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From 'Dirty' to 'Clean' and in-between: European Climate and Energy Policies

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4.1. INTRODUCTION

"[E]nergy has a crucial role to play in tackling climate change" (IEA, 2013:15). The EU-28 is responsible for 6.1% of global energy production and 11.9% of global CO₂ emissions. These figures make the EU rank last in energy production⁴⁶, yet fourth in CO₂ emissions and final energy consumption (European Commission, 2014c:11-19). Logical conclusions that can be drawn from these figures are that 1) the EU contributes relatively highly to the climate change problem and 2) the EU imports more energy than it produces. In fact, the EU's energy import dependency stood at a grand total of 53.4% in 2012, with the highest level of dependency on petroleum and products. The most important exporting countries are Russia, Norway, and Saudi Arabia for crude oil, Russia, Norway, and Algeria for natural gas, and Russia, Colombia, and the US for solid fuels (*ibid.*:24-26). The EU will therefore not achieve much by only focusing on reducing emissions at the source, where economic fundamentals and geopolitical considerations are the main drivers (European Commission, 2011b:4). While climate objectives are often agreed upon internationally, their implementation has a national character. Energy policy is a national affair as well. Any analysis of EU climate and energy policies must therefore focus on the nation state as well.

⁴⁶ Identified regions are EU-28, China, United States, Middle East, Asia (excl. China), Russia, Africa and 'Rest of the World'.

However, policies alone are not enough. The author of *The Energy of Nations*, Jeremy Leggett⁴⁷, warns against five global systemic risks which influence energy policies and challenge businesses around the world: oil shock (mismatch between supply and demand), climate shock, further crash in the global financial system, carbon bubble in capital markets, and the shale gas boom. The dominant view is that peak oil is far off, so there is nothing to worry about. The same goes for the climate shock; while many agree that there is a threat to the earth and mankind due to emissions, adaptation is viewed as being possible and so there is no reason to be too concerned about it. The carbon bubble adds to this problem by continuing investments in fossil fuels even though we know that there is more carbon in them than mankind can *afford* to burn. Should governments decide to counter this trend, fossil fuel assets will decline in value so dramatically that the carbon bubble will burst. The shale gas boom adds to global uncertainty because of the concerns guiding the exportability of it as a concept. Finally, the inability to rein in the financial sector versus the resiliency and cyclical nature of capitalism provide risks in the financial sector, with further crashes possibly having a detrimental effect on energy markets (Leggett, 2014:xiii-xv). Why are these five systemic risks relevant to this dissertation? They painfully show the interconnectedness of energy markets on a global scale, not only with each other but also with the financial system and with the policies adopted by the world's nations. A port aptly showcases the importance of connections: without connections, there is no reason for a port to exist. Therefore, this chapter addresses both European climate and energy policies affecting the Dutch situation and the global context EU and port developments are embedded in. I start (§4.2) with a discussion of the history of EU climate and energy policies up until now, including current progress and global developments, then turn to Dutch energy and climate policies (§4.3) before concluding with the statement that the guiding policies are of a highly fragmented nature (§4.4).

4.2. ENERGY AND CLIMATE POLICIES: TWO SIDES OF THE SAME COIN?

Sustainable energy is a phrase that appeals to many audiences. Most people would not even think about the controversy that is implicit in the term. The desirability of sustainable energy is not translated into an actual global movement towards the abandonment of fossil fuels, because investments into it are very expensive and many systems are designed to run on fossil fuels. Energy and climate thus do not always go together, even though the concept of sustainable energy aims to fuse them. In the world of policy, the link between

47 *The Energy of Nations* is not an academic publication, but its author, Jeremy Leggett, is an Associate Fellow at Oxford University's Environmental Change Institute. The book was published in 2014 and provides an interesting account of the danger of peak oil and of risks inherent in the global energy system.

energy and climate is not necessarily obvious either. Climate change action is often seen as an emissions reduction problem and not as an energy problem (Shaw, 2011:743). From its early commitments under the 1997 Kyoto protocol, the EU has gradually shifted from aspiring to fulfil its climate obligations as a climate leader, to wedding the economies of energy and climate in an effort to reduce the stress human activity places on the planet. Yet even though the EU has extensive competencies to combat climate change, large parts of energy policy still fall under the sovereignty of its member states (MS). Articles 191 through 194 TFEU⁴⁸ establish competence in the areas of environmental and energy policy. The EU's competence in the environmental area is well-established, but it has no say in a country's energy mix. Individual MS thus often make their own energy strategies and do not always implement EU internal market policies properly (Vogler, 2013:629-639). The organisation of both policy fields in the Commission lies with two separate DGs — DG ENER and DG CLIMA⁴⁹ — with no formal coordination between them (Toke & Vezirgiannidou, 2013:544; Vogler, 2013:629) until 2014. They often differ considerably in their opinion on the same matter (Skovgaard, 2014:12). Problematic are the multifaceted aspects of energy policy, which include market policies, security of supply, trade, but also a heavy national security component.

4.2.1. A Brief History of Climate and Energy Policies in the European Union

Energy security was the basis for peace in Europe after the Second World War⁵⁰, and member states are reluctant to surrender control over such an important part of their national security (Vogler, 2013:630). Energy cooperation is part of the EU's history since the 1950s, yet *real* cooperation is still difficult to achieve. The Single European Act of 1986 foresaw convergence of energy policies across the European Community and was subsequently spurred along by exogenous events such as the fall of the Berlin wall, the Gulf War, and the fall of the Soviet Union (Schubert, Pollak & Kreutler, 2016:105-108). National monopolies in the gas and electricity sectors were cut with the adoption of market liberalisation and third party trade directives in 1996 (electricity) and 1998 (gas). Since oil is not as bound to infrastructure as gas and electricity, national monopolies were of much lower concern there although Europe's dependence on oil import from non-EU countries was a potentially problematic issue (Claes & Frisvold, 2009:213-214). Fully realising that a disruption in energy supply directly affects citizens' welfare, member states became very worried about their energy security in the

⁴⁸ Treaty on the Functioning of the European Union, see the 2012 consolidated version at [<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012E%2FTXT>].

⁴⁹ DG CLIMA was established in 2010 when DG Environment was split into two DGs. The Juncker Commission (2014 onwards) has kept DG ENER and DG CLIMA as two separate DGs but under one Commissioner. Perhaps more synergies will now occur between energy and climate policy.

⁵⁰ For a comprehensive historical account of EU energy policy, see Schubert, Pollak & Kreutler, 2016:92-124.

wake of tensions between Russia and the EU and the problems in the Gulf region. Using coal became interesting again since it could be mined in the EU (*ibid.*:216).

The first international climate conference took place in 1988 when over 300 scientists and world leaders discussed the impact of energy consumption on climate change. Basing itself on the IPCC's 1990 report showing a decrease in emissions in all sectors except transport, the European Commission took a leadership role and published its first communication on energy and environment in the same year. The Commission used strong statements such as "sufficient energy and environmental quality are essential for the survival of the human race" (European Commission, 1990:6) and "[a] high level of environmental protection requires stringent legal measures to be applied in all Member States" (*ibid.*:15). The EC tried to establish a leading role in policy-making towards CO₂ reduction by 'inviting' the Council to "collaborate closely with the Commission in the execution of this important work" (*ibid.*:12). The resulting document, the United Nations Framework Convention on Climate Change (approved by the EU in 1993), sets out to stabilise the concentration of GHG in the atmosphere, marking the first international agreement focusing on the impact human activity has on the climate⁵¹.

Subsequent proposals to introduce an energy tax were shot down by EU member states, but the environment was now firmly on the EU's agenda (Schubert, Pollak & Kreutler, 2016:112). The first Kyoto Protocol (1997) saw the introduction of quantitative GHG reduction targets for 2008-2012. The EU kickstarted its implementation by establishing the European Climate Change Programme (ECCP). Coal, attractive for its positive energy security component, became problematic from a climate perspective. Yet a country's energy mix is up to national governments themselves. Most countries — also globally — treat energy and climate policies as two separate domains. Even so, some reconceptualisations of energy security now involve sustainability (Toke & Vezirgiannidou, 2013:538-547). There is an obvious link between energy security and sustainability, which is often forgotten in the realm of public debates on this topic: many negative climate impacts (f.e., water stress, sea level rise, tropical cyclones) will make fossil fuel extraction and transport much more difficult and costly, thereby necessitating climate action *simply to keep the engines running* (IEA, 2013:92). The IEA writes

51 That is not to say there were no *protective* measures before the '90s. The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter of 1972, also called the London Convention or the London Protocol, attempts to reduce pollution of the seas caused by waste dumping by vessels, aircrafts and platforms. It also includes a prohibition on transboundary CO₂, making it illegal to 'trade' CO₂ for the purpose of offshore storage. An amendment has been made to change this situation, but it has not been ratified by the required amount of states. Furthermore, if the CO₂ is used as a product (for example for EOR), trade is allowed. Another important convention, the OSPAR Convention of 1992, is meant to protect the North-East Atlantic and prohibits the storage of CO₂ in the water columns or on the seabed. Sub-surface storage is allowed.

"[u]nless the resilience of our energy system to climate change is considered more explicitly, energy supply and transformation will be exposed to greater physical risks, which will increase capital, maintenance and insurance costs, impair energy supply reliability and accelerate the depreciation and deterioration of assets" (IEA, 2013:97).

There should thus be a clear incentive for governments and energy companies alike to aspire to successful climate change mitigation alongside the economics of energy security. Reframing energy security to make sustainability be a part of it makes investments into sustainability less 'sacrificial' to people, yet others argue that, as a result, sustainability will become a secondary consideration (Toke & Vezirgiannidou, 2013:541-542). This dissertation shows that the critics are partly right.

4.2.2. Towards 2020 and Beyond

Over the years the EU has tried to link debates surrounding energy and climate issues. Early examples of climate and energy policy links are the ECCP and EU ETS, but they were not components of a "wider energy and climate security strategy" (Vogler, 2013:637)⁵². The turning point was a European Council meeting in 2007, led by the German presidency, which was later dubbed the 'Merkel Miracle'. After the Lisbon Strategy and the European Constitution failed, Commission president Barroso tried to re-establish the Commission's honour by initiating the *Climate & Energy package* (the '20/20/20 goals') with support of Commissioners Piebalgs, Dimas and Verheugen. The goals included binding GHG reduction targets for member states and were supplemented by the Fuel Quality Directive (FQD) — regulating emissions from transport fuels — and standards for CO₂ emissions from cars. During the meeting of the European Council, German Chancellor Merkel succeeded in ensuring unanimous support for the 20/20/20 goals. Member states were united and leading in their ambitions to save the climate. Some, most notably Germany, Denmark and The Netherlands, even announced stricter reductions than the EU-level agreement (Claes & Frisvold, 2009:218-219). Hindsight teaches us that these commitments, though revolutionary as they were at the time, would be subject to political whims. Even so, the onset of 2009 saw energy security and climate discourses finally brought together, yet not fused.

The Europe 2020 Strategy (COM(2010) 2020 final) was introduced in 2010, right after the economic and financial crisis hit the European Union. Its predecessor, the Lisbon Strategy (2000 - 2010), addressed the EU's place in a global competitive environment in an attempt to transform European economies and solve socio-economic problems such as ageing, growing

⁵² From 2001 onwards there was a concrete EU renewable energy policy.

globalisation, and rapid innovation (Natali, 2010:5). The focus was very much on ensuring the EU's competitive position in a global perspective, which meant not only strengthening economic governance but also liberalising the energy market, improving education and social policies, increasing overall productivity and employment, and protecting the environment (Begg, 2008:427-429; Natali, 2010:5). Governance was a focal point of the strategy. The EU believed very much that a lot could be achieved through soft coordination and its newly introduced Open Method of Coordination (OMC)⁵³. In cases where the EU did not have sole regulatory power, soft coordination hinging on flexibility, participation, use of benchmarks, and multi-level (policy) integration, was to aid in the harmonisation of policies across the EU (Borrás & Jacobsson, 2004:185-189)⁵⁴. Its influence on domestic policies and participation was heavily questioned by the time the Europe 2020 strategy was launched (Natali, 2010:19-20). Furthermore, the importance assigned to liberalising financial markets under the Lisbon strategy left the EU disappointed in the wake of the financial crisis (Gros & Roth, 2012:10-11). As a result, the Europe 2020 strategy was to be more focused and include clearly quantifiable, reachable goals (*ibid.*:77). Its main goal — to achieve smart, sustainable and inclusive growth — reflects the impact of the crisis. Barroso's words in its preface deliver a clear message: "2010 must mark a new beginning. I want Europe to emerge stronger from the economic and financial crisis" (European Commission, 2010b:2, emphasis in original). In order to deliver the goals, European leaders agreed on five 'headline targets':

1. Employment
 - at least 75% of 20-64 year-olds employed;
2. R&D
 - 3% of the EU's GDP invested in R&D;
3. Climate and energy
 - 20% reduction in greenhouse gas emissions as compared to 1990 levels;
 - 20% of energy from renewables in final energy consumption;
 - 20% increased energy efficiency;
4. Education
 - at least 40% of 30-34 year-olds completing tertiary education;
 - early school leaving below 10%;
5. Fight against poverty and social exclusion
 - at least 20 million fewer people in or at risk of poverty and social exclusion.

53 The Open Method of Coordination (OMC) is an example of an emerging form of EU governance around the 2000s. For more information on the OMC, see for example the Eurogov paper by Citi & Rhodes: 'New Modes of Governance in the EU', 2007.

54 The OMC was, through its emphasis on multi-level participation, another form of multi-level governance.

A caveat of the Europe 2020 strategy is that member states are given the freedom (except in the area of climate and energy) to formulate their national goals themselves in their National Reform Programmes (NRPs). In the areas of employment, R&D and social cohesion the sum of these domestic goals does not add up to the goals European leaders have formulated at the EU-level (Gros & Roth, 2010:85)⁵⁵. Since only the climate and energy goals are binding (except for energy efficiency), one would expect higher success in reaching Europe 2020's energy and climate goals than in the other areas. However, section 4.2.5 will show that even this success is not yet guaranteed. Figure 4.1 provides an overview of the relevant policy and financial coordination mechanisms in place at EU level since 2010. The green boxes show which policies are the focus of this dissertation.

To support the headline targets under Europe 2020 the European leaders agreed to the launch of seven flagship programmes. The flagships are meant to help reach the targets and boost economic growth in European countries by making coordination between EU institutions and national authorities a prerequisite. The seven flagships are fitted into the 2020 Strategy as shown in table 4.1. Because Europe 2020 was introduced in times of economic crisis, it is important to consider not just the coordination of policy but also the financial mechanisms that guide the implementation of the strategy. The European Economic Recovery Programme (EERP) was launched in 2008 and aims to resolve the crisis. Its main pillars are the establishment of mechanisms for crisis resolution, financial reform, and to reinforce EU economic governance. A very important tool to reinforce economic governance is the European Semester, which was launched in 2011. The European Semester is an annual, cyclical coordination mechanism geared towards harmonising economic policies across the EU (Gros & Roth, 2010:79). It requires member states to submit their National Reform Programmes — the economic policies — and Stability and Convergence Programmes (SCPs) — the budgetary policies — to the Commission for an in-depth review and recommendations. These reports also feed into the EC's economic forecasts and, most notably, its Annual Growth Survey (AGS). Member states are invited to report on their action plans and progress towards achieving the Europe 2020 goals in the same cycle. These plans are also discussed in the European Council and the European Parliament. The European Semester is thus a tool of economic coordination and also provides a direct link to the policy coordination strategy introduced in Europe 2020, and can potentially impact (progress towards) the Europe 2020 goals (*ibid.*:79).

55 See also the 2015 annex to the key 2020 parameters on the European Commission website: [http://ec.europa.eu/europe2020/pdf/annexii_en.pdf].

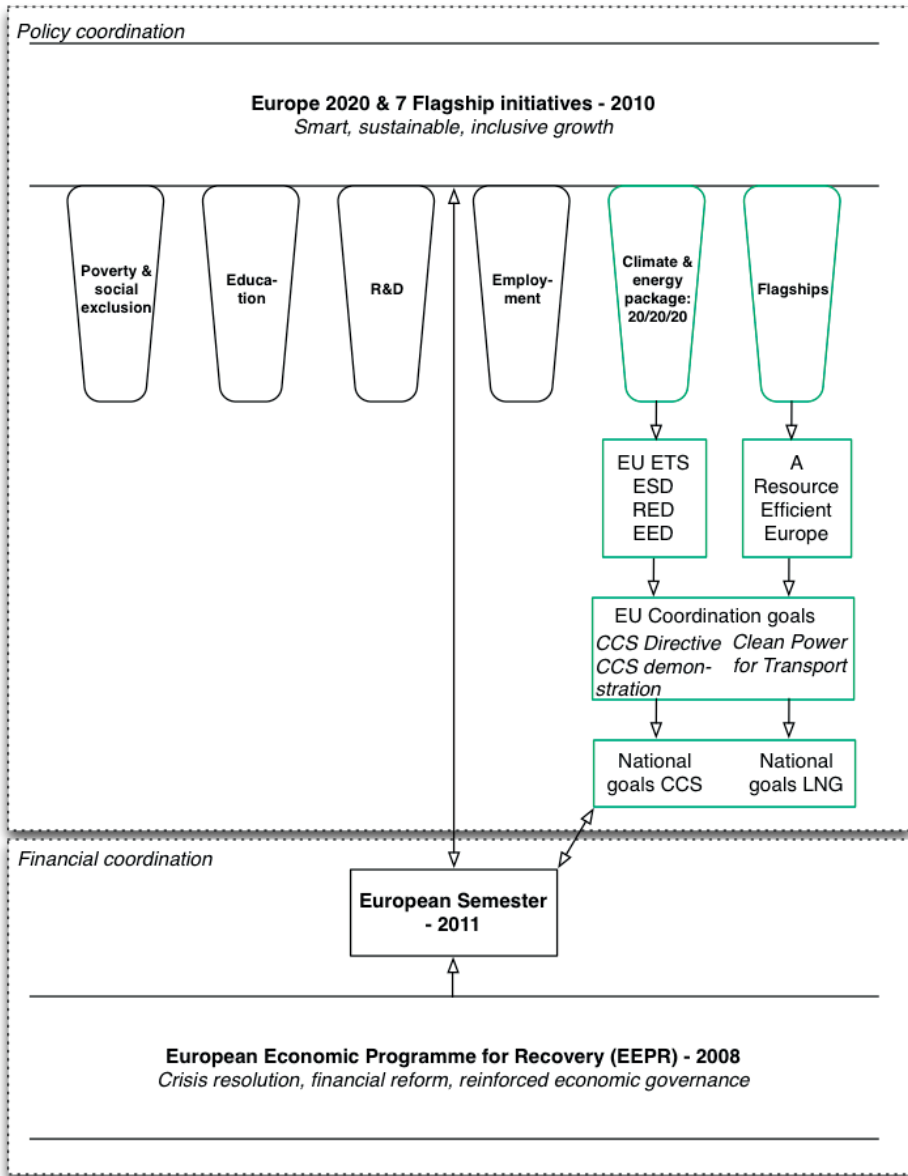


Figure 4.1. European policy and financial coordination through Europe 2020 and EEPR
 Source: own composition based on policy documents mentioned above and EC website.

Table 4.1. Flagship programs under Europe 2020

Europe 2020 goal	Flagships	Brief summary of goals
Smart growth	1) Digital Agenda for Europe	1) Digital Single Market promoting access and economic growth
	2) Innovation Union	2) Fostering an innovation-friendly environment
	3) Youth on the Move	3) Promoting young people to study, train or work abroad
Sustainable growth	4) A Resource Efficient Europe	4) Promoting resource efficiency and the transition to a low-carbon economy
	5) An Industrial Policy for the Globalisation Era	5) Promoting a competitive and sustainable European industry
Inclusive growth	6) An Agenda for New Skills and Jobs	6) Increasing employment and equipping people with the right skills for the future
	7) European Platform Against Poverty	7) Promoting social inclusion and fighting poverty

Source: European Commission's Europe 2020 website (http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/flagship-initiatives/index_en.htm).

4.2.2.1. Agenda-setting in an energy insecure Europe

The road to 2020 began with two catchphrases: *competitiveness* and *energy efficiency*. The 2004 Green Paper on Energy Efficiency, called "*Doing More With Less*", stresses the importance of competitiveness and represents the era during which the EU was trying to be 'the best'. Saving energy and efficient use of energy are examples of ways to ensure future EU competitiveness. The Green Paper aims to increase this cost-effective and efficient use of energy by reformulating the existing EU energy policy (European Commission, 2004:4-5), and, following the 2009 package, the subtitle of the ensuing *Energy 2020* strategy (European Commission, 2010a) — "*A strategy for competitive, sustainable and secure energy*" — neatly summarises the reformulation into three pillars. Incidentally, this reformulation happened after the EU realised that being the best was no longer a realistic expectation in a rapidly changing world where emerging economies were forcing the EU to focus on remaining afloat. EU leaders decided not to place all their eggs in one basket; aside from conventional coal, oil and gas, increased focus was placed on the role of renewables, nuclear energy and LNG. Domestic energy production could increase and its supply could be diversified to reduce import dependency on Russia. Geopolitical considerations were important agenda setters for EU energy policy, and incidentally helped climate efforts as well. The EC had to find a way around exclusive member state competency and climate change provided a good way to do so.

Around 2007, all sectors except for the transport sector were showing a break in the growing emissions trend. To the dismay of many governments and the EU, the transport sector was stubbornly emitting more each year. The Merkel Miracle also saw the adoption of standards for CO₂ emissions from cars, but the car lobby was not thrilled. They campaigned for a so-called *integrated approach* which could “spread the burden of carbon intensity reduction over all parties contributing to carbon emissions” (Breemersch, 2015:3). Alternative fuels came up as an option to reduce emissions in novel ways and the Fuel Quality Directive (FQD) focused on mixing-in biofuels for easy CO₂ reductions. But a focus on just cars was not enough. The Joint Expert Group on Transport and Environment (JEGTE) explored additional options and came to the conclusion that heavy transport could not be approached in the same way as passenger cars. Each modality needed a specific approach. JEGTE’s advice for the Commission was to address alternative fuel routes for trucks, aviation, rail and waterways separately⁵⁶, which later morphed into the *Clean Power for Transport Directive*.

4.2.2.2. Decision-making and outcomes: back to square one?

“The price of failure is too high”

— (European Commission, 2010a:2, emphasis in original)

The introduction to the EU’s Energy 2020 strategy says it all: the Union needs energy that is secure, safe, affordable, competitive, but also sustainable. The Lisbon Treaty has addressed energy policy as a shared European competence for the first time and laid down the goals of the Union’s energy policy: security of supply, competitiveness and sustainability. The EU’s energy goals have been formulated in the knowledge that if the EU does not diversify its energy resources and modernise its energy infrastructure, European society will face large costs and higher insecurity for both the short and the longer term future. The Energy 2020 strategy was formulated when the realisation hit that the EU is adapting too slowly to the changing energy reality, and that decisive action is necessary if the EU is to successfully face upcoming energy and security challenges (*ibid.*:2). The entire 2020 Climate & Energy package was proposed and adopted within a span of 15 months. By the end of November 2008, all proposals were adopted by the committees of the EP and awaited a final vote. The EU took its 2020 targets to the Poznań Climate Change Conference in December 2009, and the EP voted on the climate and energy package after the conference ended. From that point onward swift adoption of the whole package was seen as desirable by the EU and by national governments to serve as input for the 2009 Copenhagen Climate Change Conference, or COP-15. The EU was keen to maintain its international leadership on climate

⁵⁶ Personal communications with R. Cuelenaere. The report can also be found at [https://ec.europa.eu/transport/sites/transport/files/themes/urban/cts/doc/jeg_cts_report_201105.pdf].

change and energy (Council of the EU, 2008:3; Kulovesi, Morgera & Muñoz, 2011:830; Skjaereth, 2016:509)⁵⁷.

As stated previously, this dissertation focuses on the 'green' boxes of figure 4.1: the *Climate and Energy Package* and the flagship programmes *A Resource Efficient Europe*. The other pillars of the strategy come with their own policies, but these will not be discussed in this dissertation and are therefore left blank. The 2009 policy package for energy and climate was incorporated into the Energy 2020 Strategy⁵⁸ under Europe 2020 a year later. Its goals have been directly imported into the climate and energy headline of the strategy (see table 4.2). The package rests squarely on two pillars: ETS and effort sharing, with two technology-specific directives included to make it easier to sell the package politically (Skjaereth, 2016:516-520). At the time the package was proposed, DG ENV had a climate department which issued climate-related proposals. It established the EU ETS in 2003, much to the dismay of DG Energy (then DG TREN). They disliked interference with their domain (EU ETS influenced the prices of fossil fuels, nuclear energy and renewables) and feared market distortions. Cooperation between DG ENV and DG TREN was necessary and key people in both DGs began working on finding synergies between both policy fields (*ibid.*:513-14). The Renewable Energy Directive will not be discussed further in the context of this dissertation, though it is important to state that Directive 2009/28/EC dealt with highly contentious issues and needed much deliberation in the Energy and Environment Councils, especially on the topic of biofuels. The CCS part of the package was likewise deliberated on within both the Energy and Environment Council and became linked to the ETS Directive during negotiations.

The EU-15 were generally in favour of a more stringent climate policy, whereas the newly accessed Eastern European countries were more concerned with their energy security. Full policy coordination was not reached. The 2020 package provides a mixture of binding, yet nationally established goals and a politically constructed effort sharing. The poorer countries were promised such compensation in turn for their backing of the package (Skjaereth, 2016:516-517)⁵⁹. Contrary to energy efficiency, the GHG emission reduction goal and the renewable goal come with legally binding targets at the national level. These targets have been set with regards to the difference in wealth between individual countries; wealthier economies have to put in more effort whereas less wealthy economies have lower targets (Eurostat, 2015:84-85). Even though such effort sharing was necessary to get all member

⁵⁷ On April 6th, 2009, the Council unanimously approved the amended proposal at the first reading, along with the other proposals in the energy and climate package.

⁵⁸ COM(2010) 639 final.

⁵⁹ Though the inclusion of the NER 300 for CCS purposes could potentially benefit a country such as The Netherlands as well.

Table 4.2. Energy and Climate under Europe 2020

Proposal	Summary of main issues	Document number	Leading DG
EU ETS Directive - (ETS)	1) Establishes an <u>EU-wide cap</u> for GHG emissions from power generation, industrial plants, and aviation 2) Allocation methods, carbon leakage, NER fund, and application to small installations	Directive 2009/29/EC*	DG CLIMA (at the time of introduction still part of DG ENV)
Effort Sharing Decision - (ESD)	1) Defines <u>legally binding national GHG emission targets for the non-ETS sectors</u> 2) Issues of flexibility and interaction with ETS	Decision 406/2009/EC	DG ENV
Renewable Energy Directive - (RED)	1) Defines the <u>EU renewable energy target in gross final energy consumption</u> for 2020, defines <u>legally binding national renewable energy targets</u> , requires formulation of National Renewable Energy Action Plans by 2010 2) Renewable transport fuels, reinforcing measures	Directive 2009/28/EC	DG ENER (at the time of introduction DG TREN)
Energy Efficiency Directive - (EED)**	1) Defines the <u>EU energy efficiency target</u> for 2020, requires member states to set an <u>indicative national target</u> , requires formulation of National Energy Efficiency Action Plans by 2014 2) Energy saving in distribution and retail, building efficiency, renovations, empowering consumers, energy audits, monitoring	Directive 2012/27/EU	DG ENER
CCS Directive	1) Lays down a <u>framework for safe capture, transport and storage</u> of carbon dioxide and the composition of CO2 stream 2) Proposes solutions for <u>permitting, monitoring, transfer of responsibility, capture readiness and financing issues</u>	Directive 2009/31/EC	DG CLIMA (at the time of introduction still part of DG ENV)

Source: Commission documents (see numbers in table). * Originally introduced in 2005, now in its third phase (phase I: 2005-2007, phase II: 2008-2012, phase III: 2013-2020, phase IV: >2021). Iceland, Liechtenstein and Norway are also part of the EU ETS. ** The Energy Efficiency Directive is a loose-standing directive that is part of Energy 2020.

states to agree to the directives, it has led to nearly half of the EU's countries⁶⁰ being allowed an *increase* of GHG emissions rather than a decrease to stimulate their economic growth. Overall, the EU-28's progress shows positive signs.

As visible in figure 4.2, GHG emissions dropped quite drastically after the recession hit. The 2010 rebound appears to have been temporary as emissions have dropped continuously afterwards. The emission rise in 2015 could be another such brief rebound reflecting an improving economic situation throughout the EU. Major contributors to the decrease in

⁶⁰ Bulgaria, Czech Republic, Estonia, Latvia, Lithuania, Hungary, Malta, Poland, Portugal, Romania, Slovenia and Slovakia are allowed a net increase in non-ETS emissions in 2020 (as compared to base year 2005). See also Annex III.

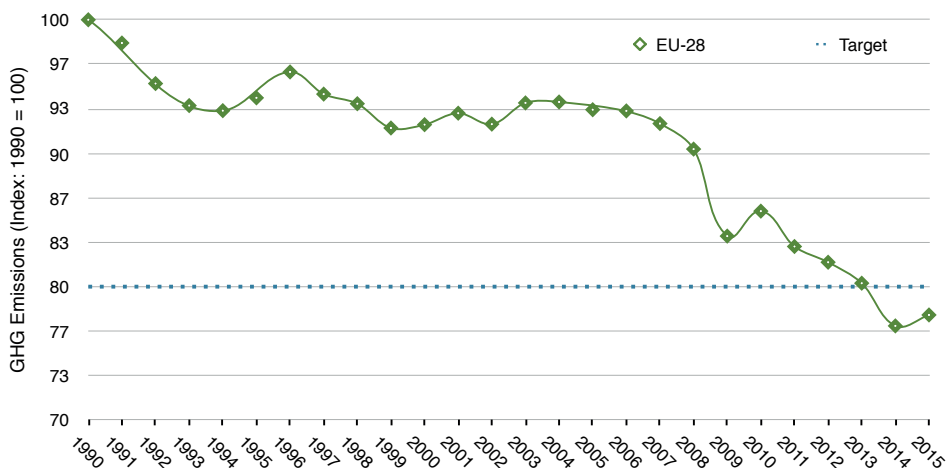


Figure 4.2. Greenhouse gas emissions for EU-28 *, 1990 - 2015

* Emissions include aviation but exclude emissions from land use, land use change and forestry (LULUCF). Source: Eurostat (online data code t2020_30).

emissions are electricity and heat production, manufacturing industries (including iron and steel), and residential fuel use (EEA, 2016:vi). Member states reporting the largest reductions in 2013-2014 are Germany, the UK, France, and Italy. However, for non-ETS emissions Germany is among the worst performers, along with The Netherlands, Belgium, Finland, Denmark and Luxembourg⁶¹. Furthermore, emissions from international aviation and international shipping increased by 95% and 24% respectively between 1990 and 2014, contributing to 6% of the EU's GHG emissions in latest reports (*ibid.*:xi).

By 2014, the EU-28 had reached its GHG emissions reduction target for 2020. The share of renewables in final energy production was 16% in the same year, with best performers being Sweden (52,6%), Latvia (38,7%), Finland (38,7%) and Austria (33%), and worst performers being Luxembourg (4,5%), Malta (4,7%), The Netherlands (5,5%) and the UK (7%). In total, nine out of 28 member states had reached their 2020 target⁶². The 10% biofuels in transport target has been under considerable duress from the beginning, suffering from differences in opinion between member states, critiques that biofuel production and usage hurts other sectors, and doubts about the environmental friendliness of biofuel production. The results are mixed success across the EU, with Sweden being a high outlier (The Netherlands stood at 5% in 2012) and little or no progress being made in Bulgaria, Spain and Estonia

⁶¹ Annex II to COM(2014) 130 final/2.

⁶² Some of the best performers, for example Latvia, had not reached their target even though they were far above the 20% share by 2014. Source: Eurostat, online data code t2020_31.

(Schubert, Pollak & Kreutler, 2016:170-173). Lastly, the energy efficiency target for the EU-28 also had not been reached by 2014, standing at an aggregate of 15,7%. Most EU member states reported a decrease in primary energy consumption, with Finland, Poland and Estonia being the exceptions⁶³. It can be concluded that the EU as a whole is on track to reach the 2020 targets, but that MS performance varies considerably which makes the outlook for 2030 quite bleak; the 40% GHG reductions target will not be met with current policies, renewable energy share has ceased to be a legally binding target at national level and the Energy Efficiency Directive — with merely indicative targets formulated at national level — had not been legally transposed by the majority of member states by 2015 and needs additional measures in particularly the building, transport and energy generation sectors (European Commission, 2015a:11-13). The fact that the Commission cannot decide on a country's actual energy mix makes harmonisation at the EU level only possible with decisive activity at the national level⁶⁴. While 2010 may have been a turning point for the climate in the EU's discourse and high-level ambitions, performance is lagging behind. The ongoing tensions between EU-level commitments and national interests are discussed in section 4.2.5.

4.2.2.3. *The role of CCS*

The CCS case will be discussed at length in chapter five, though this section will provide a comprehensive overview of the relevant CCS policies in place. The 2007 Strategic Energy Technology Plan⁶⁵ (SET-Plan) identified six priority technologies: wind, solar, electricity grids, bioenergy, carbon capture and storage, and nuclear fusion. On the political agenda of the EU, the potential of CCS was first recognised in 2005 (Martínez Arranz, 2015:249; Nykvist, 2013:683) following the IPCC's special report examining the potential of CCS to stabilise the climate (IPCC, 2005). Before that, the technology was studied extensively in academia (especially in The Netherlands) and advocated by scholars outside of IPCC as well. The EU responded by establishing a cross-sectoral think tank to advise the EC, the Zero Emissions Platform (ZEP)⁶⁶. Furthermore, in 2005 a cap-and-trade system for CO₂ emissions was introduced with the EU ETS, to which the price of capturing and storing CO₂ was subsequently linked as part of the EU ETS review in the climate and energy package for 2020.

⁶³ Source: Eurostat, online data code t2020_33.

⁶⁴ Instead, what the Commission has been doing is investing funds into R&D and pilot projects to stimulate private sector involvement (Schubert, Pollak & Kreutler, 2016:179), which is its classic response when its competences in a certain area are weak (cf. Van Schendelen, 2017).

⁶⁵ COM(2007) 723 final, originally a required output of the 2007 March Council meeting. Since 2015-2016 supported by European Technology and Innovation Platforms (ETIPs). The 2020 timeline of the SET-Plan is supposed to aid in reaching the goals of Europe 2020. Mentioned in bibliography as 2007b.

⁶⁶ Currently ZEP is also one of the European Technology and Innovation Platforms (ETIPs) that helps implement the integrated SET-Plan under the Energy Union strategy.

That package also contained a communication on supporting early demonstration of sustainable power (COM(2008) 13). It is a supportive document to the CCS Directive and outlined the Commission's view on how CCS should be deployed in the EU. The goal was to have CCS commercially feasible in power plants around 2020 with strong support from a well-functioning EU ETS (European Commission, 2008:3). While the EC admitted that CCS is very expensive, the expectation based on industry estimates was that the costs of CCS could be brought down by 50% by 2020. Wide application could then lead to CO₂ emissions reductions of 161 Mt in 2030 and 800-850 Mt in 2050, which would amount to respectively 3.7% and 18-20% of the overall EU CO₂ emission levels in 2008. A role for CCS was also envisaged in the energy intensive industries. To overcome the legal and financial obstacles to CCS, the Commission proposed the CCS Directive and stressed the importance of quick adoption and transposition by member states (*ibid.*:4-6). Energy companies were expected to be willing to invest into CCS to retain their market position and gain new business opportunities, but the Commission also admitted that public funds may be needed for a limited time⁶⁷. The EC's trust in the promise and possibility of CCS is visible in the following confident statement:

“Without bold funding decisions by the companies at the earliest opportunity, complementary public funding may not be triggered. The longer the power industry takes to start embracing the CCS technology, the more policymakers will be obliged to look at the option of compulsory application of CCS technology as the only way forward” (European Commission, 2008:9).

To this day, the Commission's implicit threat has not been made reality because it would not pass voting in the Council. The EC further asserted that it is in the member states' interest to develop CCS, hinting at the responsibility of the national governments to provide additional funding where needed, yet also stating that co-funding from the EU would be a possibility. The Seventh Framework Programme (FP7) and the European Investment Bank (EIB) were mentioned as possible catalysts for CCS investments at EU level (European Commission, 2008:9-10). Clearly, the potential promise of CCS for European decarbonisation led to a technology-biased approach from the EC. It would later discover that such an approach does not work.

⁶⁷ In general, a distinction is made between the development/demonstration phase and the commercial phase. Public support is often expected — and granted — in the demonstration phase but not in the commercial phase as companies are expected to be able to apply the technologies competitively.

The CCS Directive was discussed seven times in the energy and environmental setting of the European Council between February⁶⁸ and December 2008. On December 17, 2008, the European Parliament adopted the Directive in the first reading with an overwhelming majority⁶⁹, proposing 144 amendments prepared by two committees (Environment, Public Health and Food Safety, and Industry, Research and Energy). The Directive's main parliamentary rapporteur was Chris Davies, who had previously attempted to put in place a financial mechanism for CCS and to stimulate the creation of a regulation for Emission Performance Standards (EPS) in the dirtiest power plants in the EU. However, his attempts were opposed by the EC and the Council. The overall opinion of the EP was favourable to the CCS Directive, although the possibility of EPS was greatly favoured by the Green Party over CCS investments. The Greens wanted EPS and the exclusion of EOR, with one German member stating that "the commitment with which a technology that does not even work yet is being canvassed seems absurd"⁷⁰. The EP made sure to underline that CCS is but one of the means to combat climate change and that its use should not increase the number of power plants burning fossil fuels. The EC accepted the amended proposal on the same day the EP approved it. Similarly to the optimism reflected in EU proceedings at the time, the Dutch opinion on CCS was also very positive. In Rotterdam, and especially with the help of the Rotterdam Climate Initiative, it was seen as *the* way to decarbonise the mainport region.

Recognising that the demonstration of CCS was necessary to further develop the technology and make it more affordable for upscaling until 2030, the June 2008 Council agreed to try to make 12 CCS demonstration projects happen across the EU by 2015 to at least make it a *possibility*. The Commission was to play a role in this development through (financial) incentives⁷¹. These were provided under the NER 300 — led by DG CLIMA — and the European Energy Programme for Recovery (EEPR) — led by DG ENER — but due to the financial crisis and high public investment into renewables the CO₂ price under EU ETS fell too sharply to make the business case for CCS demonstration even remotely positive⁷². Lacking other targets, CCS in EU policy is now officially only covered by the CCS Directive, which mostly has a legal and technical nature to ensure that implementation conditions are harmonised across EU member states. However, even this directive faced delays in

68 The CCS Directive was sent to the Council and the EP in January 2008.

69 623 in favour, 68 against, 22 abstentions. The other components of the package were adopted as well and with similar majorities, although the Shared Effort decision had a harder time with 555 votes in favour, 93 against and 60 abstentions (source: Europarlament votes document number PE 417.804/ 12).

70 See CRE 16/12/2008 - 13 on the Eur-lex website for more information on the EP debate.

71 See Decision 2010/670/EU.

72 These issues are discussed in more detail in section 5.1.2.3. of chapter 5.

implementation in *all* EU member states (except Spain⁷³) and was eventually transposed in different ways across the EU⁷⁴. Whilst officially part of the climate and energy package for 2020, CCS has no current targets embedded in EU policy and getting the private sector to invest is proving to be extremely difficult.

4.2.2.4. *The role of LNG*

Whereas CCS was originally meant to offset emissions from the burning of coal, European leaders have also recognised the transition potential of gas. Gas-fired power plants achieve about 50% lower CO₂ emissions than coal-fired power plants (IEA, 2015a:35). In 2010, increasing the use of gas instead of coal was therefore also politically attractive, but it came with issues of dependency (mostly on Russia). The global gas market has been changing, most notably through the shale gas boom in the US and Canada. Using LNG will make the gas market increasingly global since transport will be more independent from pipelines (European Commission, 2011a:12), which would satisfy the energy security criterium. In fact, LNG is becoming a cornerstone of EU energy policy precisely because it enhances Europe's energy security and diversity (Schubert, Kreutler & Pollak, 2016:244). But LNG can be used for more than a source of energy supply. One of the possibilities that offer great potential to reduce GHG emissions (from shipping) is provided by the development of LNG as fuel. This development is part of a larger EU strategy to transition towards more sustainable fuels for transport. The EU linked the climate impact of transport to energy policy in a 2000 Green Paper (European Commission, 2000:66) on security of supply, noting that the transport sector was responsible for 28% of CO₂ emissions in 1998. Reducing energy use and diversifying sources was paramount. In its 2001 White Paper on European transport policy, the Commission stated the need for reducing EU oil dependency by introducing alternative fuels, noting that

“[t]he most promising forms are biofuels in the short and medium term, natural gas in the medium and long term and hydrogen in the very long term” (European Commission, 2001a:86).

The EC also stressed the importance of synchronicity (flexibility in transport mode usage allowing for highest efficiency), arguing that one 135m container carrier vessel could substitute up to 470 trucks, making inland shipping a good alternative for road transport (*ibid.*:43-44). Even though there was not yet a concrete vision on alternative fuels, a heavier

⁷³ Spain was the first country to start a CCS demonstration but the project was cancelled before it the real demonstration phase.

⁷⁴ For a detailed discussion, see section 5.2.3.1. of chapter 5.

emphasis on inland shipping fit within the preferences of a river-laden country such as The Netherlands. With increasing emphasis on environmental performance, greening the fleet was also an interesting option for the Port of Rotterdam to reduce port-related emissions.

The Europe 2020 flagship *A Resource Efficient Europe*⁷⁵ stimulates clean transitions in the energy, agricultural, industrial and transport systems. To deliver a low-carbon transport system by 2050 the EU commits itself to developing and executing a vision on how to transition to a cleaner transport system (European Commission, 2011e:5-11). The resulting 2011 *White Paper on Transport*⁷⁶ provides the starting point, announcing the development of an alternative fuels strategy including appropriate infrastructure development (European Commission, 2011c:24). The EU sets as goal to reduce transport-related GHG emissions with 60% by 2050 (European Commission, 2011b:3). Whilst no targets are set for inland shipping, the EU wishes to see maritime CO₂ emissions cut, using low-carbon fuels, by 40% by 2050. After 2001, the EC lost its adamant advocacy of inland waterway transport (IWT). The 2011 White Paper mentions only that inland navigation needs a suitable framework to integrate it with other modalities and that there is ample capacity to be filled (*ibid.*:19). This change in focus likely has to do with the fact that most EU member states have little or no IWT capacity, rendering advocacy of the sector useless in the eyes of most countries. Furthermore, inland shipping is perceived to be relatively clean, although that is not necessarily true since the EU's NAIADES programme calculated that, if one looks not just at the climate change costs but also the air pollution costs, IWT's external costs roughly equal those of road transport (European Commission, 2013d:7). Finding ways to reduce emissions from inland shipping therefore remained important in the eyes of DG MOVE⁷⁷.

The 2011 White Paper morphed into the *Clean Power for Transport Directive*⁷⁸ (CPfT) in 2014. It marks the EU's first holistic coordination attempt aimed at structurally changing the EU's fuel usage⁷⁹. Before 2013, the Commission tried — and failed — to incentivise cleaner light-duty vehicles using voluntary agreements⁸⁰ and to lay down requirements to increase

75 COM(2011) 21 final.

76 COM(2011) 144 final: Roadmap to a Single European Transport Area.

77 An example of a development often mentioned in the interviews were engine standards. For ships, these are regulated through the EU's Non-Road Mobile Machinery (NRMM) Regulation, even though inland shipping only comprises about 2% of all engines governed by NRMM. Every manufacturer has to comply with this Regulation, and member states need to keep an eye on that.

78 2014/94/EU.

79 As discussed in the CCS chapter, biofuels were part of the 2009 Energy & Climate package but they only cover a small range of possibilities to make European transport more sustainable.

80 COM(2007) 19 final. Mentioned in bibliography as 2007c.

the share of biofuels in the EU⁸¹. The *Clean Power for Transport Directive*⁸² proposes wider development of liquefied petroleum gas (LPG), liquefied natural gas (LNG), compressed natural gas (CNG), gas-to-liquid (GTL), electricity, (liquid) biofuels, and hydrogen as fuels for the transport sector (European Commission, 2013a:2). CPfT's first draft provided every member state with country-specific targets⁸³, but this approach did not make it through the negotiations. It is up to member states to decide how large they want the contribution of LNG to be. LNG thus becomes part of a larger European narrative advocating climate action through transport policy instruments. The benefit of LNG is its broad application in the sense that

“LNG development into a global commodity can improve security of energy supply in general by boosting the use of natural gas as fuel for transport. LNG use in transport can also increase the value of gas otherwise flared” (European Commission, 2013g:5).

This quote from the EC communication (COM(2013) 17) showcases the discursive coupling of climate change mitigation and energy policy, stating the security of energy supply aspect as an important benefit of relatively clean LNG initiatives. Since the security of gas supply is higher than that of oil, LNG is seen as a potentially vital resource to help reach climate targets while ensuring security of energy supply. Furthermore, the economic argument of the value-increase of gas otherwise flared is another example meant to make climate change action seem more desirable. Even though the industry still largely needs to be convinced of the added benefits of LNG, the price of LNG is attractive. From an environmental perspective, it is worth it; LNG fuel allows for a reduction of sulphur emissions to nearly 0%, reductions of NOx by 53,5% as compared to Euro VI, PM by 95% as compared to Euro VI, and well-to-wheel CO₂ is reduced by 15% in dedicated LNG engines (LNG Platform, n.d.:3). Its use can aid European states in achieving the targets set out in the Commission's National Emission Ceilings and Air Quality Directives⁸⁴.

81 Directive 2003/30/EC and Directive 2009/28/EC. There is a binding target for biofuels until 2020, but the Commission decided not to set another target for the period after 2020, partly because of indirect land-use change.

82 Adopted by the Council on the first reading on December 5th, 2013 and subsequently with suggested amendments by the European Parliament on April 15th, 2014. The European Commission approved the EP's amendments on July 9th, 2014.

83 See [http://europa.eu/rapid/press-release_MEMO-13-24_en.htm] for the initially proposed targets.

84 Currently, heavy-duty road transport is subject to the Euro VI norm regulating truck emissions. However, the real driving emissions of many trucks exceed the Euro VI norm, especially concerning NOx emissions. If diesel fuelled trucks are not maintained properly, their emissions will rise further after several years. Countries can therefore also attempt to get their NOx emissions down by adopting more stringent inland shipping emission norms to regulate another part of the transport market as well. LNG becomes very interesting to get these NOx emissions down. (Information based on interviews 9 and 10.)

The directive further prescribes the building of LNG refuelling points in all maritime and inland waterway ports of the TEN-T network by the end of 2025 (for maritime) or 2030 (inland). Aside from the formulation of national policy frameworks, the Directive includes the requirements as outlined in table 4.3. The EU has also committed itself to establishing technical and legal rules for the safe use and transport of LNG and is providing financial support through the TEN-T program and the European Investment Bank (EIB) (European Commission, 2013f:3). Since LNG is not a renewable source of energy, using it as fuel does not count towards the auxiliary goal of 10% energy use from renewables in transport under the Energy 2020 strategy, unless it is bio-LNG. The transport White Paper and the *Clean Power for Transport Directive* are clear examples of the EU's efforts to harmonise transport policies across member states. The importance of being less dependent on oil is stressed, but heavy emphasis is placed on the climate as well.

Table 4.3. National Requirements of Clean Power for Transport Directive

Coverage	Timing
Electricity and CNG in urban/suburban and other densely populated areas	End of 2020
CNG along the TEN-T core network	End of 2025
Electricity at shore-side	End of 2025
Hydrogen in MS who choose to develop it	End of 2025
LNG at maritime ports	End of 2025
LNG at inland ports	End of 2030
LNG for heavy-duty vehicles	End of 2025

Source: European Commission, 2014b.

Technological development is to move along Horizon 2020 funding, the roadmaps under the EU's transport technology strategy⁸⁵, public-private partnerships, and via EU joint research centre projects. The Transport Council asked the European Economic and Social Committee (EESC) and the Committee of the Regions (CoR) for their opinions⁸⁶. Both organs expressed a favourable opinion even though they had some concerns as well. EESC's main worry was the focus on biofuels due to the indirect land-use change discussion, and it also warned against investing too much into LNG for shipping while better, cheaper or cleaner alternatives were being developed. In terms of financing, the EESC underlined the importance of trans-border continuity of infrastructure coverage because of:

⁸⁵ COM(2012) 501 final.

⁸⁶ EESC's opinion is marked TEN/506 and CoR's opinion is can be found in JO C/2013/280/66.

“the level of investment costs and uncertainty of markets the EESC takes the view that there will be a general and long term need for public financing of dedicated refuelling/recharging infrastructure for alternative fuels” (EESC, 2013:8).

The original EC proposal did not indicate the necessity of long term public financing. CoR, unsurprisingly, underlined the importance of regional and local authorities in helping to draw up a policy framework which can ensure local viability. Furthermore, CoR stated that general energy policy has to be considered as well and that alternative fuels are therefore not just a transport issue. In CoR’s view, businesses are beneficiaries of the Directive and should therefore do the investments themselves. Both institutions were in favour of EU-level coordination. The Transport Council expressed a favourable stance towards the Directive in December 2013.

The European Parliament approved the Directive on the first reading. The transport committee⁸⁷ proposed 119 amendments, its members largely being in favour of the Directive. Most importantly, the EP wanted to underline that the list of alternative fuels may change in the future and that it is important for the EU to be technology neutral. More explicit references to the climate impact of transport (and the Directive’s contribution to 2050 goals) and the need to reduce oil dependency were added as well. The EP’s debate underlined the importance of common standards and technical harmony, yet some MEPs suggested that ‘national egoism’ was delaying or watering down agreements. Especially the greener-minded parties expressed regret for not being able to agree to more ambitious goals. Eventually, the EP approved the Directive in April 2014, upon which the EC accepted the amendments in July and the Council voted in favour in September 2014.

Whilst there is no hard LNG target, and the directive has not yet passed its transposition date, it is too early to measure its success but especially in The Netherlands there have been public and private investments into small-scale LNG deployment. Furthermore, the construction of refuelling points across core ports in the EU does imply use of LNG as fuel, simply because it would make no sense to build access points only to leave them unused.

87 The rapporteur from the transport committee (TRAN) asked the environment (ENVI), agriculture (AGRI), industry (ITRE), internal market (IMCO) and regional development (REGI) committees for an opinion, but only ITRE decided to give one.

4.2.3. Global Climate Progress and Objectives

Following the lack of clear mitigation commitments in the UNFCCC in the '90s, the EU decided to start acting as the global agenda-setter in climate matters (Schubert, Pollak & Kreutler, 2016:168). In 2010, around the formal adoption of the 2020 targets, the European Commission established a special Directorate-General for Climate Action and gave it the climate-related competencies previously held by DG Environment. While part of the split was due to the enlargement of the EU and subsequent need for more Commissioner functions, it also marked a turning point in the EU's view of its own role in climate action. The internal dimension of EU energy and climate policy was geared towards preventing the potentially disastrous consequences of climate change and mostly revolved around increasing the share of renewable energy across the EU. The external face of the policy was meant to make the EU an example for the rest of the world to follow (*ibid.*:167). This frontrunner role was advocated globally, yet succumbed under the weight of the declining competitiveness of the European economy⁸⁸. Worries about carbon leakage to the US and China led to a less ambitious climate and energy framework for 2030 (*ibid.*:250), as discussed earlier in this chapter. However, in preparation for the Paris Climate Summit of December 2015, COP-21, the EU restated the need to move away from uncoordinated national energy policies and towards an integrated, sustainable European Energy Union (European Commission, 2015b:3)⁸⁹. The change in discourse was to be followed by a change in practical implementation. At the same time⁹⁰ the Commission published the *Paris Protocol* which would serve as the EU's input for global climate negotiations. The Commission restated the EU's ambition to reduce CO₂ emissions by at least 40% by 2030 and called for global action as the only way to effectively mitigate climate change. The EU's vision was to promote both public and private financing for clean technologies while at the same time restating that it is up to countries themselves to choose which technologies to support (European Commission, 2015c:11). Just like what happened around the Copenhagen summit, the EU was able to unite in the wake of COP-21. International pressures help persuade EU member states to commit to EU-level goals which are otherwise difficult to negotiate.

COP-21 led to the Paris Agreement which the Commission calls "a historically significant landmark in the global fight against climate change" (European Commission, 2016a:2). The agreement includes a commitment to keep global warming below 2°C above pre-industrial

⁸⁸ Which, painfully, was the opposite of what the EU had been trying to achieve with its Lisbon strategy.

⁸⁹ The subtitle of the Energy Union package says it all: 'A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy'.

⁹⁰ Both Communications were published in February 2015. Their identifiers are COM(2015) 80 final and COM(2015) 81 final.

levels and an aspiration to limit it to 1,5°C. The agreement entered into force in November 2016 and stands at 126 ratifications (out of 197 parties) in January 2017 (UNFCCC, 25 January 2017). Parties are obliged to pursue domestic mitigation measures in an effort to reach the goals of the agreement. The EU acts as a facilitator between member states and their obligations under the Paris Agreement and is committed to revising the ETS to make it more functional again and adapting the ESD whilst “providing maximum flexibility for Member States and striking the right balance between national and EU level action” (European Commission, 2016a:9). What this means for the vision of an integrated, sustainable Energy Union remains to be seen. COP-21 does not contain enforcement measures. Its legally binding nature is therefore limited.

The aftermath of COP-21 may have given credence to the Commission's *2030 Climate & Energy framework*, but the national authorities are still in the driver's seat. Aside from the development of member states being unwilling to commit to legally binding targets after 2020, each member state still chooses its own future energy mix as it pleases. In the words of Schubert, Pollak and Kreutler (2016:252):

“Once again, the negotiations behind the 2030 framework revealed that the old game between the Commission and the member states continues unabated. The Commission proposes big changes, the Council confirms, but then waters them down, while the member states take their time selectively implementing those aspects that best benefit [*sic*] their national interest. The EU's member states continue to sing the same song, but dance to a different tune.”

Whereas the Scandinavian states seem to be taking the renewable route, Germany's investment into renewables is being offset by an increase in the usage of coal and The Netherlands has chosen to rely more on gas as a transition fuel than on renewables. Harmonisation across the EU therefore still seems far off. This development is also visible in the policy processes surrounding LNG and CCS.

4.2.4. What About Ports?

There is no overarching port policy in the EU, yet activities from several of the Commission's DGs impact ports on a day-to-day basis. Since the existence of the European Union, Europe's ports have resisted becoming 'captured' by the EU policy-making process. This phenomenon is mainly due to too much variety in port characteristics, rendering a comprehensive policy framework difficult to 'sell' to the more than 800 ports Europe currently counts (Pallis, 2007:491-492; Suykens & Van de Voorde, 1998:255; Pallis & Tsiotsis, 2008:17; Chlomoudis

& Pallis, 2005, Verhoeven, 2009:79). Differences between ports are visible in, for example, size, geographical location, management, operations, labour type, and financial autonomy (Suykens & Van de Voorde, 1998:256; Verhoeven & Vanoutrive, 2012:184-185). In fact, the European Commission itself admits that “no two ports [are] operating in exactly the same way” (European Commission, 2013c:5). Previous research has shown that efforts to Europeanise have consistently led sectors to unify in Eurofeds (Eising, 1999:213). Indeed, the differences between ports have led to a slow start towards a European Ports Policy with Europeanising efforts consistently being thwarted by the ports themselves and their European umbrella organisation: the European Sea Ports Organisation (ESPO). European legislative ‘successes’ have mainly led to policies in the fields of transportation and infrastructure, but other than that the European Union has employed a policy of non-intervention with respect to ports for a long time (Chlomoudis & Pallis, 2005:21-22). Member states are responsible for their own port policies and diversity in port management and operation is to be respected.

In 2007, the European Commission published a communication on European Ports Policy (EPP), which mainly deals with issues of port performance, a level playing field and respect for the environment (Verhoeven, 2009:87-88). While this Communication states the importance of sustainable transport in ensuring the vitality of hinterland connections and port performance as a whole, it also states that, at this stage, it leaves “this matter to regional and national authorities and to the market” (European Commission, 2007a:4). The Communication also explicitly states that the EC does not wish to intervene in the way member states organise their port management, effectively leaving ample room for the heterogeneity that characterises the European port system at present. It does, however, recognise and underline the economic efficiency of ports that enjoy a ‘sufficient’ degree of autonomy, i.e., landlord-type ports (European Commission, 2007a:8) such as the Port of Rotterdam. In other words, even though there have been tendencies to Europeanise which continue through soft law practices, there has been no real European Ports Policy because the EC cannot seem to get a grip on ports. The European Commission admits the ‘failure’ of its 2007 incentive in its 2013 revision of EPP and states that the soft measures proposed in 2007 have had “little or no impact” (European Commission, 2013c:4). Since ports are seen as vital to the functioning of the EU, the Commission sees ample reason to propose more intensive regulation. The 2013 revision, called “*Ports: an engine for growth*”, reiterates the earlier finding that there are structural performance gaps in the European port system. This situation is seen as problematic, because even though just three ports⁹¹ are able to handle 20% of today’s import of goods, the predicted volume of goods will increase by about 50% by 2030. The EC underlines the necessity for better inclusion of other ports in

⁹¹ These are the ports of Rotterdam, Antwerp and Hamburg.

the Trans-European Network (TEN-T) to accommodate the expected rise⁹². The Commission is reluctant to try to impose a uniform model for ports (*ibid.*:5), probably having learned from previous experiences with negative outcomes.

Instead, the Commission attempts to influence ports indirectly through the creation of links with other policy fields, most notably through funding arrangements. Transport policy has shown that the EC can attempt to Europeanise through the advocacy of post-material values, drawing in actors sensitive to these values and thereby creating 'soft issue alliances' (Aspinwall, 1999:128). Furthermore, the EC is trying to use earlier agreements under transport policy — and the related TEN-T and Connecting Europe Facility (CEF) programs⁹³ — to influence port management. Connecting the development of small-scale LNG to ports is logical due to their position next to roads, rail- and waterways. The regulation of inland navigation in Europe is governed by multiple bodies, such as "river-specific navigation commissions, the EU, UNECE and pan-European ministerial conferences" (UNECE, 2011:37). Of the river-specific navigation commissions, most important for the Rotterdam region is the CCNR, which governs through the Mannheim Convention of 1868. UNECE is most well-known for its 2000 European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN). Pan-European ministerial conferences are organised every couple of years and mostly focus on harmonising and integrating the regulatory frameworks for inland navigation. There is now also attention for environmental issues. The EU itself is increasingly gaining importance in this sector by its attempts to legislate (through the NAIADES Programme) and stimulate harmonisation between its own regime and that of CCNR (UNECE, 2011:38-58)⁹⁴.

When port authorities are looking for EU funding, the Commission will assess the added value of the proposed projects for EU transport policy (European Commission, 2013c:7). The same goes for environmental policy. The EC is very much aware of the impact ports have on emissions, noise, water and soil pollution. Emissions from maritime transport account for 3% of global GHG emissions today and are expected to rise to 5% by 2050 (European Commission, 25 September 2014). As yet, maritime transport is not included in the EU's GHG emission reduction system even though it contributes up to 4% of EU-wide GHG

92 Even so, the revision of EPP (*ibid.*:9-12) still only consists of five core measures: 1. Common rules to ensure port service charges are fair and that economic activity is subject to competition rules; 2. Rules to ensure transparency on the relationship between a port authority and public authorities; 3. State aid subjected to strict rules; 4. A degree of autonomy for port authorities to establish their own port dues, as long as they are fair and transparent, and; 5. Rules governing working conditions and safeguarding workers' health in port areas. While these rules certainly can have an impact on ports that still rely greatly on state aid, the scope of EPP remains small.

93 More on CEF and TEN-T in the LNG chapter (chapter 6).

94 Through a newly established organ called CESNI.

emissions. In fact, only for the EU, the emission rise is expected to amount to a whopping 51% by 2050 as compared to 2010 levels (European Commission, 2013a:2). The European Union has adopted an expectant attitude towards the integration of maritime transport into any emission schemes, instead preferring that any action be undertaken by the International Maritime Organisation (IMO). However, the IMO has to date not been able to agree on clear targets for emission reductions. Integrating maritime emissions into the emissions regime is therefore proposed through a gradual approach consisting of three steps. The first step is the implementation of a monitoring, reporting and verification (MRV) system for maritime emissions. Based on this MRV, the second step will be to define the reduction targets for the sector as a whole. The third step is to apply market-based measures (MBMs) in order to stimulate emission reductions. The Commission prefers to work with MBMs as it sees such incentives as cost-effective and flexible (European Commission, 2013d:4-5). Interestingly, this COM document explicitly mentions a link to the 2030 climate and energy framework. Future considerations regarding maritime emissions should consult the energy and climate framework to ensure consistency (*ibid.*:5). Another interesting example in the environmental policy field is the policy covering birds and habitats guidelines, which is also applicable to port areas (European Commission, 2013c:12). Better said, almost all activities covered in climate and energy policy are not necessarily port-related; they just happen to take place in a port area (such as the ROAD CCS project). The result is an intertwinement of port activities with different policy fields at the EU level, the origins of which are varied and guided by logic that does not *de facto* cover ports. As the Commission's DGs are often at odds with each other (Aspinwall, 1999:127), it is only expected that port authorities will find European policy confusing yet hugely important in their day-to-day management.

The Dutch national government has used the concept of 'mainports' since the end of the '80s and recognised the importance of a port such as the Port of Rotterdam to the Dutch economy (Rijksoverheid, 6 January 2014). In devising policy, the government has acknowledged the fact that the Port of Rotterdam is not simply a transport hub, but also a vast industrial complex. It has sought to strengthen this complex (Edelenbos, Gerrits & Van Gils, 2008:52-53; Kuipers & Manshanden, 2010:7). Some scholars take their argument even further. In their article, Edelenbos, Gerrits and Van Gils conclude that the Dutch port policy system seems to follow port developments, instead of the other way around, and devises policy to fit what is already happening in practice. This empirical observation implies efforts to "codify and maybe support the actual developments of the port" (Edelenbos, Gerrits & Van Gils, 2008:57), rather than trying to determine the exact future of the port. It should be noted that this conclusion does not suggest that the port is not influenced by national policy making at all, however. The authors speak of co-evolution and concede (Edelenbos, Gerrits & Van Gils, 2008:56) that the port and national port policy systems influence one another. The PoR thus becomes a policy actor. By contrast, while the EU has formally recognised

the possibility of the existence of industrial complexes in ports and the importance of the Rotterdam case for the Dutch economy (European Commission, 2013b:1), further actions have not been undertaken, and in issues of transport the EU remains an advocate of spreading opportunities instead of focusing on one strong mainport⁹⁵.

4.2.5. Reaching Goals? The EU versus National Governments

Even though highly ambitious in its vision to create a sustainable future for every citizen of the EU, the Commission has also criticised actual progress towards reaching the ambitious targets. Member states have been developing National Energy Efficiency Action Plans since 2008, yet the Commission has called the quality of these plans “disappointing” (European Commission, 2010a:3). In 2010 it was judged that the renewable target of 20% by 2020 was not the problem, but the energy efficiency was another matter altogether. The bleak outlooks published by the IEA in 2009 and 2010 were set aside and even the Ukrainian gas crisis did not lead to concerted European action towards a more secure and energy efficient Europe. Yet, only three years later, the Commission reported (European Commission, 2013b:2) positively on the progress towards the Energy 2020 targets. The years between 2010 and 2013 were marked by the aftermath of the financial crisis (which affected the transport sector as well), milder winters (except in 2012), increasing energy prices for households, and a relatively large increase in renewable energy share (EEA, 2014a:3-4). Eurostat provides the most recent data (currently until 2015 - see table 4.4).

Table 4.4. Progress towards the 2020 objectives for climate and energy

Target	2020 objective	Progress until 2015
GHG emissions reduction	20% reduction	22,1%*
Share of renewables in energy mix (consumption)	20%	17%
Energy efficiency	20% more efficient energy use	16,7%

* Reported CO₂ reduction was 28% between 1995 and 2010. Source: Eurostat (2016); Eurostat, online data codes t2020_30, t2020_31 and t2020_33.

Overall, the EU seems to be on track towards reaching the targets as set out by the Energy 2020 strategy. This progress is not only due to the energy and climate policies the EU has put in place, but is also the result of milder weather conditions and the economic and financial

95 This notion has been further confirmed in Commissioner Kallas' (DG Transport) speech of 23 May 2013. The EU's reason to advocate spreading opportunities fits within its integrative mission and attention for development of underdeveloped regions. It is therefore understandable that the Commission does not want to seem to favour any port over another.

crises that hit the EU since 2008. Nevertheless, the EU notes challenges to the European energy system. The centre of gravity of global energy demand has shifted towards emerging economies such as China and India. Energy prices (and price differences) are rising in the EU as compared to other countries, and an internal market measure such as the Emissions Trading System (ETS) has led to an ineffective and low carbon price. Renewable energy development has taken off but at the same time also challenges the existing balance in the energy system. The German *Energiewende* and the consequences of energy dumping in The Netherlands have been discussed in the introductory chapter as an example of such a challenge. Additionally, climate change scholars continue to publish studies confirming the impact of human agency on climate change. Along with the systemic changes noted above, the confirmation of human influence on the world's climate has led the EU to reconsider its climate and energy strategy. The results are twofold: a general 2050 strategy called the *Energy Roadmap 2050* and the *2030 Climate and Energy Framework*. The table below outlines the envisaged progress to 2030 and 2050 as compared to the Energy 2020 strategy. It is important to note that there are only legally binding targets up to 2020. As table 4.5 shows, the 2030 and 2050 objectives are not met with commitments at MS level.

Table 4.5. European Energy and climate objectives between 2020 and 2050

Target	2020 objective	2030 objective	2050 objective
GHG emissions reduction	20% reduction	40% reduction	80-95% reduction
Share of renewables in energy mix (consumption)	20% (10% binding target for renewable use in transport fuels)	27%	Majority is renewable
Energy efficiency	20% more efficient energy use	27%	30%

Sources: COM(2010) 639, COM(2011) 885, and COM(2014) 15.

The need for clear milestones has driven the EU to also establish a 60% GHG emissions reduction target by 2040 (European Commission, 20 October 2014), which neatly sits in between the 2030 and 2050 objectives. The 2030 target is set to be achieved in two ways. Sectors covered by the EU ETS system need to reduce their emissions by 43%, while sectors outside the ETS need to cut their emissions by 30% (both below 2005 levels). Whilst the GHG reduction target is most relevant to this dissertation, the three main targets are interrelated.

Compared to the 2030 climate and energy framework, the *Energy Roadmap 2050* is a more visionary document. The lack of, for example, a clear 2050 objective for the share of renewables in the European energy mix shows that this document has more of an agenda-setting purpose than a prescriptive nature, which is ideal for zooming into policies which are meant

to govern markets that are still very much in development⁹⁶ but also reflects the unwillingness of member states to make long-term commitments. The 2050 Roadmap acknowledges that decarbonisation is possible and even states that the costs associated with transforming the energy system are not that different from a scenario that the Commission calls the Current Policy Initiatives (CPI) scenario (European Commission, 2011a:5). The Commission foresees electricity to play an increasing role in the future energy mix, not only for heating and cooling purposes but also in transport. Crucial for any success of EU energy and climate policies are energy savings and the increasing share of renewables in the European energy mix, which both contribute to decreasing GHG emissions. These predictions fit the 2020 and 2030 strategies. Conversely, those strategies remain silent about nuclear power while the 2050 Roadmap identifies nuclear power as having an important contribution to make in the process of energy system transformation (*ibid.*:5-8). An example of this ambition is the approval by the EC and UK to build two new nuclear reactors at Hinkley Point C in the UK (Financial Times, 8 October 2014).

The combination of Europe 2020, the economic crisis, and coordination through the European Semester led to a turning point in European energy and climate policy. The pre-2010 focus on competitiveness was replaced by a focus on sustainability while remaining competitive. In the most recent Juncker Commission (after 2014)⁹⁷, DG CLIMA and DG ENER have — for the first time in EU history — the same Commissioner. This move is not illogical; the majority of global emissions is energy-related, and even when emissions are not directly related to energy, they often stem from human practices that are 'energetic'⁹⁸ (Shaw, 2011:744). Treating energy and climate policy as a single policy is a feature that is fairly unique to the EU. Unfortunately, there are still many disjunctures between the two domains (Toke & Vezirgiannidou, 2013:543). The differences in GHG emission goals across EU member states and fears surrounding carbon leakage show that competitiveness still has the upper hand. Discourse has linked energy and climate, but action is largely lacking. Part of the incoherence stems from a largely supranational environmental policy and a fragmented climate policy, in contrast to the MS-exclusive components of energy policy. Another reason for ineffective coupling of energy and climate policies is the tension that arises between energy and climate solutions, which are often contradictory. For example, natural gas is cleaner than coal but it also makes the EU more dependent on external suppliers who are not always reliable (Vogler, 2013:631-640). In essence, Skovgaard (2014:2-5) argues that there are two conflicting frames at play: green growth ('win-win') and trade-off ('sustainability

⁹⁶ Both LNG and CCS policy — the two case studies covered in this dissertation — fit in this category.

⁹⁷ See Annex IV for an overview of the two Commission formations — Barroso's and Juncker's — spanning this dissertation.

⁹⁸ Waste treatment is an example of a human practice that is energetic.

is bad for the economy’). There are people who see the relationship between climate and economic growth policies as potentially synergetic, but others see conflicts. Economy often wins, though sustainability appears to gain some land in times of prosperity. Both these frames will be visible in the case studies.

4.3. CLIMATE AND ENERGY POLICIES IN THE NETHERLANDS

This section discusses the relevant Dutch climate and energy policies for the two nested cases studied in chapters five and six: CCS and LNG. Dutch energy policy is cemented in the *Energieakkoord* and updated yearly through the *Energierapport*. The *Energieakkoord* resulted from extensive consultations with civil society and the private sector, epitomised in the way it was published: not by the government itself, but by the Dutch Social and Economic Council (in Dutch: *Sociaal-Economische Raad*, or SER). Its core components are energy saving, increasing renewable electricity production, decentralised electricity production, a strong energy network, a functioning EU ETS, a responsible decrease in coal-fired power plants, emissions reductions in transport and mobility, an increase in jobs in the energy sector, energy innovation and export, and programmatic financial incentives. These ten pillars are cemented in a governance structure in which the government is responsible for the formulation, implementation, execution and evaluation of policy measures and the private sector is responsible for meeting the goals they agreed to. Continuing interaction between all involved parties is facilitated through a permanent commission under the SER that consists of representatives of all involved sectors. No formal control and enforcement mechanism was agreed upon (SER, 2013:12-27).

The most recent *Energierapport* (2016) includes a ‘CCS vision’ even though there are still no CCS projects operational⁹⁹. The government states that if CCS is not developed in The Netherlands, where the technology is among the most promising due to an abundance of offshore gas and oil fields for storage, the costs for effective climate mitigation will increase significantly (Ministerie EZ, 2016a:117). At the end of 2016, the Dutch government released the *Energieagenda* (translated: energy agenda) outlining its goals for the period after the *Energieakkoord* ends. Dutch energy policy consists of three key assumptions: energy and climate policy is international policy, CO₂ reduction is the focal point, and a long-term vision is essential (Ministerie EZ, 2016b:23-25). The government’s logic for the first assumption is that if just The Netherlands adopts stringent policy to reduce GHG emissions they will be emitted elsewhere, so international agreements are necessary. The empirical chapters show that this argument can also be used as an excuse for inaction. The second assumption

⁹⁹ CCS is slated to be responsible for up to 50% of Dutch low carbon options (Ministerie EZ, 2016a:119).

has as a consequence that the Dutch government does not want further binding energy efficiency and renewables goals past 2020, which fits with the EC's inability thus far to set binding goals for 2030 and beyond. The third assumption admits that the private sector needs long-term goals to guide their investment decisions, though when push comes to shove the Dutch government appears reluctant to make strong statements regarding its domestic fuels mix policy, favouring technology neutrality in the national policy documents such as the *Brandstofvisie* (Ministerie I&M, 2014a). The lines set out in national documents largely follow EU policy and existing initiatives and in the *Energieagenda* the government speaks of a *Dutch* energy policy and a *European* climate policy. The implications are clear: stay out of our energy mix, but ensure a level playing-field when climate policy is concerned. *Brandstofvisie* furthermore acknowledges that the bulk of Dutch policy in this regard follows the European *Clean Power for Transport* Directive (Ministerie I&M, 2014a:6-38) and is therefore adaptive rather than pioneering. The Dutch government did not make the choice to rely heavily on renewables, as seen in the *Energieakkoord*. Arguably, keeping fossil fuels in should give a technology such as CCS a fighting chance and even though there has been a lot of (political) opposition against CCS, it has been a stable factor in policy documents since 2007.

With respect to seaports, The Netherlands has formulated a working programme for seaports (in Dutch: *Werkprogramma Zeehavens 2014-2016*) for the period 2014-2016 (Ministerie I&M, 2014b:4-12). It was established as a joint effort between the national government, seaport authorities, the private sector established in the ports and the *Topteam Logistiek*¹⁰⁰. Based on a threat-assessment and the importance of Dutch seaports for Dutch and European economy and industry, the working programme outlines six policy priorities with a level playing-field and supporting sustainable initiatives being the most notable for this case¹⁰¹. The Dutch maritime strategy (in Dutch: *Nederlandse Maritieme Strategie*) for 2015-2025 formulates the government's wish to support the transition towards zero-emission ships. The elimination of legal barriers hampering this transition are also discussed, along with the potential of the *Clean Power for Transport* Directive (Ministerie I&M, 2015:9-16).

100 Topteam Logistiek is a group of elite people from business, government and academia and represents the top sector logistics. For more information on Dutch top sector policy, see [<http://topsectoren.nl/english>].

101 Full six priorities: a level-playing-field, better hinterland connections, lessening the administrative burdens of the business sector and improving training, supporting sustainable initiatives (BBE, CCS and LNG are mentioned), sharing of best practices under *Natura 2000*, and fostering cooperation between ports plus defending national interests.

4.3.1. The Netherlands and CCS

The Netherlands has to implement EU environmental law, but is free to set stronger goals. At present, this is not being done, although organisations such as Natuur & Milieu (2016:7) call for more activity from the national government when it comes to setting stricter standards or increasing the carbon price. With ETS as it is, however, doing so could lead to an even lower EUA price (Groenberg & De Coninck, 2008:658). Specifically for CCS, The Netherlands will only accept offshore storage after the Barendrecht debacle. Furthermore, in the implementation of the CCS Directive the Dutch government has decided to give a single permit for the whole CCS chain up until the end of the injection process. The Mining Law (in Dutch: *Mijnbouwwet*) was changed to allow for these permits. The consequence is that Dutch law does not allow for simultaneous ownership of both a storage permit and an operation permit as needed for EOR/EGR, which can cause legal issues for CCS projects.

In The Netherlands, EU proposals go through a procedure called BNC fiche prior to approval. The CCS Directive case file¹⁰² stated that CCS was an indispensable part of the climate goals of the cabinet at the time. However, the Dutch position was such that it was hesitant to provide funding mechanisms — hence the contentment with the possibilities offered by NER 300 — and it also had its reservations regarding some of the proposal's details. The Dutch wanted primary responsibility for CCS development to lie with member states so as to reduce red tape, but also wanted the EU to finance CCS projects without telling the national government how to allocate its national budget. From this position follows that in terms of financing there was some discrepancy between the expectations the EU had and those of the Dutch government.

The Dutch position underwent a change from being an ally of the 2020 package (although the government's views differed from those of the EU regarding who should be paying for CCS projects) to an opponent of renewed EU coordination. The Netherlands had its separate EU-related CCS debates between 2009 and 2015; various files within the BNC dossier were attributed to CCS¹⁰³. In 2009 the Dutch Parliament voiced negative opinions about investing in CCS, which was subsequently linked to energy efficiency plans in 2011. By then, the government was backing ROAD in the EEPF funding race by promising a 150 million euros investment. Its initial stance that the EU should be covering the funding had shifted with the realisation that The Netherlands, as a fossil fuel country, could reach its climate targets while continuing to use fossil fuels. However, in 2013 the Ministry of Infrastructure and

102 Number 22112 - 619. Available on the website of the Dutch parliament.

103 All files have the base dossier number 22112. Between 2009 and 2015 the CCS related discussions were recorded in files 822, 1232, 1756, 1952 and 1998. They are accessible through the website of the Dutch parliament.

Environment sent a letter to the Parliament stating that CCS is not happening in the EU right now but that it still is important for the 2030 climate and energy plans. Therefore, even though CCS had an explicit place in the *Energieakkoord*, the EU should fund it. The Netherlands, along with several other countries such as the UK, Italy and Poland, further opposed the setting of new binding renewable energy and energy efficiency targets at EU level (European Commission, 2013b; Ibec, 2013), representing a turn away from the ambitions of the 2020 package and underlining national sovereignty. In a 2015 letter from the Ministry of Infrastructure and Environment, the government reiterated its wish for a light governance structure of the Energy Union with respect for national competency. It wanted as little red tape as possible yet with a view towards accomplishing 2030 and 2050 objectives. National efforts to generate more funding for the ROAD project increased in an attempt to further stimulate CCS. The Dutch wanted to reap the fruits of EU funding without accepting further interference with domestic energy policy. A representative from the Dutch government illustrated Dutch efforts as follows:

“What’s typically Dutch is that we try to just barely reach goals by putting in the least amount of money as possible.”¹⁰⁴

In light of the most recent discussion about low-carbon investments and their link to the EU’s NER 400 programme, CCS was again a topic of debate. No new projects or nationwide CCS initiatives resulted from parliamentary deliberations. In fact, similarly to what happened with the inclusion of the CCS Directive in the 2020 Climate and Energy package at EU level, the Dutch government decided to incorporate its ‘CCS Vision’ into the *Energierapport* so as to avoid a CCS-specific discussion in the Parliament¹⁰⁵. Similarly, the EU has not put a new regulatory proposal for CCS forward due to extremely low interest across EU member states (European Commission, 2013c:2). The Netherlands did not even respond to the consultation.

The province of South Holland is committed to realising national and European energy and climate goals, but does not make policy in these areas. It is the responsible authority for environmental permits and (sub-)surface operations and delegates executive tasks to DCMR. The city of Rotterdam supports the development of CCS and even made an agreement with the ROAD project partners that their power plants were not allowed to commence operations without the simultaneous application of CCS. Unfortunately, the delay in the final investment decision (FID) regarding ROAD led to problems between the parties, with the city eventually agreeing to allow the plants to start up even without CCS. Rotterdam has its own sustainability program *Programma Duurzaam*, through which it aims to become the

¹⁰⁴ Interview 31.

¹⁰⁵ Confirmed by a government employee, interview 31.

cleanest port city in the world by 2030. Similar to the Dutch government, the city prefers re-using CO₂ over storing it. RCI's 2007-2010 programme calls for the establishment of a CCS Platform and a CO₂ cooperation agreement (RCI, 2007:16). During a city council discussion in December 2007, there was a big debate about the appropriateness of the construction of Electrabel's (now Engie) coal power plant after adopting highly ambitious climate goals for the Rotterdam region. Opponents (GroenLinks, Leefbaar Rotterdam and SP) feared the power plant would not use CCS because it cannot be made obligatory, whereas proponents (CDA, VVD, ChristenUnie-SGP) expressed their trust and stated that CCS is necessary for climate mitigation. Without CCS, no RCI goals would be achieved¹⁰⁶. CCS was part of the ambitious Energy Port goal to reduce CO₂ emissions by 50% in 2025¹⁰⁷ in the port-industrial complex. The start was to be made in the power sector, which amounted to 30% of port-related CO₂ emissions in 2005. Infrastructure would be developed and Deltalinqs — an RCI partner — would seek businesses willing to sign five letters of cooperation for CCS projects in the near future (RCI, 2009:21-25). Of the 3,5 million euros available RCI funds (for 2009) for developing the Energy Port, nearly 2 million was earmarked for CCS purposes. Almost half of those funds were accounted for by DCMR, which had extensive responsibilities under the RCI programme. A year later 1,7 million euros was earmarked for CCS (*ibid.*:13).

4.3.2. The Netherlands and LNG

The Dutch government is obliged to create and communicate a framework for implementation of the *Clean Power for Transport* Directive by November 18, 2016 (Article 7 Directive 2014/94/EU)¹⁰⁸. The European Commission will have another year to consider the coherence of all the national frameworks. The Dutch government is also obliged to send progress reports concerning the implementation of the Directive and will have to follow guidelines for reporting as established by the EC. The government will have some leeway transposing the Directive and choosing appropriate instruments for policy implementation — it can therefore decide for itself how it values the contribution of LNG to the Dutch transposition of the Directive —, but will have to comply to the terms of the Directive at set deadlines¹⁰⁹. Recommendations from the EC may be sent should The Netherlands be judged to do an

106 Notulen raadsvergadering 20 december 2007. Accessible at the Rotterdam city archives [www.ris.rotterdam.nl]. To provide a full picture of the positions, D66 and PvdA expressed doubts but were not necessarily negative.

107 Baseyear 1990.

108 In doing so, the Ministry of Infrastructure and Environment consults with actors such as the Port of Rotterdam Authority regarding TEN-T participation and LNG safety requirements.

109 The Directive outlines deadlines for 2025 and 2030.

insufficient job of implementing the Directive¹¹⁰. The question is whether sanctions will follow should a country not implement *CPFT* correctly. Since the EC seems internally divided over the usefulness of the Directive — with some DGs dismissing alternative fuels in favour of electrification — the enforcement of proper implementation of the Directive is unsure.

A year after the Commission published the *Clean Power for Transport* Directive, the Ministry of Infrastructure and Environment led the negotiations surrounding a national fuel plan which would include LNG. The *Brandstofvisie* immediately fit within the requirements of the Directive but also kept an express link to Dutch energy policy because of the importance of LNG to energy security. In November 2014, the Dutch cabinet¹¹¹ reaffirmed its position to keep applying for CEF funding, noting that LNG could be one of the focal points in the Dutch CEF strategy. The Dutch government envisages four tools which can be used to support a sustainable business case: regulations/standards, subsidies for R&D, policy that offers positive discrimination to the use of sustainable fuels, and fiscal policy. The latter is problematic for LNG, as both the shipping sector and the LNG sector pay low taxes. The other three tools can thus be more effective (Ministerie I&M, 2014a:12-32). *Brandstofvisie* (Ministerie I&M, 2014a) also reflects on the relationship between the various governmental levels. There is explicit recognition of complexity due to globalisation, multiple levels of policy-making, the economy, and various other factors. Sustainable transport policy therefore crosses several different hierarchical levels. The *Regeling Groenprojecten* (sustainable projects regulation) of 2010 includes the possibility to provide tax benefits to project owners of single fuel LNG engines and dual fuel engines for inland ships.

Local governments are asked by the *Energieakkoord* to consider climate and sustainability in their spatial policies in the future. The private sector played a large part in the formulation of both the *Energieakkoord* and the *Brandstofvisie*, indicating the importance the Dutch government attributed to the private sector. LNG came up at the municipal level in Rotterdam in 2009-2010¹¹², when the port bye-law (in Dutch: *Havenbeheersverordening*) was changed to accommodate the construction of the GATE terminal. The Gas Port (in Dutch: *Gashaven*) concept was added to the law and the RCI and the private sector began looking at how the cold produced at GATE (to keep the LNG cool) could be used for other means. One of the first thoughts was to make a connection between GATE and the coal-fired power plants and liquefy captured CO₂ for transport and storage (RCI, 2010:38). Transport applications were

110 This goes for all other European governments as well.

111 See Dutch parliamentary proceedings, #21501-33 512.

112 The online city archives show 70 unique results (not including concept documents) when performing a search for 'LNG brandstof' between 1-1-2010 and 11-8-2016. The results include policy documents, documents of auxiliary organs, year reports, college letters informing the Council, and laws. Interestingly, no meeting notes of the Council discussing small-scale LNG show up.

considered immediately as well, and within the Regional Air Quality Programme (In Dutch: *Regionale Aanpak Luchtkwaliteit*) 500.000 euros was set aside to look at the possibilities of small-scale LNG in Rotterdam¹¹³.

4.4. CONCLUSIONS: FRAGMENTED BUT AMBITIOUS CLIMATE AND ENERGY POLICIES

The EU stands before a fundamental problem of wanting to act against climate change whilst ensuring the competitiveness of the European economy. Its member states have committed themselves to help solve the problem, but question the solutions in the wake of the need for global action. Broadly speaking, the EU's climate and energy policy can be divided into a pre-2010 era and a post-2010 era (see table 4.6). The pre-2010 era was marked by a focus on European competitiveness in a globalising world. The Lisbon Strategy addressed the need for sustainability but the modernisation of the European economy was a more pressing concern. Within the European Commission one large DG Environment was responsible for both climate and environmental concerns and GHG emissions declined particularly because of a switch to less carbon intensive fuels (eg. coal to gas) and higher efficiency in electricity production (EEA, 2014b:3-4). Energy and climate policies were drafted separately. The period after the economic and financial crises hit marked a turning point in European discourse on and organisation of energy and climate policies. The *Climate and Energy Package* of 2009 incorporated binding national targets for both GHG emissions reductions and the share of renewables. The climate department within DG ENV became its own DG CLIMA and energy and climate were mentioned as a single headline target under the ambitious Europe 2020 Strategy.

Table 4.6. EU climate and energy focus shifted in goals, beliefs, results and instruments

EU approach on climate & energy policy	90s - 2007	2007 - 2010	2010-
Policy goals	Competitiveness	Competitiveness + sustainability	Competitiveness + sustainability
Underlying belief	No technological preferences	Technological preferences (fe. CCS)	Technological neutrality
Policy result	Energy efficiency as main focus	Energy efficiency & renewables as main focus	"We support everything" (but preferably energy efficiency & renewables)
Target formulation	-	Hard	Soft

Source: author's own compilation based on desk research and interviews.

113 See Herijking RAP/RAL 2011 in the online Rotterdam city archives at [<http://www.ris.rotterdam.nl>].

The results show mixed success. Whereas the EU is on track to meeting the 2020 targets for climate and energy, there are large differences in performance across its member states. Why? European leaders have been unwilling to commit to further binding targets for 2030 and beyond. There are vast differences between member state preferences in the high-level politics area of energy policy. National agendas on climate change do not converge, and EU policies can be summed up to edging more toward the “multidimensional pursuit of comprehensive energy security” (Schubert, Pollak & Kreutler, 2016:125). National governments still seem very much concerned with their own energy security and sovereignty, not wanting the EU to dictate their energy mix choices. Sweden and Denmark prefer renewables, The Netherlands has chosen the gas route, Germany has invested heavily into renewables but is also burning a lot of brown coal, Poland is mostly operating on coal, France is heavily nuclear and the UK has invested in both renewable energy and nuclear energy. The EU's recent Energy Union strategy — an attempt to harmonise energy and climate policies *and* governance across the EU — will not necessarily lead to more integration as countries have chosen to maintain in the driver's seat even after the success of the global Paris agreement at COP-21. The EU's ambitious climate leadership is further offset by the increase in global GHG emissions. We are observing a multi-level interplay of political logics that often do not fit together nicely.

Within the European Commission there has been a noticeable switch from making technological choices in the pre-2010 era — also visible in the original SET-Plan — to attempting to be technology neutral post-2010 and seeing the energy system as an integrated whole under the Energy Union. Fostering innovation and R&D is the EU's harmonisation tool by providing funding for technological development that aids in reaching both the 2020 goals and longer-term goals. The new iteration of the SET-Plan, however, continues the EU's earlier focus on renewables (also in transport) and energy efficiency. Additional financing mechanisms are provided by funds such as the NER 300 and the TEN-T Programme, which support the notion of nation state sovereignty regarding their energy mix; both CCS and small-scale LNG can receive funding from these programmes even though real European policy goals regarding these developments are lacking. It is difficult to predict whether the Energy Union strategy will lead to a more unified European climate and energy policy, but the inherent tension between climate and energy remains. The empirical part of this dissertation will show the trade-off between the three pillars of EU energy policy: is the quest for simultaneous energy security, competitiveness *and* sustainability doomed to fail?