

Property in emissions? Analysis of the Norwegian GHG ETS with references also to the UK and the EU¹

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1. Introduction

The atmosphere is a global commons, and international legal cooperation as well as national climate control measures are evolving in the attempt to avoid a new 'tragedy of the commons'. The alienable emission allowance is an important tool in this regard. This article explains why the allowance may be viewed as a new form of property, and discusses the relationship between the basic principles of the relevant Norwegian statute and the notion of cost-effectiveness – a notion which has been declared as defining the goal of this new legislation. Comparisons with the UK and the EU are made throughout, to indicate whether this analysis might be applied more generally.

The global climate is changing and this may eventually have grave effects on human life, health and the economy. Scientific uncertainty prevails about the extent to which the consequences may be of our own making, and the extent to which such detrimental effects could be avoided by curtailing emissions of greenhouse gases (GHGs).³ It seems reasonable to develop institutions and laws which make the management of this global commodity feasible, and to sacrifice some material well-being to avoid the possible perils of a more volatile global climate.

The alienable emission allowance is an important element in the legal regulation of climate change. This flexible instrument has been catered for in the international legal framework, and has now been implemented in many European jurisdictions. The intention in this article is to analyse emission allowances in a property

perspective, with special reference to their implications for the allocation of resources. Although this article's jurisdictional focus is the Norwegian Greenhouse Gas Emission Trading Act (GHG ET Act), in force since 1 January 2005,⁴ much of the analysis may add to the understanding of emission trading systems generally and of legislation in other countries and regional measures.

Although Norway is not bound by the European Directive on Emission Allowance Trading (EU ETSD),⁵ for various reasons the content of the Norwegian GHG ET Act is similar to the EU system. This will be illustrated throughout this article by drawing comparisons with the EU ETSD and the regulations transposing this into UK law (UK ETS Regulations).⁶

The article is structured as follows: based on an outline of the relevant framework of public international law (2), emission allowances are discussed as a new form of 'hybrid' property, and the relationship between notions of property and emission trading systems commented on (3). The basic social rationale for alienable GHG emission allowances is then set out (4). The most important costs and benefits of free allocation (grandfathering), as opposed to auctioning or selling allocated allowances, are also explained (5). Finally, some conclusions are offered (6).

2. The public international legal framework

Greenhouse gas emission allowances embedded when incorporated in national climate change regulations are a crucial element in climate change law. In this section, to put the discussion of these allowances into context, an outline is provided of the public international legal framework for controlling climate change. This framework is the basis for collective and individual state commitments towards curbing GHG emissions.

1 This article grew out of an invited lecture at the NorFA Seminar on Climate Change March 13–15 2003 at the University of Oslo, and a draft was presented to Norsk Hydro's Corporate Legal Department on 12 May 2005 and at the 7th Nordic Environmental Social Science Research Conference Gothenburg University 15–17 June 2005. For comments, thanks to Hans Christian Bugge, Erling Eide, Cathrine Hambro, Harald Francke Lund, Nicolas de Sadeleer, Geir Stenseth, Christina Voigt and participants in the seminars and workshops mentioned above.

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3 GHGs include CO₂, CH₄, N₂O, HFC, PFC and SF₆. See Annex A of Report of the Conference of the Parties on its third session, held in Kyoto, 1–11 December 1997, pp 4–30 (FCCC/CP/1997/Add 1, Decision 1/CP 3), hereinafter referred to as Kyoto Protocol.

4 Act of 17 December 2004 No 99 relating to greenhouse gas emission allowance trading and the duty to surrender emission allowances § 24.

5 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.

6 The Greenhouse Gas Emissions Trading Scheme Regulations 2005, UK SI 2005/925.

The collective commitment to curb GHG emissions rests on the United Nations Framework Convention on Climate Change of 9 May 1992 (the Climate Convention), which was ratified by Norway on 9 July 1993.⁷ According to Article 2 of the Climate Convention, the purpose of the treaty is to stabilise 'greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system'. Based on the Climate Convention, the parties agreed to the Kyoto Protocol in December 1997.⁸ This agreement sets out a more elaborate set of duties for the industrial countries party to the Climate Convention, whereby the industrial countries shall annually and on aggregate for the period 2008–2012 reduce the levels of GHG emissions to a level which is 5 per cent lower than their 1990 aggregate level of emissions.⁹ Accordingly, a clear collective commitment has been made to reduce GHG emissions. The Kyoto Protocol entered into force on 16 February 2005.¹⁰

The Kyoto Protocol also sets out each individual state's commitments to curb GHG emissions (Annex B). However, only certain industrial countries, including the UK and Norway, have committed themselves to curtailing their national emissions.¹¹ Each nation is obliged to limit annual emissions for the period 2008–2012, relative to its emissions in 1990. An important consideration in defining national duties to abate GHG emissions has been to contain the overall costs involved in curtailing emissions. As the marginal costs of abatement vary across jurisdictions, the privilege to emit the 'assigned amount'¹² relative to 1990 also varies; for example, Switzerland is supposed to cut its emissions by 8 per cent, some other countries (eg Canada, Japan, Hungary and Poland) are required to lower emissions by 6 per cent, whereas Iceland is permitted to increase its emission level by 10 per cent compared to 1990 levels, and Norway is free to increase its emissions by 1 per cent. The UK's Kyoto commitment is an 8 per cent reduction, but the UK's commitment under the EU Burden Sharing Agreement is a reduction of 12.5 per cent.¹³

The allocation of differentiated duties to abate has not, however, ensured equal marginal abatement costs across jurisdictions. Accordingly, the potential exists to draw up mutually beneficial agreements to transferring abatement responsibilities. The purpose of the Kyoto Protocol's so-called 'flexible' mechanisms is to lower the overall costs of controlling climate change by enabling mutually beneficial cooperation. The alienable emission allowance is a prerequisite for these flexible mechanisms.¹⁴ The allowances enable firms and countries to reduce the overall costs of compliance through intra-jurisdictional and inter-jurisdictional trade in emissions (see (4) below for an account of the logic underlying this point).

This broad outline of international law may lead us into thinking that climate change law-making is a question of top-down reasoning and implementing treaty-based rights and duties. However, this is not the whole picture. To ensure that a complete and also in other respects desirable system of climate change regulation is established, each jurisdiction must set up national legal institutions charged with curtailing GHG emissions.¹⁵ In practice, industry participation is required, and the system, partly based on property notions, has to be built 'bottom up'. To clarify this point and some related points connected to the basic features of emission trading systems, as mirrored in Norway's new statute on emission allowances, some reflections on the property perspective follow.

3. The property perspective

3.1 Introduction

Countries bound by the Kyoto Protocol, such as the UK and Norway, must ensure that their implementation systems are capable of putting their Kyoto commitments into effect. For Norway, the goal for each year in the period 2008–2012 is to limit GHG emissions to a level 1 per cent above 1990 emissions.¹⁶ However, there is no legal impediment to adopting a more stringent domestic target. The UK has announced that its domestic goal is to move towards achieving a CO₂ emission reduction of 20 per cent by 2010, compared to 1990 levels.¹⁷ It is hard to imagine how such announcements can be made credible through legal means.

This way of stating the goal implies that an important instrumental choice has been made. If taxes are to be used as the main instrument, a tax rate equal to marginal harm or a damage schedule should be set at the UN level. It would then be up to each state for each unit of emission to choose to abate or to pay the tax. In contrast, the Kyoto Protocol commitments imply that a property regime at the level of states has been selected.¹⁸

7 Ot Prp (gov bill) nr 13 (2004–2005) p 15 (col 2).

8 Note 3.

9 *ibid* Kyoto Protocol art 3.

10 On that day, 90 days had passed since Russia had ratified the protocol.

11 The countries are those listed in Annex I of the Climate Convention.

12 Kyoto Protocol (n 3) art 3.

13 Council Decision 2002/358/EC.

14 Kyoto Protocol (n 3) art 17. The other flexible mechanisms therein are Joint Implementation (art 6) and the Clean Development Mechanism (art 12).

15 Under the Kyoto Protocol, each party is under an obligation to implement and/or further elaborate policies and measures in accordance with its national circumstances, art 2 1 (a).

16 In 2003, the total emission of greenhouse gases in Norway amounted to 54.8 million tonnes CO₂-equivalents. From 1990–2003 the emissions increased by approximately 9 per cent, increasing by 2 per cent between 2002 and 2003 alone. See 'National Inventory Report 2005 Norway, Greenhouse Gas Emissions 1990–2003 reported according to the UNFCCC Guidelines', April 2005, p 10. If this trend (1–2 per cent increase per year) continues until 2008, the goal for Norway will be to reduce its overall GHG emissions by something around 14–19 per cent during the first commitment period.

17 A Hobley, C Rowe 'Transposition of the Emission Trading Scheme Directive into UK Law and Associated Issues' (2004) JEPL 1, 10–22 at 13.

18 On the general subject of property rules versus liability rules, see eg L Kaplow, S Shavell 'Property Rules versus Liability Rules: An Economic Analysis' (1996) 109 Harvard Law Review, 713–90.

The Norwegian legislator's approach so far has been to use a pragmatic mixture of instruments which includes agreements with industry and the introduction of taxes, as well as a new act on greenhouse gas emission trading. For the years 2005–07, it is expected that approximately 15 per cent of emissions will be regulated by agreement with industry, 20 per cent by taxes on offshore emissions, 30 per cent by taxes on onshore emissions and 15 per cent by the new act on greenhouse gas emission trading.¹⁹ As such, some emissions remain unregulated. These percentages can be expected to change for the Kyoto period 2008–2012.

This pragmatism parallels that of the EU in that the scope of the emission trading system is restricted with respect to both activities and GHGs.²⁰ The UK even operates two different emission trading systems – one voluntary and one compulsory.²¹

3.2 The emission allowance

The basic rules in the Norwegian GHG ET Act pertaining to emission allowances are set out here. The process of original acquisition, the main rights and duties of an emission allowance holder, and thirdly, the dissolution of the right are described.

The *original acquisition* of the allowances takes place annually.²² The pollution control authorities inform the Norwegian Emissions Trading Registry by 1 March each year that a specified number of CO₂ emission allowances are to be transferred to an operator's account in the registry.²³ A registry ensures allowances are accurately issued, accounted for, held, transferred and cancelled.²⁴ The Norwegian registry is not modelled on the French but on the British version, put into place according to UK ETS Regulation 26.²⁵

It is important to note that the emission allowance is not identical to the discharge permit.²⁶ This is consistent with the EU solution which has been transposed into UK law.²⁷ Operators of installations falling within the scope of the Act are required to obtain both, but the discharge permit is an open-ended privilege to emit and does not fix the amount of permitted emissions.²⁸

The pollution control authorities then issue each operator with the number of allowances to which the enterprise is 'entitled'. How is the amount decided? Pursuant to the GHG ET Act²⁹ the starting point is that

operators must apply for discharge permits. These applications must have been submitted by 15 January 2005 for installations to be taken into consideration when allowances were being allocated for the period 1 January 2005 to 31 December 2007.³⁰ Applications submitted within this time limit were also considered to be applications for allowances to be allocated.³¹ Based on the information in the application, the pollution control authorities use their discretionary powers to decide the amounts of allowances to which the operators are entitled.³²

Eliminating discretion in allocating and issuing allowances is probably not desirable, though it is of course necessary to place checks on the way discretion is exercised. Allocating and issuing allowances in the EU is based on objective and transparent criteria, including the 11 criteria listed in Annex III to the EU ETS Directive.³³ However, the criteria in the EU ETS do give Member States some leeway to design their own allowance allocation and issuing systems. Although a number of different solutions exist, the Norwegian criteria resemble – according to the Norwegian Government – those of many EU members.³⁴

In the Norwegian system, there are two statutory constraints on the pollution control authorities' use of discretion. First, GHG ET ACT § 8 contains some guidelines to be followed in the allocation process. Although these guidelines leave ample room for residual discretion, it is clear from the wording that the historical pattern of emissions across industries and firms is a crucial criterion:

- a) For installations that started operations no later than 1 January 2001, allowances shall be allocated on the basis of the installation's average emissions in the base years 1998 to 2001 inclusive.
- b) If an installation such as is mentioned in litra a was not in operation throughout the base years, or if the level of emissions was for some other reason atypical in one or more of the base years, allowances may be allocated on the basis of emissions in the other years.
- c) If, as a result of substantial changes in the nature or scale of its operations, emissions from an installation such as are mentioned in litra a have risen or fallen substantially after 1 January 2001 but before 31 December 2007, or it is reasonably certain that this will happen, this shall be taken into account when allowances are allocated. In the case of changes that result in higher emissions, the potential, including the technological and economic potential, for reducing emissions of CO₂, particularly through the use of the best available techniques, may be taken into account.

19 Source: personal communication in June 2005 with Harald Francke Lund from the Norwegian Pollution Control Authority.

20 EU ETS Directive (n 5) art 2, para 1; Annex I, II.

21 UK Greenhouse Gas Emission Trading Scheme 2002, (http://www.defra.gov.uk/environment/climatechange/trading/uk/pdf/trading-rules_rev2.pdf) and the UK ETS Regulations (n 6).

22 GHG ET Act (n 4) § 9.

23 The allocation of allowances for 2005 was to take place by 15 March 2005.

24 EU ETS Directive (n 5) art 19 para 1.

25 Ot Prp nr 13 (2004–2005) p 61.

26 GHG ET Act (n 4) § 4.

27 EU ETS Directive (n 5) arts 2 (para 2), 4, 6; UK ETS Regulations (n 6) parts 2, 3.

28 Norwegian Pollution Control Act § 11, para 2; EU ETS Directive (n 5) art 26; Directive 96/61/EC art 9 para 3.

29 Note 4, § 4, 5.

30 This would imply that new entrants who had not applied for permits and allowances by 15 January 2005 have to buy themselves into the market. However, this is a rather theoretical case. The relevant activities are subject to a long planning period, and several new entrants in 2006 and 2007 actually applied for permits and allowances by 15 January 2005.

31 GHG ET Act (n 4) § 5.

32 *ibid* § 8.

33 EU ETS Directive (n 5) arts 9, 11; UK ETS Regulations (n 6) 21.

34 Ot Prp nr 13 (2004–2005) p 51, pp 32–6.

- d) For installations that start operations after 1 January 2001 or are reasonably certain to do so before 31 December 2007, the potential, including the technological and economic potential, for reducing emissions of CO₂, particularly through the use of the best available techniques, may be taken into account when allocating allowances.

The intention is that emissions in 1998–2001 will form the historical basis of the main allocational rule (see *litra a*).³⁵ Thus, although relevant emissions in the UK are those during the baseline period 1998–2003, it seems that the Norwegian and British approaches to the determination of the quantity of allowances at installation level are broadly similar.³⁶

Secondly, it is clear that the amount allocated to the operator must, in addition to its emissions in the past, also reflect the scarcity of the allowances. Thus the factors guiding the use of government discretion in determining the total number of allowances are also crucial. According to § 6, these guidelines are formulated as follows:

In determining the total number of allowances to be allocated, the King shall among other things take into account Norway's international commitments to reduce greenhouse gas emissions, actual and projected emissions in Norway, the proportion of actual and projected emissions that come within the scope of section 3, the fact that discrimination between sectors and enterprises should be avoided, and the technological and economic potential for reducing emissions that come within the scope of section 3.

The Norwegian lawmaker has deemed these guidelines compatible with the way EU members determine the total number of allowances in compliance with EU ETS Annex III.³⁷

From this account of the regulatory structure for original acquisition, it is clear from a legal point of view that the emission allowance is a rather weak *a priori* 'entitlement'. The pollution control authorities can exercise considerable discretion regarding the size of allowances with which an individual firm can be issued. In two respects, however, the emission allowance resembles a real entitlement. As mentioned previously, the first point is that the historical pattern of emissions is an important criterion in the allocation. This can be seen as a regulatory approximation to the ancient principle of 'first come, first served' when allocating property rights.³⁸ Secondly, the operator does not have to pay any economic compensation

for the issuance of allowances. This is clear from the wording in GHG ET Act § 7: 'For the period 1 January 2005 to 31 December 2007, the allowances shall be allocated to operators free of charge.'

This method of allocation is consistent with EU law. Allocation of allowances free of charge is prescribed for EU members. This is true for 95 per cent of the allowances in 2005–2007 and 90 per cent in 2008–2012.³⁹ A more thorough analysis of this basic feature of current emission trading systems is presented in section 5 (below).

An important first question concerning the *content* of the 'property right' relates to the identity of the allowance holder. According to GHG ET Act § 9, only 'operators' can obtain emission allowances through original acquisition. This raises two questions: first, what kinds of activity are within the scope of the system and secondly, which legal entity is allocated the allowance?

The first question is addressed explicitly in GHG ET Act §§ 3 and 4 which determine that an operator is any person engaged in CO₂ emissions in connection with (1) energy production, (2) refining mineral oil, (3) producing coke, (4) producing and processing iron and steel, including the roasting and sintering of iron ore, (5) producing cement, lime, glass, glass fibre and ceramic products. This list is consistent with the EU ETS which identifies similar categories of activities.⁴⁰ However, outside the act's scope are emissions caused by (a) combusting biomass, (b) combusting hazardous or municipal waste, or (c) activities which under the terms of the Storting's annual decision on the CO₂ tax are liable to the tax.⁴¹ The most important exclusion is clearly the one in *litra c*, which excludes both energy plants on the Norwegian continental shelf as well as the pulp and paper industry. The legislator has justified this exclusion as it has been predicted that the allowance's expected price level will be well below the tax – avoiding diminishing abatement incentives by shifting from tax to allowances for such installations is also desirable.⁴² Moreover, even if Norway were an EU member, such installations would have been able to obtain temporary dispensations pursuant to EU ETS Article 27.⁴³ It is interesting to note that the UK emissions trading system does not allow for equivalent dispensations.⁴⁴

The answer to the second question is not obvious from reading the statutory wording. It could be argued that the legal entity owning the plant and registered in the company registry should be allocated the allowance. However, this is not the case. It is evident from the preparatory work that the holder of the allowance is the unit which is responsible for discharges under the pollution control act.⁴⁵ The practical implication is that when a group of companies owns several plants, the issuance of the allowance will be to the individual firm in the group which

35 Ot Prp nr 13 (2004–2005) p 52.

36 Greenhouse Gas Emission Trading Scheme (Approved National Allocation Plan) Regulations 2005 UK SI 2005/1387 pp 22–3.

37 Ot Prp nr 13 (2004–2005) p 48.

38 Due to the limited scope of the act in the pre-Kyoto period, only seven of the 51 decisions by the Norwegian Pollution Control Authority are based on historical emissions, see <http://www.sft.no/kvoteregister/dbafile13028.html>. However, if the scope of the act is widened for the first Kyoto period, the number of decisions based on historical emissions can be expected to rise significantly.

39 EU ETS (n 5) art 10.

40 EU ETS (n 5) art 2 para 1; Annex I.

41 The King may promulgate more detailed regulations, GHG ET Act § 3 paras 2,3.

42 Ot Prp nr 13 (2004–2005) p 39.

43 *ibid*.

44 UK ETS Regulations (n 6) Sched 1, see reg 2 (1) and 7.

45 Ot Prp nr 13 (2004–2005) p 44.

commands the most direct control of the plant whose polluting activities ‘give rise’ to the allowance. This Norwegian rule is assumed to be in congruence with the EU ETS and seems to be similar to the UK definition of an ‘operator’.⁴⁶

In addition to the identity of the allowance owner, the main content of the right inherent in the emission allowance has three dimensions. First, the ordinary way of using the allowance is for an operator to transfer a number of allowances corresponding to the volume of emissions in the previous year to a specified retirement account in the registry. One way of looking at this is to say that there is a right to be free of the ‘debt’ incurred by the emission of CO₂, but that the currency to meet this debt is the allowance, not cash.⁴⁷ An operator is under a duty to fulfil his or her obligation by 1 May each year.⁴⁸ This is one day later than the prescribed deadline in the EU emission trading system.⁴⁹ The UK system is different from the Norwegian system in that the permit is subject to transfer.⁵⁰

Another way of using the allowance is to block operators from using it to legitimise emissions. Thus, an option for account holders is to require the cancellation of allowances registered in their own accounts.⁵¹ This is similar to the EU emission trading system in which EU members ‘shall take the necessary steps to ensure that allowances will be cancelled at any time at the request of the person holding them’.⁵²

A third option for an account holder is to transfer the enterprise’s own allowances to other account-holders.⁵³ That allowances are alienable is the most basic feature of the emissions trading systems. The allowance owner is entitled to the profit made by using this alienability. This gives rise to an incentive to abate and induces the socially desirable cost savings which motivate emission trading systems (see section 5 below). Thus, it is unsurprising that the EU ETS states that all EU members must ensure transferability.⁵⁴

The allowance ceases to exist (*the issue of extinction*) under one of three scenarios. First, allowances are cancelled when the operator surrenders allowances corresponding to the volume of emissions for which reporting is mandatory.⁵⁵ Secondly, if an operator has received a larger number of allowances than the enterprise is entitled to, the excess allowances in the operator’s account are cancelled⁵⁶ (this rule is not clearly prescribed in the EU ETS).

Thirdly, if the pollution control authorities discover that the operator at the time of the annual issuance of allowances did not hold a discharge permit for CO₂ emissions, or if the nature and scale of activities at the installation was substantially different from those foreseen in the decision concerning the allocation of allowances, the decision to allocate the allowance to the operator may be reversed⁵⁷ (again this rule is not clearly prescribed in the EU ETS).

3.3 Why property?

The introduction of property terminology might be questioned. Property is an ambiguous term with different meanings across jurisdictions and academic disciplines. It may also be a controversial term to use in connection with emission allowances. To illustrate this, the US Clean Air Act Amendments (1990) explicitly state that an alienable emission allowance is not a property right.⁵⁸

In fact, from a strictly legal point of view, the question ‘is the emission allowance a property right, an asset, or an entitlement of similar characteristics?’ is not well-defined. Legal systems typically include various rules which may attach specific legal consequences to such classifications, eg rules on the taking of property, rules of bankruptcy, rules of taxation and so on. At least since Hohfeld, it has been acknowledged that rights and similar concepts point to plurality of correlations between legal persons.⁵⁹ Correspondingly, it is a matter of basic legal method in Norway and, I would venture, most other jurisdictions that classifications with regards to one set of legal rules do not prescribe classifications with regards to others.⁶⁰ Thus, the precise legal nature of the allowance is likely to be different, depending on the reason the question is being asked.⁶¹ Against this background, it is not surprising that the GHG ET Act is silent on whether the allowance is a property right or not, as are the EU ETS and the UK ETS Regulation.

Against this background, it should be emphasised that my aim is not to discuss a question that may enhance categorical mistakes in the application of the law. My aim is rather to discuss the emission allowance from a perspective which may shed light on its basic characteristics from an evolutionary and legal policy point of view. There are at least three arguments in support of the property perspective.

The first reason to speak of property in relation to GHG emission allowances is that there are structural similarities between the allowances and other phenomena which are denominated as property. When I use the term

46 UK ETS Regulations (n 6) 2 (1).

47 This point is made in M Paques ‘Les systèmes d’échange de quotas d’émission de gaz effet de serre dans la Communauté européenne’ *Aménagement – environnement: Urbanisme et Droit Foncier: Revue d’études juridiques, Numéro special ‘l’énergie’* (2003) 16–29. Thanks to Nicolas de Sadeleer for translating orally the main content of this paper from French to English.

48 GHG ET Act (n 4) § 13, para 1.

49 EU ETS (n 5) art 12 para 3; UK ETS Regulations (n 6) 2 (1).

50 *ibid* UK ETS Regulations 15.

51 GHG ET Act § 12 para 3.

52 EU ETS (n 5) art 12 para 4.

53 GHG ET Act § 12 para 2.

54 EU ETS (n 5) art 12 para 1.

55 GHG ET Act § 13.

56 *ibid* § 9 para 2.

57 *ibid* § 8 para 3.

58 US Clean Air Act Amendments (1990) S.1630, § 403 (f), as in DH Cole *Pollution and Property – Comparing Ownership Institutions for Environmental Protection* (CUP Cambridge 2002) 53–54.

59 WN Hohfeld ‘Some Fundamental Legal Conceptions as Applied in Judicial Reasoning’ (1913) 23 *Yale Law Journal* 16–59 at 30.

60 For analytical foundations, see eg A Ross ‘TÜ-TÜ’ (1957) 70 *Harvard Law Review* 812–25 at 819; NK Sundby ‘Legal Rights in Scandinavian Analyses’, (1968) 13 *Natural Law Forum* 72–107 at 105.

61 A Hobley, C Rowe (n 17) 18–19.

property, I am thinking of the zone of power and the legal ability to use discretion in managing and controlling a certain resource, such as land, information and petroleum. There are many types of property, but all entail at least some ability to exclude others from using the same resource (performing the same acts) and some protection from public and private infringements. Normally, property also entails the legal ability to transfer the entitlement to the resource (to performing the act) to someone else, ie alienability. I sense that there are enough structural similarities between emission trading rights and other rights called property rights to call – although tentatively – allowances property rights.⁶² In the Nordic countries, alienable allowances might be considered a new type of 'formuerettighet', ie favourable legal positions which are seen as part of a person's wealth.⁶³ The permit to emit can be seen as a kind of right to lease space for a certain amount of greenhouse gas. However, instead of paying for this right in cash, the allowance itself is the prescribed currency for fulfilling the debt incurred by the emission.⁶⁴

Another reason to introduce this term is that there is a growing body of literature within history and social science which, with its starting point in a broad concept of property rights, makes generalisations and builds models and theories of legal evolution. One such generalisation is that developments in environmental law parallel developments in land ownership and the like. In this perspective, a tradeable allowance is the final step in a three-stage evolutionary process.⁶⁵ When overexploitation of a natural resource becomes a problem, the cheapest way to deal with the problem is to exclude new entrants from the common pool of the resource. Norwegian medieval nuisance law could illustrate this. The legal remedy for serious nuisances consisted of the possibility of expelling the responsible party from the local community. When this becomes impossible to maintain as an allocation principle, or when safe insiders start to overexploit the resource, the second stage kicks in and the government tries to regulate the way an individual uses it. More modern nuisance law and traditional environmental regulation are examples of techniques used during this second stage. Tradable allowances are instances of techniques used when congestion problems and the benefits of regulating the environmental problem become even higher. It then makes sense for society to incur even higher control costs by introducing new versions of individual alienable property rights (hybrid property). This three step evolutionary story mirrors the theory of property law which says that private ownership structures tend to be put in place (and grow spontaneously) when the benefits of such a system

outgrow the costs, and that property law evolves in response to how costs and benefits develop.⁶⁶

A third reason to frame discussions of GHG emission allowances in property language is that such quotas are clearly in need of more regulation parallel to that of other forms of property. No matter what allowances and emission trading programmes are called, there are several dimensions to such systems which need regulating in detail. First, design issues include promulgating rules concerning measurement, delineation and registration. This is necessary to define what the allowance is about. To illustrate this, a choice has to be made concerning which kind of flexibility an owner of several plants is to have. Secondly, liability issues must regulate involuntary transfer by private or public infringements. For instance, I do not seriously doubt that the tradeable, time-limited right inherent in the emission allowance is protected under the takings clause (§ 105) in the Norwegian constitution.⁶⁷ Thirdly, rules governing voluntary transfer are needed to govern the relationship between buyer and seller and between these parties and third parties, eg a bank lending money to a large emitter. Fourthly, questions related to bankruptcy and security interests must also be answered.

All these design issues may benefit from an understanding of allocation and distributional issues. In the following discussion, however, I shall be focusing on the issue of alienability and on the choice between auctioning and free allocation of allowances (grand-fathering).

4. Why alienability is socially desirable

A basic feature of emission trading systems is that owners of quotas can freely transfer their rights to others. At the same time, cost-effectiveness is this legislation's primary purpose. Thus, the social desirability of any given feature of GHG emission allowance regulation depends on whether or not the feature contributes to the minimisation of the total costs involved in complying with a state's Kyoto commitment. From this perspective, the rationale for alienable allowances is based on two factual circumstances taken together. On the one hand, firms tend to differ in their abatement costs schedules. On the other, the regulator does not have perfect information. This point is explored in more detail below. The focus will be on intra-jurisdictional trade as a mean to minimise firms' compliance costs, but the same logic underlies interjurisdictional trade to minimise the compliance costs of each party to the Kyoto Protocol.

As a starting point, it must be acknowledged that it is possible in theory to achieve optimal results through old-

62 This has become more apparent to me after reading JW Harris *Property Theory and Property Law: From Formal Dogmatics to Substantive Rights* (unpublished manuscript 2003) (on file with the author).

63 K Lilleholt (ed) *Knophs oversikt over Norges rett* (12th edn Oslo 2004) pp 163–181.

64 Note 15.

65 CM Rose 'Evolution of Property Rights' in P Newman (ed) *The New Palgrave Dictionary of Economics and the Law* (Macmillan London 1998) 93–97.

66 For outline and discussion, see E Eide, E Stavang *Rettsøkonomi – analyse for privatrett og miljørett* (Cappelen Akademisk Forlag Oslo 2001) 49–52 and C Rose 'Economic Claims and the Challenges of New Property' in K Verdery, C Humphrey (eds) *Property in Question. Value Transformation in the Global Economy* (Berg Oxford, New York 2004) 275–95.

67 J Andenæs *Statsforfatningen i Norge* (9th edn Arne Fliflet, Universitetsforlaget 2004) 352.

fashioned direct regulation. This can be done ‘simply’ by licensing firms to pollute by an amount equal to their level of pollution under an optimal tax. To attain this result, however, each firm must receive a quantity of allowances which makes all the firms’ marginal abatement costs equal to those of other firms. By implication, firms with low marginal abatement costs should receive fewer allowances than firms with high marginal costs. Otherwise, abatement would not occur where it could be done most cheaply. To attain this result, however, the government regulator would have to possess precise information concerning production technology and other means of abatement. Without huge administrative efforts in this regard, the result of traditional regulation would not be optimal.

Making allowances alienable solves this information problem and reduces the administrative challenge. With alienability, firms with high abatement costs can simply buy allowances instead of incurring the high costs involved in abatement. Firms with low abatement costs can choose to abate and obtain high revenues by selling allowances. To illustrate this, suppose the regulator, knowing nothing about each firm’s abatement cost structures, allocates allowances of 10 tons to firm A and firm B. If the marginal cost of abatement in this situation is two million NOK for A and one million NOK for B (per tonne), there is ample room for a mutually beneficial agreement. A is willing, if its leaders maximise shareholder value, to pay up to almost two million NOK for the right to emit a marginal ton, while B, assuming the same kind of management, is willing to give up a marginal ton in exchange for a price just above one million NOK. Any price between just above one million NOK and just below two million NOK would be consistent with a mutually beneficial agreement. Because of this indeterminacy, whether a deal is struck depends on the parties’ negotiating skills and tactics and, more generally, on the nature of the market.⁶⁸

If there are many buyers and many sellers, an equilibrium price may be generated which the individual buyer and seller may tend to take as given. This is even more likely if trade is organised by entrepreneurs who are willing to enter into the contractual arrangements necessary to perform services as exchanges. In Norway, Nordpool has taken on this function. As of 11 May, the volume of trade registered by the Nordpool Exchange for 2005 was 50 million tons CO₂. However, this only covers allowances regulated by the ET ETSD. Until there is a formal link between the Norwegian system and those directly regulated by the ET ETSD, there will only be bilateral trade Norwegian allowances.⁶⁹

The end result, both under bilateral negotiations and under market clearing prices, is that the total costs of imposing regulations (the overall cap on emissions) on industry is thus minimised. This trading activity will not increase emissions, since the total number of allowances is

fixed. In addition, the development of cleaner technology is encouraged if the firms are able to sell allowances made superfluous by investing in cleaner technology.

If these requirements are met, it will be easier to set stricter caps in the next period than if the total abatement cost were higher.

5. Free allocation (grandfathering) versus auctions

When setting up an emissions trading system it is necessary to allocate allowances to each firm owning a polluting plant. An important question is whether such allowances should be given to firms with or without financial compensation. In other words, the legislator faces a choice between two alternative principles:

1. allowances are allocated to firms without financial compensation
2. the payment of a certain amount of money determined by the state is a condition for the allocation of allowances to the firm (through the use of an auctioning mechanism or by other means).

As explained in section 3 above, most if not all emissions trading systems are based entirely or predominantly on principle 1. There may seem to be an inconsistency between this aspect of the regulations and the basic statutory purpose of minimising the total costs involved in regulating emissions. The reason for this is that by auctioning the quotas on the basis of principle 2, the state would in effect be imposing a financial penalty on the firms to reflect the scarcity of the ‘renovation services’ provided by the atmosphere to emitters of climate gases. Thus, a mechanism for the internalisation of the external costs of emissions would have been provided. It is not as obvious that free allocation according to principle 1 is equally consistent with the basic rationale of cost-effectiveness.

The answer to this question of internal consistency in the legislation may have important ramifications for two reasons. First, consistency is a basic legal value which over time may be expected to be accorded considerable weight in the law-making process. If the current principle is not consistent with a statutory rationale which is subject to a broad consensus, it is likely for this reason alone that the principle concerning allocation of allowances will be changed sooner or later. Secondly, the allocation of emission allowances may be reviewed based on state aid rules. Checking the consistency between the rationale of the regulation and its various details may be a crucial element in the review under the law of state aid.⁷⁰ In summary, the following question is of particular interest: is allocating allowances inconsistent with the main rationale behind alienable allowances?

As a starting point in this evaluation, the concept of opportunity costs is relevant. Generally speaking, there

⁶⁸ The same reasoning can be represented by a diagram, eg the exposition in RS Pindyck, DL Rubinfeld *Microeconomics* (5th edn Prentice Hall New Jersey 2001) 630 and fig 18.5.

⁶⁹ Source: personal communication with Per Otto Larsen from Nordpool.

⁷⁰ Case C-173/73, *Italy v Commission* (1974) ECR p 709, para 15; Case C-143/99 *Adria-Wien Pipeline* (2001) ECR I-8365 para 42.

will be an incentive for firms to abate under both principles. With compensation, the firm obviously balances the purchase price for rights and the cost of abatement. But this is also the case when rights are given away. In this case the purchase price for the allowance is potential revenue for firms. If a firm chooses not to abate, it will incur a cost in the form of lost revenues from selling allowances. *The opportunity cost is as real as the expense* under auctions and other forms of making firms compensate for allocated allowances. This opportunity cost argument is in line with basic microeconomic principles for rational behaviour, although it is not absolutely certain that economic actors consistently adhere to such principles.⁷¹

However, there is some basis for believing that the implications of the two principles for resource allocation are not identical after all. This is due to the dead-weight losses of taxes. It could be argued that there is a social loss if allowances are given away rather than auctioned. The reason is that *the existing tax system influences work incentives and savings decisions in an undesirable way*. If the allowances were auctioned, the government could lower these disincentives while maintaining its total income. Thus, although the basic rationale behind alienable allowances does not insist on auctions and preclude free allocation, it is clear that free allocation leads to some extra social costs. How high these are is an empirical question.⁷² The question, then, is whether these costs are unnecessary, or whether free allocation has some corresponding benefits.

Although an efficiency argument could be made against free allocation, this argument has to be balanced against its benefits. The benefits of free allocation are related to the distributional consequences which may feed back into the efficiency analysis, for reasons both of fairness and public choice.

First, let's look at the aspect of fairness. Obviously, auctioning the allowance compared to the free allocation of allowances will change the distribution of wealth between firms and state. If the allowances were sold by the state in an efficiently functioning market, the firms would have to pay a price reflecting the scarcity of the allowances, and this price would equal the tax rate that the state had imposed in an optimal emission tax system. Thus, in addition to the costs of abatement, the firms would have to pay a tax disproportionate to the harm which, as a matter of theoretical attribution, results from the firm's emission. This so-called excess burden is a well-known feature of an emission tax rate equal to the marginal costs of harm caused by the emission, and auctioning allowances would entail a similar excess burden. This lack of proportionality may run

against sentiments of fairness and justice, and *if* such sentiments are widely shared by individuals in the relevant jurisdiction, it may seem justified to count this lack of fairness or justice as a cost of the auctioning system as compared to free allocation.⁷³

Secondly, it may also be relevant under the criterion of cost-effectiveness that the design and operation of the tradeable emission allowance system requires industry participation and cooperation. If auctioning rather than free allocation is chosen, and if that choice makes firms less eager to cooperate in the practical implementation of the allowance system, it may become more difficult and hence costly to gather the necessary information and operate the system. Such administrative costs are relevant under the criterion of cost-effectiveness.⁷⁴

It may seem that the costs of fairness and administration discussed above are somewhat fanciful, and that an analysis under the cost-effectiveness criterion should only include costs that can be documented to exist. However, the legislative history of the Norwegian Greenhouse Gas Emission Trading Act indicates that these are real concerns. In the 1990s, some preparatory work indicated that the government was preparing for a shift towards the consistent use of 'green taxes' as the preferred environmental regulatory instrument.⁷⁵ However, after a parliamentary hearing in 1998, it became evident that the politicians and their expert advisers favoured emission allowances (property rights) to taxes to regulate greenhouse gases nationally.⁷⁶ Moreover, in 2002, Stortinget explicitly instructed the cabinet to develop the details of the act based on free allocations of allowances in close dialogue with industry.⁷⁷ In my opinion, it is reasonable to infer that the political system was thus acknowledging that there were relevant considerations to make, additional to the aggregate costs of harm and

⁷³ For an elaboration of this point, see figure in FR Førstund 'Commentary' in E Eide, R van den Bergh (eds) *Law and Economics of the Environment* (Oslo Juristforlaget 1996) 116, showing declining marginal abatement costs and increasing costs of harm, both measured in NOKs over emissions. With a perfect market and full payment for emission rights, industry will pay an equilibrium price equal to marginal harm at the prescribed level. Additionally, this price is equal to the optimal tax. In this case, industry has to pay its own costs of abatement up to the prescribed abatement level (A) and the sum of harm (D) and the so-called excess burden (EB). It may be considered unfair that industry should pay both D and EB in addition to A, which might be called a narrow polluter pays principle. If such notions of fairness are a real concern to the population, it should be seen as a benefit of free allocation (grandfathering) that such an allocation principle relieves industry from paying SK and ES. See L Kaplow, S Shavell *Fairness versus Welfare* (Harvard University Press Cambridge and London 2002) 18–19: 'The only limit on what is included in well-being is to be found in the minds of individuals themselves, not in the minds of analysts.'

⁷⁴ Eg RH Coase (n 71) p 118–19, 154–56.

⁷⁵ NOU 1992:3 *Mot en mer kostnadseffektiv miljøpolitikk i 1990-årene*; NOU 1996:9 *Grønne skatter – en politikk for bedre miljø og høy sysselsetting*.

⁷⁶ Referat fra åpen høring vedrørende Grønne skatter (St prp nr 54 (1997–1998)) mandag den 11 mai 1998 kl 11 pp 1–29; NOU 2000:1 *Et kvotesystem for klimagasser. Virkemiddel for å møte Norges utslippsforpliktelse under Kyotoprotokollen*; St meld nr 54 (2000–2001) *Norsk klimapolitikk*; St meld nr 15 (2001–2002); Tilleggsmelding til St. meld nr. 54 (2000–2001) *Norsk klimapolitikk*.

⁷⁷ Ot Prp nr 13 (2004–2005) 21–22.

⁷¹ Compare eg RH Coase *The Firm, the Market, and the Law* (University of Chicago Press, Chicago and London 1988) p 102 and Ot Prp Nr 13 (2004–2005) s 37 sp 2, with eg C Jolls, CR Sunstein and R Thaler 'A Behavioral Approach to Law and Economics' in R Ellickson, C Rose and B Ackerman (eds) *Perspectives on Property Law* (3rd edn Aspen Publishers New York 2002) 221–30.

⁷² For an exploration of this issue, see LH Goulder 'Environmental Policy Making in a Second-Best Setting' in RN Stavins (ed) *Economics of the Environment* (4th edn Norton New York 2000) 396–427.

abatement. It is outside the scope of this article to discuss whether this inference holds also for EU members, but it has been observed that an important aspect of the process in the UK has been ‘transparency and a willingness on the part of the UK Government to consult with industry.’⁷⁸

Another argument that might be relevant and could serve as a counter-argument to the free allocation of allowances, is that this allocation contradicts the polluter pays principle (PPP). This principle has been invoked by the government on numerous occasions over the years.⁷⁹ However, the PPP can be invoked in a narrow sense or interpreted widely.⁸⁰

The narrow version of the PPP is useful, but not relevant. It states that the polluter should not receive financial support to meet the duties involved in abating pollution. This version is useful because it solves a potential indeterminacy in the analysis of policy instruments. According to the opportunity-cost point of view, the incentives to abate will be the same whether the polluter pays for the harm or is paid (bribed) to abate. The PPP is a kind of rule of thumb in policy-making which rules out the bribe option. Normally, this also makes sense under the cost-minimisation criterion. If the government uses the bribe option to regulate a certain sector, the sector will have a tendency to grow more than is desirable from a welfare-economic point of view.⁸¹

The wide version of the PPP has relevance as a theoretical idea, but is not supported by actual law or policies in any consistent way. The idea is that all harm should correspond to the firm’s financial expenditure, and correspondingly this might lead to a preference for auctioning over free allocation. However, the wide version of the PPP lacks support in actual legal policy-making practices. So far, a consistent set of optimal environmental taxes has not been put into effect. Industrial pollution is mainly regulated through a concession system, and the firm’s civil liability is then regulated not by absolutely strict liability, but through a system of tolerance limits which entails a doctrine of reasonable use.⁸² Thus, the actual legislation reveals that the wide version of the PPP is far removed from the political community’s preferences. In this situation, I do not find sufficient reasons to accord it independent weight in the evaluation under the criterion of cost-effectiveness.

To summarise, the conclusion here must be that there is no clear inconsistency between cost-effectiveness as the main rationale behind the Greenhouse Gas Emission Trading Act and choosing to allocate alienable allowances

without compensation. As already mentioned, this conclusion may be relevant to the application of state aid rules, and Norway and EU members could perhaps have immunised their emission trading systems more from state aid review by following property principles to a greater extent in their allocation plans. It is outside the scope of this article, however, to analyse this question any further.

6. Conclusions

I would like to sum up the analysis in this article with three claims.

1. By allocating the legal ability to transfer emission allowances, cost-minimising operators and other parties can transfer allowances to those who value them the most. The costs of climate change controls will thus be reduced in comparison to the traditional command-and-control approach.
2. Allocating emission allowances to operators without forced monetary compensation may be cost-efficient and does not violate the main purpose of the legislation relating to emission trading systems.
3. The alienable emission allowance is a fruitful subject for property law. These last two claims are mainly based on an analysis of the Norwegian law, but the comparisons with EU and UK law would seem to indicate that they also hold true more generally.

78 A Hobley, C Rowe (n 17) 20.

79 KH Alfsen G Haakonsen KE Rosendahl and K Telle ‘Forslag om nytt virkemiddel i klimapolitikken: Lov om kvotehandel med klimagasser’ *Økonomisk Forum* nr 7 (2004) 45–53 at 47–48.

80 The PPP can of course be subject to a much more refined analysis, see eg HC Bugge ‘The Principles of “Polluter-Pays” in Economics and Law’ in E Eide, R van den Bergh (n 73) 53–84.

81 Eg FR Førund, Steinar Strøm *Miljøøkonomi* (4th edn Gyldendal Akademisk Oslo 2000) 98.

82 E Stavang ‘Tolerance Limits and Temporal Priority in Environmental Civil Liability’ (1997) 17 *International Review of Law and Economics* 553–74.