtained from state-owned energy enterprises directly.

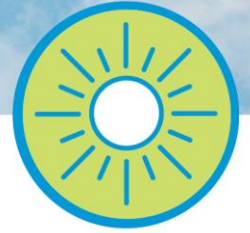
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



DIRECT TRANSFER OF GOVERNMENT FUNDS, PART 1: BASICS

- Example measurement and recording in the template:
 - Mexico
 - Direct transfer to CFE by the federal government to cover part of the electricity tariff (“subsídios a las tarifas eléctricas”) (2016)
 - > [Federal Expenditure Budget 2016](#) (p. 64)
 - Absorption by federal budget of a portion of Pemex’s debt (2019)
 - > [Secretariat of Finance and Public Credit: Communiqué No. 084](#)
 - > [Pemex statistics](#) (p. 15)
 - Germany
 - Compensation for mothballing and closing of lignite-fired power plants (2017–2023)
 - > [European Commission state aid decision](#) (p. 4)
 - (1) Grants for the sale of German hard coal + (2) adjustment-benefit to employees in the hard-coal mining industry (2018)
 - > [Ministry of Finance subsidy report 2015–2018](#) (p. 152–154)

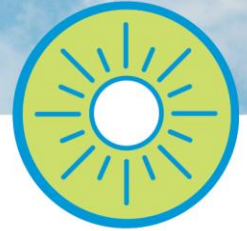
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



DIRECT TRANSFER OF GOVERNMENT FUNDS, PART 2: SPECIAL CASES

- Government ownership of state-owned energy enterprises
 - The financial relationships between governments and their state-owned energy enterprises are often very close.
 - It is not always easy to clearly identify where subsidies exist, or the full scope of those subsidies.
 - All direct budgetary transfers to state-owned energy enterprises should be included.
 - Additional subsidies (e.g. preferential access to state-owned resources, including financial institutions) should be identified and reported as thoroughly as possible.

3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



DIRECT TRANSFER OF GOVERNMENT FUNDS, PART 2: SPECIAL CASES

- Government procurement
 - Purchase of a good or a service by a government agency for its own purposes (e.g. fuel or electricity for military, vehicle fleets, buildings) made at a price above the market or international benchmark → benefit to the producer or distributor.
 - Calculation: $(\text{unit price paid} - \text{unit market value}) \times \text{affected volume}$
 - The government paying a price closer to the international reference price is not a subsidy to production if the unit market value is subsidized.
 - But the unit market value (consumer price) has to be registered as a subsidy.
 - Obtaining information on the unit price and other conditions of a government purchase is not easy, and the number of procurement transactions that take place is usually high.

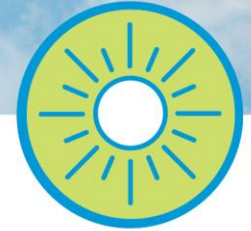
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



DIRECT TRANSFER OF GOVERNMENT FUNDS, PART 2: SPECIAL CASES

- Government equity infusions into private firms
 - Governments at times assist large firms (that are in economic trouble) by providing an infusion of equity. There is a subsidy if:
 - expected return for the government is below what private investors would expect;
 - terms for the recipient are better than what it could receive in private equity markets.
 - Estimating the grant equivalent value of an equity infusion is a complex task, potentially requiring a considerable amount of data and calculation.
 - Additional capacity building is needed.
 - At this time, it is not recommended to include the subsidy component of equity infusions in the FFS inventory.
 - Countries are recommended to report as many details as possible in annual monitoring.

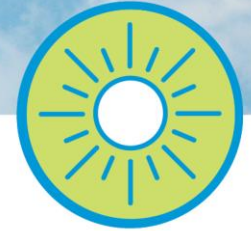
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



DIRECT TRANSFER OF GOVERNMENT FUNDS, PART 3: INFORMATION AND ANALYSIS

- Governments often provide good information on direct transfers.
- Challenges and capacity-building need
 - Data collection by the statistical agencies from the sectoral ministries and state-owned enterprises, including at the subnational level, could be challenging in some cases.
 - Some governments do not provide public details of the expenditures under different programs.
 - Capacity-building would most usefully be targeted at improving national procedures for obtaining expenditure and data (e.g. from state-owned energy enterprises or from surveys).

3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS

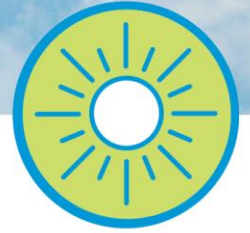


DIRECT TRANSFER OF GOVERNMENT FUNDS, PART 3: INFORMATION AND ANALYSIS

- Analysis
 - Information on direct transfers of funds is generally the best documented of all types of subsidies and relatively easily to obtain.
 - Direct transfers should be reported.

DATA AVAILABILITY	COMPLEXITY	ACCEPTANCE
++	++	++
Direct budgetary transfers are well documented by governments, and often in publicly available documents.	Do not need to be estimated by analysts, only reported. Some analysis may be required to allocate the amount to fossil fuel related industries.	Included in all international definitions, accepted by governments in case study countries.

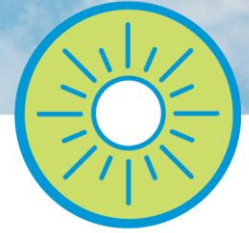
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



DIRECT TRANSFER OF GOVERNMENT FUNDS, PART 3: INFORMATION AND ANALYSIS

- Breakout session
 1. Can you think of any examples of FFS from your country that fall under this category?
 2. Have those been measured or estimated already?
 3. What was the experience with identifying such subsidies and finding data for measuring them?

3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS

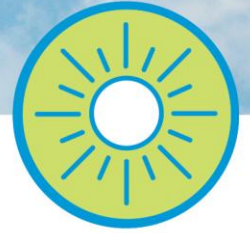


INDUCED TRANSFERS (PRICE SUPPORT)

- Induced transfers arise as a consequence of government interventions that affect prices received by producers and paid by domestic consumers.
- Price interventions are nowadays predominantly in favour of consumers, but some domestic producers are still supported or insulated from foreign competition.

SUB-CATEGORY	EXAMPLE
Induced transfers (price support)	<ul style="list-style-type: none">• Consumption mandates and mandated feed-in tariffs: fixed consumption shares for use of a specific energy type• Border protection or restrictions: controls (tariff and non-tariff measures) on imports or exports leading to unfair advantages• Regulated prices set at below-market rates for consumers, including where there is no financial contribution by government• Regulated prices set at above-market rates for producers• Cross-subsidies in the electricity sector

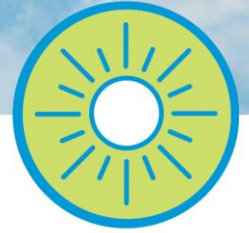
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



INDUCED TRANSFERS (PRICE SUPPORT)

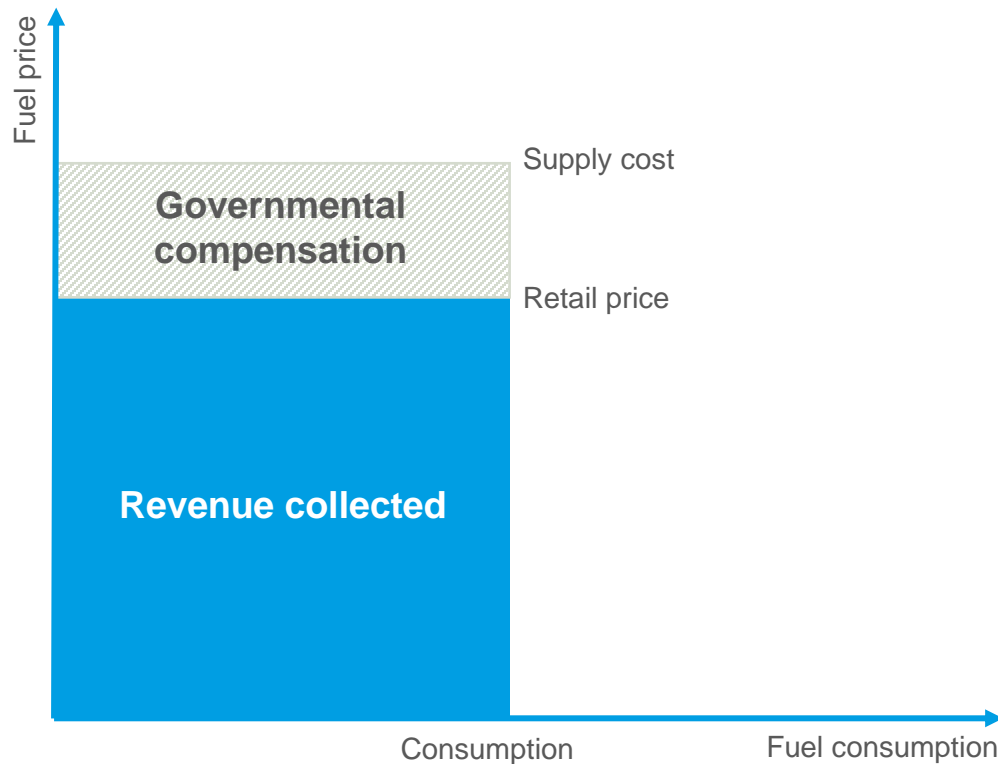
- Measurement
 - Induced transfers are measured by calculating the price gap between the producer or consumer price and a reference price.
 - Calculation: Consumer price support = (adjusted net-of-tax reference unit price – local net-of-tax unit price) x units subsidized
 - Many factors to consider (included in the reporting template)
 - Some factors influencing reference prices
 1. Import or export parity prices considering the price of a product at the nearest international hub (adjusted for fuel quality differences)
 2. Cost of freight and insurance
 3. Cost of internal distribution, marketing and any value-added tax (VAT)

3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS

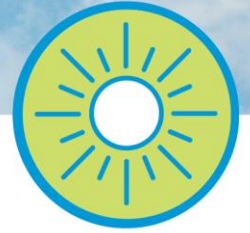


INDUCED TRANSFERS (PRICE SUPPORT)

- Measurement
 - Simplified graphic of induced transfer calculation (below market rates)



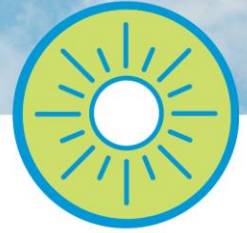
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



INDUCED TRANSFERS (PRICE SUPPORT)

- Data availability
 - Governments generally have very good documentation of the regulated fuel prices and domestic price build-up in cases where fuel prices are regulated.
 - Data on the prices of fuels and electricity sold domestically are generally available for most countries, even if only for certain regions.
 - IEA: End user prices for main oil products, gas, coal and electricity (OECD countries)
 - IMF: Retail prices for petroleum, coal and natural gas (not country-specific, but representative benchmark prices)
 - GIZ (the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH): Retail prices of gasoline and diesel based on surveys conducted on a specific day throughout the world
 - Data to calculate the reference price could be improved.

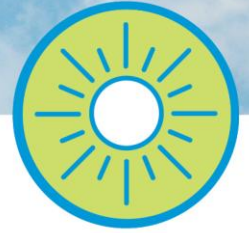
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



INDUCED TRANSFERS (PRICE SUPPORT)

- Real world example for calculating the benchmark price: Indonesia ([MEMR Decree No. 62 K/12/MEM/2020](#))
 - Formula for the type of Gasoline under RON 95 and the type of Diesel Oil ON 48 with the following formula:
Mean of Platts Singapore (MOPS) or Argus + Rp 1,800/liter + Margin (10% of base price)
 - Formula for the type of RON 95 Gasoline, RON 98 Gasoline type, and ON 51 type of Diesel Oil, it is determined by the following formula:
MOPS or Argus + IDR 2,000/liter + Margin (10% of base price)

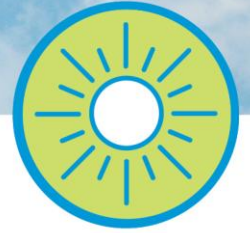
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



INDUCED TRANSFERS (PRICE SUPPORT)

- It is recommended to include induced transfers in the SDG indicator reporting.
 - The calculation provides an important cross-check about existing subsidies and gives a good idea of the total scale of subsidies.
- Estimate the price gap with reporting template (optional) or rely on IMF or IEA data. The template includes:
 - Details on how prices are formed
 - A level of detail on market that would permit estimating (weighted) average prices by fuel
 - Corresponding consumption figures at those prices

3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



INDUCED TRANSFERS (PRICE SUPPORT)

- Challenges and capacity-building needs
 - It can be challenging to obtain data that accurately represents the situation in countries with complex pricing systems and the price fluctuations of internationally traded energy commodities.
 - Capacity-building could be valuable, particularly in helping countries improve their statistical techniques for obtaining information on prices and volumes associated with consumption subsidies.
 - Capacity-building is also needed to determine the correct levels of costs for price build-up and taxation (to calculate the reference price).
 - This should be based on information from inter-governmental organizations involved in estimating price gaps.

3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS

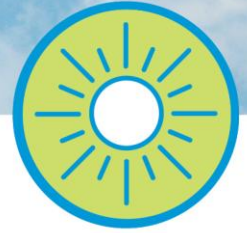


INDUCED TRANSFERS (PRICE SUPPORT)

- Analysis
 - Induced transfers should be reported.

DATA AVAILABILITY	COMPLEXITY	ACCEPTANCE
+	+	++
Good, as data on energy prices is available for most countries. Data to calculate the reference price could be improved.	Moderate and can vary, depending on the size of the market and fuels.	Price support is widely recognized as a component of total government support in estimates of total support under the WTO Agreement on Agriculture, the OECD's work on support for different sectors, the IEA's work on fossil fuel subsidies, the IMF's work, and in the economic literature more generally. However, low-cost producer countries argue that the reference price for making comparisons, even for tradable commodities such as petroleum products, should be production cost, not export-price parity.

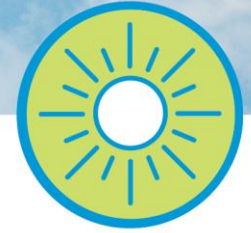
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



INDUCED TRANSFERS (PRICE SUPPORT)

- Double-counting
 - Definition: Double-counting means counting both budgetary and induced transfers (producer or consumer price support and government expenditure) in the total subsidy estimates for a country.
 - Steps must be taken to avoid summing up both expenditures:
 - The analyst should determine which calculation (price gap or inventory) best represents the value of the subsidy and include it in the total of the subsidies.
 - The other calculation should be noted, but not included in the total of the subsidies.
 - Because of the risk of double-counting, disaggregated information on individual subsidy measures is to be reported in the reporting template.

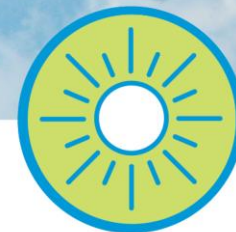
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



INDUCED TRANSFERS (PRICE SUPPORT)

- Double-counting: Example and recording in the template
 - Mexico:
 - Direct transfer to CFE by the federal government to cover part of the electricity tariff (2016)
 - > [Federal Expenditure Budget 2016](#) (p. 64)
 - Price subsidies through tariffs below cost (2016)
 - > [Secretary of Energy: Detailed report on performance and trends of the national electricity industry 2016](#) (p. 117)

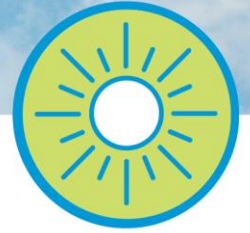
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



INDUCED TRANSFERS (PRICE SUPPORT)

- Breakout session
 1. Can you think of any examples of FFS from your country that fall under this category?
 2. Have those been measured or estimated already?
 3. What was the experience with identifying such subsidies and finding data for measuring them?

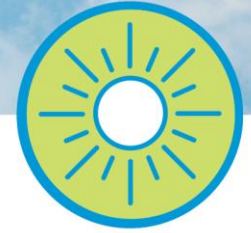
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Broad classification of this category
 1. Tax expenditures (the monetary value of tax breaks) and other government revenue foregone (targeted reductions for specific industries of import and other duties)
 2. Under-pricing of goods and services, including risk (access to government services and goods for free or at a reduced price)

3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS

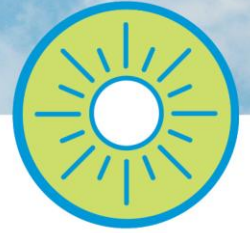


TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

1. Tax expenditures and other government revenue foregone

SUB-CATEGORY	EXAMPLE
Tax breaks and other government revenue foregone	<ul style="list-style-type: none">• Income tax expenditures:<ul style="list-style-type: none">- Tax expenditures are foregone tax revenues, due to special exemptions, deductions, rate reductions, rebates, credits or deferrals that reduce the amount of tax that would otherwise be payable.• Exemptions from excise taxes and other special taxes, or other duties:<ul style="list-style-type: none">- Exemption of excise taxes on fuels- Exemption of special targeted taxes on energy industry (e.g., based on environmental concerns or “windfall” profits)- Exemption of import duties on equipment for a specific industry

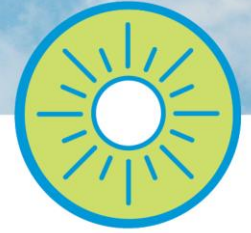
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Tax expenditures take a variety of forms:
 - Allowances: amounts deducted from the benchmark to arrive at the tax base
 - Credits: amounts deducted from tax liability
 - Exemptions: items excluded from the tax base
 - Rate reliefs: a reduced rate of tax applied to a class of taxpayers or taxable transactions
 - Tax deferrals: a relief that takes the form of a delay in paying tax
- Tax expenditures are almost never included in country budgetary frameworks.
 - Less subject to oversight.

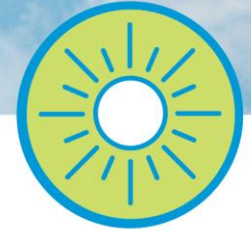
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- There can be other forms of government revenue foregone:
 - Exemptions from excise taxes or other special taxes and duties (including carbon taxes, for example)
 - Import-duty exemptions for equipment used in specific industries

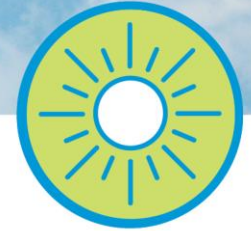
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Measurement
 - Tax expenditure is the difference in revenue due to deviations from the tax norm (tax benchmark).
 - It can be complex to measure the value of special features introduced into the tax code to favour certain industries or the activities of those industries.
 - Some countries report the annual value of those tax features in their periodic tax expenditure reports.
 - Where that is not the case, an estimation model is needed based on tax benchmarks.
 - Identifying a benchmark is a key step to understand what should be considered a tax expenditure subsidy and its value.

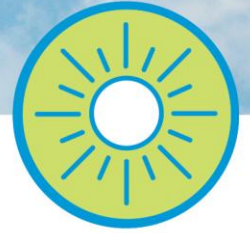
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Measurement: Identifying a benchmark
 - Common approaches to determine the benchmark tax regime recommended by the methodology of SDG Indicator 12.c.1:
 1. Setting the benchmark on the structural features of the tax system
 - This approach treats any “special features” (e.g. raising revenues, or internalizing externalities) that are intended to address objectives other than the basic function of the tax as deviations from the benchmark.
 - Such an approach requires identifying which features should be treated as “special.”
 2. A reference-law approach considers as tax concessions only those explicitly stated in law:
 - A lower tax rate on one product than on another within a broader category would not necessarily be considered a tax exemption.
 - For example, some countries regard the standard rate of VAT as a baseline for measuring tax exemptions, while others (adhering to the principle described in the first bullet) regard the differential rates as intrinsic elements of the VAT.

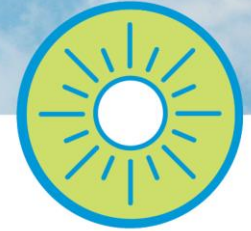
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Measurement: Estimating tax expenditures
 - Several approaches are generally used to quantify the tax expenditures based on the benchmark tax regime:
 1. The **revenue foregone method** calculates the tax expenditure as the rate of the tax concession multiplied by the base or uptake.
 - Example: A reduced rate of EUR 0.25 per litre of diesel for taxis from a normal tax rate of EUR 0.45 per litre would yield annual tax expenditures of EUR 180 million if taxi drivers used 900 million litres of fuel a year.
 2. The **revenue gain method** estimates the expected increase in government revenue if the tax concession were eliminated, allowing for substitution effects.
 - Using the same example, taxis' fuel consumption would be below 900 million litres, since raising the tax rate will likely encourage some people to no longer take taxis
→ the tax differential times the new fuel consumption would be considered.

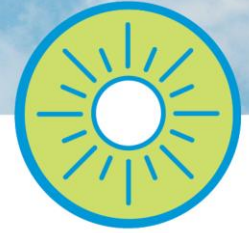
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

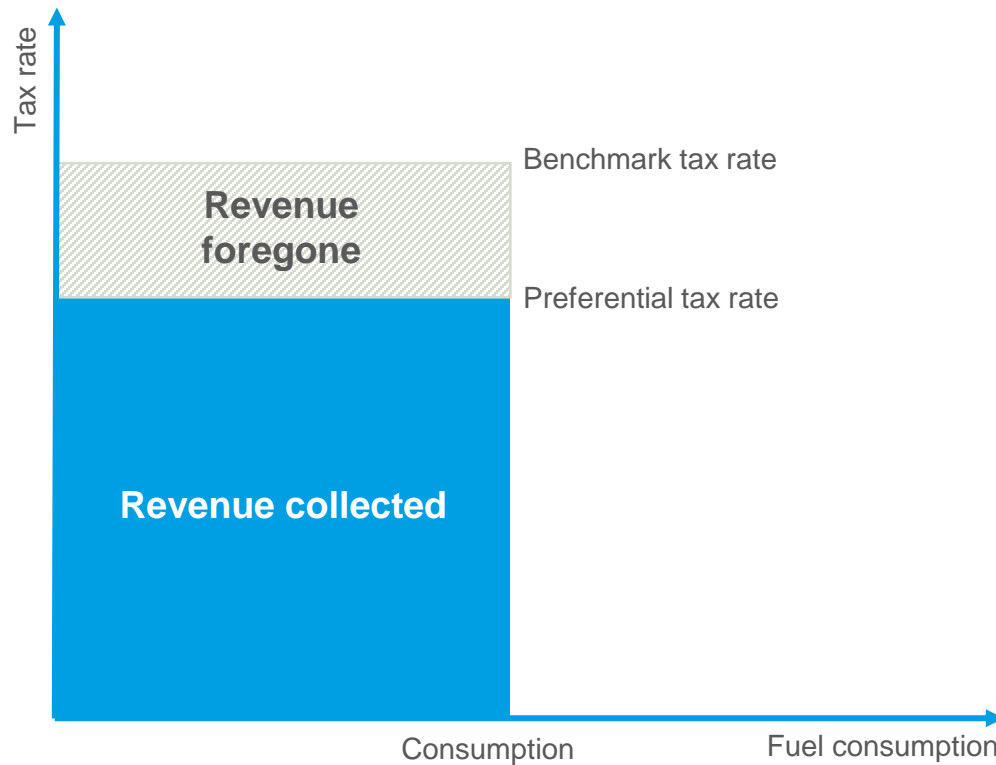
3. The expenditure equivalent method estimates the amount of funding that would be required to achieve the same outcome using a direct budgetary transfer.
 - In the previous example, it would estimate what level of direct subsidy would be needed to maintain the level of taxi drivers' income if the tax expenditure were eliminated → larger estimations than the other two (direct government transfers are generally taxed).
 - The revenue foregone method appears to be the most commonly used approach and is the simplest to apply practically.
 - If applied consistently, all three approaches yield acceptable estimates for SDG Indicator 12.c.1, if a country applies the method consistently.
 - Development of guidance notes on the methods for estimating tax expenditures would be very helpful and could serve to build further regional and international agreement.

3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS

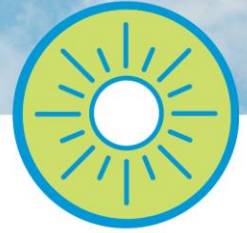


TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Simplified graphic of the revenue foregone method



3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS

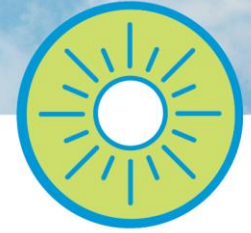


TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Data availability
 - Tax expenditures are less transparent than subsidies financed out of the budget, and no standard exists for reporting or accounting.
 - This can limit assessments and the international comparability of tax expenditures for fossil fuel subsidies, particularly in developing countries.
 - Some countries are producing detailed tax expenditure reports, but this is not general practice.
 - Germany presents tax expenditures together with outlay subsidies every other year in a subsidy report, attached to the draft budget.
 - > Four areas: energy generation and use, transportation, buildings, agriculture, forestry and fisheries
 - > 36 individual subsidy measures
 - > Quantified to (at least) EUR 57 billion in 2012



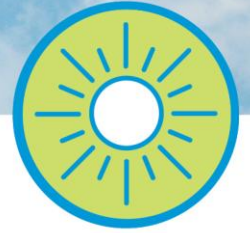
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TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Example measurement and recording in the template
 - Mexico
 - Excise tax exemption for fishers and farmers (2019)
 - > [Federal Expenditure Budget 2019](#) (p. 55)
 - Germany
 - Energy tax exemption for fuels used in commercial aviation (2019)
 - > [Energy Taxation Law](#) (§ 2, sect. 1, no. 3; § 52, sect. 2)
 - > [Federal Office of Economics and Export Control](#) (tab 6j)

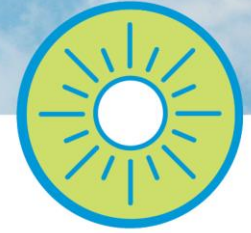
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Challenges and capacity-building needs
 - Benchmarks set on a country-by-country basis and differences in estimation methods
 - For example, the OECD Inventory of Support Measures for Fossil Fuels reports tax expenditures estimated by each country itself, providing the caveat that the higher tax expenditures reported do not necessarily mean that the country provides a higher level of support.
 - There is an opportunity to further improve datasets, as well as some interest from countries in improving the accounting of tax expenditures.

3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS

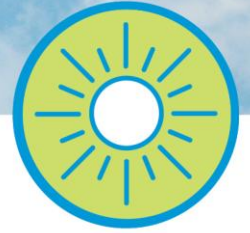


TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

2. Underpricing of goods and services

SUB-CATEGORY	EXAMPLE
Underpricing of government-owned energy resources	<ul style="list-style-type: none">• Benefits related to differences in procedures for energy resource leasing: For example, some countries auction access to larger sites, but designate a sole source for smaller sites.• Royalty relief or reductions in other taxes due on extraction: reduced, delayed or eliminated royalties
Underpricing of non-energy, government-owned natural resources or land	<ul style="list-style-type: none">• Access to government-owned natural resources such as water or land at no charge or for below-market rate
Underpricing of government-owned infrastructure	<ul style="list-style-type: none">• Use of government-provided infrastructure at no charge or below-market rate
Underpricing of other government-provided goods or services	<ul style="list-style-type: none">• Government-provided goods or services at below-market rates.• Government loans: below-market lending to energy-related enterprises, including loans to energy exporters, and debt restructuring and cancellations

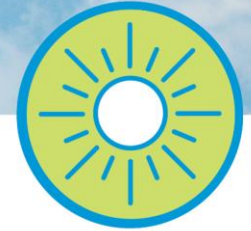
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Fossil fuel production involves combining capital goods with financing, labour, intermediate inputs, land, energy and sometimes water.
- Subsidies associated with these different production inputs are sometimes reported by governments, but not always. If not, the analysts must estimate these subsidies themselves.

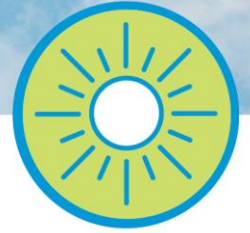
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Measurement
 - Calculation is not difficult, if the requisite data can be found.
 - General calculation: (resource unit price – resource market price) x number of units involved
 - Calculation of loans provided at below-market rates: amount that would have been paid by the debtor under market pricing – amount actually paid to the lending institution on the date that the loan was provided
 - It is difficult to determine the loan terms that would apply if the lending institution had not stepped in.

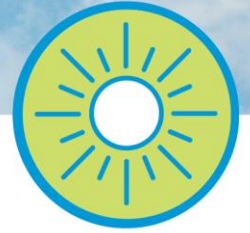
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Data availability
 - There are several limiting issues, including slow advancement in literature which makes generalization about the availability of data difficult.
 - Many government-controlled resources that are provided for free or underpriced are very local.
 - Obtaining a counterfactual market price for comparison may be difficult.
 - Data on financing, and the conditions of financing, can be opaque, and disaggregated data are often not made public.
 - Governments may have information regarding each transaction, but not all are willing to share it with other parts of the government, let alone the public.

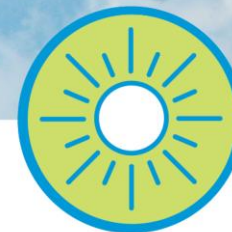
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TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Example measurement and recording in the template
 - Mexico
 - Royalty exemption for natural gas not associated to crude production (October 2020)
 - > [Hydrocarbon Revenue Law](#) (article 24, section II, b)
 - > [Energy Information System](#)
 - > [Economic Information System](#)

3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS

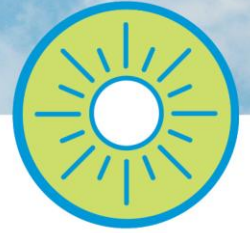


TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Analysis
 - Countries are encouraged to report this FFS category, but some countries may not yet have the information required or the resources available for this task.
 - This FFS category should be progressively reported on as countries build up their capacity.

DATA AVAILABILITY	COMPLEXITY	ACCEPTANCE
+	0	+
<p>Government estimates of tax expenditures relevant to the production of fossil fuels are reported by most developed countries, but not by many others.</p> <p>Data that would permit the valuation of exemptions, reductions and rebates of consumption-side taxes – VAT and excise taxes in particular – should be obtainable with a moderate amount of effort.</p> <p>Data on financing can be opaque but is increasingly being collected.</p>	<p>Tax expenditures: relatively complex to measure.</p> <p>Under-pricing of goods and services: relatively non-complex to measure.</p> <p>Methods for estimating the subsidy element of loans have been developed, but not systematically applied.</p>	<p>Tax expenditures: Included in national monitoring in some countries and G20 peer reviews, but not widespread.</p> <p>Can be controversial, because differences in national tax systems make interpretation necessary.</p> <p>Under-pricing of goods and services: included in most definitions, and accepted, though in practice not widely measured.</p>

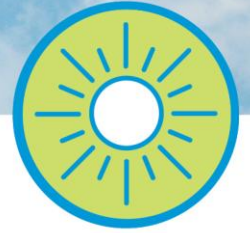
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TAX EXPENDITURES, OTHER GOVERNMENT REVENUE FOREGONE AND UNDERPRICING OF GOODS AND SERVICES, INCLUDING RISK

- Breakout session
 1. Can you think of any examples of FFS from your country that fall under this category?
 2. Have those been measured or estimated already?
 3. What was the experience with identifying such subsidies and finding data for measuring them?

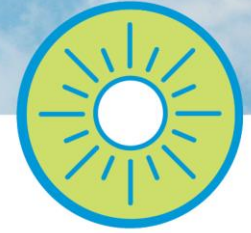
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TRANSFER OF RISK TO GOVERNMENT

- Private enterprise in the fossil fuel industry involves managing various risks: technological, financial, price-related, policy-related and geological.
- A portion of those risks can be shifted to the government (and ultimately taxpayers).
- This is usually done through direct involvement in industry (e.g. state-owned enterprise), or by offering credit, loan guarantees or other risk-sharing mechanisms to independent companies.

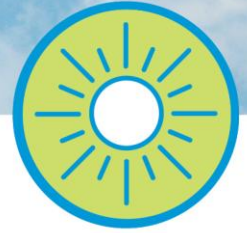
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TRANSFER OF RISK TO GOVERNMENT

SUB-CATEGORY	EXAMPLE
Credit support	<ul style="list-style-type: none">• Loan guarantees at below-market rates
Debt restructuring and cancellations	<ul style="list-style-type: none">• Debt restructuring: The government orders the easing of the debt burden on one or more firms.• Debt cancellation: The government forgives the outstanding balance of a loan it has made, with no compensation from the beneficiary.
Insurance and indemnification	<ul style="list-style-type: none">• Government insurance and indemnification: market or below-market risk-management or risk-shifting services• Statutory caps on commercial liability, which can confer substantial subsidies if set well below plausible damage scenarios
Assumption of risks related to occupational health and accidents	<ul style="list-style-type: none">• Assumption of occupational health and accident liabilities

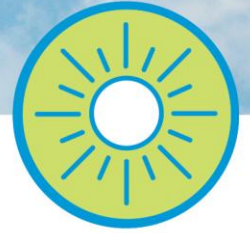
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TRANSFER OF RISK TO GOVERNMENT

- Measurement
 - The calculation of the subsidy element in credit-related instruments to transfer risk follows the same logic as for underpriced loans.
 - Risks related to occupational health and accidents, as well as remediating environmental damage, are difficult to quantify, as this requires information on the amount of damage covered and the likelihood of these events happening.
 - Compensation for damages caused by major explosions and oil spillages - contributions from the responsible industry made to those harmed by a fossil fuel-related activity = subsidy to that industry.

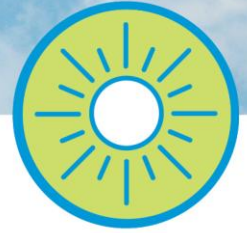
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TRANSFER OF RISK TO GOVERNMENT

- Data availability
 - Data on financing, and the conditions of financing, is not always publicly available.
 - Risk-related data is also often not publicly available and requires access to a uniform methodology for putting a financial value to this risk.
 - A country's detailed SNA may provide a source of information on certain capital transfers, such as debt cancellations.

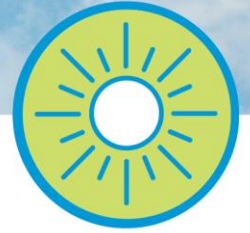
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TRANSFER OF RISK TO GOVERNMENT

- Example
 - Germany:
 - Export credit guarantees
 - > These protect exporters against bad debt losses for commercial or political reasons.
 - > They generally cover risks that private insurance companies cannot assume or do not offer on economic terms.
 - > Total amount of export credit guarantees (2012): EUR 443 million—about 30% of all export credit guarantees of the energy sector ([German government 2013](#), p. 39).
 - > It's not possible to quantify the amount of FFS provided through export credit guarantees.

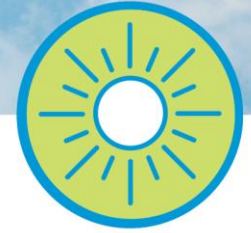
3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



TRANSFER OF RISK TO GOVERNMENT

- Challenges and capacity-building needs
 - Data challenges (as mentioned)
 - Detailed understanding of the energy sector, risk quantification and corporate financing may be required in order to evaluate the level of support provided through concessional financing, insurance and the assumption of risks.
 - Need to undertake a survey of the nature and scope of the finance-related support in the country, to determine its complexity and the resources needed to update the estimates.

3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS

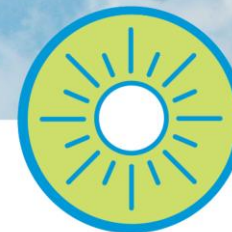


TRANSFER OF RISK TO GOVERNMENT

- Analysis
 - Countries are encouraged to report this FFS category to familiarize themselves, but it is voluntary in the initial stages of SDG Indicator 12.c.1 reporting.

DATA AVAILABILITY	COMPLEXITY	ACCEPTANCE
-	-	0
Only the face values of individual transactions are generally made public, if they are public at all. Other data needed to produce estimates are likely to be hard to obtain.	Relatively complex to measure.	Generally accepted in theory, but rarely quantified in practice. In concrete cases of subsidy estimations, divergent stakeholder views are often observed.

3. SDG INDICATOR 12.C.1: IDENTIFYING AND ESTIMATING FFS



SUMMARY OF TYPOLOGIES AND Q&A

SUBSIDY CATEGORY	DATA AVAILABILITY	COMPLEXITY	ACCEPTANCE	RECOMMENDATION FOR SDG MONITORING	
				NATIONAL	GLOBAL
Direct transfer of funds	++	++	++	Yes	Yes
Induced transfers (price support)	+	+	++	Yes	Yes
Tax expenditure, other revenue foregone, and under-pricing of goods and services	+	o	+	Yes, but optional	Yes, but optional
Transfer of risk	-	-	o	No	No

++ (green) means “excellent” or “low degree of complexity”
 + (yellow) means “good” or “moderate degree of complexity”
 o (orange) means “neutral”
 - (red) means “poor” or “difficult”

4. SDG INDICATOR 12.c.1

Reporting of FFS



4. SDG INDICATOR 12.C.1: REPORTING OF FFS



CONSIDERATIONS TO REPORT

- While the target itself refers to “inefficient fossil fuel subsidies,” no distinction is made between efficient and inefficient subsidies in the indicator.
- All uses of fossil fuels (including for electricity and heat) should be included, but the monitoring of non-energy uses of fossil fuels is optional.
- Identify and report individual measures that can be classified as fossil fuel subsidies following an inventory approach.
 - This provides valuable information for national-level discussions and is best suited to national monitoring practices.
- All subsidies should be reported and quantified, as far as possible. Where subsidies cannot be quantified, they should be reported without attributing a financial value.

4. SDG INDICATOR 12.C.1: REPORTING OF FFS



STEPWISE APPROACH TO BUILDING UP GLOBAL AND NATIONAL MONITORING ON SDG INDICATOR 12.C.1

