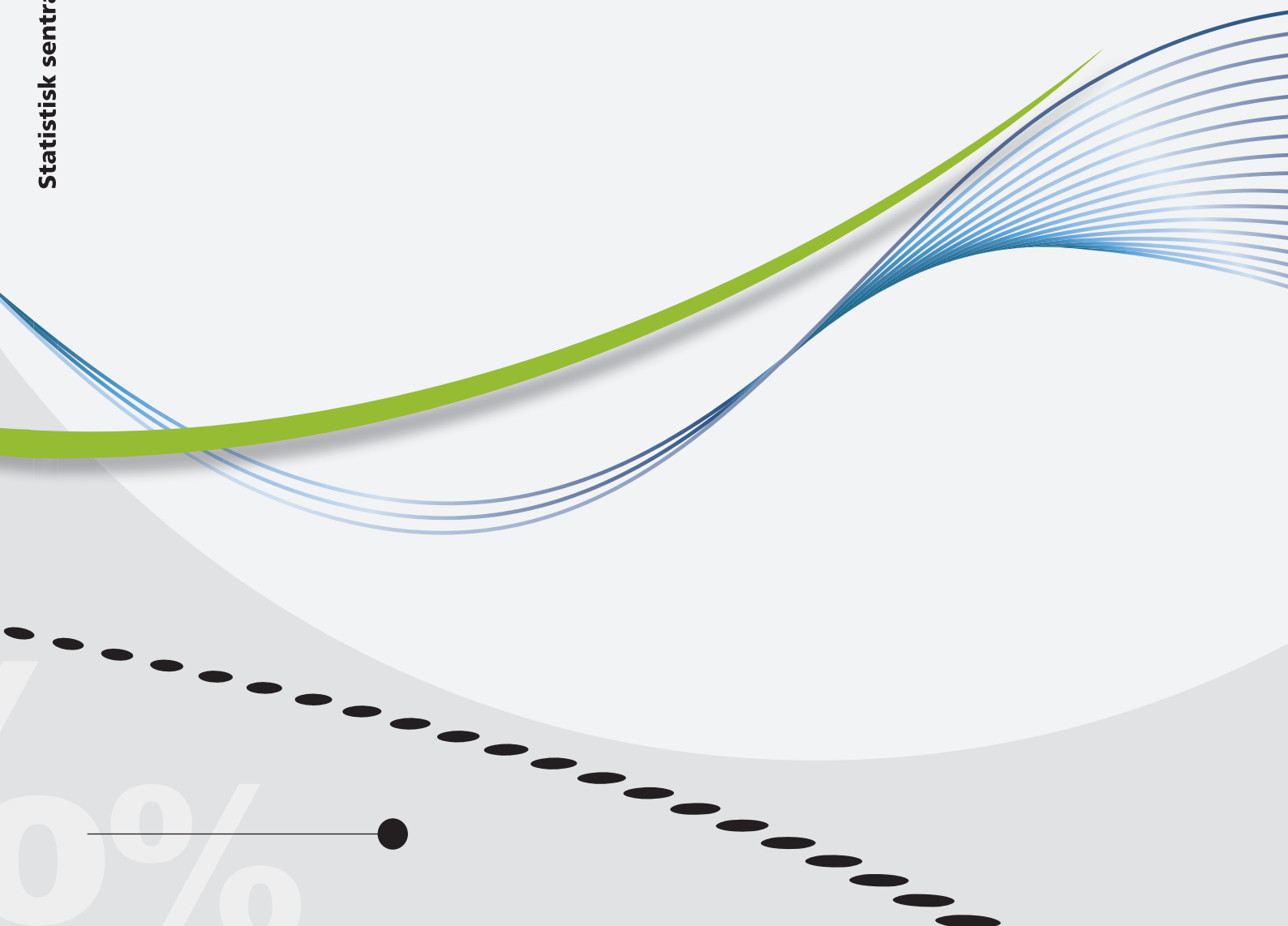


Sigrid Hendriks Moe and Trine Heill Braathu

**Government expenditures on
environmental protection and
resource management**



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Preface

The regulation (EU) No 691/2011 on European environmental economic accounts establishes a common framework for the collection, compilation and transmission of data on environmental accounts. Norway, represented by Statistics Norway, is according to the EEA agreement obliged to adopt the regulation as Norwegian law and provide data in future annual reporting.

Environmental protection expenditure accounts (EPEA), Environmental Goods and Services Sector (EGSS) and Physical Energy Flow Accounts (PEFA), was in April 2014 amended in the EU-regulation 691/2011 on environmental accounting through the new regulation 538/2014. Statistics Norway is now working step-by-step to develop chosen areas of the statistics in order to meet the reporting requirements in 2017.

This report summarizes the main findings of a project undertaken in 2014. The main objective of this project was to develop criteria in order to identify and classify environmental protection expenditure and resource management expenditure in the general government sector as well as to develop a method for identifying these expenditures on an annual basis. Statistics on general government expenditure on the environment is needed to fulfil the reporting requirements on the EPEA- module. This information is also needed in other types of environmental accounts, in particular the area of environmental transfers and resource management expenditure accounts (ReMEA) which also are areas under development in Eurostat.

The project was initiated by a grant proposal from Statistics Norway under the leadership of senior advisor Ms. Kristine E. Kolshus, in cooperation with the head of the Division for Energy and Environmental statistics, Ms. Tonje Køber. The project has been carried out in collaboration between the Division for Energy and Environmental statistics and the Division for Public Finances in Statistics Norway. The editors of this report have been Ms. Sigrid Hendriks Moe and Ms. Trine Heill Braathu from the Division for Energy and Environmental statistics. The contributors from the Division for Public Finances have been Ms. Aina Johansen and Mr. Frode Borgås.

Statistics Norway would like to thank Eurostat for supporting this project by the contribution of a grant.

Statistics Norway, 21 November 2014.

Hans Henrik Scheel

Abstract

This document presents the results and work undertaken in the pilot study on environmental expenditure by the general government according to Eurostat grant agreement no. 05121.2013.003-2013.343.

The main objective of this pilot study has been to develop a method for identifying general government expenditure for environmental protection and resource management, as well as developing a method for identifying these expenditures on an annual basis in order to meet the reporting requirements for EU-regulation 538/2014 amending EU-regulation 691/2011 on European environmental economic accounts.

The objectives of this pilot study were reached by adopting new methods in the classification of environmental expenditure by the general government.

Since the COFOG classification is an established classification in the Norwegian statistical system a new system was developed and designed alongside COFOG to recognise environmental expenditures by the general government in all COFOG divisions. All environmental expenditures were in the pilot study classified by environmental domain using the CEPA and CReMA classifications.

To comply with new regular reporting requirements on environmental economic accounting from the year 2017 an annual production process plan was developed.

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Abbreviations

ESA - European System of Accounts
EPEA - Environmental protection expenditure accounts
EGSS - Environmental Goods and Services Sector
ReMEA - Resource Management Expenditure Accounts
COFOG - Classification of the Functions of Government
CEPA- Classification of Environmental Protection Activities and Expenditure
CReMA - Classification of Resource Management Activities and Expenditure
EPE - Environmental protection expenditure
RME - Resource management expenditure
EE- Environmental expenditure
TE – Total expenditure
KOSTRA – The Norwegian system for municipal state reporting

1. Introduction

Environmental protection expenditure accounts (EPEA), Environmental Goods and Services Sector (EGSS) and Physical Energy Flow Accounts (PEFA), was in April 2014 amended in the EU-regulation 691/2011 on environmental accounting¹ through the new regulation new regulation 538/2014. Statistics Norway is now working step-by-step to develop chosen areas of the statistics in order to meet the reporting requirements in 2017.

Government spending on environmental protection and resource management is of considerable interest to policy makers and analysts. Statistics on government expenditure on environmental protection will for example provide information on how much a government in a country spend on activities aimed at the prevention, reduction and elimination of pollution or any other degradation of the environment. Environmental protection expenditure (EPE) by the government sector is included in the EPEA legal module, while EPE and resource management expenditure (RME) by the government sector (i.e. non-market activities) is voluntary reporting in the EGSS-statistics. Environmental expenses by the government are also relevant for the ongoing work with developing the area of environmental transfers and Resource Management Expenditure Accounts (ReMEA).

The objective of this project is to develop criteria in order to identify government expenditure for environmental protection and resource management, as well as developing a method for identifying these expenditures on an annual basis in order to meet the reporting requirements for EU-regulation 538/2014 amending EU-regulation 691/2011 on European environmental economic accounts. The project is a collaboration between Division for Energy and Environmental Statistics and the Division for Public Finances in Statistics Norway.

This report presents the methods used to identify and classify government spending on environmental protection and resource management. Chapter 2 defines what is considered government expenditure on environmental protection and resource management. In chapter 3, the methods for identifying and classifying the environmental expenditure in the Norwegian national accounts are described. Chapter 4 presents the results from this pilot calculation for the year 2013. A proposed method for producing the data on an annual basis and potential uses of data are presented in chapter 5. The conclusions of the project are summarized in chapter 6.

2. What is considered government expenditure on the environment?

Environmental protection and resource management are considered the two main areas within environmental economic accounting. In this chapter we explain what these environmental activities are, and what type of economic activities that are considered government expenditure according to the European System of Accounts (ESA).

2.1. Environmental protection expenditure

Environmental protection expenditure (EPE) is defined as economic resources devoted to activities aimed at the prevention, reduction and elimination of pollution or any other degradation of the environment.

¹Regulation (EU) No 538/2014 of the European Parliament: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.158.01.0113.01.ENG

The expenditure can be classified according to the Classification of Environmental Protection Activities and Expenditure (CEPA)². The CEPA classification is developed by the UN and it was adopted as an international standard by the Statistical Commission in 2002. The classification has a structure of 3 digits. The level 1 structure is the CEPA-classes, as presented below. The function of the 2-digits and 3-digits are mainly used to guide classification into the upper classes, but they may also be used for data collection and coding as well as for publication purposes³.

CEPA 1 - Protection of ambient air and climate
 CEPA 2 - Wastewater management
 CEPA 3 - Waste management
 CEPA 4 - Protection and remediation of soil, groundwater and surface water
 CEPA 5 - Noise and vibration abatement
 CEPA 6 - Protection of biodiversity and landscapes
 CEPA 7 - Protection against radiation
 CEPA 8 - Environmental research and development
 CEPA 9 - Other environmental protection activities.

2.2. Resource management expenditure

Resource management expenditure (RME) is defined as economic resources aimed at preservation and maintenance of the stock of natural resources and hence safeguarding against depletion.

The expenditure can be classified according to the classification of resource management activities (CReMA). The CReMA classification is presented in the EGSS Handbook (2009). Although initially developed in the context of the EGSS, the CReMA is a generic, multi-purpose, functional classification for resource management. It can be used for classifying activities but also products, expenditure and other transactions whose primary purpose is resource management. The CReMA categories are complementary with CEPA and the numbering of the CReMA classes follows the CEPA numbering. It is a revised and adopted version of Istat's⁴ Classification of Resource Use and Management Activities (CRUMA). CReMA has not yet been adopted as an international standard.

CReMA 10 - Management of water
 CReMA 11 - Management of forest resources

- CReMA 11A – Management of forest areas
- CReMA 11B – Minimization of the intake of forest resources

 CReMA 12 - Management of wild flora and fauna
 CReMA 13 - Management of energy resources:

- CReMA 13A - Production of energy from renewable resources
- CReMA 13B - Heat/energy saving and management
- CReMA 13C - Minimisation of the use of fossil energy as raw materials

 CReMA 14 - Management of minerals
 CReMA 15 - Research and development activities for resource management
 CReMA 16 - Other resource management activities

2.3. The general government sector

In ESA 2010 the general government sector is defined as all resident institutional units which are non-market producers whose output is intended for individual and

² Classification of Environmental Protection Activities and Expenditure (2000): http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=CEPA_2000&StrLanguageCode=EN&IntPcKey=&StrLayoutCode=HIERARCHIC

³ Eurostat. Background document. Item 5. 9th meeting of the Task Force on COFOG. May 2013.

⁴ Istituto Nazionale di Statistica (Istat) is the Italian National Statistical Institute.

collective consumption⁵. The general government sector in Norway is divided into the following two subsectors: the central government (including social security funds) and the local government.

With different time intervals, the national accounts are revised in order to give a consistent picture of the economic development over time. These revisions may be adaptations due to new international recommendations or inclusion of new data sources. One of these main revisions was conducted in 2014. This revision changed how we record environmental services like the output of water supply services, waste water management and waste management by the local government. These environmental services by the local government were prior to the revision recorded as market output. In accordance with the definition for government production in ESA 2010, Statistics Norway now records all production from the government sector as non-market.

The main argument for recording these environmental services as non-market, even though more than 50 per cent of the production is recovered by payments from users of these services, is that the local authorities are legally required to provide these services. The users (e.g. households) can not choose whether to receive services or not and the payment for the service is "forced". Another argument is that the improved consistency between the accounts and the balance for the local government. Fixed assets for the production of EP services (e.g. water works) are in most cases owned by the local government; the output of this production should therefore also be recorded as non-market output by the local government. To distinct between market and non-market output is also important in the EGS statistics. This change in the recording in the national accounts and the implications on the environmental economic accounting was therefore coordinated between EPEA and EGSS.

2.4. Classification of general government expenditure

The government expenditure in the Norwegian national accounts is classified according to purpose. This classification is based on the international classification COFOG - *Classification of the Functions of Government*. COFOG applies to all types of general government expenditure, such as government final consumption expenditure, gross fixed capital formation, subsidies, property income (i.e. expenses), capital transfers and other transfers for use in government financial accounts and in the national accounts.

COFOG is a 3-level classification with 10 "Divisions" at the top level, each of which is broken down to about 6 "groups" at the next level of detail, which in turn are subdivided into "classes"⁶. The COFOG-classification is used when reporting government expenditure in the ESA Transmission Program.

COFOG has its own division devoted to environmental protection (COFOG 05). COFOG 05 is based upon the CEPA-classification, and can be broken down to 6 groups. Table 1 shows the correspondence between COFOG 05 and CEPA.

COFOG 05 is a good starting point for identifying environmental protection expenditure in the Government sector, but it does not cover all environmental expenditure relevant for environmental economic accounts. This is mainly due to different accounting principles. COFOG follows a main purpose classification criterion. This means that expenditure items classified in other divisions than COFOG 05 might be environmentally related, but since COFOG can only be classified by one purpose, the environmental element might be subordinated or less

⁵ European System of Accounts. ESA 2010.

http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-02-13-269/EN/KS-02-13-269-EN.PDF

⁶ COFOG Manual. Eurostat 2011. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-11-013/EN/KS-RA-11-013-EN.PDF

prominent. One example is international transfers for climate and environmental activities. These types of transfers are classified as part of COFOG 01.2 - Foreign economic aid. We therefore need to look beyond COFOG 05 when identifying environmental protection expenditure. But in the current system these environmental related expenditures in other COFOG classes than 05 are not visible as environmental ones.

Table 1. Correspondence between COFOG 05 and CEPA

| COFOG 05 – Environment Protection (ESA 95) | CEPA 2000 (SEEA, EPEA, JQ) |
|--|---|
| 05.1.0 Waste management | 3. Waste management |
| 05.2.0 Wastewater management | 2. Wastewater management |
| 05.3.0 Pollution management | 1. Protection of ambient air and climate 4. Protection and remediation of soil, groundwater and surface water 5. Noise and vibration abatement 7. Protection against radiation |
| 05.4.0 Protection of biodiversity and landscape | 6. Protection of biodiversity and landscape |
| 05.5.0 Research and development environment protection | 8. Research and development |
| 05.6.0 Environment protection n.e.c. | 9. Other environmental protection activities |

Unlike the CEPA, there is not a direct correspondence between COFOG and CReMA. According to the EGSS Handbook (2009) from Eurostat the resource management expenditures by general government are mainly classified within division 04 and 06 of COFOG, together with other non-environmental expenditures, as for example energy conservation (COFOG 04.03.05) or forestry management (04.02.02). There may also be resource management expenditure classified as COFOG 05. This makes the process of identifying resource management expenditure more challenging. We therefore need to develop a new method for identifying and extracting data on environmental expenditure from the general government statistics.

2.5. Environmental expenditure characteristics

Environmental protection expenditure (EPE) by the general government sector is a central part of the reporting requirements of the Environmental protection expenditure accounts (EPEA). The reporting requirements for the general government sector include the following expenditure characteristics:

- Output of environmental protection services. Market output and non-market output are distinguished.
- Intermediate consumption of environmental protection services by specialist producers
- Imports and exports of environmental protection services
- Valued added tax (VAT) and other taxes less subsidies on products on environmental protection services
- Gross fixed capital formation and acquisitions less disposals of non-financial non-produced assets for the production of environmental protection services
- Final consumption of environmental protection services
- Environmental protection transfers (received/paid)

A draft questionnaire for reporting data on EPEA was presented on the Working Group meeting on Environmental Accounts in March 2014. The two tables below shows the variables that are to be reported as general government expenditure.

Table 2. Reporting requirements for general government expenditure in EPEA

| Environmental protection expenditures | Code used in the EPEA-questionnaire | Corresponding ESA code |
|--|-------------------------------------|------------------------|
| Obligatory | | |
| EP output | O.1 | P1 |
| Market EP output (incl. government local KAUs that are market producers) | Omk.1 | P11 |
| Non market EP output (incl. P.131 (payments for non-market output)) .. | Onmk.1 | P13 |
| Gross capital formation and acquisition less disposals of non-financial, non-produced assets for the production of EP services | GCF.1 | P5 |
| Intermediate consumption (excl. EP services) | Pnep.1 | P2 |
| Compensation of employees | D.1 | D1 |
| Intermediate consumption of EP services (fees and purchases) | P2ext | P2 |
| Other taxes less subsidies on production | S.1 | D29-D39 |
| Consumption of fixed capital | K.1 | K1 |
| Final consumption of EP services (Onmk less P.131 (payments for non-market output)) | F.1 | P3 - P.131 |
| Voluntary | | |
| Receipts from by-products | C | |
| Subsidies/transfers paid to other sectors | D | |
| Labour input | L.1 | |

Transfers allow for calculating national environmental protection expenditure and for calculating the financing of EP expenditure. The following transfers are to be reported in the EPEA legal module:

Table 3. Reporting requirements for transfers in EPEA

| Transfers | Code used in the EPEA-questionnaire |
|--|-------------------------------------|
| Obligatory | |
| General government: current and capital transfers paid | Tpg |
| General government: current and capital transfers received | Trg |
| Corporations: current and capital transfers received | Trc |
| Households: transfers received | Trh |
| Rest of the world: current and capital transfers paid | Tpw |
| Rest of the world: current and capital transfers received | Trw |
| Voluntary | |
| Households: earmarked taxes paid | TAXh |
| Corporations: earmarked taxes paid | TAXc |

In the EGSS statistics only market activities are obligatory to report under the EU-regulation. Non-market activities are voluntary reporting according to the regulation as well as ancillary activities. However, the draft questionnaire allows for reporting of non-market figures for output, value added and employment. Only the total of non-market output is voluntary reporting, the other variables required in EPEA is not a part of EGSS, but the three variables⁷ output, value added and employment must be classified by economic activities, NACE Rev. 2 (A*21 aggregation level as set out in ESA). This requires a different process than the variables needed for the EPEA reporting.

3. Data sources and methodology

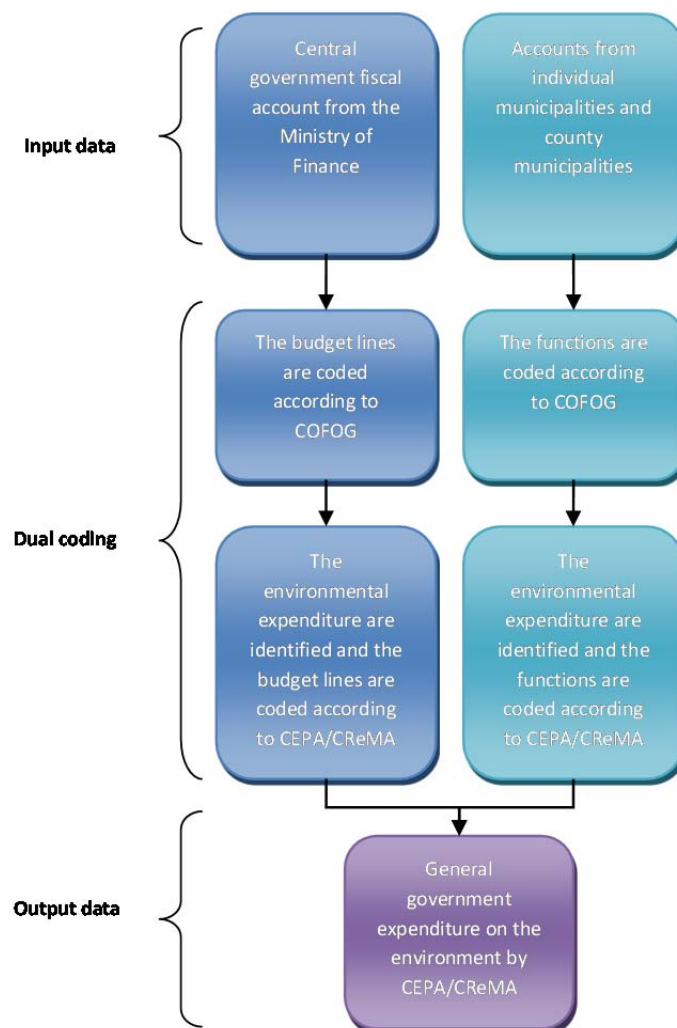
The main objective of this project is to develop a method for identifying environmental protection expenditure and resource management expenditure in the general government accounts. As described in chapter 2.4; it is not straightforward to identify environmental expenditure relevant for environmental economic accounts. This chapter describes the methods for identifying and classifying the environmental expenditure for the General government as defined in the Norwegian national accounts.

⁷ In EGSS also export is to be reported, but only for market output.

3.1. A new environmental classification

The COFOG is an established classification in the Norwegian statistical system. Expenditure items are already classified by their main function in COFOG and the aim is not to re-classify COFOG. The aim is to better identify the environmental expenditure, also when the main purpose is not environmental or in cases where the environmental expenditure is a part of the expenditure. We therefore had to develop a new classification method. This new method must identify and classify items whose main function is not environmental, but may have a secondary environmental purpose, in addition to those items with the environment as the main purpose. Our chosen method was to introduce an environmental specific classification in addition to the existing COFOG classification.

Figure 1. Production process for environmental coding of general government expenditure



The main difference between the classification method in EPE and RME compared to COFOG is that COFOG is to be classified by purpose and only into one category, while the new method on environmental domains do not have this strict rule for how the expenditures should be assigned in the environmental classifications. We can therefore include only the environmental part of an expenditure item whose main purpose is not environmental.

During the work on allocating the general government expenditure on CEPA and CRema classifications we have seen that some of the expenditures fall within more than one environmental domain. This makes it necessary to divide the expenditure between several CEPA and CRema classes. To not make the work too

comprehensive we set a limit to three environmental classes per expenditure. This procedure is described in more detail in chapter 3.2.1 and 3.3.1.

3.2. Method in the central government accounts

The central government fiscal account is received by Statistics Norway from the Ministry of Finance. The fiscal accounts consisted of 700 chapters for in all 18 ministries in 2013. The chapters are further divided into individual posts for each income and expenditure in the central government. The two first digits in the chapter coded say which ministry the expenses belong to, for example 14XX is expenses under the Ministry of Climate and Environment.

The number of posts under each chapter may vary between the different ministries. Some posts are standard for every ministry, like operating costs and wages. In total there are 5318 individual combinations of chapter and post in the central government accounts. It was seen as a too comprehensive job to go through all of the chapters and posts one by one so we had to make some ground rules for who we should proceed to identify the environmental expenditures.

The work process step by step has been the following:

1. We used a bridge table between COFOG 05 and CEPA to identify the main environmental expenditures.
2. The next step was to go through the expenditures classified in COFOG 05 to see if the environmental classification was correct according to the definition in EPEA. We identified the following issues:
 - some of the environmental expenditures was in fact resource management and should be classified according to CReMA instead of CEPA
 - the environmental function of some expenses in COFOG 05 does not fall within the definitions of CEPA or CReMA
 - the expenditure had an environmental related name, but with further investigation the chapter/post was not environmental according to CEPA/CReMA
3. We then looked at COFOG 01, 04 and 06 to possibly identify CReMA expenditures.
4. To identify other environmental expenditure in other COFOG divisions we used search-words like “environment”, “energy”, “climate”, “resources”, “water”, “waste”, “forest” etc.
5. We finally went through the ministries that were expected to have environmental expenditures.

When all the different expenditures were marked as either “Yes” for environment or “maybe environmental” we conducted a budget analysis of parliamentary propositions and used information from government web pages to decide if the expenditure was actually environmental and correctly classified.

3.2.1. Examples of the method used to code central government expenditure

Table 4 presents some examples on how we classified the central government expenditure items according to CEPA and CReMA classes. To show the steps taken in order to classify the environmental expenditures by the central government we will give some examples. The first example is based on expenditure item number 2 and shows a special case where additional information is used. The item is expenditure from the Ministry of Foreign Affairs where the expenditure is on environmental and sustainable development in developing countries. The item is split between several CEPA and CReMA categories where information from the parliamentary propositions has been used. The parliamentary proposition was used to confirm that the expenses were environmental as the title of the post suggested. In addition, since this is foreign aid to developing countries given by NORAD (The Norwegian Agency for Development Cooperation) more information is available

on which development projects the expenditures are related to (Norwegian Aid Statistics).

Table 4 Environmental coding in central government accounts

| Central government expenditure item | COFOG 1 - CEPA/ CReMA | 1 - % split | 2- CEPA/ CReMA | 2-% spli | 3- CEPA/ CReMA | 3- % split |
|--|-----------------------|-------------|----------------|----------|----------------|------------|
| 1 International transfers for the protection of climate | 0 113 | 01 | 100 % | - | - | - |
| 2 Costs related to international environmental processes and sustainable development | 0 121 | 01 | 40 % | 06 | 25 % | 13 35 % |
| 3 Grants for environmental and climate measures in forestry | 0 422 | 09 | 50 % | 16 | 50 % | - |
| 4 Oil- and energy management | 0 435 | 13 | 30 % | - | - | - |
| 5 Grants for research in environmental transport | 0 485 | 08 | 100 % | - | - | - |
| 6 Operating costs for the protection against radiation | 0 530 | 07 | 100 % | - | - | - |
| 7 Fish- and game management | 0 540 | 12 | 100 % | - | - | - |
| 8 Transfers to the environmental protection fund | 0 540 | 09 | 50 % | 12 | 50 % | - |

Item number 4 in Table 4 is an example where only a part of the expenditure is environmental. The environmental split and the classification are done by using the information from the parliamentary proposition from the Ministry of Petroleum and Energy. The proposition states that 3 million NOK of the total budget of 10 million NOK should go to the Low-energy program (reduce energy use and support environmental friendly alteration of buildings), therefor 30 per cent is allocated to CReMA 13.

Some of the budget items are not as detailed as item number 4. It might be stated in the proposition that some of the expenditure has an environmental purpose, but we do not have information on the exact environmental share. A thorough consideration must then be undertaken on how the environmental share should be calculated. In cases where the parliamentary proposition text suggests that most of the expenditure is environmental, we chose to classify the entire post as environmental.

As mentioned, the parliamentary propositions gave a lot of information. In the cases where we had doubts about the environmental share of an expenditure item, a rough assessment was made. For some of the big expenditure items under the Ministry of Climate and Environment, the environmental classification was difficult due to limited details in the parliamentary proposition. For example, we had to classify operating costs as general environmental protection activities (CEPA 9) even though we know they operate under several CEPA and CReMA classes. We contacted the Ministry of Climate and Environment for more detailed accounts, but this information is not easily available. The information might not exist in an applicable way in regards to the needed details, or it may not exist at all. Further investigation is needed at a later stage too see if it is possible to obtain more information to help with the environmental classification. We need to have a discussion to whether the extra effort in gaining more detailed information for the big expenditure items under the Ministry of Climate and Environment will improve the quality of the overall figures or not. This kind of analysis has not been able to undertake as part of this project since more information about the situation in the Ministry of Climate and Environment is needed.

3.3. Local government accounts

Local government expenditure data are collected by Statistics Norway through KOSTRA (Municipal State Reporting). The data is reported electronically from all municipal and county municipal administrative bodies, public corporations owned by municipals and county authorities. The expenditure is reported after a chart of

accounts consisting of 175 functions. The expenditures from KOSTRA are then classified according to purpose criteria in COFOG.

The work process has been the following:

- We started by looking at the 8 functions that were already coded at COGOG 5.
- We then had to check if the existing coding corresponded with the environmental classification required for EPE. We detected that some of the costs was in fact resource management, not environmental protection.
- We then did a “screening” of remaining functions to identify environmental expenditure relevant for EPE and RME. In total, we identified 10 environmental related functions.

In general, the functions correspond well to relevant CEPA and CReMA classes. Unlike the central government accounts, which had the parliamentary propositions to help with details, the municipal accounts do not have more information for each function other than the description of the function. The description of the type of costs that are to be included under each function are quite detailed, but it does not provide information to break down the totals. So in case of doubt about the environmental share of a function no more details are available.

3.3.1. Method used to code local government expenditure

Table 5 presents how we classified environmental expenditure in the local government account. We found in total 10 functions relevant for EPE and RME. The functions regarding waste water management expenditure (350, 353 and 354) could be directly coded as CEPA 2. The waste management functions were a bit trickier. This is because recycling is regarded as resource management, not environmental protection. For one of the functions, 357- Treatment and recycling of household waste, we used the waste accounts to split between waste to incineration (energy production and final treatment), land fill and different recycling categories. For now, energy production from waste (CReMA 13 A) includes both renewable and non-renewable waste. We plan to extract the non-renewable part at a later stage. This will give a bigger share of CEPA 3 and a lower share of CReMA 13A for function 357.

Table 5 Environmental coding in local government accounts

| Local government function | COFOG | 1 - CEPA/ CReMA | 1 - % split | 2 -CEPA/ CReMA | 2 - % split | 3 - CEPA/ CReMA | 3 - % split |
|---|-------|-----------------------|----------------|-------------------|----------------|-----------------------|----------------|
| 329 - Agricultural management and agricultural business development . | 0 490 | 09 | 12.5 % | 16 | 12.5 % | - | - |
| 340 - Production of water | 0 630 | 10 | 100 % | - | - | - | - |
| 350 - Treatment of waste water | 0 520 | 02 | 100 % | - | - | - | - |
| 353 - Collection of wastewater and management of sewerage networks | 0 520 | 02 | 100 % | - | - | - | - |
| 354 - Emptying of septic tanks, sludge separators and such | 0 520 | 02 | 100 % | - | - | - | - |
| 355 - Collection of household waste | 0 510 | 03 | 100 % | - | - | - | - |
| 357 - Treatment and recycling of household waste | 0 510 | 03 | 35 % | 11 | 15 % | 13 | 50 % |
| 360 - Management of nature and outdoor life | 0 560 | 06 | 25 % | 12 | 25 % | - | - |
| 715 - Local and regional development | 0 560 | 06 | 12.5 % | 12 | 12.5 % | - | - |
| 716 - Management of outdoor life, water authorities, wildlife and freshwater fish | 0 560 | 10 | 25 % | 12 | 25 % | - | - |

When looking at the functions coded as COFOG 0560, we found that the expenditure included both environmental protection and resource management activities. In addition, after reading the description of the functions, it was clear that only parts of the functions were environmentally related. For example 360 -

Management of nature and outdoor life, we ended up with including only 50 per cent of the total expenditure. This is because management of outdoor life is not relevant for EPE and RME.

We found two environmentally related functions outside COFOG 05. We coded function 340 - Production of water as 100 per cent CEPA 10. Function 329 is compounded of several agricultural activities. We ended up with including 25 per cent of the function. Environmental measures in forestry and organic farming are examples of purposes in this function.

Unlike the central government accounts with the relatively detailed parliamentary propositions, the local government functions do not provide information needed to get a correct break down of the expenditure. Since many of functions have several purposes, both environmental and non-environmental, we had to make a rough assessments when assigning the CEPA and CReMA codes. The KOSTRA chart of accounts are evaluated on a regular basis, but the general direction in the development is to simplifying the reporting scheme rather than introducing more detailed functions. This is due to the principal of reducing the response burden.

An alternative approach to get more details is to contact a small sample of the municipalities with the highest reporting of the environmental expensed in question. They may have more information that what is reported through KOSTRA. This has not been done as part of this project.

4. Analysis

A part of this project was to apply the developed methods for identifying and classifying environmental expenditure and do a trial calculation for the year 2013. This chapter presents the results from the analysis.

4.1. Environmental expenditure by the general government

COFOG 05-Environmental protection is a good starting point for compiling data on environmental expenditure (EE) by the general government, but there is a theoretical possibility of EE in all COFOG divisions as a secondary purpose. After closer examination, we identified EE in other COFOG divisions than COFOG 05 that fall within the criteria for environmental protection expenditure (EPE) and resource management expenditure (RME). Table 6 presents a matrix between the environmental classification (CEPA/CReMA) and COFOG.

EE classified according to CEPA and CReMA summed up to 30 billion NOK in 2013. Total EE accounted for 2 per cent of the total expenditure (TE) in the general government sector. We have classified 94 per cent of the expenditure in COFOG 05 as environmental. The 6 per cent that was excluded are mainly in those cases where we identified only a share of a central government expenditure item or a local government function as environmental.

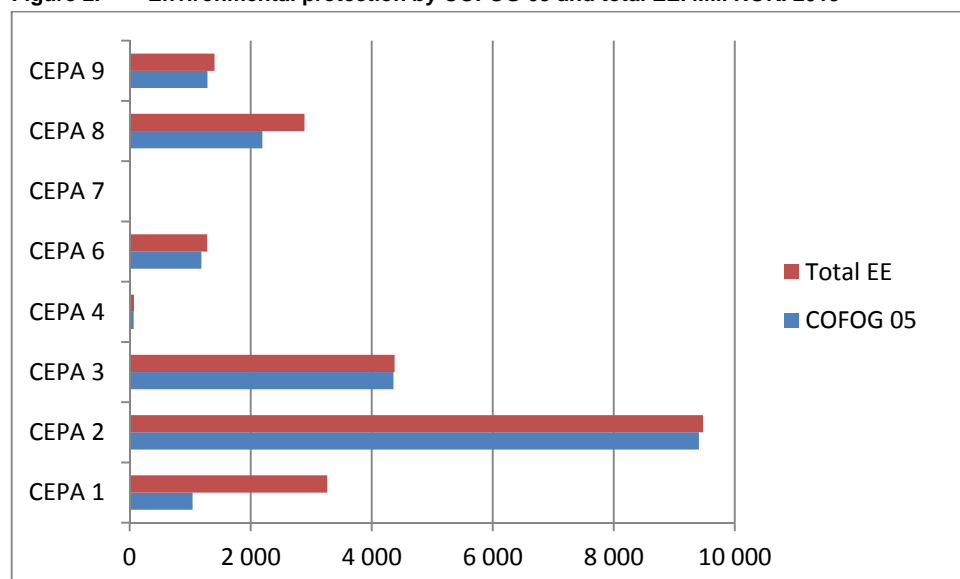
Most of the EE can be found in COFOG 05 with 77 per cent. We also identified EE in the other COFOG divisions COFOG 01, COFOG 04 and COFOG 06. COFOG 01 accounted for 9 per cent of the total EE. The EE in COFOG 01 are mainly environmental aid and international support for environmental cooperation. COFOG 04 accounted for 7 per cent and examples of EE in COFOG 04 are R&D on CO₂ capture technologies and marine research. In COFOG 06 we can for example find EE related to water supply and the sum accounted for 6 per cent of the total EE.

Table 6. Total environmental expenditure by CEPA/CREMA and COFOG¹. Mill NOK. 2013

| | 01 - General public services | 04 - Economic affairs | 05 - Environmental protection | 06 - Housing and community amenities | Total EE |
|--|------------------------------|-----------------------|-------------------------------|--------------------------------------|----------|
| CEPA 1 - Protection of ambient air and climate | 2 131 | 93 | 1 041 | 0 | 3 265 |
| CEPA 2 - Wastewater management | 68 | 0 | 9 407 | 0 | 9 476 |
| CEPA 3 - Waste management | 20 | 0 | 4 359 | 0 | 4 379 |
| CEPA 4 - Protection and remediation of soil, groundwater and surface water | 0 | 6 | 67 | 0 | 73 |
| CEPA 5 - Noise and vibration abatement | - | - | - | - | - |
| CEPA 6 - Protection of biodiversity and landscapes | 93 | 4 | 1 185 | 0 | 1 282 |
| CEPA 7 - Protection against radiation | 0 | 0 | 13 | 0 | 13 |
| CEPA 8 - Environmental research and development | 0 | 696 | 2 192 | 0 | 2 889 |
| CEPA 9 - Other environmental protection activities | 0 | 115 | 1 287 | 0 | 1 402 |
| CREMA 10 - Management of water | 18 | 0 | 31 | 1 893 | 1 942 |
| CREMA 11A - Management of forest areas | 34 | 0 | 0 | 0 | 34 |
| CREMA 11B - Minimization of the intake of forest resources | 214 | 0 | 307 | 0 | 521 |
| CREMA 12 - Management of wild flora and fauna | 0 | 0 | 465 | 0 | 466 |
| CREMA 13A - Production of energy from renewable resources | 5 | 29 | 1 574 | 0 | 1 608 |
| CREMA 13B - Heat/energy saving and management | 129 | 23 | 551 | 22 | 725 |
| CREMA 13C - Minimization of the use of fossil energy as raw materials | - | - | - | - | - |
| CREMA 14 - Management of minerals | - | - | - | - | - |
| CREMA 15 - Research and development activities for resource management | 0 | 972 | 0 | 0 | 972 |
| CREMA 16 - Other resource management activities | 0 | 116 | 503 | 0 | 619 |
| Total EE | 2 713 | 2 054 | 22 982 | 1 915 | 29 664 |
| EE share of TE | 1 % | 2 % | 94 % | 9 % | 2 % |

¹ Total expenditure is the sum of current expenditure and net acquisitions of non-financial assets.

EPE by the general government is one of the reporting requirements in the new EPEA-module. COFOG 05 is listed as the main data source for compiling the data on general government expenditure. If we compare COFOG 05 and the results from our analysis, we find that the sum of CEPA 1-9 is 17 per cent higher when we include EE from all COFOG divisions. The difference between the two methods is presented in Figure 2. The biggest difference is found in CEPA 1; expenditure on activities aimed at the protection of ambient air and climate triples in size if we include EE from all COFOG divisions.

Figure 2. Environmental protection by COFOG 05 and total EE. Mill NOK. 2013

4.2. Environmental expenditure by the local government

Environmental expenditure by the local government amounts to around 60 per cent of EE in the general government. The local authorities are responsible for providing services like water supply, wastewater management and waste management. Table 7 presents a matrix of EE by the functions used in the KOSTRA-reporting and the environmental classification.

Table 7. Total environmental expenditure by local government function and CEPA/CRReMA. Mill NOK. 2013

| | 2 | 3 | 6 | 9 | 10 | 11B | 12 | 13A | 16 | Total EE |
|---|--------------|--------------|------------|-----------|--------------|------------|------------|--------------|-----------|---------------|
| 329 - Agricultural management and agricultural business development | 0 | 0 | 0 | 77 | 0 | 0 | 0 | 0 | 77 | 154 |
| 340 - Production of water | 0 | 0 | 0 | 0 | 1 911 | 0 | 0 | 0 | 0 | 1 911 |
| 350 - Treatment of waste water | 3 080 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 080 |
| 353 - Collection of wastewater and management of sewerage networks .. | 5 994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 994 |
| 354 - Emptying of septic tanks, sludge separators and such | 402 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 402 |
| 355 - Collection of household waste .. | 0 | 3 249 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 249 |
| 357 - Treatment and recycling of household waste | 0 | 720 | 0 | 0 | 0 | 309 | 0 | 1 028 | 0 | 2 057 |
| 360 - Management of nature and outdoor life | 0 | 0 | 254 | 0 | 0 | 0 | 254 | 0 | 0 | 509 |
| 715 - Local and regional development | 0 | 0 | 99 | 0 | 0 | 0 | 99 | 0 | 0 | 198 |
| 716 - Management of outdoor life, water authorities, wildlife and freshwater fish | 0 | 0 | 0 | 0 | 31 | 0 | 31 | 0 | 0 | 61 |
| Total EE | 9 476 | 3 969 | 353 | 77 | 1 942 | 309 | 384 | 1 028 | 77 | 17 615 |

Wastewater management (CEPA 2) is the biggest EE by the local government, and it amounted to 9.5 billion NOK in 2013. This is almost one third of the EE by the general government. Waste management (CEPA 3) is the second biggest EE with 4 billion NOK, while management of water (CEPA 10) amounted to 2 billion NOK. Recycling of materials from waste and energy production from waste is recorded as CRReMA 11B and 13A respectively. CRReMA includes both renewable and non-renewable household waste. We plan to extract the part that is non-renewable and record it as CEPA 3 – Waste management.

4.3. Environmental expenditure by the central government

By distributing the environmental expenses by ministry we can see where the environmental measures are taken in the central government. Table 8 shows the total environmental expenditure by ministry and CEPA and CRReMA. Over 70 per cent of the environmental expenses are on CEPA categories, while the rest is on CRReMA categories. The ministry with the highest total environmental expenses in 2013 were the Ministry of Foreign Affairs, followed by the Ministry of Climate and Environment and the Ministry of Petroleum and Energy. Not surprisingly the Ministry of Climate and Environment had the highest expenses within environmental expenditures.

Table 8. Total environmental expenditure by ministry and CEPA/CRReMA. Mill NOK. 2013

| Ministry | CEPA 1-9 | CRReMA 10-16 | Total EE |
|---|--------------|--------------|---------------|
| Ministry of Foreign Affairs | 2 518 | 1 477 | 3 995 |
| Ministry of Local Government and Modernisation | 0 | 28 | 28 |
| Ministry of Children, Equality and Social Inclusion | 3 | 3 | 6 |
| Ministry of Trade, Industry and Fisheries | 16 | 973 | 989 |
| Ministry of Agriculture and Food | 85 | 38 | 123 |
| Ministry of Transport and Communications | 74 | 0 | 74 |
| Ministry of Climate and Environment | 2 875 | 581 | 3 456 |
| Ministry of Finance | 867 | 0 | 867 |
| Ministry of Petroleum and Energy | 2 465 | 45 | 2 511 |
| Total EE | 8 902 | 3 146 | 12 048 |

In the parliamentary proposition from the Ministry of Climate and Environment an overview of the environmental initiatives by each ministry is given. The overview is presented in Table 9.

Table 9. Total environmental policy initiatives by ministry. Mill NOK. 2013¹

| Ministry | Environmental expenditure |
|--|---------------------------|
| Ministry of Foreign Affairs | 7 300,0 |
| Ministry of Local Government and Modernisation | 95,0 |
| Ministry of Children, Equality and Social Inclusion | 6,2 |
| Ministry of Trade, Industry and Fisheries | 2 292,7 |
| Ministry of Agriculture and Food | 5 493,2 |
| Ministry of Transport and Communications | 15 595,1 |
| Ministry of Climate and Environment | 5 122,7 |
| Ministry of Finance | 632,0 |
| Ministry of Petroleum and Energy | 4 950,0 |
| Ministry of Defence | 1 161,3 |
| Ministry of Education and Research | 300,0 |
| Ministry of Government Administration, Reform and Church Affairs | 121,1 |
| Ministry of Justice and Public Security | 133,0 |
| Ministry of Culture | 1 067,8 |
| Total EE | 44 270,1 |

¹ <http://www.regjeringen.no/n/dp/kld/dokument/proposisjonar-og-meldingar/proposisjonar-til-stortinget/2013-2014/prop-1-s-20132014/5.html?id=740793>, in Norwegian.

When comparing Table 8 and Table 9 we see that the figures given by Ministry are quite different from the analysis undertaken by using CEPA and CREMA as classification criteria. The main reason is the difference in definition of environmental expenditure. The environmental expenditures defined by the ministries themselves follow these criteria:

The environmental measures are defined as:

- The expenses must fully be used for environmental improvements, or
- environmental considerations should be a critical factor for the initiative / project being implemented, or
- expenditure should counteract the negative environmental effects of other sectorial policies (preventive measures).

It is emphasised that the expenditures are not weighted against each other in the degree of how environmental the measures are.

One major difference from the EPE is that the environmental measures in table 4 are not main purpose of the expenditure, even if the expense might have an environmental effect. One example to illustrate this is that all of the expenses for investments, improvements and operation of the railway system in Norway are included by the Ministry of Transport and Communication as environmental. The expenses have the mainly purpose of maintenance of the railway system, and not environmental protection or resource management.

4.4. Reporting tables for general government and transfers in EPEA

General government expenditure and environmental transfers is an important part of the EPEA. The draft questionnaire for the EPEA legal module regulation (EU) No 538/2014 has two tables that use general government statistics as the main data source. EPEA asks for expenditure and transfers classified according to CEPA. COFOG 05 – Environmental protection was a good starting point for compiling the tables, but we had to look beyond COFOG in order to capture all environmental expenditure relevant for EPE. As a result of introducing the new environmental classification, we are now one step closer to compile the required tables.

Table 10 presents the data required for reporting environmental protection expenditure by the general government. The regulation asks for data on the production of EP services, gross capital formation and acquisition less disposals of

non-financial, non-produced assets for the production of EP services and final consumption of EP services by the general government⁸.

Table 10. Draft table for EPEA - General government. Mill NOK. 2013

| Expenditure | CEPA 2 | CEPA 3 | CEPA 6 | Sum of CEPA 1+4+5+7 | Sum of CEPA 8+9 | TOTAL |
|---|--------|--------|--------|---------------------------|-----------------------|--------|
| (O.1) EP output [P1] | 6 803 | 4 920 | 396 | 107 | 2 192 | 14 418 |
| (Omk.1) Market output [P11] | - | - | - | - | - | - |
| (Onmk.1) Non-market output [P13] | 6 803 | 4 920 | 396 | 107 | 2 192 | 14 418 |
| (GCF.1) Gross capital formation and acquisition less disposals of non-financial, non-produced assets for the production of EP services [P5 + NP] | 4 308 | 251 | 394 | 885 | 27 | 5 865 |
| (F.1) Final consumption of EP services [P3] | -199 | -165 | 370 | 59 | 2 049 | 2 115 |

The national account was in 2014 revised according to ESA 2010. All production from the government sector is now recorded as non-market output (see chapter 2.3). This means that the output of environmental services like waste water management and waste management by the local government are recorded as non-market even though more 50 per cent of the production are recovered by payments from users of these services (ESA P131 – Payments for non- market output). This results in negative figures for final consumption of CEPA 2 and CEPA 3.

Non-market output are made up of four expenditure components; intermediate consumption, compensation of employees, consumption of fixed capital and other taxes less subsidies on production. These details are asked for in the voluntary part of the table. Other taxes less subsidies on production of general government services is an estimated value which in 2013 summed up to only 108 NOK mill for the whole general government sector. The estimation for EP-services is possible, but the work is very time consuming and the figures will be very small. For the time being, these calculations have therefore not been integrated into the regular compilation routines. As a result, the non-market output are therefor excluded other taxes less subsidies on production.

The voluntary part of the reporting requirements also asks for intermediate consumption of EP-services. We do not have the sufficient detailing level in our data to be able to do this split of intermediate consumption.

Table 11. Draft table for EPEA - Transfers. Mill NOK. 2013

| Transfers | CEPA 2 | CEPA 3 | CEPA 6 | Sum of CEPA 1+4+5+7 | Sum of CEPA 8+9 | TOTAL |
|---|--------|--------|--------|---------------------------|-----------------------|-------|
| (Tpg. 6) General government: current and capital transfers paid | | | | | | |
| <i>Paid to corporations, households and the rest of the world</i> | 115 | 444 | 505 | 2 366 | 2 238 | 5 667 |
| (Trg.6) General government: current and capital transfers received | | | | | | |
| <i>Received from the rest of the world</i> | - | - | - | - | - | - |
| (Trc.6) Corporations: current and capital transfers received | | | | | | |
| <i>Received from GG and the rest of the world ...</i> | 0 | 0 | 104 | 22 | 718 | 844 |
| (Trh.6) Households: transfers received | | | | | | |
| <i>Received from GG and the rest of the world ...</i> | 115 | 444 | 307 | 99 | 1 296 | 2 261 |
| (Tpw.6) Rest of the world: current and capital transfers paid | | | | | | |
| <i>Paid to GG, corporations and households</i> | - | - | - | - | - | - |
| (Trw.6) Rest of the world: current and capital transfers received | | | | | | |
| <i>Received from GG</i> | 0 | 0 | 94 | 2 244 | 224 | 2 561 |

⁸ DRAFT - QUESTIONNAIRE FOR EPE LEGAL MODULE. Background document for point 2 of WG agenda 21 February 2014

To be able to calculate national EPE and for calculation the financing of EPE, the EPEA-questionnaire also asks for transfers by institutional sectors. Table 11 presents the transfers that included in the obligatory part of the questionnaire.

General government statistics in the national accounts are currently the only data source for environmental transfers. This means that we are only able to report data on transfers that are paid by the general government, and not paid by the rest of the world. We can therefore compile data on current and capital transfers paid to corporations, households and the rest of the world by the general government (Tpg. 6 and Trw.6).

Transfers received by corporations (Trc. 6) and households (Trh. 6⁹) are equal the sum they have received from the general government. We do not have information on potential transfers received by corporations and households from the rest of the world.

We do not have information on transfers received by the general government from rest of the world (Trg.6). We know that the Norwegian government receives EU grants and such aimed at environmental research and other activities, but this is not recorded separately in the chart of accounts that is used today. EU-grants and other potentially received transfers are instead recorded as general commission revenues and cannot be extracted from the accounts.

Given the explanations above, we do not have data to report transfers from the rest of the world to the general government, corporations and households (Tpw.6).

5. Implementation and use of data

During this project the environmental expenditures by the general government was identified. In addition, a method for identifying and classifying environmental government expenditure annually was developed.

5.1. Proposal for an annual production process

The proposal for an annual production process has been developed in cooperation with the Division for public finances.

1. The central government accounts:

- The Division for public finances receives the central government fiscal account from the Ministry of Finance each month for the last month activities. In January they receive both the December account and the total account from the previous year.
- Minor changes to the fiscal account, e.g. new posts, are coded by Division for public finances according to COFOG on a monthly basis. They will also assess if the posts are relevant for EPE or RME. The Division for energy- and environmental statistics will then be included in the process and provide the input needed to code and implement the environmental classification in the production system.
- Bigger changes to the fiscal account are dealt with on a yearly basis. One example is when Norway has a change of government. This does not occur every year, but it will increase the work load for both divisions if it does (see Table 12 task 4-6).

2. The local government accounts:

- The expenditure data from municipal and county municipal administrative bodies are reported through KOSTRA during the spring after the end of the reference year. The Division for public finances starts to allocate the expenditure according to COFOG in September. The Division for energy-

⁹ Trh. 6 includes transfers paid by the general government to households and non-profit institutions.

and environmental statistics will be consulted if there are changes that effect the environmental classification.

The data from the general and local account are final when the national accounts are balanced and locked. This usually happens in August 22 months after the end of the reference year. However, there are usually none or very small changes to the general government accounts

During the project the possibility of using data directly from the national accounts was considered. The original idea was that with doing it this way we could ensure that the EPEA had the same system boundaries as ESA. However, the Division for public finances also follows ESA and the same figures are used in both the national accounts and the general government accounts. Arguments for using figures directly from the Division for Public Finances are that these figures are available at an earlier point in time than from the national accounts. In addition, the same level of details is not available in the national accounts since the government expenses are aggregated to fit the national accounts system.

The EPEA and the EGSS questionnaires shall be transmitted within 24 months of the end of the reference year. The first reporting starts in 2017 with 2015 as the first reference year. In the first transmission only 2014 and 2015 are to be reported, but in the following transmission periods for annual data for the years n-2, n-1 and n are to be reported (where n is the reference year).

Table 12 shows a proposal for an annual work plan for the government expenditure where tasks are divided between the Division for Energy and Environmental statistics and the Division for public finances. Each task is marked with an estimate of the resources needed. Many stars (*) indicates that the task is relatively resource demanding. The first reporting of the EPEA and the EGSS questionnaire are due in 2017, so we have chosen to use 2015 as the reference year.

Table 12. Proposed annual production process for general government environmental expenditure

| Task | Year (2015) | Description of task | Division for Energy and Environmental statistics | Division for Public Finances | Estimated resources needed |
|------|-----------------|--|--|------------------------------|----------------------------|
| 1. | Monthly (2015) | Identify potential new environmental expenses in the monthly central government account from the Ministry of Finance (MoF). | | X | * |
| 2. | Monthly (2015) | Classify new environmental expenses in the monthly central government account from the Ministry of Finance (MoF). | X | | * |
| 3. | Monthly (2015) | Include minor changes in the environmental classification in the production system (SAS). | | X | * |
| 4. | Spring (2016) | Identify new environmental expenses in the annual central government account from MoF if the account has been through big revisions. | | X | ** |
| 5. | Spring (2016) | Classify new environmental expenses in the annual central government account from MoF if the account has been through big revisions. | X | | *** |
| 6. | Spring (2016) | Include potential bigger changes in the environmental classification in the production system (SAS). | | X | *** |
| 7. | Autumn (2016) | Identify potential changes in the recording of environmental expenditure in the local government chart of accounts. | | X | * |
| 8. | Autumn (2016) | Classify new environmental expenses in the local government accounts. | X | | * |
| 9. | Autumn (2016) | Include changes in the environmental classification in the production system (SAS). | | X | * |
| 10. | Autumn (2016) | Produce an output dataset with general government expenditure on the environment (SAS). | | X | ** |
| 11. | November (2017) | Process the output dataset to fit the format of the reporting tables in the questionnaires (EPEA and EGSS). | X | | ** |
| 12. | December (2017) | Fill in questionnaires for EPEA and EGSS. | X | | * |
| 13. | December (2017) | Write Quality Report on the EPEA and EGSS. | X | | * |
| 14. | 31. Dec 2017 | Report EPEA and EGSS to Eurostat | X | | * |

The annual plan shows the tight cooperation between the two divisions involved with the governmental expenditures within Statistics Norway. It is important to keep in close contact during the annual process to inform each other about possible changes or delays in the annual work plan.

5.2. Use of data in EPEA

Environmental protection expenditure by the general government is an important part of the EPEA. The reporting requirements for EPEA in Regulation (EU) No 538/2014 ask for expenditure broken down by a selection of expenditure characteristics and CEPA classes. The reporting requirements also include environmental transfers by institutional sectors.

The Division for Energy and Environmental statistics will do the final compilation and reporting of the EPEA-questionnaire. The Division of Public Finances is the “owner” of the production system for general government expenditure and they will produce an output dataset with transfers and general government EPE. The Division for energy and environmental will process the output dataset to fit the format of the questionnaire and report the questionnaire to Eurostat.

An analysis of the data needed for EPEA-questionnaire is described in more detailed in chapter 4.4. Except for other taxes less subsidies on production, we have the data needed to fulfil the obligatory reporting requirements on EPE by the general government. In order to report the obligatory part, various estimation techniques must be applied. An evaluation of resources needed and data quality must be carried out before we can consider implement this. The same goes for the reporting requirements for environmental transfers by institutional sectors. We have data on transfers paid by the general government, but we do not have information on transfers paid by the rest of the world.

5.3. Use of data in EGSS

When the production process is well in place the output of non-market activities i.e. general government can be used in the EGSS statistics in the voluntary reporting. Since the formats of the reporting tables in EGSS are different than the EPEA tables some alternations must be made to fit with the EGSS reporting tables. The main alternation is that the environmental expenses must be classified by economic activity. Since it is the non-market output and value added of environmental products that are to be reported, more aggregated variables are needed in the reporting of EGSS than in EPEA, however the two environmental modules follow the same definitions of the variables.

The division for public finance divides the general governments output by economic activity, NACE Rev. 2, in such a way that it fits the structure of the reporting layout. Trial calculations are yet to be undertaken to get the data on EGSS-format.

5.4. Other uses of data

Regulation (EU) 691/2011 on European environmental economic accounts provides a framework for the development of various types of environmental accounts (modules). ReMEA (Resource Management Expenditure Accounts) and environmentally related transfers are future areas of inclusion

ReMEA has the same structure as EPEA with the same set of tables and variables. The difference is that ReMEA only includes CReMA categories and not CEPA. Since CEPA and CReMA are complementary to each other it was important also include CReMA as part of this project with general government expenditure.

The work of identifying environmental expenditure by the general government is also relevant for the ongoing work with developing the area of environmental subsidies and similar transfers. As with EPEA, we need to look beyond COFOG 05 to capture all environmentally related transfers. Environmental transfers include both environmental protection (CEPA) and resource management (CReMA).

6. Conclusions

The main objective of this pilot study was to develop a method for identifying general government expenditure for environmental protection and resource management, as well as developing a method for identifying these expenditures on an annual basis in order to meet the reporting requirements for EU-regulation 538/2014 amending EU-regulation 691/2011 on European environmental economic accounts.

The government expenditure in the Norwegian national accounts is classified according to purpose. This classification is based on the international classification COFOG, and COFOG has its own division devoted to environmental protection (COFOG 05). COFOG 05 is a good starting point for identifying environmental protection expenditure, but it does not cover all environmental expenditure relevant for environmental economic accounts. COFOG follows a main purpose classification criterion. This means that expenditure items classified in other divisions than COFOG 05 may be environmentally related, but since COFOG can only be classified by one purpose, the environmental element might be subordinated. In some expenditure by the general government only parts of the expenditure were considered environmental. In these cases efforts were made to separate the environmental part.

The COFOG is an established classification in the Norwegian statistical system. Expenditure items already classified by their main function in COFOG and cannot be re-classified. We therefore had to develop a new classification method. Our chosen method was to introduce an environmental specific classification in addition to the existing COFOG classification. We decided to use CEPA and CReMA as our environmental specific classification. We are now able to classify expenditure items whose main function are not environmental, but may have a secondary environmental purpose, in addition to those items with the environment as the main purpose. We applied the new environmental classification method by conducting a trial calculation for the year 2013. In addition to COFOG 05, we also found environmental expenditure in COFOG 01, COFOG 04 and COFOG 06.

In order to comply with the new reporting requirements on environmental economic accounting in 2017, we had to develop a method for compiling data on environmental expenditure by the general government on an annual basis. A proposal for an annual production process was developed in collaboration with the Division for Public Finances. The tasks in the production process were identified and a rough assessment of the resources needed was made.

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