



6. Subsidies

Definition and objectives

Governmental institutions can provide financial support to households or private enterprises to promote resource-efficient production and services. There are two main categories of financial aid:

- Direct subsidies such as financial grants or credits. These facilitate investments in resource efficient technologies by partly covering the costs incurred by businesses or households.
- Indirect subsidies in form of (i) differentiated tax rates or tax exemptions and (ii) provision of goods like power or water and services below real, i.e. market, price. Indirect subsidies are used to lower the price of resource efficient devices, items and services to improve their competitiveness and to enhance their commercialisation.

Subsidies are used either to promote innovations, or to facilitate the adaptation to new legal frame conditions (norms and standards) or to preserve environmentally sound structures and production processes.

Mode of operation

Depending on the objective and the target group to be addressed, there exist different types and approaches of subsidies.

Type	Description
Financial contributions	Enterprises receive a grant to develop, purchase or implement resource efficient technologies, if they fulfil certain requirements. Public grants are often programme based and have a limited duration. Grants for industrial research are quite common in OECD countries, however grants to enterprises for the purchase and implementation of equipment or machinery are more rare.
Capital cost subsidies	Capital cost subsidies comprise soft loans, favourable interest rates, liability guarantees and debt forgiveness for investments in resource efficient technologies and measures. Capital cost subsidies are given by state owned or publicly funded banks that can operate with interest rates for loans below the prevailing market rate.
Tax subsidies	Tax subsidies include tax credits, breaks, exemptions, allowances, exclusions and deductions, rate relief, tax deferrals, preferential tax treatment for investments and for consumer goods. They are often provided for a longer period of time and not linked to special programmes.
Provision of goods and services below costs	Governments can provide goods and services needed to improve resource efficiency at prices below real costs to stimulate resource efficiency. This might include certain types of technology, infrastructure (e.g. for waste treatment), energy, water and telecommunication services. Public research infrastructure and capacities, e.g. at universities, can be brought into collaborations with companies on research and development towards resource efficiency (see instrument description Research and Development).

Table 1: Types of Subsidies

The process of providing subsidies can be characterised by four distinctive steps:

Step	Issues to consider
Preparation of subsidy programmes	Programmes with a significant subsidy component should be subject to in-depth planning, comprising: <ol style="list-style-type: none"> a) an analysis of the barriers for resource-efficient innovations and of the role of financial constraints; b) the identification of objectives to be achieved in the short, medium and long run; c) the identification of the beneficiaries of the programme, their profile and exact needs; d) the identification of possible organisations and authorities responsible for the programme; and e) the analysis of the risks, including fraud, linked with subsidies and the alternative options available;

Design of the programme	Once it has been decided in principle to start a subsidy scheme, the programme must be designed in detail. This includes inter alia the definition of: <ul style="list-style-type: none"> a) expected results, required measurement indicators and the measurement activities; b) necessary information from the clients or beneficiaries that will be applying for subsidies c) criteria for eligibility and the evaluation process d) the scope of measures to be subsidised e) the type and amount of subsidy f) the mode of delivery of the subsidies, the work processes, the managing units g) the monitoring and evaluation system.
Implementation Measures	The acceptance and the outcome of subsidies largely depend on the efficiency of the administration, the quality of the marketing of the programme and the provision of professional support to clients in form of information, training and advice.
Monitoring, Evaluation & Revision	Interim monitoring and evaluation measures examine and assess the progress of the subsidy scheme, whether the objectives are likely to be achieved, and what corrective interventions should be taken to improve the effectiveness of the subsidies. Monitoring and evaluation information provides direct feedback into the implementation process and thus helps to improve the quality of ongoing interventions. Moreover, since new programmes are often prepared long in advance, evaluations are an important source of information for the design of the next generation of a programme, new policy orientations, and so forth. Final evaluations analyse and assess the impacts, efficiency and effectiveness of the subsidies. They should also assess how sustainable the impacts are and the main factors behind success or failure of a subsidy scheme.

Table 2: Steps and issues to be considered regarding subsidies

A variety of parameters determines how subsidies contribute to the desired objective.

Parameter	Issues to consider
Subsidy item	Subsidies can be provided for measures, resources or goods. The item of the subsidy should be selected according to the objective of the subsidy, efficiency, and feasibility. For example, if sales of single goods cannot be monitored efficiently, subsidies for resource efficiency measures can be more appropriate.
Amount of subsidy	Setting the amount of subsidy right is crucial. The decision should depend on a comparison of the costs between resource-efficient and inefficient devices and processes, on the customers' habits and financial resources.
Beneficiaries	Subsidies can be provided at the level of businesses or private consumers. For example, tax breaks or reduced tax rates for certain fuels can be provided to companies or, as in the case of bio-diesel, to the consumer.
Subsidy source	Subsidies are financed either through general tax revenues or through special taxes or fees established for this specific purpose.
Institutional setup	Different governmental departments can be responsible for providing subsidies, monitoring compliance with programme requirements and sanctioning any fraud.

Table 3: Parameters determining the effectiveness of subsidies

Strengths & weaknesses

Strengths	Weaknesses
<p>Uses financial interest of target groups Subsidies are a potent economic instrument to influence investment and purchasing decisions, as they directly reduce expenditures and increase income and profitability of the production of goods and services. Subsidies make use of the financial interests of people and can be effective even when people are not convinced of the value of resource-efficient measures which are being subsidised.</p> <p>Immediate effectiveness Subsidies act immediately as soon as they are provided. Loss of time to promote resource efficiency is comparatively low. The preparation of a well-managed subsidy scheme may take some time, but once it is established and awareness is raised, clients can be expected to take immediate advantage of the subsidy.</p> <p>Competitiveness advantage for enterprises When awarded on a national or regional level subsidies offer enterprises advantages in international competition. They can contribute to creating on the medium term a powerful and internationally competitive industrial branch, and they can prevent companies from relocating their factories abroad.</p> <p>Support innovation at an early stage Subsidies facilitate the market launch of innovation at an early stage as they reduce the costs of pioneering products and increase knowledge among customers quickly. Subsidies are often used as initial aid to build up new markets, when it is difficult to raise sufficient capital given the uncertain sales potential.</p> <p>Address financial needs of SMEs Subsidies are especially advantageous for small- and medium-sized enterprises (SMEs) which have only limited financial capabilities to internally cross-subsidise new products with revenues from well-established products. Subsidies can also help SMEs to adapt production and service processes to new standards and norms. Without subsidies many of these enterprises may not be able to carry out necessary investments.</p>	<p>Interfere with market results Subsidies interfere with normal market development. They alter the price situation on the market by lowering the price for certain products or services. In this manner, less profitable production and services can displace more economic products and services resulting in net welfare losses.</p> <p>Unequal treatment of enterprises Subsidies create a group of beneficiaries but also a group of disadvantaged. Among the latter are often economically working enterprises that may feel discouraged as they finance their less economic competitors through taxes.</p> <p>Reduce innovation pressure Subsidies weaken the motivation of beneficiaries to become more economical, as long as the subsidies guarantee sufficient revenue. In this way they can hamper the development and introduction of further innovations.</p> <p>Burden for public budgets Subsidies burden public budgets. Especially in developing countries that have a small tax base and face difficulties in raising government revenues, subsidies reduce the availability of financial resources for core tasks of the state such as education, infrastructure, security etc. In extreme cases they can be a waste of tax revenues without meaningful benefit. Subsidies are often considered as unfair when taxpayers finance measures that are only beneficial for a selected group and are not of general interest.</p> <p>Vulnerability to illicit behaviour Subsidies are susceptible to illicit behaviour and corruption. Companies can try to receive subsidies through falsification of records or engagement in corruption with government officials.</p>

Table 4: Strengths and weaknesses of subsidies

Success factors

Using subsidies to stimulate resource efficiency requires specific governmental management capabilities at different stages.

Success factor	Description
Set clear objectives	During the planning stage it is important to precisely define the objectives of the subsidies to enable a review of the performance of the measure. The objectives should be supported by the majority of the taxpayers that finance the subsidies and should not be purely a result of lobby activities with a narrow set of interests.

Timing subsidies	Subsidies should be temporary to avoid that beneficiaries become dependent on financial aid. The size of the subsidy should decrease in a transparent manner and predictably over time, to promote innovation and efforts to improve the profitability of resource-efficient technologies and products. It also helps companies to adapt to a subsidy free market situation.
Set appropriate scale	The number of beneficiaries should be large enough to achieve a significant improvement of the resource efficiency in selected sectors but not too large so that they do not overload public budgets.
Account for side effects of subsidies	Subsidising goods and services, especially those based on the environment like water and energy, shall be undertaken with care not to undermine the efficient use of these resources.
Transparency and openness	The implementation of the subsidy scheme should be as transparent as possible to prevent misuse and corruption. This includes a functioning information system, allowing the responsible institution to determine the subsidy in a consistent manner and to avoid unequal treatment of applicants.
Independent monitoring and evaluation	The results and procedures of the subsidy scheme have to be independently evaluated regularly to decide whether the subsidies are still necessary and more effective than other measures. If these evaluations are not carried out accurately there is a high risk that subsidies continue to exist although the original purpose is no longer relevant or valid.

Table 5: Success factors of subsidies

Key Literature and Case Studies

Bundesbank, 2000: *Die Entwicklung der Subventionen in Deutschland seit Beginn der neunziger Jahre.* Deutscher Bundesbank, Monatsbericht Dezember 2000. (www.bundesbank.de/download/volkswirtschaft/mba/2000/200012mba_subvent.pdf)

Bundesregierung, 2006: *20. Subventionsbericht der Bundesregierung.* Deutscher Bundestag Drucksache 16/1020 (<http://www.bundesregierung.de/Anlage978296/Zwanzigster+Subventionsbericht.pdf>)

Albrecht, John 1998: *Environmental Consumer Subsidies and Potential Reductions of CO2 Emissions.* Paper presented at the GREENING THE BUDGET Conference, ifo Institut für Wirtschaftsforschung, München, May 11-12, 1998 (www.feb.ugent.be/Fac/Research/WP/Papers/wp_98_59.pdf)

Moor de, André, Calamai, Peter 1997: *Subsidising Unsustainable Development: Undermining the Earth with public funds.* Commissioned by the Earth Council, San José, Costa Rica

Case Studies / Examples	Link
EEA Reports with a number of Case Studies on subsidies and subsidy reforms	http://reports.eea.europa.eu/technical_report_2005_ http://reports.eea.europa.eu/eea_report_2006_1/en