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Enforcing the European Emissions Trading System within the EU Member States: a Procrustean bed?

*Floor Fleurke and Jonathan Verschuuren**

1. Introduction

Since the late 1990s, the EU has explicitly decided to take the lead in action addressing Climate Change, and has made common action against global warming an important part of its foreign environmental policy.¹ The EU has laid down this goal in its Climate and Energy package of 2010, in which it committed to a reduction of 20% in greenhouse gas emissions by 2020 relative to a 1990 baseline.² In October 2014, the Council of the EU adopted a reduction target of 40% as part of the 2030 Framework for Climate and Energy Policies.³ The flagship of this policy is the EU emissions trading system (EU ETS), as laid down in Directive 2003/87 (hereafter 'the Directive').⁴ This will remain so in the period until 2030,⁵ despite major challenges to the EU ETS that emerged during the economic crisis. These were mainly caused by a growing surplus of emission allowances, which undermined the trade in the carbon market. Although the EU ETS is now in its third trading phase, so far the outcomes in terms of emissions abatement have been minor.⁶ The price for CO₂ has simply remained too low to encourage the industry to invest in low carbon technology.

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¹ European Commission, EU Action Against Climate Change: Leading Global Action to 2020 and beyond.

² Analysis of options to move beyond 20% of greenhouse gas emission reductions and assessing the risk of carbon leakage, COM(2010)265 final.

³ EUCO 169/14, CO EUR 13/CONCL 5, 1.

⁴ Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, [2003] OJ L 275/32.

⁵ Supra note 3 at 2. In December 2014, the European Commission started its work on the revision of the EU ETS Directive for post 2020, see http://ec.europa.eu/clima/news/articles/news_2014121901_en.htm.

⁶ See Sandbag Report - URN 13D/198 - Amendments to UK greenhouse gas emissions trading scheme and national emissions inventory regulations: a public consultation.

This, in turn, was caused by a cap that was set too high; the financial crisis, which caused a reduction in production; 'off-setting' of emission reduction abroad and a reduced need for electricity caused by warm weather.⁷

Moreover, the carbon market - as the world's fastest growing commodities market - is at risk of being targeted and undermined by criminals. In fact, the system has been plagued by incidences of fraud that have been covered extensively in the media.⁸ It requires proper monitoring and enforcement to ensure both the environmental and financial integrity of the EU ETS system. Its effectiveness and reliability depends for a substantial part on the level of compliance in each of the 31 participating states.⁹ A lack of compliance in even one or just a few participating countries may harm the functioning of the ETS in the entire EU. It is here that we are confronted with a Procrustean dilemma: is there a fit between the centralised and standardised EU ETS and the decentralized, individual enforcement practices and enforcement cultures of the different member states? In Greek mythology, Procrustes was a rogue smith who stretched people or cut off their legs, so as to make them fit the size of his bed.

Against this background we examine the enforcement side of the EU ETS. The chapter is organized as follows. First, in section 2, we will explain the compliance cycle of the EU ETS. We will also briefly pay attention to the various amendments that were adopted over the years, and especially in the run up to the third trading phase: how has the EU legislature tried to improve the compliance mechanism? In section 3, we explain the core legal obligations for market players to which all compliance efforts are directed, and in section 4 we will deal with the sanctions that apply in case of non-compliance.

Sections 5 and 6 then provide the findings of an empirical study of the compliance mechanism of the EU ETS in six different Member States: Germany, the Netherlands, Poland, Greece, the United Kingdom and Hungary. These Member States were chosen because they represent both smaller and larger countries as well as old and new Member States. Here, we turn to the question of how the compliance mechanisms have played out in the context of the EU ETS at the domestic level, drawing on experiences in different Member States, with a focus on organization (section 5) and compliance instruments (section 6) respectively.. We have studied and compared national legislation and analysed the organizational and administrative structures, including monitoring instruments. Data were gathered by means of desk research and interviews with representatives from various institutions involved in the compliance mechanism.¹⁰ In the final section, we will draw some conclusions on whether in

⁷ A structural reform of the EU ETS is underway to deal with these challenges, see the European Commission's website through http://ec.europa.eu/clima/policies/ets/reform/index_en.htm.

⁸ See e.g. Organized Crime and Corruption Reporting Project, *United Kingdom: Four Men Jailed for Carbon Credit Cyber-Heist*, (September 25, 2014); R. Mason, *The Great Carbon Trading Scandal*, Telegraph (January 30, 2011); The Economist, *The Wrong Sort of Recycling* (March 25, 2010).

⁹ Participating States are the 28 Member States of the EU and Norway, Iceland and Liechtenstein.

¹⁰ For a full overview of the findings, see the full report Verschuuren, J. and F. Fleurke, Report on the legal implementation of the EU ETS at Member State level (Tilburg 2014) is available through <http://entracte-project.eu/research/report-legal-studies/>. All the

the third phase the compliance mechanism of the EU ETS has sufficiently improved in terms of effectiveness, and what prospects - from a compliance perspective- exist for stepping up the EU's emission reduction efforts while relying on the EU ETS as the main instrument, to achieve the 2030 targets.

2. Complying with the EU ETS

The EU ETS is the largest trading program in the world designed with the aim to combat global climate change. The key concept of emissions trading is the establishment of a market mechanism to mitigate greenhouse gasses. After a cap is set and potential polluting firms have obtained allowances to emit (either distributed freely, or through auctioning), they can either (1) reduce their emissions and sell their allowances by for example investing in technological innovation; (2) use their allowances in order to cover their emissions; or, (3) increase their emissions by buying additional allowances on the market.

The crucial importance of a well-developed and operationalized compliance chain has been neglected in the original design. In fact, a striking paradox of the EU ETS is that while it is based on the idea of a free market the system only functions if it operates in a well-regulated context. Market participants must have the confidence that the system is transparent and consistent, and that it guarantees a level playing field for all actors in the participating states. In this regard, information on emission allowances, on the amount of allowances that are surrendered, and information on actual emissions is essential. Monitoring, reporting and verification of this process are therefore of vital importance for the functioning of the system and compliance. In order to be compliant covered installations must operate in accordance with the requirements of the EU ETS. Inspections and enforcement actions are necessary to monitor and ensure this.¹¹

The Commission already emphasized the importance of oversight and enforcement in its Green Paper on emission trading in the year 2000, by stating that:

'The purpose of strict compliance provisions and enforcement is to enhance confidence in the trading system, make it work in an efficient way in accordance with the rules of the internal market and at the same time increase the likelihood of achieving the desired environmental result.'¹²

In reality however, not much attention was dedicated to this important aspect.¹³

interviews are available on transcript with the authors. We would like to thank all persons that have participated in the interviews for their time and valuable insights.

¹¹ IMPEL Report, *Options and Proposals for Consistency in the Implementation of the EU Emissions Trading Scheme* Report 4: Good Practice in Compliance and Enforcement, May 2007, 3, available online <http://impel.eu/wp-content/uploads/2012/09/IMPEL-Report-4-Compliance-and-Enforcement-Report-FINAL.pdf> 3.

¹² European Commission, Green Paper on greenhouse gas emissions trading, 8 March 2000, COM/2000/87, 24.

¹³ M. Peeters was an early signaller of this important issue. See M. Peeters, 'Inspection and market-based regulation through emission trading: the striking reliance on self-monitoring, self-reporting and verification' *Utrecht Law Review* (2006) 2(1), 177-195.

The initial EU ETS legislation left a considerable amount of discretion to Member States. This particularly concerned operational elements of emission trading, such as registration, monitoring, verification, reporting and enforcement issues. It was only when European law enforcement agencies reported signals that in some European countries carbon trading fraudsters accounted for up to 90% of all market activity, with proceeds of crime running into billions, the compliance issue started to receive increased attention.¹⁴ As mentioned above, the effectiveness and reliability of the EU ETS to a significant extent depends on compliance in each of the Member States and differences in compliance strategies in the Member States may distort the entire market for greenhouse gas allowances. Earlier reports have indicated that this decentralized approach pursued in the Directive has adversely affected the effectiveness of the system and gradually, however, a series of amendments of the scheme's operational aspects have been adopted to reduce the level of decentralization.¹⁵ The latest changes made to the EU ETS, the ones that apply to the current trading phase (2013-2020), have greatly centralized the EU ETS. Provisions on compliance and enforcement have now been for the most part harmonized. Particularly regarding enforcement issues various elements of the ETS however remain within the domain of the Member States.¹⁶ The Nevertheless, Member States remain the most important actors responsible for in ensuring compliance with of the EU ETS. The active role of Member States in setting up compliance strategies is also important for ensuring that competition of the industry covered is not seriously distorted, and that there remains a 'level playing field'.¹⁷

Compliance issues in emission trading differ from those following from standard command and control regulations in typical for environmental law. As Peeters pointed out, the classical command and control enforcement method is imposing static obligations on firms, such as binding limit values for their emissions, and requirements to apply specific techniques.¹⁸ To the firms to which such obligations apply these do not change unless the permit is amended. In emissions trading however, the requirements set in the emission permit are dynamic: the amount of allowances that need to be surrendered fluctuates with the exact amount of CO₂ emitted.¹⁹ Monitoring this is a challenging and highly complex task for the operators of installations covered by the system and also requires continuous control and oversight by Member State authorities. Weishaar in this regard even suggests that the EU ETS 'necessitates a system

¹⁴ Interpol, Guidance to Carbon Trading Crime (June, 2013), available on the Internet at: <http://www.interpol.int/en/News-and-media/News/2013/PR090/>

¹⁵ See for a detailed discussion all the regulatory changes, the full report mentioned in footnote *.

¹⁶ See D. Ellerman, 'The EU's Emissions Trading Scheme: A Prototype Global System?' (2009) *Joint Program on the Science and Policy of Global Change*, Report No. 70. Negotiations are currently underway with Switzerland. Plans to link the EU ETS to the Australian ETS were abandoned after the Australian parliament repealed the emissions trading scheme in July 2014.

¹⁷ Peeters, supra note 16.

¹⁸ Ibid. at 171-172.

¹⁹ Ibid.

that may perhaps be even more stringent than in the case under comparable command and control instruments'.²⁰

When thinking of compliance and inspection as an ongoing effort of both operators and competent authorities, one has to bear in mind the entire *compliance cycle*. This includes the following activities:

- Information and communication facilities
- Site visits and consideration of the results
- Monitoring achievements
- Verification of self-monitoring and self-reporting
- Controlling equipment
- Controlling systems and procedures
- Controlling the relevant records and measurement systems
- Controlling the emission permit to ensure that the activities described in the monitoring plan reflect the reality of the site in relation to the consistency and completeness of the monitoring of the emissions
- Controlling the verified emissions reports.²¹

Ideally, a compliance assessment by the competent authority will be produced based upon a risk assessment taking into account the complexity of the installation, the level of emissions, the compliance history of the installation and its operator, the time required for visits and for drawing up the verifier report. Here, “instrument sequencing” whereby enforcement agencies dispose of a range of instruments, ranging from soft to hard is also of relevance. Within the dynamic context of the EU ETS it is particularly important for regulators and firms to foster good relationships to ensure sustained and long-term compliance. Therefore, upon becoming aware of an infringement, enforcement agencies will first seek to educate and persuade rather than resort immediately to the more extreme coercive instruments that they also have at their disposal. The fact that enforcement agencies may revert to coercive instruments higher up the escalation ladder accounts for the effectiveness of less draconic enforcement policies. Socio-legal scholars explain this dynamic by referring to it as ‘negotiating under the shadow of the law’.²²

As has become clear from the country reports in this study, the extent to which the Member States apply the different instruments depends upon the regulatory approach the competent authorities choose. Their choices depend on factors such as regulatory tradition, the principles underlying their enforcement strategy and how it is implemented, but also on available resources.

The EU ETS Compliance Forum has been established to promote better harmonization.²³ Participation is voluntary and open to all Member States. The Forum is used to exchange information and best practices and to discuss challenges concerning the operation of the EU ETS. Task forces are organized to address specific priorities. A second instrument to foster harmonization and

²⁰ S.E. Weishaar, *Emissions Trading Design: A Critical Overview* (Cheltenham: Edward Elgar, 2014) 150.

²¹ *Supra* note 12.

²² See Gunningham, N. and P. Garbosky, *Smart Regulation. Designing Environmental Policy* (Oxford: OUP 1998).

²³ See http://ec.europa.eu/clima/events/articles/0050_en.htm.

compliance is standardized IT systems as is for example used to register the EU ETS.

3. Key legal obligations of participating operators in the EU ETS

Before discussing concrete compliance issues relating to the EU ETS, we briefly explain the core legal obligations applying to the market actors. The essential requirement for the actors is a permit necessary for entering the emissions market obliging them to monitor, report and verify emissions. Registration obligations are included as well, as the integrity of the Register is crucial to the functioning of the EU ETS. In our chapter we do not address auctioning since it does not directly relate to questions of enforcement and compliance in the context of the EU ETS.²⁴

a. The Greenhouse Gas Emissions permit

As explained above, the core of the EU ETS is that the emissions of every installation falling within the scope of the system must equal its annual emission rights. Since operators without a GHG emissions license may no longer emit CO₂ this permit is the key legal instrument of Directive 2003/87 (hereafter: 'The Directive'). The competent authority can only issue such a permit after having established that the operator is capable of monitoring and reporting emissions.²⁵ In the permit, the specific activities of the installation(s) are described, as well as the main conditions for operating within the EU ETS: the operator must surrender allowances equal to the total emissions of the installation in each calendar year, within 4 months following the end of that year.²⁶ In addition, the operator is required to inform the competent authority of any changes that affect the functioning of the installation, for example an extension that might require an update of the emission permit.²⁷

b. Monitoring, Reporting and Verification (MRV)

The Directive requires that the GHG emissions permit contains a monitoring plan, specifying detailed, complete and transparent documentation, including a risk assessment.²⁸ The monitoring plan is of paramount importance, because without it the permit cannot be granted.²⁹ Emissions must be monitored in accordance with the rules of the Commission Regulation 601/2012/EU on the monitoring and reporting of greenhouse gas emissions, and the competent authorities must ensure that each operator of an installation reports the emissions from that installation during each calendar year after the end of that

²⁴ Compliance with the auctioning system is part of the report on which this article is based, see footnote * above.

²⁵ Art. 4 of the Directive.

²⁶ Art. 6(2)(e).

²⁷ Art. 7.

²⁸ Art. 6(2)(c), Art. 12.

²⁹ Art. 6(2)(c) and (d), 14 and 15.

year.³⁰ An update of the monitoring plan is not necessarily labelled as ‘a change’ that also requires a revision of the GHG emissions permit.³¹

Monitoring provisions require the use of certain monitoring methodologies and detailed specific sector rules. Operators must take into account different aspects, such as the location and calibration of measurement equipment, and quality assurance and control, missing data and uncertainties.³² The principle of constant improvement of performance in monitoring and reporting emissions hence should encourage in continuously finding new improved approaches, hereby supported by the verifier.

In addition to the monitoring requirements, according to Article 6(2)(d) of the Directive the operator must draft and submit an emission report.³³ Ultimately, the Member States must confirm that all operators of an installation report the emissions from that installation during each calendar year to the competent authority after the end of that year. Independent and certified verifiers must commissioned by the operator must approve the emission reports.³⁴ The verification report must conclude with ‘reasonable assurance’ that the operator’s report is free from material misstatements.’³⁵ The verifier must carry out his activities with ‘an attitude of professional scepticism recognizing that circumstances may exist that cause the information in the operator’s report to contain material misstatements’.³⁶ These provisions should guarantee the quality and reliability of the system of self-monitoring and self-report.

Importantly, since 2012 the verifier is obliged to include irregularities in the monitoring plan even if the competent authority accepts the verification report. Detailed rules prescribe the verification process. For example, data should be tested in detail and be traced back to the primary source and cross-checked with information from external sources. Site visits must be conducted during the verification process to assess the operation of measuring devices and monitoring systems and to conduct interviews.³⁷ Although it is very important that the verification tasks are carried out ‘in the public interest’, Member State authorities remain ultimately responsible in checking whether compliance exists.

c. Register

³⁰ Commission Regulation 601/2012/EU of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council, [2012] OJ L 181/30. See below for more details on this Regulation.

³¹ Art. 6(2)(c) of the Directive.

³² Commission Regulation (EU) No. 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and the Council, Section 3 and art. 57. There are specific provisions for the aviation sector.

³³ See also Directive 2009/29, art. 14 and 15, as well as Commission Regulation 600/2012/EU of 21 June 2012 on the verification of greenhouse gas emission reports and tonne-kilometre reports and the accreditation of verifiers pursuant to Directive 2003/87/EC of the European Parliament and of the Council, [2012] OJ L 181/1.

³⁴ Art. 15 of the Directive and Regulation 600/2012/EU.

³⁵ Art. 7 of Regulation 600/2012/EU.

³⁶ *Ibid.*

³⁷ Art. 21 of the Directive.

Operators must submit all transactions within the EU ETS electronically to a Register to ensure the availability of accurate data on transfers and submission of emissions. The quality of the transaction logs is crucial to the functioning of the EU ETS. A breach of the integrity of the Register can lead to substantial fraud and cybercrime, for instance to double counting of surrendered allowances and identity theft.³⁸ In 2009, it was observed that there was a significant increase in the occurrence of VAT-fraud, money laundering and other criminal activities.³⁹ To secure the integrity of the registration, the national registries were replaced by a single Union Registry and a European Union Transaction Log (EUTL) in the third phase (2013-2020) of the EU ETS.⁴⁰ This was deemed necessary to improve the coherence of the registry, and also to better guarantee the robustness of the system and to reduce its vulnerability to fraud.⁴¹

One measure was to tighten regulations on the persons involved in the transaction administration. National administrators, for instance, can now refuse to open an account in case the person who requests the opening of the account is a suspect under investigation in cases of fraud involving allowances or Kyoto units, money laundering, terrorist financing and other serious crimes to which the account may be instrumental, or any other reason set out in national law.⁴² Any violations of these requirements may result in the European Commission instructing the EU Central Administrator to suspend the acceptance of some or all processes (i.e. automated technical means to carry out an action relating to an account or a unit in a registry).⁴³ Automated checking of all processes is required.⁴⁴ If discrepancies are discovered, the process concerned has to be terminated and the relevant account holder has to be informed on this.⁴⁵

Interestingly, there exists no market inspection yet as a CO₂ allowance is not considered to be a financial product. However, the Market Abuse Directive (Article 43) does apply to the EU ETS.⁴⁶ According to that Directive authorities have the right to a) access any document in any form whatsoever, and to receive

³⁸ See for example on the fraud hitting the EU ETS: Interpol, *Guide to Carbon Crime*, June 2013.

³⁹ Interpol, *Guidance to Carbon Trading Crime* (June, 2013), available on the Internet at: <http://www.interpol.int/en/News-and-media/News/2013/PR090/>

⁴⁰ Commission Regulation 994/2008/EC of 8 October 2008 for a standardised and secured system of registries pursuant to Directive 2003/87/EC of the European Parliament and of the Council and Decision 280/2004/EC of the European Parliament and of the Council, [2008] OJ L 271/3. For more on this see the next section.

⁴¹ In addition, accounts have to have at least two authorised representatives next to the person opening the account, and the obligations of these persons (account holder and authorised representatives) have been laid down in Annex VI of Regulation 920/2010/EU, such as the duty to ensure that the posted data are accurate. Regulation 920/2010/EU also contains many provisions with technical requirements of the registries system aimed at preventing security breaches. If there is a security breach, the Central Administrator may suspend access to the EUTL.

⁴² Art. 13(4) of Regulation 920/2010/EU.

⁴³ *Ibid.*, Art. 65(2).

⁴⁴ *Ibid.*, Art. 66.

⁴⁵ *Ibid.*, Art. 67.

⁴⁶ Directive 2003/6/EC of 28 January 2003 of the European Parliament and of the Council on insider dealing and market manipulation (market abuse), [2003] OJ L 96/16.

a copy of it, b) demand information from any person, c) carry out on-site inspections, d) require existing telephone and existing data traffic records, e) require the cessation of any practice that is contrary to the provisions adopted in the implementation of the above provisions, f) suspend trading, g) request the freezing and/or sequestration of assets, h) request temporary prohibition of professional activity.⁴⁷ Member States have the obligation to impose effective, proportionate and dissuasive administrative sanctions against the persons responsible for non-compliance. Criminal proceedings may also be instituted if a Member State so decides.⁴⁸

Since the national competent authorities responsible for the enforcement of the EU ETS do not possess specific expertise on criminal behaviour it is important that they cooperate closely with other enforcement agencies and government agencies, such as the tax authorities or the authorities on competition.⁴⁹

4. Sanctions

The EU ETS Directive requires Member States to put in place a system of penalties which is effective, proportionate and dissuasive but the nature of the penalties is almost completely left to Member State discretion.⁵⁰ There exists an important exception to this rule: the aforementioned obligation for operators of an installation to surrender each year by 30 April at the latest a number of allowances equal to the total emissions from that installation during the preceding calendar year.⁵¹ Failure to comply with this requirement will result in an excess emissions penalty of €100 for each tonne of CO₂ equivalent emitted without sufficient allowances.⁵² This may result in huge penalties keeping in mind that large installations may emit millions of tonnes of CO₂ annually.⁵³ The financial penalty may further increase because of increase in accordance with the European index of consumer prices.⁵⁴ In addition, the Directive also requires the names of the offending operators to be published.⁵⁵ The latter penalty, of 'naming and shaming', is a novelty in European secondary environmental legislation. The idea is that covered installations are usually conscious about their reputation and therefore this penalty would increase compliance.⁵⁶ Finally,

⁴⁷ Art. 12 of Directive 2003/6/EC.

⁴⁸ Art. 14 of Directive 2003/6/EC.

⁴⁹ Nederlandse emissieautoriteit, Onderzoeksrapport: Frauderisico's bij handel in emissierechten Den Haag, 30 september 2010.

⁵⁰ Art 16(1) of the Directive.

⁵¹ Art. 12(3) of the Directive.

⁵² Art. 16(3) of the Directive.

⁵³ Europe's biggest emitter is a Polish coal fired power plant emitting 37 million tonnes of CO₂ annually Kathrin Gutmann et al., Europe's Dirty 30. How the EU's coal-fired power plants are undermining its climate efforts (Brussels: CAN Europe, WWF European Policy Office, HEAL, the EEB and Climate Alliance Germany, 2014) 10.

⁵⁴ Art 16(4) of the Directive.

⁵⁵ Art. 16(2) of the Directive; the Directive does not specify where or how the the names of operators who are in breach of requirements to surrender sufficient allowances under Article 12(3) should be published.

⁵⁶ Gunningham and Grabosky, *supra* note 23.

the operator is still obliged to surrender an amount of allowances equal to the excess emissions.⁵⁷

In EU environmental law such detailed requirements for the kind of sanctions the Member States must include in their national legislation are rare. Consequently, this raised questions on how much room this leaves to the national courts to apply domestic sanctioning case law. A Swedish court, for example, asked the Court of Justice of the EU (CJEU) in the *Billerud* case whether the principle of proportionality had to be applied in a case where the operator did have a sufficient number of allowances on 30 April, but did not surrender these as a result of an oversight, an administrative error or a technical problem, and whether the penalty could be waived or reduced under certain circumstances.⁵⁸ The CJEU gave a more or less negative answer to these questions and stressed the relevance of a centralized sanctioning system for the functioning of the EU ETS, at least as far as the surrendering of allowances is concerned.⁵⁹

According to the CJEU in the *Billerud* case, the Directive does not aim to penalise 'polluters' generally, but rather those operators whose number of emissions for the preceding year exceeds the number of allowances listed in the centralised registry in the section of the surrendered allowance table for their installations for that year. This - and not the emissions which are per se excessive - is how the concept of 'excess emissions' is to be construed.⁶⁰ The Court of Justice therefore concluded that the obligation imposed by Directive 2003/87 is not as a mere obligation to have in their possession the allowances covering the emissions for the preceding year on 30 April of the current year, but is an obligation to surrender those allowances by 30 April in order to have them cancelled in the registry, which is intended to ensure the accuracy of the accounting record of the allowances.⁶¹ Although the ultimate purpose of the EU ETS is environmental protection, the infrastructure needed to attain that purpose is the strict accounting of the issue, holding, transfer and cancellation of allowances.⁶² Implementation of a uniform sanctioning regime throughout the EU is necessary in the pursuit of the legitimate objective of establishing an efficient carbon dioxide equivalent allowance trading scheme, in order to prevent certain operators or market intermediaries from being tempted to circumvent or manipulate the scheme by speculating abusively on prices, quantities, time limits or complex financial products.⁶³

The message for operators is a simple one: if you do not keep a proper administration you risk paying a substantial fine. The fact that this fine may reflect earlier expectations of market prices which, with the benefit of hindsight, have now proved to be unrealistically high is not in itself a reason to question the wisdom of the Court to deny a role for national courts to take the sharp edges off Article 16(3) by allowing them to sweeten the pill through a general

⁵⁷ Art. 16(3) of the Directive.

⁵⁸ Case C-203/12, *Billerud Karlsborg AB, Billerud Skärblacka AB v Naturvårdsverket* of 17 October 2013, n.y.r.

⁵⁹ The Court noted that imposing sanctions for any other conduct contrary to the Directive, is left to the discretion of the Member States.

⁶⁰ *Ibid.*, para 28.

⁶¹ *Ibid.*, para 30.

⁶² *Ibid.*, para 27.

⁶³ *Ibid.*, para 39.

recourse to the principle of proportionality. If, for whatever reason, the penalty system thus imposed proves to be disproportionate, it is for the EU legislator to intervene by amending the Directive's relevant provisions. To allow national courts to perform this role by opening the door for national and inconsistent applications of the principle of subsidiarity would give rise to the kind of distortions which the Directive intends to prevent.

As mentioned above, for all other breaches of the obligations concerning the functioning of the EU ETS, such as on the rules on MRV, Member States have to put in place a system of penalties that is effective, proportionate and dissuasive.⁶⁴ This for example concerns penalties for not complying with monitoring and reporting obligations causing essential data to be missing or not be accurate which in turn may lead to problems in establishing how many allowances the operator must surrender. Obviously this can seriously impair the effectiveness of the EU ETS and Member States thus have an obligation to establish an enforcement strategy that includes sanctions for these infringements. Considering the diversity in enforcement strategies among the Member States, Article 21 of the Directive is of specific interest. According to this provision Member States are required to report every year on the application of the Directive. The European Commission has developed a format for this questionnaire that also addresses the compliance issues we have discussed above.⁶⁵ The format has been expanded as of 2013; reports now have to include much more detailed information on all issues relating the functioning of the EU ETS. Based on these national reports the Commission must publish a report on the application of the Directive within three months of receiving the reports of the Member States.⁶⁶ In the past, the Commission has used the 'Article 21 Reports' for making improvements in future trading periods.

5. Organization of Enforcement

Considering how important the organization of the administrative arrangements within the 31 participating states is for the functioning of the EU ETS, it is remarkable that the Directive gives minimal directions on how implementation is to be organised. Article 18 only requires the 'designation of the appropriate competent authority or authorities, for the implementation of the rules of this Directive'. This flexibility is reflected in differences in the organization of the implementation and enforcement of the Directive in the Member States.

⁶⁴ Art. 16(1) of the Directive.

⁶⁵ Commission Decision of 23 November 2006 amending Decision 2005/381/EC establishing a questionnaire for reporting on the application of Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC, OJ L 326/38. The Art. 21 reports are available on the Internet at: available on the Internet at: <http://cdr.eionet.europa.eu/>

⁶⁶ Art. 21(3) of the Directive. See for example http://www.eea.europa.eu/publications/technical_report_2008_13

Generally speaking, we can distinguish three approaches: (i) a single competent authority responsible for all tasks regarding the functioning of the EU ETS (e.g. the Netherlands, UK, Hungary), (ii) a clear separation between the authorities responsible for the issuing of the GHG permit and the enforcement of the EU ETS respectively, with a coordinating role for the Designated National Authority (e.g. Germany, Greece), and (iii) a decentralized network of several local or regional authorities for the assessment and issuance of permits and accepting of monitoring plans, as well as separate Inspectorates for Environmental Protection responsible for the enforcement of the EU ETS (e.g. Poland).

In environmental law, it is usually considered wise to task separate authorities with the issuing of permits on the one hand and inspection and enforcement on the other. This seems to be different for the EU ETS. Given the complexity of the system and the emphasis on compliance assistance, the emissions authority seems to be best placed to oversee the entire process, from the issuing of the GHG permit to the sanctioning of non-compliance. In the Netherlands for example, this set-up has enhanced communication and quality throughout the compliance chain.⁶⁷ In this case all employees operate according to a functional division between departments in order to account for checks and balances.

In addition, to enforce the EU ETS cooperation with regular environmental inspection authorities is necessary (e.g. joint site inspections), since environmental law inspectors will usually have an long standing relationship with operators. Knowing the operator's past (compliance) performance in other environmental areas can be useful when checking compliance with the EU ETS.

Among the Member States, there exist notable variations in terms of the quality and number of staff employed with the competent authorities. This is also visible in the level of assistance that is provided to operators falling under the scope of the Directive. In some of the Member States (e.g. UK, Germany, the Netherlands) the competent authorities are very active in providing assistance through their helpdesks in particular to small emitters. They view this as part of their 'Compliance Assistance' strategy.⁶⁸ In these cases, websites provide online guidance and assistance in the permit application process. The competent authority actively notifies stakeholders of new procedures and introduces these through emails, newsletters, stakeholder workshops and updates of respective websites where appropriate. By comparison, other Member States do not have a helpdesk (Hungary) or provide very limited assistance (Greece).

At the EU level, some Member States (the United Kingdom, Germany, the Netherlands, to a lesser extent Italy and Poland) are active contributors to the Compliance Forum. By the more active member states The Forum is regarded as a valuable platform to test thoughts, exchange best practices and answer frequently asked questions. However, most of the Member States are not participating at all.⁶⁹ The variety in enforcement styles could affect the level

⁶⁷ Interview Netherlands emissions authority NEa, 14 April 2014.

⁶⁸ In particular the UK, the Netherlands and Germany.

⁶⁹ Interview German emissions authority DEHSt 7 April 2014.

playing field that is needed throughout the EU to ensure an efficient and effective EU ETS.⁷⁰

6. Compliance instruments

6.1 Monitoring and reporting in the Member States

This section provides insights into the compliance and enforcement practices of the six member states included in our study.

In Germany and the Netherlands the authorities required from operators of existing installations to submit their monitoring plans for the third trading period at least five and four months respectively, before its start.⁷¹ They deemed these periods necessary for the completion of the collaborative process involving the competent authority and the operator to achieve the desired quality of the monitoring plan. In the UK too, we found that the ex-ante process is an elaborate one during which the monitoring plan is scrutinized and qualified as a ‘dialogue between the operator and the regulator’.⁷²

After the operator has submitted the application for a permit and the monitoring plan, the national emissions authority decides on granting the permit within four months. The validation process involves active correspondence with the applicant, and usually requires the remedying of omissions at least once. Interestingly, the UK has developed and installed an online Emissions Trading System Workflow Automation Program (ETSWAP) in which all monitoring plans and reports must be submitted in a standardised electronic format. This online system is capable of checking anomalies relative to previous entries.⁷³ The online system may even refuse certain information if it differs substantially from the values of previous years.

Once the competent authority approves the monitoring plan the operator is obliged to continuously update it if significant changes occur. This also means that there has to be constant oversight. In Germany, for example, the operators must comply with a system of ongoing ex post control, which includes continuous measurement of source streams, and providing information on new emission sources and scales for example. This system constantly generates items the operator must update in the monitoring plan. As of 2014, site visits also generate input for this process (see below). Finally, the yearly emissions registry cycle is also important for the ex post control mechanism because here the verifiers check the annual emissions reports against the monitoring plan.⁷⁴

In Greece, Hungary and Poland, we found much less collaborative processes between operators and the authorities. The operators here, seem to be much more on their own in figuring out how to comply with the requirements on monitoring and reporting. We also found that ex post control is much less a continuous process. Instead, the authorities in these countries primarily rely on

⁷⁰ Interview Netherlands emissions authority NEa, 14 April 2014.

⁷¹ Appendix 2, Part 1, §1(a) TEHG.

⁷² Interview UK Environment Agency, 7 April 2014. The research on UK practices did not include Scotland and Northern Ireland.

⁷³ Ibid.

⁷⁴ Supra note 56.

the verified report. In Greece, the authorities complained that most of the operators send the verified report to them on the final day.⁷⁵ This is problematic because then they have to check everything within a very short period.⁷⁶

6.2 Verification and Inspection

As mentioned above, in accordance with Regulation 600/2012 an independent verifier must verify the annual emission report.⁷⁷ The EU has completely harmonised the provisions for the accreditation of verifiers, more specifically the conditions for granting and withdrawing an accreditation and the requirements for mutual recognition and peer evaluation of accreditation bodies.

The number of accredited verifiers varies per country. In 2014, in Poland the number of accredited verifiers was insufficient and this resulted in a late submission of the emission reports.⁷⁸ Not all Member States exercise continuous oversight after the verifier has been accredited, but we did find some best practices. For example, the United Kingdom Accreditation Service (UKAS) regularly inspects verifiers to ensure they continue to meet with their accreditation obligations. In Greece, verifiers are obliged to notify the Hellenic Accreditation Board (ESYD) and the Competent Authority on their schedule of site visits. ESYD can choose to join them in these site visits as part of the verification process.⁷⁹

The competent authorities must subsequently check the verified emission report. How thorough this is conducted varies greatly between the Member States we researched. In the UK, the regulator carries out independent checks on all verified reports and sends its comments back to the operator. Certain reports are selected for detailed analysis; this is done on the basis of classification of an installation in one of categories laid down in Regulation 601/2012.⁸⁰ The verified reports have to include information on insignificant non-conformities and misstatements.⁸¹ Operators subsequently address such non-material non-conformities and misstatement in improvement reports they are required to submit to the competent authority by 30 June each year.⁸² The German DEHSt does not review the work of the verifiers but instead performs additional checks. They, for instance, compare different years and different source streams.⁸³ So far, in Germany two methods are used to detect non-compliance. First and most importantly automated systems of the competent authority detect suspicious data automatically, such as big differences

⁷⁵ Interview Greek Emissions authority GEDE 28 March 2014.

⁷⁶ Ultimately, though, operators, after being pressured by GEDE, hand in what is needed also because of the influence of the verifiers. Interview GEDE 28 March 2014.

⁷⁷ Supra note 34.

⁷⁸ Questionnaire Polish National Centre for Emissions Balancing and Management KOBIZE, received 7 May 2014.

⁷⁹ Supra note 62.

⁸⁰ Art. 19(1).

⁸¹ See for the exact number of Non-material misstatement and non-conformities UK Art. 21 Reports.

⁸² Regulations, 89(4)(d).

⁸³ Supra note 56.

compared to previous years. It will then investigate these signals in-depth. Second, inspectors who compare data from various sources and do cross checks may detect irregularities. The authorities expect that the newly planned site visits will further improve detection of non-compliance.⁸⁴ Upon detection of non-compliance, the DEHSt corrects the report if necessary and the operator must pay a financial penalty that follows from the corrected data.

In the Netherlands, the Dutch NEa does not review every emission report but only a random sample. If the NEa detects inaccuracies it will substitute the report by conducting its own measurements. There have been incidences where the NEa found omissions in the verified reports, and subsequently send a complaint to the verifier and the Council for Accreditation. In Greece the competent authority also randomly checks a sample of the reports.⁸⁵

The Hungarian reports pursuant to Article 21 of the Directive for the period of 2008-2012 stated that all verified reports were checked for completeness and that most were reviewed in full detail, with the conclusion that no non-satisfactory reports were received.⁸⁶ However, although Hungary has implemented inspection and enforcement obligations in its national legislation, practice is quite different. Companies falling under the scope of the Directive are not checked ex-ante and do not receive assistance. There exists ex-post control of the monitoring protocol, but only in an electronic way. The competent authority does not perform individual checks and site-visits. During the first phase, a priority system for regular checks was developed but it was never put in operational use.⁸⁷

Site visits

In the UK, the competent authority regularly conducts site visits as part of its enforcement strategy; 5% of the operators are audited each year. Operators receive notice of these audits since their purpose is more to check than to inspect, although formally the regulator could use its power of entry to perform an unannounced inspection.⁸⁸ Regulators in England and Wales have developed a common format for reporting the results of site visits, which are entered into an electronic database. The details include a summary of the visit, any instances of non-compliance detected follow-up actions that have been agreed with the operator. The findings of the site visit may also be shared with other government bodies. Non-compliance is explicitly recorded to create a database of historical performance for future reference. Follow-up varies from a phone call or a visit to slightly more invasive forms such as a warning.

By comparison, in Germany inspection was until 2013 mainly an administrative process as described above. Until recently the federal emissions authorities performed physical inspections of installations, but not the DEHSt. However, the emissions authorities did not focus on GHG emissions. In retrospect, this was the biggest loophole in the German EU ETS compliance mechanism.⁸⁹

⁸⁴ Ibid.

⁸⁵ Supra note 62.

⁸⁶ Reports available on the Internet at: <http://cdr.eionet.europa.eu/>

⁸⁷ Interview of 17 July 2014. Transcripts available with the authors

⁸⁸ Supra note 59.

⁸⁹ Supra note 56.

In the Netherlands, the NEa has developed an Inspection Strategy that is published on its website. It states that all new entrants operating in the EU ETS shall be audited within three years to test their monitoring plan. The frequency of audits of other operations depends on a risk-based assessment, taking into account the location and complexity of the operation, the size of emissions, past compliance behaviour and external signals. In addition, the NEa conducts random audits. The audits are generally announced and the NEa provides a 'what - to - expect' list to help operators prepare for the audit. This exemplifies the strategy of persuasion of the NEA: throughout the entire compliance cycle the NEa deliberately communicates and assists operators in their efforts to comply with the EU ETS.

The Greek legislation provides the GEDE with the power to perform site visits to installations but at the time of writing these have not yet taken place in practice.⁹⁰ The low number of staff (four) employed with the GEDE and the lack of time and funding explains for this, combined with the number of operators (160 installations).⁹¹ In Hungary, site visits are also rare. In 2013, for example, the Inspectorate reported only two onsite inspections of installations.⁹²

In Poland, inspection is decentralized: when the emissions authority detects cases of non-compliance it lists and forwards these to the relevant Regional Inspectorate for Environmental Protection for further factual inspection.⁹³ Inspection is considered 'a useful tool that could be used in more problematic cases, such as the lack of an emission report in case of cessation, bankruptcy or closure. However, due to the high costs and capacity limitations each Regional Inspectorate decides for itself on when and how to organize an inspection.'⁹⁴

6.3 Sanctions

Mandatory sanctions

As mentioned above, the Directive requires that all Member States impose fixed penalties in case the operator fails to surrender the required allowances by April 30th. All Member States have implemented these mandatory sanctions in their national legislation. The UK, however, has changed its Regulations in 2013. If an operator that initially failed to surrender the allowances timely and correctly, but did notify the regulator of their mistake and surrender the correct allowances before the regulator noted their non-compliance, a penalty of only €20 per ton CO₂ applies instead of €100 per ton.⁹⁵ Imposing the penalty in cases of self-rectification was seen as disproportionate and this amendment allows operators to self-rectify under-reporting of emissions in previous years. The UK Government argues that this amendment is compliant with the aim of the Directive 2003/87/EC to ensure the monitoring, report and accountability of all relevant emissions of greenhouse gases. The lower penalty only applies to

⁹⁰ Supra note 62.

⁹¹ Ibid.

⁹² Supra note 73.

⁹³ Art. 66 (1) ETS Act. Supra note 65; Art. 63 (1), (2) and (3) ETS Act.

⁹⁴ Supra note 65.

⁹⁵ Regulations, 54.

underreporting and not to *under surrendering*. However, critics have suggested that operators can thus deliberately leave reportable emissions out of their reporting obligation and benefit from a lower penalty.⁹⁶ Given the *Billerud* case discussed above, it is unlikely that the mandatory penalty of Article 16(3) is a discretionary penalty. The UK Government was well aware of the legal risk it took by including this new provision and stated that 'the legal position may in the longer term have to be clarified by the UK courts'.⁹⁷

Overall, the excess emissions penalty has not been imposed very often in the different Member States. In the Netherlands for example, this happened only three times in the past nine years; with two penalties imposed in 2013. In the UK, 21 excess emission penalties were imposed in the years 2008-2011.

The naming and shaming sanction does not seem very effective either. Most Member States make the information publicly available in the national official journal. Not all Member States publish the data on their own website. According to the German competent authority DEHSt, NGOs do not follow up on this information (so far). NGOs do identify the dirtiest power companies from the reports, but are more concerned with the level of emissions than on compliance issues.⁹⁸ As a consequence, it can be doubted whether the public will have learned of such publication.

Other sanctions

Most Member States have in place a system of both administrative and criminal sanctions for non-compliant behaviour. An exception is the UK where for the third trading phase (that commenced in 2013), its policy on penalties has substantially changed by moving to a strategy based entirely on administrative penalties.

The discretion given to the Member States is such that they can (a) refrain from imposing a penalty, (b) choose the nature or maximum of a penalty, (c) extend the time for payment of a financial penalty, (d) withdraw a penalty or (e) substituting a lower penalty. When comparing the different enforcement and sanction policies the Member States apply, a range of approaches appears. For example, to the Dutch competent authority (NEa) compliance assistance rather than imposing sanctions is key to the enforcement strategy. If the NEa detects non-compliance it will first issue a warning and try to persuade the operator into compliant behaviour. A directive drawn up by the NEa issuing guidelines on which penalty should be applied in which case distinguishes between 'essential obligations', 'important obligations' and 'other obligations'.⁹⁹ To each type of obligation, a different penalty applies.¹⁰⁰ In practice the NEa will only impose penalties when a non-complying operator is very persistent in his behaviour. Similarly, in Greece the competent authority GEDE invites the non-complying operator for an interview before handing the dossier to its superiors in the Ministry of Environment, Energy and Climate Change (YPEKA) for possible enforcement measures. According to the Polish

⁹⁶ Sandbag Report, *supra* note 6.

⁹⁷ DECC Consultation Summary of Responses: Transposition of EU Directive 2009/29/EC revising EU Directive 2003/87/EC (2012) 23.

⁹⁸ *Supra* note 56.

⁹⁹ Ordinance of 8 September 2011, no. I&M/BSK-2011/114418.

¹⁰⁰ *Supra* note 57.

emissions authority, financial fines work mainly as a deterrent. The Polish authority sends reminders before each important deadline.¹⁰¹

While some Member States have detailed what penalties can be imposed under what conditions, others have no such guidelines (Greece, Hungary). The UK competent authority DECC, for example, determines the value of the EU ETS carbon price used by the regulator to calculate administrative penalties.. In February 2013, the Secretary of State issued a Ministerial Direction to instruct regulators on how the penalty for operating without a permit should be calculated.¹⁰² The Direction provides a transparent methodology for estimating the economic benefits derived from operating without a permit. Regulators are also required to set the penalty 5% above this estimate to ensure it exceeds the benefits and produces the desired deterrent effect.

Throughout the EU, Member States achieve a compliance rate of 97%, with some even achieving a near-perfect record.¹⁰³ Figures from illustrate the effectiveness of the enforcement strategy. In 2005, the first year of emissions trading the DEHSt imposed administrative sanctions on operators in 180 cases. Numbers fell to 58 in 2006 and to 32 in 2007. In 2008, the DEHSt only had to take action in 21 cases. According to the DEHSt, the rapid fall in the number of sanctions imposed shows that emissions trading procedures have become part of normal business routine. It is clear that there is a continuous decline of non-compliance. Nowadays in Germany, 1900 installations annually produce an estimated 30 cases of non-compliance.¹⁰⁴

The first obvious reason for the high compliance rate is the falling price of emissions; there is simply not an incentive for deviant behaviour. In fact, we can attribute most cases of non-compliance to unfamiliarity with the legislation and the fact that the EU ETS is not part of the core business of the operator. The majority of offences concerns the operation of a CO₂ installation without holding the required permit, exceeding the deadline for submitting the emission report or not monitoring in accordance with the monitoring plan.¹⁰⁵ It is also believed that the verification process pays off: many mistakes are discovered during that process and subsequently rectified.¹⁰⁶ An important question is undoubtedly whether this high compliance rate holds when the price for carbon allowances increases substantially above the current price of €3-4.

Criminal investigation usually follows upon suspicions of fraud. For example, when The VAT fraud hit Germany hard (in 2011, German prosecutors announced that the German state lost € 850 million in this scheme), a German court in 2011 sentenced six people to jail terms of between three years and seven

¹⁰¹ Supra note 65.

¹⁰² See

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/80705/penalties_n.pdf.

¹⁰³ Antoine Dechezleprêtre, Report on the empirical assessment of monitoring and enforcement of EU ETS regulation (London: LSE 2013) <http://entracte-project.eu/research/report-monitoring-and-enforcement-eu-ets-regulation/>

¹⁰⁴ Supra note 56.

¹⁰⁵ Supra note 57.

¹⁰⁶ Supra note 56.

years and 10 months in a trial in a case of tax evasion related to carbon permits.
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7 Conclusions

Data suggest that compliance with the EU ETS has been extremely high. This positive result cannot automatically lead to the conclusion that the enforcement of the EU ETS is effective. Since the prices of ETS allowances are very low, the majority of allowances are surrendered and not traded. Hence, the EU ETS has not been tested to the full yet, and it remains to be seen whether compliance will be as high in a market under stress (with high prices due to limited availability of allowances). Our study shows that, contrary to general belief, monitoring and enforcement efforts of an emissions trading market mechanism must be much more intensive compared to regular command and control type instruments due to the inherently complex character of an EU ETS and its constant fluctuations of emissions and allowances.

We have researched whether in the third phase the compliance mechanism of the EU ETS has sufficiently improved in terms of effectiveness, and what prospects - from a compliance perspective- exist for stepping up the EU's emission reduction efforts while relying on the EU ETS as the main instrument, to achieve the 2030 targets. In this section, we present our main findings.

Our first conclusion is that the dozens of additional rules and regulations of various legal form that were adopted after the first phase to secure a reliable compliance mechanism for the EU ETS have greatly improved the quality of the regulatory framework for compliance through providing for tightened rules at EU level and, generally, centralization of the EU ETS. Such measures as adopting harmonized rules for verifiers, and adopting rules to combat VAT fraud, money-laundering and other criminal activities have improved the resilience of the EU ETS. Similar improvements stem from linking the EU ETS to the EU's financial regulatory instruments (Market Abuse Directive and Anti-Money Laundering Directive), tightened rules on transactions, the range of available sanctions, centralizing auctioning and registration processes etc.

However, it is important to stress that centralization and harmonization does not encompass the entire compliance cycle: the national competent authorities remain responsible for inspection and sanctioning, and are in charge of reviewing compliance of operators with the MRV process. Therefore, achieving full compliance with the EU ETS still largely depends on the efforts of national competent authorities of the participating countries.

Here, our conclusions are less positive. We have found that compliance strategies and their implementation still differ substantially between the Member States. In some Member States, all competences regarding the functioning of the ETS (issuing of permits, inspection and sanctioning) are bundled in one Agency. In others, different authorities hold different competences. In addition, there are notable variations in capacity and staff employed at the competent authorities. Although verifiers detect most of the

¹⁰⁷ Many criminal law suits are still ongoing as a consequence of the VAT fraud. *Supra* note 56.

anomalies and take the necessary follow up actions, we found that some Member States largely depend on the verification process without developing their own inspection policy. More in general, we found tremendous differences between the Member States in the style of inspection and enforcement. A remarkable finding, for example, is that site visits are not yet part of the standard enforcement strategy in most of the Member States we studied. Only the UK and the Netherlands have a well-developed blueprint for conducting regular site visits based on risk assessments. There is a considerable risk that non-compliant behaviour will remain undetected when inspectors rely on data provided by the automated system (“paper reality”).

Many differences were discovered with regard to compliance assistance. Since most detected infringements were caused by ‘genuine mistakes’ and lack of knowledge usually related to the complexity of the rules, we think it is important that competent authorities offer assistance throughout the whole compliance cycle. Currently, the Member States differ profoundly in this respect: some have an active helpdesk, regular mailings and meetings. Other countries hardly provide operators with any assistance at all. The use of ICT as a compliance assistance tool is very useful here, but again, variation between the Member States is substantial. The UK online ETSWAP system for example could serve as a basis for a more harmonized compliance in this respect.

Although there exists a harmonized automatic sanction of €100 per ton CO₂ equivalent emitted by an installation for which the operator did not surrender allowances, there are major differences in other administrative and criminal sanctions that can be imposed in case of evasion of rules, fraud, etc. These additional penalties in some Member States include huge fines (in the range of millions of euros) and substantial prison terms (up to ten years), whereas in others rather low fines apply (as low as €1500 EUR) without the possibility to press criminal charges. The sanction of ‘naming and shaming’ is not actively applied in all Member States researched. The names of the installations that did not surrender sufficient allowances are available in reports on the websites of the emissions authorities, but are far from easy to find. Consequently, the intended effect of reputation loss is yet hardly achieved. More in general, we found that the information provided by the Member States in the reports pursuant to Article 21 of the Directive do not provide a complete picture of actual compliance with and enforcement of the EU ETS in the Member States. The new format for reporting introduced in 2013 has solved this problem to some extent, but the distributed data are still insufficient to allow the European Commission to fulfil its role as the ‘watchdog’ of the EU ETS.

These findings lead to the conclusion that the final, essential element of the compliance cycle, i.e., administrative and criminal enforcement by the domestic authorities in the Member States is not overall effective. It is of the utmost importance that the EU’s central instrument to achieve future climate change targets is resilient and reliable. Hence, we feel that much more attention should be focused on the role of domestic enforcement, even though most Member States are reluctant to have the EU encroach upon domestic enforcement. Some, not too far reaching suggestions for improvement are a further harmonization of the additional penalties and/or bringing the EU ETS Directive under Directive 2008/99/EC on the protection of the environment through criminal law. Overall, more efforts should be undertaken to harmonize the *practice* of the national competent authorities responsible for the enforcement of the EU ETS, for instance by transforming the now voluntary EU

ETS Compliance Forum into a compulsory platform in which best practices are exchanged. Other light forms of harmonization could be applied as well, for instance through issuing guidelines for inspection and enforcement.

Although Procrustes perhaps was not the nicest of persons, an EU wide ETS only functions in a fully harmonized market, which definitely also includes the enforcement phase. Some stretching and cutting off legs cannot be avoided in the process...