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EU GRANT: REPORT ON ENVIRONMENTAL SUBSIDIES AND TRANSFERS

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Summary

This pilot project investigates the feasibility to compile an annual account for environmental subsidies/transfers for the Netherlands. In the first part of the project, definitions, concepts, classifications, and data sources and data collection have been scrutinized (see interim report, Graveland 2010). The main conclusions reached were that we use as point of departure the international practices and recommendations (London group on Environmental accounting, Eurostat / OECD Reflection Group). At the same time also the Dutch policy context – an important part of the user community – needs to be taken into account. As a result also off-budget subsidies are accounted for, as these constitute a significant part of instruments used by the Dutch government. They are however separately identified.

Existing practices for the compilation of data on environmental subsidies are investigated and analysed. These practices are: 1) using government data from the National Accounts classified according to COFOG; 2) analysis of budget lines 3) use of microdata at the level of beneficiaries. Given our objective to obtain a breakdown of subsidies/transfers by 2 digit NACE categories, as well as other advantages, we have decided to strive for a “bottom-up” approach based upon microdata. However, due to data availability, we have resorted in practice to a “hybrid approach” that can be characterized as a combination of the second (budget analysis) and third approach (microdata).

First, data are collected at the level of individual subsidy schemes via the agencies responsible for executing subsidy schemes. Fortunately, some of the largest subsidy schemes were allocated already to NACE within the regular work program on EPE. In a second step, these microdata at the level of individual beneficiaries were connected to the business register. In a third step, in order to obtain data on a transaction basis (for the government sector in fact at cash basis) keys were calculated per subsidy scheme to distribute totals obtained from annual statements of executing agencies to NACE. For subsidy schemes for which no microdata were obtained or connection to the business register has low success, additional assumption were made.

The “bottom up” approach proved to be labour intensive, nevertheless, our results show that it is in principle a feasible approach, that may provide value added once fully followed through.

This report discusses the preliminary results i.e. an overview of annual subsidies (2005 – 2008) classified according to subsidy scheme (on and off budget), to NACE (on budget) and to environmental domain (on budget). It should be stressed that these are preliminary results that need to be further discussed and reviewed by stakeholders.

1. Introduction

1.1 Background and project initiation

For several years Statistics Netherlands has compiled on an annual basis a statistic on Expenditures for Protecting the Environment (EPE) following the SBS regulation¹. This statistic provides information regarding environmental investments, costs, as well as which ‘institutional sector’ finances these costs. The EPE therefore covers to a certain extent also environmental subsidies / transfers. However, the EPE does not provide a complete and comprehensive coverage of all environmental transfers and subsidies. Some activities are not fully covered (such as construction, service sectors). Also, the breakdown into sectors (economic and institutional) provides not a high level of disaggregation. Only the largest subsidy programs are covered. Finally, EPE disaggregates into six environmental domains, which is slightly less detailed than the classification of CEPA 2000 (see Annex I, CReMA is not applied yet).

On the other hand, the EPE work program does provide an excellent starting point to look into the feasibility of compiling an account for environmental subsidies / transfers.

This project assigned to Statistics Netherlands as part of the Environmental Accounts Grants program 2009 is executed by the Environmental Accounts group within the National Accounts department during 2010, however in close cooperation with the team working on EPE.

1.2 Objectives of the project

The aim of the pilot project is to test the framework under development for environmental subsidies / transfers within Eurostat and OECD and to contribute to ongoing discussions in this area. This framework with definitions, concepts and classifications will be further developed by the Eurostat Task Force on environmental transfers which has started in the beginning of 2010 and the London Group (UN - Environmental Accounts). In this report we have chosen to include both on-budget as well as off-budget subsidies (i.e. preferential fiscal treatment), as the latter represents significant value in the Netherlands.

In this project the aim is to compile a time series of subsidy/transfer data specifically for 2005-2008, and subsequently to try to allocate these subsidies/transfers to both NACE class as well as environmental domain. This opens up opportunities to connect the figures on subsidies to a number of economic and environmental indicators which allows to monitor developments at industry level.

This report is structured as follows: Chapter 2 discusses the definitions and scope of environmental subsidies/transfers in the Dutch policy context. Chapter 3 describes the chosen method and existing data sources. Chapter 4 shows the preliminary results. In Chapter 5 we draw conclusions, and describe the envisaged programme of work.

¹ See also CBS publication ‘Environmental Accounts of the Netherlands 2009’, chapter 15, 2010.

2. Definitions and delineations

2.1 Dutch policy context vis-à-vis international recommendations

Subsidies are an important economic instrument in the Dutch policy context. The precise definition and scope of environmental subsidies is a difficult matter, and is one of the revision items of the SEEA. We generally agree with the main recommendations of the London Group, being (Obst, 2010):

1. Environmentally related subsidies have a scope that includes the following types of transfers as defined in the 2008 SNA: subsidies, social benefits to households, other current transfers, investment grants, and other capital transfers.
2. Only subsidies should be included where the main purpose or subsidiary purpose of the payment is for environmental protection or resource management.
3. Environmental subsidies should be restricted to payments from the general government sector to all domestic sectors and the rest of the world.

However, there are a couple of more specific issues that arise in the Dutch context.

Ad1) In the Dutch policy context² clearly also so-called “off budget subsidies”, in particular tax credits, are understood to be included.³ In order to make a statistic that is relevant for Dutch policy users we have therefore included off-budget subsidies in our summary table, however as separately identifiable information. There is also policy interest (as well as work by academia e.g. Van Beers 2001) in the measurement of environmentally harmful subsidies, however these are outside the scope of the current pilot project.⁴

We agree that subsidies should be defined broader than in the strict SNA sense of the word, however there is a scoping issue to what extent ‘other current transfers’ should be included.⁵ We will discuss several borderline cases in Chapter 3, and explain our reasoning in several cases.

² The website www.rijksoverheid.nl/milieusubsidies provides an enumeration of the most important environmental subsidies (in Dutch: milieusubsidies).

³ Environmentally motivated subsidies can be divided into so-called ‘on-budget subsidies’ and ‘off-budget subsidies’. On-budget subsidies are financial flows being part of the expenditures of government. Off-budget subsidies however, function in a somewhat indirect manner, and are not always perceived as subsidies per se. These represent alternative forms of government intervention such as fiscal facilities / tax credits, the setting of minimum prices, creating marketing guarantees, providing financial guarantees for export, etcetera.

⁴ For the interpretation of environmentally harmful / damaging subsidies, a distinction is often made between actual or Potentially Environmentally damaging subsidies (PEDs). The PEDs were considered in the Eurostat / OECD reflection group and are considered in Eurostats Taskforce on subsidies / transfers at present. Potentially environmentally damaging subsidies (PEDs) are supposed to be those subsidies that are applied to industries / sectors that have above average intensity for a specified environmental issue such as CO₂ emissions or for other substances.

⁵ **SNA definition:** Subsidies are current unrequited payments that government units, including non-resident government units, make **to enterprises** on the basis of the levels of their production activities or the quantities or values of the goods or services which they produce, sell or import. This includes both product subsidies (most important), as well as on subsidies on production.

Ad 2) In practice, in case of multiple purposes (e.g. sustainable development) we include subsidies as long as environment is one of the purposes (hence we follow a lenient approach). For instance, *energy subsidies*, which are often provided to serve multiple goals, are included in full. Subsidies for energy-saving measures in addition to having a clear environmental goal⁶ (reducing greenhouse gases and other air emissions) regularly are applied also with an economic aim (less dependence on fossil fuels, or financial beneficial to national industry). There are basically two considerations for this: it is analogous to the approach taken in environmental taxes, where for instance energy taxes are included in full as environmental taxes; alternative approaches, such as the application of an environmental share based upon the total set of objectives of a given policy, usually lack an objective basis and hence additional arbitrariness would be introduced. The resulting figures therefore tend to represent a maximum estimate.

Ad 3) Subsidies / transfers to / from other governmental bodies. In the Netherlands, subsidies are often provided to other government agencies, branch organisations or NGOs that subsequently distribute these amounts among their stakeholders. There is clearly a danger of double counting here. Therefore in this study in principle we count just the subsidies from central government at the moment they are first granted and exclude subsidies that remain internal to the government sector. This obviously has implications for the allocation to NACE.

Funding by and monetary flows from the European Union (EU) are clearly of interest as well. Sometimes co-financing by the Dutch (central) government is involved. In practice these flows run partly through national ministries which carry the risk of double counting. In principle, flows from the EU have not been included. Similarly, for now, we have excluded environmentally related subsidies / transfers to the rest of the world.

2.2 *Other scoping issues and specific cases*

- Consistency with National Accounts (NA) requires that transfers should follow an accrual basis of recording, not a cash basis or commitment basis.⁷ There are two difficulties here. First, most reporting by agencies that execute subsidy programs focuses on commitments⁸ (subsidies granted or ‘intended’ payments), as key measure of their performance. This is in some way logical as it is closer to the heart of their core business i.e. providing incentives, and not the actual payments that follow later on. At first sight, these commitments appear to be close to the accrual basis of recording, however, these commitments may cover several years, and frequently, they are paid out in the form of advances (in Dutch: ‘voorschot subsidie’) that only after monitoring are definitively granted. As a result, following these commitments would introduce not only volatility, but would also introduce a potential

⁶ With the development of RUMEA and the accompanying classification CReMA, it appeared that even more goals (described in legal texts) can be determined and added to the existing ones.

⁷ The general principle in national accounting is that transactions between institutional units have to be recorded when claims and obligations arise, are transformed or are cancelled.

⁸ In Dutch “verplichtingen” is used. To give an example, someone constructing a wind turbine may receive a commitment to obtain an annual transfer for say 10 years. If the wind turbine breaks down, also the annual payments would be suspended. Therefore, we prefer to use the term commitments to distinguish them from true obligations.

mismatch between when the time these commitments were made, and the resulting economic activities. Second, most agencies are included within government statistics and therefore follow a cash basis of recording, and not an accrual basis. Given the fact that also EPE data are based upon a cash basis of recording we follow here in general (the second best solution) of a cash basis of recording.

- In cases where business generates financial means via a commodity board and distributes it again to the business community, it is not treated as a subsidy. As long as the government is not involved in these activities (e.g. by generating and/or distributing these funds), monetary flows will not be treated as subsidies. Examples can be pilot projects set up by the industry itself. Sometimes funding is combined. In such cases, the government part should be treated as subsidy however.
- *Agricultural subsidies* It is debated whether certain subsidies applied in agriculture should be considered as environmentally motivated subsidies. This concerns subsidies for which first a number of (environmental) conditions must be met before one, farmers in particular, becomes eligible to receive the actual (income) subsidy. An example are agricultural subsidies (income support) obtained from the EU, in particular the subsidies in operation under the so-called ‘cross-compliance’. This is part of the income policies (‘first pillar’) of the Common Agricultural Policy, CAP in the EU⁹. For the moment, we have decided not to treat this category as environmentally motivated subsidies as the original objective primarily was income support.¹⁰ However, this choice can be debated as the mentioned ‘environmental conditions’ become more and more stringent, now and in future, contrary to the stringency of conditions set before. The main reason for us not to treat this support category as environmental transfer today is that a government in theory always has different policy instruments at its disposal to reach a certain goal (say reducing pollution): it could tax, it could provide subsidies, or it can regulate. The focus of compiling an account should be restricted to subsidies, and not also include transfers paid in the context of regulating instruments supporting other policy goals.
- *Subsidies for conservation of nature and landscape* are only partly included. For instance transfers made to acquire land and prepare and connect areas to facilitate for conservation (in Dutch: ecologische hoofdstructuur or EHS) are excluded. However, direct payments made to farmers for nature conservation (In Dutch: Subsidie Agrarisch Natuurbeheer, SAN) are included. Also schemes (like ‘Faunafonds’) that compensate farmers for loss of income due to reduced activities in order to safeguard migratory birds that use agricultural land etc. are included. Those are scored within CEPA as ‘protection of biodiversity and landscape’, one out of nine main classes.
- *Subsidies for Innovation, R&D, etc.* In case subsidies for innovation projects include environmental objectives / environmental motives, these are included in the environmental

⁹ The Subsidies / transfers provided under the second pillar of EUs’ Common Agricultural Policy (CAP), as is the nature and landscape conservation policies should, in any case, be taken as environmental subsidies.

¹⁰ In other countries, like Sweden, one seems to treat them (partly) as environmental subsidy.

subsidies. The same applies to subsidies for R&D projects. Subsidies for demonstration projects or implementation, including environmental objectives, are generally excluded.

2.3 Classifications

Current vs capital transfers.

The relationship between environmental subsidies and environmental investments is not always straightforward. One issue is whether these transfers are of a current or capital nature.¹¹

Box 2.1 Typology of environmental subsidies / transfers

on budget env. transfers	<i>current</i>	<i>capital</i>
off budget subsidies	<i>current like</i>	<i>capital like</i>

In Holland this issue plays a minor role, as most of the on budget transfers have a current nature (exceptions would be for instance transfers for installing solar panels). Off budget subsidies are strictly speaking not transfers (nor subsidies) and they are outside the scope of the SNA. Nevertheless, they could be divided into being of a capital nature (linked to the acquisition or disposal of an asset) or of being of a current nature. Most of the off budget subsidies are of a capital nature e.g. tax deductions for clean cars etc.

Also, this issue is not so much of importance for an account of environmental subsidies/transfers per se, but has major implications for compilers of the national accounts due to the effects on income measurement. Therefore, in this report we have chosen not to present transfers broken down into current / capital, but this could easily be achieved.

Break down to environmental domain

For the breakdown to ‘environmental domain’ we use the Classification on Environmental Protection Activities and Expenditure 2000 (CEPA 2000) used by Eurostat for the classification of environmental protection activities (Annex I). In addition, we also include CReMA, the recently developed classification for ‘Resource Management’. Therefore, both classifications are used to allocate subsidies to domain. So far further distinction of the subsidies classified to CEPA class 1, ‘protection of ambient air and climate has not been made. This is foreseen in the near future when subsidies for ‘climate change’ will be identified and classified accordingly.

Breakdown by industry

For now on-budget subsidies have been allocated to 2-digit NACE Rev.1 level. When taken into regular production, they would be classified according to the NACE Rev.2 level using the same level of detail of our environmental accounts (which is based upon A64 however, with additional detail which we will refer to as A64+).

¹¹ 2008 SNA p.162: “a capital transfer is one that is linked to the acquisition or disposal of an asset, either financial or non financial.”

2.4 Off-budget subsidies

Off budget subsidies consist of a few large programs that are mostly covered within the regular EPE program. Obtaining information is therefore relatively easy. For some a breakdown by NACE already exists. Here we briefly explain the workings of the main programs.

- *VAMIL (vrije of willekeurige afschrijving milieu-investeringen)*: Scheme with freedom of choice for the rate of depreciation of environmental investments, with liquidity and interest benefit advantage. The ‘Vamil scheme’ normally results in accelerated depreciation of environmentally-friendly equipment. The VAMIL is not supposed to provide net tax reduction over the entire life of an investment. This is particularly the case for companies that pay the flat corporate tax, since there will not be net deduction from taxable profit¹². VAMIL thus for many companies just provide (limited) cash flow and interest benefit, which is obviously economically advantageous but the adverse impact on government finance is less obvious. The ‘subsidy effect’ of VAMIL in terms of (calculated) income lost by government, may in some years even be negative. This can be the case if related investment in the whole economy shows a significant declining level.
- *MIA (milieu investeringsaftrek)*: MIA is a tax relief scheme for entrepreneurs willing to invest in environmentally-friendly equipment. This environmental investment deduction scheme has up to 40% deduction from taxable profit. MIA and Vamil are (off-budget) subsidies available to entrepreneurs willing to invest in environmentally-friendly equipment.
- *EIA: Energy Investment Deduction*, with a tax deduction of up to 40% deduction from taxable profit. It is a tax relief scheme for entrepreneurs willing to invest in energy-efficient equipment or renewable energy technology. In contrast to VAMIL, EIA and MIA actually do provide net tax reduction over the lifetime of the related investment. Due to the different effects of MIA and EIA compared to VAMIL, it is preferable to treat them differently and separately. The finally calculated benefit of these off-budget subsidies will be determined by the parameters chosen in the calculation, for example by the marginal tax rates used. Therefore, ideally income tax data from the tax authorities should be obtained. However, as we were not able to obtain detailed data, we have simply used available EPE data.
- *Green investment*: The key example is the Green Funds Scheme, a tax incentive scheme enabling individual investors to put money into green projects that benefit nature and the environment. It is a possibility to invest savings in green investment. These investments go to green funds, with which environmental projects such as wind turbines and organic farms are funded. That can be done at rates below market rates, since green investment attractiveness is a tax concession granted to the investor which enhances (net) profit. Individuals who invest in green funds or save money by practicing ‘green banking’ receive a rate lower than the market interest rate but the tax incentive compensates for this. In return, the banks charge green projects less interest.

¹² This however can be slightly different for the industries and parties that are confronted with progressive income tax rates. They can deduct extra in years with high profits and high tax rates.

- *WBSO* (In Dutch: Wet bevordering Speur en Ontwikkelingswerk): Dutch tax incentive scheme for innovation and promotion of research. Resident companies investing in research & development (R&D) can receive a grant that partly compensates the labour costs for R&D. Part of these grants can be assigned to environmental R&D. In the situation in which a WBSO grant has been awarded to a company, it can immediately start to deduce the granted amount from the (monthly paid) wage tax, which results in a substantially reduced wage tax rate.
- *BPM*. If you buy a car, motorcycle or a van in the Netherlands or you import it, one has to pay various taxes. In addition to VAT (% over current value), and duty (cars / motorcycle from outside EU-territory), one pays a ‘taxation of cars and motorcycles’ (BPM). Before the BPM is paid, one is not allowed to use the vehicle on public roads in the country. As a new environmentally motivated adjustment of the tax measure, since the 1st of January 2010, the BPM amount for passenger cars is partly determined by the level of CO₂ emissions of the car (gram per kilometre according to test data of the type of the car). One is exempted from BPM payments if the emissions of the car fall below the limit set by the responsible authority. The crucial element of this environmentally motivated change to the BPM is to change the distribution of the burden and to create incentives to promote cleaner cars, not by affecting the budget necessarily. However, given the fact that with this measure the principle of budget neutrality should be met, one could question whether this in fact constitutes an off-budget subsidy. For now, we have included however the lost tax revenues by government from the exempted cars, as an off-budget subsidy.

Another category of ‘support’ from government to society to enhance environmental protection consists of so-called securities and guarantees. These securities and guarantees obtained from the government make life easier for (private) parties and entrepreneurs to undertake certain activities. This may include investments in somewhat more risky programs and activities aimed at environmental protection as well. Examples of such facilities potentially relevant for the Netherlands include: a. Guarantee Fund for agriculture; b. Loan Guarantee Fund for horticulture and; c. Loan Guarantee Fund for SMEs and eventually d. guarantees to support export. The right treatment of these securities, guarantees and procurement will depend on the result of consultation and coordination within the OECD / Eurostat taskforce on environmentally related transfers and subsidies in 2010 and beyond. For now, they have been excluded.

Recording of off-budget subsidies

To give an example of EIA, suppose an investor in wind turbines is allowed to obtain tax relief in year t1. This raises two recording issues, the scope of the relief to be included and the timing. Within the Dutch EPE environmentally related investments are recorded on an annualized basis. In there the resulting tax relief obtained at t1 is spread out over the expected lifetime of the asset in question.

Profitability functions are relevant as a boundary condition. Within the Dutch EPE, environmental investments are considered to be profitable when costs, both investment costs and operational costs (excluding subsidies received), are recovered within three years. As a result, part of the investments aimed at environmental protection - when this condition is met –

is no longer regarded as environmental investment and the resulting costs are not longer regarded as environmental costs.

We have decided to follow these standing EPE practices for the recording of off-budget subsidies. The main reason being that this recording would be similar to the treatment of consumption of fixed capital.

3. Data sources and methods

3.1 Overview of approaches

There exist, roughly speaking, the following three approaches for compiling an account for environmental subsidies/transfers:

1. Starting from the SNA classification of subsidies, social benefits, other transfers etc. one could attempt to cross classify subsidy data to environmental purpose, building for instance on the COFOG classification;
2. An analysis of budget lines of government and / or annual statements (realizations) of relevant government agencies;
3. Microdata concerning actual transfers (a “bottom up” approach).

Ad 1) The definition of a subsidy applied in the SNA falls short of the policy and research interest that a statistic on environmental subsidies/transfers tries to serve. However, one could obviously also include social benefits, other transfers etc. (as enumerated in the definition of environmental transfer in section 2.1.) and subsequently apply the classification of expenditure by purpose (COFOG; annex II). For the environmental protection activities, following CEPA, in particular COFOG 5: environment protection could be used. Major categories in there are for example Waste and Waste water management (05.1 and 05.2), Pollution abatement (05.3), and Protection of biodiversity and landscape (05.4).

This COFOG classification however faces significant limitations. For example looking in the government budget will learn that budget lines classified as COFOG 05 are not the only ones being environmentally related. In addition, not necessarily all expenditures classified as COFOG 05 have the prime purpose of environmental protection. In several occasions it is combined with other primary objectives such as enhancement of economic or development.

Likewise, other COFOG categories may also cover environmental transfers. For example, ‘agriculture, forestry, fishing and hunting’ (COFOG 04.2) or ‘housing and amenity issues’ (COFOG 06), also supports environmental protection activity. Other COFOG-classes in which environmental protection expenses can be found are Defence (COFOG 02), Economic affairs (COFOG 04) and Fuel and Energy (COFOG 04.3), Foreign economic aid (COFOG 01.2), etc.

With regard to Resource use and management activities (RUMEA), to some extent a linkage can be made to activities as determined by COFOG. For example irrigation and drainage systems applied in agriculture and Water supply (COFOG 4.2.1 resp. 6.3.1) can be linked to use and management of inland water (CRUMA 10). Forestry (COFOG 4.2.2) can be linked to Use and management of natural forest resources (CRUMA 11) etc.

In short, the COFOG based approach results in only very rough estimates and falls short of our objectives.

Ad 2) The second approach analyses the central governments’ budget and accounts (realisations) in depth for environmentally motivated expenditures and subsidies. This approach underlies to a large extent the compilation of the EPE statistic. In some European countries an

exclusive authority or agency takes responsibility for the financial management of central Government and its agencies and makes analyses, and sometimes even forecasts, of central Government finances. This is not the situation in Holland.

Our research has shown that large discrepancies exist between budget data (intended payments) and actual payments (realisations). These differences have to do both with the size of payments as well as with their timing. Commitments that have arisen in a certain budget year often lie above the actual payments. Sometimes advances are paid first, which only after several years are settled, for instance after monitoring has taken place. As a result there are sometimes lags of several years between the actual payment of certain subsidies and the year when commitments arose. It is our experience that reporting by main subsidy providing agencies is usually done on the basis of arisen commitments including for future years, and not on the basis of actual payments. Obviously, both commitments and payments provide important policy information, however, we, due to the harmonisation with SNA principles, are primarily interested here in an accrual basis of recording (with cash basis as second best). It is therefore best to base the analysis on annual statements (realizations) rather than budgeted amounts.

The main drawback of this approach is, however, that an analysis of annual statements often does not provide enough detail in order to decide whether something is a subsidy or more a program related expense. Also, it is sometimes difficult to distribute amounts across environmental domains. More importantly, a breakdown by industry is not possible.

Ad 3). The approach we have tried to implement is the last mentioned i.e. a “bottom-up” approach based on microdata. This is arguably not the easiest route, as it requires lots of effort in collecting and analysing data. However it provides several important advantages over the other methods:

- It is possible to obtain a sufficient breakdown by industry;
- Microdata often provide a more detailed description of the expenses which make them easier to score to domain;
- It is easier to separate program expenses from actual subsidy payments.
- It is possible to determine which subsidy schemes actually contributed to the total sums of subsidy paid, also per industry and domain. This facilitates interpretation and communication of the results.
- A database with microdata could have various other applications, such as combining subsidy data with other (economic) microdata and econometric analysis)

As we will describe in more detail below, due to the fact that we were not able to obtain all microdata for all subsidy schemes, and as some microdata were not based upon cash basis, in practice we have used a combination of budget analysis (annual reporting) and microdata.

Overall, our approach can be characterized as a combination of the second (budget analysis) and third approach (microdata), which we have termed “hybrid approach”.

If the compilation of the government account in the national account is done thoroughly it should, in the future eventually be possible to go even one step further and integrate with the first approach as well. For that purpose, thorough consideration of ‘budget lines’ information

(article description connected to policy area and ‘instruments’) should be carefully implemented as part of the government account compilation processes.

3.2 The hybrid approach

Here the steps relevant for the hybrid approach being applied are described. The process followed consists of the following steps:

1. First an inventory was made of relevant ministries, government agencies; other institutes that may provide subsidies (see Annex III for an overview). Here extensive use was made of the expertise and knowledge of the EPE team.
2. Second, a list of relevant subsidy schemes for the years 2005 – 2008 was compiled. In order to do so, we used existing information within EPE statistics as well as information found on government websites (e.g. for farmers interested in securing finance; or for consumers interested in energy saving measures) as well as existing inventories of subsidy schemes. This resulted in a gross list of subsidy programs per agency in charge of these programs.
3. Subsequently the gross list was ‘scored’ on several criteria: 1) whether the subsidy scheme was ‘environmentally motivated’. 2) it was assessed whether the scheme in fact classifies as a transfer / subsidy. 3) the environmental domain. Often this procedure necessitates confrontation with the (legal) text of each subsidy scheme as well as internet searches (see annex IV for a list). The result is a selection of environmental transfers. We decided to fully include or fully exclude individual subsidy schemes, and not to apply environmental percentages or shares. This assessment procedure may look somewhat labour-intensive. But as most subsidies run for more years this ‘scoring’ effort is normally required just once. This means, that each subsequent year only the newly established subsidy programs need to be assessed.
4. These ‘scores’ were subsequently checked and discussed with relevant experts in the agencies.
5. Obtain annual statements (called “consolidation schemes”) from the various agencies in charge of the identified subsidy programs. In Holland, most environmental subsidy schemes are managed by one main agency, ‘Agentschap NL’, which manages subsidy schemes for several ministries. Other important agencies are DLG and DR (under the ministry of agriculture). For the off-budget subsidies Ministry of Finance as well as the Tax authorities provided information. The consolidation schemes provide information on actual payments on various schemes that can be matched with the inventory list.
6. Obtain as much microdata as possible regarding the identified subsidies. Fortunately, some of the largest subsidy schemes were allocated already to NACE within the regular work program on EPE. For some measures the allocation to industry (NACE) is already done by the execution agency.
7. For those schemes that were not classified according to NACE and for which microdata were obtained, link them to the CBS business register, in order to establish a breakdown by NACE. About half of the beneficiaries, corresponding to roughly two thirds of the total subsidy sum could be connected to different industries (NACE-classes) directly. In

a next step, manually the connection to the business register is improved. For this improvement a procedure of attribution has been developed. Now that this exercise has been performed once, with new data, this becomes much easier to implement in the future. (See text box 1 for more information about the followed procedures)

8. It appeared that microdata from Agentschap NL were not available on a cash basis but only on an ‘commitment’ basis, we decided to use the microdata to estimate keys per individual subsidy scheme to allocate to NACE. Subsequently, these keys are used to allocate actual payments (obtained from annual reports) to ISIC. In doing so, the assumption is made that the breakdown of payments to ISIC in a particular year is distributed similarly as the allocation to ISIC of commitments for the subsidy scheme as a whole.¹³ Moreover, percentage wise, for the largest subsidy scheme, the MEP subsidy¹⁴, an accurate allocation to NACE is already compiled (but not published) for compiling the EPE statistic.
9. Agricultural subsidies have not been linked to the business register due to poor connectivity rates for this sector.¹⁵ Moreover, the beneficiaries are more or less known to exist exclusively of ISIC 1, 5 and 73 (research institutes and academia). Microdata was however used here to score payments as being a subsidy/transfer and environmental.

For certain subsidy schemes the allocation to receiving industry cannot be done via connection to the business register. Most importantly, this was the case for a scheme which provides funding for exhaust filters for particulates, (in Dutch: “roetfilters”). Hereto, additional assumptions were made after consultation of relevant experts. To obtain an industry breakdown and distribution over households, we use the levels of fuel use per transport mode, vehicle category and fuel type, in order to estimate relevant keys. These data are obtained from the transport module that we use within the compilation of the air emission accounts module.

Textbox: connection to the business register with microdata

¹³ It is of course a possibility that when a new subsidy scheme is introduced, first mostly NACE X is paid, and NACE Y is paid later on. Overall, we believe that the resulting errors of this assumption are not that large. We are still hopeful to obtain micro data with actual cash payments from Agentschap NL in the near future.

¹⁴ This is a subsidy on renewable energy actually produced (in Dutch: Milieukwaliteit Elektriciteitsproductie, MEP).

¹⁵ This may change in the near future due to improvements to the business register that are currently being undertaken.

The result of the automated connection effort of Agentschap NL with the microdata in the business register delivered both duplicates as well as records that could not be connected to an individual company (ID). Out of 12,144 records 5594 were connected directly, 5002 were not connected, 1548 records were connected to multiple NACE codes. Thus additional selection was required:

- a. For the 5002 records without connection to a receiver (ID and NACE) additional steps were applied such as: records with subsidy for solar energy up to 16.000 euro were allocated to households (# 4341 records). Subsidies for solar heating systems (boilers) till 1.800 euro were allocated to households as well (# 250). Subsidies related to ERUPT, Emission Reduction Unit (ERU) Procurement Tender, were allocated to “abroad”.
- b. In case a subsidy is connected to the agency itself, the subsidy is supposed to be ‘overhead’ for the agency. This holds for the category waste management and for bilateral agreements between government and industry as well. In total this is relevant for 87 transactions;
- c. Transfers related to universities (and or connected research institutes are allocated to education / research (# 21);
- d. Amounts larger than 1 mln. euro were selected and manually allocated to business register and NACE on individual basis;
- e. Remainder, allocate on individual basis to business register and obtain NACE class and industry unit via additional research based on name and eventually address of the business in question.

For 1548 records on average 5 to 6 options were provided. Based on additional data, allocation to the right NACE category and business ID was made.

As a result, the main on-budget subsidy schemes could be allocated to the level of individual industries and domain for the period 2005 to 2008.

For several off-budget subsidy schemes (MIA; VAMIL; EIA; BPM) we are still trying to get detailed data from the tax authorities at the level of individual receivers. So far, we have not been successful, with the result that the distribution to NACE at this stage is possible for a large part of the on budget subsidies and for almost half of the off budget subsidies.

3.3 Difficulties encountered

In practice, we have encountered several difficulties when using exclusively microdata. First, the names of subsidy schemes change very frequently (sometimes even from year to year). Often, however, although the subsidy schemes change, the underlying subsidy regulations remain identical. There is not a uniform coding system in use by which one can identify whether a certain expense fits within one or another scheme which increases the risk of double counting.

Another difficulty is that the same agency often uses various databases internally to record subsidies that follow different format and classifications. Also, some of the microdata describe commitments, not actual payments. Third, due to ongoing reorganisations, the format of annual statements and the agency in charge changes frequently. This complicates the applications of the bottom up approach.

In practice, scoring also proved to be a difficult task, with a lot of border line cases. Consultation with relevant agencies provided clarification, but usually, also these experts are

primarily aware of their own subsidy scheme and also have difficulty scoring others programs. To mention a few difficult cases:

- Should transfers in kind (an Energy box with products that households can use to save energy) be included? We reasoned yes as it constitutes a transfer in kind.
- Should platforms that primarily raise awareness ('Consumers and energy saving (COEN)) be included? We reasoned no, when this is considered primarily a government program.
- Should JI (joint implementation) type of programs be included? We reasoned no as something in exchange (an emission permit/credit) is obtained.
- Should payments to industries to stop doing certain activities (buy out) be included? We reasoned yes as long as the objective is primarily environmental.
- Should transfers to NGOs (Natuurmonumenten) for land management be included? They are obviously included within EPE(A), and are obviously environmental transfers. On the other hand, they are not subsidies in the common understanding of the terminology, as instruments to initiate behavioural change, as the *raison d'être* of these NGOs is to perform conservation activities. This raises the question what an account on environmental subsidy/transfers should attempt to measure in the first place. An alternative view would be to keep a more narrow focus on subsidies/transfers as a policy instrument to instigate behavioural change. The advantage of such a reasoning would be that subsidies could be compared to rival instruments such as environmental taxes and / or regulation. These are all instruments that influence behaviour but in different ways.

4. Results (preliminary)

In this chapter preliminary results are shown. Table 1 gives an overview of the main environmentally related subsidies / transfer for 2005-2008.

Table 1: Environmental subsidies/ transfers for 2005-2008

<i>thousands euros</i>				
<u>Environmental subsidies (on budget)</u>				
<i>million euros</i>	2005	2006	2007	2008
MEP	532.322	629.596	455.345	628.370
SMOM	5.077	7.424	6.715	7.177
ProMT	4.477	5.487	4.812	5.315
Roefilters	-	725	151.075	72.394
OEPS	29.500	14.344	17.686	5.945
EOS	7.990	16.517	28.983	45.660
Duurzame energie	21.672	11.628	8.716	4.539
CO2 goederenvervoer	-	946	625	2.193
Verduurzaming Noordzeevervisserij	3.287	30.446	4.309	1.603
Duurzame productiemethoden	-	1.752	1.146	1.984
SN/SAN	94.364	122.508	124.292	129.664
Productievoorwaarden en dierenwelzijn	-	1.646	2.069	350
Other - Agentschap NL	63.460	71.148	56.621	34.582
Other - LNV	31.215	414	1.455	109
<i>Subtotal</i>	<i>793.365</i>	<i>914.582</i>	<i>863.850</i>	<i>939.883</i>
<u>Environmental subsidies (off budget)</u>				
Green investments	103.000	115.000	131000	156000
MIAVAMIL	24.115	53.000	11.919	61.681
EIA	101.544	194.994	132.541	111.670
BPM vrijstellingen elektrische en hybride voertuigen	25.000	64.000	14000	<i>pm</i>
BPM verlaging dieselauto's met roefilter	15.000	29.000	39000	<i>pm</i>
WBSO toerekening milieu	35.600	37.900	37500	42500
other				24.000
<i>Subtotal</i>	<i>304.259</i>	<i>493.894</i>	<i>365.960</i>	<i>371.851</i>
Total	1.097.624	1.408.475	1.229.810	1.311.734
On/off ratio	72%	65%	70%	72%

The annual amount varies between 1 and 1.5 billion Euros for 2005-2008. Off budget subsidies constitute about 30 percent of total subsidies / transfers. The MEP subsidy scheme is by far the most important scheme. We also see that a significant amount of schemes are classified under "other", especially in 2005 for Netherlands ministry of Agriculture, Nature and Food Quality (LNV).

Table 2: Environmental subsidies/ transfers for 2005-2008 allocated to domain*million euros*

<u>Environmental subsidies (on budget)</u>	2005	2006	2007	2008
1: Protection of ambient air and climate	635.956	712.647	670.614	738.584
2: Wastewater management	-	-	-	-
3: Waste management	3.819	2.569	1.578	734
4: Protection and remediation of soil, groundwater and	26.131	2.409	9.379	350
5: Noise and vibration abatement	477	1.308	1.342	-
6: Protection of biodiversity and landscape	94.364	124.330	124.292	129.751
7: Protection against radiation	-	54	-	-
8: Research and development	17.021	32.025	43.839	62.019
9: Other Environmental Protection activities	12.310	9.093	8.756	7.200
10. Resource use and management	3.287	30.147	4.049	1.245
	793.365	914.582	863.850	939.883
1: Protection of ambient air and climate	80%	78%	78%	79%
2: Wastewater management	0%	0%	0%	0%
3: Waste management	0%	0%	0%	0%
4: Protection and remediation of soil, groundwater and	3%	0%	1%	0%
5: Noise and vibration abatement	0%	0%	0%	0%
6: Protection of biodiversity and landscape	12%	14%	14%	14%
7: Protection against radiation	0%	0%	0%	0%
8: Research and development	2%	4%	5%	7%
9: Other Environmental Protection activities	2%	1%	1%	1%
10. Resource use and management	0%	3%	0%	0%
	100%	100%	100%	100%

Table 2 provides an allocation of on budget subsidies to environmental domain (using CEPA and CRUMA). We see that the domain “air” is by far the most important followed by protection of biodiversity.

Table 3 allocates the on budget subsidies to NACE classes. There still remain a small percentage of subsidies that have not been allocated yet. We see that this percentage is decreasing over time. The share successfully allocated to NACE has grown from 85 percent in 2005 towards 95 percent in 2008. This can be explained by the fact that the microdata that we used to estimate keys are based on an commitment basis, which implies that it is forward looking in the sense that it covers all new regulations from t1 onwards, but does not cover payments of regulations that have been suspended since. Sometimes, we see that the money trail lags several years compared to the date in which the initial subsidies were granted.

Hopefully, when additional micro data become available, we will be able to improve the number of schemes that we can distribute to NACE based on connection to the business register. However, when microdata will not become available, we will be able to distribute these remaining amounts on the basis of expert information or other assumptions (e.g. for instance by the average distribution by specific domains etc.). We have been able to allocate 40 – 50 percent of the off-budget subsidies to NACE depending of which year. To increase the allocation rate to NACE additional analyses of the microdata is needed.

The largest recipients are ‘electricity supply industry’ followed by agriculture, land transport, other business activities, and the manufacture of chemicals and chemical products.

Table 3: Environmental subsidies/ transfers for 2005-2008 allocated to NACE

<i>thousands euros</i> ISIC rev2	On budget env. subsidies			
	2005	2006	2007	2008
01 - Agriculture, hunting and related service activities	182.659	213.549	236.546	280.719
02 - Forestry, logging and related service activities	48	59	76	71
05 - Fishing, aquaculture and service activities incidental to fish	3.287	30.147	4.049	1.245
10 - Mining of coal and lignite; extraction of peat	888	959	1.137	1.184
11 - Extraction of crude petroleum and natural gas; service acti	590	645	853	794
14 - Other mining and quarrying	1.134	397	420	280
15 - Manufacture of food products and beverages	4.397	4.563	7.305	8.163
16 - Manufacture of tobacco products	-	-	132	56
17 - Manufacture of textiles	94	108	247	243
18 - Manufacture of wearing apparel; dressing and dyeing of fur	-	-	28	14
19 - Tanning and dressing of leather; manufacture of luggage, l	47	58	64	63
20 - Manufacture of wood and of products of wood and cork, ex	1.019	1.231	588	365
21 - Manufacture of paper and paper products	7.048	5.441	9.589	5.109
22 - Publishing, printing and reproduction of recorded media	-	-	551	221
23 - Manufacture of coke, refined petroleum products and nucle	858	-	3.512	1.740
24 - Manufacture of chemicals and chemical products	7.082	13.813	12.745	19.985
25 - Manufacture of rubber and plastics products	211	243	430	339
26 - Manufacture of other non-metallic mineral products	153	346	411	344
27 - Manufacture of basic metals	436	465	433	392
28 - Manufacture of fabricated metal products, except machine	1.966	2.215	3.380	3.687
29 - Manufacture of machinery and equipment n.e.c.	656	786	1.947	1.779
30 - Manufacture of office, accounting and computing machiner	21	29	45	46
31 - Manufacture of electrical machinery and apparatus n.e.c.	2.701	2.779	3.209	3.335
32 - Manufacture of radio, television and communication equipn	5	-	162	91
33 - Manufacture of medical, precision and optical instruments,	128	162	260	254
34 - Manufacture of motor vehicles, trailers and semi-trailers	-	-	52	39
35 - Manufacture of other transport equipment	28	33	62	56
36 - Manufacture of furniture; manufacturing n.e.c.	50	61	350	222
37 - Recycling	279	474	1.175	1.395
40 - Electricity, gas, steam and hot water supply	432.356	482.206	290.184	415.896
41 - Collection, purification and distribution of water	9	77	64	38
45 - Construction	684	418	4.760	3.970
50 - Sale, maintenance and repair of motor vehicles and motorc	507	501	2.945	2.400
51 - Wholesale trade and commission trade, except of motor ve	2.315	3.119	13.128	9.126
52 - Retail trade, except of motor vehicles and motorcycles; rep	21	28	1.060	579
55 - Hotels and restaurants	162	497	1.312	1.657
60 - Land transport; transport via pipelines	103	-	69.399	29.677
61 - Water transport	33	47	2.158	255
62 - Air transport	-	3	1.250	653
63 - Supporting and auxiliary transport activities; activities of tra	423	648	2.782	2.079
64 - Post and telecommunications	12	-	1.821	953
65 - Financial intermediation, except insurance and pension fun	3.878	3.710	8.406	8.946
66 - Insurance and pension funding, except compulsory social s	56	239	744	359
67 - Activities auxiliary to financial intermediation	188	-	874	1.185
70 - Real estate activities	1.956	2.303	5.631	6.095
71 - Renting of machinery and equipment without operator and	-	37	13.728	7.082
72 - Computer and related activities	102	-	1.570	934
73 - Research and development	2.471	423	8.350	12.366
74 - Other business activities	7.217	7.303	22.213	22.796
75 - Public administration and defence; compulsory social secu	50	3.788	5.488	3.037
80 - Education	871	491	2.842	4.464
85 - Health and social work	869	970	715	927
90 - Sewage and refuse disposal, sanitation and similar activitie	5.774	9.852	14.587	13.974
91 - Activities of membership organizations n.e.c.	4.970	446	7.662	8.266
92 - Recreational, cultural and sporting activities	52	6.771	854	477
93 - Other service activities	36	50	521	367
95 - Activities of private households as employers of domestic s	-	18	-	-
99 - Extraterritorial organizations and bodies	-	-	-	-
Households as consumers	-	-	11.488	6.607
To allocate	680.898	802.510	786.291	897.398
	112.467	112.072	77.558	42.486
	793.365	914.582	863.850	939.883
 succesfully allocated	 86%	 88%	 91%	 95%

5. Discussion and recommendations

In this report we have tried to apply a so-called “bottom up” methodology to compile accounts for environmental subsidies / transfers based upon microdata. Although this approach is highly labour intensive, if implemented thoroughly, it may create significant value added, as such microdata could also be used for econometric analyses. Moreover, after linkage to the business register, a very detailed NACE breakdown can be obtained. However, due to various practical difficulties, we ended up following an approach that combines budget analysis (resulting in total amounts per subsidy program) and microdata (that resulted in ‘keys’, enabling to allocate to NACE). Whether we want to continue to strive for a complete bottom-up approach should be evaluated, taking both user needs, as well as capacity constraints into account. Nevertheless, the first preliminary results of our “hybrid” approach are promising.

The amounts of environmentally motivated subsidies (both on and off budget) are between 1 and 1.5 billion euro annually. This figure is a lot higher than the estimates that we obtain according to SNA subsidies (the sum of subsidies D.3 and social transfers in kind D.63), classified according to COFOG 05 Environmental Protection, and amounted to 208 million euro in 2008).

We have been able to allocate on-budget subsidies to environmental domain, classified according to CEPA/CRUMA. As the allocation to domain is dominated by air, we may further subdivide this domain into policy relevant areas such as a) climate change related (mitigation) and b) other such as PM10, acidification etcetera in the near future.

The bottom-up analysis also allowed us to allocate on budget subsidies to 2-digit NACE (more than 90%) with a high level of accuracy. In the near future it is expected that we will be able to allocate all on budget subsidies, with a reasonable level of accuracy. Reporting could be achieved on A64+ (NAMEA breakdown) according to NACE rev2.

It should be stressed that these results are very much preliminary. We intend to discuss the current report with stakeholders (Agentschap NL, Ministries and Research Institutes, Academia) to obtain feedback about coverage as well as estimated amounts.

The precise delineations and scope of environmental subsidies / transfers still requires some additional thought. We have followed in general the international recommendations regarding the definition of environmentally motivated subsidies / transfers. However, we have specifically added information regarding off-budget subsidies as these are important in the Dutch policy context. We have had internal discussions to what extent ‘other transfers’ need to be included. That may require further thought and consideration.

From a practical point of view, we have encountered many borderline cases and a lot of judgement is continuously required during the compilation process.

Depending on the outcomes of the stakeholder consultation, accounts for environmental subsidies could potentially be taken into regular production following the “hybrid” methodology described in this report. All data sources that were used are regularly available, and a lot of the groundwork has been laid.

However, we are still in the process of acquiring additional data sources that may extend our coverage (The Government Service for Land and Water Management (DLG, In Dutch: Dienst Landelijk Gebied) and the Ministry of foreign affairs) or sources that follow more closely transaction/cash basis of recording (Agentschap-NL) instead of commitment basis. Especially, if we were to obtain the latter, this would further improve our estimates. On the other hand, there is also an issue of resources available to do such exercises regularly. One may well expect that the work is organised in conjunction with the EPE team.

The experiences of this project will also provide input for the Eurostat Task Force on Environmental transfers / subsidies which started in 2010. The results will too be used for the current pilot project on EPEA.

6. References

- Boers, A. en M.J. Koning, 2005. Belastinguitgaven door fiscale faciliteiten voor natuurbeleid. Den Haag, LEI, 2005. Rapport 6.05.16; ISBN90-8516-018-7. 80p.
- CBS (2009). Milieurekeningen 2008 ('Dutch Environmental Accounts 2008'). CBS, Den Haag.
- CBS (2010). 'Environmental Accounts of the Netherlands 2009'. Statistics Netherlands, The Hague.
- Comisari, Peter, 2009. A proposed set of standard accounts for the revised SEEA (including tables). Note and tables prepared for the 15th London Group meeting on Environmental Accounting in Wiesbaden (Germany), 30 November - 4 December 2009. LG/15/25.
- Eurostat, 2001. Environmental taxes – A statistical guide.
- Eurostat, 1999. Statistics on Environmental Taxes and other Economic Instruments for environmental Protection in EU Member States. A collection of studies in 13 EU Member States and the Czech Republic. European Commission, Luxembourg.
- Graveland, C., 2009. Haalbaarheidsstudie Milieu subsidies (In Dutch: feasibility study environmental subsidies). Divisie MSP, Sector MOO. 80p.
- Graveland, C. 2010. Interim report on Environmental Subsidies and transfers.
- EEA 2005. Market based instruments for environmental policy in Europe. EEA Technical report No 8/2005.
- EEA 2007 Size, structure and distribution of transport subsidies in Europe. EEA Technical report No 3/2007.
- Eurostat 2007. Environmental expenditure statistics – General government and specialised producers data collection handbook.
- LEI, 2007. Landbouw-Economisch Bericht 2007 (LEB 2007). P. Berkhout en C. van Bruchem (red.). Den Haag. Periodiek rapport 07.01; ISSN 0169-3255. 272 p.
- Larsson, Maja and Annika Mårtensson, 2005. Public environmental protection expenditures and subsidies in Sweden. 55p. Statistics Sweden, Stockholm.
- Ministerie van Financiën, 2005. Belastingplan 2006. Tweede Kamer der Staten generaal. Vergaderstuk 30800.
- Ministerie van Financiën, 2008. Verticale Toelichting Voorjaarsnota 2008. Ministerie van Financiën, Den Haag.
- Ministerie van LNV(a), 2006. Toelichting op de regelingen van het gemeenschappelijk landbouw- en visserijbeleid in het boekjaar 2006.
- Ministerie van LNV(b), 2006. Toelichting op de betalingen in het kader van het gemeenschappelijk landbouwbeleid in het boekjaar 2006.
- Ministerie van LNV(c), 2006. Toelichting op de betalingen in het kader van het gemeenschappelijk visserijbeleid in het boekjaar 2006.
- Obst, C. Outcome paper for global consultation, Issue 7: Environmentally related subsidies. 2010.
- OECD, 2003. Environmentally Harmful Subsidies (Article in the book 'Subsidy measurement and classification: developing a common framework'). OECD, Paris.

- Palm, Viveka, Maja Larsson, 2007. Economic instruments and the environmental accounts. *Ecological Economics* 61 (2007) p.684 – 692. Statistics Sweden, Stockholm.
- Palm, Viveka, Maja Cederlund, Nancy Steinbach, Anda Marina Georgescu, 2009. Unresolved issues: SEEA transfers related to the environment. Document to the 15th London Group meeting on Environmental Accounting in Wiesbaden (Germany), 30 November - 4 December 2009. LG/15/16/1. Statistics Sweden / Eurostat.
- Frederico Falcitelli, 2008. Natural Resources use and management expenditure accounts. Issue paper for the London Group. Brussels, 29 September – 3 October. Istituto Nazionale di Statistica, Istat.
- PBL, 2009. Planbureau voor de Leefomgeving. Milieubalans 2009.
- PBL, 2008. Planbureau voor de Leefomgeving. Milieubalans 2008.
- Senternovem, 2007. Vindwijzer 2007, Voor duurzaamheid en innovatie. Publ.nr. 9COM0707. April 2007.
- Statistics Sweden, 2003. Environmental subsidies. A review of subsidies in Sweden between 1993 and 2000. Rapport 2003:4. ISSN 1403-1337. 63pp.
- Steinbach, Nancy, Viveka Palm, Maja Cederlund, Anda Marina Georgescu, 2009. Unresolved issues: SEEA transfers related to the environment. Document to the 15th London Group meeting on Environmental Accounting in Wiesbaden (Germany), 30 November - 4 December 2009. LG/15/16/2. Statistics Sweden / Eurostat.
- Steinbach, Nancy, Viveka Palm, Ute Roewer, 2008. Revision of SEEA 2003: Issue paper: SEEA subsidies related to the environment. Document to the London group meeting in autumn 2008. Statistics Sweden / Eurostat. 2008-09-21.
- Steinbach, Nancy, Viveka Palm, Ute Roewer, 2007. London Accounting for economic activities and products related to the environment & Accounting for other environmental related transactions. Document to the London group meeting in Rome 17-19 December 2007. Eurostat.
- Tweede Kamer, 2007. Miljoenennota 2008, tekst. Tweede Kamer der Staten generaal. Vergaderstuk 31200, Nota over de toestand van 's rijks financiën. Aangeboden 18 september 2007.
- Tweede Kamer, 2006. Miljoenennota 2006, tekstgedeelte. Tweede Kamer der Staten generaal. Vergaderstuk 30800, Nota over de toestand van 's rijks financiën. Aangeboden 19 september 2006.
- Tweede Kamer, 2004. Miljoenennota 2005, tekst. Tweede Kamer der Staten generaal. Vergaderstuk 29800, Nota over de toestand van 's rijks financiën. Aangeboden 21 september 2004.
- UN et al. 2008. System of National Accounts. United Nations System of National Accounts 2008.
- Beers, Cees van, Jeroen C.J.M. van de Bergh, André de Moor & Frans Oosterhuis, 2002. Milieueffecten van indirecte subsidies, de ontwikkeling van een beleidsgerichte methodiek, TUD/RIVM/VU, Vrom, Den Haag.
- Van Beers, C., van den Bergh, C.J.M., 2001. Perseverance of perverse subsidies and their impact on trade and environment. *Ecological Economics* 36 (2001) 475-486.
- Van Beers, C. and A. de Moor, 2001. Public Subsidies and Policy Failures. How Subsidies distort Trade, Equity and the Environment and How to Reform them. Edward Elgar, Cheltenham UK, November 2001.
- VROM, 1998. 'Kosten en baten in het milieubeleid: definities en berekeningsmethoden'. Herziene uitgave van de standaardmethode voor het definiëren en berekenen van de kosten van milieubeheer. VROM-publicatie. Publicatiereeks milieustrategie 1998/6. Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieu (VROM), Den Haag.

Appendixes

Annex I: Eurostat classification of Environmental protection Activities and Expenditure (CEPA 2000) en Classification of Resource Management Activities (CReMA)

CEPA, The Classification of Environmental Protection Activities, as recommended by SERIEE is composed of 9 classes.

The general structure is as follows:

- 1: Protection of ambient air and climate
- 2: Wastewater management
- 3: Waste management
- 4: Protection and remediation of soil, groundwater and surface water
- 5: Noise and vibration abatement
- 6: Protection of biodiversity and landscape
- 7: Protection against radiation
- 8: Research and development
- 9: Other Environmental Protection activities

CReMA, The Classification of Resource Management Activities. This preliminary classification has the following structure:

- 10: Management of waters
- 11: Management of forest resources
 - 11 A: Management of non-cultivated forest areas
 - 11 B: Minimisation of the intake of forest resources
- 12: Management of wild flora and fauna
- 13: Management of energy resources:
 - 13 A: Production of energy from renewable sources
 - 13 B: Heat/Energy saving and management
 - 13 C: Minimisation of the intake of fossil resources as raw material for other use than energy production
- 14: Management of minerals
- 15: Research and development activities for natural Resource Management
- 16: Other natural Resource Management activities

Annex II: The Classification of the Functions of Government (COFOG)

- 01 - General public services
 - 01.1 - Executive and legislative organs, financial and fiscal affairs, external affairs
 - 01.2 - Foreign economic aid
 - 01.3 - General services
 - 01.4 - Basic research
 - 01.5 - R&D General public services
 - 01.6 - General public services n.e.c.
 - 01.7 - Public debt transactions
 - 01.8 - Transfers of a general character between different levels of government
- 02 - Defence
 - 02.1 - Military defence
 - 02.2 - Civil defence
 - 02.3 - Foreign military aid
 - 02.4 - R&D Defence
 - 02.5 - Defence n.e.c.
- 03 - Public order and safety
 - 03.1 - Police services
 - 03.2 - Fire-protection services
 - 03.3 - Law courts
 - 03.4 - Prisons
 - 03.5 - R&D Public order and safety
 - 03.6 - Public order and safety n.e.c.
- 04 - Economic affairs
 - 04.1 - General economic, commercial and labour affairs
 - 04.2 - Agriculture, forestry, fishing and hunting
 - 04.3 - Fuel and energy
 - 04.4 - Mining, manufacturing and construction
 - 04.5 - Transport
 - 04.6 - Communication
 - 04.7 - Other industries
 - 04.8 - R&D Economic affairs
 - 04.9 - Economic affairs n.e.c.
- 05 - Environmental protection**
 - 05.1 - Waste management**
 - 05.2 - Waste water management**
 - 05.3 - Pollution abatement**
 - 05.4 - Protection of biodiversity and landscape**
 - 05.5 - R&D Environmental protection**
 - 05.6 - Environmental protection n.e.c.**
- 06 - Housing and community amenities
 - 06.1 - Housing development
 - 06.2 - Community development
 - 06.3 - Water supply
 - 06.4 - Street lighting
 - 06.5 - R&D Housing and community amenities
 - 06.6 - Housing and community amenities n.e.c.
- 07 - Health
 - 07.1 - Medical products, appliances and equipment
 - 07.2 - Outpatient services
 - 07.3 - Hospital services
 - 07.4 - Public health services
 - 07.5 - R&D Health
 - 07.6 - Health n.e.c.
- 08 - Recreation, culture and religion
 - 08.1 - Recreational and sporting services
 - 08.2 - Cultural services
 - 08.3 - Broadcasting and publishing services

- 08.4 - Religious and other community services
- 08.5 - R&D Recreation, culture and religion
- 08.6 - Recreation, culture and religion n.e.c.
- 09 - Education
 - 09.1 - Pre-primary and primary education
 - 09.2 - Secondary education
 - 09.3 - Post-secondary non-tertiary education
 - 09.4 - Tertiary education
 - 09.5 - Education not definable by level
 - 09.6 - Subsidiary services to education
 - 09.7 - R&D Education
 - 09.8 - Education n.e.c.
- 10 - Social protection
 - 10.1 - Sickness and disability
 - 10.2 - Old age
 - 10.3 - Survivors
 - 10.4 - Family and children
 - 10.5 - Unemployment
 - 10.6 - Housing
 - 10.7 - Social exclusion n.e.c.
 - 10.8 - R&D Social protection
 - 10.9 - Social protection n.e.c.

Annex III: Agencies / Organisations executing environmental subsidies

Agency / Organisation:	Source:
Binnenland:	
Tax authorities	
Central government	
Ministeries (separately):	
Ministry of environment (VROM)	
VROM - General	
VROM - International affairs	
VROM - Directorate Environment	
VROM - Directorate housing	
Ministry of home affairs (BZK)	
Ministry of Agriculture, Nature and Foodquality	
Directorate Nature	
Directie Fisheries	
Directie Agriculture	
Directie Knowledge	
Agencies:	
Agentschap NL (/ SenterNovem)	Annual Report
AID (Ministry of Agriculture)	Annual Report
Dienst Regelingen, DR (Ministry of Agriculture)	Annual Report (?)
Dienst Landelijke Gebied, DLG (Ministry of Agriculture)	Annual Report (?)
Commodity Boards (Ministry of Agriculture)	Annual Report (?)
EVD (EZ)	Annual Report
RIVO (LNV)	Annual Report
DLO (LNV)	Annual Report
Syntens	
Provinces:	
Individual provinces:	Annual Report individual Provs.
Municipalities:	
Association of Netherlands municipalities (VNG)	SiSa (?);
Individual municipalities:	Annual Report
Research:	
The Netherlands Organisation for Scientific Research (NWO)	Annual Report
The Royal NL Academy of Arts and Sciences (KNAW)	Annual Report

Annex IV: list of subsidies from ‘Agentschap NL’ that were eventually included as environmental transfers

NAAM

AvdT onderdeel Green corridors	IBB T1 pm	SMOM (programmasubsidies)2006
AvdT waterstof, aardgas en verkeersman	Implementatie Energiebesparing GWW	SMOM (projectsubsidies)
BANS 2006	Industrieel en Demontabel Bouwen	SMOM (uitv.kosten)
BANS 2007	Innovatie programma luchtkwaliteit	SMOM 2005
BANS Klimaat	Introductie Alternatieve Vulpunten sub.	SMOM 2005 (programmasubsidies)
Bans Klimaat+	Klimaat en Gebouwde Omgeving	SMOM 2006
Bodem+	Kompas DP Communicatie 2006	SMOM 2007 programma's
CDM Private Spoor FMO-CERUPT	Kompas DP Experimenten 2003-2004	SMOM 2007 projecten
CERUPT	KOMPAS DP RDC 2007	SMOM 2007/Stichting Verantwoord Beheer IJ
CERUPT sub	Kompas DP2 Woningbouw	SMOM programmasubsidies
CO2	Kompas EPBD	SMOM projectsubsidies
CO2 opslag	Kostenvergoeding Subsidie Milieukwaliteit El	Snel fiets verhuur
CO2 reductie Gebouwde omgeving	Kvl/VE, Subsidies verkeersmaatregelen luch	SPIRIT 1999-2002
CO2 Reductie in de Gebouwde Omgeving	KVMEP	SSZ 2001
CO2 reductie Personenvervoer pm	KVMEP / PDE (Novem)	SSZ 2002
Contractperiode 2003	LIFE	SSZ 2005
DEMO 1998	LIFE 2006	SSZ 2006
DEMO 2000	LTO (Novem)EOS	STADSVARWARMING 2003
DEMO 2001	MIA VAMIL 06	Stadsverwarming 2006
DEMO 2002	Montreal Protocol 2004	Stimuleringsprogramma roetfilters op bestelw
DEMO 2003	Montreal Protocol 2006	Stimuleringsprogramma roetfilters op bestelw
DEMO 2004	Montreal protocol 2007	Stimuleringsprogramma roetfilters op persone
DEMO 2005	Nieuw Energie Onderzoek	Stimuleringsprogramma roetfilters op vrachtw
DEMO 2006	Nieuwe Energie Onderzoek 2002	Stimuleringsprogramma roetfilters op vrachtw
DEMO 2007	Nieuwe Energie Onderzoek 2003	Stralingsbescherming (uitvoering KEW)
DEMOS 2001-02	Nieuwe Energie Onderzoek 2004	Strat. onderst. int. samenwerking
DEN B contractperiode	Nieuwe Energie Onderzoek 2005	Sub. Prog. CO2 (pers.vervoer) voorbereiding
DEN 2005	NIRIS	Sub.prog. CO2 (goederenvervoer) proj.boek
DEN B 2004	NOZ - PHOTOVOLTAISCH	Sub.prog. CO2 (goederenvervoer) Tender 1 p
DEN B 2006	NOZ THERMISCH	Sub.prog. CO2 (goederenvervoer) Tender 1 s
DEN B 2007	NWO Stimuleringsprogr.Energie-Onderz.	Sub.prog. CO2 (goederenvervoer) Tender 1+:
Duurzame Energie 2002	NWO; NWO Stimuleringsprogr. Energie-Onc	Sub.prog. CO2 (goederenvervoer) Tender 2 p
Duurzame Energie 2003	OEPS	Sub.prog. CO2 (goederenvervoer) Tender 2 s
Duurzame Energie 2004	Ondersteuning Werkzaamheden IEA - GHG	Sub.prog. CO2 (goederenvervoer) Tender 3 p
Duurzame Energie 2005	Onderzoek fijn stof (infomil)	Sub.prog. CO2 (goederenvervoer) Tender 3 s
Duurzame Energie 2006	Ontw. VM Lukwa 2007	Sub.prog. CO2 (goederenvervoer) Tender 3 s
Duurzame Energie 2007	Opwekken Duurzame Elektriciteit in Vergiste	Sub.prog. CO2 (goederenvervoer) Tender 4 p
Duurzame Energie Nederland	OVMEP	Sub.prog. CO2 (goederenvervoer) Tender 4 s
Duurzame Energie Nederland 2001	PDE (Novem) / KVMEP (deels Delta)	Sub.prog. CO2 (pers.vervoer) proj.boek pm
Duurzame mobiliteit pm	Piek 2005	Sub.prog. CO2 (pers.vervoer) Tender 1 pm
EBIT 2004 - 2006	PIEK SP 2006	Sub.prog. CO2 (pers.vervoer) Tender 1 sub
EDI/Netto	PMZ PRODUCTGER.MILIEUZORG	Sub.prog. CO2 (pers.vervoer) Tender 2 pm
EINP (maandverantw In SAP)	PMZ Productgerichte Milieuzorg 2002	Sub.prog. CO2 (pers.vervoer) Tender 2 sub
EINP (maandverantwoording in SAP)	PMZ Productgerichte Milieuzorg 2003	Sub.prog. CO2 (pers.vervoer) Tender 3 pm
EINP wind	PMZ Productgerichte Milieuzorg 2005	Sub.prog. CO2 (pers.vervoer) Tender 3 sub
Em. Mon. Brksgassen 2004	PMZ Productgerichte Milieuzorg 2006	Sub.prog. CO2 (pers.vervoer) Tender 4 pm
Em.mon. Broeikasgassen 2004-2006	PMZ Productgerichte Milieuzorg 2007	Sub.prog. CO2 (pers.vervoer) Tender 4 sub
Energie Onderzoek Subsidie	Programma Luchtwassers	Sub.prog. CO2 (pers.vervoer) voorber. ronde
Energiebesparing door innovatie / Netto	Programma Luchtwassers 2008 (subsidie)	Sub.prog. CO2 (RO&V) ronde 2 pm
Energiebesparing huishoudens i.i.	ProMT 2002	Sub.prog. CO2 (RO&V) ronde 2 sub
Energiebesparing in Transport 2005	ProMT 2003	Sub.prog. CO2 (RO&V) ronde 3 pm
Energiebesparing in Transport 2006	ProMT 2004	Sub.prog. CO2 (RO&V) ronde 3 sub
Energiebox t.b.v. Nederlandse Huishoud	ProMT 2005	Sub.prog. CO2 (RO&V) ronde 4 pm
Energiebox t.b.v. Nederlandse Huishoud	ProMT 2006	Sub.prog. CO2 (RO&V) ronde 4 sub
Energiebox tbv Ned. Huishoudens	ProMT 2006 bezwaar	Subs.progr. IBB Tender 1 pm
Energiepremieregeling	ProMT subsidie 2007	Subs.progr. IBB Tender 1 subs
Energiepremieregeling 2003 Beroep en b	ProMT subsidie 2008	Subs.regl. Piek (SMT 2004)
EOS	ProMT, Vamil, Life, SMOM, Groen Beleggen	Subs.regl. Piek 2004 (SMT)
EOS (deels Delta)	REDUCTIE LUCHTEMISSIES	SUBSIDIEREGELING EINP
EWAB	Regeling Energiebesparing Huishoudens me	SV; STADSVARWARMING
FES voor schone bussen	REGELING MT	TAB pm
GAVE 2004	ROB	Tender 4 Transportbesparing
GAVE 2007	ROB 2004	Tender 5 Transportbesparing
GAVE Contractperiode 2002	ROB 2005	Tender 6 Transportbesparing
GWW fase 5	ROB 2006	Tender 7 Transportbesparing
GWW sector fase 4	ROB 2007 (subsidie)	Uitv. en Onderst. Montreal Protocol 2006
Halonen 2004	ROB 2008	Uitvoering VERS
Halonen 2004 (beheerskosten)	ROB Contractperiode 2002	Uitvoering VERS 2007
Het Nieuwe Rijden 4e fase 2008 - 2011	ROB Contractperiode 2003	Verkeersmaatregelen Luchtkwaliteit
Het Nieuwe Rijden fase 1	ROB Contractperiode 2004	VRS-Subsidiereregeling2006-Subs-Uitg.
Het Nieuwe Rijden fase 2 pm	ROB SUBS. PROGR	WARMTEPOMPEN 2000
Het Nieuwe Rijden fase 2 sub	SAM/HA	WARMTEPOMPEN 2001
Het Nieuwe Rijden fase 3 pm	SAM/PreDo 2002	Wijziging Subsidiereregeling emissievermindere
HNR 2 contractperiode 2003 pm	SAM/PreDo 2003	Wind op land
HNR 2 contractperiode 2004 pm	SAM/PreDo 2004	
HNR 2 contractperiode 2005 pm	SAM/PreDo Contractper. 2001	
HNR 2 contractperiode 2005 sub	Sanering Loden Leidigen	
HNR 3 contractperiode 2006 pm	SB (3)	
HNR 3 contractperiode 2007 pm	SMOM	

Annex V: overview of the main data sources

- Budget ministry of environment, Environmental program with budget lines (lasted: 2002 to 2005);
- Ministry of environment, budget lines with environmental motivation, 'Overzichtsconstructie milieu', OCM (several years);
- Ministry of Finance & general Overview of subsidies from Central Government, (Subsidie Overzicht Rijksoverheid, SOR (till 2003);
- Ministry of Finance & Interdepartmental Overview of policy Instruments by Central Government (Instrumenten overzicht Rijksoverheid, IOR) (central government intends to compile this each four years, first time in 2006). Supplemented with insights from the report, "View of grants" (zicht op subsidies, ZOS);
- Ministry of Finance compiles makes annual review of so-called "tax expenditures" generally referring to the off-budget subsidies;
- Additions with data from the individual departments of central government, with details from the annual budgets and specific policy instruments. For specific cases, the Interdepartmental Policy Researches (IBO's) may be helpful;
- Ministry of Finance is supposed to compile an annual overview (of over 900 'instruments' transfers from central government incl. subsidies). This data has been compiled and provided for 2010 for the first time relying on 2010 budget information. This is the overview of the government subsidy schemes 2010 (Subsidieoverzicht Rijk 2010, SOR 2010), containing all subsidies from central government;
- Ministry of Agriculture on her website reports details of the grants being paid to individual farmers (these include environmental and subsidies for nature and landscape conservation as well);
- Ministry of the Environment provided detailed additional information from their individual subsidies / subsidy schemes they are taking care of;
- Information from government subsidy framework (rijkssubsidiekader) in 2010, it provides an overview of subsidies primarily aimed for businesses (for 2009 > 200 subsidies in the various departments, including 22 ones with credit / surety);
- CBS statistics of government (government statistics and accounts groups), in particular obtained from the ministry of finance (classification sufficient and sufficiently detailed for the purpose of this project regarding the environmental grants?);
- CBS data on subsidies / transfers / budgets for 'Environmental Protection' obtained from government accounts, being part of the recurring data delivery to the IMF. Data for central and local government is separately available. (But sufficiently detailed and focused by scheme...?).
- CBS data on environmental statistics, so far this is limited to a selection of just 7 subsidy schemes but among the largest. It in particular contains the most important off-budget subsidies. But, an inventory of grant schemes aimed at environmental protection both on-budget and off-budget subsidies, has been done;
- Ministry of Economic affairs with its main Agency responsible for provision of subsidies, 'Agentschap NL' make overview of their environmental subsidies. Since 2007 they provide the so-called 'Find the subsidy Wizard', ('de vindwijzer'), with an annual and detailed overview of the subsidies they carry responsibility for;
- OECD instruments database, this data is somewhat outdated and not very detailed.

