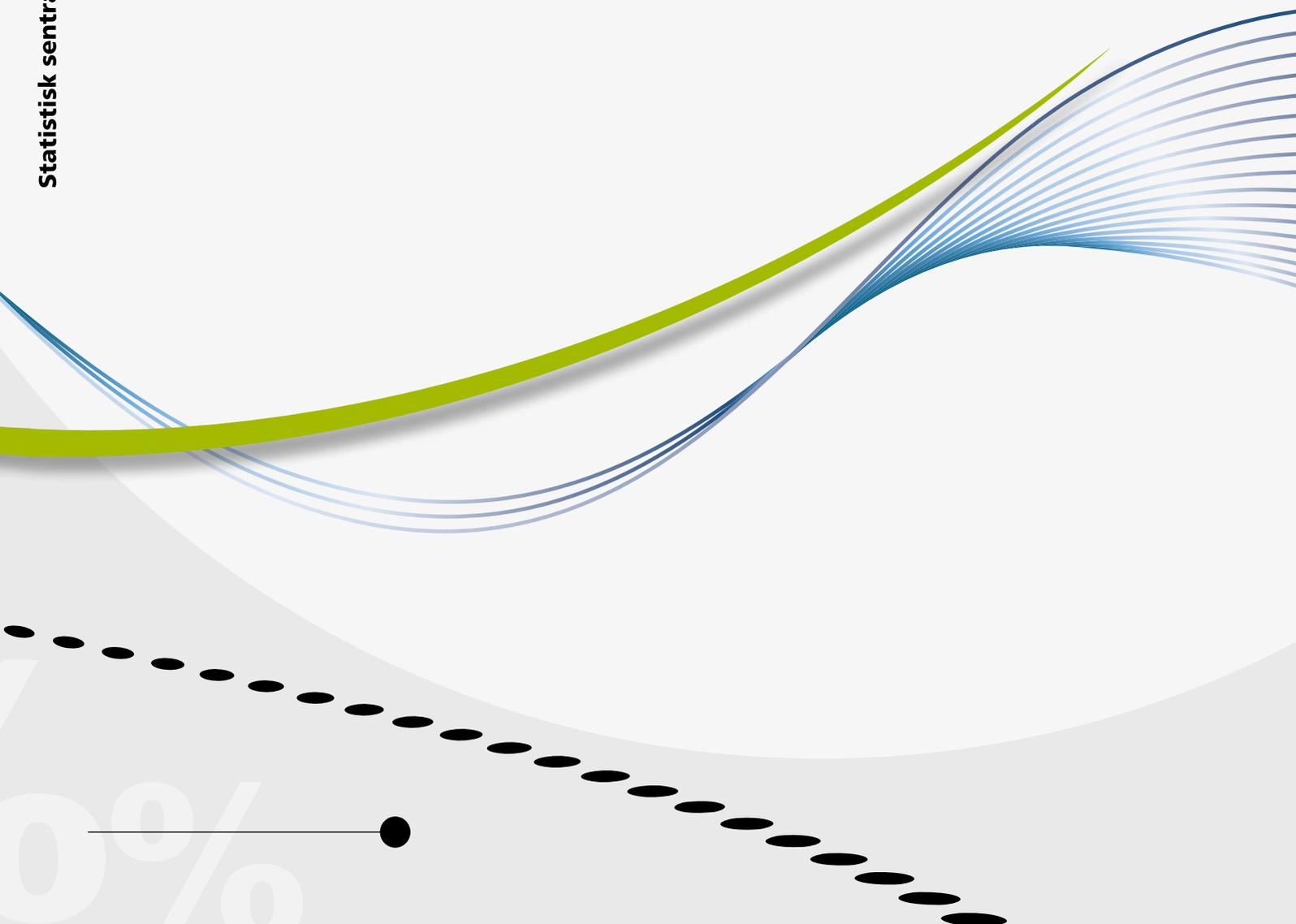
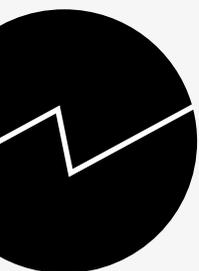


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Oil and Gas statistics
The Norwegian Experience



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The Norwegian Experience

In the series Documents, documentation, method descriptions, model descriptions and standards are published.

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Published 9 June 2017

ISBN 978-82-537-9553-9 (electronic)

Symbols in tables	Symbol
Category not applicable	.
Data not available	..
Data not yet available	...
Not for publication	:
Nil	-
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Preface

Norway found oil in the late 1960s, the emergence of the petroleum industry led to changes in the National Statistics system. The purpose of this report is to share both challenges and experiences covering petroleum activities in statistics production. This report is focused on giving countries which are part of the Norwegian Oil for Development Programme information and inspiration on their path to produce “oil statistics”.

Thanks to the Norwegian Development Agency (NORAD) and the Oil for Development Programme, for financing the report

Statistics Norway, 22 May 2017

Lasse Sandberg

Abstract

Statistic Norway has more than 40 years of experience of keeping track of the petroleum industry, and this has led to a number of modifications to the Norwegian national statistical system. By sharing Statistics Norway's experience, this report is a contribution to new petroleum countries to avoid some of the challenges and as inspiration to developing petroleum related statistics. Statistics Norway has acquired valuable knowledge regarding both petroleum specialized statistics, as well as how to include this activity into standard statistical products, like price indices, foreign trade statistics, national emissions inventories, accidents at work, etc.

The purpose of this report is threefold; first, to contribute to a better understanding of the statistics component that is part of the Norwegian Oil for Development (OfD) program. Secondly, to provide a tool for the OfD secretariat and Statistics Norway when considering support to petroleum related statistics in a potential partner country. Thirdly, to give input for partner countries when considering whether they would like support in petroleum related statistics development and in which statistical areas.

In the report many parts of the Norwegian national statistics system are presented, covering everything from the Statistics Act, classifications and various petroleum related statistics. It is a large task to cover such a wide area thematically, and therefore the report does not go in to depth on all issues. The first part of the report gives a contextual understanding of a national statistical system and the emergence of a petroleum sector. The second part covers some of the most relevant petroleum statistics in a systematic matter.

The petroleum industry has provided various challenges to the statistical system of Norway and following international recommendations has sometimes led to sub-optimal results. Some topics that would seem to be rather elementary have turned out to be rather challenging. Changes and improvements are continuously being made. The Norwegian way of doing things will not be optimal for all countries. How the industry is structured and located (land-based/offshore), the structure of the statistical system, regulations around data access and data collection tools will vary. Processes and methods must be adapted to local conditions, while also ensuring alignment with international reporting.

This report provides information on the "how and why" of petroleum statistics. Hopefully it can contribute to more and better petroleum sector statistics, thus making quality information available to the public. In the end statistics is an important contributor to knowledge based policy discussion and policy making.

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1. Introduction

1.1. Aim of the report

The purpose of this report is to contribute to a better understanding of the statistics component that is part of the Norwegian Oil for Development (OfD) program. It can be used as a tool for the OfD secretariat and Statistics Norway when considering a statistical component in a potential partner country. The report can also be helpful input for partner countries when considering whether they would like support in petroleum related statistics development and in which statistical areas.

The OfD program links public institutions in Norway to their counterparts in developing countries to build capacity in petroleum resource management. Statistics Norway is involved through collaboration with national statistical offices and other members of the national statistical system. Our role is to share experiences and technical know-how on how to develop and use statistics related to oil and gas in the national statistical systems and in economic modelling.

The ultimate goal of the collaboration is to publish petroleum sector statistics thus making quality information available to the public. Available statistics contributes to knowledge based policy discussion and policy making. One of the OfD programmes three target goals is that “The authorities are transparent in their management of the petroleum sector, and the public holds the authorities accountable”. The international fundamental principles for official statistical production specify just that; the official statistics should use sound methodology, be transparent and made available on an impartial basis. When this is lived up to, statistics are an important aspect of transparency and the opportunity of holding authorities responsible.

What is petroleum related statistics? How the statistical production is organized will to some degree vary from country to country. In Norway, the petroleum sector is just one of many sectors in the different statistical domains. The petroleum industry, constituting 16 percent of GDP in Norway (current prices) and 57 percent of exports in 2014, affects statistics varying from investment and production, to education, environment and work accidents. This report is *not* exhaustive. Focus is on areas which are the most relevant to begin with when adapting a statistical system to a new and growing petroleum sector in a country.

The petroleum industry has provided various challenges to the statistical system of Norway and following international recommendations has sometimes led to sub-optimal results. Some topics that would seem to be rather elementary have turned out to be rather challenging. Changes and improvements are continuously being made. The Norwegian way of doing things will not be optimal for all countries. How the industry is structured and located (land-based/offshore), the structure of the statistical system, regulations around data access and data collection tools will vary. Processes and methods must be adapted to local conditions, while also ensuring alignment with international reporting.

1.2. Organization of the report

This report is divided into two parts. The first part, chapter 1 to 5, covers petroleum statistics more broadly and gives an overall presentation of a National Statistical System (NSS). Further, the first part provides examples of the Norwegian experience and the use of petroleum related statistics. This is followed by an overview of the statistical system, general terminology and different types of data sources for statistical production. These chapters can be used to better understand the specifications provided in part two of the report.

Part two, chapters 6 to 20, provides information about many of the different petroleum related statistics more in detail. A “one-page fast fact” is provided for all relevant statistics. Furthermore, those statistics considered most relevant for an OfD cooperation is more elaborative. The one-pagers can be useful for project planners when considering which statistical areas to support, but also for statistical offices in partner countries to better understand what data and details are needed to establish or improve the statistical area in question.

2. The Norwegian experience

With more than 40 years of experience of keeping track of the petroleum industry, Statistics Norway has made a number of modifications to our national statistical system. This experience could assist countries to avoid some of the development challenges needed to be solved along the way, and to prepare for tracking and including this economic activity as it develops. In addition, Statistics Norway have acquired valuable knowledge regarding both specialized statistics that focus only on the petroleum industry as well as how to include this activity into standard statistical products, like price indices, foreign trade statistics, national emissions inventories, accidents at work, etc.

In addition to the development and modification of various statistical products, Statistics Norway has found that the petroleum industry’s importance to the overall economic activity is substantial. Therefore, having employees at the national statistics office with specialized knowledge and competence relevant to the activities and organization of the economic units in this industry is important. It takes time to learn how the petroleum sector is organized and how it works, and particularly how it differs from the way other parts of the economy. Just doing things the “standard way” is not always good enough – so developing special competence for how to include the activities in the petroleum industry has implications for the human resources of the national statistical office.

2.1. Identifying and tracking a new economic activity

When new economic activities begin, there is a need to capture these – but the question then becomes, how do you capture them? In the early 1970s as the oil business started in Norway there was a distinct lack of basic statistics which were needed to monitor this activity. In a certain sense, things started to “happen” in the Norwegian economy and Statistics Norway was not prepared to look for it. Of course, it would have helped to know what to look for and to prepare ahead of time in order to capture this activity – but Statistics Norway did not have a chance to learn from others before this happened in the Norwegian economy. In the 1970s the value-added share of oil and gas activities increased from 0 to 14 per cent of GDP so, needless to say, it was important to capture this development.

When oil and natural gas activities are initiated there is a substantial increase in the import of services related to exploration, new companies/enterprises being established, new entities are established – such as licenses, licensees and operators – and new economic activities take place, such as exploration, boring wells and building oil rigs/platforms.

Over time, as national actors are established and the local workforce learns new skills, there are less imports and more locally based activities. However, for the oil business being such a global industry, there will virtually always be a substantial component of international activities to capture.

2.2. Examples of statistical areas specialized due to petroleum industry

Some examples from the Norwegian experience, based largely on *History of National Accounts in Norway (Fløttum 2012¹)*, can help to illustrate why and briefly how Statistics Norway have developed and specialized the information systems to cope with the special characteristics of having a very dominant industry, which at times experiences high growth rates and large price fluctuations, in a small open economy.

In this context there are two main types of statistics – those that existed before the Norwegian petroleum era and needed to be adapted in different ways, and those developed after oil was discovered and focuses either primarily on the petroleum activity or includes this as an important part of the statistics. The statistics which existed before are areas such as foreign trade, the national accounts, Research and Development statistics, price indices, employment, etc. Statistics that have been developed specifically for the petroleum industry is, for example, investment statistics for the petroleum industry (which were merged with investment in manufacturing, mining and electricity supply in 2015²). Additionally, there are those statistics established after the start of the petroleum activity which took it into account from the beginning, for example, environmental protection expenditure, air emissions inventory and accounts, energy balances, etc.

The following examples describe some of the historical developments for statistics that needed to be adapted in order to include the petroleum activity in Norway. The chapters will present a selection of statistics which can be important for countries to know about when capturing the activities of the petroleum industry.

2.3. Investment statistics for the petroleum industry

In the 1980s, one challenge that emerged related to the national accounts was the treatment of large investments, such as the construction of oil platforms that took more than one year to complete. The standard approach was to record these investments as work in progress (recorded as changes in inventories) until the platforms were towed into place, installed in the oil fields and became part of the production infrastructure. In the period when the platforms were being towed into place, their full value was recorded as gross fixed capital formation with a corresponding negative value in the work in progress accounts. In order to get a full picture of the investments in the petroleum industry, one had to take the sum of the gross fixed capital formation and the work in progress. This created challenges to analysts and modellers. To avoid these problems and get the investments recorded in one place in the national accounts, the principle of ‘accrued investments’ was introduced. But this approach had a number of issues that needed fixing. One problem was that platforms being built in other countries would result in continuous imports of the construction activity. However, this was considered less of a problem than having the figures in two different places. Therefore, the accrual approach for large investments in the petroleum industry was implemented in the 1995 main revision of the national accounts.

Today this statistic is one of the most anticipated quarterly releases from Statistics Norway, and are considered market sensitive as e.g. the value of the Norwegian Krone can be influenced by these publications. As the investment statistics also

¹ Fløttum, E.J., T. Halvorsen, L.H. Simpson and T. Skoglund (2012). History of National Accounts in Norway: From free research to statistics regulated by law. Statistics Norway. Social and Economic Studies 113. <https://www.ssb.no/en/nasjonalregnskap-og-konjunkturer/artikler-og-publikasjoner/attachment/79796?ts=13a306a8068>

² <http://www.ssb.no/en/energi-og-industri/statistikker/kis/kvartal>

provides estimates for future investments, they are an important source for giving guidance on the future for the Norwegian economy.

Foreign trade and manufacturing statistics

Another challenge was how to keep track of goods and services which are delivered directly to the offshore platforms. Such transactions are typically not recorded through customs, and consequently not part of the source data used for developing the trade statistics. Rather they are considered a type of direct import. Early on, this meant there were problems obtaining information on intermediate consumption due to these direct deliveries to the offshore oil fields. To fix this, the foreign trade and manufacturing statistics needed to cooperate to figure out these direct deliverances and make sure they were being recorded in a consistent manner in their respective systems – first to make sure they were captured at all, as they were not going through the usual customs procedures, then to be sure they were included only once (and not twice).

Fluctuations in oil prices influence GDP growth – constant prices to chain-linked prices in the national accounts

Traditionally Statistics Norway changed its base year every fifth year when calculating constant prices and when developing the information in the national accounts in constant prices. This approach was based on the international recommendations at the time. This methodology has an implicit assumption that relative prices do not change dramatically over this five-year period. But in the 1980s the annual growth rate of the oil activity in Norway was 10 per cent or more, and oil prices were fluctuating markedly, determining the growth rate of GDP became a challenge. For example, the quantity of oil and gas produced in 1989 had increased by 25 per cent but the oil prices in 1988 were approximately 60 per cent lower than in 1985. Norway published a GDP growth rate of 1 per cent, whereas the OECD released figures for Norway showing a 5 per cent GDP growth.

The differences could be explained by the choice of base year. This problem has eventually been solved by implementing a new way of calculating “constant prices” – instead of using a fixed reference year the reference is chained to the year before. This is now the international standard, but some countries are still having challenges implementing this chain-linked to prices of the year before (t-1) approach.

3. The National Statistical System and the Statistics Council

In most countries, the National Statistical Office (NSO) has a coordinating role for the NSS system as well as the overall responsibility to ensure that quality principles are followed. According to the OECD “*The National Statistical System (NSS) is the ensemble of statistical organisations and units within a country that jointly collect, process and disseminate official statistics on behalf of national government.*”³ Other producers of statistics are typically line ministries or other government agencies with their own data collection and statistics units.

The National Statistical System in Norway is very centralized, but Statistics Norway is not doing everything. Other actors produce and publish statistics and if necessary there are cooperation agreements between institutions. Data sharing arrangements are often formalized and roles regarding data collection, editing/revision, statistical production, and reporting and publishing are typically discussed and are also formalized.

³ <https://stats.oecd.org/glossary/detail.asp?ID=1726>

3.1. The Statistics Act

In Norway it is the *Act concerning official statistics and Statistics Norway Act of 16 June 1989 No. 54*, which outlines Statistics Norway's activities and responsibilities. Statistics Norway is in this act defined as an independent governmental body which is central for producing and dissemination of official statistics. Regarding collection of data, the act describes that Statistics Norway can

*“Impose upon any person an obligation to provide the information which is necessary for the production of official statistics in so far as any legally prescribed obligation of secrecy is no obstacle thereto”*⁴

Statistics Norway has the right to collect data from persons, business and other register owners and data producers, and are entitled to issue compulsory fines if data is not reported. The Statistics Act also specifies that data must be reported on in the asked for format and before the set deadline. If these requirements are not met the obligation to provide information is breached, and can thus result in a compulsory fine from Statistics Norway.

The petroleum sector does not have any special adaptations when it comes to data collection. However, before the revision of the Statistics Act in 1989 there was a more complex system. The previous Statistics Act from 1907 implied that the Parliament was involved in the decision process when new surveys were approved. This was done either through decision, regulations or included in other laws.

Coordination of data collection from the oil companies has been on Statistics Norway's agenda for decades. This especially relates to the response burden for the reporting units. The Statistics Act facilitates coordinating of data by stating that Statistics Norway should be involved when administrative registers are set up. The motivation behind this is to make sure that the requirements of official statistics are met.

*“When an administrative body is to carry out major statistical investigations, notice thereof shall be sent in advance to Statistics Norway. Statistics Norway may seek additional information. Statistics Norway may forward proposals concerning the manner in which information shall be sought and the manner in which statistics shall be produced in order to safeguard consideration for statistics and coordination”*⁵.

3.2. Statistics Act and Data Sharing

All data collected by Statistics Norway using the Statistics Act as mandate is protected by Statistics Norway's obligation to maintain secrecy. Statistics Norway produces statistics that is published and made available for all users at the same time. Further Statistics Norway can only provide indirectly identified data (de-identified) to approved research institutes, and only anonymous data for public planning purposes.

*“Information collected in accordance with any prescribed obligation to provide information, or which is given voluntarily, may only be used for the production of official statistics or for such other use as is approved by the Data Inspectorate and is not detrimental to the security of the realm. If information is handed over, the obligation of secrecy pursuant to § 2-4 shall also apply to the recipient of the information. When particular grounds so indicate, the Data Inspectorate may nevertheless make exceptions to such obligation of secrecy for certain types of information.”*⁶

⁴ <http://www.ssb.no/en/omssb/styringsdokumenter/lover-og-prinsipper/the-statistics-act-of-1989>

⁵ <http://www.ssb.no/en/omssb/styringsdokumenter/lover-og-prinsipper/the-statistics-act-of-1989>

⁶ <http://www.ssb.no/en/omssb/styringsdokumenter/lover-og-prinsipper/the-statistics-act-of-1989>

In some cases, Statistics Norway collect data on behalf of other governmental institutions. Such agreements are entered into if it, in some ways, benefits the society and/or the statistical production process. It reduces response burden since data sharing is allowed. After the 1989 revision of the Statistical act an agreement called the “The two-step legal authority” has in some cases been used for coordination and data sharing. This agreement is not mentioned in the Statistics Act, but was introduced in 2003 to formalise existing practices and to standardize agreements.

The name “two-step legal authority” refers to the process of using two different laws as mandate in a data collection process. First, a sector specific law is used by Statistics Norway as mandate to collect the data on behalf of other governmental institutions, and then the Statistics act is used as mandate for Statistics Norway to keep a copy of this data for statistics purposes. If the Statistics Act was used as the mandate to collect data, it would be protected by Statistics Norway obligation to maintain secrecy and could not be shared with anyone.

More specific the two-step legal authority is a written contract between Statistics Norway and another governmental body on data collection. An example of this type of agreement is the oil and gas investment statistics. The data is collected by Statistics Norway on behalf of The Norwegian Petroleum Directorate, using the Petroleum Act as mandate. Statistics Norway then keeps a copy of the data by using the Statistics Act. In this case the two-step legal authority agreements allow Statistics Norway to collect the data and later on share most of it with the Norwegian Oil Directorate.

3.3. Examples of data sharing in Norway

Information about the petroleum sector and related activities are not only collected, developed and published by Statistics Norway. Many institutions are involved and coordination of these data is important. The idea of having information reported once and used many times leads to multi-purpose data systems serving multiple users needs where the reporting burden from the industry is kept as low as possible. Data sharing arrangements where topics like reporting and publishing are typically discussed, agreed upon, coordinated and are also formalized. The Statistics Council⁷ is the coordination body for the Norwegian national statistical system. Statistics Norway leads the Statistics Council. There are 22 different producers of statistics or central register owners which are members of this coordinating body.⁸ Both the Norwegian Petroleum Directorate and the Norwegian Environment Agency are members of the Statistics Council. In addition to the council there are bilateral cooperation agreements between Statistics Norway and other important institutions (such as the Petroleum Safety Authority) which specify the working relationships in more detail.

Oil and Natural Gas Production statistics

The Norwegian Petroleum Directorate has the responsibility of collecting daily production figures from all wells in the Norwegian Sector. They use these data for control purposes to monitor that the operators are producing according to their license agreements. The figures from the daily reporting are aggregated by field and month and are published by the Norwegian Petroleum Directorate on their website. These figures are available to all actors and are used by Statistics Norway as inputs into a number of statistics – such as energy statistics, national accounts, air emissions national inventory, etc.

⁷ <https://www.ssb.no/en/omssb/samarbeid/statistikkraadet/the-mandate-of-the-statistics-council>

⁸ <https://www.ssb.no/en/omssb/samarbeid/statistikkraadet/participants-in-the-statistics-council>

Natural Resource Assets – valuation of what is under the ground

The Norwegian Petroleum Directorate has the responsibility for assembling the knowledge regarding the petroleum natural resources, what is still in the ground, in physical terms. In addition, the valuation of these natural resources is also the responsibility of the Norwegian Petroleum Directorate. In some countries, such as the Netherlands, the national statistical office is involved in the valuation of the natural resources (also called “non-produced natural capital” in the national accounts). In Norway, the Norwegian Petroleum Directorate provides the valuation of the petroleum natural resources to the government (Ministry of Finance, Ministry of Petroleum and Energy) for use in the annual national budget and revised national budget. Since the national accounts for Norway do not develop a balance sheet that includes the petroleum resources, Statistics Norway does not publish official figures for either the physical petroleum assets or the valuation of these assets.

National Greenhouse Gas and Air Emissions Inventories

In Norway, the Norwegian Environment Agency is responsible for issuing pollution permits, which allow those who have the permits to pollute up to a certain level, and for monitoring the activities allowed under the permit. There are reporting requirements as part of the conditions of the pollution permits. The data are then made available in the Norwegian Pollution Release and Transfers Register (PRTR) at the site or facility level⁹. These data are then used by Statistics Norway as an important data source, together with many other data sources, for developing air emission statistics for Norway and for the petroleum related activities. The emission statistics include development of the national greenhouse gas inventory (reported to UNFCCC¹⁰), the air emission inventory (UNECE CLRTAP¹¹ Gothenburg Protocol) and the related System of Environmental-Economic Accounts (SEEA) air emissions accounts (Eurostat reporting).

Other environment statistics – with various levels of coverage

The pollution permits issued by the Norwegian Environment Agency (NEA) also have reporting requirements^{12 13} for other environmental aspects such as discharges from drilling, discharge of oily water, use and discharge of chemicals and hazardous materials, accidental discharges, discharges of radioactive substances, and waste. All of these reporting can lead to the development of statistics – both published by NEA through the PRTR system and Statistics Norway. The main difference between statistics from NEA and Statistics Norway is the coverage. Statistics Norway typically makes statistics which cover the whole country whereas NEA only aggregates the figures from the point sources with pollution permits (a more limited coverage).

4. Important building blocks for official statistics and statistical systems

Important building blocks for developing official statistics are the concepts of categorization and classification. Objects and activities are grouped based on similar properties. The groupings or categories are developed in ways which are clearly defined, mutually exclusive and collectively exhaustive. In this way, an

⁹ <http://www.norskeutslipp.no/en/Frontpage/?SectorID=90>

¹⁰ UNFCCC = United Nations Framework Convention on Climate Change

¹¹ UNECE = United Nations Economic Commission for Europe; CLRTAP = Convention on Long-range Transboundary Air Pollution

¹² <https://epim.no/eeh/>

¹³ <http://www.miljodirektoratet.no/no/Publikasjoner/2014/Februar-2014/Retningslinjer-for-rapportering-fra-petroleumsvirksomhet-til-havs/>

object or an activity can be placed into one, and only one, category. The different categories are then assembled into a hierarchical classification system.

The UN Statistical Commission has the responsibility for developing official classification systems for products, economic activities, other types of activities, geographic areas, etc. These classification systems facilitate the development of consistent and comparable statistics. If, for example, different classification systems are used by each country then the statistics are not measuring the same things and are therefore not comparable, except maybe at more aggregated levels. Developing information that is internationally comparable is one of the goals of official statistics. Using standard classification systems is one tool which is used for reaching this goal.

There are a number of classification systems that are important when describing the petroleum industry. The classifications of economic activities are perhaps the most relevant. There are international (ISIC), European (NACE) and national, in this case, Norwegian Classification systems (Statistics Norway). These classifications are revised periodically¹⁴ since new industries appear and the structure or relative importance of industries change as times goes by. Which economic activities are grouped together in these classification systems is important when developing statistics covering economic activities that end up in several categories. How Norway has defined the “petroleum industry” – i.e., which SN2007 categories are ‘in’ and ‘out’, will be discussed later.

In addition to defining the petroleum industry in terms of which ISIC/NACE/SN categories are included/excluded, Norway also produces a GDP estimate with and without the petroleum and shipping industries. The reasons for doing this and how this is defined will also be described later.

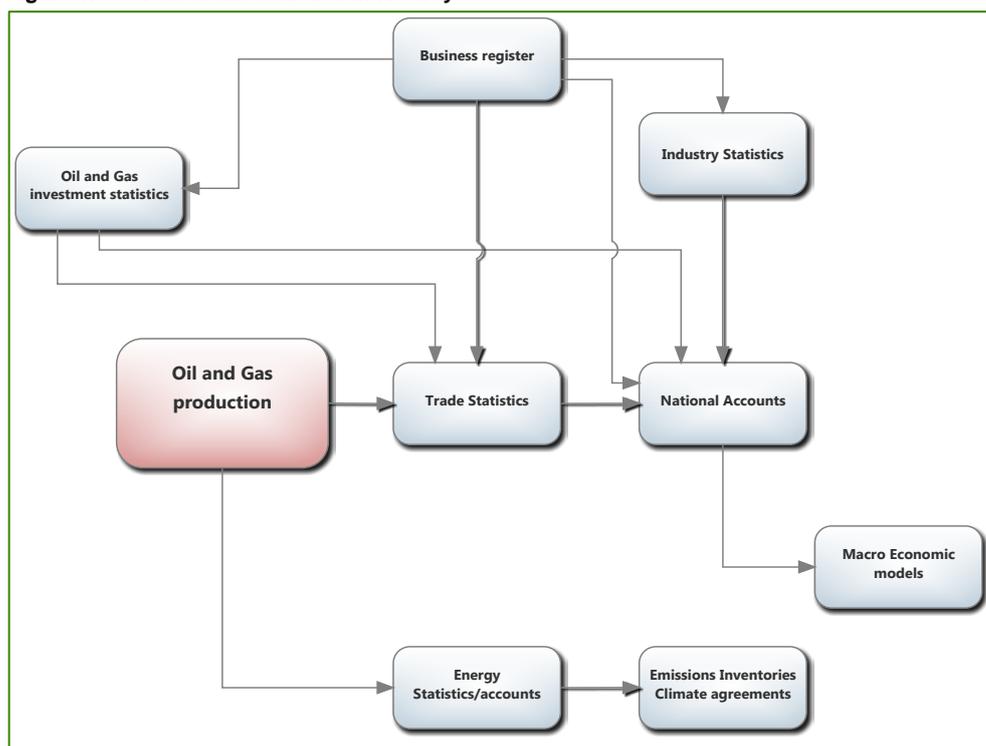
Another important building block is the unit of analysis – in other words, who do you ask for information. In many cases when statistics about economic activities are being developed, an enterprise or establishment (also more commonly called companies or businesses) are the entities that report figures for their turnover, cost of goods sold, employee compensation, production, number of employees, energy use, etc. In the petroleum industry, there are often other constellations of national and international companies involved in the exploration and extraction of oil and gas. In this case, there are new units – licenses, licensees and operators – that become important and new entities are established. These new constellations are then the ‘unit of analysis’ and this also causes some challenges for developing statistics.

4.1. Producing Petroleum statistics

Statistics on petroleum and related areas is a complex system. It involves everything from investments to macro-economic models and physical units to monetary values. The figure below (see Figure 1) gives a course overview of the so called petroleum related statistics in Norway. There are more areas not covered in the figure, but as a starting point the figure covers the most important areas.

¹⁴ ISIC rev 3 was published in 1989, ISIC rev 3.1 was published in 2002, ISIC rev 4 was published in 2008.

Figure 1. Petroleum statistics in Norway



Of the statistics in Figure 1 production figures are central. It is production figures that establishes the basis and serve as input to many of the “petroleum” statistics. One notable exception is oil and gas investments statistics. A considerable amount of funds are needed to build up petroleum production and are invested before the first oil is extracted. In Norway production figures and investment statistics together form the foundation which the whole petroleum related statistics is built upon, and they influence Industry Statistics, Trade statistics and finally National accounts and macro-economic models. The different statistics are described more in detail in part 2 of the report. (See Appendix 1 for a more detailed overview on petroleum statistics, input and user.)

4.2. Defining «petroleum related»

The petroleum sector is often defined in three different parts: Upstream, mid-stream and downstream.

- Upstream: Exploration and extracting oil and gas from the ground.
- Mid-stream: Transport of the petroleum products to refineries or end users.
- Downstream: Includes refineries and all service providers to the up- and midstream activity.

The upstream sector is always included in the petroleum related statistics. The other sectors are more complicated to measure, especially the downstream as it covers many different areas and overlaps with other sector definitions. This is however where “local content” usually will have the greatest potential in most countries. The downstream service providers are, for example, a big part of the Norwegian industry as Norway has specialized in producing bits and parts to the upstream exploration and extraction activities. Since much of this production is technically defined under other activity codes, it is not included in the petroleum statistics. Satellite accounts for the petroleum sector or other sector specific analyses, i.a. regional accounts, can be used to look at the whole petroleum sector as one.

“Mainland Norway” – A non-standard way of defining “Norway”

What is considered “in” and “out” of a group of industries is dependent on the purpose for establishing these special definitions. Norway has established satellite accounts for tourism, health and environment. All of these groupings are combinations of various activities that are found in a number of different ISIC/NACE industries. Typically, when a new grouping is needed, first the ISIC/NACE/SN standard classes are examined to find the “pure” classes where all of the activity could be classified as being included in the new definition. Then portions of all of the other categories are reviewed to find which could contain the types of activities of interest. Determining the portion of the “mixed” groups then becomes the real challenge. In addition, there are the “indirect” economic activities which are identified when certain types of analyses, such as input-output analysis, are performed (Prestmo 2015)¹⁵ When defining an oil industry or petroleum sector, there are a number of different approaches and definitions used in Norway. These different definitions will be discussed in more detail later in the report.

The most common definition/concept that includes some industries and excludes others related to the petroleum industry is called “Mainland Norway” which was introduced in the tables of the national accounts in the 1980s. Since the petroleum industry’s activity is offshore in Norway, a “Mainland Norway” definition was basically excluding the economic activity related to oil and natural gas extraction and ocean transportation.

Intuitively the exclusion of the oil activities could be understood from the fact that inputs were mostly imported and outputs were mostly exported in the beginning. In this way the oil activities had only a limited effect on other activities of domestic production. Excluding the production of oil and gas extraction can also be justified due to the large element of capturing the resource rent which skews the data and makes it more difficult to use them for business cycle analysis. Over time, however, as the service activities to the oil and gas industry became more established in Norway and the Norwegian inputs increased, it was decided to change the definition so these service activities were counted as part of the mainland economic activities.

Now “Mainland Norway” consists of all domestic production activity *except* exploration of crude oil and natural gas, transport via pipelines and ocean transport. The concept was revised as part of the main revision of the national accounts in 2014. Before 2014, service activities incidental to oil and gas were also excluded from the Mainland Norway aggregate.

Unit of Analysis

The unit of analysis is the major entity that is being analysed in a study. It is the “what” or “who” being studied. In most economic statistics, the unit of analysis – which is typically also the unit for reporting – is an enterprise (or more commonly called a company or firm or conglomerate). An enterprise can have one or several establishments. Enterprises having similar economic activities are grouped together into “industries” which are classified according to the ISIC/NACE/SN systems.

But in the petroleum industry, there are other important units. These units are licenses and licensees, and operators. Typically, there are many enterprises that are owners of a license where one of the licensee’s takes on the role of “operator”. In Norway, by law, it is the operator that has the responsibility to report for the collective license owners or licensees. The challenge becomes how to combine the reporting from enterprises, which is used in all of the other economic statistics,

¹⁵ Prestmo, J.B., B. Strøm and H.K. Midsem (2015): Ringvirkninger av petroleumsnæringen i norsk økonomi. Statistics Norway, Reports 2015/8.

together with the information from the “operators”, about the activities related to the licenses – and be sure that there are no gaps or double counting.

Industrial classifications (ISIC/NACE/SN2007¹⁶)

Enterprises with the same kind of economic activity are grouped together in defined categories. There are clear rules explaining how to classify different types of enterprises – see for example “Chapter 3: Classification rules for activities and units” in the Eurostat NACE rev. 2 manual.¹⁷

The basis of SN2007 (Norwegian classification) are the EU standard NACE Rev. 2 (Nomenclature européenne des activités économiques) and UN standard ISIC Rev.4 (International Standard Industrial Classification of all Economic Activities). Both NACE Rev.2 and SN2007 are based on ISIC Rev.4 (2006). Although NACE Rev.2 has the same structure or classification as ISIC Rev.4, it is more detailed than ISIC Rev.4 at the three and four digit levels. It is possible to convert to ISIC’s three and four digit categories by aggregating the NACE groups. Up to the four-digit level (class), SN2007 is identical with NACE Rev. 2. Based on Norway’s need for a more detailed industrial classification and alignment with Norwegian conditions, a Norwegian national level has been introduced (five-digit-subclass). There are 297 Norwegian national codes at the 5-digit level.¹⁸ The structures of the industrial classification systems have posed some challenges for identifying and tracking the activities in the petroleum sector in Norway.

In 1973 the economic activity from the North Sea was first included in the Norwegian national accounts. At that time, the extraction of crude oil and natural gas was classified as part of the mining and quarrying industry, while oil drilling belonged to the construction industry. This meant that finding the economic activities related to oil needed to be located in several different industry sections and it was not easy. The situation related to the grouping of the petroleum industry’s economic activities has improved as the ISIC/NACE classifications have been revised over the years. Currently ISIC rev. 4 has classified the extraction and the services related to the extraction in the same Section, Section B Mining and Quarrying, with Division 06 Extraction of crude petroleum and natural gas, and ISIC Class 09.10 Support activities for petroleum and natural gas extraction. This makes it easier to find the direct economic activities related to oil and natural gas extraction. With the extraction activity taking place offshore, there are also extensive pipelines which transport natural gas and other petroleum products. Transport in pipelines is not classified in ISIC Section B 19 so in order to group all direct Norwegian petroleum industry activities together a non-standard grouping must be established. Combining various ISIC/NACE/SN groups in “non-standard” ways can be useful for countries when economic activities are not classified in the way the country may need for policy making and management purposes.

5. Data sources

Petroleum related statistics have multiple sources of which some are specifically developed to produce statistics while others are not. In the statistical chapters (part two of the report), more details on the sources used for producing petroleum related

¹⁶ The main classifications for economic activities include the UN system, International Standard Industrial Classification (ISIC), the classification used in the European statistical system, Nomenclature statistique des activités économiques dans la Communauté européenne (NACE) and for Norway, the Norwegian system, Standard for næringsgruppering (SN).

¹⁷ Eurostat (2008) NACE Rev. 2, Statistical classification of economic activities in the European Community; <http://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF>

¹⁸ NOS D383 (2008) Standard for næringsgruppering; https://www.ssb.no/a/publikasjoner/pdf/nos_d383/nos_d383.pdf

statistics in Norway are presented. Data for statistics are usually collected either by Statistics Norway directly or by others which then shares the information with Statistics Norway. Common for the Norwegian approach is what we call multi-purpose data systems: *collect once and use many times*.

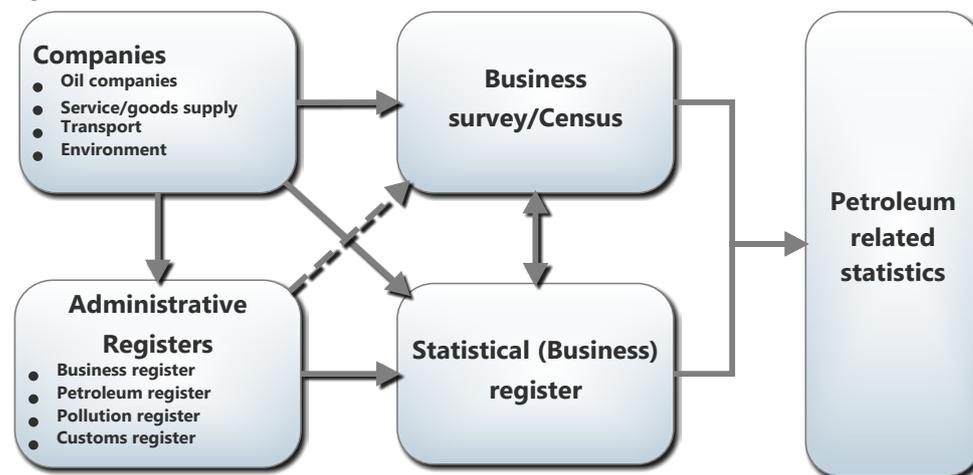
In general, there are two main sources of data used by Statistics Norway in the production of statistics (see Figure 2):

- Surveys/Censuses
- Administrative registers

The traditional way of collecting information for statistics production is through surveys and censuses. This implies use of questionnaires, paper or digital, and enumerators in the data collecting process. Using this approach gives the statistics office control over the questions asked and correspondingly the information collected. On the other hand, this is a rather costly approach which usually is carried out once a year or even less frequent.

Information is also collected for various administrative purposes referred to as registers. In Norway three main register exists: The Cadastre register, the Person register and the Business register. All three are important contributors for production of statistics at Statistics Norway (see Figure 2). The Business register gives a full overview of all Norwegian businesses, and also has information on the industry they operate in (ISIC), turnover, number of employers, etc. Thus it provides important information for sampling and analysis of i.a. the petroleum sector. Many other important petroleum related register exists, like the Norwegian Petroleum register (see below). Data from registers are not always specified according to format or quality required for statistical purposes. However, it is efficient to use data already collected. Further processing of data in registers is often needed for statistics production. Data from registers can also be used as secondary sources for quality assurance of data collected in surveys.

Figure 2. Various data sources and data flow



5.1. The Petroleum register (FactPages)

The Norwegian Petroleum Directorate collects and publish detailed information regarding the petroleum activities on the Norwegian continental shelf.

The register is called the Petroleum register and is partly available for the Public. This information can be accessed online and is called the “Factpages”, which is synchronised with the Norwegian Petroleum Directorate’s databases on a daily basis.

(<http://factpages.npd.no/factpages/Default.aspx?culture=en>)

The “Factpages” covers many areas of the petroleum sector, i.e. a fully updated register of production licenses. Production licenses for petroleum activities can only be awarded when the area has been officially opened. A license grants exclusive rights to exploration, exploration drilling and production of petroleum in the area covered by the license.

The Norwegian Petroleum Act and the Norwegian Petroleum Regulations specify what, when and how the oil companies must report to the Norwegian Petroleum Directorate. The reporting is focused on volume data, some which must be reported daily and others monthly. These reports give the NPD among other a full overview over wellbore, facilities and fields, including licenses.

Petroleum statistics, detailed presentation of statistical areas

6. Macro-economic modelling and the petroleum sector

The extraction of crude oil and natural gas was developed into a major industry at the beginning of the 1970s. The industry became important for the economy as a whole mainly because it contributed hugely to the national income. It generates a profit in the sense that the income is larger than the value of the resources put into the industry. Further, the industry is important because of its demand for factors such as labour and intermediate goods going into the production. Changes in factor demand and investments from the industry have large effects on the mainland economy. Even if Norway has passed the peak of its oil production the industry is still important for the economy.

The oil and gas industry is, in many ways, an industry like others although it also has its own characteristics. As we mentioned above the industry generates an extra profit, sometimes referred to as “super profit” or “oil rent”. The revenues from the oil and gas industry do not come in addition to the revenues Norway would have had without this business. The use of resources, both capital and labour, would, in part have been used in other production activities if Norway had not discovered oil and gas.

We normally define net value added in an industry to equal income generated from labour and capital, and that this income is divided between the two factors. The share attributed to labour is given by the total labour costs, while the capital’s share is calculated as factor income less labour costs (i.e. a residual). For the petroleum industry, however, this method would have allocated an unreasonably high return to the use of capital. In addition to this, it does not take into account that oil and gas are non-renewable resources. This implies that the production of oil and gas consumes the national wealth. An income concept that can be traced back to Adam Smith is formulated by J.R. Hicks (Hicks 1946) as the value of what one can consume during a period while assets (“national wealth”) at end of period are expected to be unchanged.

6.1. Macro-economic models in Norway

The large macro-econometric models used in Norway, such as the MODAG model developed by Statistics Norway, are closely linked to the national accounts. Main users of the model are the Ministry of Finance for medium term macroeconomic forecasts and policy analyses and by Statistics Norway for their own forecasts and analyses. However, Statistics Norway also employs the model for other clients, including the Standing Committee on Finance and Economic Affairs of the Storting (the Norwegian Parliament). MODAG is a result of more than two decades of research and a great number of people have contributed over time. Hosting these models within Statistics Norway is a fortunate situation bringing important users of data closer to the producers of the data.

As the oil and gas extraction in Norway is off shore a convenient concept of “mainland economy” is used to distinguish the mainland production activities from activities in the petroleum industry and “Ocean transport”. This concept is used both in the national account and in the MODAG model. Production activities related to the oil and gas industry has been divided into “Oil and gas extraction” and “Service activities incidental to oil and gas”. Gross product in the “Oil and gas

extraction” constituted about 90% of the total of the two in 2015 current value. The combined industry constituted about 16 percent of total gross product.

Such models have thousands of equations and variables. Its structure and relationships has been estimated based on historic information, and together with assumptions for independent variables determines the future scenarios. The main source of data is from the national accounts providing historic time series for domestic production and imports for all industries, as well as information on their direction, i.e. where production and imports is used, both as intermediate use and for final use including exports and stock building. This information on the “inter-industry” economics is provided from the supply and use tables of the national accounts, often via an input-output table.

6.2. Input data to the Macro-economic model

Input-output tables additionally provide information on wage sums and operating surplus by industry, and taxes and subsidies on both intermediate and final use. This is valuable information to a model making it useful for many types of analysis. Wage sums will typically be linked to employment to give wage rates by industry.

The public sector is to some extent included through the national accounts but we should also include detail on government revenues and expenditures. Tax income should be endogenous and linked to a suitable tax base. This will provide any model with an important dynamic feed-back mechanism, or second round effects, so that a change in tax policy also changes the tax base due to economic agents’ change in behaviour.

When a country discovers petroleum resources this information is not in place. It will still want to separate the oil industry and should, as a minimum, try to model the oil sector in addition to the non-oil private sector and the public sector. It is important to incorporate the links between the sectors as e.g. the non-oil private sector usually produce for the oil industry, and the public sector receive taxes from the industry. As the oil business starts with exploration the first data to be recorded should be related to this. Usually this is investments but might also be foreign direct investment that should be included in the balance of payments. Investment should separate oil exploration from investing in oil drilling platforms. When oil production starts we need to record statistics for production and use of production and the use of production factors and intermediate input. Often much of the production goes directly to exports, but also enters into refining, i.e. the manufacturing industry. In addition to this it is important to have information from the balance of payments on oil companies’ repatriation of profit.

The most important statistics related to oil and gas is prices and production volumes, and these must be integrated into the national accounts. This will transform the data from “US dollar per barrel” and “million barrels” into price and volume indices respectively. However, as the price and volume measures are so widely used it is common, in a macro-model, to create a link from the oil price (in US dollars) and production volume (in million barrels) to its indices. This makes it possible for the model user to give assumptions in the more widely used terms “US dollar per barrel” and “million barrels” rather than using price and volume indices. Further, the nominal oil price can then be linked to a reference price, e.g. Brent Blend or West Texas Intermediate using a fixed mark-up or discount. This makes it easier to apply e.g. the IMF’s assumptions in making forecasts.

Some countries use a separate model to estimate the government’s revenue from the oil and gas industry. These models are more detailed than a macro-model and

main results from such models, e.g. oil production or exports in volume, the oil price, the government share, etc., are often used in macro-models.

6.3. The MODAG model

The MODAG model does not try to predict the oil price. Rather this is an important variable fixed by the model user. From a Norwegian perspective, the price of oil is given from the world market. The oil price works through various channels and measured in US dollars it has effects on the real exchange rate. The drop in the oil price in 2014 depreciated the exchange rate, and, as a result, increased the domestic price level in Norway.

MODAG does not include any forward-looking mechanisms. However, it is clear that expectations about future oil price influence decisions made today. Of particular interest here, is the decision to invest. Oil investments have contributed significantly to value added over the previous years. The lower oil prices over the last years have resulted in both lower investment and labour demand.

As the oil and gas industry demand labour and intermediate goods from other sectors of the economy, it is crucial having a macroeconomic model taking into account these inter-industry transactions. The impact on the economy as a whole from various scenarios can be analysed from model simulations thanks to a model specification like this.

In a stable democracy like Norway, mechanisms are in place to ensure the wealth arising from oil and gas operations is distributed and managed transparently. If this framework is not in place there are risks to end up funding corrupt practices, which might contribute to social and economic inequalities (World Bank, 2009). Proper inclusion of revenues from the oil and gas industry into the national budgets and implementing a multi-year budget approach ensure proper oversight and accountability of the government's macroeconomic policy decisions.

The Ministry of Finance in Norway use their macroeconomic model to analyse policy options for sound revenue management and allocation. One important area where model based analyses can be used as a tool for designing a proper policy is to mitigate any negative impact from exchange rate appreciation. Another important decision that should be properly analysed by using a macroeconomic model is related to savings; as oil prices are volatile it is important to decouple public expenditures from revenues. Further, related to this, is the finite nature of oil and gas suggesting asset accumulation to safeguard the values for future generations.

6.4. The Petroleum fund

The macroeconomic model has been used for many studies of budgetary rules and how to phase into the economy earnings from the oil and gas industry without harming the economy. A budgetary rule was introduced in 2001 to ensure that the sovereign wealth fund would secure sustainable development for the future generations of Norway. As such, the budgetary rule will exist in the future, even after the petroleum resources has come to an end. The rule states that a maximum of 4 percent of the fund's value should be allocated to the yearly government budget. The macroeconomic model has built in mechanisms on financing any budget deficit from the fund.

The financial crisis in 2008 was a period when macroeconomic issues returned to the forefront. There was considerable interest and attention on the sustainability of public finances in many countries, also in the very short term. Norway, thanks to its large financial reserves, managed to manoeuvre through the crisis without the

same difficulties as many other European countries. This was however, a reminder that Norway must look at the long-term sustainability of public finances and keep in mind that the large budget surpluses now are based on income from non-renewable natural resources that is going to be depleted and fall away. In this context, it is important to understand that the welfare state is built on a mutual understanding between the generations. Social security contributions, mainly to the youngest and the oldest, are broadly financed by taxes paid by those in working age. When we are witnessing a changing age structure of the population together with dwindling revenues from the oil sector, it becomes increasingly important to analyse the future to be able to decide on good policies. It also reminds us how important it is to have analytical capacity for these purposes.

7. National accounts

7.1. Fast facts National accounts

Fast facts	
Name	Quarterly national accounts
Topic	National accounts
Purpose	The national accounts (NA) statistics are designed to provide a consistent and comprehensive survey of the overall national economy. The national accounts give both a summarised description of the economy as a whole and a detailed description of transactions between different parts of the Norwegian economy, and between Norway and the rest of the world. The national accounts also provide information on capital stocks and employment.
Key users	The QNA have a wide group of users, from school pupils and students to public and private institutions that actively use the statistics in their analyses and investigation of economic development. Active users include the Research Department in Statistics Norway, the Ministry of Finance, Norges Bank, international organisations such as the IMF, the OECD, the World Bank, the UN and Eurostat, resident and non-resident financial sector analysts, and the media.
Input data	The compilation of the QNA implies the use of final annual national accounts data and comprehensive input data sets. These data series are mainly based on short-term statistics from Statistics Norway. In addition, some short-term information from other sources is used.
Frequency and timeliness	The quarterly national accounts (QNA) are published about 45-50 days after the end of the given quarter. The accounts for the first quarter of the current year are published in May. The second quarter in August/September third quarter in November and fourth quarter in February. The QNA adds up to preliminary years in the national accounts.
International reporting	Published figures are reported to Eurostat, the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD) and the United Nations (UN).
Microdata	Not relevant
Table/graph	http://www.ssb.no/en/nasjonalregnskap-og-konjunkturer/statistikker/knr

Value added by industry
Basic current prices (NOK million)

Year	Total industry (NOK million)	Oil and gas extraction including services (NOK million)	Manufacturing (NOK million)
2000K1	320,000	80,000	50,000
2002K1	350,000	80,000	50,000
2004K1	400,000	100,000	50,000
2006K1	500,000	150,000	50,000
2008K1	600,000	180,000	50,000
2010K1	550,000	150,000	50,000
2012K1	700,000	200,000	50,000
2014K1	700,000	150,000	50,000
2016K1	700,000	100,000	50,000

7.2. Description of the statistical area

The national accounts provide an overview of the Norwegian economy. It is the main source of knowledge about the state and development in the Norwegian economy and provides a good basis for many important decisions in the society.

The national accounts are a wide concept and consist of many sub-statistics. As such it is both an important statistic and a user of other statistics. As a part of this wider concept Statistics Norway publish statistics on for example annual national accounts which includes a full integrated labour accounts, quarterly national accounts, annual sector account, quarterly non-financial sector accounts, etc.

The statistical area also consists of satellite accounts for i.a. regional accounts, health accounts, non-profit institutions and tourism and environment accounts

The balance of payments is also an integrated part of the national accounts. Its main purpose is to provide information on Norwegian residents' economic transactions with non-residents. It is fully integrated with sector account through the sector Rest of the world

In this chapter, we will mainly focus on, and exemplify referring to the quarterly national accounts (QNA).

7.3. Petroleum industry

Although the oil and gas industry has passed its peak it is still important to the Norwegian economy. In addition to the revenues from taxation, the industry is deeply interlinked with other industries through its demand for goods and services, and a shock to the industry affects the rest of the economy.

Both the supply and use tables and the input-output tables reflect these interactions, as they estimate how much other industries produce for intermediate use in the oil and gas industry, as well as where the output from the oil and gas industry is used. On this background, amongst others, it is vital for policy planning to have good statistics on the oil and gas industry and on its linkages to the rest of the economy. Another dimension of the data that is useful, is the regional statistics on national accounts figures. For example, in the aftermath of the substantial decline in oil prices in 2014 the policymakers could target the regions that were most severely hit based on these dimensions of the statistics.

Table 1 shows one of the main tables from the Quarterly National Accounts showing per cent volume growth from previous period.

Table 1. Quarterly National Accounts. Seasonally adjusted change in volume from the previous period. Per cent

	2015	3rd quarter 2015	4th quarter 2015	1st quarter 2016	2nd quarter 2016
Gross domestic product	1.6	1.5	-1.3	1.0	0.0
Gross domestic product Mainland Norway	1.1	0.1	-0.1	0.3	0.4
Petroleum activities and ocean transport	3.7	7.5	-5.8	4.2	-1.4
Final domestic use of goods and services	0.7	-0.8	0.5	2.1	-0.4
Final consumption expenditure of households and NPISH	2.1	0.1	0.5	0.5	0.4
Final consumption expenditure of general government	2.1	0.4	0.6	0.6	0.6
Gross fixed capital formation (GFCF)	-3.8	0.7	-0.6	-1.6	0.1
Total exports	3.7	6.1	-2.2	-2.7	-0.3
Total imports	1.6	0.5	2.9	-0.9	-1.7
Employed persons	0.3	0.0	-0.2	-0.1	-0.1
Total hours worked	0.3	-0.2	-0.2	-0.3	-0.5

¹Figures from 2015 onwards are preliminary.

7.4. Population

The coverage of the national accounts is defined by international guidelines in the System of National Accounts 2008 (2008 SNA), published by the UN, the OECD, the IMF, the World Bank, and the Commission of the European Communities, and the European System of National and Regional Accounts 2010 (ESA 2010).

The total national economy, and the distinction between the national economy and foreign countries, is defined in terms of resident units. A unit is defined as a resident unit of the country when it has a centre of economic interest in the economic territory of the country - i.e. when it is involved in economic activities on this territory for an extended period of time (one year or more).

Two basic types of information are recorded in the national accounts: flows and stocks. Flows refer to actions and effects of events that take place within a given period of time, for example the output of an industry in one year. Stocks refer to positions at a certain point of time, for example the value of capital stock or the number of employed persons.

7.5. The statistical unit

The national accounts comprise two basic statistical units: institutional units and local kind-of-activity units (establishments). Institutional units are economic entities that are capable of owning goods and assets, of incurring liabilities and of engaging in economic activities and transactions with other units in their own right. An institutional unit contains one or more local kind-of-activity units which are classified by type of activity. An activity is characterised by an input of products, a production process and an output of products. All local kind-of-activity units engaged in the same or similar kind-of-activity constitute an industry.

7.6. Sources

The compilation of the quarterly national accounts implies the use of final annual national accounts data and other comprehensive input data sets. These data series are mainly based on short-term statistics from Statistics Norway. In addition, some short-term information from other sources is used. The most central sources are:

- Index of production for oil and gas extraction, construction, mining and quarrying, manufacturing, electricity and gas supply
- Index of retail sales
- Turnover index for accommodation and transport activities
- Turnover index for real estate, renting and business activities
- Financial reports from banks (used to calculate the output of banking services, including FISIM)
- Quarterly investment statistics for manufacturing, mining and quarrying and electricity supply
- Building statistics
- KOSTRA (Municipality-State-Reporting)
- Central government fiscal account, revenues and expenditures
- Specialist health service, accounts
- External trade in goods (volume and price indices)
- Reporting of exports and imports of trade in services: Survey of Norwegian non-financial companies' economic relations with other countries
- Consumer price index
- Producer price index, manufacturing
- Producer price indices for various services: freight transport by road, sea transport, renting of automobiles, architectural activities, computer consultancy, industrial cleaning services
- Labour Force Survey (LFS)
- Wage statistics and wage indices
- In addition, the system is based on various indicators such as accommodation statistics (guest nights in hotels, camping sites, etc.), passenger statistics (by air, railway, the Coastal Express Liner Bergen-Kirkenes), harbour statistics, road goods transport.

7.7. Users

The national accounts are a useful tool for analyses of the economic development and structures in Norway and therefore have many users spanning from pupils and students to public or private institutions that actively use the national accounts figures for analytical purposes.

Among other things, macroeconomic models developed by Statistics Norway and used in economic planning are based on the national accounts.

Other major users of the data are the Ministry of Finance, Bank of Norway (Norges Bank), research and development institutes (including Statistics Norway's research department), financial analysts and the media. The national accounts are also used

to compare the economy in different countries so international organisations such as the IMF, the OECD, the World Bank, the UN and Eurostat use the reported data in their statistics

8. Balance of payments

8.1. Fast Facts Balance of payments

Fast facts	
Name	Balance of payments
Topic	External economy
Purpose	The purpose of the Balance of Payments statistics is to supply reliable information on residents of Norway economic transactions with non-residents. The statistics are an integrated part of the National Accounts using the same principles and definitions. The financial transactions can be seen in relation to the positions presented in international investment position.
Key users	The main users are international organizations, IMF, Eurostat, OECD and BIS. The Balance of Payments is used by market analytics within finance and the business sector in general, and by governmental agencies for economic policy purposes.
Input data	The Balance of Payments is based on data collected by other divisions in Statistics Norway
Frequency and timeliness	Published quarterly, first version 60 days after the end of the quarter. This is revised in the next publication. The final version is published in August/September after two years.
International reporting	Reporting to Eurostat, the International Monetary Fund (IMF), Organization for Economic Co-operation and Development (OECD) and Bank for International Settlement (BIS).
Microdata	Not relevant
Table/graph	https://www.ssb.no/en/utenriksokonomi/statistikker/ur/kvartal/2016-09-07#content

Figure 1. The current account

Source: Statistics Norway.

8.2. Description of the statistical area

The balance of payments statistics summarises the economic transactions of Norway with the rest of the world over a specific time period. The statistics is

integrated into the national accounts. The compilation of the balance of payments is made in accordance with the recommendations by the IMF's Balance of Payments Manual, sixth edition (BPM6), and these are harmonized with SNA2008. The balance of payments statistics was published on a monthly basis until 2005, while on a quarterly basis from the first quarter of 2005. The measurement period was the month three months before, e.g. the statistics for December 2004 was published March 2005.

The transactions are organized in two accounts; the current account and the capital and financial account. The two accounts end up with calculating net lending/borrowing which, in principle should be equal but that never occurs. Consequently, the current account balance reveals the exposure of an economy towards the rest of the world, whereas the capital and financial account shows how it is financed.

The current account gives a statement of Norway's incomes and expenditures versus rest of the world, while the capital accounts contains acquisitions less disposals of patented entities and other intangible non-produced assets, and capital transfers versus rest of the world. The financial accounts records transactions that involve financial assets and liabilities between institutional units in Norway and the rest of the world.

8.3. Petroleum industry

Complete statistics on Norway's foreign trade in goods exists from 1835 when the "Table Office in the Ministry of the Interior" began processing the records in the customs books from all customs offices.

From 1835 to 1850 the statistics was published every three years, but since 1851 it was published annually. Further, in the years 1835-1865 the statistics contained only amount or quantity, but from 1866 value figures was introduced. The value of the individual commodities was estimated based on representative records for some commodities' average price for the year. Related to this change value figures of imports and exports were estimated backwards until 1851.

In 1922 a value declaration of exportation was introduced leaving the exporters to complete a statistical form for each batch declaring among other things the FOB value. Ten years later, in 1932, also importers had to complete a value declaration. After the Second World War cooperation between customs authorities and statistical authorities increased in many European countries, and we saw the adaptation to an international Goods Nomenclature adopted in 1959.

The first crude oil was exported from the Norwegian continental shelf in 1971. Information on the oil exports is partly obtained directly from oil companies. The Norwegian customs authorities have not extended its sphere of responsibility to include the continental shelf. This implies that Statistics Norway does not get customs declarations for the flow of goods between offshore oil platforms and abroad²⁰.

For use in the current account estimated figures for goods excluding oil and gas is calculated, and supplements the foreign trade statistics. The tables for the current account also include records for foreign trade in services. The concept of "Mainland exports" was introduced and covers "Exports of goods other than crude oil, natural gas, natural gas condensates, ships and oil platforms".

²⁰ Note that also other Information on foreign trade is obtained without using customs declarations. This applies to e.g. trade with ships, coal from Svalbard and electricity.

From 1835 to 1883 the statistics on external trade was published in “Tables on Norwegian Trade and Shipping”. It was published every three years up to 1850, when it was released annually. Since 1884 Statistics Norway has annually published the “Norwegian Official Statistics Norway’s Trade” giving records broken down on product groups, customs offices and countries. The publication changed its name to “Foreign Trade” in 1961.

In Table 2 we show one of the tables from the Balance of Payments publication for the second quarter of 2016.

Table 2. Balance of payments. NOK million

Balance of payments. NOK million					
	2nd quarter 2015	3rd quarter 2015	4th quarter 2015	1st quarter 2016	2nd quarter 2016
Current account balance	70 518	62 542	52 851	42 814	40 311
Balance of goods and services	39 648	36 466	39 297	9 637	2 142
Balance of income and current transfers	30 870	26 076	13 554	33 177	38 169
Capital transfers to abroad, net	122	24	5	739	65
Net lending, current account	70 384	62 506	52 834	42 063	40 234
Direct investment	36 870	33 302	61 910	9 004	17 854
Portfolio investment	144 664	108 861	42 939	-93 420	149 597
Other investments	-131 439	-96 941	-36 749	57 456	-52 130
Reserve assets (IMF breakdown)	-5 422	-25 359	-34 793	45 234	-5 376
Net lending, financial account	44 673	19 863	33 307	18 274	109 945
Net errors and omissions	25 711	42 643	19 527	23 789	-69 711

8.4. Population

Figures for the Balance of Payments are based on data collected for other statistics by other divisions in Statistics Norway. It is an integrated part of the National Accounts and is constructed as a mirror image of the sector “Rest of the World” in the Sector Accounts.

Data collected for non-financial corporations and mutual funds are based on sample surveys. For areas with incomplete statistical coverage estimations procedures are employed or supplementary sources such as tax returns are used.

All major Norwegian financial and non-financial enterprises are covered in the BoP-statistics.

8.5. The statistical unit

Statistical units are institutional units which make economic decisions on an independent basis and can present complete accounts for their activities. The institutional unit normally coincides with a body corporate, e.g. a limited liability company or legal person.

The delineation of the economy towards the rest of the world is based on the concept of resident units. A unit is a resident unit when it has a centre of economic interest in the economic territory in question, i.e. when it is engaged in economic activity in a territory for a long period of time (at least one year). A resident unit can be producers or consumers. Both the System of National Accounts and the Balance of Payments Manual identify resident producers and consumers in

identical fashion. Both invoke the concepts of economic territory and the centre of economic interest to identify resident units.

An institutional unit has a centre of economic interest and is a resident unit of a country when, from some location (dwelling, place of production, or other premises) within the economic territory of the country, the unit engages and intends to continue engaging (indefinitely or for a finite period) in economic activities and transactions on a significant scale. (One year or more may be used as a guideline but not as an inflexible rule.)

8.6. Sources

The Balance of Payments statistics is compiled from many other statistics and consequently have many sources. For the current and capital accounts, the main sources are:

- External trade in goods
- Petroleum Statistics
- Sample survey, non-financial enterprises, non-financial corporations and financial institutions not under supervision
- Structural Business Statistics, Ocean Transport
- Annual and quarterly accounting statistics for the general government.
- Quarterly accounting statistics for financial corporations under supervision
- Travel survey

Further, for the financial account, the main sources are:

- Quarterly accounting statistics for financial corporations under supervision.
- Quarterly accounting statistics for non-financial corporations and financial institutions not under supervision.
- Annual accounting statistics for the general government.
- Quarterly data from the Norwegian Central Securities Depository (VPS) and data from a separate survey on mutual funds.

8.7. Users

The main users of the Balance of Payments statistics are international organizations like the IMF, Eurostat, OECD and BIS. The Balance of Payments is also used by market analytics within finance and the business sector in general, and by governmental agencies for economic policy purposes.

When the Balance of Payments statistics is used in the Sector Accounts, it gives an exact mirror image of the “Rest of The World” sector.

9. General government revenue and expenditure

9.1. Fast facts General government revenue and expenditure

Fast facts	
Name	General government revenue and expenditure
Topic	Public sector
Purpose	The purpose of the statistics is to provide long time series for revenue and expenditure in general government based on the international guidelines for national accounts and government finance statistics. Further, Norway is obliged to compile and report such statistics to EU's statistical organization – Eurostat
Key users	Government finance statistics are input to the national accounts. Other important users are the Ministry of Finance, the Ministry of Local Government and Modernisation, KS (the Municipalities Central Association), the Central Bank of Norway, research institutes and mass media.
Input data	The principal administrative register used is the budgetary central government fiscal account collected from The Norwegian Government Agency for Financial Management
Frequency and timeliness	Annual and quarterly figures. Preliminary annual figures are released in February/March after the end of the reference period – and updated figures are released in May/June and in August. Quarterly figures are released approximately 75-80 days after the end of the reference period.
International reporting	Eurostat, OECD, Revenue Statistics, IMF, Government Finance Statistics Yearbook
Microdata	Microdata are stored in SAS and Oracle databases, and disseminated data are stored in the FAME database.
Table/graph	http://www.ssb.no/en/offentlig-sektor/statistikker/offinnut/aar/2016-06-03
<p>Per cent</p> <p>60</p> <p>50</p> <p>40</p> <p>30</p> <p>20</p> <p>10</p> <p>0</p> <p>1978 1985 1990 1995 2000 2005 2010 2</p> <p>Legend:</p> <ul style="list-style-type: none"> Petroleum revenue Property income Administrative fees and sales Social security contributions Taxes <p>Source: Statistics Norway.</p>	

9.2. Description of the statistical area

The statistics on “General government revenue and expenditure” is part of the main topic “Public sector”. These two must not be confused as the public sector, in addition to general government, also includes financial and non-financial public corporations.

Together with financial assets and liabilities, the “General government revenue and expenditure” give a comprehensive overview of the sector’s finances.

The purpose of the statistics is to provide long time series for revenue and expenditure in general government based on the international guidelines for national accounts and government finance statistics. Further, Norway is obliged to compile and report such statistics to EU’s statistical organization – Eurostat. The statistics had comprehensive revisions in 1995 and in 2012 that ensure comparable figures from 1978 to the present.

9.3. Petroleum industry

Given the important role of the petroleum industry in the Norwegian economy, and especially the government revenues from the industry in financing the Norwegian welfare state, it is vital for policy planning to have good statistics.

Government petroleum revenues consist of three main elements; taxes from companies engaged in petroleum activities, operational surplus from the State’s Direct Financial Interest (SDFI), and dividends from Statoil. Further, the taxes from companies engaged in petroleum activities, or “Taxes on income and wealth from extraction of petroleum” as the statistics is called, consists of two sub categories:

1. “Ordinary taxes on extraction of petroleum”, which includes tax on capital and income from extraction of petroleum and pipeline transportation of petroleum products, and
2. “Special income tax on extraction of petroleum”, which comes in addition to ordinary taxes as the petroleum companies is given the opportunity to utilize a valuable and non-renewal resource giving extraordinary returns, sometimes called a “super profit”.

In Table 3 we show aggregated values for the General government revenues, expenditures and net lending for the years 2011 to 2015.

Table 3. General government. Revenue, expenditure and net lending/borrowing. Accrued values. NOK million

	2011	2012	2013	2014	2015
General government revenue	1 580 595	1 664 677	1 662 578	1 691 864	1 682 753
General government expenditure	1 205 122	1 254 127	1 331 246	1 416 584	1 496 789
Net lending/borrowing (-)	375 474	410 551	331 332	275 280	185 964
Central government net lending/borrowing	394 979	427 676	354 512	298 629	202 637
Local government net lending/borrowing	-19 505	-17 126	-23 180	-23 349	-16 673

9.4. Population

The statistics are based on international guidelines for national accounts and government finance statistics. These are UN’s System of National Accounts 2010

(SNA2010), EU's European System of Accounts 2012 (ESA2012), and IMF's Government Finance Statistics Manual 2014 (GFSM2014).

The population is delimited to the institutional sector general government, as it is defined in the international guidelines. This sector consists of all government units and all non-market institutions that are controlled by central or local government units. Market based non-financial and financial corporations owned by government are not included.

9.5. The statistical unit

In Norway there are two subsectors of the general government: central and local government.

The statistics for general government revenues and expenditures is produced in accordance with the European System of National and Regional Accounts (ESA 2010), which means that the population includes all units included in the institutional sectors central government and local government.

The general government consists of public sector activities and non-profit organisations that are controlled by the authorities, and whose business is not conducted on a commercial basis.

The general government sector consists of all government units and all non-market institutions that are controlled by central or local government units.

9.6. Sources

The main administrative data register used as source is the budgetary central government fiscal account collected from The Norwegian Government Agency for Financial Management. This covers a number of government units such as the Parliament, all ministries, directorates, the Norwegian Armed Forces, police and prison services, law courts, the Norwegian Labour and Welfare Service and the National Insurance Scheme.

For public hospitals and the Government Pension Fund, financial statements are transmitted directly to Statistics Norway.

Revenues and expenditures of public universities and university colleges are collected from the Database for Statistics on Higher Education which is administered by the Norwegian Centre for Research Data (previously Norwegian Social Science Data Services) which is owned by the Ministry of Education and Research.

Other extra-budgetary accounts, such as financial statements from public research institutes, government controlled cultural institutions and various public funds, are collected individually, mostly from the respective units' webpage or via email.

Municipalities, county authorities, municipal and inter-municipal companies and joint parish councils are obliged to submit financial statements directly to Statistics Norway, via KOSTRA (Municipality-State-Reporting).

Accrued taxes on income and wealth are based on the statistics "Tax statistics for personal tax payers" and "Tax statistics for companies" from Statistics Norway.

Government expenditures related to research and development are estimated on the basis of data collected and published by the Nordic Institute for Studies in Innovation, Research and Education (NIFU).

In principle, all accounts are included. In practice however, some minor accounts are not collected due to lack of resources or lack of total overview of the population.

9.7. Users

Government finance statistics are important input to the national accounts. General government revenue and expenditure can be found in central and local government tables in the non-financial sector accounts.

Other important users are the Ministry of Finance, the Ministry of Local Government and Modernisation, KS (the Municipalities Central Association), the Central Bank of Norway, research institutes and mass media.

The Ministry of Finance is granted access to imputed accrued employer contributions to the National Insurance Scheme before data is released by Statistics Norway. Publication of this material is not allowed until the figures are released by Statistics Norway.

10. Investments in oil and gas, manufacturing, mining and electricity supply

10.1. Fast fact Investments in oil and gas, manufacturing, mining and electricity supply

Fast facts	
Name	Investments in oil and gas, manufacturing, mining and electricity supply
Topic	Oil and Gas Investments
Purpose	Monitoring the development in estimated and final investments within these sectors, providing information about domestic demand for capital goods.
Key users	National Accounts, Ministry of Finance and policy makers. Oil and Petroleum sector, media and other analyst.
Input data	Accrued and estimated future investments (reported from petroleum companies directly through questionnaire)
Frequency and timeliness	Published quarterly about 8 weeks after the end of the quarter for final investments
International reporting	Not relevant directly, but as a part of National accounts and GDP
Microdata	Non-revised and revised micro data are stored in accordance with Statistics Bureau guidelines for storing of computer files
Table/graph	https://www.ssb.no/en/energi-og-industri/statistikker/kis

Figure 3. Investments. Extraction and pipeline transport. Estimates given on different points in time

Mill. current NOK

Year	May t-1	Aug t-1	Nov t-1	Feb t	May t	Aug t	Nov t	Feb t+1
2014	225,000	235,000	240,000	240,000	240,000	235,000	225,000	220,000
2015	190,000	195,000	200,000	198,000	200,000	205,000	205,000	200,000
2016	190,000	185,000	175,000	170,000	168,000	165,000	168,000	160,000
2017	155,000	150,000	145,000	148,000	155,000	150,000	150,000	145,000

10.2. Description of the statistical area

The statistics on *Investments in oil and gas, manufacturing, mining and electricity supply* main purpose is to monitor the development in estimated and final investments within these sectors, providing information about domestic demand for

capital goods. Figures on both accrued (final) and estimates of future investments are published, showing investment history and the forecast of future activity within these sectors. Especially the estimated investments for the future have a high profile in media and are followed closely by stake holders.

From late 2015, the statistics on investments in manufacturing, mining and quarrying and electricity supply was merged with the *Statistics on oil and gas investments*. The merged statistics have separate production processes, but figures are presented in one publication. The combined statistics provides a more comprehensive presentation of final and planned investments. The oil and gas part, of this broader statistics, also captures both accrued (final) and estimates for future investments, including separate categories for goods and services. In addition, the investments are categorized according to if they are carried out as a part of; exploration, field development, fields on stream, shutdown and removal, onshore activities or Pipeline transport (see Fast facts).

10.3. Petroleum industry

The *Statistics on Oil and Gas investments* was developed to map the investments in the Norwegian oil and gas sector, and have a history back to the first days of investments in the Norwegian oil and gas sector in the late sixties and early seventies. Even though there has been major changes and further development of this statistics, it has more or less been the same since 1984. Stakeholders in the oil sector, such as Government institutions and the industry itself, rely on available statistics on investments for several reasons. First of all, the investments in the oil and gas sector often represent considerable values. These values are important to capture for a country in its budgeting process. Available and public figures on oil and gas investments promote sustainable management of the oil resources and development of efficient policy. In addition, it can also be used by companies in the sector to make sound business decisions. The oil and gas investment statistics provides information not only on accrued investments, but also estimated figures, short and mid-term, on future investments (see Table 4). For Norway, and other oil and gas producing countries, the future estimated investment figures indicate in what direction the oil sector is moving, and in our case it also influences the forecasts and future expectations for the national economy.

Table 4. Estimated and accrued investments for oil and gas extraction and pipeline transport (NOK million)

Estimated and accrued investments for oil and gas extraction and pipeline transport (NOK million), by time, investments division, contents and estimation moment/acrued

	Investment costs		
	Estimates made in November in the year before the investment year	Estimates made in February in the year of investments	Accrued investment costs
2015			
0 Total	188 570	189 049	189 598
1 Total extraction of crude petroleum and natural gas	183 718	183 722	185 217
111 Exploration and concept studies	31 699	25 939	28 698
12 Field development and Fields on stream	136 158	140 015	140 476
121 Field development	57 614	67 783	59 451
1211 Commodities	28 088	38 890	31 599
1212 Services	11 093	10 302	15 066
1213 Production drilling	18 433	18 591	12 786
122 Fields on stream	78 554	72 231	81 026
1221 Commodities	8 216	7 844	6 254
1222 Services	23 437	21 244	22 183
1223 Production drilling	46 891	43 143	52 589
123 Onshore activities	4 185	5 358	5 012
124 Shutdown and removal	11 676	12 410	11 030
2 Transport via pipelines	4 852	5 328	4 382

10.4. Population

Figures for both accrued and estimated for future investments in the oil and gas activity are collected for a number of goods and services. The investments statistics includes the following industry sectors (SN2007):

- Extraction of crude oil - 06.100
- Extraction of natural gas - 06.200
- Pipeline transport - 49.500

For these three industries, all operators are included in the survey. Usually a company/business will be operator for more than one field and thus fills out one questionnaire for each field where they are a licensee and are the operator. The sample is identical to the population.

10.5. The statistical unit

The statistical unit for the statistics on oil and gas investments statistics is:

Statistical units:

- All active production licenses (PL) and Business Arrangement Area (BAA)
- All ongoing and decided field development projects
- All producing fields
- All terminals
- All operator's offices
- All pipelines
- All fields which are shut down, but not yet completely removed.

A license can be shared by many licensees. The licensee in charge of the day to day operation of the license/oil field and is called the operator. Investment data is collected quarterly from all operators within the industries (SN2007) Extraction of crude oil, Extraction of natural gas and Pipeline transport. The operators report on behalf of all the partners (licensees) in the various production licences, fields, terminals and pipelines. Both data on accrued investments and the companies' best estimates for future investments are collected.

10.6. Sources

The Norwegian Petroleum Directorate is responsible for the Petroleum Register which contains an overview of production licenses including details on licensees and operators. Up to date data is published on the Directorates "fact pages"

(<http://factpages.npd.no/factpages/Default.aspx?culture=en>)

A licensee is defined as a physical or legal person, or several such persons, who, under the terms of the Norwegian Petroleum Act or earlier jurisdiction, has a license to search for, recover, transport or utilize petroleum. If a license is awarded to several such persons together the expression licensee can cover both the licensees combined and the individual participant. The operator is the agent who, on behalf of the licensee, is in charge of the day-to-day management of the petroleum activity.

For the statistics on oil and gas activities data is collected from all operators. An operator is one of the licensees and is part of a business/enterprise. The Petroleum register is used to identify operators and licensees. It is the operator who is the reporting unit and responsible for submitting the questionnaire for a field. An oil

field is defined as one discovery, or a number of concentrated discoveries, which the licensees have decided to develop and for which the authorities have approved.

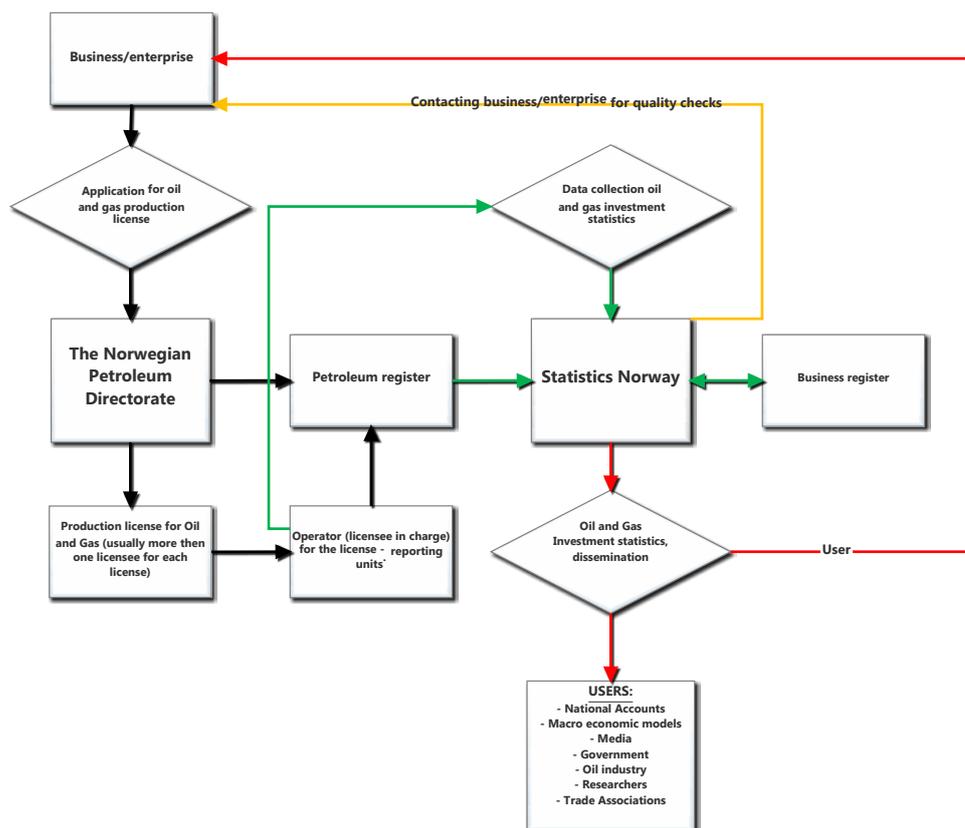
Statistics Norway also gives feedback to the business register on updates on production licensees (see Figure 3: Overview data sources and data flow). The data collection is carried out using an electronic questionnaire. Both investments in goods and services are asked for. The questionnaire is divided into the following areas:

- Exploration
- Field development
- Fields on stream
- Shutdown and removal
- Onshore activities
- Pipeline transport

The data is collected by using an electronic file transfer system. When data is in house at Statistics Norway it is automatically checked for duplicates and errors in total values. The data is also checked for deviations from collected data in previous quarters. When there are considerable deviations the establishment is contacted. Editing on an aggregated level is conducted by assessing the development over time, and time series with irregular development will be further followed up.

Data for the oil and gas investments are collected by Statistics Norway on behalf of Norwegian Petroleum Directorate authorized by the legal Act of 29 November 1996 No. 72 relating to petroleum activities. Statistics Norway makes use of the information in preparation of official statistics, authorized by The Statistics Act of 1989.

Figure 3. Overview data sources and data flow



The figure gives an overview over the data flow, and the process to dissemination of Oil and Gas investment part of the *Investments in oil and gas, manufacturing, mining and electricity supply statistics*. To begin with a business/company can apply for a oil and gas production licence. It is the Norwegian Petroleum Directorate who handles the license applications and also administrates the petroleum register. In this registers all oil fields, operators and licensees are registered (black arrows). Statistics Norway has three main sources of data used to produce the statistics on Investments in Oil and Gas (Green arrows):

1. The operators gives information to statistics Norway trough the survey (data collection)
2. The Petroleum register gives Statistics Norway information on the sample, but also other information used in evaluating data
3. The Business register provides other general information, and is also updated with new information.

The Investment in Oil and Gas statistics is published quarterly and includes both accrued an future estimates of investments. The statistics is available for all user at the same time (Red arrows).

10.7. Users

The statistics on oil and gas investments is an important and in high demand by users. It is used by the public sector and the financial industry, and the oil sector. Typically, users are Ministry of Finance, Bank of Norway, Trade associations, Media, Researchers and businesses operating in the sector. The statistics are also an important input to the quarterly National accounts at Statistics Norway, and is also interesting and important in a macroeconomic perspective and in development of macroeconomic models.

11. Oil and gas production statistics

11.1. Fast Facts Oil and gas production statistics

From 1971 to 2014 Statistics Norway published Oil and Gas production statistics. It was based on data published and collected by The Norwegian Petroleum Directorate. In 2014 Statistics Norway discontinued the Oil and Gas production statistics. This was done due to that almost identical figures are published by the Norwegian Petroleum directorate (<http://www.npd.no/en/news/Production-figures/>).

Fast facts	Oil and Gas production statistics
Name	Oil and Gas production statistics
Topic	Oil and Gas production
Purpose	Monitoring the development in production of Oil, Gas, NGL and condensate on the Norwegian continental shelf.
Key users	All institutions and persons interested in historic figures on Norwegian oil and gas production.
Input data	The statistics is based on the figures published by the Norwegian Petroleum Directorate
Frequency and timeliness	Published quarterly
International reporting	Not relevant
Microdata	Not relevant
Table/graph	https://www.ssb.no/en/energi-og-industri/statistikker/ogprodre

Figure 1. Total production of oil and natural gas. Q3

1 000 Sm³ o.e.

Year	Oil (1000 Sm ³ o.e.)	Natural gas (1000 Sm ³ o.e.)	Total (1000 Sm ³ o.e.)
2000	145,000	35,000	180,000
2001	145,000	38,000	183,000
2002	145,000	45,000	190,000
2003	140,000	50,000	190,000
2004	140,000	55,000	195,000
2005	130,000	60,000	190,000
2006	120,000	65,000	185,000
2007	110,000	65,000	175,000
2008	105,000	70,000	175,000
2009	100,000	75,000	175,000
2010	90,000	75,000	165,000
2011	85,000	75,000	160,000
2012	85,000	80,000	165,000
2013	75,000	80,000	155,000
2014	80,000	75,000	155,000

<https://www.ssb.no/en/energi-og-industri/statistikker/ogprodre>

11.2. Description of the statistics area

It is The Norwegian Petroleum Directorate that collects and published detailed information on petroleum activities for the Norwegian continental shelf. Before 2014 Statistics Norway also published statistics based on these production data. Production figures are important information for petroleum producing countries. This chapter is based on information from The Norwegian Petroleum webpage. Today production data is mostly published on the Norwegian Petroleum Directorate's so called

“Factpages”: <http://factpages.npd.no/factpages/Default.aspx?culture=en>

Through the “Factpages” the public has access to some of the reported data. The data can also be downloaded in various formats. In addition, the official production figures are also published on the Norwegian Petroleum Directorate's website.

Reporting of petroleum production data is regulated by Section 10-4 of the Petroleum Act, Sections 27, 48 and 49 of the Petroleum Regulations and Sections 27 and 28 of the Resource Management Regulations.

Relevant Petroleum Acts:

<http://www.npd.no/en/Regulations/Acts/>

Relevant Petroleum Regulations:

<http://www.npd.no/en/Regulations/Regulations/>

Relevant Guidelines:

<http://www.npd.no/en/Regulations/Guidelines/>

11.3. Population and Statistical unit

The licensees in the production licenses are formally responsible for fulfilling the reporting requirements. Normally, the operating company for the production license/unit where the field is located will conduct the actual reporting on behalf of the entire licensee group.

11.4. Sources

The Norwegian Petroleum Directorate is responsible for the regulations relating to resource management in the petroleum activities. This is often referred to as the Resource Management Regulations. Section 27 of this regulation describes that Daily reports during the production phase is required.

“Information on the most important production parameters such as gross/net production shall be made directly available to the Norwegian Petroleum Directorate on a daily basis”.

Section 28 of the Resource Management Regulations describes what production data that should be reported monthly. It specifically describes that volume data should be reported on the following structure:

Production

- per wellbore, facility and field
- allocated marketable products per field
- import/export per facility/plant
- consumption (flare, fuel, diesel, etc.) per facility/plant.

Injection

- per wellbore, facility and field
- Stock
- volumes at end of month

Sales

- gas per owner and buyer
- oil, NGL and condensate per vessel

There are currently no regulatory requirements relating to how the daily production data should be received by the Norwegian Petroleum Directorate, but the prevailing practice is that the Norwegian Petroleum Directorate can download it from the L2S portal which the licensees have determined must include daily production figures, or that the Norwegian Petroleum Directorate receives the data as an attachment in an email directly from the operator.

Monthly production reports must be sent to the Norwegian Petroleum Directorate in accordance with the regulations. Quarterly reporting of sales pursuant to Section 49 of the Petroleum Regulations must be sent to the Ministry of Petroleum and Energy.

11.5. Users

All institutions, companies and persons interested historic figures on Norwegian oil and gas production.

12. Statistics on External trade in goods

12.1. Fast facts Statistics on External trade in goods

Fast facts																																													
Name	External trade in goods																																												
Topic	External economy, export and import of goods																																												
Purpose	The purpose of the external trade statistics is to provide information about the commodity flows between Norway and other countries. Exports and imports are important economic indicators both in describing structural changes and in monitoring the economic trends. The monthly statistics of external trade in goods have been published since 1913 (value figures were published for the first time in 1866).																																												
Key users	Important users are National accounts and the balance of payment statistics and the business sector's. The statistics are also intended for prognoses and analyses performed by public authorities, research institutions and private organisations. International organisations such as the UN's statistical office, the Organization for Economic Cooperation and Development (OECD), the statistical office of the EU (Eurostat) and others make use of the information provided in the external trade statistics.																																												
Input data	The vast majority of the data is collected through the Customs' TVINN register and transmitted electronically to Statistics Norway. However, some additional data is obtained separately. For the petroleum sector particularly exports of crude oil and natural gas in gaseous state.																																												
Frequency and timeliness	Preliminary figures are published monthly. Final monthly and yearly figures are published in May t+1 the following year, and in May one year later t+2.																																												
International reporting	Reports are sent to the EU statistical office (Eurostat), Organization for Economic Cooperation and Development (OECD), World Trade Organization (WTO), International Monetary Fund (IMF) and the United Nations (UN)																																												
Microdata	Non-revised and revised micro data are stored in accordance with Statistics Norway's guidelines for storing computer file.																																												
Table/graph	http://www.ssb.no/en/utenriksokonomi/statistikker/muh/aar-endelige http://www.ssb.no/en/utenriksokonomi/statistikker/muh/aar-forelopige																																												
<p>Figure 3. Total exports, main components</p> <table border="1"> <caption>Data for Figure 3: Total exports, main components (NOK billion)</caption> <thead> <tr> <th>Year</th> <th>Mainland exports</th> <th>Exports of crude oil, natural gas and natural gas condensates</th> <th>Total exports¹</th> </tr> </thead> <tbody> <tr> <td>2006</td> <td>300</td> <td>480</td> <td>780</td> </tr> <tr> <td>2007</td> <td>330</td> <td>450</td> <td>780</td> </tr> <tr> <td>2008</td> <td>350</td> <td>580</td> <td>930</td> </tr> <tr> <td>2009</td> <td>300</td> <td>420</td> <td>720</td> </tr> <tr> <td>2010</td> <td>330</td> <td>450</td> <td>780</td> </tr> <tr> <td>2011</td> <td>360</td> <td>520</td> <td>880</td> </tr> <tr> <td>2012</td> <td>360</td> <td>560</td> <td>920</td> </tr> <tr> <td>2013</td> <td>370</td> <td>540</td> <td>910</td> </tr> <tr> <td>2014</td> <td>390</td> <td>510</td> <td>900</td> </tr> <tr> <td>2015</td> <td>400</td> <td>420</td> <td>820</td> </tr> </tbody> </table> <p>¹ Total exports also includes ships and oil platforms. Source: Statistics Norway.</p>		Year	Mainland exports	Exports of crude oil, natural gas and natural gas condensates	Total exports ¹	2006	300	480	780	2007	330	450	780	2008	350	580	930	2009	300	420	720	2010	330	450	780	2011	360	520	880	2012	360	560	920	2013	370	540	910	2014	390	510	900	2015	400	420	820
Year	Mainland exports	Exports of crude oil, natural gas and natural gas condensates	Total exports ¹																																										
2006	300	480	780																																										
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2015	400	420	820																																										

12.2. Description of the statistical area

The purpose of the external trade in goods statistics is to provide information about the commodity flows between Norway and other countries. Exports and imports are important economic indicators both in describing structural changes and in monitoring the economic trends. The statistics on external trade in goods have in Norway been published since 1835 (value figures were published for the first time in 1866).

External trade in goods covers petroleum imports and exports. Because of the prominent role, the petroleum sector has in Norway, statistics on export of petroleum products provides particularly important figures for monitoring the economy.

12.3. Petroleum industry

Most countries have a throughout statistics on external trade in goods based on data from the customs. This is also the main method the Norwegian external trade in goods statistics is based on, but with some notable exceptions for the oil and gas sector. The statistics External trade in goods covers all goods, including various goods related to the petroleum sector such as crude oil and natural gas. This chapter focuses on special adaptations of External trade in goods needed for the Petroleum industry in Norway. The reason for the “oil adaption” of External trade statistics is the dominating position the petroleum industry has in Norway, and when publishing figures for external trade there is almost always a focus placed on goods that are related to this industry.

Norwegian trade in goods statistics is based on information from custom declarations provided by the Customs Authorities. However, the responsible area of the customs only covers transactions to and from mainland Norway and its territorial waters. The Norwegian oil fields are located off shore and are defined as outside the custom territory. The consequence of this is that the custom authorities do not have export data on most of crude oil and natural gas in gaseous state. To capture data from this important industry in Norway a special adaption has been made, and export data on crude oil and natural gas in gaseous state is collected from the Norwegian Petroleum Directorate, Ministry of Petroleum and Energy and different operators/ licensees/owners. Gas and oil which is transported from Norwegian offshore installations, vessels and mobile oil platforms to the Norwegian main land, for processing or other purposes, is not treated as import in the statistics.

12.4. Population

The scope of foreign trade statistics is based on international guidelines from the United Nations Statistical Commission. The general recommendation is that the statistics should include all goods which add to or subtract from the stock of material resources of a country by entering (imports) or leaving (exports) its economic territory. In addition to the geographical dimension, a country's economic territory also includes ships, aircraft and mobile oil platforms owned by national corporations. These are goods that are not necessarily located within the geographic area, but are still viewed as part of the material resources of a country. For these goods, external trade is measured by the change in ownership. There are two different statistical trade systems - the general trade system and the special trade system. UN recommends using the general trade system where a country's statistical area coincides with its economic territory. This implies that goods are recorded at the time they enter or leave the economic territory. The special trade system is used when the statistical area covers only a part of the economic territory. Statistics Norway follows, with a few exceptions, the general trade system

External trade statistics is mainly based on information drawn from customs declarations. However, the responsible area of the customs authorities only covers mainland Norway and its territorial waters. As a supplement, data on important trade in goods to and from the remaining areas of the economic territory are collected directly from respondents and registers.

The Norwegian part of the continental shelf

Except from export of crude oil and natural gas in gaseous state the external trade statistics does not include exports and imports of goods transported directly from and to offshore installations, Norwegian owned vessels and mobile oil platforms that operate on the Norwegian continental shelf (If transported via the Norwegian mainland, transactions are declared by customs and included in the statistics).

Exports of crude oil and natural gas require another data collection/reporting system and are based on data from the Norwegian Petroleum Directorate, Ministry of Petroleum and Energy and the different operators/licensees/owners.

Norwegian owned ships, aircraft and mobile oil platforms

Exports and imports of ships, aircraft and mobile oil platforms are based on information from Norwegian ship registers as well as from different respondents.

The external trade statistics does not cover imports to Norwegian vessels, mobile oil platforms and aircraft abroad, exports of bunkers to foreign vessels and aircraft in Norwegian ports and airports.

Data on exports of fish caught by Norwegian fishing vessels outside the customs area and landed abroad is obtained from the Directorate of Fisheries.

12.5. Sources

The statistics are mainly based on administrative information obtained from TVINN, which is the Norwegian Customs' electronic information system for the exchange of customs declarations between businesses and Norwegian Customs. Some data is, however, obtained from other sources.

Data is collected with the legal authority of The Statistics Act §§ 2-1, 2-2 and 3-2

Exports of crude oil and natural gas in gaseous state

Preliminary and final figures for exported volumes of crude oil and natural gas in gaseous state are collected through reports from the operators/licensees/owners and the Norwegian Petroleum Directorate. The prices, however, are obtained via various sources depending on whether they relate to crude oil or natural gas, and whether the data is being collected to compile preliminary or final figures.

From 2013 on, preliminary natural gas prices are based on information from the journal World Gas Intelligence (WGI). Final figures on gas prices are based on information from operators/owners.

Preliminary crude oil prices are based on Brent Blend spot price.

The final prices: quarterly surveys from the licensees, as well as information from the Norwegian Petroleum Directorate, the Ministry of Petroleum and Energy and the owners.

Imports and exports of ships and mobile oil platforms

The data collection for vessels and mobile oil platforms is based on information from Norwegian ship registers and owners.

Classification of goods

The classification by HS (the international customs and statistics nomenclature, the Harmonized System) is a 6-digit grouping of goods organised primarily according to the material characteristics of goods at the time of crossing the border. Only in exceptional cases is the later use of the goods of any significance to the classification. The WCO (World Customs Organization) is responsible for this nomenclature.

When publishing external trade figures, the UN Standard International Trade Classification (SITC) is mainly used. Here the goods are grouped by level of processing (raw materials, semi-finished and finished goods). As from 1988 to 2006, the SITC-Rev.3 is used, but as of 2007 the SITC-Rev. 4 is used.

The product classification that is used in the National Accounts, CPA, divides goods by industry group, and in external trade we use extracts from this. CPA (Statistical Classification of Productivity by Activity in the European Community) is the EU's central Product by Activity classification. It is a product group that is closely linked to industry, i.e. distinctive products within each activity can be linked to the activity classification NACE Rev.2.

With regard to essential changes in the statistics, the commodity classification in line with the Harmonized System that was introduced in 1988 entailed a comprehensive restructuring of the distribution at a detailed level in relation to the earlier CCCN nomenclature (the Customs Cooperation Council Nomenclature).

12.6. Users

The external trade statistics are a part of the national and international statistical system, and are used in the compilation of the national accounts and the balance of payment statistics in Statistics Norway. The statistics are aimed at covering the business sector's need for data in this area for their planning of production, marketing and sales.

The statistics are also intended for prognoses and analyses performed by public authorities, research institutions and private organisations. International organisations such as the UN's statistical office, the Organization for Economic Cooperation and Development (OECD), the statistical office of the EU (Eurostat) and others make use of the information provided in the external trade statistics.

13. Statistics on External trade in services

13.1. Fast fact Statistics on External trade in services

Fast facts																																																																																																										
Name	External trade in services																																																																																																									
Topic	External economy, export and import of services																																																																																																									
Purpose	The purpose of the statistics is to give information about service flows between Norway and other countries. Income and expenditure in connection with exports and imports of services to and from other countries are important economic indicators, both in describing structural changes and in monitoring the economic trends.																																																																																																									
Key users	<p>The statistics are needed for prognoses and analyses performed by public authorities, research institutions and private organisations. International organisations like the UN statistical office, the statistical office of the EU (Eurostat) are important users.</p> <p>The external trade statistics are a part of the national and international statistical systems, and are also used in the compilation of the national accounts and the balance of payment statistics</p>																																																																																																									
Input data	The data is reported from companies electronically, either by filling the WEB questionnaire directly or by reporting via Altinn (Norwegian public reporting portals for Internet site for transmitting data) or reporting data via file. The reporting deadline for the quarterly reports are 25 days after the end of each quarter.																																																																																																									
Frequency and timeliness	The statistics are collected quarterly from non-financial enterprises reporting export and import of services with other countries. From 2006 until 2010 the statistics was published annually, and from 1. Quarter 2011 the statistics is published on quarterly basis.																																																																																																									
International reporting	The statistics is a part of the balance of payments and the national accounts, and data is used as a part of the reporting to international institutions such as IMF, OECD and the statistical office of the EU, Eurostat.																																																																																																									
Microdata	Non-revised and revised micro data are stored in accordance with Statistics Bureau guidelines for storing of computer files																																																																																																									
Table/graph	http://www.ssb.no/en/utenriksokonomi/statistikker/uhtjenester/																																																																																																									
<p>Figure 1. External trade in services for non-financial enterprises</p> <p>Figure 1 is a combined line and bar chart. The Y-axis represents NOK billion, ranging from -20 to 80 in increments of 10. The X-axis represents time in quarters from Q1 2012 to Q4 2016. There are three data series: Imports (yellow line), Exports (purple line), and Balance (green bars). Imports and Exports are plotted as lines, while Balance is plotted as bars below the zero line. Imports and Exports show a general upward trend over the period, with a notable peak in Q4 2015. Balance is consistently negative, indicating that imports exceed exports.</p> <table border="1"> <caption>Estimated data for Figure 1 (NOK billion)</caption> <thead> <tr> <th>Year</th> <th>Quarter</th> <th>Imports</th> <th>Exports</th> <th>Balance</th> </tr> </thead> <tbody> <tr><td>2012</td><td>Q1</td><td>42</td><td>45</td><td>3</td></tr> <tr><td>2012</td><td>Q2</td><td>48</td><td>48</td><td>1</td></tr> <tr><td>2012</td><td>Q3</td><td>50</td><td>48</td><td>-2</td></tr> <tr><td>2012</td><td>Q4</td><td>48</td><td>45</td><td>-1</td></tr> <tr><td>2013</td><td>Q1</td><td>45</td><td>48</td><td>1</td></tr> <tr><td>2013</td><td>Q2</td><td>48</td><td>48</td><td>1</td></tr> <tr><td>2013</td><td>Q3</td><td>50</td><td>50</td><td>0</td></tr> <tr><td>2013</td><td>Q4</td><td>55</td><td>55</td><td>0</td></tr> <tr><td>2014</td><td>Q1</td><td>48</td><td>48</td><td>1</td></tr> <tr><td>2014</td><td>Q2</td><td>52</td><td>55</td><td>3</td></tr> <tr><td>2014</td><td>Q3</td><td>55</td><td>58</td><td>1</td></tr> <tr><td>2014</td><td>Q4</td><td>60</td><td>62</td><td>2</td></tr> <tr><td>2015</td><td>Q1</td><td>58</td><td>58</td><td>0</td></tr> <tr><td>2015</td><td>Q2</td><td>58</td><td>58</td><td>0</td></tr> <tr><td>2015</td><td>Q3</td><td>60</td><td>60</td><td>0</td></tr> <tr><td>2015</td><td>Q4</td><td>65</td><td>65</td><td>0</td></tr> <tr><td>2016</td><td>Q1</td><td>60</td><td>55</td><td>-5</td></tr> <tr><td>2016</td><td>Q2</td><td>60</td><td>55</td><td>-5</td></tr> <tr><td>2016</td><td>Q3</td><td>60</td><td>52</td><td>-8</td></tr> <tr><td>2016</td><td>Q4</td><td>62</td><td>58</td><td>-4</td></tr> </tbody> </table> <p>Source: Statistics Norway.</p>		Year	Quarter	Imports	Exports	Balance	2012	Q1	42	45	3	2012	Q2	48	48	1	2012	Q3	50	48	-2	2012	Q4	48	45	-1	2013	Q1	45	48	1	2013	Q2	48	48	1	2013	Q3	50	50	0	2013	Q4	55	55	0	2014	Q1	48	48	1	2014	Q2	52	55	3	2014	Q3	55	58	1	2014	Q4	60	62	2	2015	Q1	58	58	0	2015	Q2	58	58	0	2015	Q3	60	60	0	2015	Q4	65	65	0	2016	Q1	60	55	-5	2016	Q2	60	55	-5	2016	Q3	60	52	-8	2016	Q4	62	58	-4
Year	Quarter	Imports	Exports	Balance																																																																																																						
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13.2. Description of the statistical area

The purpose of the external trade in services statistics is to give information about service flows between Norway and other countries. Income and expenditure in connection with exports and imports of services to and from other countries are important economic indicators, both in describing structural changes and in monitoring the economic trends. Data is collected with the legal authority of The Statistics Act §§ 2-1, 2-2 and 3-2

13.3. Petroleum Industry

Import and export is classified according to industry and type of service. Services are classified according to The EU product standard and "Classification of Products by Activity" (CPA). There is no clear definition of the "oil sector" and thus it is not always straight forward to determine whether one CPA is part of the "oil sector" or not. To compare figures on External trade in Services with External trade in goods the most feasible will be to use industry classification SN2007.

13.4. Population

The population of the external trade in services statistics is built on information from Central Register of Establishments and Enterprises and The Register of Cross Border Transactions and Currency Exchange.

The population includes border crossing bank transactions between a "Norwegian" and a "foreigner" where the "Norwegian" is not a financial establishment (NACE 64, 65 and 66) or a private person. Enterprises which are classified in other NACE than 64, 65, 66, but in principally carries out the same activities and have the same characteristics are also left out.

13.5. The Statistical unit

The statistical unit is the legal persons who produce goods and services for sale. The quarterly statistics are based on a survey with a sample of about 3000 non-financial companies, including enterprises operating in ocean transport. Thus, the statistics are based on information from non-financial enterprises and respondent's reports data every quarter.

NACE:

Until the published statistics for the year 2009, the Standard Industrial Classification of Economic Activities 2002 (SN 2002) was being used, which is a Norwegian adaption of NACE REV. 1. (EUROSTAT). From the year 2010 Standard Industrial Classification of Economic Activities 2007 (SN 2007) was being used. SN 2007 correlates with the EU standard NACE REV. 2, and forms the basis for coding units according to principal activity in the Central Register of Establishments and Enterprises. The use of common standards is essential in enabling the comparison and analysis of statistical data at national/ international level and over time.

13.6. Sources

The production process of Trade in services statistics utilizes the following sources; The VAT statement, the Central Register of Establishments and Enterprises and The Register of Cross Border Transactions and Currency Exchange.

13.7. Users

The statistics are used for prognoses and analyses performed by public authorities, research institutions and private organisations. International organisations like the

UN statistical office, the statistical office of the EU (Eurostat) and others make use of the information that the external trade statistics gives. The external trade statistics are a part of the national and international statistical systems, and are also used in the compilation of the national accounts and the balance of payment statistics.

14. Producer price index for oil and gas, manufacturing, mining and electricity

14.1. Fast fact Producer price index for oil and gas, manufacturing, mining and electricity

Fast facts	
Name	Producer price index for oil and gas, manufacturing, mining and electricity
Topic	Producer price index
Purpose	The purpose of the Producer Price Index is to measure the price development of first hand sales of products to the Norwegian market, from Norwegian production and export. The PPI is an important part of a system for short-term indicators made in order to monitor the Norwegian economy
Key users	Public sector and the financial industry. The index is also used for regulating the price of different contracts over time. National accounts at Statistics Norway
Input data	Data for the PPI is collected through a survey. The survey is based on electronic questionnaires via the Internet (Altinn).
Frequency and timeliness	Published Monthly, on the 10th of every month.
International reporting	Price statistics for the home and export markets are reported to EUROSTAT. The PPI total is also reported to the International Monetary Fund (IMF).
Microdata	Non-revised and revised micro data are stored in accordance with Statistics Bureau guidelines for storing of computer files
Table/graph	https://www.ssb.no/en/priser-og-prisindekser/statistikker/ppi
<p>Figure 1. Price development for selected industries. 2000=100</p> <p>The graph displays two price indices over time. The 'Extraction and related services' index (orange line) starts at approximately 390 in Jan. 2012, peaks at 410 in early 2012, and then fluctuates between 350 and 400 until early 2015. It then drops sharply to around 310 in early 2016, recovers to 340 by mid-2016, and ends at 290 in Jan. 2017. The 'PPI, total' index (green line) starts at 250 in Jan. 2012, remains relatively stable around 240-250 until early 2015, then drops to a low of 200 in early 2016, and recovers to 230 by Jan. 2017.</p> <p>Source: Statistics Norway.</p>	

14.2. Description of the statistical area

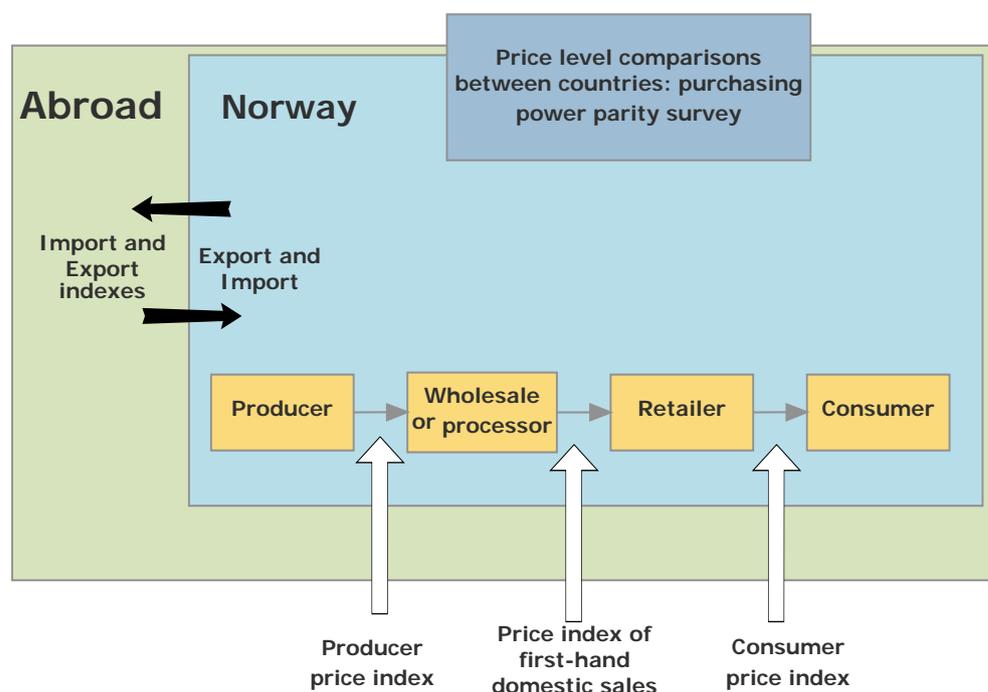
Statistics Norway publishes many price indexes (see figure 1), and these cover various areas of the economy. The producer price index for oil and gas,

manufacturing, mining and electricity is one of these indexes and is particularly relevant for countries with oil and gas production.

In general, the purpose of the Producer Price Index (PPI) is to measure the price development of first hand sales of products to the Norwegian market, from Norwegian production and export. The PPI is an important part of a system for short-term indicators made to monitor the Norwegian economy. Together with the price-index of first-hand domestic sales (PIF), the PPI measures the price development in production and imports of goods. Together these two statistics cover the price development in three markets: Domestic production, exports and imports.

Figure 4. Price indexes explanation

Prices are measured various places in the economy



14.3. Petroleum industry

The producer price index for oil and gas, manufacturing, mining and electricity was published the first time in 1977. The PPI is a key economic indicator in most countries and shows trends within the wholesale markets, manufacturing industries and commodities markets. All of the physical goods-producing industries that make up the Norwegian economy are included. Imports are not included in the PPI. Analysis by PPI reveals the impact of inflationary pressure from raw materials, which often are priced on international markets and are outside the control of domestic agencies. An important example is the price change of crude oil.

The PPI for extraction of oil and gas (NACE06) measures price development on oil and gas and is an important index for producing countries. Other indices that provide valuable information to oil and gas producing countries are "Services connected to extraction of oil and natural gas" (NACE09) and "production of refined petroleum products" (NACE19).

For oil and gas producing countries it is of interest to analyse the total impact of the oil and gas sector on the economy and see how much of the country's underline inflation that is connected to the oil and gas sector. Further, it is relevant to analyse producing industries excluded oil and gas industries to isolate the effect of oil and gas from the PPI. Another aspect is the production of refined petroleum products, which is an industry within manufacturing. Prices of petroleum products are developing on the international markets and are highly connected to the price of oil. Prices of refined products are very volatile. This volatility can affect the index for manufacturing by making it more volatile. Some industries use oil and gas as an important input factor, it is interesting comparing their price development with the price development in oil and gas.

14.4. Population

The population for the survey is all commodities and some services produced by companies within oil and gas extraction (NACE 06), mining (NACE 05, 07 and 08), mining support service facilities (NACE 09), manufacturing (NACE 10 - 33) and energy supply (NACE 35), water supply (NACE 36)

The following industries are not covered: mining of uranium and thorium ores (NACE 07.21), processing of nuclear fuel (NACE 24.46), manufacture of weapons and ammunition (NACE 25.4), building of ships and boats (NACE 30.1), manufacturing of aeroplanes and spacecraft (NACE 30.3) and manufacture of military fighting machinery (NACE 30.4).

The goods, whose prices are measured, are mainly from establishments belonging to these industries, and the establishments are sampled from Statistics Norway's Register of Establishments and Enterprises. Parts of the primary industries and wholesalers are also included in order to cover first-hand domestic transactions. The population does not include establishments with ten employees or fewer.

A selection of establishments is used in the monthly price collection. In cooperation with these companies a range of goods are chosen to cover the selected HS products (and CPA commodities). The sample consists of about 1300 establishments and roughly 5000 products. Companies with 100 employees or more are included in the sample on a permanent basis (cut-off principle). The sample is updated continuously with regard to liquidation, foreclosures etc.

14.5. The statistical unit

The statistical unit for a PPI are the goods and their price. The prices on goods are collected from all establishments in the sample. The sample consists of about 630 commodity groups. These groups are split into various Harmonized system (HS) products. The products are selected based on foreign trade data and the PRODCOM survey, where the HS products are selected to cover the CPA products. The number of HS products is usually about 3500 total to cover the domestic, export and import market.

14.6. Sources

The main data source is the price survey which together cover the PPI and the PIF. Prices are mainly surveyed using electronic questionnaires to the establishments specified above. In addition, data are collected from various sales organisations, the Division for Foreign Trade, the quarterly electric energy prices, and in some cases from international sources (spot prices).

The statistics PPI and PIF are collected in the same survey. The survey is based on electronic questionnaires via the Internet (Altinn). Respondents who register an e-mail address in Altinn are notified by e-mail when a new questionnaire is released. The data collected for the domestic markets and the export markets are used in the calculations of the PPI. The questionnaires are available online around the 10th every month and have deadline around the 17th. Figures from foreign trade are used if they are found to be an adequate indicator of the price development of a good. Prices of electric energy prices are collected from NordPool . In addition some prices are collected from international sources such as Bureau of Labour Statistics , London Spot Markets and London Metal Exchange.

The electronic questionnaires contain some automated controls. A computerised control then checks for punching errors, duplicates and observations with large price changes from the previous month. The checks are done for each market separately. Respondents are contacted if one or several of their commodities show large changes in price and no explanation is given in the questionnaire.

Non-response: Non-response is imputed mechanically based on the price development at a higher aggregation level. The firm is contacted in case of non-response, and if prices are not available price data are imputed. In this procedure, observations which are important to higher level indices are prioritised. CPA products which are not covered by actual price observations are imputed using a similar algorithm. Which aggregate level is used depends on the number of actual price observations.

On the most detailed level the Jevons formula is used, which is the geometric average of products within the same HS product (HS means Harmonised system). Higher level indices are calculated using a chained Young formula. For the PPI, total indices on the HS level (domestic market and exports) are weighed together. Higher level indices are first calculated as weighted averages to the CPA six digit products, then to four digits CPA and then according to the hierarchical structure of SIC07. The weights are updated annually, and are calculated on production and export values from the national account's latest final figures. To keep the weight as up-to-date as possible aggregated levels are adjusted by using the quarterly results from the national accounts. This way weights always relate to the year previous to each index period (calendar year). The reference year is 2000 (2000=100).

14.7. Users

The statistics are used by the public sector and the financial industry. The index is also used for regulating the price of different contracts over time. The statistics are used in the production of the national accounts in Statistics Norway.

15. Turnover in oil and gas, manufacturing, mining and electricity supply

15.1. Fast Facts Turnover in oil and gas, manufacturing, mining and electricity supply

Fast facts	
Name	Turnover in oil and gas, manufacturing, mining and electricity supply
Topic	Energy and manufacturing
Purpose	The goal of the survey is to monitor the level and development of the turnover within oil and gas, manufacturing, mining and electricity supply distributed on the domestic and export market.
Key users	The statistics main users are used in internal controls in other economic trend surveys such as Index of production and Quarterly national accounts . Other users include financial and analytical institutions and, to some extent, public institutions (the Ministry of Finance and Norges Bank among others).
Input data	The statistics on Turnover in oil and gas, manufacturing, mining and electricity supply, collects data in a separate survey. The turnover is collected by the questionnaire from the units included in the sample, in addition to information from the Central Register of Establishments and Enterprises. Annual Manufacturing statistics , monthly statistics on External trade in goods and annual Electricity statistics are used to estimate the total turnover. Monthly statistics on External trade in goods are used for classifying results by market.
Frequency and timeliness	The statistics on turnover has a monthly frequency and is released about 35 days after the reference month
International reporting	The statistics on turnover is reported to EUROSTAT on a monthly basis.
Microdata	Non-revised and revised micro data are stored in accordance with Statistics Norway's guidelines for storing computer files
Table/graph	https://www.ssb.no/en/energi-og-industri/statistikker/ogibkoms/
<p>Indicator for petroleum-related industries. Seasonally adjusted. Three-month moving average. 2005=100</p> <p>Index</p> <p>225</p> <p>200</p> <p>175</p> <p>150</p> <p>125</p> <p>100</p> <p>Jan. 2011 Jan. 2012 Jan. 2013 Jan. 2014 Jan. 2015 Jan. 2016 Jan. 2...</p> <p>Purple: Petroleum related manufacturing Green: Manufacturing Yellow: Manufacturing without petroleum related manufacturing</p>	

15.2. Description of the statistical area

The statistics on turnover is part of a system of short-term statistics compiled to monitor the economy. The primary goal of the survey is to monitor the level and development of sales in mining and quarrying, oil and gas extraction, manufacturing, electricity and gas supply. Turnover data have been collected since February 1996, however the survey has existed in its current form since May 2002. As from March 2006, all results are divided by market.

As from January 2009, all results will refer to SIC2007. The historical series are recalculated according to this version of SIC, and results for total turnover dating back to 1998 are available in the Statbank database. Results classified by market are available back to 2000. Historical series based on SIC2002 also remain available for the period 1998 to 2008.

15.3. Petroleum industry

The statistics on turnover provides information on the development of sales in the whole manufacturing industry (ISIC C). This statistic can provide information on the repercussion of the Oil and Gas sector on related manufacturing industries. For a country with production of petroleum this is highly relevant information to monitor the development in the manufacturing industry.

15.4. Population

The population covers all establishments in mining and quarrying (SIC 05, SIC 07-08, SIC 09.9), oil and gas extraction (SIC 06, 09.1), manufacturing (SIC 10-33) and electricity and gas supply (SIC 35), see Standard Industrial Classification 2007 (SIC2007) . The Central Register of Establishments and Enterprises defines the population, and the establishment is the observation unit in the survey. (See paragraph 4.1 for a complete definition of establishment and enterprise.)

15.5. Sources

The survey uses turnover data collected by questionnaire from the units included in the sample, in addition to information from the Central Register of Establishments and Enterprises. Annual Manufacturing statistics , monthly statistics on External trade in goods and annual Electricity statistics are used to estimate the total turnover. Monthly statistics on External trade in goods are used for classifying results by market.

The sample consists of 1780 establishments (January 2009). This includes all establishments with 100 employees or more, or establishments with a turnover of at least 10 per cent of the publishing level. The remaining units are drawn based on stratification and optimal allocation, proportional to the size of the unit measured by the number of employees (PPS). The sample does not include establishments with less than 10 employees.

The survey is based on data collected by questionnaires. The questionnaires are returned electronically via Altinn. The questionnaire is sent at the end of the month. The deadline for returning the questionnaire is normally the 15th of the following month.

15.6. Users

The results are used in internal controls in other economic trend surveys such as Index of production and Quarterly national accounts . Other users include financial and analytical institutions and, to some extent, public institutions (the Ministry of Finance and Norges Bank among others).

16. Oil and gas extraction and related services

16.1. Fast Facts oil and gas extraction and related services

Fast facts	
Name	Extraction and related services
Topic	Energy and manufacturing
Purpose	The object of the annual statistics for oil and gas activity is to provide an economic overview of the activity on the Norwegian continental shelf, as well as related service activity. Separate data collection for the oil and gas industries has been carried out since 1984. The oil statistics are used as basis for calculations in the National Account and for research purposes
Key users	National accounts, Eurostat, ministries, branch associations and research. The national statistics, which are described here, are compiled according to the needs of the national accounts, while the figures reported to Eurostat and Fats are based on the same administrative sources as the rest of the structural statistics.
Input data	The statistics use one survey form for obtaining information from enterprises belonging to NACE 06 and 49.5. In addition, there is a survey form for NACE 09. Both forms are only available in electronical form, and from 2015, the forms must submit through Altinn.no. Furthermore, pipeline tariff is collected from Revised National budget (RNB) data obtained from the Norwegian Petroleum Directorate (NPD), and gas prices by data from ETS.
Frequency and timeliness	Annual. Preliminary figures are published 12 months after the reference year. Final figures are delivered to the national accounts 17 months after the reference year.
International reporting	Structural business statistics (SBS), Eurostat. ITF/UNECE Common Questionnaire for Transport Statistics
Microdata	Data are stored in accordance with Statistics Norway's guidelines for storing computer files
Table/graph	https://www.ssb.no/en/energi-og-industri/statistikker/oljev/aar/

Figure 1. Value of production, intermediate consumption and value added. Total for the oil and gas industries

Year	Value added	Intermediate consumption	Value of production
1991	100	20	120
1992	100	20	120
1993	100	20	120
1994	100	20	120
1995	100	20	120
1996	150	30	180
1997	150	30	180
1998	150	30	180
1999	200	40	240
2000	350	50	400
2001	350	50	400
2002	300	50	350
2003	350	50	400
2004	400	50	450
2005	550	60	610
2006	600	60	660
2007	600	60	660
2008	650	60	710
2009	600	60	660
2010	650	60	710
2011	750	60	810
2012	800	60	860
2013	800	60	860
2014	750	60	810
2015	650	60	710

16.2. Description of the statistical area

The object of the annual statistics for oil and gas activity is to provide an economic overview of the activity on the Norwegian continental shelf, as well as related service activity. This data collection for the oil and gas industries has been carried out since 1984. The statistics is used as basis for calculations in the National Account and for research purposes. Further, the statistics provides principal figures like gross value of production, value added, intermediate consumption and more. The Extraction and related services statistics are a part of the structural statistics at Statistics Norway.

16.3. Petroleum industry

The statistics on Oil and gas extraction and related services is one the specialised “oil statistics” at Statistics Norway. It provides valuable information on the value and activity of oil and gas and on the Norwegian continental shelf. By providing figures to the National accounts it is also relevant for the national budget.

16.4. Population

The annual statistics for oil and gas activity covers the following 3 industries:

- Extraction of crude oil and natural gas (NACE 06)
- Service activities incidental to oil and gas extraction (NACE 09.10)
- Transport via pipelines (NACE 49.500)

All enterprises within these three industries included in the statistics if they are registered with active operations in Norway in statistical year. EU structural Regulation primarily requires statistics on enterprise level. For reasons of national accounts and other Norwegian users, however, this statistic is compiled on business unit level meaning fields, terminals, pipelines and land office.

16.5. Sources

Extraction of crude oil and natural (Nace 06) gas and Transport via pipelines (NACE 49.500)

Data on produced petroleum amounts which are collected from the Norwegian Petroleum Directorate (NPD), are combined with price data from several sources to estimate the production value. For crude oil norm prices from Ministry of Petroleum and Energy (MPE) are used. Prices from external trade statistics are used for the three gas products.

To get the most accurate price different data sources are used. From 2015 Statistics Norway received tariff revenues for pipeline transport and environmental taxes from the NPD. From license-owners, operators and pipeline-owner’s data on operational costs and characteristic income for both extraction industry and pipeline, is collected through a survey. From Gassco data on tariff costs for Gassled are collected. (ie major pipelines, as well as two terminals).

Service activities incidental to oil and gas extraction (NACE 09.10)

All en

terprises with either employees, turn-over or investments are covered in the population. All multi-business enterprises and all single-business enterprises with more than 20 employees are included in the sample. For single-business enterprises with less than 20 employees, a stratified sample is drawn. Data for enterprises

outside the sample are based on administrative sources and distributions from the sample.

The data sources include the annual structural survey and administrative sources (tax statements, annual reports and the A-ordningen and the Business Register.

16.6. Users

The main user of the Extraction and related services statistics is National accounts, Eurostat, ministries, branch associations and research.

17. Air Emission Statistics and Accounts

Air emission statistics and accounts consist of four different publications. This is mainly due to the reporting requirements of different users, while the sources of data are similar for all of them.

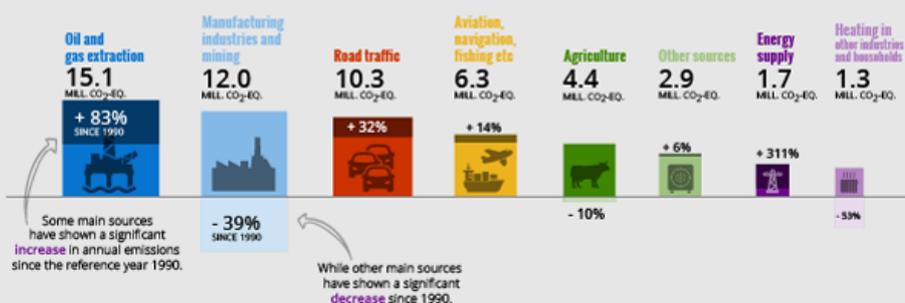
17.1. Fast Facts Emissions of Greenhouse Gases

Fast facts	
Name	Emissions of Greenhouse Gases
Topic	Nature and the environment
Purpose	The purpose of the statistics is to present the total emissions from Norwegian territory, distributed by sources, industries, energy goods and counties
Key users	<ol style="list-style-type: none"> 1. International reporting 2. As a tool for public administration and the authorities 3. Research and education/teaching 4. Market, resource and environmental mapping 5. General information
Input data	National emissions to air are mainly estimated from existing statistics on activity level and emission factors (emission per unit activity). Emissions from large industrial plants are based on data from the plants' own reports to the Norwegian Environment Agency
Frequency and timeliness	Annual. In May, preliminary figures for the last year are published. Final figures in January/February the next year.
International reporting	Annual reports to UNFCCC (United Nations Framework Convention on Climate Change).
Microdata	Not relevant for Statistics Norway. See the Norwegian Pollution Release and Transfers Register of the Norwegian Environment Agency.
Table/graph	https://www.ssb.no/en/energi-og-industri/statistikker/kis

Figure 2. Emission of greenhouse gases, 2015, *preliminary figures

Which sources contribute most to the emissions?

Oil and gas extraction is the main contributor to greenhouse gas emissions, and made up **28 per cent** of the total emissions in 2015. Annual emissions from oil and gas extraction have increased by 83 per cent since 1990.



17.2. Fast Facts Emissions of Acidifying Gases and Ozone Precursors

Fast facts																																																																																					
Name	Emissions of acidifying gases and ozone precursors																																																																																				
Topic	Nature and the environment																																																																																				
Purpose	The purpose of the statistics is to present the total emissions from Norwegian territory, distributed by sources, industries, energy goods and counties. The statistics also show the achievement with regard to the fulfilment of international environmental obligations and national emission targets.																																																																																				
Key users	Figures from the emission inventory are being used by the Ministry of the Environment and the Norwegian Environment Agency in reports. Statistics Norway also makes use of the emission inventory, both in order to make forecasts/prognoses and as a basis for economic analyses. Different public and private institutions use the statistics in studies connected to emission technology, pollution, health and economy. The emission inventory is an important source of information for newspapers, other news media, environmental organisations and other non-governmental organisations.																																																																																				
Input data	Emissions from large industrial plants are based on data from the plants' own reports to the Norwegian Environment Agency. No particular measurements or other kinds of special data collection take place in connection with the preparation of national emission statistics.																																																																																				
Frequency and timeliness	Annual. In May, preliminary figures for the last year are published. Final figures in January/February the next year.																																																																																				
International reporting	Annual reports to ECE (Economic Commission for Europe): Convention on Long-Range Trans boundary Air Pollution (CLRTAP)																																																																																				
Microdata	Not relevant for Statistics Norway. See the Norwegian Pollution Release and Transfers Register of the Norwegian Environment Agency.																																																																																				
Table/graph	http://www.ssb.no/en/natur-og-miljo/statistikker/agassn																																																																																				
	<p>Figur 2. Emissions of NO_x, by source</p> <p>The graph shows that 'Other transport and motor equipment' is the largest source of NO_x emissions, peaking at approximately 95,000 tonnes in 1999 before declining to around 35,000 tonnes by 2015. 'Road traffic' emissions show a steady decline from about 65,000 tonnes in 1990 to 30,000 tonnes in 2015. 'Oil and gas extraction' emissions have generally increased from 25,000 tonnes in 1990 to 45,000 tonnes in 2015. 'Manufacturing and mining industries' emissions remain relatively stable, fluctuating between 15,000 and 25,000 tonnes. 'Other sources' consistently contribute the least, with emissions around 5,000 tonnes.</p> <table border="1"> <caption>Estimated data for Figure 2: Emissions of NO_x, by source (in 1000 tonnes)</caption> <thead> <tr> <th>Year</th> <th>Other transport and motor equipment</th> <th>Road traffic</th> <th>Oil and gas extraction</th> <th>Manufacturing and mining industries</th> <th>Other sources</th> </tr> </thead> <tbody> <tr><td>1990</td><td>72</td><td>65</td><td>25</td><td>22</td><td>5</td></tr> <tr><td>1993</td><td>70</td><td>62</td><td>30</td><td>20</td><td>5</td></tr> <tr><td>1995</td><td>75</td><td>60</td><td>35</td><td>23</td><td>5</td></tr> <tr><td>1997</td><td>85</td><td>58</td><td>40</td><td>24</td><td>5</td></tr> <tr><td>1999</td><td>95</td><td>55</td><td>42</td><td>24</td><td>5</td></tr> <tr><td>2001</td><td>82</td><td>50</td><td>43</td><td>23</td><td>5</td></tr> <tr><td>2003</td><td>78</td><td>48</td><td>44</td><td>22</td><td>5</td></tr> <tr><td>2005</td><td>75</td><td>48</td><td>48</td><td>21</td><td>5</td></tr> <tr><td>2007</td><td>75</td><td>48</td><td>48</td><td>20</td><td>5</td></tr> <tr><td>2009</td><td>68</td><td>45</td><td>48</td><td>18</td><td>5</td></tr> <tr><td>2011</td><td>65</td><td>40</td><td>49</td><td>20</td><td>5</td></tr> <tr><td>2013</td><td>58</td><td>38</td><td>48</td><td>18</td><td>5</td></tr> <tr><td>2015</td><td>35</td><td>30</td><td>48</td><td>18</td><td>5</td></tr> </tbody> </table> <p>Source: Statistics Norway.</p>	Year	Other transport and motor equipment	Road traffic	Oil and gas extraction	Manufacturing and mining industries	Other sources	1990	72	65	25	22	5	1993	70	62	30	20	5	1995	75	60	35	23	5	1997	85	58	40	24	5	1999	95	55	42	24	5	2001	82	50	43	23	5	2003	78	48	44	22	5	2005	75	48	48	21	5	2007	75	48	48	20	5	2009	68	45	48	18	5	2011	65	40	49	20	5	2013	58	38	48	18	5	2015	35	30	48	18	5
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17.3. Fast Facts Emissions to air of hazardous substances and particulate matter

Fast facts																																																																																		
Name	Emissions to air of hazardous substances and particulate matter																																																																																	
Topic	Nature and the environment																																																																																	
Purpose	The purpose of the statistics is to present the total emissions from Norwegian territory, distributed by sources, industries, energy goods and counties. The statistics also show the goal achievement with regard to the fulfilment of international environmental obligations and national emission targets																																																																																	
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Table/graph	http://www.ssb.no/en/natur-og-miljo/statistikker/milgiftn																																																																																	
<p style="text-align: center;">Emissions to air of PAHs and dioxins, by industry</p> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">2014</th> </tr> <tr> <th>PAH (kg)</th> <th>PAH-4 (kg)</th> <th>Dioxins (mg)</th> </tr> </thead> <tbody> <tr> <td>All industries and households</td> <td>85 525</td> <td>7 798</td> <td>24 404</td> </tr> <tr> <td>Emissions from international air and ocean transport</td> <td>4 434</td> <td>110</td> <td>11 012</td> </tr> <tr> <td>International air transport - Norwegian airlines</td> <td>50</td> <td>0</td> <td>51</td> </tr> <tr> <td>International ocean transport - Norwegian operated ships</td> <td>2 798</td> <td>70</td> <td>6 996</td> </tr> <tr> <td>Emissions from Norwegian territory</td> <td>81 091</td> <td>7 688</td> <td>13 392</td> </tr> <tr> <td>Agriculture and forestry</td> <td>1 612</td> <td>130</td> <td>46</td> </tr> <tr> <td>Fiske og fangst</td> <td>578</td> <td>15</td> <td>1 432</td> </tr> <tr> <td>Aquaculture</td> <td>6</td> <td>0</td> <td>8</td> </tr> <tr> <td>Mining and quarrying</td> <td>243</td> <td>8</td> <td>15</td> </tr> <tr> <td>Oil and gas extraction</td> <td>642</td> <td>14</td> <td>1 667</td> </tr> <tr> <td>Service activities incidental to oil and gas</td> <td>234</td> <td>5</td> <td>390</td> </tr> <tr> <td>Food products, beverages and tobacco products</td> <td>50</td> <td>4</td> <td>20</td> </tr> <tr> <td>Textiles, wearing apparel, leather</td> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td>Wood and wood products, except furniture, paper and paper products</td> <td>90</td> <td>7</td> <td>407</td> </tr> <tr> <td>Printing and reproduction of recorded media</td> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td>Refined petroleum products, chemicals and chemical products, pharmaceutical products</td> <td>1 000</td> <td>136</td> <td>511</td> </tr> <tr> <td>Rubber and plastic products, non-metallic mineral products</td> <td>2 278</td> <td>111</td> <td>679</td> </tr> <tr> <td>Basic metals</td> <td>31 258</td> <td>4 551</td> <td>1 560</td> </tr> </tbody> </table>					2014			PAH (kg)	PAH-4 (kg)	Dioxins (mg)	All industries and households	85 525	7 798	24 404	Emissions from international air and ocean transport	4 434	110	11 012	International air transport - Norwegian airlines	50	0	51	International ocean transport - Norwegian operated ships	2 798	70	6 996	Emissions from Norwegian territory	81 091	7 688	13 392	Agriculture and forestry	1 612	130	46	Fiske og fangst	578	15	1 432	Aquaculture	6	0	8	Mining and quarrying	243	8	15	Oil and gas extraction	642	14	1 667	Service activities incidental to oil and gas	234	5	390	Food products, beverages and tobacco products	50	4	20	Textiles, wearing apparel, leather	1	0	0	Wood and wood products, except furniture, paper and paper products	90	7	407	Printing and reproduction of recorded media	1	0	0	Refined petroleum products, chemicals and chemical products, pharmaceutical products	1 000	136	511	Rubber and plastic products, non-metallic mineral products	2 278	111	679	Basic metals	31 258	4 551	1 560
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17.4. Fast Facts Emissions from Norwegian Economic Activity (SEEA-Accounts)

Fast facts	
Name	Emissions from Norwegian Economic Activity
Topic	Nature and the environment
Purpose	The goal of the environment and economic accounts is to give a consistent and comprehensive picture of the environmental consequences due to the economic activity of units that are resident in Norway. A unit is resident in a country when the centre of economic interest belongs within the country's economic territory.
Key users	The data are used for analyses that combine emissions and economic information. Industry sector profiles, changes over time, decoupling of emissions from economic activity and emissions intensities can all be obtained from these time series. The data set can also be used as the basis for other types of analyses, including input-output analyses and decomposition studies. Among the users of the statistics are Eurostat, UNFCCC and the Ministry of the Environment.
Input data	The data sources that are used in the environmental and economic accounts are already published figures at Statistics Norway for air emissions and the annual and quarterly national accounts.
Frequency and timeliness	Annual
International reporting	Annual reporting to Eurostat
Microdata	Not relevant.
Table/graph	http://www.ssb.no/en/natur-og-miljo/statistikker/nrmiljo

Figure 3. Greenhouse gas emissions (CO₂-equivalents) and output (fixed 2005-prices) divided according to industries and share of totals. 2014

Industry	Greenhouse gas emissions (%)	Output (%)
Agriculture, forestry and fishing	~12	~2
Oil and gas extraction	~28	~10
Manufacturing	~22	~15
Energy and water supply, sewage and waste management	~8	~2
Transport incl. ocean transport and international air transport	~32	~8
Services and remaining industries not elsewhere included ¹	~8	~62

¹ Services, energy and water supply and construction, education, health and social work and general government administration.
Source: Statistics Norway.

17.5. Description of the statistical area

The purpose of these statistics is to present the total emissions from the Norwegian territory, distributed by sources, industries, energy goods and counties. There are three publications of the emission statistics – each one focuses on a different set of chemicals. In addition comes the Air Emissions Accounts, which has one annual publication and presents the total emissions from the Norwegian economic activity combined with the matching economic data at detailed industry levels.

The statistics also show the achievement with regard to the fulfilment of international environmental obligations and national emission targets. Together with the accounts, these provide information to the media, schools, researchers, other institutions or organizations, and the general public.

The statistics are to a great extent developed in order to cover the demands in the reporting to the protocols under the Convention on Climate Change (UNFCCC) and the protocols under the Convention on Long-Range Transboundary Air Pollution (Gothenburg Protocol). The Norwegian Environment Agency, on behalf of the Ministry of Climate and Environment, is responsible for the reporting to these international agreements.

The emission statistics are mainly based on calculations. The Statistics Norway emission model is continuously being developed, as research on emissions to air is regularly evaluated. New emission factors are taken into use, errors in the calculations are corrected, and other improvements in the emission model are implemented. These changes lead to new, revised and more consistent time series each year, and results that were published earlier are no longer valid.

The emission statistics include the following emission types:

Greenhouse gases: Carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), PFCs (perfluorocarbons), HFCs (hydrofluorocarbons) and sulphur hexafluoride (SF₆).

Acidifying pollutants: Nitrogen oxides (NO_x), sulphur dioxide (SO₂) and ammonia (NH₃).

Other pollutants: NMVOC (non-methane volatile organic compounds), carbon monoxide (CO), heavy metals and persistent organic pollutants (POPs).

17.6. Petroleum industry

Oil and gas extraction (ISIC 06) and Service activities incidental to oil and gas (ISIC 09.10) are part of the standard categories of industries for which statistics are developed. These groupings are also used in these statistics – and since this industry is responsible for substantial proportions of the Norwegian emissions, these industry groupings are typically shown and discussed in the published figures.

17.7. Population

The main difference between the *inventory* and the *accounts* lies in the definition of the system boundaries for which the data is reported.

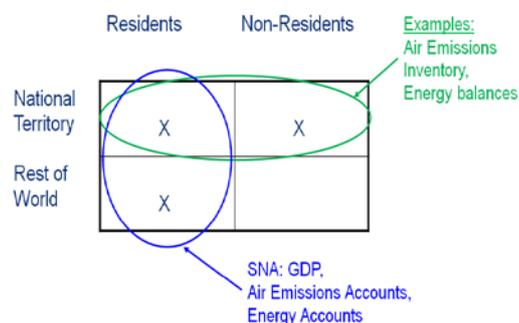
In the emission *inventory*, the reported emission figures cover only Norwegian territory, including domestic air and sea traffic. For fishing and road traffic, all emissions originating from fuel sales in Norway are defined as Norwegian emissions, irrespective of the residency of the purchaser. The emission figures are furthermore distributed between emission sources (e.g. manufacturing, households,

and agriculture) or by industry (e.g. oil and gas extraction, metal production, construction).

The goal of the air emission *accounts* is to give a consistent and comprehensive picture of the environmental consequences due to the economic activity of units that are resident in Norway. A unit is resident in a country when the centre of economic interest belongs within the country's economic area/territory. Obtaining a harmonized data set that includes both the national accounts and the air emission accounts is the major focus of these linked accounts. To do so, the air emission inventory data need to be adjusted to correspond to the economic definition.

Differences between SNA boundary and territory boundary

(Main difference is usually international transport)



In Norway, the difference between these two definitions (territory vs. resident) is primarily due to ocean transport and international air transport. The emissions from international shipping and international air transport are not usually included in the territorial defined air emissions but they are included in the SEEA accounts so that there is better correspondence with the National Accounts' economic definition of Norway (i.e. the economic activity of units that are resident in Norway). There are other small differences but they are not as important as ocean transport and international air transport.

17.8. Sources

The Norwegian emission inventory is a joint undertaking between the Norwegian Environment Agency and Statistics Norway. Statistics Norway is responsible for the collection and development of activity data, the development and management of the various calculation models and the different emission statistics. The Norwegian Environment Agency is responsible for the emission factors, for providing data from specific industries and sources and for considering the quality, and assuring necessary updating, of the emission models such as the road traffic model and the calculation of methane emissions from landfills.

Statistics Norway only collects very minimal, specific data for the emission inventory. The goal for data collection for the emissions inventory is that these statistics shall be based on already existing registers and statistics. However, it may be necessary to make some adjustments for this special purpose.

Data reported directly to the Norwegian Environment Agency (NEA) (emission data from point sources, and from large industrial plants which are published in the Norwegian Pollution Release and Transfer Register - PRTR) are quality checked by the NEA. In addition, a consistency check is done by Statistics Norway. Statistics Norway is responsible for quality control of the activity data and emission figures from the model. No particular controls are performed on data from Statistics Norway's own primary statistics used in the emission calculations, as it is presupposed that the data already have been quality controlled.

The Norwegian Environment Agency is responsible for developing emission factors and for collecting information from point sources. Statistics Norway is

responsible for developing the data models for the emissions and to collect the activity data. Statistics Norway makes the final calculations by applying the data model.

Quality controls of the data and model results

The controls used in connection with the emission calculations can be divided into two parts:

1. Quality control and editing of input data, for example information about emissions per industrial plant from the Norwegian Environment Agency.
2. Quality control and editing of the emission figures (output from the model).

Quality control and editing of input data

The possibility to check the input data varies, depending on the collection methods and who collects the data. The controls will mainly be:

- To compare data with figures reported from the same unit earlier;
- To collect missing data;
- To contact industrial plants regarding obvious errors or by asking questions about the reported figures;
- Lack of data in time series can be interpolated or filled in by use of estimates.

The primary statistics in SSB are submitted to fixed quality control and editing routines. There is no additional control of primary data.

Quality control and editing of the emission figures (output from the model)

The national figures must be controlled source by source, by comparing with figures from previous years or figures for the same year calculated one year ago. Breaks in the series must be explained.

For comparisons between different calculations for the same year, the target is that all changes should be explained as change in data or method. For comparisons between different years, the target is to explain all large changes in the time series.

In the revised version of the model, the main part of the quality control will be to check the input data.

Every third year, there is an international examination (review) of the emission inventory. The examination is a centralised review performed by a group of experts. The Norwegian emission inventory was reviewed in 2013.

The emission inventory is mainly based on calculations. Only a few industrial plants continuously measure their emissions. Some plants have periodic measurements that are scaled up to annual levels. For other plants and other sources than manufacturing industries, the emission figures are calculations, often of the type:

$$\text{Emission} = \text{Activity data} * \text{emission factor}$$

Activity data can be for example tonnes of fuel oil used by an industry, while the emission factor expresses the emission of a component in proportion to the activity (for example tonnes of SO₂ /tonne fuel oil). The emission factors are usually based on measured values, national or international. The estimation methods are described in detail in [Sandmo \(2014\)](#)²¹.

17.9. Petroleum industry

Information from point sources – for example oil platforms – is available on the Norwegian PRTR website (PRTR is the abbreviation for Pollution Release and Transfer Register²²

Aggregations of these figures for the Offshore Petroleum industry are also presented by the Norwegian Environment Agency. These are the source data which are used in the comprehensive air emissions statistics which cover the whole Norwegian territory and the air emissions accounts which cover the entire Norwegian economic activity.

17.10. Users

The emission inventory and its basic statistics are mainly used for five different purposes:

1. International reporting
2. As a tool for public administration and the authorities
3. Research and education/teaching
4. Market, resource and environmental mapping
5. General information

International reporting is an important use of the official statistics. Figures from the emission inventory are being used by the Ministry of the Environment and the Norwegian Environment Agency in reports to UNFCCC and CLRTAP. These figures state whether Norway has reached its targets or not. Also Eurostat, OECD and others are given access to the figures.

The emission inventory is used by the authorities in environmental information documents, such as “*Regjeringens miljøvernpolitikk og rikets miljøtilstand*” (The Government's environmental policy and the state of the environment in Norway), which is published every second year, and also in different SDIs: Sustainable Development Indicators.

Statistics Norway also makes use of the emission inventory, both in order to make forecasts/prognoses and as a basis for economic analyses. The project NOREEA (Norwegian Economic and Environmental Accounts) including NAMEA (National Accounts Matrix including Environmental Accounts) shows the connection between economic and environmental development.

Different public and private institutions use the statistics in studies connected to emission technology, pollution, health and economy.

²¹ Sandmo, Trond (2014) The Norwegian Emission Inventory 2014: Documentation of methodologies for estimating emissions of greenhouse gases and long-range transboundary air pollutants <http://www.ssb.no/en/natur-og-miljo/artikler-og-publikasjoner/the-norwegian-emission-inventory-2014?fane=om>

²² <http://www.norskeutslipp.no/en/Frontpage/>

The emission inventory is an important source of information for newspapers, other news media, environmental organisations and other non-governmental organisations.

18.Environmental Expenditure in oil and gas, manufacturing, mining and electricity supply

These statistics provide information about investments and current expenditure on environmental protection within the mining, quarrying and other industries. The statistics encompass end-of-pipe investments, investments in integrated technology and current expenditures for environmental protection. From 2008, the statistics also includes oil and gas extraction, including fields where production is terminated and the associated-on shore installations.

18.1. Fast Facts Environmental Expenditure in oil and gas, manufacturing, mining and electricity supply

Fast facts	
Name	Environmental Expenditure in oil and gas, manufacturing, mining and electricity supply
Topic	Nature and the environment
Purpose	The statistics provides information about investments and current expenditure on environmental protection within the mining, quarrying and other industries.
Key users	Potential users are public authorities, professional and industrial bodies, research institutions and private users (e.g. business organisations).
Input data	The statistics is based on information collected using a questionnaire sent to a selection of businesses. For the oil and gas extraction, the questionnaire collects information from all offshore field operators and operators of onshore installations.
Frequency and timeliness	The statistics is an annual survey and published approximately 12 months after the end of the survey year.
International reporting	Eurostat: Council regulation 295/2008, amended by regulation 251/2009 Bi-annual reporting to the OECD/Eurostat joint questionnaire for environmental protection expenditure and revenues (JQ-EPER).
Microdata	Non-revised and revised micro data are stored in accordance with Statistics Bureau guidelines for storing of computer files
Table/graph	http://www.ssb.no/en/natur-og-miljo/statistikker/miljokostind

Figure 2. Environmental expenditures divided in current expenditures, investments and industries

Industry	Year	Total current environmental expenditures	Total Environmental protection investments	Total
Oil and gas extraction	2013	~1.7	~2.1	~3.8
	2014	~2.5	~1.3	~3.8
Manufacturing and mining	2013	~4.6	~0.9	~5.5
	2014	~4.5	~0.6	~5.1

Source: Statistics Norway.

18.2. Description of the statistical area

The environmental investments and current expenditure are divided into seven categories

- Emissions of greenhouse gases
- Other emissions to ambient air
- waste water management
- solid waste
- soil, groundwater and surface water as well as ocean and ocean floor
- biological diversity and landscape
- "other"

This is in accordance with Classification of Environmental Protection Activities and Expenditures (CEPA 2000) developed by Eurostat in cooperation with the UN (UNECE/CES).

Environmental protection expenditure

Environmental protection expenditure covers expenses for activities whose primary objective is to prevent, reduce or treat pollution or other damages to the physical environment. The statistics comprise three areas:

1. Current expenditure
2. *End-of-pipe investments*
3. Investments in integrated technology

All expenditures are exclusive of VAT and other taxes and not adjusted for possible financial support.

Production of environmentally friendly products and other measures that are not explicitly motivated by an environmental concern, are not defined as environmental expenditures.

Current expenditure includes wages, services, emission fees and other expenditure related to operation and maintenance of environmental protection equipment.

The End-of-pipe investments category includes investments in facilities for surveillance, control, prevention, reducing or cleaning emissions or effluents. It covers investments in equipment which is independent of the production process

The Investments in integrated technology category includes investments that are an integral part of the production process with the stated purpose of reducing environmental impacts. Replacement of existing equipment is only included if the new equipment has a better environmental performance than the industry standard, where only the additional expenditure is to be reported.

18.3. Petroleum industry

Oil and gas extraction (ISIC 06) are part of the standard categories of industries for which statistics are developed. The oil and gas extraction industry typically accounts for about 40 percent of environmental protection expenditure in Norway and are shown in the tables and graphs as its own category. The data collection for this industry is conducted separately from the manufacturing, mining and electricity supply industries. An annual separate questionnaire is sent to the operators for reporting.

18.4. Population

The survey on environmental protection expenditure includes all business in the manufacturing, mining and quarrying industries as defined in the Norwegian Standard Industrial Classification, SIC .

The statistics do NOT include service enterprises, offshore exploration and development nor transport of oil and gas via pipelines.

18.5. Sources

The statistics is based on information collected using a questionnaire sent to a selection of businesses. For the oil and gas extraction, the questionnaire collects information from all offshore field operators and operators of onshore installations.

The questionnaire is distributed in May/June, i.e. when most businesses have finalized their annual accounts. The data collected are subject to a thorough micro level editing. To ensure consistency, the data are related to relevant data from the previous year, production statistics, the Central Register of Establishments and Enterprises and the businesses annual accounts.

Starting in 2013, the statistics for onshore manufacturing industries is no longer based on a randomly selected sample of establishments. All enterprises with certain characteristics are required to submit the questionnaire. In particular, this means that reported expenditure on waste and waste water, does not represent an estimate for all Norwegian businesses.

18.6. Users

Potential users are public authorities, professional and industrial bodies, research institutions and private users (e.g. business organisations).

19. Environmental Economic Instruments

The purpose of the statistics on environmental economic instruments is to give an overview of which economic instruments are regarded as environmental ones and to show which economic actors are affected of these instruments. The statistics on environmental economic instruments includes now only taxes (as defined in the National Accounts) but these include the costs related to purchases of tradable emission permits.

19.1. Fast Facts Environmental Economic Instruments

Fast facts	
Name	Environmental Economic Instruments
Topic	Nature and the environment
Purpose	The purpose of the statistics on environmental economic instruments is to give an overview of which economic instruments to be regarded as environmental ones and to show which economic actors that are affected of these instruments
Key users	Figures for environmental economic instruments are mainly used for: Public administration and the authorities, Research and education/teaching, International reporting and General information.
Input data	The statistics on environmental economic instruments is mainly based on already existing data from the national accounts and statistics covering the general government income. With the exception of some data received from the Norwegian Tax Administration, the statistics on environmental economic instruments does not have any specific external data collection or survey.
Frequency and timeliness	Frequency: Annual figures. Timeliness: In November year t figures divided by industries are published for year t-2 together with total figures for year t-1.
International reporting	Eurostat: EU-regulation 691/2011 on environmental accounts
Microdata	Stored according to requirements of Statistics Norway
Table/graph	http://www.ssb.no/en/natur-og-miljo/statistikker/miljovirk
<p>Figure 2. Environmental taxes, by industry and households</p> <p>1 Services, wholesale, construction, education, health and social services and general government. Source: Statistics Norway.</p>	

19.2. Description of the statistical area

Environmental economic instruments are those instruments that are introduced either in order to correct for negative effects in the environment caused by human activities (making environmental damage more expensive) or introduced in order to encourage environmentally friendly initiatives (making environmental friendly activities less costly). The purpose of these instruments is to change today's production and consumption patterns in line with Norway's environmental and climate change political goals in the least costly way. Examples of environmental

economic instruments are taxes, fees, subsidies and other transfers, tradable emission permits and reimbursement arrangements.

Environmental economic instruments do not include juridical instruments, i.e. rules and regulations or voluntary arrangements.

At the time being, the statistics on environmental economic instruments includes environmental taxes including the purchase of tradable emission permits.

Table 5. The environmental taxes are systematized according to 5 main categories

Main Category	Tax
Tax on greenhouse gases incl. emissions permits, total	Tax on CO ₂ emissions Tax on CO ₂ emissions in the petroleum sector Tax of greenhouse gases HFC and PFC Motor vehicle registration tax – imputed CO ₂ component Imputed tax on emission permits
Tax on NO _x and sulphur emissions, total	Tax on NO _x emissions, petroleum sector excepted Tax on NO _x emissions in the petroleum sector Sulphur tax Motor vehicle registration tax – imputed NO _x component
Taxes on noise and local pollution from road use etc. in total	Petrol tax Diesel tax Tax on lubricating oils
Taxes on waste, total	Tax on the final treatment of waste Environmental tax on disposable beverage packaging
Other taxes on environmental issues n.e.c., in total	Tax on trichloreten Tax on tetracloroten Tax on pesticides Tax on mineral oils

The statistics were published for the first time in December 2014.

Eurostat uses “environmentally related taxes” and different categories for these types of instruments. Statistics Norway publishes figures according to the Eurostat definition in the StatBank.

19.3. Petroleum industry

Oil and gas extraction (ISIC 06) and Service activities incidental to oil and gas (ISIC 09.10) are part of the standard categories of industries for which statistics are developed. These groupings are also used in these statistics – and since this industry is responsible for substantial proportions of the taxes paid, these industry groupings are typically shown and discussed in the published figures. This industry is part of the EU emissions trading scheme (EU ETS) so the payments for the tradable permits are also considered part of the taxes paid.

19.4. Population

The statistics covers the general government revenues by instruments defined as either environment taxes or environmental related taxes. The taxes are broken down by different categories and further divided by industries and household in accordance to whom have paid the taxes.

19.5. Sources

The statistics on environmental economic instruments is mainly based on already existing data from the national accounts and statistics covering the general government income. With the exception of some data received from the Directorate

of Customs and Excise, the statistics on environmental economic instruments does not have any specific external data collection or survey.

Newly introduced taxes in the annual Norwegian State Budget are annually included in the General government income and expenditure statistics by the division for general government finances. The division for energy and environmental statistics prepares some of the basic input data for environmental taxes that are used in the national accounts and/or General government revenue and expenditure statistics. Examples are the CO₂ and NO_x-components of the motor vehicle registration tax and the purchases of tradable emission permits by industries.

The starting point for the estimations of the statistics on environmental economic instruments is the general government revenues defined as taxes in hence the general government income and revenue statistics and in the national accounts. These taxes are based on the recorded book value of tax revenues that have been received by the government and are identifiable the annual Norwegian State Budget. The exception is the CO₂ and NO_x-part of the re-registration tax and the purchases of emission permits, which are estimated values and not identifiable values in the Norwegian State Budget. Time adjustments of the recorded book values have been undertaken for those taxes where available monthly and/or quarterly payments exist.

Whereas the totals of the taxes are based on recorded values from the annual Norwegian State Budget, the division of taxes by industries and households are estimated based on statistics and accounts including consumption figures of the products that are levied with an environmental tax.

The distribution of taxes by industries follows the accounting principles of the National accounts. This means that the tax is distributed to the final purchaser or owner of the product levied with the tax. Industries and activities that are exempted from a tax or face reduced tax rates are taken into account in the calculations. The method used for the distribution of taxes by industries varies between taxes on products and taxes on production, and also in accordance to the need of sorting out the environmental part of taxes that consist of both an environmental part and a fiscal part.

The CO₂ and NO_x-part of the re-registration tax and the purchases of emission permits are estimated values.

19.6. Users

The statistics on environmental economic instruments gives an overview of the development in costs by industries and households from paying these instruments. Since the statistics on environmental economic instruments is compiled using the same scope and industry breakdown as other economic and environmental accounts in Statistics Norway, it is possible to do analyses combining different statistics, not doing analyses only based on the statistics on environmental economic instruments alone.

Environmental related taxes are reported to Eurostat using another definition than that used in the national statistics for environmental taxes, for more information see "Definitions".

Tables showing detailed industry breakdown is available for both definitions in the StatBank.

Figures for environmental economic instruments are mainly used for:

1. Public administration and the authorities.
2. Research and education/teaching.
3. International reporting.
4. General information.

20. Statistics on employment in the petroleum sector

20.1. Fast Facts Statistics on employment in the petroleum sector

Fast facts									
Name	Employment in the petroleum sector								
Topic	Employment								
Purpose	The main purpose of the report is to describe the employment and characteristics of employment in industries that are directly or indirectly related to the petroleum sector in Norway is to give an overview of the employment in the petroleum sector in Norway. However the report does not cover employment where only parts of the industry supply goods or services to the petroleum sector.								
Key users	Public administration and local administrations in particular, employers' and employees' organisations, media, individual companies and researchers								
Input data	The register based employment statistics was until the end of 2014 built on various public registers, the most important was the The Register of Employers and Employees, (Ee-register) produced by The Norwegian Labour and Welfare Organization (NAV). From 2015 onwards a new joint reporting solution called a-ordningen gathers the reporting from the employers to the Ee-register and some reports to the Tax Administration and Statistics Norway								
Frequency and timeliness	Annual publication, register based labour market statistics are published annually per 4 th quarter								
International reporting	Not relevant – general register based employment statistics are reported to OECD, Eurostat								
Microdata	Stored according to requirements of Statistics Norway								
Table/graph									
<table border="1"> <caption>Employment in Petroleum sector* 2014</caption> <thead> <tr> <th>Category</th> <th>Employment (Approximate)</th> </tr> </thead> <tbody> <tr> <td>Petroleum industries</td> <td>65,000</td> </tr> <tr> <td>Petroleum and related industries</td> <td>85,000</td> </tr> <tr> <td>Petroleum, petroleum related services + subcontractors*</td> <td>240,000</td> </tr> </tbody> </table>		Category	Employment (Approximate)	Petroleum industries	65,000	Petroleum and related industries	85,000	Petroleum, petroleum related services + subcontractors*	240,000
Category	Employment (Approximate)								
Petroleum industries	65,000								
Petroleum and related industries	85,000								
Petroleum, petroleum related services + subcontractors*	240,000								

20.2. Description of the statistical area

Employment in the petroleum sector (Ekeland 2015)²³ gives annual statistics on persons employed in the petroleum sector. This includes persons employed in establishments whose activity is related to oil and gas extraction and through the building and fitting of oil platforms and the operation of supply bases. Employment in businesses that supply goods and services to the petroleum sector *are not* included as they are part establishments that are also suppliers to other sectors.

The labour market variables are based on several different sources. Statistics Norway has established a system to jointly utilise these for statistics production. The systems comprise modules for consistency management between various data sources, selection of the most important job and classification of persons employed.

20.3. Petroleum industry

The delineation of what constitutes petroleum and petroleum related employment is based on the main activity of the workplace/establishment.

Persons employed in establishments whose activity is directly related to oil and gas extraction, as well as those working in establishments that are indirectly involved through the building and fitting of oil platforms and the operation of supply bases are included.

Table 6 The classification of establishments is based on SN2007²⁴ and include

Standard Industrial Classification (SIC2007)
Petroleum industry
06.100 Extraction of crude petroleum
06.200 Extraction of natural gas
09.101 Drilling services for petroleum and natural gas extraction
09.109 Other support activities for petroleum and natural gas extraction
52.215 Support activities for transportation
49.500 Transport via pipeline
Petroleum related industries
30.113 Building of oil-platforms and modules
30.116 Installation and completion work on platforms and modules
52.223 Offshore supply terminal

This approach does not capture the broader petroleum related employment such as sub-contractors to the activities in the North Sea. Many of the businesses that supply goods and services to the petroleum sector have not been included as they are part of an establishment that is also a supplier to other sectors, such as seismic exploration, catering services, helicopter transport services and production of safety equipment. Statistics Norway has over the years (see for instance SN 2015/8) made attempts at also capturing this broader group through an approach utilising national accounts input/output tables.

²³Anders Ekeland. Sysselsatte i petroleumsnæringene og relaterte næringer 2014 (2015/48)

²⁴ SIC 2007 is primarily a statistical standard. In practice, this means the standard will be the basis for coding units according to the most important activities in Statistics Norway's Business register and in the Central Coordinating Register for Legal Entities. For corresponding ISIC codes see chapter 5.

Using this approach produces a higher estimate of number of employees (see figure above) and more than triples the overall employment in the petroleum sector. Using this approach one cannot give more detailed information about those employed in the sector and the statistics cannot show demographic variables or regional levels of employment. The estimate has a high degree of uncertainty but illustrates the increased employment if also establishments that directly or indirectly supplies goods and services to the sector are included. These estimates are based on activities in the Norwegian sector and do not include employment related to production of goods and services that are exported for petroleum activities in other countries.

20.4. Population

The statistics on employment in the petroleum sector is based on the regular national labour market/employment statistics produced by Statistics Norway. The statistics in the report covers both persons that are resident in Norway and statistics on employment of the non-resident population.

20.5. Sources

Before 2015 labour market statistics in Norway was based on data from several administrative registers. The most important ones are The Register of Employers and Employees, The Register of End of the Year Certificates (Register of Wage Sums), The Register for Personal Tax Payers, The Register of Unemployed and The Central Co-ordinating Register for Legal Entities (business register). The Register of Employers and Employees is the main source for data on salaried employees. The Register of Wage Sums gives additional information. These are both job-registers. The tax register is the main source of data on self-employed persons. The Register of Unemployed holds data on unemployed persons and persons in labour market measures.

From 2015 onwards a new joint reporting solution called *a-ordningen* gathers the reporting from the employers to the Ee-register, produced by the Norwegian Labour and Welfare Administration, as well as some reports to the Tax Administration and Statistics Norway (for more of this see:

<http://www.ssb.no/en/arbeid-og-lonn/statistikker/regsyst/aar/2016-05-27?fane=om#content>

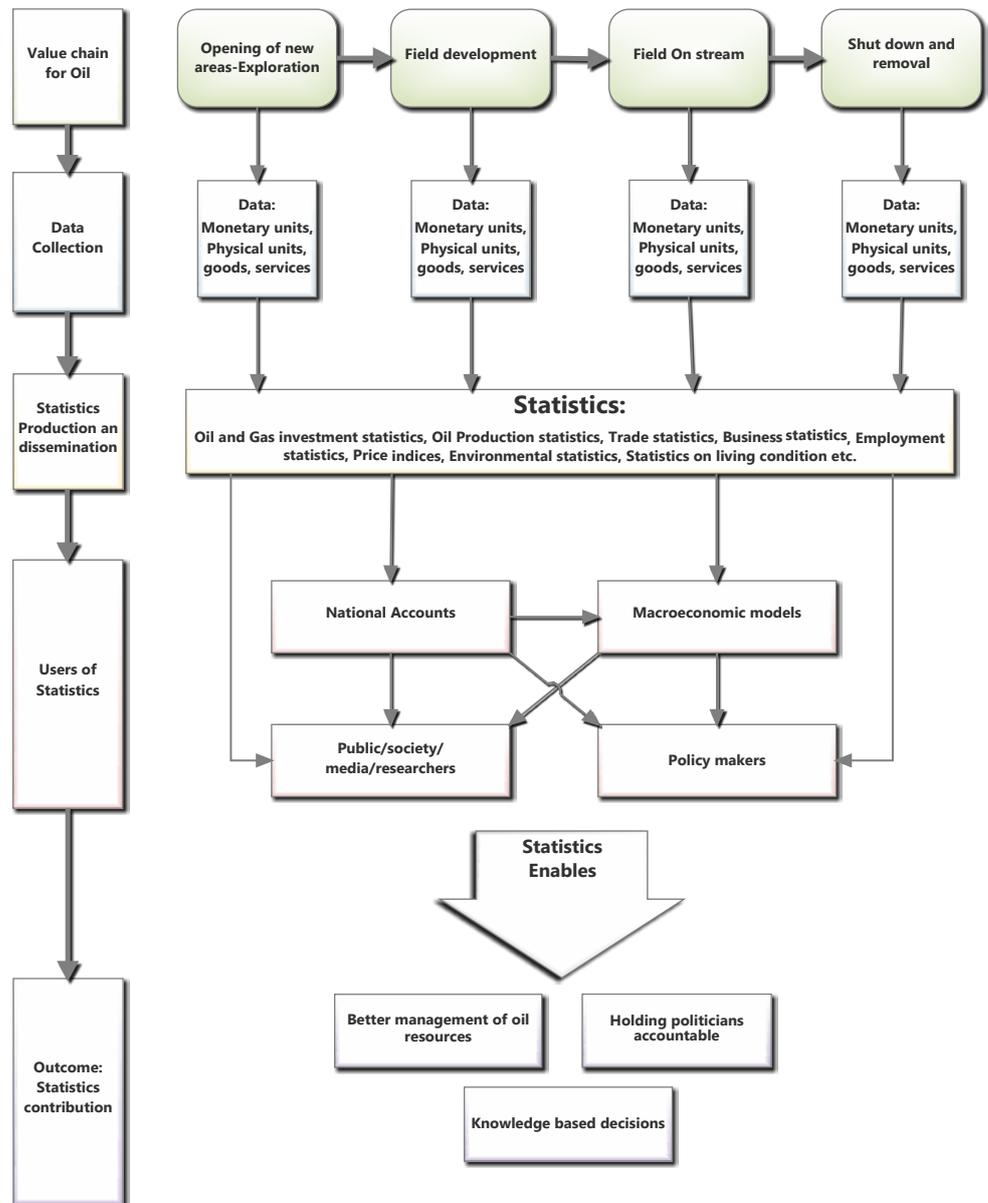
Information about main activity of the establishments is based on data from the business register. The business register holds information on the working places. Several registers give additional information: register of conscripts, registers of employees in central and local government, register of sick leave etc.

20.6. Users

Users are interested public, professional and industrial bodies, research institutions and private users (e.g. business organisations). The report was initially commissioned by the Ministry of Petroleum and Energy, the latest years it has been produced with the support of the Norwegian Oil and Gas Association.

Appendix

Appendix 1: Overview of Petroleum Statistics including data input and users



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Relevant Petroleum Acts, regulations and guidelines:

<http://www.npd.no/en/Regulations/Acts/>

<http://www.npd.no/en/Regulations/Regulations/>

<http://www.npd.no/en/Regulations/Guidelines/>

Statistics act:

<http://www.ssb.no/en/omssb/styringsdokumenter/lover-og-prinsipper/the-statistics-act-of-1989>

Relevant International standards:

International Standard Industrial Classification (ISIC) of All Economic Activities Revision 4. (2008) Department of Economic and Social Affairs Statistics Division. United Nations.

<https://unstats.un.org/unsd/cr/registry/isic-4.asp>

Statistical classification of economic activities in the European Community, NACE Rev. 2 (2008); EUROSTAT, European Commission.

<http://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF>

Standard Industrial classification: NOS D383 (2008) Standard for næringsgruppering;

https://www.ssb.no/a/publikasjoner/pdf/nos_d383/nos_d383.pdf

OECD glossary:

<https://stats.oecd.org/glossary/detail.asp?ID=1726>

Norwegian figures on oil and gas production:

<http://factpages.npd.no/factpages/Default.aspx?culture=en>

Relevant oil and gas statistics:

National accounts:

<http://www.ssb.no/en/nasjonalregnskap-og-konjunkturer/statistikker/knr>

Balance of Payments (BoP)

<https://www.ssb.no/en/utenriksokonomi/statistikker/ur/kvartal/2016-09-07#content>

General government revenue in percent:

<http://www.ssb.no/en/offentlig-sektor/statistikker/offinnut/aar/>

Oil and gas investment statistics:

<https://www.ssb.no/en/energi-og-industri/statistikker/kis>

External trade in goods:

<http://www.ssb.no/en/utenriksokonomi/statistikker/muh>

External trade in services:

<http://www.ssb.no/en/utenriksokonomi/statistikker/uhtjenester/>

Producer price index for oil and gas, manufacturing, mining and electricity:

<https://www.ssb.no/en/priser-og-prisindekser/statistikker/ppi>

Turnover in oil and gas, manufacturing, mining and electricity supply:

<https://www.ssb.no/en/energi-og-industri/statistikker/ogibkoms/>

Extraction and related services

<https://www.ssb.no/en/energi-og-industri/statistikker/oljev/aar/>

Emissions of Greenhouse Gases:

<https://www.ssb.no/en/energi-og-industri/statistikker/kis>

Emissions of Acidifying Gases and Ozone Precursors:

<http://www.ssb.no/en/natur-og-miljo/statistikker/agassn>

Emissions to air of hazardous substances and particulate matter:

<http://www.ssb.no/en/natur-og-miljo/statistikker/milgiftn>

Emissions from Norwegian Economic Activity (SEEA-Accounts)

<http://www.ssb.no/en/natur-og-miljo/statistikker/nrmiljo>

Environmental Economic Instruments

<http://www.ssb.no/en/natur-og-miljo/statistikker/miljovirk>

Environmental Expenditure in oil and gas, manufacturing, mining and electricity supply

<http://www.ssb.no/en/natur-og-miljo/statistikker/miljokostind>

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ISBN 978-82-537-9553-9 (electronic)



Statistisk sentralbyrå
Statistics Norway