

Norms, Incentives, or Deadlines?

Explaining Norway's Noncompliance with the Gothenburg Protocol

Andreas Kokkvoll Tveit

Bio:

Andreas Kokkvoll Tveit is a PhD candidate at the Department of Political Science, University of Oslo. His main research interests include international environmental governance and comparative environmental politics.

Postal address:

Andreas Kokkvoll Tveit
Department of Political Science
Boks 1097 Blindern
0317 Oslo
Norway

Norms, Incentives, or Deadlines?

Explaining Norway's Noncompliance with the Gothenburg Protocol

Andreas Kokkvoll Tveit*

ABSTRACT

Despite having been a pusher in the international efforts to reduce long-range transboundary air pollution, Norway was far off its 2010 emissions target for nitrogen oxides (NO_x) under the 1999 Gothenburg Protocol. I argue that neither of the main theories in the international compliance literature can account for very much of this noncompliance. Little evidence supports the management school's three explanations – treaty ambiguity, state capacity, and changed conditions for compliance. Likewise, Norwegian policies are also inconsistent with the enforcement school's predictions. Albeit too late to reach compliance by the 2010 deadline, a NO_x tax was commissioned in 2007. Even though no enforcement mechanisms were in place, the ensuing emissions reductions were clearly deeper than in a business-as-usual scenario. Some evidence supports an “office incumbent” theory. The NO_x tax was not introduced until after the 2005 elections, when an environmentalist party gained considerable influence over NO_x policies. However, the fact that NO_x emissions declined substantially across Northern and Western Europe after 2005, and several other Gothenburg parties achieved even larger emissions reductions than Norway, suggests that the explanation for the policy shift is structural rather than particular. One such structural explanation is the “deadline pressure” theory: As the 2010 deadline came closer, most parties considered action to cut emissions as more urgent than before.

* Parts of the research were carried out while I was a master's thesis stipendiate at the Fritjof Nansen Institute, Lysaker, Norway. I thank Jon Hovi, participants at CICEP's annual research conference in September 2016, and three anonymous reviewers for many comments that helped improve the paper substantially. Finally, my research has benefited greatly from my stay at the International Institute for Applied Systems Analysis (IIASA) in May 2016.

Word count: 7992 (excluding abstract, keywords and tables)

Keywords:

International cooperation, international institutions, compliance, international treaties, transboundary air pollution

Introduction

When scientific and public awareness of acid rain rose in the 1970s, Scandinavian countries served as frontrunners in the international efforts to address the problem (Wettestad 2012, 25–26). As cooperation grew increasingly institutionalized over the following decades, Norway was eager to keep this position. Therefore, it may seem surprising that Norway failed to comply with its 2010 target for nitrogen dioxides (NO_x) under the 1999 Gothenburg Protocol.¹

Using an in-depth case study, I aim to explain this noncompliance. I find that neither the enforcement school (Downs et al 1996; Barrett 2003) nor the management school as formulated by Chayes and Chayes 1993 (see also Chayes, Chayes and Mitchell 1995, Young 1979) explain Norway's noncompliance and NO_x policies well. I thus turn to two alternative explanations, which are derived from an “office incumbent” theory and a “deadline pressure” theory, respectively. I find that both of these alternative explanations are consistent with the Norwegian case; however, only the latter is also consistent with the emissions trajectories of other Gothenburg countries. Since the “deadline pressure” theory shares some features with both the management and the enforcement schools, I argue that it may be viewed as a hybrid of the two.

This paper contributes to the international compliance literature in four ways. First, it provides the first study of noncompliance with the Gothenburg Protocol. As Norway is an important player in the regional environmental cooperation to reduce long-range air pollution,² understanding the causes of its noncompliance should be interesting to scholars, to Norwegian authorities, and to other Gothenburg parties alike. In particular, findings concerning the Norwegian case may be useful also for explaining other states' noncompliance with Gothenburg targets.

Second and perhaps surprisingly, few (if any) scholars have done what the present paper aims to do – derive and empirically assess precise hypotheses concerning the

¹ Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution to abate Acidification, Eutrophication and Ground-Level Ozone, usually referred to as the 1999 Gothenburg Protocol. An amended Gothenburg Protocol was adopted in 2012, including emissions targets for 2020. I study the original protocol from 1999, not the amended protocol. Hence, in the present paper, the term “the Gothenburg protocol” refers to the version of 1999.

² Levy describes Norway as a “hardcore environmentalist countr[y]” (1993,116).

causes of one particular case of noncompliance. Other scholars have mostly tested other types of hypotheses (see the literature review).

Third, while sacrificing breadth, the present analysis is deeper than any previous study of compliance with a protocol under the 1979 Convention on Long-Range Transboundary Air Pollution (CLRTAP).

Finally, my assessment of hypotheses derived from the management and enforcement schools may contribute to theory development. Much of the compliance literature has revolved around these two schools. Generally, the more important a school or theory is to a field of research, the more interesting it is if hypotheses derived from it prove inconsistent with evidence.

The remainder of the paper proceeds as follows. The next section describes the Gothenburg Protocol and its goals. The following section reviews relevant research and develops a set of hypotheses.

Thereafter, I confront the management school's three explanations of noncompliance with empirical evidence for Norway. I find that neither ambiguity, incapacity, nor "the temporal dimension"³ can account for Norway's noncompliance.

Next, I show that Norwegian policies are also inconsistent with the enforcement school's expectations. Albeit too late to reach compliance by the 2010 deadline, a Norwegian NO_x tax was commissioned in 2007, despite that Gothenburg provides few (if any) incentives to implement strict policy measures. Moreover, the ensuing emissions reductions were clearly deeper than in a business-as-usual (BAU) scenario.

Consequently, I then turn to two alternative theories. I show that some evidence suggests that Norway's NO_x policies are consistent with an "office incumbent" theory. Despite being widely considered the most effective measure, an emissions tax was not introduced until after the 2005 elections, when environmentalist parties gained additional influence over NO_x policies. However, the fact that several other Gothenburg parties conducted even larger NO_x emissions reductions from 2007 onwards suggests that we should look for a structural explanation, rather than a particular one. One such structural explanation derives from the "deadline pressure"

³ Changed conditions for compliance due to social and economic changes between commitment and deadline.

theory: As the 2010 deadline came closer, the Gothenburg parties (including Norway) considered action to cut emissions as increasingly urgent.

The Gothenburg Protocol and Norway's NO_x target

The 1999 Gothenburg Protocol was the 8th CLRTAP protocol. As transboundary air pollution is largely a regional problem, most parties to the convention are European states. The United Nations Economic Commission for Europe (UNECE) was chosen as the institutional foundation for the collaboration. Gothenburg seeks to solve three interconnected environmental problems: First, acidification, which harms life in water and soil. It is largely caused by sulfur and nitrogen oxides emissions. Second, eutrophication increases algae growth. It is a result of extensive use of fertilizers like ammonia. Finally, nitrogen dioxides reacting with volatile organic compounds (VOCs) causes harmful ground-level ozone (Miljødirektoratet 2015).

Gothenburg provides quantified emissions targets for four substances – nitrogen dioxides (NO_x),⁴ sulfur dioxides, volatile organic compounds (VOCs) and ammonia. A majority of the targets in the Gothenburg Protocol was reached by the 2010 deadline (Table 1). However, 21 of 92 targets were not reached by 2010. 10 of them were targets for NO_x emissions, eight for ammonia, and three for VOC. All SO₂ targets were reached by 2010.

⁴ NO_x targets are expressed as NO₂ equivalents.

Party	NO _x	VOC	Sulfur dioxide	Ammonia
Belgium	139	107,9	57,1	88
Bulgaria	52,1	55,8	45,2	38,4
Croatia	74	61	49,6	129,4
Cyprus	80	71,3	56,3	62,2
Czech Rep.	77	78,4	56,6	67,1
Denmark	114	147,5	27,9	115,9
Finland	97,6	89,4	57,6	123,4
France	127,5	79,5	71,3	93,4
Germany	123,4	124,5	79	116,8
Hungary	77,8	91,3	5,7	86
Latvia	45,7	65,6	2,4	32,7
Lithuania	45	77,7	14,3	51,4
Luxembourg	358,7	94,3	43,9	67,5
Netherlands	103,1	82,7	68,2	112,3
Norway	113,6	71,6	89,5	119,3
Portugal	68,1	89	31,2	42,8
Romania	53,1	66,5	38,1	80
Slovakia	68,2	45,6	63,1	63,9
Slovenia	104,7	96	36,5	95
Spain	113	97,4	54,6	111
Sweden	101,1	79,5	47,7	90,6
Switzerland	98,3	62,6	46,7	101
United Kingdom	95,1	71,3	68,4	93,9

2010 emissions in % of targets. Targets that were not reached are shown in grey (emissions data from CEIP 2015)

Table 1 includes all 23 European countries that became parties to Gothenburg before the 2010 deadline. 13 of these countries failed to meet at least one target by the deadline.

1999	2000	2001	2002	2003	2004	2005	2006
213.700	202.000	200.300	195.100	194.600	195.700	196.100	194.300
2007	2008	2009	2010	2011	2012	2013	
195.800	185.200	175.100	177.200	170.000	163.100	154.400	

Source: CEIP 2015

Norway did not comply with its annual emissions target of 156.000 tonnes NO_x by 2010. Norway's 2010 emissions⁵ were 177.200 tonnes – approximately 13.6 per cent above the target (Table 2).

Norway's NO_x emissions were declining most of the period after 1999 (Table 2). However, the downward trend became substantially steeper after 2007. The low 2009 emissions were likely caused by reduced economic activity during the financial crisis (Statistics Norway 2009).

Previous research and hypotheses

In this section, I present the two main theoretical perspectives on international compliance and then some recent contributions. I also develop a set of hypotheses.

Granted, the enforcement and the management schools are not the only explanatory perspectives I could have tested. For example, Franck (1988) argues that equitability is a crucial determinant of compliance (see also Breitmeier et al's (2006) "legitimacy" perspective, as well as Kim et al 2017). Nonetheless, Breitmeier et al's (2006, 110–111) summary of findings concerning compliance points specifically at the management and the enforcement schools. They thereby suggest that those two schools have sparked more debate than other perspectives have.

The enforcement school

According to the enforcement school's model, states act like unitary, rational actors. Evaluating its options according to their (private) costs and benefits, each state chooses the action that maximizes its net (private) benefit (Aakre et al 2016, 1317).

Unless (marginal) abatement costs are outweighed by (marginal) abatement benefits, unilateral emissions reductions are economically irrational. Thus, defection constitutes each state's *dominant strategy*: Each state will be better off by not contributing to problem solving, regardless of other states' actions. If each state pursues this dominant strategy, the outcome entails suboptimal public goods provision.

⁵ Unless I state otherwise, all emissions are in metric tonnes, and as reported to UNECE in 2015.

Therefore, successful treaties restructure states' incentives – by ensuring credible punishment of non-compliers or rewards to compliant states. Because international third-party enforcement is rare, such credibility usually requires that other parties to the agreement have incentives to implement punishment or rewards. Hence, prospects for solving malign⁶ collective action problems are gloomy. Wettestad (2002, 205–208) characterizes long-range transboundary air pollution as a malign problem.

The management school

Managerialists argue that nothing *inherent* or structural in the international system warrants pessimism concerning cooperative efforts. The cornerstone of this reasoning is the claim that “states have a general propensity for compliance” that makes calculated, intentional noncompliance rare⁷ (Chayes and Chayes 1993, 175–178).

Thus, enforcement measures are not only expensive and inefficient, but also unnecessary. Managerialists advocate “softer” mechanisms, such as monitoring, increasing states' capacities, and sharing of knowledge and information (Chayes, Chayes and Mitchell 1995, 84–85).

The alleged propensity to comply originates in interests (states negotiate and sign treaties aligned with their interests, and noncompliance means jeopardizing your reputation as a reliable partner (Chayes and Chayes 1993, 177, 183–184)), efficiency (constant recalculation of interests is inefficient, while acting in accordance with agreements reduces costs) and international norms (in international relations, a core norm is to do as promised (Chayes and Chayes 1993, 185; Henkin 1968; Finnemore and Sikkink 1998)).

Thus, violations of international agreements typically have causes beyond the noncompliant state's control: treaty ambiguity, insufficient state capacity, and what Chayes and Chayes label “the temporal dimension”.

According to the ambiguity explanation, legal documents may be open to different interpretations. The state capacity explanation argues that financial constraints or insufficient bureaucratic and technical competence may impede goal achievement even

⁶ Political malignancy depends on asymmetries, cleavages, and “the incentives of the underlying game” (Underdal 2002, 15-18, Mitchell 2006, 78).

⁷ Still, Chayes and Chayes certainly do not deny that deliberate noncompliance sometimes occurs (1993, 176.)

in wealthier states (Chayes and Chayes 1993, 194). Generally, state capacity has received much attention among scholars of environmental and development politics (Sagar and VanDeever 2005, Simmons 1998)

The “temporal dimension” contends that immediate compliance often cannot be expected, because policies must be implemented and then acted upon by polluters (Chayes and Chayes, 1993, 195). During the time between commitments and their implementation, social and economic changes may alter the conditions for compliance (Aakre et al 2016, 1317).

Two decades of empirical research

Since the mid-1990s, several large empirical studies have been conducted; however, the jury is still out concerning which theory has more explanatory power (Perkins and Neumayer 2007).

Summarizing their analyses⁸ concerning compliance, Breitmeier et al (2006, 110–111) state that “neither the shallowness argument of Downs, Rocke and Barsoom (1996) nor the management school of Chayes and Chayes can explain patterns of compliance with international environmental regimes”.

No similarly clear summary of which theoretical perspective gets more support from their study is provided by Brown Weiss and Jacobson (eds. 1998)⁹. Nonetheless, both schools receive some support by different findings in the editors’ summary. Figure 15.2 summarizes the findings of their case studies, and lists 30 variables that the authors “believe are the most important factors that affect compliance” (Jacobson and Brown Weiss 1998, 534–536). Among them are sanctions, in keeping with the enforcement school’s expectations. On the other hand, scholars of the enforcement camp would not expect most of these factors (for instance equity, reporting requirements, NGOs) to increase compliance with deep¹⁰ commitments absent enforcement. Depth is, however, not systematically assessed by

⁸ Breitmeier et al (2006) study the 23 International Environmental Regimes included in the International Regimes Database (Young and Zürn 2006).

⁹ This anthology includes studies of eight states’ (and EU) compliance with five international environmental treaties.

¹⁰ A commitment is deep to the extent that it requires a party to do more than it would do *in the absence of the commitment* (Downs et al 1996, 382.)

Jacobson and Brown Weiss (1998). They support the management school by suggesting that factors like administrative capacity and monitoring increase compliance. It is, however, difficult to draw clear conclusions concerning which school receives more support, since Jacobson and Brown Weiss (1998) do little to distinguish between their 30 explanatory factors' relative importance.¹¹

Although *implementation* and *effectiveness* are the main dependent variables in the 14 case studies of regimes in Victor, Raustiala and Skolnikoff (eds. 1998), their findings also shed light on compliance. The editors (Victor et al, eds. 1998, x) argue that “We find that some implementation failures are intentional and that ‘harder’ measures, such as sanctions, are available and sometimes necessary.”

Hanf and Underdal (2000) provide the most comprehensive study concerning CLRTAP protocols (not including Gothenburg). According to them, a model of states as unitary rational actors predicts patterns of compliance (operationalized as emissions reductions), negotiation positions and implementation reasonably well (Underdal 2000, 351–353).

Hypotheses and research design

Given Norway's noncompliance, the management school would expect that the Gothenburg Protocol was ambiguous, that Norway's capacity was inadequate or that time was too short to enable Norwegian compliance.

I assess the ambiguity explanation by asking if there has been any doubt concerning what Gothenburg obliges Norway to do. If not, the ambiguity explanation is unable to account for Norway's noncompliance.

Likewise, I assess the capacity explanation by asking if Norway's capacity was adequate to reach compliance by 2010. If it was, then capacity cannot account for Norway's noncompliance.

¹¹ Except from arguing that “the strength and health of national political-economic systems and a deep public commitment are the most important ingredients in compliance” (Jacobson and Brown Weiss 1998, 542).

Finally, I assess Chayes and Chayes' "temporal dimension" by asking if compliance was realistically within reach, given the time frame and developments between the protocol's adoption and its deadline.

Empirically assessing the enforcement school's explanatory power is less straightforward. Two questions must be answered. First, was the target shallow or deep? Second, were any enforcement mechanisms in force?

Conducting counterfactual judgements is notoriously challenging. However, Norway's NO_x target was arguably deep and thus deviates from a BAU scenario: Cost analyses conducted by Norwegian authorities in 1998 and 1999 suggested that compliance with the NO_x target in the Gothenburg Protocol would amount to NOK 200–300 million annually *compared to the expected emissions trajectory* (St.prp. nr. 87 (1999-2000)).

Like other UN agreements, CLRTAP protocols have no significant enforcement mechanisms (Wettestad 2012, 35). Essentially, Gothenburg consists of emissions targets and timetables (author).

Likewise, no regulation following Norway's membership in the European Economic Area (EEA) has provided incentives for Norway to comply with its NO_x target. Although the inclusion of the EU's National Emissions Ceilings (NEC) Directive (Directive 2001/81/EC) in the EEA Agreement in 2009 made Norway's NO_x target of 156.000 tonnes binding under the EEA Agreement, evidence suggests that Norway's policies were unaffected by the NEC Directive. Norway strengthened its NO_x policies well before 2009. Throughout the 2000s, Norwegian authorities rarely, if ever, refer to the NEC directive when NO_x policies are discussed. For instance, the Government's budget proposal from October 2009 only mentions the Gothenburg Protocol (Prop. 1 S (2009-2010), 129–130). Erik Solheim, Norway's Minister of the Environment 2005–2012, states that he never heard anyone suggest that noncompliance with Gothenburg targets could result in punitive actions.¹² Geir Axelsen, State Secretary in the Ministry of Finance 2005–2009, states that the NEC directive was "not in his mind at all" while the NO_x tax was prepared and implemented.^{13,14} Moreover, the NEC directive was not

¹² Author's interview with Erik Solheim, Paris, May 2014

¹³ Author's interview with Geir Axelsen, Oslo, February 2016. The State Secretary is the political second-in-command in Norwegian Ministries.

brought up in NO_x policy discussions between state authorities and the business sector.¹⁵ Neither does Harald Rensvik, Secretary General¹⁶ in the Ministry of the Environment 1996–2011, suggest that Norway’s NO_x policies were affected by any anticipation of sanctions following Norway’s EEC membership.¹⁷ Additionally, as of March 2017, no action has been taken by ESA (the EFTA Surveillance Authority) following Norway’s delayed compliance with the NO_x target.¹⁸

Considering the deep target and no enforcement, the enforcement school would predict Norwegian noncompliance with its NO_x target and that *Norway would not commission policies to reduce NO_x emissions beyond a business-as-usual scenario.*

Empirical analysis I: The management school

I first consider the management school’s ambiguity explanation, then the capacity explanation, and finally the temporal dimension.

Can ambiguity explain Norway’s noncompliance?

Gothenburg states that “Each party shall, as a minimum, control its annual emissions of polluting compounds in accordance with the obligations in annex II” (article 3, paragraph 1). The protocol includes no provision that may relieve Norway from the obligation to reach the target – unless it withdraws from the protocol. Thus, the protocol seems unambiguous concerning Norway’s NO_x obligations.

Public statements from Norwegian authorities suggest that they share this interpretation: Under the headline “Did not comply with NO_x obligation”, the Norwegian

¹⁴ According to Kristin Halvorsen, Minister of Finance 2005-2009, Axelsen was following the implementation of the NO_x policies very closely (Author’s e-mail correspondence with Erik Tollefsen, Kristin Halvorsen’s adviser, October 2015).

¹⁵ Author’s e-mail correspondence with Geir Høiby, January 6th 2016. Høiby is former assistant director at The Confederation of Norwegian Enterprise, and former Manager of the NO_x fund.

¹⁶ The Secretary General is the highest-ranking permanent bureaucrat of Norwegian Ministries.

¹⁷ Author’s interview with Harald Rensvik, Oslo, January 2017.

¹⁸ Author’s e-mail correspondence with Eli Marie Åsen, senior adviser the Norwegian Ministry of Climate and Environment, March 2017

Environment Agency states that "In 2010 [the NO_x emissions] were 19 per cent above Norway's emissions target in the Gothenburg Protocol" (Miljødirektoratet 2012a).¹⁹

When I asked former Minister Solheim if there ever were doubts over the protocol's implications for Norway, he replied: "I cannot remember that anyone ever suggested that the protocol's content was unclear (...) The focus was on two questions: What time frames are achievable, and what kind of costs are we willing to impose on the affected businesses."²⁰

If ambiguity influenced Norwegian NO_x policies, it should be known by the then minister in charge. We have little reason to distrust Solheim's statement. Generally, scholars must be careful when using information from political actors who might want to give spectators a certain impression. However, when actors present facts or opinions that may be conceived of as unfavorable to themselves, despite having the possibility to frame them differently, they seem trustworthy. Not all politicians read Machiavelli. And not all who read him heed his advice.

In short, ambiguity was not a barrier to Norwegian compliance.

Can lack of capacity explain Norway's noncompliance?

In 1999 (see St.prp. nr. 87 (1999-2000)) and 2006 (Miljødirektoratet 2006) Norwegian authorities published cost analyses of NO_x emissions reductions. According to the 1999 study, reaching the 2010 NO_x target would require implementation of all measures with abatement costs up to NOK20/kg. The estimated *total* compliance cost was NOK200–300 million annually. In the 2006 study, only the first type of estimate was included: Compliance would require implementation of all measures with costs up to NOK60/kg.

Thus, we do not know how high the total costs of reaching compliance would be. However, given that the first estimate tripled from NOK20 to NOK60 per kg, we cannot rule out the possibility that the total costs might have tripled as well. Thus, although the numbers are uncertain, total costs *may* have been in the range of NOK600–900 million annually.

¹⁹ As shown by Table 2, more recent reports of Norway's 2010 emissions suggest that Norway's 2010 noncompliance was 13,6 percent.

²⁰ Author's interview with Erik Solheim, Oslo, February 2013.

Compared to the Norwegian government's total spending on environmental measures, NOK600–900 million NOK is substantial: The Ministry of the Environment's total 2002 budget was approximately NOK2.8 billion (St. prp. Nr. 1 2001-2002) and NOK5.4 billion in 2013 (regjeringen.no 2012). It seems, however, safe to conclude that Norway did have the funds to cover its compliance costs. When the 2010 national budget was presented, total incomes were estimated at NOK974 billion, with a budget surplus of NOK67 billion (statsbudsjettet.no 2009).

Even more importantly, none of the individuals I interviewed indicated that lack of resources or increased costs caused Norway's noncompliance. When I asked former Minister Solheim why Norway did not reach its 2010 NO_x target, he replied: "This was all about one thing: Mobilizing the political will. Technological barriers and similar factors were negligible."

If increased costs explain some or all of Norway's noncompliance, Solheim would likely have mentioned it. He was Minister of the Environment until 2012 – well after Gothenburg's 2010 deadline. Hence, Solheim should have every reason to point at factors that might excuse the noncompliance. Neither did former State Secretary Axelsen nor former Secretary General Rensvik direct our attention to (unexpectedly high) compliance costs, despite ample opportunities to do so during my interviews with them.

What about lack of knowledge? Three important documents concerning Norwegian NO_x policies largely agree on (a) how emissions can be reduced and (b) which sources' emissions should be cut. White papers from 1994–1995 (St. meld. no. 41) and 2004–2005 (St. meld. no. 21) and a report from the Ministry of the Environment (Miljøverndepartementet 2013) all point to emission limits for road vehicles, using low-NO_x technology on the petroleum industry's diesel turbines, international regulation of shipping emissions, retrofitting of modern technology on small coastal vessels, and corresponding measures for land-based industry. This continuity indicates that knowledge concerning sources of and solutions to NO_x emissions was reasonably mature already in the mid-1990s.

Finally, can lack of bureaucratic resources explain the Norwegian noncompliance? In April 2008, the Office of the Auditor General (OAG) of Norway presented a report on Norwegian authorities' efforts to reduce NO_x emissions in accordance with national

goals. The OAG concludes that “the authorities control relevant measures, but the implementation of these measures overall has not contributed to significant emissions reductions.” The OAG also finds that “Judging by the measures implemented by December 2007, we find it very likely that Norway will not be able to reduce its NO_x emissions in accordance with its obligations in the Gothenburg Protocol by 2010” (Riksrevisjonen 2008, 89).

The 94-page OAG report was the outcome of a thorough review process. Five ministries provided detailed comments to draft versions (Riksrevisjonen 2008, 15, 18, 65). Thus, the OAG’s conclusions were likely based on the best available information. If bureaucratic resources were in short supply, or the bureaucratic institutions in any way were incapable of carrying out governmental instructions, the Auditor General – and former Minister Solheim – would almost certainly have directed attention to this problem.

Thus, the evidence suggests that lack of capacity was not a problem.

The management school: The temporal dimension

A starting point for my analysis of the temporal dimension is the fact that Gothenburg parties themselves chose 2010 as deadline for reaching the protocol’s targets. Thus, judging compliance by 2010 can hardly be misleading or premature.

However, concluding that the temporal dimension cannot account for Norway’s noncompliance is premature. Setting an emissions target and deadline is a decision made under incomplete information. Matching the parties’ information and expectations in 1999 with what actually happened can tell us more about the temporal dimension’s explanatory power. If the target proved significantly harder to reach than Norwegian authorities expected when the protocol was adopted, Chayes and Chayes’ “temporal dimension” may fully or partly explain Norway’s noncompliance.

Several sources (UNECE 2003, European Commission 2015, European Commission 2016) suggest that during the last 10 to 15 years, scientists have several times increased estimations of diesel vehicles’ NO_x emissions, since emissions under real-life conditions have proven to be higher than emissions under tests. Hence, diesel vehicles have failed to live up to a number

of EU emissions standards, thereby (potentially) increasing countries' total emissions. Underestimation may make compliance with a quantified emissions target less attainable: For example, if Norwegian NO_x emissions in 1999 were significantly underestimated, Norway's authorities may have believed that reaching the 156.000 tonnes target was easier than what proved to be true.

Tables 3–5 show how estimates²¹ of Norway's NO_x emissions in 1999, 2005 and 2010 have varied over time. This procedure allows comparison of *what Norwegian authorities believed* were the NO_x emissions in those years to *what the real²² emissions were*.

Evidently, Norway's total NO_x emissions have largely been *overestimated*. For instance, Norway's emissions in 1999 were estimated at 213.700 tonnes in 2015 and at 239.000 tonnes in 2001. Thus, the 1999 emissions reported in 2001 were 25.300 tonnes higher than in 2015.

The only instance of underestimation shown in my tables is the 2010 estimate of the 2005 emissions. This estimate is 9.200 tonnes higher than the estimate from 2015 (Table 4).

Table 3: Estimations of Norway's 1999 NO _x emissions (thousand metric tonnes)			
2001	2005	2010	2015
239	238	215,5	213,7

Table 4: Estimations of Norway's 2005 NO _x emissions (thousand metric tonnes)		
2007	2010	2015
196,9	186,9	196,1

Table 5: Estimations of Norway's 2010 NO _x emissions (thousand metric tonnes)	
2012	2015
184,3	177,2

If anything, the significant overestimation could have made compliance more attainable, since it may have (mis)led Norwegian authorities to believe that compliance required even stronger efforts than what proved to be true.

²¹ As reported to UNECE.

²² Since the most recent estimates are based on the best scientific knowledge available today, I use the 2015 estimates as my baseline.

Furthermore, new studies suggesting that some diesel vehicles' NO_x emissions in fact were higher than allowed by the EURO 2²³ emissions standard were presented as early as in 2003 at a meeting in an advisory body under CLRTAP. Experts from most parties, including Norway, participated (UNECE 2003). Thus, six and a half years before the 2010 deadline expired, state authorities got an "early warning" about diesel vehicle's violations of EU emissions standards.

Empirical analysis II: The enforcement school

Because Gothenburg includes no enforcement mechanism, the enforcement school would expect Norway *not to implement any policies to cut NO_x emissions beyond business-as-usual*.

This section argues that although it happened too late to reach compliance by 2010, a policy package introduced in 2007 and 2008 lead to emissions reductions well beyond a business-as-usual scenario.

Norway's NO_x policies 1999–2010: From weak to strong

After the Storting²⁴ consented to ratifying Gothenburg (December 2000), an expert group examined the prospects for cutting emissions. Its 2004 report included no specific advice concerning measures. However, it stressed that business as usual would not suffice to reach compliance: "Significantly stronger measures to reduce NO_x emissions are required" (Riksrevisjonen 2008,7, 47–51).

Similarly, as shown above, the Office of the Auditor General (OAG) concluded that Norwegian NO_x policies had not significantly reduced emissions by 2008 and that compliance required additional policies.

Emissions data (Table 2) support the OAG's assessment: Between 2000 and 2007 emissions were relatively stable, and the weak downward trend was not sufficient for reaching the 2010 target.

²³ Vehicle noncompliance with more recent emissions standards due to inconsistency between real-life and test cycle emissions have been discovered (European Commission 2015).

²⁴ Norway's parliament.

After 2007, however, the downward trend of the emissions curve became steeper. This change coincided with the introduction of (a) the NO_x tax that came into force on 1 January 2007, and (b) the so-called NO_x agreement between the Norwegian government and several sector organizations that are members of the Confederation of Norwegian Enterprise.

Most significant NO_x emitters are subject to the tax, which covers approximately 55 percent of Norwegian emissions. Companies entering the NO_x agreement are exempted from the tax and pay only a lower rate to the so-called NO_x fund, which supports NO_x-reducing investment. Thus, rather than being collected by the treasury, the revenue is redistributed to emitters able and willing to reduce emissions (regjeringen.no 2010; NOU 2015: 15, 98). The agreement now covers more than 95 percent of taxable emissions.²⁵

According to the first NO_x agreement, the total emissions reductions from the affiliated enterprises should amount to 18.000 tonnes from 2008 to 2010. Certification and consultancy foundation Det Norske Veritas (DNV) was assigned with verifying these reductions. In 2012, having reviewed projects supported by the NO_x fund, the Norwegian Environment Agency concluded that the 2008–2010 targets were reached and that “the NO_x emissions have been reduced by 21.211 tonnes between 2008 and 2011” (Miljødirektoratet 2012b).

Of course, DNV’s verifications might be exaggerated or otherwise incorrect. Consultants may be reluctant to draw negative attention to their customers’ prestige projects. Likewise, it would be naïve to rule out the possibility that the Norwegian Environment Agency might be influenced by the Ministry’s need to show results.

On the other hand, both DNV and the Norwegian Environment Agency are staffed with highly qualified personnel trained to adhere to strict scientific norms. Moreover, their findings are supported by Norway’s decreasing emissions. Norway experienced a total NO_x emissions reduction of 15.200 tonnes between 2008 and 2011 (Table 2). Albeit lower than the 21.211 tonnes reduction from projects verified by DNV, this experienced reduction suggests that DNV’s and the Environment Agency’s claims

²⁵ Author’s e-mail correspondence with NO_x fund manager Tommy Johnsen, April 2016.

correspond reasonably well to reported emissions.

Can domestic benefits explain the strict post-2006 policies?

Thus far, I have argued that Norway's policies from 2007 onwards reduced emissions beyond BAU. An important foundation for this claim is the fact that Norway was in compliance by 2013 despite that an analysis from 1999 suggested that reaching Gothenburg's NO_x target would be 200–300 million NOK annually *compared to an expected emissions scenario*. Could it, however, be that the reductions were caused by a re-evaluation of the domestic costs and/or benefits of NO_x emissions reductions?

All the evidence I have collected consistently suggests otherwise. Between 1999 and 2010, Norwegian authorities conducted no new analyses of the total costs of complying with the NO_x target. As mentioned above, a Norwegian Environment Agency report from 2006 argued that compliance required implementation of significantly more expensive measures than was found in 1999. Moreover, in the National Budget for 2007, “[the Government proposes] a tax on NO_x emissions in order to fulfill the obligations in the Gothenburg Protocol of 1999” (St.prp. nr. 1 (2006-2007), 19). Domestic advantages of stricter national NO_x regulation are not even mentioned.

Harald Rensvik, former Secretary General in the Ministry of the Environment, argues that “the abatement costs of stricter NO_x policies were considerable, at least in the short run. I do not think domestic benefits of Norway's emissions reductions can explain why these policies were introduced. As I see it, the crucial determinant was the wish to reach Gothenburg's NO_x target.” Rensvik's claim is consistent with statements from former Minister Solheim, and Manager of the NO_x fund, Tommy Johnsen. None of these individuals have incentives to avoid emphasizing the domestic benefits of strict NO_x regulation. If anything, we would expect politicians like Solheim to (over-)emphasize domestic benefits of environmental policies, since it could increase voter support.

Moreover, Norway's NO_x policies since January 2007 mainly reduce emissions from sea vessels and petroleum installations at the continental shelf (Table 6). If domestic

damage costs were decision-makers' primary concern, we would rather expect that they target urban emissions.

Table 6: Emissions reductions supported by the NO _x fund 2006–2017 (percent)	
Offshore service vessels	33 %
Offshore petroleum installations	16 %
Fishing vessels	13 %
Ferries/passenger vessels	12 %
Land-based industry	12 %
Cargo/tank vessels	11 %
Drilling rigs	3 %
Total	100 %
Source: NO _x -fondet (2014, 15). Includes emissions-reducing projects that were completed and measures that were applied for by 2014.	

It seems thus unlikely that the emissions reductions since 2007 are maximizing Norway's net private benefit. Hence, Norway's emissions trajectory deviates from BAU, and thereby runs contrary to the enforcement school's expectation.

Empirical analysis III: An opportunity lost?

Thus far, this paper has found that the two main theories in the compliance literature cannot explain very much of Norway's noncompliance. Granted, the lax policies until 2007 are consistent with the enforcement school. Similarly, the stringent policies in force since 2007 are consistent with the management school. Nonetheless, the enforcement school expects no emissions reductions beyond BAU *throughout the period*, while managerialists would expect Norway to tighten policies *early enough to reach compliance*. Neither school can explain the change of policy stringency from 2007 onwards.

Hence, in the present section, I develop and consider two explanations that may account for Norway's behavior throughout the period from Gothenburg's adoption in 1999 until its 2010 deadline.

When I asked about his opinion concerning why the NO_x tax and the NO_x agreement were not introduced earlier, former NO_x fund manager Geir Høiby answered: "Even though it is difficult to verify this information, several reliable sources have suggested

that Kristin Halvorsen²⁶ was the fourth Minister of Finance that handled the proposal of a NO_x tax and the first that did not turn it down.”

Høibye’s account suggests that characteristics of politicians in office – or their parties – explain Norway’s noncompliance and its NO_x policies between 1999 and 2010. Tax policies were a part of the portfolio of Øystein Børmer, former State Secretary and thus political second-in-command in the Ministry of Finance between 2001 and 2005.²⁷ Having stressed that it is challenging to recall details about specific proposals more than a decade later, he stated that “NO_x-reducing measures were discussed throughout the 1990s and into the 2000s (...) A NO_x tax must have been a part of our assessments continuously throughout our time in office.”²⁸ Børmer thus largely confirms that a NO_x tax was indeed considered several years before 2007.

When being asked about the bureaucracy’s opinions concerning a NO_x tax versus a NO_x agreement, Geir Axelsen, one of Børmer’s successors as State Secretary in the Ministry of Finance, replied: “Most economists, as well as academic literature on environmental economics, would argue that emissions taxes are more effective than green technology subsidies. Thus, it is rather simple to imagine what advice the bureaucracy gave.”

Together, the statements from Børmer and Axelsen strengthen the impression that an emissions tax was high on the agenda in NO_x policy discussions both before and after 1999, and that such a tax was proposed to the Ministry of Finance’s political leadership(s).

Moreover, politicians and bureaucrats alike were well aware that Norway was heading towards noncompliance. As shown above, an expert group argued in 2004 that “significantly stronger measures” were required to reach the NO_x target. Their conclusion echoes findings of another expert committee (appointed by the Ministry of Finance) more than a decade earlier: Assessing Norway’s chances of fulfilling a nonbinding 1988 declaration of a 30 percent NO_x emissions reduction by 1998²⁹ (see

²⁶ See Table 7.

²⁷ Author’s e-mail correspondence with former Minister of Finance Per Kristian Foss, October 2015. Foss advised the author to interview former State Secretary Børmer.

²⁸ Author’s e-mail correspondence with Øystein Børmer, October 2015, April 2016.

²⁹ Implying Norwegian emissions not exceeding 153.000 tonnes.

Wettestad 2012, 29,) the committee wrote that “far-reaching measures in addition to current policies are needed” (NOU 1992:3, 28).

The Government’s awareness of the need for additional policies is shown by the budget proposal presented in October 2001: “The Government is currently assessing what measures should be implemented to meet Norway’s obligations under the [Gothenburg] protocol, and will return [to the Storting] with its views” (Miljøverndepartementet 2001, 28). One year later, this assessment was still ongoing (Miljøverndepartementet 2002, 67).

In summary, it had long been known what measures could cut emissions and that additional policies indeed were needed. Moreover, the 2010 deadline was known since 1999. The million-dollar question is why the NO_x policies shift came only around 2007. What changed?

One factor that did change, is who was in charge. After the parliamentary elections in 2005, a cabinet consisting of the Labor Party, the Agrarians (the Centre Party) and the Socialist Left Party replaced another coalition, consisting of the Conservative Party, the Liberal Party and the Christian Democrats. The latter (minority) coalition won the 2001 elections, while the former retained their majority in the 2009 election.

Table 7: Politicians in key positions 1999–2010			
Appointed	Minister of the environment	Minister of Finance	Prime Minister
1997	Fjellanger (Liberals)	Restad (Centre)	Bondevik (Christian Dem.)
2000	Bjerke (Labor)	Schjødt-Pedersen (Labor)	Stoltenberg (Labor)
2001	Brende (Conservatives)	Foss (Conservatives)	Bondevik
2004	Hareide (Christian Dem.)	Foss	(Bondevik)
2005	Bjørnøy (Socialist Left Party)	Halvorsen (Socialist Left)	Stoltenberg
2007	Solheim (Socialist Left Party)	(Halvorsen)	(Stoltenberg)
2009	(Solheim)	Johnsen (Labor)	(Stoltenberg)

Table 7 shows that between 2001 and 2005, the Conservatives had key influence over NO_x policies. Although Knut Arild Hareide, a Christian Democrat, was Minister of the Environment for 16 months in 2004 and 2005, his time is outweighed by the Conservative Børge Brende’s two and a half years. Furthermore, the Conservatives’

Per-Kristian Foss was Minister of Finance from 2001 to 2005. From 2005 to 2013, all Ministers of the Environment represented the Socialist Left Party. Equally important, from 2005 to 2009 Kristin Halvorsen was Minister of Finance, thereby giving the Socialist Left Party major influence on both environmental and tax policies.

Table 8: Voter support for parties' environmental policies			
	2001	2005	2009
Socialist Left	36	34	35
Labor	10	15	15
Liberals	16	13	15
Christian Dem.	7	3	1
Centre Party	5	8	5
Conservatives	5	5	8
Progress Party	1	2	4

Data: Karlsen and Aardal 2007, 123; 2011, 140

Arguably, the 2005 change of government increased the influence of environmentalist parties over NO_x policies: The Socialist Left Party is categorized as a typical eco-socialist European party (Arter 2008, 111; see also Heidar 2001, 69). As shown by Table 8, at the time of the elections in 2001, 2005, and 2009 voter support for the Socialist Left Party's environmental policies were strong and stable. For instance, in 2001, 36 percent of Norwegian voters thought that the Socialist Left Party had the best climate and environmental policies among Norwegian Parties.³⁰

In contrast, the Norwegian Conservatives, like many of their sister parties in Europe, traditionally appeal strongly to business interests (Heidar 2008, 46).

Thus, the 2007 NO_x policies shift may be explained by the change of Government after the 2005 elections: Politicians with seemingly good reasons to be reluctant to implement costly yet environmentally effective policies were replaced by politicians giving higher priority to environmental issues.

Evidence from my interview with former Secretary General Rensvik suggests that Halvorsen's role is key to understanding the NO_x tax introduction. According to Rensvik, "any Minister of Finance's political maneuvering space is restricted by the

³⁰ The respondents are asked "Concerning climate and the environment, which party does in your opinion have the best policies?"

Ministry’s mainstream reasoning on economic policies. However, I believe that Kristin Halvorsen was important in the process that got the NO_x tax proposal up and running, for example to support that a first draft was presented to the government.”

However, although the Socialist Left Party held crucial positions when Norway’s NO_x regulations were tightened, it is still possible that the same policies would have been implemented by other parties – had these other parties remained in power after 2005. After all, the closer one gets to a deadline, the more urgent it might seem to act to meet it.

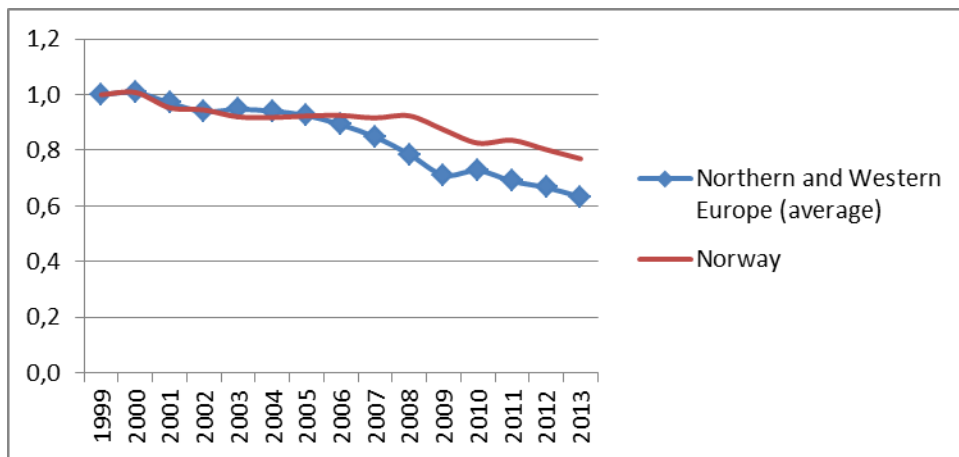
Thus, the increased willingness to reduce NO_x emissions from around 2007 may have been conditioned by an increased general awareness of the upcoming 2010 time limit. If this “deadline” theory is correct, Norway’s emissions should not develop differently from those of other states, since the approaching deadline would affect politicians and bureaucrats in all member countries more or less equally. In contrast, the “office incumbent” theory suggests that Norway’s emissions trajectory should deviate from those of other Gothenburg parties.

Table 9: NO _x emissions reductions 2006–2010 (percent)	
Denmark	-27,7
UK	-27,2
Luxembourg	-26,9
France	-19,3
Netherlands	-16,2
Germany	-14,3
Switzerland	-14
Sweden	-13,1
Finland	-11,3
Belgium	-9,1
Norway	-8,8
<i>All data from CEIP (2015)</i>	

Although Norway’s emissions clearly went down after 2006, the downward trend was even steeper in all other Northern and Western European Gothenburg Protocol parties (Table 9).

Furthermore, the *shape* of Norway's emissions curve is roughly similar to that of other Northern and Western European states. Both curves in figure 1 show a steeper downward trend in the latter half of the 2000s.

Figure 1: Domestic emissions levels as share of 1999 emissions



The verdict seems clear: Table 9 and Figure 1 support the deadline pressure theory but not the office incumbent theory.

Conclusion

This article has shown that the management and enforcement schools fail to give a convincing account of Norway's breach of its 2010 NO_x target under the Gothenburg Protocol. The management school is unable to explain Norway's noncompliance: There were no doubts about Gothenburg's contents. Although compliance costs were higher than expected when the protocol was adopted, Norway's capacity to comply seems high nonetheless. Interviews with top politicians and bureaucrats support this conclusion. Furthermore, Norway had an adequate time to reach compliance.

The enforcement school's expectation that states – unless being incentivized – will not implement costly emissions reductions, is clearly inconsistent with Norway's behavior after 2007. Although Norway's material interests concerning NO_x emissions did not

change significantly around 2007, effective policies were implemented. Thus, the lack of action until the introduction of the NO_x tax is consistent with the enforcement school, but the increased policy stringency is not.

I thereafter developed inductively and assessed two more theories. In accordance with the “office incumbent” theory, rapid emissions reductions followed the 2007 introduction of a NO_x tax. Such a tax had long been considered; however, it was not imposed until after the 2005 elections, when an environmentalist party gained major influence over fiscal and environmental policies. However, this theory cannot explain that other Gothenburg states also reduced their emissions significantly after 2006. These simultaneous reductions support the “deadline pressure” theory: Only when the 2010 deadline got close did action to reduce NO_x emissions begin to seem urgent to the Gothenburg member countries.

One may well hypothesize that norms – more specifically the *pacta sunt servanda* norm – were the driver of the increased efforts. However, the norm was evidently not strong enough to induce Norwegian emissions reductions early enough to reach compliance by 2010. Similarly, since the lack of strong NO_x policies until 2007 is consistent with the enforcement school, one may argue that Norway’s policies followed a logic of consequences until 2007 and a logic of appropriateness from 2007 onwards (see March and Olsen 1998). The Norwegian case may suggest that norms and incentives are affecting state behavior simultaneously, but that their relative influence varies over time. While the logic of consequences is the more important driver when the deadline is distant, the logic of appropriateness’ influence grows stronger when the deadline is approaching.

Thus, the deadline pressure theory may be seen as a hybrid theory of the management and enforcement schools. In contrast with the two theories in their original form, the synthesized theory is able to account for Norway’s policies throughout the period between 1999 and 2010, as well as the change from weak to strong NO_x policies.

List of references

Aakre, Stine, Leif Helland, and Jon Hovi. 2016. When Does Informal Enforcement Work? *Journal of Conflict Resolution*, 60 (7): 1312 –1340

Arter, David. 2008. *Scandinavian politics today*. Manchester: Manchester University Press

Barrett, Scott. 2003. *Environment and Statecraft. The Strategy of Environmental Treaty-Making*. Oxford: Oxford University Press

Breitmeier, Helmut, Oran R. Young, and Michael Zürn. 2006. *Analyzing International Environmental Regimes. From Case Study to Database*. London: MIT Press

Brown Weiss, Edith, and Harold K. Jacobson (eds). 1998. *Engaging Countries: Strengthening Compliance with International Environmental Accords*. Cambridge: MIT Press

CEIP. 2015. *Trend Tables 2015*.

Available online at:

http://www.ceip.at/ms/ceip_home1/ceip_home/status_reporting/2015_submissions/, last accessed March 27, 2017

Chayes, Abram, and Antonia Handler Chayes. 1995. *The New Sovereignty*. London: Harvard University Press

Chayes, Antonia Handler, Abram Chayes, and Ronald B. Mitchell. 1995. Active Compliance Management in Environmental Treaties, in *Sustainable Development and International Law*, edited by Winfried Lang, 75–89. London: Graham & Trotman

Chayes, Abram, and Antonia Handler Chayes. 1993. On Compliance. *International Organization* 47 (2): 175–205.

Downs, George W., David M. Rocke and Peter N. Barsoom. 1996. Is the good news about

compliance good news about cooperation? *International Organization* 50 (3): 379-406

European Commission. 2016. *Transport Emissions: Air pollutants from road transport*.

Available online at:

<http://ec.europa.eu/environment/air/transport/road.htm>, last accessed March 28, 2017

European Commission. 2015. *Fact Sheet. Air pollutant emissions standards*.

Available online at:

[http://europa.eu/rapid/press-release MEMO-15-5705_en.htm](http://europa.eu/rapid/press-release_MEMO-15-5705_en.htm), last accessed March 28, 2017

Finnemore, Martha, and Kathryn Sikkink. 1998. International Norm Dynamics and Political Change. *International Organization*, 52 (4): 887–917.

Franck, Thomas M. 1988. Legitimacy in the International System. *American Journal of International Law*, 82 (4): 705–59.

Heidar, Knut. 2001. *Norway. Elites on Trial*. Westview Press.

Heidar, Knut. 2008. Norge. In *Politikk i Europa*, edited by Knut Heidar, Einar Berntzen og Elisabeth Bakke, 42–57. Oslo: Universitetsforlaget

Henkin, Louis. 1968. *How Nations Behave: Law and Foreign Policy*. London: Pall Mall Press

Jacobson, Harold K., and Edith Brown Weiss. 1998. Assessing the Record and Designing Strategies to Engage Countries. In *Engaging Countries: Strengthening Compliance with International Environmental Accords*, edited by Edith Brown Weiss and Harold K. Jacobson, 511–554. Cambridge: MIT Press

Karlsen, Rune and Bernt Aardal. 2007. Politisk dagsorden og sakseierskap. In *Norske*

velgere. *En studie av stortingsvalget 2005*, edited by Bernt Aardal, 111–132. Oslo: Damm og Søn AS

Karlsen, Rune and Bernt Aardal. 2011. Kamp om dagsorden og sakseierskap. In *Det politiske landskap. En studie av stortingsvalget 2009*, edited by Bernt Aardal, 131–160. Oslo: Damm og Søn AS

Kim, Yoomi, Katsuya Tanaka, and Shunji Matsuoka. 2017. Institutional Mechanisms and the Consequences of International Environmental Agreements. *Global Environmental Politics* 17 (1): 77–98

Levy, Marc A. 1993. European Acid Rain: The Power of Tote-Board Diplomacy. In *Institutions for the Earth: Sources of Effective International Environmental Protection*, edited by Peter M. Haas, Robert O. Keohane, and Marc A. Levy, 75–132. Cambridge: The MIT Press

March, James G., and Johan P. Olsen. 1998. The Institutional Dynamics of International Political Orders. *International Organization*, 52 (4): 943–969

Miljødirektoratet. 2006. *Tiltaksanalyse for NOx*.

Available online at:

<http://tinyurl.com/jf4rk5h>, last accessed April 3, 2017

Miljødirektoratet. 2015. *Air pollution*.

Available online at:

<http://www.environment.no/topics/air-pollution/>, last accessed March 28, 2017

Miljødirektoratet. 2012a. *Klarte ikke innfri NOx-forpliktelsene*.

Available online at:

tinyurl.com/zgqy6og, last accessed April 3, 2017

Miljødirektoratet 2012b. *Årsrapport 2011 – oppfyllelse av forpliktelsene i reduksjon av NO_x-utslipp for 2011 i miljøavtalen om NO_x. Kommentarer til rapporter fra NO_x-fondet*. Letter from The Norwegian Environment Agency, June 29 2012, on file with author

Miljøverndepartementet. 2001. *St.prp.nr. 1 (2001-2002)*.

Available online at:

tinyurl.com/hber222

last accessed April 2, 2017

Miljøverndepartementet. 2002. *St.prp.nr. 1 (2002-2003)*.

Available online at:

www.regjeringen.no/no/dokumenter/stprp-nr-1-2002-2003-/id295908/, last accessed April 3, 2017

Mitchell, Ronald B. 2006. Problem Structure, Institutional Design, and the Relative Effectiveness of International Environmental Agreements. *Global Environmental Politics* 6 (3): 72–89.

NOU 1992:3. *Mot en mer kostnadseffektiv miljøpolitikk i 1990-årene*.

Available online at:

tinyurl.com/h5oun44, last accessed April 2, 2017

NOU 2015: 15. *Sett pris på miljøet*

Available online at:

www.regjeringen.no/no/dokumenter/nou-2015-15/id2465882/, last accessed April 3, 2017

NO_x-fondet. 2014. “Årsrapport”

Available online at:

<https://www.nho.no/siteassets/nhos-filer-og-bilder/filer-og-dokumenter/nox-fondet/dette-er-nox-fondet/arsrapporter/arsrapport-2014.pdf>, last accessed April 23, 2017.

Perkins, Richard, and Eric Neumayer. 2007. Implementing Multilateral Environmental Agreements: An Analysis of EU Directives. *Global Environmental Politics* 7 (3): 13–41.

Protocol to The 1979 Convention on Long-Range Transboundary Air Pollution to abate Acidification, Eutrophication and Ground-Level Ozone
www.unece.org/fileadmin/DAM/env/lrtap/full%20text/1999%20Multi.E.Amended.2005.pdf, last accessed April 3, 2017

Raustiala, Kal, and David G. Victor. 1998. Conclusions. In *The Implementation and Effectiveness of International Environmental Commitments: Theory and Practice*, edited by Kal Raustiala, David G. Victor and Eugene B. Skolnikoff, 659–707. Laxenburg: IIASA; Cambridge: MIT Press

Regjeringen.no. 2008. *Ny avtale skal redusere miljøfarlige utslipp*.

Available online at:

www.regjeringen.no/no/aktuelt/ny-avtale-skal-reducere-miljofarlige-uts/id497833/, last accessed April 3, 2017.

Regjeringen.no. 2010. *Miljøavtale om reduksjon av NOx-utslipp for perioden 2011–2017*.

Available online at:

tinyurl.com/hnvo8t7

last accessed April 3, 2017.

Regjeringen.no. 2012. *Statsbudsjettet 2013: Over ti prosent vekst i Miljøverndepartementets budsjett*.

Available online at:

tinyurl.com/zfh324g, last accessed April 3, 2017

Riksrevisjonen. 2008. *Riksrevisjonens undersøkelse av myndighetsutøvelse for reduksjon av*

NOx-utslipp. Dokument nr. 3:9 (2007-2008).

Sagar, Ambuj D., and Stacy D. VanDeveer. 2005. Capacity Development for the Environment: Broadening the Scope. *Global Environmental Politics* 5 (3): 14–22.

Simmons, Beth A. 1998. Compliance with International Agreements. *The Annual Review of Political Science*.1: 75–93.

Statistics Norway: *Nedgang i klimagassutslippene, men er det varig?*

Available online at:

<https://www.ssb.no/natur-og-miljo/artikler-og-publikasjoner/nedgang-i-klimagassutslippene-men-er-det-varig>, last accessed March 4, 2017

Statsbudsjettet.no. 2009. Statsbudsjettet 2010

Available online at:

<http://www.statsbudsjettet.no/Statsbudsjettet-2010>, last accessed April 4, 2017

St. meld. nr. 41 (1994-95). *Norsk politikk mot klimaendringer og utslipp av nitrogenoksider*. Miljøverndepartementet

St. prp. nr. 1 (2006-2007). *Statsbudsjettet*. Finansdepartementet

Available online at:

http://www.statsbudsjettet.no/Upload/Statsbudsjett_2007/dokumenter/pdf/gulbok.pdf, last accessed April 4, 2017

St.prp. nr. 87 (1999-2000). *Om samtykke til ratifikasjon*. Miljøverndepartementet

St. meld. nr. 21 (2004-2005): *Om regjeringens miljøvernpolitikk og rikets miljøtilstand*. Miljøverndepartementet

Underdal, Arild and Kenneth Hanf. 2000. *International Environmental Agreements and Domestic Politics: The Case of Acid Rain*. Aldershot: Ashgate.

Underdal, Arild. 2000. Comparative Analysis: Accounting for Variance in Actor Behaviour. In *International Environmental Agreements and Domestic Politics*, edited by Arild Underdal and Kenneth Hanf, 341–384, Aldershot: Ashgate

Underdal, Arild. 2002. One Question, Two Answers. In *Environmental Regime Effectiveness. Confronting Theory with Evidence*, Edward L. Miles, Arild Underdal, Steinar Andresen, Jørgen Wettestad, Jon Birger Skjærseth, and Elaine M. Carlin, 433–465. London: MIT Press

UNECE. 2003. *Progress Report*.

Available online at:

www.unece.org/fileadmin/DAM/env/documents/2003/eb/wg5/eb.air.wg.5.2003.5.e.pdf, last accessed April 4, 2017

Victor, David, Kal Raustiala and Eugene B. Skolnikoff (eds). 1998. *The Implementation and Effectiveness of International Environmental Commitments: Theory and Practice*. Laxenburg: IIASA; Cambridge: MIT Press

Wettestad, Jørgen. 2002. The Convention on Long-Range Transboundary Air Pollution (CLRTAP). In *Environmental Regime Effectiveness. Confronting Theory with Evidence*, Edward L. Miles, Arild Underdal, Steinar Andresen, Jørgen Wettestad, Jon Birger Skjærseth, and Elaine M. Carlin, 197–222. London: MIT Press

Wettestad, Jørgen. 2012. Reducing Long-Range Transport of Air Pollutants in Europe. In *International Environmental Agreements: An Introduction*, edited by Steinar Andresen, Elin Lerum Boasson and Geir Hønneland, 23–37. New York: Routledge

Young, Oran. 1979. *Compliance and Public Authority: A Theory with International Applications*. London: Johns Hopkins University Press

Young, Oran, and Michael Zürn. 2006. *The International Regimes Database: Designing and*

Using a Sophisticated Tool for Institutional Analysis. *Global Environmental Politics* 6 (3):
121–143.