



CARBON CAPTURE LEGAL PROGRAMME

Case studies on the
implementation of
Directive 2009/31/EC on
the geological storage of
carbon dioxide

Norway

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Foreword

The CCLP EU Case Studies Project

The Carbon Capture Legal Programme launched the 'EU Case Studies Project' in January 2010. The project analyses the implementation of Directive 2009/31/EC on the geological storage of carbon dioxide ('CCS Directive') in selected European jurisdictions - the United Kingdom, Germany, Poland, Romania, Spain and Norway. Each jurisdiction, for distinct reasons, provides an example of different approaches to the transposition and to CCS in general.

The objective of the project is to identify some of the more subtle nuances in different legal cultures and to provide a better understanding of the rationale for national decisions in specific aspects of the implementation of the Directive. In particular, the focus is on those areas where the Directive leaves room for Member States' discretion or is ambiguous or silent. The project also considers the policy and political context within which the national legal and regulatory framework for CCS has emerged. The studies are deliberately designed to move beyond formal transposition measures to reveal more of the underlying dynamics and tensions involved in national implementation. Such elements are often crucial in driving domestic legal developments. The way in which EU Directives are implemented often reflects distinct legal and administrative traditions, and the case studies seek to present these in order to provide better insights on the development of CCS regulation.

The outcome of the project is a series of reports from the six jurisdictions, based on key legal and policy questions and on a critical reading of the CCS Directive. The CCLP has coordinated the overall research and has carried out the UK case study. Independent experts have been commissioned to carry out research in Germany, Poland, Romania, Spain and Norway.

Background on the EU transposition process¹

EU Member States have an obligation to adopt all appropriate measures to ensure the fulfilment of the obligations arising out of the Treaties governing the European Union or resulting from acts of the institutions of the Union.²

Directives are binding on Member States but only with respect to a result to be achieved, leaving considerable discretion to Member States as to the choice of form and methods to be used for their implementation. In contrast to regulations, the provisions of directives do not automatically become part of the national legal system, but require a national transposition process before doing so. In their transposition, Member States may rely upon existing law; amend existing legislation or pass wholly new legislation.

Each directive will specify a time limit for transposition, normally two years but sometimes three where complex administrative or legal changes are involved. The CCS Directive specified the date of 25 June 2011, which is just over two years after its coming into force.

The European Commission is in charge of ensuring the application of the treaties and the legal acts adopted by the institutions pursuant to the treaties.³ To fulfil this duty, the Commission enjoys enforcement powers against Member States, which are carried out by means of an infringement proceeding.⁴

¹ This paragraph is the extended version of a CCLP contribution to the International Energy Agency Carbon Capture and Storage- Legal and Regulatory Review- Edition 2 (May 2011). Available at www.iea.org/Papers/2011/ccs_legal.pdf.

² Treaty on European Union, Article 4.3. OJ C 191, 29.7.1992.

³ Treaty on European Union, Article 17.

⁴ Treaty on the Functioning of the European Union, Article 258. OJ C 115, 9.5.2008 (ex European Community Treaty, Article 226).

With respect to the transposition of directives, the Commission distinguishes between three categories of infringement proceedings:

- a) non-communication cases, where a Member State fails to communicate to the Commission national laws or other measures transposing a directive within the specified time limit;
- b) non-conformity cases, where the Commission considers a Member State's transposition of a directive into national law to be incomplete or incorrect;
- c) 'bad application' cases, where the Commission feels that there has been a failure to apply a directive in practice, even though there has been correct transposition.

The formal stages of the infringement procedure consist of three phases:

- a) a letter of formal notice from the Commission to the Member State, which then has two months to reply (pre-litigation);
- b) a reasoned opinion issued by the Commission if the Member State's reply is not satisfactory, setting the details of the infringement and establishing a new deadline for compliance; and
- c) referral to the Court of Justice of the European Union, if the non-compliance persists.

The Commission enjoys wide discretion as to when and whether to start an infringement proceeding, and a good deal of informal negotiation takes place to resolve the issue during the various stages of the process. In practice, however, once the deadline for transposition has passed without communication from the Member State, the Commission will automatically start an infringement proceeding based on a formal failure to communicate any national measures.

The vast majority of cases are settled without the need to refer them to the Court. If a case is brought before the Court and the Court rules against the Member State, the State must take all necessary measures to comply with the judgement.⁵ If the non-compliance persists, the Commission can refer the case to the Court again, recommending a financial penalty. The Court then has the power to impose financial sanctions on the Member State. Further to amendments made under the Lisbon Treaty coming into effect in 2010, non-communication has been given increased priority, since the Commission is now entitled to request the application of such sanctions upon the first referral to the Court.⁶

⁵ Treaty on the Functioning of the European Union, Article 260.2. (ex European Community Treaty, Article 228).

⁶ Treaty on the Functioning of the European Union, Article 260.3. (ex European Community Treaty, Article 228).

Key findings of this report

- Norway is widely supportive of carbon capture and storage (CCS) technologies as a climate change mitigation measure, both at the national and international level. The country benefits from a large offshore CO₂ storage capacity in its North Sea continental shelf (i.e. saline aquifers and depleted oil and gas fields), which could exceed its storage needs and provide storage opportunities to neighbouring EU countries.
- Since the mid-1990s, Norway has developed CCS technologies linked to petroleum production, including for enhanced oil recovery (EOR). Norway has been a pioneer in developing the first 'full' CCS projects at the Sleipner (1996) and Snøhvit (2008) offshore natural gas fields. Currently, several technological development projects have been undertaken linked to gas fired power plants onshore, with the participation of industry and the Norwegian government.
- As of today, there is no comprehensive legislation regarding CCS in Norway. Apart from some minor amendments to existing laws, no dedicated legislative work has been undertaken to regulate this technology. This may be partly due to the fact that the most relevant existing acts applicable to CCS seem to provide a sufficiently broad legal basis for more specific regulations, if necessary. These are: the 1963 Act on Research, Exploration and Exploitation of other Natural Resources than Petroleum on the Ocean Floor (hereafter 'the Continental Shelf Act'); the 1981 Pollution and Waste Act; and the 1996 Petroleum Activities Act.
- The EU Directive 2009/31 on the geological storage of CO₂ ('CCS Directive') made evident the need for more precise rules on CCS in Norwegian law. Norway is not a member of the European Union but is a member of the European Economic Area (EEA).⁷ The CCS Directive qualifies as being 'EEA relevant', which means that, if it is incorporated within the EEA agreement, it must be also implemented by all EEA members, including Norway. As of October 2011, such incorporation has not yet been agreed. However, in 2009 Norway started a process of developing the necessary rules and regulations to implement the provisions of the Directive within its national legal system. A royal decree of 13 March 2009 refers to the Directive and states that the government aims to develop rules comparable with the Directive's regime. At the time of writing, this work has not yet been finalised. Indeed, there does not seem to be any particular sense of urgency on this matter, probably due to the fact that the technological progress has been taking more time than had been expected at an earlier stage.
- Due to its well-established oil and gas legislation, the implementation of many of the provisions of the Directive does not seem to entail any really new legal issues for Norway. However, key questions mainly arise as a result of the country's membership of the EEA, and the formal incorporation of the Directive in the EEA body of binding law, which might pose challenges with respect, for example, to the implementation of the provisions providing a role for the European Commission and different views on the limit of territorial application of the EEA agreement. As a consequence, the solution to several

⁷ The European Economic Area (EEA) consists of the 27 Member States of the European Union (EU) and three European Free Trade Association (EFTA) States: Iceland, Liechtenstein and Norway. It was established in 1992 by the EEA Agreement, an international agreement which enables the three EFTA states to participate fully in the European internal (or single) market. The Agreement seeks to guarantee equal conditions of competition, and equal rights to participate in the internal market for citizens and economic operators in the EEA. As a result of the agreement, EC law on the four freedoms is incorporated into the domestic law of the participating EFTA States. All new relevant EU legislation is also introduced through the EEA Agreement so that it applies throughout the EEA, ensuring uniform application of laws relating to the internal market.

questions relating to CCS and the application of the CCS Directive still remain uncertain in Norwegian law.

- Norway has comprehensive legislation dealing with public participation and access to information on environmental matters. If the Directive was to be implemented into national law, such provisions will constitute a sufficient regime to warrant that public engagement and information with respect to CCS is ensured. Thus far, it does not seem to be a specific concern from the Norwegian public with respect to the deployment of CCS technologies in general. This is partially due to the focus on offshore CO₂ storage in Norway.

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1. Context for CCS

1.1 History of CCS in Norway

Norway has, since the late 1880s, satisfied its electricity needs almost exclusively by means of hydropower generation. The country has therefore always had low CO₂ emissions from electricity production. Since the 1970s however, Norway has had an important offshore petroleum industry, which has contributed - and continues to contribute - to a relatively large proportion of the country's emissions of CO₂.⁸

In 1990 the debate on national climate policy resulted in the Norwegian government imposing a carbon tax on the petroleum industry.⁹ This tax was of about NOK 300¹⁰ (which today corresponds to 40 euros) per tonne of CO₂ emitted from burning petroleum and emission of natural gas. The industry had then already started studying CO₂ for Enhanced Oil Recovery (EOR) activities.¹¹ The carbon tax reinforced the petroleum industry's interest in CCS and incentivised private investments in the technology. In 1996 the petroleum company Statoil developed the technology to capture CO₂ from natural gas extracted from its Sleipner platform and store it permanently in the Utsira offshore saline aquifer.¹² As the natural gas had a too high CO₂ content for commercial export, it was needed to capture the CO₂ from the gas stream. As a bonus the company could also avoid paying the carbon tax by storing CO₂.

In 1998 the government at the time (Bondevik I)¹³ published a comprehensive report on the future sources of supply and expected demand of energy and electricity towards 2020.¹⁴ In this report CCS was pointed out as a possibility for eliminating the negative environmental effects of CO₂. However, the report concluded that more research was needed in order to conceptualise and commercialise the capture, transport and storage of CO₂. On this basis, the government decided to make gas-fired electricity production dependent upon further development of CCS technology. This was accepted by Parliament until 2000, when the sitting government resigned after a parliamentary majority voted in favour of the construction of gasworks without CCS technology. A new government (Stoltenberg I)¹⁵ subsequently took office.

In 2001 the new government submitted a report to Parliament called 'Norwegian climate policy'.¹⁶ The report focused on a plan for the establishment of a national Emissions Trading Scheme (ETS) for CO₂ by 2008. With regards to CCS, the report held that research and practice had shown the possibility of offshore storage in saline aquifers, but that further research was needed. Financial support was recommended, but directed towards research on CCS technology applicable to gasworks with the aim of operating a demonstration project around

⁸ In 2010, 26% of Norway's CO₂ emissions came from the petroleum industry, including necessary installations onshore. In 2007, approximately 66% of the CO₂ emitted from large Norwegian facilities (equivalent to more than 100,000 tonnes of CO₂) stemmed from petroleum activities and refineries. See S Teir et al, *Potential for Carbon Capture and Storage (CCS) in the Nordic Region* (VTT, Helsinki, 2010) 21-22.

⁹ Act 21 December 1990 no 72 on CO₂ tax on emissions from petroleum activity.

¹⁰ The tax level is decided annually by the Parliament, but was kept stable at this level for many years.

¹¹ EOR is a process where CO₂ (separated from the hydrocarbons through a refining-process) is captured, transported and finally stored in a gas or oil reservoir in order to increase pressure and maximize the productivity of the reservoir.

¹² Sleipner was the first commercial-scale project in the world dedicated to the geological storage of CO₂ in a saline formation.

¹³ A coalition government between the Christian Democratic Party (Kristelig folkeparti), the Centre Party and the social liberal party Venstre.

¹⁴ NOU 1998:11 (Norwegian Public Reports 1998 nr 11).

¹⁵ A (minority) Labour Party government.

¹⁶ St meld (Report to the Parliament) nr 54 (2000-2001), available at www.regjeringen.no/nb/dep/md/dok/regpubl/stmeld/20002001/stmeld-nr-54-2000-2001-.html?id=195302.

2005. That same year, the 'Stoltenberg I' government gave licenses to the three first gas-fired power plants in Norway, without any requirement for CCS.¹⁷

At the same time the government appointed an independent committee with the mandate to give an opinion on the potential for environmentally-friendly production and use of natural gas in Norway.¹⁸ The committee consisted of a large group of representatives from energy companies, industry contractors, research institutions and environmental organisations. In 2002 the committee concluded that – on the basis of already existing technology, forecasts of large offshore CO₂ storage capacity and the need to meet the Kyoto commitments – the Norwegian government should give high priority to further research on integrating CCS technology with both future gas-fired electricity production and the petroleum industry more in general.¹⁹

In 2003 the new government ('Bondevik II')²⁰ passed along an action plan to Parliament based on the aforementioned committee's recommendations, while having in mind Norway's obligations under the Kyoto Protocol.²¹ The plan considered developments on CCS technology as a high priority in connection with the planned gas-fired power plants. It recommended state aid to support further production and technology development. It also recommended state aid to specific power plants integrating CO₂ capture equipment. The plan furthermore recommended the establishment of a state innovation company, Gassnova.

Gassnova SF is a particular institution, which manages the interests of the Norwegian state in CCS activities.²² The entity is a state enterprise under the Ministry of Petroleum and Energy. Gassnova SF is both a business actor with the power to enter into commercial agreements with regards to CCS development, and the source of CCS information to the public. Gassnova provides advice to the Norwegian Ministry of Petroleum and Energy in matters relating to CCS. In addition, Gassnova contributes to the implementation of the CCS technology development programme, 'CLIMIT', in cooperation with the Research Council of Norway. One of the aims of Gassnova's work is to develop ways to reduce the costs associated with CCS deployment. It participates in the three most important projects of CCS development in Norway: the CO₂ Technology Centre Mongstad (TCM); the full-scale CO₂ capture project at Mongstad and a large-scale CO₂ transport and storage project from Mongstad (see below).

The main features of the plan were endorsed by Parliament the same year.²³ The 'Bondevik II' government gave license to the fourth Norwegian gas-combustion power station project without CCS.²⁴

In 2005 the new government 'Stoltenberg II'²⁵ launched a three-step plan in order to establish CCS technology for gas-combustion power stations. The first step was the initiation of negotiations between potential commercial actors in the CCS chain. The second step was to finalise the details between the Norwegian government and Statoil for establishing a CO₂

¹⁷ The three first licensed gasworks in Norway were: Kårstø, Kollsnes and Skogn – whereas the last two have not been built yet.

¹⁸ Kgl res (royal decree) 5 October 2001, with corrections as of 27 November the same year.

¹⁹ NOU 2002:7 (Norwegian Public reports 2002 nr 7).

²⁰ A coalition between The Conservative Party (Høyre), The Christian Democratic Party (Kristelig folkeparti), and the social liberal party Venstre.

²¹ Innst S nr 167 (2002-2003) and St meld nr 9 (2002-2003), available at www.stortinget.no/no/Saker-og-publikasjoner/Publikasjoner/Innstillinger/Stortinget/2002-2003/inns-200203-167/1/#a2 and www.regjeringen.no/nb/dep/oed/dok/regpubl/stmeld/20022003/Stmeld-nr-9-2002-2003-/19.html?id=328311 (respectively).

²² See St prp nr 49 (2006-2007) and Innst S nr 205 (2006-2007).

²³ Decision by Parliament, available at www.stortinget.no/no/Saker-og-publikasjoner/Vedtak/Vedtak/Sak/?p=25308.

²⁴ This occurred at the Melkøya petrochemical complex outside Hammerfest in Northern Norway where the natural gas from the Snøhvit gas field is processed to LNG and shipped out.

²⁵ Coalition between the Labour Party, the Socialist Left Party and the Centre Party.

capture plant at the Kårstø gas plant. The last step was to clearly set out which ministry should have authority with regards to the different aspects of the CCS-chain and also to design a robust plan for the government's commitment vis-à-vis EEA rules concerning state aid. In addition to this plan, the Norwegian and British governments launched a joint research project focused on the possibility of offshore storage of CO₂ in the North Sea – whose capacity has turned out to be enormous (around fifty percent of the European CO₂ storage capacity is located under the North Sea).²⁶

In 2007 the Kårstø gaswork was completed and it started the production of electricity for the Kårstø petroleum refinery. The Norwegian Government planned to have full scale CCS installations implemented at the refinery by 2009. Up to 85 percent of the CO₂ was expected to be captured via post-combustion capture technology and subsequently transported by pipeline transportation for offshore storage in the Utsira formation. However, in the following years after its completion, the plant has not been fully operating and the government did therefore not prioritize the plans for CCS at Kårstø. As of today (2011), the gas plant in Kårstø has been operating non-stop for the last two years and is thus a potential candidate for demonstrating CCS technologies. A major technological development programme is now underway at Kårstø with the financial support by the Norwegian government.

In 2007 the government also licensed the construction of a gaswork at the Mongstad refinery, which will represent the largest single CO₂ emission source in Norway. The government entered into agreement with the companies Statoil, DONG Energy, Hydro, Shell and Vattenfall for the construction of a full-scale CCS project at the refinery – most likely also with the view of offshore storage in the Utsira formation. This project was due to be operational in 2014. However, the completion of the project has been postponed to 2018 due to exceeding investment costs and uncertainties regarding the potential health effects of the CO₂ capture technology to be used. Despite the postponement of the full-scale CCS at Mongstad, a CCS test facility *Test Centre Mongstad* (TCM) is being pursued by Statoil under a partnership agreement with other industrial players, the Norwegian government as their main sponsor, and Gassnova as the state participant. The TCM is due to become operational in spring 2012 and is designed to capture 100 kilotonnes CO₂ per year.

In 2008 the government and the opposition entered into a political agreement on the climate policy known as the Climate Agreement. It stated that Norway was to become 'carbon neutral' by 2030.²⁷ The agreement implied that two thirds of the emissions reduction towards 2020 was to take place within Norway, while one third should be achieved by the use of the Kyoto protocol's flexible mechanisms. Furthermore, the agreement committed the government to launch a CCS action plan.

In 2009 the process of implementing the CCS Directive into Norwegian law started, but as of today (October 2011), it has not finished yet. In recent years Norway has participated with capital and technology in projects abroad, for instance in Australia, China and South Africa. However, the projects at Mongstad and Kårstø have been the main area of interest and have received billions of NOK²⁸ in state aid on a yearly basis. This has been scrutinized by the EFTA Surveillance Authority (ESA)²⁹ under the EU state aids rules, which apply fully to Norway

²⁶ For the latest report (2010) from this cooperation, see: Element Energy Ltd, *One North Sea – A study into North Sea cross-border CO₂ transport and storage* (March 2010) available at nsbtf.squarespace.com/storage/OneNorthSea_Fulldoc_Final_LoRes.pdf.

²⁷ See www.regjeringen.no/Upload/MD/Vedlegg/Klima/avtale_klimameldingen.pdf.

²⁸ One EUR corresponds roughly to 8 NOK.

²⁹ The EFTA (European Free Trade Association) Surveillance Authority monitors compliance with European Economic Area rules in Iceland, Liechtenstein and Norway, enabling them to participate in the European internal market. It corresponds in this regard to the European Commission within the EU.

through the EEA Agreement. In both cases, the ESA found the state aid acceptable, but laid down certain conditions and limitations with regard to the further development.³⁰

1.2 Current status of CCS in Norway

As of today, Norway has ambitious goals with regard to climate change mitigation. In relation to CCS, both the Norwegian state and private companies have proven more than willing to invest in the development of necessary technology for a full-scale CCS model. However, the parties involved have been forced to extend their timeframe for completion, due to the uncertainties related to predicting when the technology will be available. In addition to this, the lack of commercial viability of CCS technologies has contributed to such postponement. Despite the delay, CCS is still regarded as one of the most important climate change mitigation strategies for Norway.

In a 2011 report to Parliament, named 'Full-scale CCS', the government sets up a plan for the development and deployment of CCS over the following five years.³¹ The main goal is still to achieve full-scale CCS demonstration at the Mongstad refinery. The coming three years will be spent on qualification of the capture technology, since transport and storage technologies are more mature. The next two years will be spent on the actual full-scale construction. From 2016, further plans will be made, based on the execution of the current plan. The 2011 government report explains its support to the Mongstad refinery project with the aim to mitigate Norway's emissions of CO₂ and a clear intention to develop CCS with the view to contribute to spread it outside Norway – for other countries to use.

The focus of CCS research in Norway today is still on the development of offshore storage of CO₂ mainly from gasworks. There are two reasons for the focus on gasworks. First, gas-fired power plants are the biggest single point emitters of CO₂ in Norway and it is likely that the emissions from this industry will continue to rise, due to existing plans for the construction of additional gasworks in Norway. Second, research indicates that there is a huge potential for natural gas as a source for power production in the coming 100 to 200 years. This is also true for other European countries, such as the UK, where there is increasing interest towards the business opportunities and climate change mitigation potentialities of developing CCS at gas plants.

With regard to financing, the state budget for 2011 allocated 2.7 billion NOK for CCS (351 million euros), and in the new state budget for 2012, the Government proposes an additional 2.9 billion NOK (377 million euros). The 2012 amount is mostly earmarked for Test Centre Mongstad (TCM) (1.7 billion NOK or 221 million euros) and the full-scale project at Mongstad, including planning of transport and storage infrastructure (900 million NOK or 117 million euros). Some of the money is also dedicated to Gassnova and research as well as public education.

The general public opinion of CCS can be described as in support of the technology. The public seems to accept CCS as a necessary environmental measure. This is probably due to the fact that the 'Not-In-My-Backyard (NIMBY)' syndrome is not very applicable since the CCS processes in fact will not be carried out in anyone's backyard – the CO₂ will be captured from gasworks located on land, close to the coast, transported offshore and stored offshore. These offshore activities pose slim risks of damage for the general population of Norway. Also, the fact that the petroleum industry has been operating offshore with few serious accidents since the

³⁰ ESA Decisions 503/08/COL (TCM) and 27/09/COM (Kårstø).

For in depth studies of the issue of state aid to technology development for CCS see J Myhre, *Financing of CCS Demonstration Projects – State Aid, EEP and NER Funding – An EU and EEA Perspective* (2011) University of Oslo, Faculty of Law legal Studies, Research Paper Series no 2011-02; and N Hallenstvedt, *Statlig Finansiering av CO₂-håndteringsprosjekter. Statens Handlingsrom etter EØS-avtalens Forbud mot Statsstøtte* (2010) Institutt for offentlig retts skriftserie nr 7/2010, Oslo.

³¹ St meld nr 9 (2010 – 2011), available at

www.regjeringen.no/nb/dep/oed/dok/regpubl/stmeld/2010-2011/meld-st-9-20102011.html?id=635116.

1970s has probably contributed to a generally high acceptance of industrial activities offshore. Generally speaking, the implementation of CCS technology at Norwegian gasworks was in fact expected to happen sooner. However, more recently, critical questions have been raised in the press about the costs and the realism of CCS as a climate change mitigation measure.³² This is probably mainly due to the fact that the projects at Kårstø and Mongstad already have proven to take more time and be more costly than what was originally predicted.

2. Features of the implementation of Directive 2009/31 in Norway

2.1 EEA implementation process

The EEA Agreement is an agreement between the European Community (now the European Union) and its Member States on one side and the European Free Trade Association (EFTA) states (Iceland, Liechtenstein and Norway) on the other side.³³ The agreement virtually makes the three EFTA countries party to the EU internal market, with the rights and obligations this entails. EU legislation relating to the internal market in a broad sense is defined as 'EEA relevant'. This includes most legislation in the fields of energy and the environment. EEA relevant legislation can then become part of the EFTA states' legal system by various means of implementation by the EFTA states. Relevant EU law is formally incorporated into the EEA Agreement by a decision by the EEA committee,³⁴ which consists of representatives of the EU and the three EFTA countries. The national legislative authorities in the EFTA countries then have to formally take the necessary decisions to include it within their national law. Except for competition rules, the EEA Agreement does not allow for any supranational competence.

Although the CCS Directive would qualify as being EEA relevant, it has not yet been incorporated into the EEA Agreement, and it is not yet certain if this will happen. Homogeneity between the relevant rules in EU and the EFTA states is a central objective of the EEA Agreement, as stated explicitly in its Article 1. Since the Directive does not oblige a Member State to store CO₂, but only establishes a minimum legal framework if it wishes to engage in storage activities, its implementation does not appear overly burdensome. Both Iceland and Norway have shown interest in CCS through pioneering work with demonstration projects.³⁵ This suggests that the legal framework provided by the Directive will be welcomed, especially in Norway, where the Ministry of the Environment and the Ministry of Petroleum and Energy sent the Directive proposal of 2008 out to 11 consultative bodies in the state, who in general were supportive of the proposal.³⁶

Moreover, the EEA Council stated in a report following a meeting 23 May 2011:

The EEA Council reiterated the importance of maintaining close cooperation between the EU and the EEA EFTA states in energy and climate change policies, in particular in the areas of emission trading, the promotion of competitive low carbon economy, energy

³² See, for example, an article in the Oslo daily Dagbladet, 1 October 2011, entitled 'A Castle in the Air – Under Water'.

³³ When the original EEA Agreement was concluded in 1992, it also included Sweden, Finland and Austria.

³⁴ EEA Agreement, Article 102.

³⁵ In Iceland, the CarbFix project; in Norway, Mongstad (among others).

³⁶ With regard to Liechtenstein, this is a small country emitting a total of about 211,000 tonnes CO₂ per year (as of 2007). Only 16% of it stems from the industrial sector. This means that there are no single points emitting over 100,000 tonnes CO₂, which thus makes CCS rather inapplicable for the time being. For this reason it would probably be safe to say that Liechtenstein has no incentives to block a potential implementation of the CCS-directive in the EEA Agreement.

*efficiency and renewable energy resources, as well as on carbon capture and store (CCS).*³⁷

All this points towards Norway welcoming the incorporation of the Directive into the EEA Agreement, but there is an important factor weighing against such incorporation. This is the question of the jurisdictional scope of the EEA Agreement. The Agreement itself states that it applies 'to the territories to which the [TFEU]³⁸ is applied and under the conditions laid down in that Treaty, and to the territories of Iceland, the Principality of Liechtenstein and the Kingdom of Norway'.³⁹ 'Territory' is generally defined in public international law as the proportion of land subject to the sovereign authority of a state, including the territorial waters. Following this approach, and based strictly on this wording, the EEA Agreement cannot be said to apply outside the Norwegian 'territory', thus not in the exclusive economic zone and continental shelf including the ocean floor/sub-seabed outside the territorial waters. This is a relevant issue because the CCS Directive applies to the geological storage of CO₂ within the territory of the Member States, in their exclusive economic zone, and on the continental shelves.

The question relating to the meaning of 'territory' has not yet been explicitly decided by the EFTA Surveillance Authority (ESA) or other EEA-bodies. If the EEA Committee accepts the narrower definition of territory in regard to the EEA Agreement, the Storage Directive – if implemented – will not formally apply to offshore CO₂ storage outside the territorial waters. However, if territory is understood as referring also to the exclusive economic zone and continental shelf, the Directive may be implemented into the EEA Agreement as a whole. Apparently, these issues are now under discussion.

2.2 National implementation process

Article 3 of the EEA Agreement prescribes a duty of loyalty, which implies that Norway is obliged to implement all commitments following the agreement. As mentioned earlier the CCS Directive has not yet been incorporated into the EEA Agreement (October 2011). Thus, Norway does not yet have a duty of loyalty. If Directive 2009/31 is incorporated in the EEA Agreement, the Norwegian legislative authorities must carry out a process of active implementation. As mentioned, as of today there is no comprehensive legislation regarding CCS in Norwegian law.

Active implementation can be done by incorporation or by transformation. 'Incorporation' implies a direct adoption of the text of the foreign code of law. 'Transformation', however, which is the usual legislative technique for implementing EU rules that have been included in the EEA Agreement, as discussed in 2.1 above, implies an integration of the foreign law in existing Norwegian law through translation and rewriting.

Despite the fact that Norway may choose not to implement the Storage Directive for the Norwegian exclusive economic zone and continental shelf for formal reasons, this will probably happen de facto. One reason for this is that if Norway wants to offer CO₂ storage opportunities to other European countries, it is likely that Norway must itself follow the provisions of the CCS Directive in order for it to be legal for any European country to use the Norwegian storage sites.⁴⁰ It is thus fairly clear that Norway at least will seek to make Directive 2009/31 de facto apply also to the Norwegian exclusive economic zone and continental shelf. This intention was confirmed by the government in the Royal decree of 13 March 2009 on delegation of authority in CCS matters under the 1963 Continental Shelf Act.

The Government found that Directive 2009/31 is to be implemented by way of transformation, consisting of both changes in existing legislation and also the introduction of new rules (the mixture alternative). It is foreseen that most of the rules will be in the form of regulations

³⁷ See www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/er/122175.pdf.

³⁸ The Treaty on the Functioning of the European Union.

³⁹ See EEA Agreement, Article 126.

⁴⁰ More on this in section 9.

pursuant to existing legislation, in particular the Continental Shelf Act, the Pollution and Waste Act,⁴¹ and the Petroleum Activities Act. But it is not excluded that some amendments of and additions to the relevant acts will be necessary as well.

In the Royal decree of March 2009, the responsibility for the implementation was divided between three different Ministries, based on three different main legal areas. The first legal area regards transport and storage of CO₂, including exploration of possible sites, which the Government found as having many similarities with petroleum activities – i.e. requirements for permission to survey and use underground formations, requirements relating to environmental impact assessments on the continental shelf, etc. The power to design such regulations and to issue required licenses for transport and storage was therefore delegated to the Ministry of Petroleum and Energy (Olje- og Energidepartementet).⁴² In June 2009 the Ministry proposed an amendment to Articles 4-8 of the Petroleum Activities Act, which enabled the regulations regarding third party access to petroleum installations to apply also to CCS facilities. This change in the Petroleum Activities Act was accepted by Parliament. The Ministry is however also working on a more comprehensive set of regulations, which as of today is not yet finished.

The second legal area regards human safety in relation to CCS. The Ministry of Labour (Arbeidsdepartementet) was made responsible for developing regulations on safety in connection with CO₂ transport and storage, especially with regards to security measures for the construction and operation of facilities. It is still unclear whether the Ministry will choose to make amendments in existing legislation or develop a completely new set of regulations.⁴³

The third legal area regards environmental safety. The Ministry of the Environment (Miljøverndepartementet) was given the power to develop regulations to ensure that the storage of CO₂ occurs in an environmentally safe way. This includes regulations which determine the composition of the CO₂ stream, surveillance, the monitoring and reporting regime, and financial security. It is clear that CCS storage will require a permit by the environmental authorities pursuant to the Pollution and Waste Act. Whether the Ministry of the Environment will integrate the relevant articles from Directive 2009/31 in existing legislation or design dedicated CCS legislation is not yet clear.

At this stage of the process, all documents relating to the implementation are exempt from public access. However, as soon as the draft proposals for implementation of the Directive will be finalised, they will be sent out on hearing and also made available for public access.⁴⁴

2.3. The CCS Directive as a minimum standard directive and prospects for stricter national rules in Norway

The Directive 2009/31 is issued pursuant to Article 175 of the EC Treaty (now TFEU Article 192) which enables the EU to adopt common, but minimum, environmental measures ('minimum harmonisation'). Accordingly, it shall not prevent any Member State from maintaining or introducing 'more stringent protective measures'.⁴⁵ The provisions of the Directive can be classified as a minimum standard. The question in this regard is whether or not the Norwegian authorities are likely to introduce more stringent protective measures, where this is possible.⁴⁶

⁴¹ Act of 13 March 1981 no 6.

⁴² The delegation was made in accordance with the Continental Shelf Act Articles 2(2) and 3. See: FOR-2009-03-13-321.

⁴³ See: FOR-2009-03-13-321.

⁴⁴ It may of course be speculated whether the division of the implementation process into three different ministries has resulted in complex discussions about each of the Ministries' area of responsibility and thus delayed the implementation process.

⁴⁵ Article 176 of the EU Treaty (TFEU Article 193) and Article 75 of the EEA Agreement.

⁴⁶ Whether or not the legislative authorities have the freedom to introduce 'more stringent protective measures' in relation to a specific provision, depends on the interpretation of each provision.

The introduction of stricter protective measures by the Norwegian legislative authorities must be justified by environmental concerns and comply with the general rules of the EEA Agreement.

As of today, in the absence of a proposal relating to the implementation of Directive 2009/31, it is hard to predict whether or not more stringent measures will be introduced. On the one side, Norway has been both ambitious and pioneer with regards to CCS. The fact that Norway sees itself as being 'in the forefront' on the issue may suggest that it both can and should have at least as strict rules as in the EU – and maybe even stricter rules. However, on the other side, it is probably more natural to assume that the Norwegian legislative authorities will refrain from being more stringent than necessary. The reason for this is that CCS is still in an early phase and the consequences of the Directive are still uncertain. Furthermore, the CCS Directive prescribes that guidelines will be developed by the European Commission. This fact makes it even more natural to assume that Norwegian authorities will tread carefully in relation to the current implementation. Lastly, it is also relevant to mention that the most common procedure in relation to the Norwegian implementation of minimum standard directives in the field of environmental protection is to directly adopt the current provisions – and not introduce stricter measures.

At present, a 'best guess' seems to be that the Directive 2009/31 will be applied without the introduction of more stringent measures.

2.4 Influence of regional governments on the implementation procedure

Norway is divided into 19 counties and 430 municipalities with important functions in such areas as land use planning and nature management. Both the counties and the municipalities may influence the legislative process, as the government sends a new legislative proposal out on hearing. The hearing grants counties and municipalities the right to express their opinion on whether or not the proposal safeguards local interests – which might not always be evident from a state point of view.⁴⁷ The final legal framework is ultimately decided by the Government and Parliament, and the local authorities do not have a right to veto on its approval.

Since both the implementation of Directive 2009/31 and the establishment of CCS in Norway have been regarded as important for a long period of time at the governmental level, it is quite clear that general objections against CCS from any of the municipalities will not be able to block the government's decision on CCS. At present, CCS is not expected to cause much tension between the government and municipalities, because the CCS process, based on today's technical data, will have to rely on offshore storage. CO₂ storage will therefore not have any direct negative implications on the majority of municipalities. Furthermore, both the capture and the transportation will also happen offshore or in coastal areas, since the big CO₂ emitters are located in these areas. Therefore, it is safe to say that CCS in Norway in general will have a very limited impact on local interests. However, a minority of municipalities will be exposed to pipelines and transport facilities in their coastal areas and storage off their coast. For such municipalities there is always the risk that the establishment and operation of CCS installations might interfere with local interests, such as for example the fishing industry. This will not impede the implementation of the Directive, but will rather have to be taken into account by the administrative bodies when constructing and operating future CCS facilities.

Even though the transport and storage of CO₂ will be administered by the state, one question might arise as to whether a municipality has the legal power to ban the construction of the installations necessary to capture CO₂ on their territory and thereby indirectly prevent the transport and storage of CO₂. With regards to capture facilities, such installations will be integrated within an onshore facility – most probably a gaswork. In general this will need a permit from the municipality for any new onshore constructions in the municipality's area. Unless the existing permit can be interpreted as allowing for the construction of capture

⁴⁷ Examples of such interests: demography, nature and local economics.

facilities, a new permit is needed. Hypothetically, such a permit can be turned down by a municipality based on its political stand. However, the decision is open to appeal to the relevant state authority. Therefore, the state will have the last word in such a case, and the municipality will not have the right to veto the installation of capture facilities. It should be added, however, that the state will always be sensitive to the views of the local communities in question when deciding cases like this.

3. Administrative arrangements

The administrative system proposed by the Government relies on three Ministries responsible for the CCS process. This suggests clearly that the decision-making authority is at the state level, which means that the municipalities will only have the authority to forward their opinion and advice. The fact that the state holds the decision power with regards to CCS is not surprising, given the fact that it has always been Norwegian policy that all legislative matters concerning the utilization of the continental shelf in any form are under the state's authority. This means that, if the establishment of offshore transport and storage facilities in an area will interfere with, for instance, a municipal land use plan pursuant to the Planning and Building Act, local fishing industry, etc, the balance of interests is ultimately to be decided by the relevant state organ.

The state's decision-making power with regards to the construction, operation and closure of transport and storage facilities may very well be delegated from the ministries to directorates under the ministries⁴⁸ and possibly also to an external body. With regards to transport of natural gas, the transport network is operated by a state-owned non-profit company: Gassco. This, held together with the fact that the Government already has established Gassnova SF (see above) to safeguard the state's interests in CCS, could be an indication that the state would want a similar scheme with regards to some of the functions associated with CCS.

4. Ownership of the pore space

As already mentioned, offshore storage of CO₂ is the only suitable option for Norway in the foreseeable future. Both the 1963 Continental Shelf Act,⁴⁹ the 1981 Pollution and Waste Act and the 1996 Petroleum Activities Act are relevant to regulate such storage. The Petroleum Activities Act applies to any offshore storage of CO₂ that stems from petroleum activities on the continental shelf. Any storage of CO₂ that does not stem from such activities falls outside the scope of the act. Non-petroleum related storage of CO₂ falls within the 1963 Continental Shelf Act. Both these acts must be interpreted to the effect that the Norwegian state is the owner/holder of rights of any pore space on the continental shelf.

Despite the fact that *onshore* storage is not viewed as an option in Norway, the question of onshore sub-surface ownership may still be of, at least theoretical, interest. The possibility of future onshore storage can probably not be completely excluded in the long term. As of today, there are no acts of law regulating the ownership of onshore pore space, which would mean that the ownership must be determined in accordance with general Norwegian private property law. It has been established by case law that the owner of the property overground is the owner of the land, including property underground. The property right is however not infinite and it is established by the Supreme Court that the underground property right does not follow the

⁴⁸ In particular the Norwegian Petroleum Directorate under the Ministry of Petroleum and Energy, the Petroleum Safety Authority under the Ministry of Labour, and the Climate and Pollution Agency under the Ministry of the Environment.

⁴⁹ Act of 21 June 1963 no 12.

overground property right beyond approximately 100 meters below the surface.⁵⁰ Beyond this level the rule of occupation applies, meaning that the first one to possess underground resources claims the property right.

These rules with regards to property rights do not apply to onshore exploration or recovery of *petroleum* underground. Onshore petroleum resources are state property by law, regardless of ownership overground or potential first-possession, according to the special Act on Exploration and Exploitation of Onshore Petroleum Resources.⁵¹ This Act solely includes petroleum resources and thus not empty pore spaces suitable for storage of CO₂. As of today, the rules of ownership overground and first-possession apply to such pore spaces. However, based on the fact that offshore storage spaces are state property, it is likely that the legislative authorities will decide that onshore pore spaces are to be owned by the state as well, once the issue may become relevant.

5. Field of application of the Directive

The CCS Directive provides that the state has the right to determine the areas from which storage sites may be selected (Article 4(1)). This provision gives the state the right to exclude certain areas from CCS activities. It must be considered whether or not Norway is likely to use this option to exclude any areas from CCS when implementing the Directive.

It is possible that Norway will find it preferable to exclude some parts of the continental shelf from any CO₂ storage. This may be the result of political pressure, for example from fisheries or environmental interests, mirroring the political compromises with regard to exploration and possible future exploitation of petroleum in areas that are environmentally sensitive and valuable for the fishing industry. However, this is only speculation.

If onshore storage should become a reality in the future, this has the potential of negatively affecting the interests of both regional and local communities and private entities. However, this negative effect can be minimal and even in some cases the regions, municipalities, and private entities may benefit from CCS operations – through tax income, jobs, etc. It may therefore be a mistake to generally exclude the possibility of onshore CO₂ storage. The decision as to whether or not onshore storage shall be permitted is therefore likely to be taken on a case-by-case basis. And since the state of Norway is likely to deem itself the owner of onshore pore spaces, the specific decision is up to the state, which will do a neutral weighing of the involved interests. It seems thus rather unlikely that the implementation of the CCS Directive generally will explicitly exclude onshore storage. But the issue is not very relevant at this stage or in the foreseeable future.

Since offshore storage is in fact the only envisaged form of CCS in Norway, this will be the subject for the discussion and analysis which follows.

6. Integration with existing environmental law generally

The implementation of Directive 2009/31 will require several direct and indirect amendments to Norwegian legislation. The direct amendments are those required by the provisions of the Directive. Indirect changes however are such changes that do not follow from the interpretation of the Directive itself, but which will be carried out in order to implement the new provisions of the Directive into the Norwegian legal system as a whole. An example of indirect change is

⁵⁰ See: Norsk Retstidende 1998 s 251 (The Tellnes case).

⁵¹ Act of 4 May 1973 nr 21 (Lov om undersøkelser etter og utvinning av petroleum i grunnen under norsk landområde) Article 1.

related to the Norwegian tax law, where it must be decided how CCS installations are to be taxed.⁵² Changes of such nature are not required by the Directive itself, but they are a natural consequence of the Directive in order to provide a comprehensive and balanced CCS framework within the Norwegian legal system.

The direct amendments will mostly result in modifications or additions to existing regulations. The most relevant acts are, as mentioned, the 1963 Continental Shelf Act, the 1981 Pollution and Waste Act, and the 1996 Petroleum Activities Act. These acts are, to some extent, framework acts, which presuppose that more precise obligations and rights are laid down in regulations and in individual permits. They give the government a flexible and broadly formulated authority to issue such regulations and permits. At present, it is foreseen that the rules necessary for CCS will be laid down in special regulations. In some respects, however, the acts themselves provide the necessary legal base. For example, the ordinary system for pollution permits pursuant to the Pollution and Waste Act will most probably apply directly.

Generally speaking, Norwegian environmental and energy law is comprehensive and well developed. It is furthermore generally in accordance with EU requirements. Thus, it is unlikely that the regulations implementing the Storage Directive will create any serious inconsistencies or conflicts with existing environmental or energy regulations. Instead, the existing rules will potentially be of guidance when interpreting the future CCS legislation.

However the implementation of the Storage Directive does also raise two novel legal issues which thus far had not been encountered in existing national environmental or energy law. These are: (i) the European Commission's right to give non-binding opinions on national permits and (ii) the provisions regarding transfer of responsibility to the competent authority, under certain conditions. The implementation of these novel legal issues and also the most substantial modifications following implementation will be discussed one by one in section seven, below.

7. Key provisions of Directive 2009/31 and their implementation into Norwegian law

7.1 Exploration permits

Directive 2009/31 holds in Article 4 that the state has the right to determine the storage areas. In order to identify where storage is possible, the state may demand that exploration is carried out. Such exploration relies on a permit (Article 5 of the Directive). The Directive lists specific requirements that the state must impose on anyone applying for an exploration permit. The concept of an exploration permit is well known in Norwegian natural resources and environmental law in general, and in the Norwegian petroleum industry in particular. The existing petroleum regulations are not in conflict with the requirements of the CCS Directive.⁵³ Therefore, the implementation of the requirements in the Directive is not likely to cause any problems in Norway. However, the requirements following the Directive appear at some points ambiguous and at other points they grant discretion on the implementation. Thus, an interesting question is how the exact requirements for obtaining an exploration permit for CO₂ storage purposes will be designed in Norwegian law.

According to the Storage Directive, the state decides whether exploration activities are needed. The permit must be limited in duration/time and location/area – where the duration may be

⁵² In general, Norwegian tax law aims for an equal tax on the creation of economic value in the form of business income. However, some business income is taxed mildly and some are more heavily taxed. Offshore petroleum industry is in the second category; a special tax regime applies.

⁵³ See Petroleum Activities Act Article 2-1 (petroleumsloven) and the Regulations relating to the Act ch 2 (petroleumsforskriften).

extended. Furthermore there must not occur 'conflicting uses of the complex' and the applicant must possess the 'necessary capacities'.

Details on the duration of the permit and location of the area subject to exploration are also included in the Norwegian regulations governing petroleum exploration permits, but both the duration of the permit and the extension of the area can be extended. The extension of the permitted area is not mentioned in the CCS Directive. However, there is no difference in reality between the permit-holder applying for a new permit for an extended area and the permit-holder applying for an extended area under the current permit. Therefore, the possibility of extension in both duration and area can be adopted when implementing the Directive. This is the preferred solution for petroleum activities and is, based on the similarities between offshore petroleum activities and offshore CO₂ storage, likely to become the preferred solution in regard to CCS.

The CCS Directive does not provide any definition of 'conflicting uses of the complex'. Under the Norwegian petroleum legislation, it is laid down that only exploration for petroleum is accepted. Several different methods of exploration are accepted, but different methods of exploration can hardly be described as 'uses of the complex'. Similar provisions as the ones found in the existing petroleum legislation on this matter should not be problematic.

Directive 2009/31 does not give a definition of the term 'necessary capacities' either. The most likely interpretation of this term would be that the applicant meets the requirements and obligations following the Storage Directive which can be considered relevant at an exploration phase. Amongst other things such capacities will probably include the technical competence and financial capacity required for an environmentally sound fulfillment of the precise objective of the exploration. However, since exploration does not include storage of CO₂, this means that the requirements with regards to financial security and financial contribution – in general – do not apply at this stage.

Norwegian petroleum law contains some of these requirements concerning exploration permits. In addition to those, petroleum regulations also require certain personal information and that the applicant pays a fee for the exploration activities. However, the CCS Directive is more comprehensive. The Norwegian legislative authorities can therefore not just copy the existing system for petroleum exploration, but will to some extent have to establish an individual and more thorough system for CCS exploration permits.

7.2 Storage permits

The CCS Directive decides in Article 6 that a storage permit shall be required for the storage of CO₂. The requirements for a storage permit are very similar to the requirements for exploration. However, the requirement for the operator to possess the 'necessary capacities' when storing CO₂ is, of course, more comprehensive than for the exploration phase, since proper storing requires more extensive and long term measures and obligations on the part of the operator than exploration. It seems most likely that storage will require permits pursuant to both the Pollution and Waste Act for environmental safety, and the Petroleum Activities Act for the use of the geological space and the relation to petroleum activities.

During the application for a storage permit, 'conflicting uses' of the complex will not be allowed. What constitutes a conflict is not defined. The Directive applies to CCS, but also to enhanced hydrocarbon recovery (EHR) activities, provided that they are combined with permanent storage of CO₂. Other activities – such as EHR without permanent storage – are not under the scope of the Directive and will thus probably qualify for a type of conflicting use. A question is whether CCS combined with EHR with permanent storage will fall under the definition of 'conflicting use'. If EHR with CO₂ storage does not utilize the capacity of a storage site and there is room for additional storage of CO₂ (in the form of CCS), this will contribute to a larger volume of CO₂ being stored which is in line with the purpose of the CCS Directive. Therefore, EHR with storage of CO₂ and CCS should not be regarded as conflicting use. In the light of Norwegian enhanced

oil recovery (EOR) activities, this interpretation of the term ‘conflicting uses’ is most likely to be upheld when implementing the Directive. The relationship between EOR and CCS will be further discussed in section nine, below.

Article 6 further prescribes that the holder of an exploration permit shall be given priority for the granting of a storage permit. This is not the case in Norwegian petroleum law, so on this point the Directive will be a novelty and existing regulation cannot be applied.

Article 6 states that only one ‘operator’ shall operate the storage site. The Directive defines an operator as the natural or legal, private or public person who operates, controls or has decisive economic power over the technological functions of the storage site (Article 3, paragraph 10). The same definition of operator is also used under Norwegian petroleum law, which as the main rule also accepts only one operator per field. Thus, the existing regulations for petroleum exploitation can more or less be followed when implementing the Directive.

7.3 Applications for storage permits

Article 7 of the CCS Directive contains a list of the information required in the application for a storage permit. The list is a minimum requirement and the Norwegian legislative authorities may impose stricter requirements when implementing the Directive. The information that the applicant for storage permit is required to provide is more extensive than those required by Norwegian petroleum regulations. Among other things, the existing petroleum regulations do not mention monitoring, a preventive measures plan, corrective measures plan or a post closure plan. The application of the rule of the Directive will however not raise any problem. Whether the authorities want to impose even stricter requirements is an open question.

7.4 Conditions for storage permits

The conditions for a storage permit are found in Article 8 of the Directive. There are three categories of conditions.

The first category determines that all relevant requirements in the Storage Directive must be fulfilled. This is a rather vague condition but is more extensive than the conditions in the current Norwegian legislation.

The second category of conditions relates to financial soundness and technical competence. Such provisions are also found in current Norwegian petroleum legislation. However, given the required financial contribution in relation to the transfer of responsibility, the CCS Directive has a wider set of conditions than existing petroleum legislation.

The last category concerns pressure interactions where more than one storage site is in the same hydraulic unit. This is also a new condition. Seeing that each of the conditions for a storage permit appear as more comprehensive than current petroleum and pollution legislation, the impression is that the new regulations have to be developed more or less from scratch – without the help which an adaptation of existing legislation would provide.

7.5 Contents of storage permits

Article 9 of the CCS Directive provides that the storage permit itself shall contain a minimum set of information. This information is derived from the conditions set forth in the permit. In practice, this refers to specified information in relation to the operator and how the operator shall run the storage site in question. Norway, as the other EU Member States, would have the discretionary power to require additional content of a storage permit, but there is no reason to believe that such discretion will be used. The rules with regards to the content of the permit are similar to the practice under the relevant Norwegian law.

7.6 Supranational authority

Article 10 of Directive 2009/31 provides that a Member State shall make available any storage permit application, and that the European Commission has the power to give an opinion on the draft storage permit. The Member State may diverge from the opinion, but will have to give justified reasons.

For Norway, it has to be clarified whether this role of the Commission in the Directive shall be carried out by the European Commission or rather by the EFTA Surveillance Authority (ESA), which would be the normal authority for this type of function for the EFTA states within EEA. This will be a matter for negotiation between the parties. This also has to do with the question of the status of the Directive within EEA: whether it will be formally incorporated into the EEA Agreement or not (see above). In any case, ESA will normally consult closely with the Commission in matters like this.

7.7 Changes, review, update and withdrawal of storage permits

In its Article 11, the Directive states that the authorities must be informed of any change in the operation and that substantial changes require a new or updated storage permit. In cases where the operator does not meet the permit conditions, the authorities have the discretion to withdraw the storage permit. An equivalent provision can be found in Norwegian law, where both the Pollution and Waste Act and the petroleum legislation require the operator to inform the competent authority of any change, and the competent authority has the power to change, review, update or withdraw the petroleum recovery permit.

The CCS Directive prescribes that in the event of a withdrawal, the authorities shall temporarily take over all legal obligations, whereas any costs shall be recovered by the former operator. Such a scenario is not reflected into Norwegian petroleum law. However, it is clear that – following environmental law and legal principles of recourse – the mentioned regulation would be consistent with Norwegian legislation in general. As a result, this provision is not likely to face any resistance in the implementation process.

7.8 CO₂ stream acceptance criteria and procedure

The CCS Directive contains both concrete and ambiguous requirements with regards to the quality of the CO₂ stream (Article 12). Such requirements are well known and important in Norwegian Petroleum law. Pipelines for the transport of natural gas can be used as an example, where the operator is subject to a detailed set of quality requirements in relation to the natural gas, by virtue of both the petroleum regulations and the standard agreement.⁵⁴

The specific standard of quality will depend on the state of the capture technology. The quality standards now included in the European Commission Guidance Document 2 will of course be closely studied by the Norwegian authorities.⁵⁵

7.9 Monitoring

Article 13 of Directive 2009/31 imposes on the state an obligation to ensure that the operator carries out the monitoring of the injection facilities, the storage complex and the surrounding environment. Monitoring requirements are well known in Norwegian petroleum and pollution control law. The petroleum regulations sets forth stringent requirements in relation to safety zones, and operators must at all times maintain effective emergency arrangements in order to face hazardous situations or accidents. The Directive contains both a comprehensive list of requirements (Article 13 and Annex II), which most likely will be considered as sufficient monitoring requirements by Norwegian legislative authorities when implementing the Directive.

⁵⁴ See Terms & Conditions for transportation of Gas in Gassled, chapter 4.

⁵⁵ ec.europa.eu/clima/policies/lowcarbon/ccs/implementation/docs/gd2_en.pdf

7.10 Reporting by the operator

Article 14 of the CCS Directive states that the operator – at least once a year – shall submit to the competent authority a report containing information on the results of monitoring, the quantity of CO₂ stored, the properties of the CO₂ streams, proof of financial security and other information that the competent authority might find relevant. In Norway, the current petroleum law also imposes on the operator an obligation to submit a report on an annual basis. This provision is therefore not new. According to the petroleum regulations, the report shall describe activities and measures performed which will give the authorities grounds to consider production strategy, environmental issues and so forth. The authorities can furthermore request additional information in the report. Regular reporting is also a normal condition in all pollution permits pursuant to the Pollution and Waste Act.

The requirement regarding proof in relation to financial security is seemingly new, since it is not explicitly mentioned in the correlating petroleum regulations. However, it is clear that any petroleum operator's financial soundness is an important aspect of the production strategy and is therefore likely to be a part of the report. The reporting process following Article 14 is thus not new in Norway. The implementation of the article is thus likely to be accepted and cannot be said to bring any particular innovations.

7.11 Inspections

The CCS Directive prescribes in Article 15 a duty and a right for the Member States to organise a system of routine and non-routine inspections, which should include visits, assessments and checking of records. The inspections shall be carried out at least once a year, and shall be publicly available at least within two months after the inspection. Inspections are a part of the Norwegian pollution prevention and petroleum legislation as well. In the petroleum sector a yearly inspection is the minimum. The inspectors shall have access to all data and material necessary and have the right to stay at installations as long as needed and also conduct relevant research. Costs shall be covered by the operator or licensee.

There are two minor material differences between the Directive and Norwegian legislation. On one hand, Norwegian legislation is more comprehensive when it explicitly states that the financial burden of inspections is to be borne by the operator, whereas the Directive is silent on this issue. On the other hand, the Directive seems more comprehensive when it sets a maximum period for the inspection report to be made publicly available, which is not explicitly stated in the Norwegian legislation.

Apart from the mentioned differences, the Norwegian legislation and the Directive are very similar and the implementation process will not lead to major challenges or new legal mechanisms.

7.12 Measures in case of leakage or significant irregularities

In case of leakages or significant irregularities, Article 16 of the Directive requires the Member State to ensure that the operator notifies the competent authority and takes necessary corrective measures. The competent authority may also take corrective measures itself and recover the costs from the operator, but it has a duty to do so if the operator fails to fulfill its obligations. Both the Norwegian petroleum legislation and pollution control legislation impose a duty of action on the operator in case of leakages or irregularities, whereas the authorities are provided with discretion to take such measures. If the authorities launch any measures, this may be a decision to delegate a third-party to take the necessary measures and thereafter recovering the costs from the operator. A decision by the authorities to launch any measures can – in theory – be brought before the court by the operator. It is up to the courts to decide if such proceedings shall have suspensive effect and furthermore – if requested by the operator – if the costs shall not be imposed on the operator. However, the courts will most likely respect the competent authorities' discretion.

The existing petroleum and pollution regulations mirror the CCS Directive, and does also contain some specifications with regards to the right to appeal and cost recovery in practice. There is no reason to believe that regulations similar to the existing ones will not be adopted when implementing Directive 2009/31.

7.13 Long-term liability

The operational phase and the post-closure phase connected to the storage of CO₂ pose different risks of damage. In relation to post-closure, Article 17(2) of the CCS Directive, in conjunction with Article 18(1)a, prescribes that the operator of a storage site is liable for the site until responsibility has been transferred to 'the competent authority'. As the main rule, this can happen after a minimum period of 20 years, but also before if the authority 'is convinced' that the stored CO₂ 'will be completely and permanently contained'...Such post-closure long-term liability consists of the duty to carry out monitoring, reporting, potential corrective measures, the surrender of allowances if leakage occurs and preventive and remedial actions pursuant to Articles 5 and 7 of the EU Environmental Liability Directive (Directive 2004/35/EC). Thus, both a comprehensive duty of action and an economic liability is imposed on the operator. The economic liability does not explicitly impose on the operator to cover potential economic losses of third parties.

The implementation of the provisions concerning long-term liability will not entail any new challenge to current Norwegian tort and environmental law. Post-closure long-term liability may be seen as an expression of the polluter pays principle, which is an important principle in Norwegian environmental law.⁵⁶ With regards to the duties of action prescribed in Directive 2009/31, these are quite extensive and will probably be regarded as sufficient by Norwegian legislative authorities. However, it appears that the economic liability set out in the Directive only imposes on the operator an obligation to give up ETS allowances in case of leakages. The scope of such a liability is below the current legal standard of economic liability vis-à-vis third parties in Norway.

The Pollution and Waste Act imposes a duty, irrespective of fault or negligence, to take reasonable measures to prevent, abate and repair pollution, including accidental emissions and discharges. It also lays down strict liability for the owner or operator of a property, installation or activity for damage and loss caused by pollution from such source. This Act will most probably apply if leakage from the storage site should occur. In addition, the Petroleum Activities Act imposes strict liability on operators for environmental damage caused by emission or discharge of petroleum from a petroleum installation. This also covers reasonable measures to prevent and limit such damage. Furthermore, this Act imposes strict liability for any type of damage to actors in the fishing industry, i.e. third parties.⁵⁷ It is likely to assume that a similar scope of duty to take preventive and remedial actions, as well as strict liability for any damage caused by leakage, will be adopted in connection to the implementation of the CCS Directive.

Both the Pollution and Waste Act and the Petroleum Activities Act contain forms of limitation of liability. On one hand there is a discretionary upper limit – expressed by the word 'reasonable' - as to the operators duty of action in case of a leakage accident.⁵⁸ Furthermore, the liability may be restricted in case of force majeure pursuant to the Petroleum Act,⁵⁹ but not explicitly pursuant to the Pollution Control Act. The Storage Directive does not explicitly mention such limitations, and one can therefore ask if it would be in compliance with the Directive to introduce the limitations when implementing the Storage Directive. However, the Directive refers to Articles 5 and 8 of the Environmental Liability Directive. Article 5 requires the 'operator' to take 'necessary' preventive measures when there is an imminent threat of environmental damage. Article 8 lays down as the main rule that the operator shall bear the costs for the preventive and remedial

⁵⁶ See the Pollution and Waste Act, Article 2 (5).

⁵⁷ See the Petroleum Activities Act, chapter 8.

⁵⁸ See the Petroleum Activities Act, Article 7-1 and the Pollution and Waste Act, Article 7.

⁵⁹ Petroleum Act, Article 7-3 para 3.

actions pursuant to the Directive. The same article spells out some exceptions to this obligation and defines some (limited) possibilities for Member States to allow other exceptions.

It is not possible here to carry out a detailed comparison of these rules and the liability rules in the Norwegian legislation. A close scrutiny of this kind will probably have to be done in due course in order to ensure that the Norwegian rules on the operator's duty to take preventive measures and the operator's liability comply with the EU directives. If there are differences, these do not seem to be major. Most likely, Norway will not have problems with adjusting its relevant legislation to conform with the Storage Directive and the Environment Liability Directive if necessary.

7.14 Transfer of liability

The CCS Directive prescribes in Article 18 that the operator's post-closure liability can be transferred to the competent authority after a minimum period of 20 years, subject to the fulfillment of certain conditions. Strictly speaking, the implementation of Article 18 of the Directive will result in an exception to the polluter pays principle.

Norwegian law does not contain any provision where the authorities are obliged to accept the transfer of environmental liability from private commercial actors.⁶⁰ Liability transfer has happened in practice in situations where environmental damages have been registered after the private commercial actors no longer can be held accountable.⁶¹ This has been the situation, for example, with some cases of polluted soil.

One might expect that such a new provision on the transfer of environmental liability will be viewed with skepticism by legislative authorities, political representatives and the public in general, since it entails a risk of future costs for the state – costs that may be considerable in 'a worst case scenario'. As of today, there has however been no open debate on the subject. This silence may stem from a general acceptance of CCS or simply ignorance of the implications of such transfer. On the one hand, it is possible that the transfer of liability is regarded as a necessary condition for making CCS commercially attractive and that the process is viewed as safeguarded by the stringent transfer requirements. On the other hand, it is also possible that the implications of a provision that allows the transfer of liability is still quite unknown among relevant interested parties. If the latter is the case, it cannot be excluded that the transfer of liability finally will be regulated in an even more stringent way vis-à-vis the operator than the Directive requires, in order to limit the public authorities' financial exposure and, therefore, facilitate public acceptance for the transfer of long-term responsibility.

One way of making the transfer of liability stricter is by using the discretion given to the competent authority to extend the minimum period of 20 years. As of today, there are no statements from the legislative authorities as to whether or not Norway wishes to do so. On the one hand Norway might want to extend the 20-year period in order to stress its strong commitment to environmentally safe storage of CO₂. On the other hand, a longer responsibility period will have the potential to kill, or at least inhibit, commercial incentives – and may also have a marked distortive effect in favour of other EU countries which do not expand the minimum period. Seeing that CCS in general and the Directive in particular is new and that there is a clear interest in encouraging a new industry associated with CCS and CO₂ storage opportunities, our best guess is that Norway will start out with implementing the prescribed 20 year period.

In addition to the 20-year period, there are several other conditions that the operator has to fulfill in order for the authorities to accept transfer of liability: permanent and complete containment of the injected CO₂, sealing of the storage site, removal of the storage facilities and a provision of

⁶⁰ Pursuant to the Petroleum Activity Act the state has the right – but not the obligation - to take over petroleum installations when an exploitation permit expires and/or an activity comes to a close.

⁶¹ Because the private actors do not exist anymore or the liability is time-barred.

financial contribution (see section 7.4 for more on the latter). There is no reason to believe that the Norwegian legislative authorities will deviate from the proposed conditions. Furthermore, it is natural that the liability that is transferred to the authorities is of the same character as the liability that the operator has been responsible for before the transfer. This means that the authorities will be subject to a comprehensive duty of action, and an economic liability encompassing both the obligation to surrender ETS allowances and third party liability.

Given the fact that the state owns the offshore pore space and also probably will have the supervision of CCS activities, the liability will most certainly be transferred to the state rather than to regional governments or counties.

7.15 Financial security

Article 19 of the CCS Directive imposes a requirement of financial security on potential operators in order to ensure that all obligations – following the Directive – during the operation phase can be met. This includes closure and post-closure requirements as well as potential requirements arising from the ETS system following Directive 2003/87/EC. The Directive does not define ‘financial security’ and neither does it provide any criteria in regards to what constitutes such security.

The Norwegian Petroleum Activities Act also contains a provision which gives the Ministry of Petroleum and Energy the authority to impose on the operator a form of ‘security’.⁶² However, the Petroleum Activities Act does not give any definition of what is meant by such security.

Norway adopted a Financial Security Act in 2004.⁶³ The act defines financial security as an agreement where the ownership of an asset is transferred for the purpose of securing the fulfillment of financial obligations. It applies to agreements between public authority, central banks, other financial institutions and legal persons. The act was introduced as a result of the EEA implementation of Directive 2002/47/EC on financial collateral arrangements. Therefore it is likely that Norwegian authorities will regard the act as applicable in relation to the financial security provisions in the CCS Directive.

The Financial Security Act leaves wide autonomy to the parties involved, with regards to the conditions relating to the financial security. The parties can make their own arrangements when it comes to what kind of financial security should be set up and their right to use the security. Autonomy is also granted with regards to how and on what terms the security provider can provoke the final settlement. The rules are clearly written with a high degree of flexibility, which is quite typical in Norway for legislation concerning commercial relationships between strong business actors. The parties involved in CO₂ storage activities will be the Norwegian government on one side and, most likely, a strong commercial company on the other. As such, the legislative authorities are likely to grant the parties flexibility with regard to the financial security.

The Norwegian government, as a party in the financial security agreement for CCS, is likely to impose stringent requirements vis-à-vis the operator. This is because the government must consider not only its commercial interests, but also the interests of the public and the nation at large. This means that the government, as the party that draws on the security, should not accept the same risk with regards to the operator’s financial security as a hypothetical private party may have accepted. The reason for this is that the taxpayer ultimately will be forced to pay for any losses that stem from the acceptance of a risky financial security, rather than the CO₂ storing company that actually is the one in default of its obligations. In practice the minimisation of risk may, for example, require the transfer of ownership of private property or bank accounts as financial security, rather than security in shares.

⁶² Petroleum Activities Act, Article 10-7.

⁶³ Lov 26 mars 2004 nr 17 om finansiell sikkerhetsstillelse.

With regards to the amount of financial security, this issue will also most likely depend on the parties' autonomy and, thus, rely on what the government can consider acceptable. A natural starting point in relation to calculating the amount of financial security would be to determine how much it would cost to the government to fulfill the duties and obligations it is likely to incur, in a worst case scenario. This question is in itself very subjective and will have to be decided on a case-by-case basis for each operator.

The duration of the financial security is specified in the CCS Directive, which decides that it is to be valid and effective until the responsibility of the storage site is transferred to the competent authority. Furthermore, the Directive also adds that the financial security is to be periodically adjusted. In relation to these two aspects, they will need to be implemented by the legislative authorities. Such implementation is not likely to face any problem in Norway.

7.16 Financial contribution

In addition to the financial security imposed on the operator during the operation of the storage site, the CCS Directive in Article 20 requires the operator to make a financial contribution available to the authorities as a condition for the transfer of responsibility. Norwegian law has at least one rule along the same lines, in the case of the closing down of a polluting activity; in that case the authorities may require a financial guarantee as a contribution for possible future costs and liability.⁶⁴ Since the financial contribution is a way of balancing out the fact that the operator is relieved of his environmental liability, the Norwegian legislative authorities will probably not have a problem with the implementation of this rule. The fact that the transfer of responsibility will entail a financial commitment for the operator can make the transfer easier for the legislator to accept.

The Storage Directive states that the amount of financial contribution is supposed to cover the cost of the fulfillment of the anticipated post-transfer obligations and at least the costs of monitoring for a period of 30 years. Norway, as the other EU Member States, has the discretion to impose a longer period than 30 years. Whether this discretion will be used or not remains to be seen. However, the same kind of argument as the one in relation to the minimum period relating to the transfer of liability points towards implementing the 30 year-period for the financial contribution. The actual post-transfer obligations will be dependent on the specific conditions for each individual storage facility and on how much CO₂ is stored, which will determine the magnitude and cost of a potential leakage. It would thus be natural for Norway to give the competent authority, under the meaning of the Directive, the discretion to set the financial contribution on a case-by-case basis, based on the two aforementioned elements.

Other than the indication of the amount of the financial contribution, the CCS Directive does not give any further details with regards to the payment. An important question is how the payment is to be done (i.e. in cash or in another form, all at once or several installments, etc.). However, given the new character of the rule of financial contribution, there are at the moment no indications regarding how the remaining questions will be solved by the Norwegian legislative authority.

7.17 Third party access

The CCS Directive requires the state to ensure that potential users are able to obtain access to transport networks and storage sites (Article 21). The article imposes some criteria and objectives on the state in relation to third party access. In essence the state must take necessary measures in order to achieve a system where access to transport and storage facilities is granted in a transparent and non-discriminatory manner, as long as the operator of such facilities does not refuse on the basis of duly substantiated reasons. These criteria and objectives are somewhat ambiguous. The Directive states that Member States (and Norway)

⁶⁴ Pollution and Wastes Act, section 20.

are granted discretionary power in relation to the exact design of the third party access regulations – Article 21 is thus only a framework.

Norwegian law has a well-developed system for third party access in several of the energy sectors. In 2009 it was decided that the system in the Petroleum Activities Act was to be applied also in relation to CCS installations.⁶⁵ The Norwegian regulations in relation to third party access are similar to the regulations in the CCS Directive – but more detailed – and are derived from the provisions of the recent EU electricity market directive⁶⁶ and the natural gas market directive⁶⁷. This fact should mean that the existing third party regulations will remain unchanged. However, the existing regulations in the Petroleum Activities Act do not apply to non-petroleum related activities such as CCS from gasworks. Given that the main focus for CCS in Norway today is in relation to gasworks, the applicability of existing third-party access provisions to gasworks must be considered.

One of the most interesting issues in relation to the implementation of a complete third party access regime for CCS activities is how access will be granted. On one side access can be negotiated and on the other side regulated. As of today a combination between the two applies to petroleum-related CCS. Because there are no immediately striking arguments against a similar system for a complete access regime, the same system is likely to be continued.

8. CCS and Enhanced Oil Recovery

The relationship between CCS and Enhanced Oil Recovery raises some special questions for the legislator.

The capture, transport and injection of CO₂ in offshore depleted oil fields has been practiced in the form of Enhanced Oil Recovery (EOR) for the last 30 years, and on the Norwegian continental shelf for 15 years. The technique results in an enhanced oil productivity from the reservoirs, and is still in use by petroleum companies on the Norwegian continental shelf. CCS is technically very similar to EOR, but the CO₂ is not intended for any purposeful means other than storage. An interesting question is whether or not different regulations will apply to the two activities after the implementation of the Storage Directive, and if so which differences there will be.

The CCS Directive only mentions EOR in Section 20 in its preamble, which states that EOR – or enhanced hydrocarbon recovery (EHR) in the wording of the Directive - is 'not in itself included in the scope of this Directive'. However, if EHR is combined with (permanent) geological storage of CO₂, 'the provisions of this Directive for the environmentally safe storage of CO₂ should apply'. The question is which of the regulations in the CCS Directive can be said to fall under the wording 'for the environmentally safe storage of CO₂'.

On the one hand it is clear that provisions with regards to safe monitoring and commitments that assure permanent storage must be included. On the other hand it is not as obvious that the regulations in relation to the financial mechanism and transfer of liability are needed for the 'environmentally safe storage of CO₂'. However, the Directive's expressed purpose is 'environmentally safe geological storage of carbon dioxide',⁶⁸ which – from the Directive's own point of view – spawns the need for all the listed requirements and obligations (including the financial mechanism and transfer of liability). Thus, the two wordings are almost identical and a

⁶⁵ See main rule in Petroleum Activities Act, Article 4-8.

⁶⁶ See Directive 2009/72/EC.

⁶⁷ See Directive 2009/73/EC.

⁶⁸ See Directive 2009/31, Article 1 (1).

system oriented interpretation leads to the conclusion that EOR processes with permanent storage of CO₂ must follow the same regulations as isolated storage projects.

The current proposal for a Norwegian CCS regulation – based on the CCS Directive – is primarily prepared pursuant to the 1963 Continental Shelf Act.⁶⁹ Because EOR combined with permanent storage of CO₂ ‘should’ be governed by the same provisions as CCS, it is most likely that such EOR processes will follow the upcoming CCS regulations.

The Directive does not cover EOR processes where CO₂ is not permanently stored, but does not prevent the Member States to adopt their own national regulations for this type of activity. This means that there is room for two forms of regulations in regard to EOR: one for ‘pure’ EOR projects, and one for EOR projects in combination with permanent geological storage of CO₂. In the case of Norway, EOR processes not combined with permanent storage of CO₂ are regulated by the Petroleum Activities Act. The question is whether the Petroleum Activities Act will be amended, as a result of the new CCS legislation, to also cover EOR combined with permanent storage. Such amendments are not unlikely given the fact that Norway has proved to be an ardent advocate of CO₂ storage where it is technologically possible. The required technology for EOR combined with CO₂ storage exists and has, as mentioned, been used by Statoil for 15 years. However, there might be cases where permanent storage of CO₂ in combination with EOR is not possible. This calls for separate regulations for this type of EOR.

The provisions of the Petroleum Activities Act are to a large extent designed to leave discretion to the administrative organs with regards to the exact requirements for any activity. As such, it is likely that the existing provisions for EOR are maintained. At the same time it is possible that the authorities will impose the use of CCS technology where they can. This means not only requiring EOR operators to actually store CO₂ where it is possible, but also demanding that such operators implement other requirements and obligations derived from the CCS Directive. An example of this would be to require that the EOR operator – whether or not combined with permanent CO₂ storage – seeks to achieve the same level of quality in the captured CO₂ stream than the operators who actually store the CO₂.

9. Public engagement, and environmental impact assessment

The CCS Directive establishes that the state must make environmental information relating to the geological storage of CO₂ available to the public. In Norway the public access to information regarding any business with potential environmental side effects is – in general – ensured by a set of Acts, namely: the 1967 Public Administration Act (forvaltningsloven), the 2006 Freedom of Information Act (offentleglova) and the 2003 Environmental Information Act (miljøinformasjonsloven). The existing legislation is comprehensive and gives the public an extensive right to information. This fact makes it very likely that the implementation of the CCS Directive will not lead to the creation of new regulations, but rather a reference to existing legislation.

CCS consists of capture, transport and storage and it is clear that all these three activities may have an appreciable effect on the environment. In relation to the Environmental Information Act, any undertaking engaging in an activity which may have such mentioned effect on the environment is obliged to release on request information about the potential environmental effects that the undertaking may cause. Any person has the right to access environmental information, but this does not include information which for commercial reasons is important to keep confidential.

⁶⁹ Kgl Res 13 mars 2009.

The right to receive environmental information from the private actors will not necessarily lead to any influence on the authorities' decision-making with regards to the construction and/or operation of CO₂ capture, transport or storage installations. In order to influence the decision-making process, the public is given the right to receive environmental information from the authorities. This right is listed in the Environmental Information Act and is not dependent upon the public's request, which means that the authorities are obliged to – upon their own initiative – inform the public. The information that the authorities are obliged to publish will depend on the size of the project in question. In relation to offshore petroleum activities, which are of a similar nature as offshore CCS activities, these are of such magnitude that the Petroleum Activities Act commits the Ministry of Petroleum to carry out and make available to the public an Environmental Impact Assessment (EIA) before opening new areas to petroleum recovery.⁷⁰

The Directive prescribes that the EIA Directive applies to CCS (Preamble Section 17). Even in the absence of implementation of this provision of the Directive in Norway, the fact that CCS and petroleum activities share such factual similarities – from a Norwegian point of view – makes it likely that EIA requirements in relation to petroleum activities will also be applied to CCS activities in Norway. An adoption of the existing rules would result in an obligation for the authority responsible for CCS to carry out an EIA, where the purpose is to highlight the effects which the opening of an area for CCS activities may have on business and environmental conditions. Under current petroleum regulations, the plan for the impact assessment would then be sent to relevant authorities and interest groups as well as made available to the public on the internet. The public will be given a minimum of six weeks to submit comments. After potential adjustments of the plan, the actual EIA will be carried out and the results sent out for another round of consultation. The deadline for comments would normally be three months and not less than six weeks. There are no reasons to suspect that these deadlines will be extended or curtailed in relation to CCS activities.

For CO₂ capture and installations onshore the ordinary EIA system in Norwegian law will apply. This is laid down in the 2008 Planning and Building Act and regulations pursuant to that Act.⁷¹ These rules implement the EU EIA and Strategic Environmental Assessment (SEA) directives.

If the administrative authority finds that CCS activities shall be initiated for exploration or use by an undertaking, this decision may be appealed administratively by a third party following the provisions of the Public Administration Act. The requirement is that the third party has a legal interest in the case, meaning that the third party's rights or interests are clearly affected by the decision. As in Norway the CO₂ storage will be undertaken offshore, the transport will mostly be offshore and capture will be operated close to the sea, the public will not in general be affected by decisions concerning CCS. However, fishermen and environmental organisations are typical examples of third parties that may have the required legal interest to challenge decisions concerning CCS activities, even if offshore. In case third parties with a legal interest do not succeed with administrative appeal, the administrative decision can be brought in for the court for a final ruling.

As of today, Gassnova SF has published articles, reports and general information on their homepage in order to secure public engagement in CCS matters. Gassnova SF is also open for direct questions via mail or telephone. Any relevant input from the public is considered by industry, which also has the option of bringing public opinions to the decision-makers at governmental level.

⁷⁰ See Petroleumsforskriften, chapter 2a.

⁷¹ Regulation of 26 June 2009 no 855 on Impact Assessments (FOR-2009-06-26-855).

10. Specific issues concerning export of CO₂

Due to the large CO₂ storage capacity in its continental shelf, Norway could provide CO₂ storage opportunities for many European big emitters. However, the EU countries must be convinced that the requirements of the CCS Directive will be met during CO₂ storage on the Norwegian continental shelf. Thus, Norway will have to implement the mandatory requirements from the CCS Directive in order to become a provider of CO₂ storage capacity in the future.

Given the timeframe of CCS activities – 100 to 150 years – it will be impossible for Norway to exploit the storage capacity in the North Sea, unless other countries accept export of CO₂.

As of today, Norway is the only contracting party to the Protocol to the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1996 London Protocol) that has ratified the 2009 amendment to Article 6 which will allow export of CO₂.⁷² Data from 2007 show that there were 57 facilities in Norway emitting more than 100,000 tonnes of CO₂ per year. In total their emissions were 23.7 megatonnes (Mt) of CO₂.⁷³ However, Norway has a storage capacity of approximately 254 Mt of CO₂ per year and a total storage capacity of approximately 85 gigatonnes (Gt) of CO₂. Given the fact that CCS is viewed as a promising climate change mitigation measure for the following 100 to 150 years, it is clear that Norway is not dependent on *exporting* CO₂ from its own sources.

However, the international acceptance of CO₂ export will benefit the country as a possible *importer* of CO₂. Due to its very large storage potential exceeding by far the country's own needs, Norway has an option to sell such capacity. The business of offering transport and storage of CO₂ on the Norwegian continental shelf has the potential of becoming profitable both for potential CCS actors establishing installations on the Norwegian continental shelf and also for the big emitters on the European continent. The condition for this kind of CO₂ export being lucrative is that the price on CO₂ emissions under the EU ETS increases over the coming years. Such increase in price is the backbone for a more incisive European emission trading scheme.

11. Conclusions

It will most likely be in Norway's interest to develop the necessary technology, a sound organisational structure and a suitable legal framework for large scale CO₂ storage on its continental shelf. There seems at present to be broad political support for this. An important step towards this goal appears to be an effective implementation of the Directive 2009/31 in Norwegian law and, as this analysis has shown, there do not seem to be any major legal difficulties in this regard.

⁷² Resolution LP 3 (4) On the Amendment of Article 6 to the London Protocol, adopted on 30 October 2009 by the Fourth Meeting of Contracting Parties to the London Protocol.

⁷³ See S Teir et al, *Potential for Carbon Capture and Storage (CCS) in the Nordic Region* (VTT, Helsinki, 2010) 19.