

# FROM FOSSIL SUBSIDIES TO INTERNATIONAL CLIMATE FINANCE

An investigation into the fossil subsidies of the  
Norwegian oil tax package

Report 2024/10



**NORWEGIAN CHURCH AID**  
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Vista Analyse is a social science consultancy with its main emphasis on economic research, policy analysis and advice, and evaluations. We carry out projects to the highest professional standards, with independence and integrity. Our key thematic areas include climate change, energy, transport, urban planning and welfare issues.

Our employees have high academic credentials and broad experience within consulting. When needed we utilise an extensive network of companies and resource persons nationally and internationally. The company is fully employee-owned.

## PREFACE BY VISTA ANALYSE

This assignment from the Norwegian Church Aid has allowed us to shed light on the Norwegian oil tax package from 2020. The assignment has been carried out in late 2023 and early 2024. Ingrid Aas Borge and Matilde Angeltveit have been our points of contact. We would like to thank them for helpful and constructive discussions.

April 10th, 2024  
**Åsmund Sunde Valseth**  
Partner, Vista Analyse AS

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## FOREWORD:

# The oil tax package and Norway's climate ambitions – still time to change the course?

**2023 was the warmest year ever recorded.**<sup>1</sup> Many people have lost their livelihoods and their lives due to floods, droughts, forest fires, heat waves or other forms of extreme weather events intensified by climate change. Norwegian Church Aid's mandate to save lives, build resilience and seek justice is just as needed today as when we started our work 77 years ago.

While developing countries are the most affected by climate change, rich countries are responsible for most of the emissions. Norway has both an historical responsibility and the economic capacity to assist countries hit hard by climate change to meet the crisis they are facing.

**Norway's fair share of international climate finance, based on our wealth and our historical emissions, is calculated to be somewhere around NOK 65 billion annually**<sup>2</sup>. This is equivalent of between one and one and a half times Norway's annual aid budget. We therefore see the need to find new sources of climate finance in addition to, and from other sources than the aid budget.

Developing countries will need approximately USD 1,000 billion annually in international support to achieve their climate goals and adapt to a more unpredictable and dangerous climate<sup>3</sup>. Today, the world contributes around USD 100 billion annually for the same purpose<sup>4</sup>. **While the needs are massive and time is short, it is entirely possible to find the money needed for international climate finance.** In 2022, fossil energy was subsidized by approximately USD 1,481 billion globally, meaning that the redirecting of these subsidies alone, could in theory meet the need of international climate finance to developing countries.<sup>5</sup> The Paris Agreement states clearly that all countries must contribute to shifting finance flows away from fossil fuels and towards renewable energy, in addition to the funding obligations rich countries have towards developing countries.

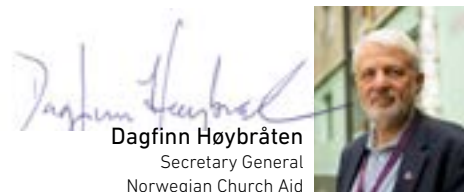
**If the world is to meet its climate targets, most fossil fuel reserves must stay in the ground**<sup>6</sup>. To achieve that in a fair way while considering historic emissions and current capacity, the 2023 Civil Society Equity Review suggests that today's fossil-producing developing countries must be economically compensated to not extract more fossil fuels.<sup>7</sup> In such a scenario, Norway must end its own fossil fuel production by the beginning of the 2030s and pay 1.9 billion dollars annually in compensation for having used a disproportionately large part of

the world's carbon budget.

The massive fossil fuel subsidies globally works against the commitments to shift away from fossil fuels. **Vista Analyse finds elements of fossil fuel subsidies in Norwegian corporate taxation.** The extraordinary oil tax package, introduced in 2020, has been characterized by both the current government, the former government, economists and journalists as too generous. Heavy lobbying from oil companies led to tens of billions of Norwegian tax payers money being promised to the oil companies for many years to come. Some projects that might not even be profitable without the package are now carried out with state support. These are fossil fuel investments benefiting the private companies, paid for with public money.

Climate finance is about priorities. Should we continue to invest our money in a fossil-fueled economy and a world that does not meet its climate goals? Or should we reverse the finance flows while there is still time, before we pass irreversible, ecological tipping points?

The UN estimates that between 3.3 and 3.6 billion people live in areas particularly vulnerable to climate change<sup>8</sup>. Based on the needs of the world's poorest, and with a mandate to save lives and seek justice, **Norwegian Church Aid believes that Norway's subsidization of the oil industry is deeply irresponsible.** The world must quickly change to a low-emission society if we are to have any chance of reaching our common climate targets and avoid massive loss of human life.



# EXECUTIVE SUMMARY

Vista Analyse has investigated the fossil fuel subsidy entailed in the Norwegian oil tax package from 2020, on behalf of the Norwegian Church Aid. The main questions to be answered are how rather complex tax rules can entail a fossil fuel subsidy, what the magnitude of the subsidy is, and whether a reversal is economically possible. The legal aspects of a potential reversal has not been assessed. Key figures for the oil tax package are presented in Table S.1.

Table S.1 Key figures for the Norwegian oil tax package

Key figure	Value
Investments affected, costs	654 billion NOK
Investments affected, years	2020-2028
Value of deductions	8.9-12.7 percent of investment cost
Equivalent investment subsidy, percent	40-58 percent of investment cost
Revenue loss	68 billion NOK
Funds that can be redirected with a partial reversal	13 billion NOK

Source: Vista Analyse

Production and consumption of fossil fuels is subsidised across the globe. **The OECD-IEA estimate for global support for fossil fuels is 1,481 billion USD in 2022.** While less extraction and consumption of fossil fuels is needed to mitigate climate change, fossil fuel subsidies contribute to the opposite. Resources which otherwise would have been left in the ground are extracted, because the subsidies make extraction economically viable.

**Reducing fossil subsidies could provide a double dividend for developing countries.** These countries are the ones that are most affected by climate change. Furthermore, the IPCC states that the “adoption of low-emission technologies lags in most developing countries, particularly least developed ones” and that “global financial flows for adaptation are insufficient (...), especially in developing countries”. A reduction on fossil subsidies limits climate change by keeping fossil resources in the ground, and it allows funds to be redirected to international climate finance.

**It is a paradox that the global support for fossil fuels exceeds the 1,000 billion USD needed for international climate finance in emerging markets and developing countries,** according to the Independent High-Level Expert Group on Climate Finance.

The Norwegian oil tax package constitutes an investment subsidy. The special petroleum tax was turned into a cash-flow tax, meaning that the state acts as a passive investor by taking its share of both income and costs. However, the oil companies were nevertheless allowed to keep the extra deduction meant to compensate them for the petroleum tax *not* being a cash-flow tax. Because of this deduction, **the companies cover a smaller share of the costs than they keep of the income.**

**Fossil investments in Norway will be subsidized for almost a decade.** The package applied to all investments in 2020 and 2021, but also to investments in all projects approved by the government before the end of 2023. Our analysis shows that the last investments within the package are likely to be made in 2028.

**The tax subsidy is equivalent to a 40 percent investment subsidy on the expenditure budget,** for costs occurring in 2023 and later. This implies that with the oil tax package, a project can make a loss up to 40 percent of investment cost and still be profitable to the oil companies. For costs occurring before 2023, the equivalent investment subsidy is almost 60 percent.

**The total revenue loss due to the oil tax package is 68 billion NOK (Norwegian krone).** This is the reduction in tax revenue for the Norwegian state due to the extra investment deduction, compared to a neutral tax with no such deduction. If one takes into account that the oil tax package might have made some unprofitable investments profitable, the loss is even greater.

**Partial reversal of the oil tax package would allow for 13 billion NOK to be redirected to climate finance.** Similarly to when the package was reduced by a third with effect from 2023, the reversal only applies to future investment costs. Furthermore, we only count revenue which is a transfer from other owners of petroleum firms than the Norwegian state. This is done to avoid conflict with the Norwegian fiscal rule for use of oil money.

Finally, three **important lessons should be learned** from the passing of this massive fossil subsidy by the Norwegian parliament:

- It should be established that tax expenditures are often equivalent to subsidies.
- Production subsidies entailed in the tax system should be accounted as fossil subsidies.
- Methods for assessing tax subsidies with regards to state aid should be developed.

The Norwegian Church Aid and other NGOs play an important role in ensuring that these lessons are learned – to ensure that fossil subsidies entailed in complex tax rules are not granted again in the future, in Norway or other countries.



Refugees are coming in from the desert to the Jilab refugee camp in Puntland, Somalia. First they lose their animals to the drought, then they flee. Photo: Håvard Bjelland/Norwegian Church Aid

# 1 FROM FOSSIL SUBSIDIES TO INTERNATIONAL CLIMATE FINANCE

Extraction of oil and gas resources from the Norwegian continental shelf has provided consumers across the globe with valuable energy, for which Norway has been rewarded with massive revenues. These revenues have been transferred to the oil fund (The Government Pension Fund Global), and their use is governed by a fiscal rule which allows for the expected real return of the fund to be used each year. Per April 2024 the value of the fund is approximately 17,000 billion NOK (Norwegian krone), which equals approximately 1,500 billion EUR (Euros).

The Norwegian petroleum tax system is crucial for the high government share of the revenues from exploitation of these valuable natural resources, with a total tax rate of 78 percent. Other important sources of petroleum revenue are the State's Direct Financial Interest (SDFI)<sup>1</sup> and returns from Equinor.

However, in June 2020 an oil tax package which entails a massive investment subsidy was passed by the Norwegian parliament.

Vista Analyse has investigated this oil tax package on behalf of the Norwegian Church Aid. As developing countries are most affected by climate change, cutting back on fossil fuel subsidies is especially important for these countries. Furthermore, a reduction in such subsidies allows funds to be redirected to international climate finance. An important aim for this study is to explain how rather complex tax rules can entail a significant fossil subsidy, providing lessons which can ensure that similar tax subsidies are avoided in the future. Another important aim is to discuss the possibilities for reversing the oil tax package, redirecting funds to climate finance.

This report is a follow-up to Vista Analyse (2020), in which we provided a menu of sources of funding which would allow Norway to achieve 65 billion NOK in climate finance. The present report provides a deep-dive into one of these sources, in light of the developments in the years after the oil tax package was passed.

## Structure of the report

The report consists of a concise main text followed by two technical appendices.

We begin the main text by stating that developing countries are most affected by climate change, and that reducing fossil subsidies could provide a double dividend for these countries (1.1). We then provide an overview of the oil tax package in Norway and explain how fossil investments will be heavily subsidized for almost a decade (1.2). The nature of the subsidy is then described more in detail, explaining how the firms cover a smaller share of the investment cost than they keep of the income (1.3) and how the oil tax package subsidy is equivalent to a 40 percent investment subsidy (1.4). We move on to our 68 billion NOK estimate for the revenue loss due to the package (1.5) before we describe the possibility for partially reversing the package and redirecting 13 billion NOK to international climate finance (1.6). Then, we present three important lessons that should be learned from the Norwegian oil tax package (1.7). Lastly, we conclude with some final remarks (1.8).

The appendices provide a detailed treatment of several of these topics. In appendix A we thoroughly explain how the oil tax package entails a subsidy, including a presentation of our notion of a subsidy and a discussion of how a neutral tax can be used as a benchmark for assessing tax subsidies. In appendix B we investigate the actual investments affected by the oil tax package and document our estimates for the revenue loss and the possibility for reversal. There is some overlap between the appendices and the main text, making it possible to read the appendices as standalone introductions to their respective topics.

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<sup>1</sup> The SDFI essentially works as a cash-flow tax, with direct state ownership in selected licenses.

## 1.1 Reducing fossil subsidies could provide a double dividend for developing countries

In its most recent report, the Intergovernmental Panel on Climate Change (IPCC) states that vulnerable communities who have historically contributed the least to current climate change, are disproportionately affected (IPCC, 2023):

Approximately 3.3 to 3.6 billion people live in contexts that are highly vulnerable to climate change. Human and ecosystem vulnerability are interdependent. Regions and people with considerable development constraints have high vulnerability to climatic hazards. Increasing weather and climate extreme events have exposed millions of people to acute food insecurity and reduced water security, with the largest adverse impacts observed in many locations and/or communities in Africa, Asia, Central and South America, LDCs, Small Islands and the Arctic, and globally for Indigenous Peoples, small-scale food producers and low-income households. Between 2010 and 2020, human mortality from floods, droughts and storms was 15 times higher in highly vulnerable regions, compared to regions with very low vulnerability.

Furthermore, the IPCC states that “adoption of low-emission technologies lags in most developing countries, particularly least developed ones, due in part to limited finance, technology development and transfer, and capacity” and that “global financial flows for adaptation are insufficient for, and constrain implementation of, adaptation options, especially in developing countries”.

At the same time, production and consumption of fossil fuels is subsidised across the globe. The OECD-IEA estimate for global support for fossil fuels is 1,481 billion USD in 2022, up from 770 billion USD in 2021 (OECD, 2023).<sup>2</sup> The estimate is based on (1) direct transfers and deviations from the general tax rules (tax expenditures) and (2) IEA estimates for fossil fuels sold below market price, and based on data for 82 countries.

While less extraction and consumption of fossil fuels is needed to mitigate climate change, fossil fuel subsidies contribute to the opposite. Resources which otherwise would have been left in the ground are extracted, because the subsidies make extraction economically viable.

It is a paradox that the global support for fossil fuels exceeds the 1,000 billion USD needed for international climate finance in emerging markets and developing countries, according to the Independent High-Level Expert Group on Climate Finance (Songwe, Stern, & Bhattacharya, 2022).

The cutting back on fossil subsidies provides a double dividend for developing countries. It limits emissions from the combustion of fossil fuels, which harms developing countries the most. And it allows funds to be redirected to climate finance, which further allows for further climate change mitigation – and for adaptation.



<sup>2</sup> The OECD explains the sharp increase by governments instituting “measures to offset exceptionally high energy prices, driven in part by Russia’s war of aggression against Ukraine”.



## 1.2 Fossil investments in Norway will be heavily subsidized for almost a decade

With the passing of the oil tax package, the special petroleum tax was turned into a cash-flow tax, which in itself implies no subsidy. With a cash-flow tax the state essentially acts as a passive investor by taking its share of both income and costs as they occur.

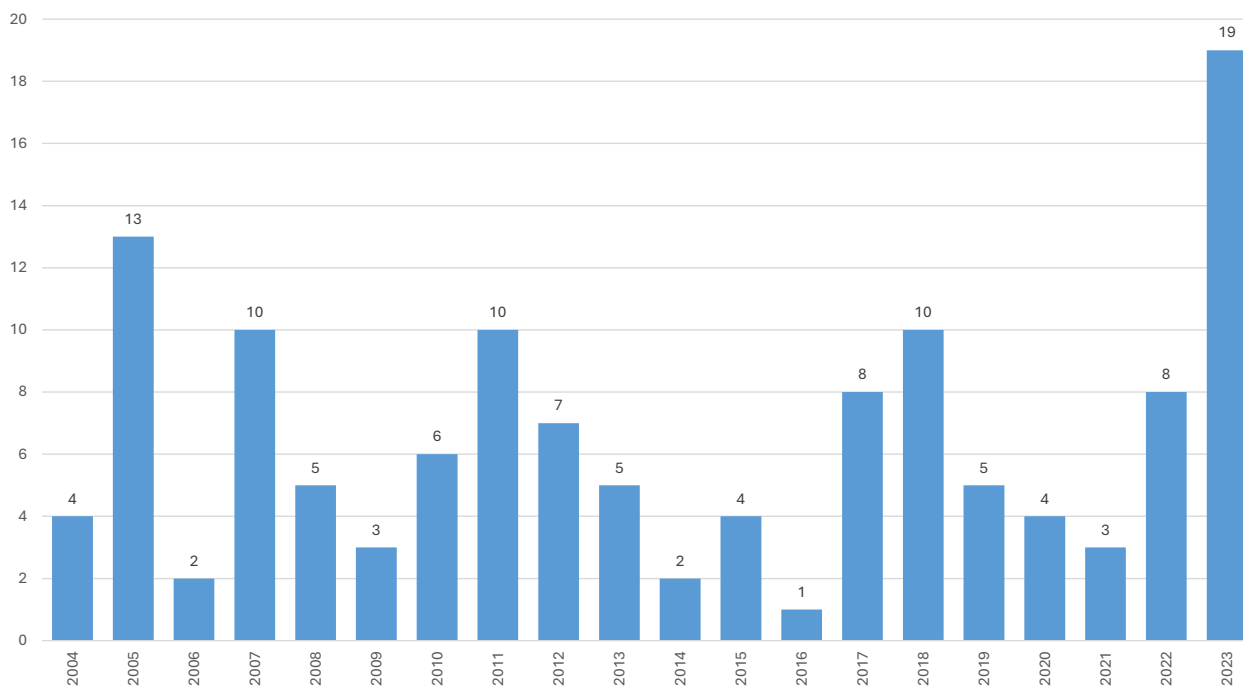
But while special petroleum tax was turned into a cash-flow tax, the oil companies were nevertheless allowed to keep the extra deduction meant to compensate them for the petroleum tax *not* being a cash-flow tax. It is this extra deduction, which no longer has any rationale, which causes the oil tax package to entail a massive subsidy.

The oil tax package applies to investments throughout almost the entire decade:

1. For all investments in 2020 and 2021, the oil firms were allowed an extra deduction worth 12.7 percent of investment cost
2. For investments in projects approved by the government before the end of 2023, the oil firms are allowed an extra deduction worth 12.7 percent of investment cost in 2022 and 8.9 percent in later years

The passing of the oil tax package led to a rush of applications for government approval. More projects were approved in 2023 than in any other year since the beginning of the petroleum industry in Norway. Figure 1.1 shows the number of projects approved each year for the last 20 years.

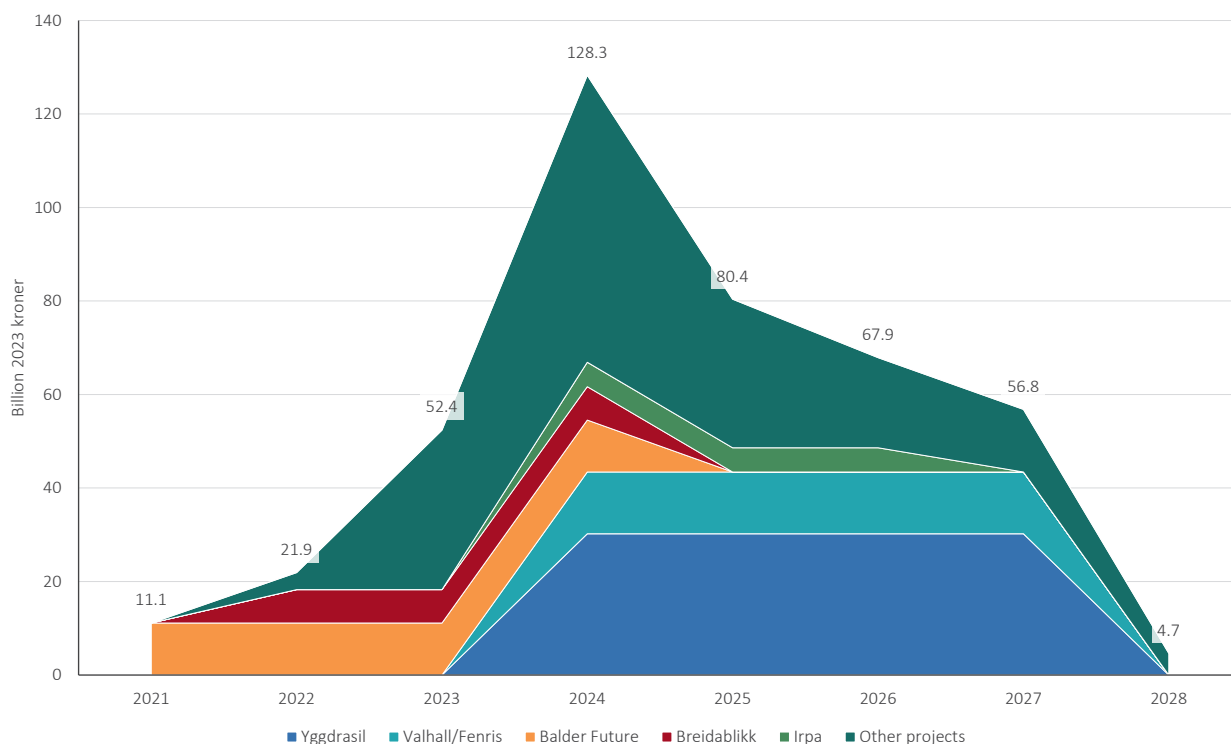
Figure 1.1 Projects approved each year



Source: The Norwegian Offshore Directorate (2024)

Figure 1.2 contains the second group of investments, in projects approved before the deadline, and demonstrates how the oil tax package will affect investments for several years to come.

**Figure 1.2 Investments in projects approved before the end of 2023, billion 2023 NOK**



Source: Vista Analyse based on The Ministry of Energy (2023)

Table 1.1 provides an overview of the oil tax package as well as the petroleum tax prior to the package and for investments after/outside the package.

**Table 1.1 Petroleum tax prior to the oil tax package (peach), with the oil tax package in various phases (purple) and after/outside the package (blue)**

Before 2020	2020	2021	2022	2023 and later
<i>Petroleum tax system prior to the oil tax package: Investment cost deducted upon depreciation, extra deduction worth 11.6 percent of investment cost (before discounting)</i>	<i>All investments in 2020 and 2021 are included in the oil tax package: Cash-flow tax, extra deduction worth 12.7 percent of investment cost</i>		<i>Projects within the oil tax package: Cash-flow tax, extra deduction worth 12.7 percent of investment cost</i>	<i>Projects within the oil tax package: Cash-flow tax, extra deduction worth 8.9 percent of investment cost</i>
			<i>Projects outside the oil tax package: Cash-flow tax, no extra deduction</i>	

Source: Vista Analyse

The government approval process acts as a safeguard against unprofitable projects being carried out. However, there are several ways in which the oil tax package can cause unprofitable investments:

- Profitable projects might include unprofitable elements because of the subsidy.
- There is a fundamental information asymmetry between firms and government that makes it difficult for the government to assess profitability.
- Incentives for cost discipline in the field development process are weakened.



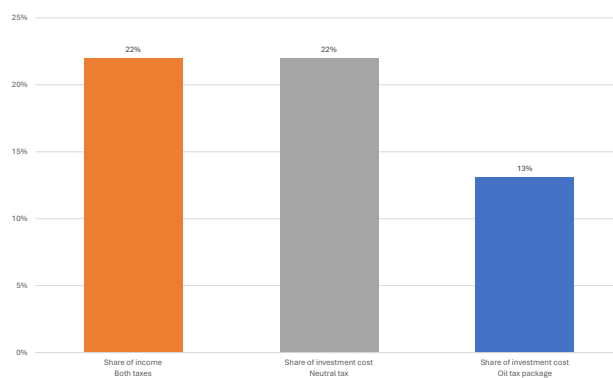
Lake Tanganyika has risen due to flooding in the surrounding countries. Climate change leads to an increase in wind and waves. The mosque and the old harbor are under water, and the fishermen come in with little or no catch. Children play in the water which not long ago was dry land. Photo: Håvard Bjelland/Norwegian Church Aid

### 1.3 The firms cover a smaller share of the investment cost than they keep of the income

In a neutral tax with a rate of 78 percent, the firms would cover 22 percent of the investment cost and similarly keep 22 percent of the income. It follows that the firms are left with 22 percent of the surplus. By only taxing the surplus, a neutral tax ensures that what is profitable before tax is also profitable after tax – and vice versa.

With the extra deduction of the oil tax package, the firms cover a smaller share of the investment cost than they keep of the income. With the 8.9 percent extra deduction that applies to most future investments, they pay approximately 13 percent of the investment cost and keep 22 percent of the income. This is 40 percent less than in a neutral tax and is illustrated in Figure 1.3.

**Figure 1.3** Share of investment cost borne by the companies, compared to their share of the income



Source: Vista Analyse



A man pours flood water out of his house during the flooding in Indonesia's Aceh province. Flooding in the region has grown worse because of climate change and the proliferation of palm oil plantations. Photo: Paul Jeffrey/Norwegian Church Aid

## 1.4 The oil tax subsidy is equivalent to a 40 percent investment subsidy

The magnitude of the oil tax package subsidy is best understood by comparing it to an ordinary investment subsidy, normally granted on the expenditure side of the budget.

An ordinary investment subsidy to the oil companies would be taxed at the total petroleum tax rate of 78 percent, which implies that 22 percent of the subsidy – about a fifth – is left after taxes.

It follows that for the oil companies to be left with equally much after taxes as they get with the oil tax package, they would have to receive a 40 percent investment subsidy. They will then be left with a subsidy equal to 8.9 percent of investment cost, similarly as with the oil tax package.

The consequence is that with the oil tax package, a project can make a loss up to 40 percent of investment cost and still be profitable to the oil companies.

With the initial deduction worth 12.7 percent of investment cost, which applied to investments in 2020, 2021 and 2022, the equivalent investment subsidy was 58 percent of investment cost.

## 1.5 Tax revenues are down 68 billion NOK because of the oil tax package

The total revenue loss due to the oil tax package is 68 billion NOK. This is the reduction in tax revenue due to the extra investment deduction, compared to a neutral tax with no such deduction. Table 1.2 shows how the total revenue loss is made up of the deductions for investment costs in 2020 and 2021 and in approved projects in later years.

**Table 1.2 Investment costs, deductions and revenue loss, billion 2023 NOK**

Investment category	Investment costs, without SDFI	Extra deduction	Value of extra deduction	Revenue loss
2020 and 2021	267.4	17.69 %	12.70 %	34.0
Approvals before deadline	387.0	12.40 %	8.90 %	34.5
<b>SUM</b>	<b>654.4</b>			<b>68.4</b>

Source: Vista Analyse

If an equivalent subsidy was to be granted on the expenditure budget, it would amount to 311 billion NOK. This is the subsidy which would have to be granted on the expenditure budget, if the oil companies were to be left with 68 billion NOK after having paid 78 percent of the subsidy in taxes.

If one takes into account that the oil tax package might have made some unprofitable investments profitable, the loss is even greater. The purpose of the oil tax package was to incentivize investment. Assuming that 30 percent of the investments would not have been carried out without the package and that these on average make a deficit equal to 20 percent of investment cost, we arrive at a revenue loss of 79 billion NOK.

## 1.6 Partial reversal of the oil tax package would allow for 13 billion NOK to be redirected to climate finance

In 2023 the extra deduction of the oil tax package was reduced by almost a third for future investment costs (Table 1.1).

We have investigated the possibility for a further reduction of the oil tax package, where the extra deduction is removed completely – but still only for future investment costs.

We find that 13 billion NOK can be redirected to climate finance by such a partial reversal of the oil tax package. This estimate follows from a conservative approach, where the extra deduction is removed only for investment costs in 2025 and later. We have also excluded the revenue which would otherwise have found its way back to the state through its SDFI shares and ownership in Equinor.

**Table 1.3 Estimation of government revenue from partial reversal, billion NOK**

Investment costs in 2025 and later	210
- SDFI share	-13
- State share (67 percent) of Equinor share (40 percent) of costs	-53
<b>= Investment costs used to find revenue from reversal</b>	<b>144</b>
<i>Tax value of deduction</i>	8.9 %
<b>= Government revenue from partial reversal</b>	<b>13</b>

Source: Vista Analyse



Religious leaders walking together in the protected church forest in Ethiopia, a project where NCA supports the conservation of these breathing spaces in nature. Photo: Hilina Abebe/Norwegian Church Aid

## 1.7 Lessons should be learned

The passing of this fossil subsidy by the Norwegian parliament provides three important lessons for governments and their organizations, as well as NGOs.

### **It should be established that tax expenditures are often equivalent to subsidies**

The first lesson is that it should be established that so-called tax expenditures, which are deviations from the general tax rules, are in many circumstances equivalent to subsidies.

Even before the oil tax package, the Norwegian Ministry of Finance warned that the petroleum tax provided stronger investment incentives than a neutral tax. The deviation from a (almost) neutral reference system has been estimated by the Ministry and printed in the budget documents for several years. Some years ago, the Ministry even stated the following (The Ministry of Finance, 2021<sup>3</sup>):

Exemptions and special arrangements represent an advantage for those who are comprised, compared to taxation in accordance with the ordinary rules. This advantage can be equated to receiving aid on the expenditure budget. (...) This aid could alternatively have been granted on the expenditure budget.

Nevertheless, the Ministry did not label the extra deduction of the oil tax package as a subsidy. Nor did the Ministry take the logical next step and calculate the equivalent 40 percent investment subsidy. If the oil tax package had been labelled as a subsidy and its magnitude clearly presented to the Norwegian parliament, the outcome might have been different.

It follows that OECD and other entities concerned with the framework for assessing tax expenditures, should establish in which cases tax expenditures equal subsidies. Furthermore, methods should be developed for assessing the magnitude of these subsidies. In this report, we show how a rather technical tax subsidy can be compared to standard investment subsidies.

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3 Translated from Norwegian by Vista Analyse

### **Production subsidies entailed in the tax system should be accounted as fossil subsidies**

The second lesson is that the methods for assessing fossil subsidies, developed notably by OECD, IEA and IMF, should be adapted so that production subsidies entailed in the tax system can be accounted for. Even though the deviations from a neutral tax have been labelled as tax expenditures by the Norwegian Ministry of Finance, they have not been included in the OECD figures for tax expenditures that constitute fossil fuel support (OECD, 2024).

### **Methods for assessing tax subsidies with regards to state aid should be developed**

The third lesson is that methods for assessing tax subsidies in state aid assessments should be developed. Unlike other measures following the Covid-19 outbreak, the oil tax package was never notified to ESA.<sup>4</sup> In late 2020 the Green Party in Norway complained that the package contained illegal state aid. Two years later, ESA concluded that the oil tax package entails no state aid. However, the authority had only investigated whether the package led to some oil companies being treated more favorably than others. The authority did not assess whether oil companies in general were more favorably treated than companies in other sectors, such as renewable energy production. From an economic point of view, it is hard to see that the distortive subsidy of the Norwegian oil tax package does not constitute illegal state aid: It is a selective measure that only applies to the extraction of oil and gas, distorting competition in several markets and affecting trade between the EEA countries.

### **NGOs play an important role in ensuring that these lessons are learned**

The Norwegian Church Aid and other NGOs concerned with putting an end to fossil subsidies and redirecting funds to climate finance, play an important role in ensuring that these lessons are learnt – to ensure that fossil subsidies entailed in complex tax rules are not granted again in the future, in Norway or other countries.

## **1.8 Final remarks**

Because of the 2022 oil tax package, fossil investments in Norway will be heavily subsidized for almost a decade. The oil tax subsidy is equivalent to a 40 percent investment subsidy, and tax revenues are down 68 billion NOK because of the package.

The oil tax package contributes to more extraction of oil and gas and greater climate emissions, at a time where emissions have to be reduced to achieve the 1.5 degrees target. Contributions such as Hoel (1994) and Harstad (2012) point towards the need for supply-side climate policies, which reduce the supply of fossil fuels. It follows that government efforts should be directed at shifting financial flows away from fossil investments, not towards them.

Furthermore, fossil subsidies delay the transition to renewable energy production and other zero-emission technologies, by shifting resources from other parts of the Norwegian economy.

A partial reversal of oil tax package should be considered by Norwegian policy-makers, allowing for 13 billion NOK to be redirected to international climate finance. Furthermore, the passing of this massive fossil subsidy by the Norwegian parliament provides important lessons for governments and their organizations.

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<sup>4</sup> The EFTA Surveillance Authority (ESA) monitors compliance with the EEA (European Economic Area) state aid rules in Iceland, Liechtenstein and Norway.

# APPENDICES



It is March 2024 and Blessed Popota stands in her field of failed crop. The inhabitants of Gwembe Valley in Zambia face the dire effects of drought on food security. The scorching rays of the morning sun serve as a constant reminder of the devastating effects of climate change, exacerbating the already challenging conditions in the region. Photo: Caroline Nenguke/Norwegian Church Aid



# A HOW THE OIL TAX PACKAGE ENTAILS AN INVESTMENT SUBSIDY

The Norwegian petroleum tax system consists of the general corporate income tax (CIT) with rate 22 percent and a special tax with effective rate 56 percent.<sup>5</sup> Prior to the oil tax package, deductions for investment costs were only allowed upon depreciation.

With the passing of the oil tax package by the Norwegian parliament in June 2020, as temporary amendments to the petroleum tax act, the special petroleum tax was essentially turned into a cash-flow tax. The oil companies no longer had to wait for deductions for investment costs, as costs could now immediately be deducted.

However, the oil companies were nevertheless allowed to keep the extra deduction meant to compensate them for the petroleum tax not having been a cash-flow tax, i.e., for having to wait for investment cost deductions. It is this unjustified extra deduction that equals a 40 percent investment subsidy.

In this appendix we explain in detail how the oil tax package entails a subsidy. We begin in section A.1 by explaining what we mean by a subsidy, making clear that even though the oil tax packages may make some unprofitable investments profitable for the oil companies, the oil and gas industry as a whole is not subsidized in the sense that it operates at a loss. Then, we assess the magnitude of the oil tax package subsidy in section A.2, including a comparison with subsidies on the expenditure side of the budget. There is considerable overlap between appendix A and the relevant parts of the main text, making it possible to read the appendix as a standalone text.

Table A.1 provides an overview of the oil tax package as well as the petroleum tax prior to the package and for investments after/outside the package. The package applied to all investment costs in 2020 and 2021 as well as all costs in projects approved before the end of 2023. Note that the ordinary petroleum tax was permanently turned into a cash-flow tax with effect from 2022 and that the oil tax package subsidy was reduced by a third with effect from 2023. Box A.1 contains the details of the oil tax package.

**Table A.1** Petroleum tax prior to the oil tax package (peach), with the oil tax package in various phases (purple) and after/outside the package (blue)

Before 2020	2020	2021	2022	2023 and later
<i>Petroleum tax system prior to the oil tax package: Investment cost deducted upon depreciation, extra deduction worth 11.6 percent of investment cost (before discounting)</i>	<i>All investments in 2020 and 2021 are included in the oil tax package: Cash-flow tax, extra deduction worth 12.7 percent of investment cost</i>		<i>Projects within the oil tax package: Cash-flow tax, extra deduction worth 12.7 percent of investment cost</i>	<i>Projects within the oil tax package: Cash-flow tax, extra deduction worth 8.9 percent of investment cost</i>
			<i>Projects outside the oil tax package: Cash-flow tax, no extra deduction</i>	

Source: Vista Analyse

<sup>5</sup> The formal special tax rate is 71.8 percent. However, the corporate income tax with rate 22 percent is deductible in the base of the special tax base. This yields the effective special tax rate of 56 percent, as  $(1-0.22)*0.718 \approx 0.56$ .

## Box A.1

### Key elements of the oil tax package

The oil tax package was passed by the Norwegian parliament, the Storting, in June 2020, as temporary amendments to the petroleum tax act. The oil companies are allowed to immediately deduct the following costs in the tax base for the special tax:

- Investment costs occurring in 2020 and 2021.
- Investment costs related to projects approved by the Ministry of Energy between May 12 2020 and January 1 2024, provided that the companies have applied before January 1 2023
- Investment costs related to projects exempted from Ministry approval within May 12 2020 and January 1 2024.

Furthermore, the companies were allowed an extra investment cost deduction. At first, this deduction was worth 12.7 percent of investment cost for the companies. However, with effect from 2023 the deduction was reduced by almost a third, reducing its value to 8.9 percent of investment cost. It is the latter value which applies to most current and future investments.

Technically, the value of the deduction follows from its tax value, which is the reduction in taxes paid – or a payout, in the case of a deficit. At first, the firms were allowed to deduct 24 percent extra of the investment cost in the base of the then 56 percent special tax. Without consequence for the value of the subsidy, this was reduced to 17.69 percent when the formal special tax rate was increased to 71.8 percent in 2022, when the corporate income tax was made deductible in the special tax. In 2023 the deduction was further reduced to 12.4 percent, which explains the reduction in its value by approximately a third.

The ordinary petroleum tax was permanently transformed into a cash-flow tax in 2022. There is no extra deduction in the ordinary petroleum tax after the switch to cash-flow taxation.

## A.1 Subsidies distort firm behaviour by turning unprofitable projects profitable

We begin by describing what a subsidy is, making clear that that the oil and gas industry has contributed massively to Norway's wealth and is not subsidized as a whole. We then move on to establishing that a neutral tax is the relevant point of reference for assessing tax subsidies.

### A.1.1 Investment subsidies reduce government revenue and make some unprofitable projects profitable for the companies

By investment subsidy we refer to a scheme where the state covers part of the investment cost. The effect is that some unprofitable projects, or unprofitable parts of projects, become profitable for the firms. The investment incentives of the firms are affected. In the absence of positive externalities which could warrant such a subsidy, this causes a loss to society.

Furthermore, subsidies are costly also because they must be funded by public funds, and distortive taxes must be used raise these funds. The marginal cost of public funds (MCF) is assumed to be 20 percent in cost-benefit analyses in Norway.

Most investment subsidies are granted on the expenditure side of the government budget, and are often measured by the share of investment cost borne by the government – often referred to as the aid intensity.

Note that extraction of oil and gas in Norway is not subsidized in the sense that the sector as a whole operates at a loss. On the contrary, oil and gas extraction has contributed massively to government revenue and continues to do so – as described in the introduction to the main part. But the oil tax package causes some unprofitable projects, or parts of projects, to become profitable for the firms. Furthermore, the package reduces the government take from profitable projects.

## A.1.2 The starting point for assessing tax subsidies is a neutral tax, which does not distort firm behaviour

When a tax system affects the investment incentives of firms in the same way as an investment subsidy on the expenditure budget, the tax system entails a tax subsidy.

It follows that the investment incentives of the tax system in question must be compared to a benchmark tax system. Two relevant benchmark systems are (1) a neutral tax, which does not affect investment incentives at all, and (2) the general tax rules in a country or another geographic entity.

We compare the oil tax package to a neutral tax. If we were to compare it to the investment incentives of the general corporate income tax in Norway, this would slightly increase the magnitude of the subsidy. The reason is that the present value of investment cost deductions in the general corporate income tax are somewhat larger for the oil companies than for other businesses, due to favourable depreciation rules. However, for simplicity we choose to use a neutral tax.

The core element of a neutral tax is that the state takes a share of the surplus. If there is a surplus before tax, there will then still be a surplus after tax. This is achieved by letting costs be deducted against the same tax rate at which income is taxed. Essentially, a neutral tax is a tax on profits.

Note that while the investment incentives of the general income tax are slightly stronger for the oil companies than for other business, the difference is much starker when comparing petroleum investments to investments in large hydropower plants. While petroleum investments depreciate (for tax purposes) in 6 years, starting in year zero, the two main categories of hydropower plant investments depreciate in 40 and 67 years, respectively. This contributes to stronger investment incentives for petroleum than for hydropower, both within the oil tax package and after the package.

## A.2 The oil tax package entails a massive investment subsidy

Prior to the oil tax package, the companies had to wait for the state to cover its share of the investment cost. The reason is that the cost could only be deducted following depreciation. This waiting for deductions was costly for the companies, who essentially had to lend the state money. However, the companies were compensated for this cost by an extra deduction, the so-called uplift.<sup>6</sup> If they had not been compensated, the present value of cost deductions would be smaller than the actual investment cost, which would imply that the companies were allowed to deduct a smaller share of the costs than the state would take of the income. The tax would then not have been neutral.

While the oil tax package essentially turned the special petroleum tax into a cash-flow tax, the oil companies were nevertheless allowed to keep the extra deduction meant to compensate them for the petroleum tax not being a cash-flow tax.

In this section, we begin by assessing the magnitude of the oil tax package subsidy by comparing it to a neutral tax. Then, we find the equivalent subsidy on the expenditure budget, where subsidies are normally granted. Finally, we compute the uplift other Norwegian industries would have to get to receive a similar subsidy.

The government approval process acts as a safeguard against unprofitable projects being carried out. However, there are several ways in which the oil tax package can nevertheless cause unprofitable investments:

- Profitable projects might include unprofitable elements because of the subsidy.
- There is a fundamental information asymmetry between firms and government that makes it difficult for the government to assess profitability.
- Incentives for cost discipline in the field development process are weakened.

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<sup>6</sup> The Ministry of Finance claimed that the deduction was too generous and larger than it should be for the petroleum tax to be neutral, while the industry and others claimed that the deduction was insufficient.

## A.2.1 The state covers a greater share of investment costs than in a neutral tax

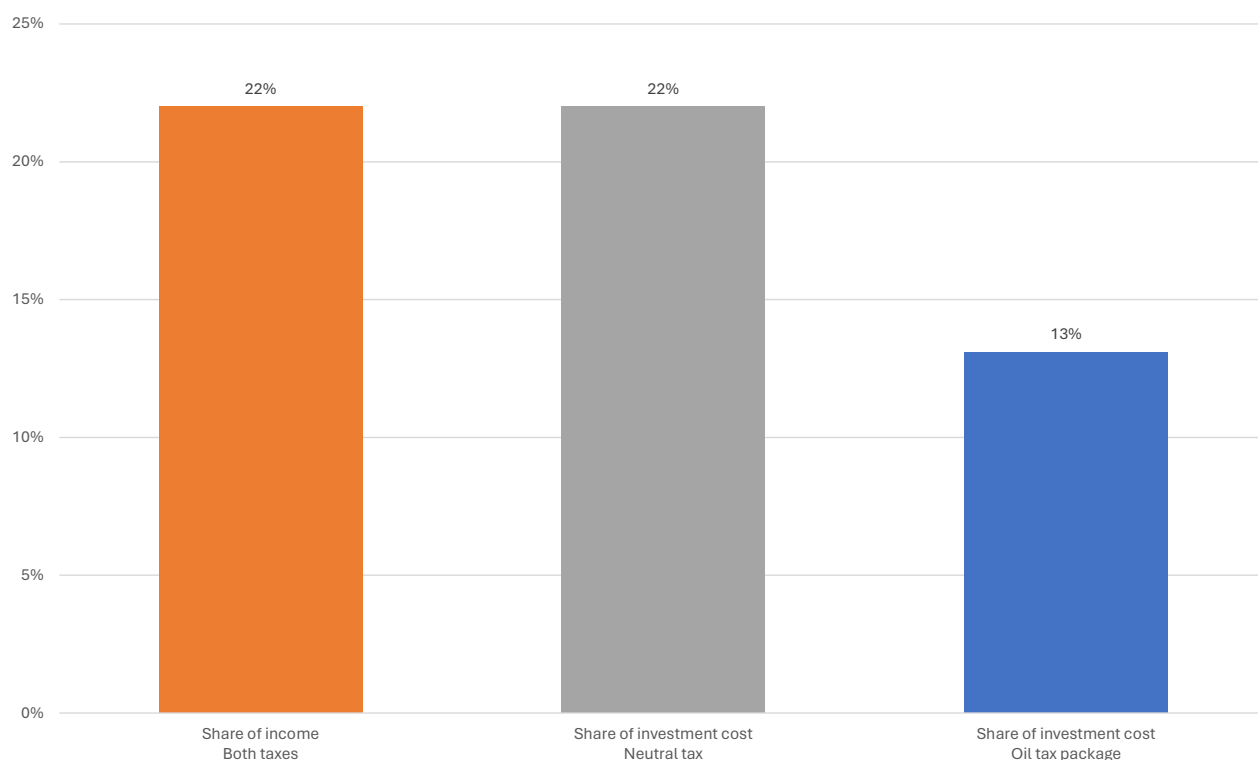
In a neutral tax with rate 78 percent, the state would cover 78 percent of the investment cost, and take 78 percent of the income.

However, because of the oil tax package an extra 12.4 percent of investment cost can be deducted in the base for the special petroleum tax. This deduction is made against the formal special tax rate of 71.8 percent. The value to the companies of this deduction is given by its tax value, which is the reduction in taxes paid because of the deduction. The tax value of the deduction is 8.9 percent of investment costs.<sup>7</sup>

This implies that the state covers 8.9 percent more of investment costs than it should have in a neutral tax, 86.9 percent instead of 78.0 percent.

From the perspective of the companies, they must cover approximately 13 percent of the investment cost themselves, compared to 22 percent in a neutral tax. This is a 40 percent reduction in the share of investment cost that is borne by the companies. However, they still get 22 percent of the income, as illustrated in Figure A.1.

**Figure A.1** Share of investment cost borne by the petroleum companies with different taxes, compared to their share of the income



Source: Vista Analyse

Note that the share of the investment cost borne by the companies is slightly higher in the ordinary petroleum tax than in a neutral tax. The reason is that the general corporate income tax, which is a part of the petroleum tax system, has weaker investment incentives than a neutral tax.

<sup>7</sup> For investment costs before 2023, within the oil tax package, the deduction was 17.69 percent and its tax value 12.7 percent.

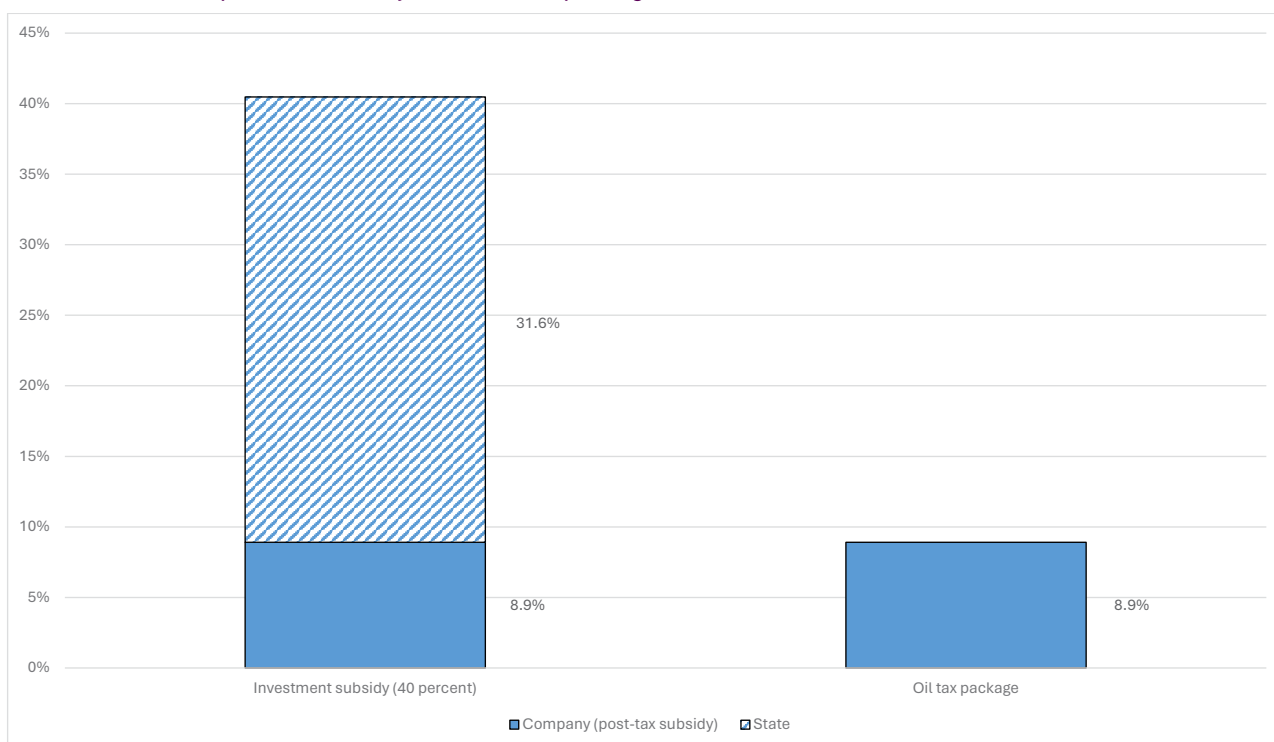
## A.2.2 The oil tax package equals a 40 percent investment subsidy

The magnitude of the oil tax package subsidy is best understood by comparing it to an ordinary investment subsidy, normally granted on the expenditure side of the budget.

The question is how large an ordinary investment subsidy would have to be to equal the oil tax package subsidy. An ordinary investment subsidy to the oil companies would be taxed at the total petroleum tax rate of 78 percent, which implies that 22 percent of the subsidy – about a fifth – is left after taxes. This implies that the subsidy would have to be almost five times as large as what the oil companies are left with after taxes. This is shown formally in the box below.

It follows that the oil tax package subsidy is equal to a 40 percent investment subsidy. This is what the oil companies would have to receive to be left with 8.9 percent after taxes. Recall from section A.2.1 that 8.9 percent is the (tax) value of the extra deduction. It is illustrated in Figure A.2 how the value of the subsidy for the company, in percent of investment cost, is the same whether it is given as a 40 percent investment subsidy or the 8.9 percent (post-tax) subsidy of the oil tax package.

**Figure A.2** Comparison between a 40 percent investment subsidy split on company and state, and the post-tax subsidy of the oil tax package



Source: Vista Analyse

For a project with 100 billion NOK in investments, an investment subsidy of 40 billion NOK would thus be necessary to equal the subsidy of the oil tax package. After 78 percent tax, the companies would then be left with 8.9 billion NOK. This is the same as what they receive with the oil tax package, where they can deduct 12.4 billion NOK in the base for the special tax with formal rate 71.8 percent – resulting in 8.9 billion NOK less paid in taxes.

With the initial deduction of 17.69 percent, worth 12.7 percent, which applied to investments in 2020, 2021 and 2022, the equivalent investment subsidy was 58 percent of investment cost.

Box A.2

The relation between pre- and post-tax subsidies

Subsidies on the expenditure budget are typically pre-tax, which implies that the state takes back a part of the subsidy equal to the tax rate. Let a pre-tax subsidy be given by a share  $s_{pre}$  of investment costs. If the tax rate is  $\tau$ , a share  $1 - \tau$  of the subsidy is kept by the company. Then, the post-tax subsidy  $s_{post}$  is given by:

$$s_{post} = (1 - \tau)s_{pre}$$

It follows that the pre-tax subsidy which is equivalent to a given post-tax subsidy, can be found by dividing the post-tax subsidy by one minus the tax rate:

$$s_{pre} = \frac{1}{1 - \tau} s_{post}$$

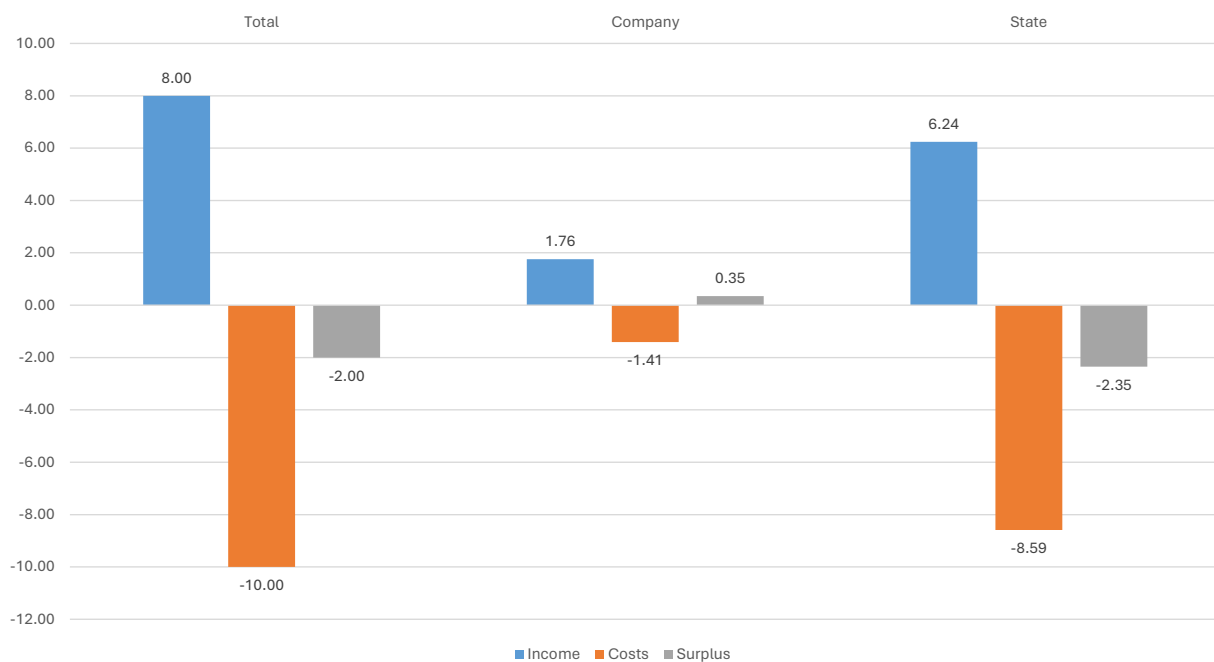
Note that the subsidies  $s_{pre}$  and  $s_{post}$  can alternatively be interpreted as monetary amounts, instead of shares of investment cost.

### A.2.3 A project can make a loss up to 40 percent of investment cost and still be profitable to the oil companies

The consequence is that with the oil tax package a project can make a loss up to 40 percent of investment cost and still be profitable to the oil companies. The reason is that the state covers a larger part of the costs than it takes of the income.

This is illustrated in Figure A.3 for a project which makes a loss equal to 20 percent of investment cost. The first group of columns show the totals for the project, which represent its (negative) value to society. The second group shows the income kept and costs paid by the company. Because of the smaller share paid of the costs, the company is left with a surplus even though it is not profitable for society. The third group of columns features the values for the state, who end up paying for both the loss to the society and for the surplus of the company.

Figure A.3 Division of income and costs for an unprofitable project, between company and state, billion NOK



Source: Vista Analyse

## A.2.4 Other industries would need massive extra deductions if they were to get a similar tax subsidy

Another way to illustrate the magnitude of the oil tax package subsidy is to find the necessary extra deduction (uplift) other companies would have to get if they were to be equally subsidised.

Table A.2 lists the necessary uplifts for other industries which have special taxes, as well as businesses in Norway in general. For the industries with special taxes it is assumed that the uplift is deductible only in the base for the special tax, while it is assumed to be deductible in the base for the ordinary (and only) corporate income tax for businesses in general. This is shown formally in the box below.<sup>8</sup>

**Table A.2** Necessary extra deduction (uplift) to yield subsidy equal to a 40 percent subsidy on the expenditure budget, percent of investment cost

	Corporate income tax rate	Special tax, effective rate	Special tax, formal rate	Total tax rate	Necessary extra deduction
Petroleum	22	56	71.8	78	<b>12.4</b>
Hydropower	22	45	57.7	67	<b>23.1</b>
Wind power	22	25	32.1	47	<b>66.9</b>
Fish farming	22	25	32.1	47	<b>66.9</b>
Other	22	0	0.0	22	<b>143.5</b>

Source: Vista Analyse

The industries with special taxes would have to allow an extra deduction between 23 and 67 percent of investment cost, to receive an equal subsidy as the oil companies do with the tax package. Businesses who only pay the ordinary corporate income tax would have to get an extra deduction of as much as 144 percent of investment cost to receive a similar subsidy. This is on top of the ordinary deduction for investment costs.

### Box A.3 The necessary uplift for a given pre-tax subsidy

Let  $u$  be the hypothetical uplift which we want to find and  $\tau$  the tax rate. Let  $a_{pre}$  and  $a_{post}$  be the pre- and post-tax subsidies, where  $a_{post} = \tau u$ . The relation between the pre-tax subsidy and the uplift is then given by:

$$a_{pre} = \frac{1}{1-\tau} a_{post} = \frac{1}{1-\tau} \tau u$$

It follows that the size of the uplift is determined by:

$$u = \frac{1-\tau}{\tau} a_{pre}$$

Next, let there instead be two taxes, an ordinary tax with rate  $\tau_o$  and a special tax with rate  $\tau_s$ . Assume that the uplift is only deductible in the base for the special tax. The relation between the pre-tax subsidy and the uplift is now given by:

$$a_{pre} = \frac{1}{1-(\tau_o + \tau_s)} a_{post} = \frac{1}{1-(\tau_o + \tau_s)} \tau_s u$$

It then follows that the size of the uplift is now determined by:

$$u = \frac{1-(\tau_o + \tau_s)}{\tau_s} a_{pre}$$

<sup>8</sup> We have disregarded the non-neutral properties of the corporate income tax, which are worse for other sectors because of the short depreciation time used for petroleum. The actual necessary uplift to provide an equal subsidy would be even greater if this was accounted for.

# B PROJECTS, REVENUE LOSS AND POSSIBILITY FOR A PARTIAL REVERSAL

In this appendix we estimate the total revenue loss due to the oil tax package. We begin by estimating the investment costs covered by the package, which fall into two main categories:

- *Investment costs in 2020 and 2021, when all investment costs were included in the package:* For these costs firms were allowed an extra deduction of 17.69 percent, worth 12.7 percent of investment cost.
- *Investment costs in later years, which are included in the package if a project was approved before the end of 2023:* For these costs firms were allowed an extra deduction of 17.69 percent, worth 12.7 percent of investment cost, for costs in 2022, and an extra deduction of 12.4 percent, worth 8.9 percent of investment cost, for costs in 2023 and later.

These categories of investment costs are treated in sections B.1 and B.2, respectively. Based on the costs covered by the package, we move on to our estimate for the revenue loss in section B.3. In section B.4 we estimate the revenue loss considering also that the package might have turned unprofitable projects profitable. Finally, we investigate in section B.5 the possibility for a partial reversal of the subsidies in the oil tax package, for future investments. As for appendix A, there is considerable overlap between appendix B and the relevant parts of main text, making it possible to the appendix as a standalone text.

## B.1 The extra deduction applied to all investment costs in 2020 and 2021

The total investment cost for 2020 and 2021 that falls within the package is estimated to 236 billion NOK by the Norwegian Petroleum Tax Office. This equals 267 billion 2023 NOK, adjusted for inflation using the average yearly inflation from Statistics Norway. This number does not include the costs borne by the State's direct Financial Investment (SDFI), which does not pay taxes. The numbers for each year before and after adjustment for inflation are shown in Table B.1.

Table B.1 Investment costs within the oil tax package in 2020 and 2021, billion NOK

Data unit	Investment costs, same year prices	Investment costs, 2023 prices
2020	118.00	136.29
2021	117.50	131.13
<b>Total</b>	<b>235.50</b>	<b>267.42</b>

Source: The Petroleum Tax Office (2024), adjusted for inflation by Vista Analyse based on Statistics Norway

For these costs, the oil companies were allowed an extra deduction of 17.69 percent, as they occurred before the deduction was reduced to 12.40 percent in 2023. The different deduction rates are explained in detail in appendix A.

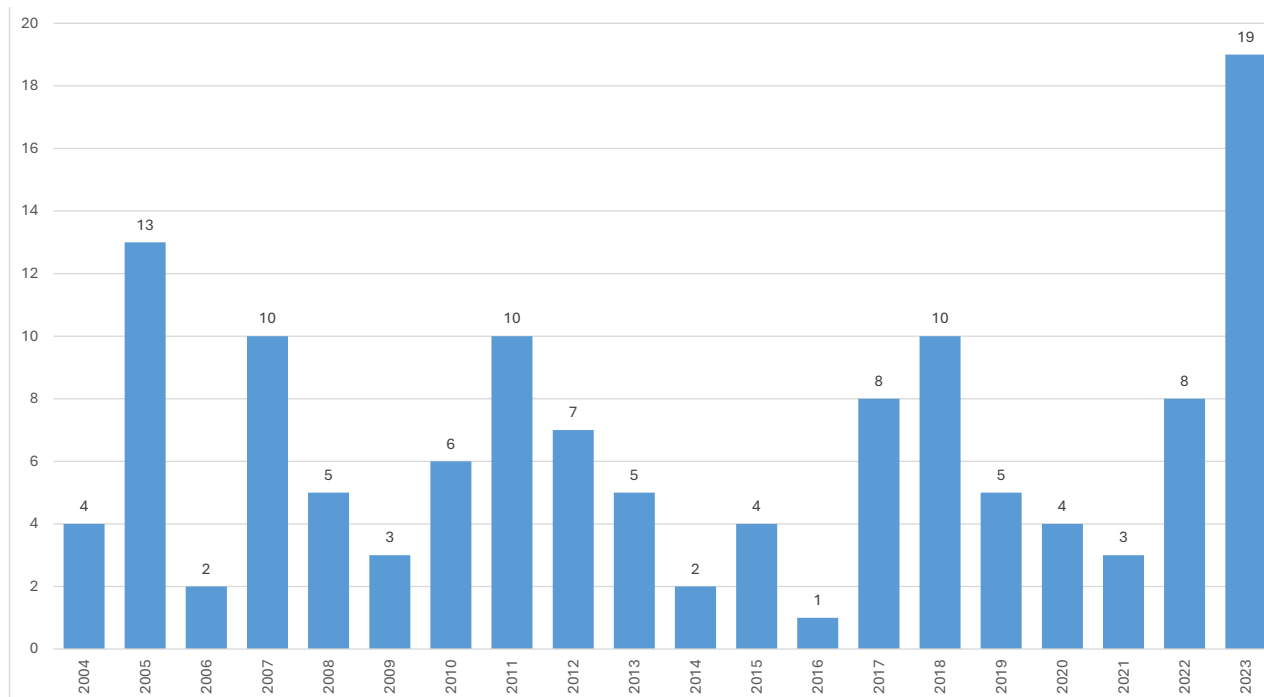


## B.2 A record-high number of projects were approved before the deadline for the oil tax package

We now turn to investment costs in later years, which are included in the package if a project was approved before the end of 2023. The full conditions for being included in the package are listed in appendix A.

More projects were approved in 2023 than in any other year since the beginning of the petroleum industry in Norway. Figure B.1 shows the number of projects approved each year for the last 20 years.<sup>9</sup> Except for two of the projects approved in 2020, both related to offshore wind, all the projects approved in the years 2020 to 2023 are covered by the package.

Figure B.1 Projects approved each year

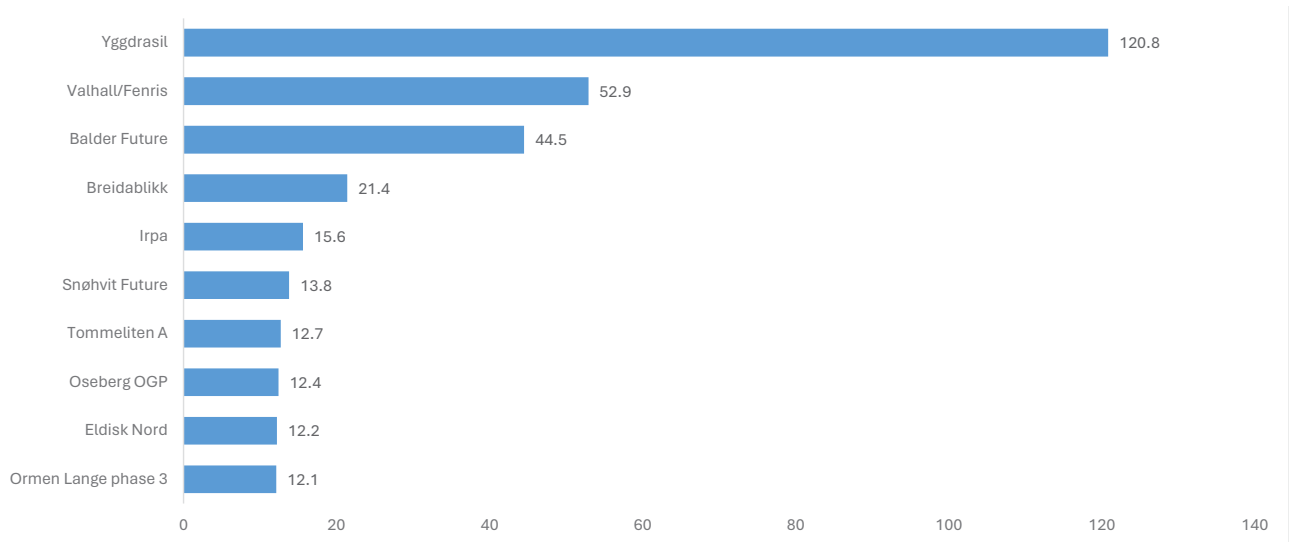


Source: The Norwegian Offshore Directorate (2024)

The total investment cost for the projects approved before the deadline is 424 billion 2023 NOK. This estimate is based on an overview in the most recent budget documents (The Ministry of Energy, 2023). Figure B.1 lists the 10 projects with the highest investment cost. The full list of projects can be found in Table B.6 at the end of this section.

<sup>9</sup> Approved «Plan for utbygging og drift (PUD)».

**Figure B.2 The 10 projects within the oil tax package with the highest investment cost, billion 2023 NOK**



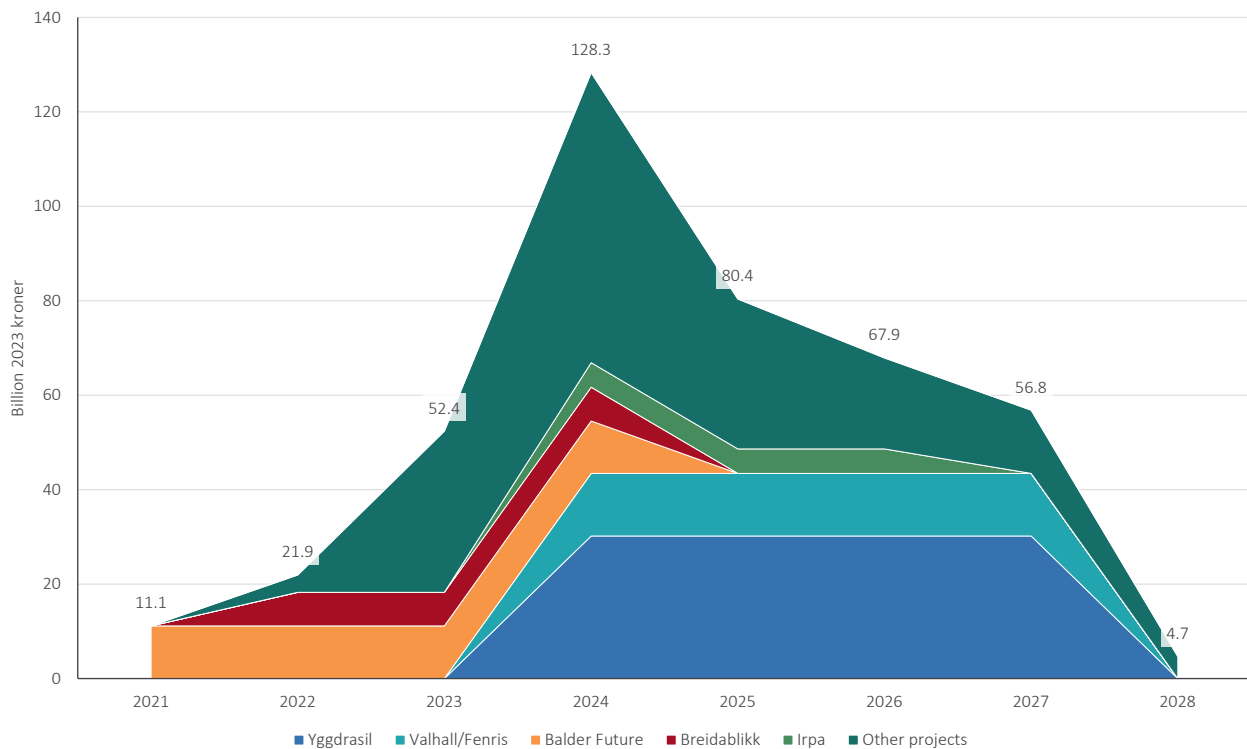
Source: Vista Analyse

The Yggdrasil project somewhat dwarfs the other projects, although Valhall/Fenris and Balder Future are also substantial.

Figure B.3 shows the investment costs for these projects over the investment period. The five biggest projects are shown separately, while the others are grouped together. We have assumed that investment starts in the year following government approval and that the final year of investment is when operations start. Costs are divided equally between these years.

Provided that our assumptions are roughly accurate, it is quite clear that there is an investment peak in 2024, but also that there are quite substantial investments in the years 2025-2027.

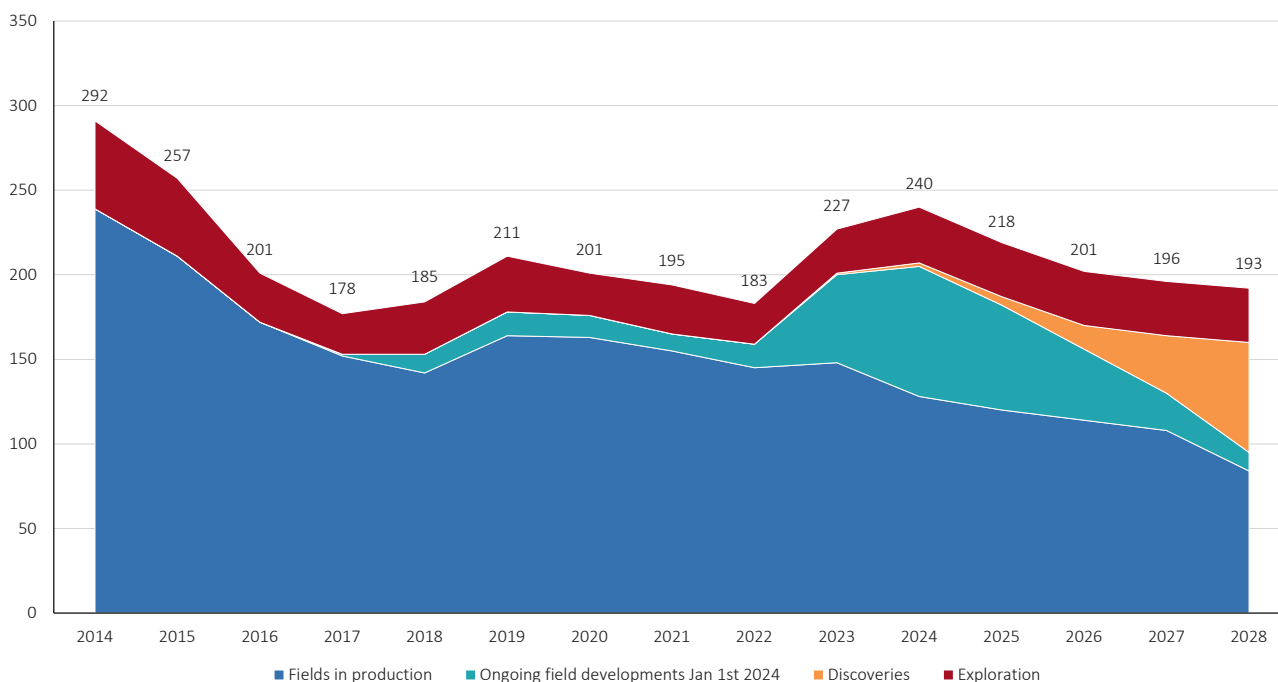
**Figure B.3 Investments in projects approved before the end of 2023, billion 2023 NOK**



Source: Vista Analyse based on The Ministry of Energy (2023)

This image of investments over time is confirmed by investment estimates from the Norwegian Offshore Directorate, presented in Figure B.4. There is a marked increase in investments in 2023 and a peak in 2024. Most investments in ongoing field developments are within the oil tax package. Some investments in fields in production are also within the package.

**Figure B.4 Investments, past and forecasted by the Norwegian Offshore Directorate, billion 2024-NOK**



Source: Vista Analyse based on data from the Norwegian Offshore Directorate

The 424 billion NOK estimate does not include projects that are exempted from Ministry approval, even though they are covered by the package. This is the case for 15 projects, according to an overview of exempted projects from the Norwegian Offshore Directorate. It has proven difficult to find investment costs for these projects, and most likely the costs are relatively small. However, we have found a quite substantial investment cost of 6.2 billion NOK for one of these projects (Andvare), which indicates that the total investment cost for the exempted projects is not insignificant.

On the other hand, there might be some overlap between the costs in the year 2020 and 2021 and the costs in projects approved before the deadline, which we have not accounted for. Notably, the projects Balder Future and Breidablikk were approved in 2020 and 2021 respectively, and are quite substantial. In Figure B.3 we placed 10.1 billion NOK in investment costs in approved projects in 2021.

When the share of costs paid by the State's Direct Financial Interest (SDFI) is deducted, we arrive at 387 billion NOK as the total investment costs in projects approved before the deadline. Because the SDFI, administered by Petoro, does not pay taxes, it is unaffected by the oil tax package. It is worth noting that the state does not have any direct ownership through SDFI in the biggest project, Yggdrasil.

**Table B.2** Projects approved before the deadline

Project	Approval year	Investment cost, billion 2023 NOK	State's Direct Financial Interest (SDFI)	Investment cost without SDFI, billion 2023 NOK
Draugen og Njord	2023	7.7	24 %	5.9
Halten Øst	2023	9.2	6 %	8.7
Tyrving	2023	6.5	27 %	4.8
Yggdrasil	2023	120.8	0 %	120.8
Valhall/Fenris	2023	52.9	0 %	52.9
Symra	2023	9.6	0 %	9.6
Irpa	2023	15.6	20 %	12.5
Verdande	2023	5.0	22 %	3.9
Alve Nord	2023	6.6	0 %	6.6
Idun Nord	2023	4.0	0 %	4.0
Ørn	2023	6.8	0 %	6.8
Maria fase 2	2023	4.3	30 %	3.0
Dvalin Nord	2023	7.9	35 %	5.1
Berling	2023	9.5	0 %	9.5
Snøhvit Future	2023	13.8	30 %	9.7
Kristin Sør	2022	7.6	23 %	5.9
Kobra East and Gekko	2022	8.3	0 %	8.3
Tommeliten A	2022	12.7	0 %	12.7
Ormen Lange fase 3	2022	12.1	36 %	7.7
Oseberg OGP	2022	12.4	34 %	8.2
Eldisk Nord	2022	12.2	5 %	11.6
Gina Krog – alternativ eksportløsning	2022	1.3	0 %	1.3
Frosk	2022	2.0	0 %	2.0
Breidablikk	2021	21.4	22 %	16.6
Sleipner Kraft fra land	2021	1.1	0 %	1.1
Troll Vest Elektrifisering	2021	7.7	56 %	3.4
Balder Future	2020	44.5	0 %	44.5
<b>Total</b>		<b>423.5</b>		<b>387.0</b>

Source: Vista Analyse based on The Ministry of Energy (2023), the Ministry's approval letter for "Draugen og Njord" and the Norwegian Offshore Directorate

## B.3 Tax revenues are down 68 billion NOK because of the oil tax package

Based on the investment costs for 2020 and 2021 and in later years for the projects approved before the deadline at the end of 2023, we can estimate the total tax revenue loss due to the oil tax package. All investment costs are without the SDFI share. We have used the reduced extra deduction rate of 12.40 percent for all costs in projects approved before the deadline, even though some of these costs were incurred before 2023 and will have warranted an extra deduction at the higher initial rate of 17.69 percent.

The total revenue loss due to the oil tax package is 68 billion NOK. This is the reduction in tax revenue due to the extra investment deduction, compared to a neutral tax with no such deduction.

Table B.3 Investment costs, deductions and revenue loss, billion 2023 NOK

Investment category	Investment costs, without SDFI	Extra deduction	Value of extra deduction	Revenue loss
2020 and 2021	267.4	17.69 %	12.70 %	34.0
Approvals before deadline	387.0	12.40 %	8.90 %	34.5
<b>SUM</b>	<b>654.4</b>			<b>68.4</b>

Source: Vista Analyse

If a similar subsidy was to be given as an investment subsidy on the expenditure budget, as investigated in section A.2.2, it would amount to 311 billion NOK. The value of that subsidy after the total petroleum tax of 78 percent would be 68 billion NOK, the same as what the firms receive with the oil tax package.

## B.4 The revenue loss is greater if one considers that unprofitable projects might have been carried out

For the estimates above we implicitly assumed that the projects would have been carried out even without the oil tax package. The revenue loss is then limited to the tax value of the extra deduction. However, as discussed in appendix A, the subsidy of the oil tax package might have turned unprofitable projects profitable. For projects with a deficit up to 8.9 percent of investment cost, the revenue loss for the government is equal to the 8.9 percent of investment cost, which is the tax value of the subsidy, which they get regardless of profitability. For projects with a greater deficit, the entire deficit is borne by the government and the revenue loss is equal to the deficit. As discussed in section A.2.3, with the oil tax package a project can make a loss up to 40 percent of investment cost and still be profitable to the oil companies.

If we assume that 30 percent of the investments would have been unprofitable and not carried out without the oil tax package, and an average deficit equal to 20 percent of investment cost, we find that the revenue loss from the package is 79 billion NOK. The government then makes a loss of 8.9 percent on almost a fourth of the unprofitable projects, for which the tax value of the deduction is paid out anyway, and on average 24.7 percent on the rest, for which the state covers greater losses.

## B.5 Partial reversal of the oil tax package would allow for 13 billion NOK to be redirected to climate finance

In 2023 the oil tax package was somewhat reduced, when the extra deduction was reduced by almost a third for future investment costs, from 17.69 to 12.40 percent.

We have investigated the possibility for a further reduction of the oil tax package, where the extra deduction is removed completely – but still only for future investment costs.

We find that 13 billion NOK can be redirected to climate finance by such a partial reversal of the oil tax package. Our starting point is the sum of investment costs in 2025 and later years, based on Figure B.3, which is 210 billion NOK. We then subtract the SDFI shares in these projects. Finally, we exclude the revenue which would otherwise have found its way back to the state through its ownership in Equinor. We have assumed an Equinor share of 40 percent, which is a rough estimate based on the Equinor ownership in each license. The steps of our estimation are shown in Table 1.3.

**Table 1.3 Estimation of government revenue from partial reversal, billion NOK**

Investment costs in 2025 and later	210
- SDFI share	-13
- State share (67 percent) of Equinor share (40 percent) of costs	-53
<b>= Investment costs used to find revenue from reversal</b>	<b>144</b>
<i>Tax value of deduction</i>	8.9 %
<b>= Government revenue from partial reversal</b>	<b>13</b>

Source: Vista Analyse

The exclusion of revenue that merely is a transfer from different sources of government revenue from petroleum, by excluding revenue that is just a mirror image of reduced government revenue from Equinor, is done to ensure that the reversal does not imply increased use of money from the oil fund. In other words, the partial reversal allows 13 billion NOK revenue from this partial reversal is in its entirety a transfer from private owners of oil companies.<sup>10</sup> This is done to avoid conflict with the Norwegian fiscal rule for the use of oil money.

A related issue is the recent ruling from the Oslo District Court that the approvals for Yggdrasil, Tyrving and Breidablikk are invalid, because of insufficient investigation of the effect of these projects on the climate. The ruling has been appealed by the state, but if it is left standing these projects will not be included in the oil tax package, because they would have to be approved anew – after the deadline. The revenue gain from these three projects not getting the extra deduction would be 12.7 billion NOK, before taking into account that some of it will effectively be a transfer from Equinor. Note that this figure also includes investments made before 2025, unlike our reversal estimate, as falling out of the oil tax package is likely to affect all investments in these projects.

<sup>10</sup> By private owners we mean other owners than the Norwegian state.

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## Endnotes to foreword

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