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NEWS & ANALYSIS

Emissions Trading: Lessons From SO_x and NO_x Emissions Allowance and Credit Systems Legal Nature, Title, Transfer, and Taxation of Emission Allowances and Credits

by Markus W. Gehring and Charlotte Streck

I. Introduction

Emissions trading is increasingly recognized as a cost-effective policy instrument to reduce the concentration of greenhouse gases (GHGs) in our atmosphere. The concept, which until recently was treated with suspicion by many countries, has seen in the last 12 months unprecedented proliferation and success.

In October 2003, Directive 2003/87/EC “establishing a scheme for greenhouse gas emission allowance trading within the Community” became law in the European Union (EU).¹ The objective of the newly established EU Emissions Trading Scheme (ETS) is to reduce the emissions of GHGs in an efficient and cost-effective manner. The initially adopted scheme was limited to emissions allowance trading within the EU and did not link the EU ETS to emission reduction credits (ERCs) generated under the Kyoto Protocol. Therefore, such credits, namely emission reduction units (ERUs) and certified emission reductions (CERs), could not be used by operators of covered installations to meet compliance obligations under the EU ETS. To remedy this, the EU has recently adopted a directive to amend the EU ETS to link the scheme to emission credits that comply with the Kyoto Protocol.²

The EU trading scheme will encompass not only the 15 previous EU Member States but will also apply to all its newly acceded Members. Denmark and the United Kingdom (U.K.) have traded with emission allowances since July 2000, and March 2002, respectively.³ Canada, Japan,

Norway, and several U.S. states have expressed their intent to establish similar GHG trading systems, to name only a few incentives that have been announced over the last months. Finally, Chile, the only developing country engaging in emissions trading so far, has recently adopted a bill which establishes a trade in pollution permits.⁴

The European, the U.K., and the Danish ETS are directly targeted to reduce GHGs in order to help EU countries meet their quantified emission limitation and reduction commitments (QELRCs) as defined under the Kyoto Protocol. In its transition into the legal systems of the EU Member States, the EU ETS will lead to the implementation of 25 national trading systems which are technically and legally harmonized on the EU level. Each country listed in Annex B of the Kyoto Protocol has an obligation to adjust its emissions of GHG by a specific average percentage from a 1990 baseline⁵ within the five-year commitment period (2008-2012). These percentages range from 8% for EU (EU15) countries to 6% for Japan, and even allow Iceland to increase its GHG emissions by 10%.

The Kyoto Protocol is a unique international law instrument in at least two respects: first, in scale, because it sets out stringent and legally binding targets for the reduction of emissions of GHGs—primarily carbon dioxide (CO₂)—which are unprecedented in an environmental agreement and which will involve the commitment of substantial financial resources in virtually all industrialized countries; and second, it is the first international agreement to include economic instruments to assist Parties to meet these targets—also known as the Kyoto Mechanisms. These mechanisms are an innovative, market-driven approach to reducing global GHG emissions. The theory behind this approach is that the marginal abatement cost, i.e., the cost of financing a GHG emission reduction, in a relatively fuel-efficient industrialized country will usually be far higher than in a country with its economy in transition or a

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1. As published in the Official Journal of the European Union on October 25, 2003; L 275, 25/10/2003 P. 0032-0046.
2. Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC, establishing a scheme for greenhouse gas emission allowance trading within the community, in respect of the Kyoto Protocol's project mechanisms.
3. See Danish Act on Carbon Dioxide (CO₂) Quotas for Electricity Production. Act No. 376 of June 2, 1999, on the Internet at

<http://www.ens.dk/graphics/Publikationer/Laws/ActOnCO2QuotaForElectricityProduction.pdf> and U.K. Greenhouse Gas Emissions Trading Scheme 2002, on the Internet at http://www.defra.gov.uk/environment/climatechange/trading/pdf/trading-rules_rev2.pdf. See Annex I for details.

4. Ley de Bonos de Descontaminación (not yet in force), on the Internet at http://www.conama.cl/portal/1255/articles-27053_Bonos.doc.
5. The countries with economies in transition had the opportunity to chose another historical baseline year (Art. 3, ¶ 5 of the Kyoto Protocol).

developing country, which may use less efficient fuel use technology.⁶ The climate system is global—it benefits from GHG reductions wherever they are made. The mechanisms have great potential for channeling investment and technical assistance in clean technology into developing countries and countries with economies in transition. Projects financed in this way promote sustainable development and typically involve transferring technology and financing clean energy projects, which, in turn, increase capacity for development through providing reliable energy.

The Kyoto Protocol market-based instruments consist of two mechanisms that are based on the implementation of projects and the achievement of credits against projected baseline emissions (Joint Implementation and the Clean Development Mechanism) and international emissions trading which allows countries to transfer and acquire units of their assigned amounts (assigned amount units) between themselves as a cost-effective means of meeting their QELRCs. Through the entry into force of the Kyoto Protocol, the importance of the flexible mechanism to governments and energy-intensive companies has increased dramatically. The Kyoto Mechanisms represent a cost-effective way for Annex I countries to meet their QELRCs and, if linked to national and regional trading schemes, will be an effective mechanism for private companies to meet their domestic or regional obligations. The mechanisms may help to channel significant amounts of foreign investment into countries with economies in transition and developing countries, and make the mechanisms appealing to nonindustrialized countries hosting such projects.

Whereas the Kyoto Protocol has provided greater incentives for countries to engage in emissions trading, there are examples of emission trading systems that are already operating. Economists and lawyers that currently develop trading schemes or are busy implementing international or supranational legislative requirements for domestic regulatory systems can draw on experiences from working with these other systems. Such examples include the U.S. emission trading system, which is based on the trade of authorizations to emit a certain amount of oxides of sulfur (SO_x) or the trade among U.S. companies in nitrogen oxide (NO_x) emission certificates.

This Article undertakes a judicial analysis of the U.S. SO_x and NO_x trading systems with respect to the legal nature of the allowances traded under these regimes. It also briefly addresses the treatment of emission reductions with regard to ownership, taxation, and accountancy of allowances allocated under national ETS. It is expected that such analysis will provide insights into the different types of tradable permits and their treatment under existing regimes.

After a short overview of the different types of trading regimes, the Article will examine the U.S. SO_x ETS. As the first functioning national ETS of its kind, the so-called acid rain program has served as a model for emission trading, and generated a great number of potentially valuable lessons learned. The Article then examines the U.S. NO_x ETS and the Canadian Ontario ETS, to draw comparative examples. In its last sections it tries to summarize the different lessons

and lists the most important features of emission credits and allowances under different regimes.

II. Emissions Trading: The Concept

Emissions trading systems, or emissions rights trading systems, are based on the allocation of an authorization to emit a ton of a pollutant, such as SO_x or NO_x, or a ton of a CO₂ equivalent GHG. The allocation of a limited number of emission permits allows for the creation of a market. Since the aggregate amount of allowances is below the current level of emissions, an artificial level of scarcity is created and permits acquiring a positive value, which determines the market price.⁸

There are two basic forms of emissions trading systems: cap-and-trade systems which are based on the assignment of allowances and baseline-and-credit systems under which credits are generated against a projected baseline of emissions and under which entities can be subject to absolute or relative emission limitation targets. Both approaches can also be merged in hybrid systems that combine elements of a cap-and-trade and a credit-baseline system.⁹

A cap-and-trade system is based on the allocation of an absolute emissions ceiling specified as a given amount of the pollutant that can be released with a defined compliance period. The regulatory authority creates and allocates allowances free or by auction, in the form of individual allowances, each representing a defined amount of a pollutant to the various sources under the regime. Examples of such systems include the EU ETS or the U.S. SO_x Allowances Trading Scheme.

Entities covered by a baseline-and-credit system are given an emission reductions target which is a specific ceiling on emissions for a given compliance period. The entity has to reduce the emissions against a certain baseline. Participants that have demonstrated that they have reduced their emissions as compared to the baseline are eligible to sell ERCs equaling the difference between the baseline and the actual emissions.

Some regimes combine features of both systems and allow the creation of emission credits against a baseline for some participants whereas others receive an allocation of allowances. In addition, these entities may be allowed to purchase ERCs generated by participants that are not subject to absolute targets. The system established by the Kyoto Protocol constitutes such a hybrid, as it allocates a fixed number of assigned amount units to industrialized Parties (Annex I Parties) and allows entities in developing countries (Non-Annex I Parties)¹⁰ to participate by selling CERs generated by projects in developing countries. Other examples include the U.K. ETS or the Ontario ETS.

III. U.S. Acid Rain Program—SO_x Trading Scheme

The Acid Rain Program was created by Title IV of the 1990

6. David Freestone, *The World Bank's Prototype Carbon Fund: Mobilizing New Resources for Sustainable Development*, in LIBER AMICORUM FOR IBRAHIM F.I. SHIHATA 265-341 (S. Schlemmer-Schulte & K.Y. Tung eds., Kluwer Law International 2001).

7. For a wide range of project examples, see www.carbonfinance.org.

8. THEODORE PANAYOTOU, *ECONOMIC INSTRUMENTS FOR ENVIRONMENTAL MANAGEMENT AND SUSTAINABLE DEVELOPMENT* 27 (United Nations (U.N.) Environment Program 1994).

9. See also JÜRGEN LEFEVRE, *GREENHOUSE GAS EMISSIONS ALLOWANCE TRADING IN THE EU: A BACKGROUND* 27 (Foundation for International Environmental Law and Development (FIELD) 2002).

10. These countries are not included in Annex I of the U.N. Framework Convention on Climate Change or the Kyoto Protocol.

Clean Air Act (CAA) Amendments.¹¹ As the first federal U.S. law to adopt an emission trading system on a large scale,¹² it was widely viewed as groundbreaking.¹³

The CAA prescribes limits for SO_x and NO_x emissions from specified electric utility plants in the 48 contiguous states of the United States.¹⁴ Owners or operators of fossil fuel-fired combustion devices, referred to as units, are required to obtain emission permits from the U.S. Environmental Protection Agency (EPA) for each location or source where units operate.¹⁵ Each permit allocates a number of emission allowances authorized for the location; each allowance authorizes the holder to emit one ton of SO_x.¹⁶ The CAA provides that these allowances may be bought and sold, just as any other commodity.¹⁷ Multiple owners can hold a unit, and a designated representative of the unit can hold and distribute the allowances and the proceeds derived from trade transactions.¹⁸

A. Legal Nature of Allowances

1. Statute Law

Section 403(f) of the 1990 Amendments to the CAA carefully defines the legal nature of emission allowances¹⁹:

(f) Nature of allowances

An allowance allocated under this subchapter is a limited authorization to emit sulfur dioxide in accordance with the provisions of this subchapter. Such allowance does not constitute a property right. Nothing in this subchapter or in any other provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization. Nothing in this section relating to allowances shall be construed as affecting the application of, or compliance with, any other provision of this chapter to an affected unit or source, including the provisions related to applicable National Ambient Air Quality Standards and State implementation plans. Nothing in this section shall be construed as requiring a change of any kind in any State law regulating electric utility rates and charges or affecting any State law regarding such State regulation or as limiting State regu-

lation (including any prudency review) under such a State law.

Nothing in this section shall be construed as modifying the Federal Power Act (16 U.S.C. 791a et seq.) or as affecting the authority of the Federal Energy Regulatory Commission under that Act. Nothing in this subchapter shall be construed to interfere with or impair any program for competitive bidding for power supply in a State in which such program is established. Allowances, once allocated to a person by the Administrator, may be received, held, and temporarily or permanently transferred in accordance with this subchapter and the regulations of the Administrator without regard to whether or not a permit is in effect under subchapter V of this chapter or section 7651g of this title with respect to the unit for which such allowance was originally allocated and recorded. Each permit under this subchapter and each permit issued under subchapter V of this chapter for any affected unit shall provide that the affected unit may not emit an annual tonnage of sulfur dioxide in excess of the allowances held for that unit.

This long and extensive provision needs to be seen in the broader context of U.S. statute law.²⁰ It tries to anticipate any possible litigation that could arise under such a regime. In spite of this, the statute still fails to address and regulate the full diversity of possible situations. In particular, it fails to comprehensively (or even, perhaps, adequately) define the nature of an emission allowance, itself.

One aspect of the legal definition of allowance under this scheme is reasonably clear. There is an explicit statutory statement that “[s]uch allowance does not constitute a property right.” Instead, the allowance is defined as “a limited authorization to emit sulfur dioxide.” As such, the CAA seeks to explicitly exclude actions and legal claims based on property rights.

While the basis of emission trading is the attribution of property rights, such attribution was identified as one of the dangers of the new system. The U.S. legislator feared that as owners of allowances, firms would insist on this right and, therefore, new attributions, withdrawals, or devaluation for environmental purposes would become more difficult as the system matured.

There are two main reasons as to why allowances were not given the character of a property right.²¹ Some suggest that the U.S. Congress was reacting to environmentalists, who expressed moral concerns with a regulatory scheme that attributed rights to pollute.²² However, it has been more persuasively argued that Congress introduced the provision in order to ensure the achievement of the Acid Rain Program’s pollution-reduction goals.

The first proposal for the establishment of a SO_x ETS did, in fact, consider the allowances as property rights, meaning that any regulatory action posterior to the allocation of allowances would potentially have constituted a taking under

11. Title IV of the CAA, enacted as part of the CAA Amendments of 1990, Pub. L. No. 101-549, 104 Stat. 2399 (1990).

12. See generally about the instrument choice, Nathaniel O. Keohane et al., *The Choice of Regulatory Instruments in Environmental Policy*, 22 HARV. ENVTL. L. REV. 313, 315-16 (1998) and Bruce Ackerman & Richard Stewart, *Reforming Environmental Law: The Democratic Case for Market Incentives*, 13 COLUM. J. ENVTL. L. 171 (1988).

13. Jeffrey M. Hirsch, *Emissions Allowance Trading Under the Clean Air Act: A Model for Future Environmental Regulations?*, 7 N.Y.U. ENVTL. L.J. 352, 354 (1999).

14. 42 U.S.C. §§7651c-7651d.

15. *Id.* §7651g.

16. *Id.* §§7651g(a), 7651a(3).

17. *Id.* §7651b(b); 101 CONG. REC. S16980 (daily ed. Oct. 27, 1990).

18. 42 U.S.C. §7651g(i). On January 13, 2003, EPA announced that it will introduce a trading system for sediments and nutrients under the Clean Water Act. This system will be based on watershed trading. Some pilot projects have already started and EPA has released a handbook to help watershed managers to decide if watershed trading is an option for their watershed. See U.S. EPA, WATER QUALITY TRADING ASSESSMENT HANDBOOK (2004) (EPA 841-B-001), available at www.epa.gov/owow/watershed/trading/handbook/.

19. 42 U.S.C. §7651b. (SO_x allowance program for existing and new units).

20. GUIDO CALABRESE, *A COMMON LAW FOR THE AGE OF STATUTES* (1982).

21. Daniel H. Cole, *Clearing the Air: Four Propositions About Property Rights and Environmental Protection*, 10 DUKE ENVTL. L. & POL’Y F. 103, 114 (1999).

22. Robert W. Hahn & Gordon L. Hester, *Where Did All the Markets Go? An Analysis of EPA’s Emissions Trading Program*, 6 YALE J. ON REG. 109, 142-43 (1989).

the Fifth Amendment of the U.S. Constitution. This raised concerns among both the environmental community and the utilities' regulators in various states.²³ If allowances were property, should the allowance be devaluated or withdrawn from the market, holders could conceivably invoke the Fifth Amendment. This amendment prevents the taking of private property without just compensation, and has been interpreted by the U.S. Supreme Court to include regulatory takings under certain conditions.²⁴ If the credits constituted private property, the government would have to offer fair compensation for regulations that had the effect of taking the value of this property, under certain conditions. But for the system to reduce pollution, and in order to retain regulatory flexibility, regulators needed to reserve the power to amend the trading system by increasing the number of allowances needed for compliance (effectively taking some of the value from private persons) or retiring allowances, without being liable for costly compensation. In the final version of the Act, through the explicit exclusion of property rights and the expressed authorization of EPA to terminate or limit allowances, Congress allowed EPA the necessary flexibility to implement the program.

While the U.S. domestic legislation governing the SO_x emission allowances does not, per se, grant property rights over these allowances vis-à-vis the state, it expressly recognizes their nature as alienable, tradable goods under the authority of the governing law, stating that "[a]llowances, once allocated to a person by the Administrator, may be received, held, and temporarily or permanently transferred in accordance with this subchapter." To date, there have been only a few cases in which specific questions of the nature of SO_x allowances needed to be determined by U.S. courts. One, *Ormet Corp. v. Ohio Power Co.*,²⁵ interpreted certain aspects of the legal nature of these rights, which followed a trend of gradual erosion of the blanket statutory definition and recognizing certain characteristics of property rights over the allowances.

In the 1996 case, Ormet Corporation, an aluminum manufacturer, brought an action against Ohio Power Company, an electric utility, claiming a right to 89% of the emission al-

lowances granted to Ohio Power's Kammer generating station. The claim was based on

the assertion that under its contractual arrangement with Ohio Power for electrical power, Ormet pays a proportionate share of the Kammer plant's operating and maintenance costs, and therefore, it is entitled, pursuant to §408(i) of the CAA, to its proportionate share of the emission allowances issued for the Kammer plant.²⁶

The district court, claiming that the exclusive avenue of recourse for Ormet was through EPA, initially dismissed the case, citing lack of jurisdiction.

On appeal, Ormet maintained that it was not challenging any EPA action in issuing the permit or establishing the allowances, but rather that they were asserting a proprietary interest in those allowances held by Ohio Power. They claimed that Ohio Power had failed to acknowledge Ormet's ownership interest in the Kammer plant and had thus "'expropriated' all of the Kammer plant's emission allowances, when in fact Ormet is entitled to 89% of them as a party with a 'life of the unit, firm power contractual arrangement' under the Act."²⁷ The district court determined that the U.S. Court of Appeals for the Fourth Circuit was the appropriate avenue for a claim involving the interpretation of federal law.

Therefore, the core issue before the court of appeals focused on whether the 1966 Power Agreement between the two parties was, in fact, a "life-of-the-unit, firm power contractual arrangement" within the meaning of §§402(27) and 408(i) of the CAA. If so, would this entitle it to a proportionate share of the emissions allowances issued for the Kammer plant?

The court's decision contained two main holdings. First, it interpreted the congressional intent behind the CAA provisions, to determine if a proprietary right was actionable. Judge Paul Niemeyer held that Congress explicitly denied the character as a property right, and stated that they only intended that emission allowances "may be bought and sold as any other commodity." The court also held that "in establishing a system of marketable allowances, Congress intended for disputes among allowance holders to be resolved in the same manner as are other private commercial disputes. Congress did not intend that EPA be involved in resolving allowance-related disputes." This suggests that although a dispute over allowances may not be seen as a dispute over property rights, it can be characterized as a private or civil dispute over ownership. This assertion is supported by §408(i) of the CAA, which provides for divided ownership of emission allowances as it states that "[n]o [Acid Rain] permit shall be issued" unless the designated representative has filed a certificate of representation in which he certifies that "allowances and the proceeds of transactions involving allowances will be deemed to be held or distributed in proportion to each holder's legal, equitable, leasehold, or contractual reservation or entitlement."²⁸

23. See Hirsch, *supra* note 13, at 383.

24. These factors were most recently reaffirmed in *Tahoe-Sierra Preservation Council, Inc. v. Tahoe Reg'l Planning Agency*, 216 F.3d 764, 780, 30 ELR 20638 (9th Cir. 2000). The original test was laid out in *Penn Cent. Transp. Co. v. New York City*, 438 U.S. 104, 124, 8 ELR 20528 (1978), which held that determining whether a regulatory taking had occurred was fact-specific and involved a rough balancing of different factors. There had to be a diminution in value and a judge was to consider: (1) the regulation's economic impact on the claimant; (2) the regulation's interference with distinct investment-backed expectations; and (3) the character of the governmental action. At issue was, interestingly for the question of allowances and credits, the right of Penn Central Station to use its air space or density allocation for development. It was found that the city of New York could prevent the Grand Central Station owners from erecting a tower over the terminal as a comprehensive preservation scheme, in part by granting transferable development rights on the air space, to decrease the economic impact. See C. Rose, *PROPERTY AND PERSUASION* (Westview Press 1994). See also E. Chemerinsky, *Expanding the Protections of the Takings Clause*, 2001 SUP. CT. REV. 70; or Palazzolo: *Regulatory Takings Decisions and Their Implications for the Future of Environmental Regulation*, TUL. ENVTL. L.J., Summer 2002.

25. 98 F.3d 799, 27 ELR 20302 (4th Cir. 1996).

26. *Id.*

27. *Id.*

28. 42 U.S.C. §7651g(i).

Box 1: Certificate of Representation

A legal document which certifies that allowances and the proceeds of transactions involving allowances will be deemed to be held or distributed in proportion to each holder's legal, equitable, leasehold, or contractual reservation or entitlement.

Box 2: Property Rights Aspects of Acid Rain Allowances

- Receipt of allowances,
- Holding of allowances,
- Permanent or temporary transfer of allowances for value, and
- Exclusivity.

Upon remand, the district court sided with Ohio Power. On cross-motions for summary judgment, it concluded that, under the CAA, the contractual arrangement between Ormet and Ohio Power did not make Ormet a joint owner of the Kammer plant and that Ormet was therefore not entitled to a proportionate share of the pollution emissions allowances allocated to the plant. Accordingly, the court entered summary judgment against Ormet. Judge Niemeyer affirmed this judgment in 2000.²⁹

Is the acid rain allowance approach, of statutory property rights denial, and limited judicial recognition of certain rights between parties, a good model for other emissions allowance and trading schemes? Academic review is not entirely complimentary. This approach has not stemmed debates on whether the government is entitled to devalue or confiscate the allowance at any point or if the system creates protections against this kind of government action.³⁰ And at present, though allowances are not property rights vis-à-vis the state, they carry certain elements of property rights between contracting parties.

Indeed, between the contracting parties, it seems that all normal property rights (usus, fructus, and abusus) are available.³¹ This has led some to describe §403(f) as "premised on the confusion between property rights in something and the thing itself."³² It does expressly define an allowance as not creating a property right, yet allows free transfer and thus recognizes the property rights in the emission allowance, because utilities can receive, hold, i.e., possess, and transfer, i.e., alienate, allowances. Utilities and all other allowance holders can exclude all others, besides the government, from interfering with their possession, use, and disposition of allowances.

These are certainly valuable property rights in emission allowances. While such de facto property rights situations are not unknown in the law,³³ they are unusual and bear risks. Clearer definitions could avoid these risks and serve better as model law.³⁴

In the *Ormet* case, the need for national (as opposed to subnational) jurisdiction over allowances was also recognized. As stated by the Court:

For allowances to "be treated like economic commodities," their nature and those entitled to an interest in them must be uniformly established throughout the market. State by state variations of interpretation about the nature and the initial title to allowances could create uncertainty in the market and thereby undermine the very device that Congress created for reducing pollution. Where the resolution of a federal issue in a state-law cause of action could, because of different approaches and inconsistency, undermine the stability and efficiency of a federal statutory regime, the need for uniformity becomes a substantial federal interest, justifying the exercise of jurisdiction by federal courts.³⁵

This need for federal jurisdiction was recently upheld and expanded upon, in *Clean Air Markets Group v Pataki*.³⁶ In this case, it was decided that U.S. states have no constitutional jurisdiction to amend the trading system in sensitive areas, such as through disallowing certain allowances to encourage compliance.

The *Ormet* case suggests that, in federal countries, it is important to retain central jurisdiction over the regulation and resolution of disputes surrounding the legal nature of such allowances. This is for the sake of uniformity and consistency.³⁷

29. *Ormet Corp. v. Ohio Power Co.*, 207 F.3d 687, 30 ELR 20457 (4th Cir. 1996).

30. See Norman Fichthorn & Allison Wood, *Preserving the SO₂ Market*, ENVTL. FIN., Sept. 2002, at 28.

31. RESTATEMENT OF THE LAW, Property 1936, The American Law Institute, §5(e) Complete Property. The totality of these rights, privileges, powers, and immunities which it is legally possible for a person to have with regard to a given piece of land, or with regard to a thing other than land, that are other than those which all other members of society have as such, constitutes complete property in such land or thing other than land. This totality varies from time to time, and from place to place, either because of changes in the common law, or because of alterations by statute. Thus if the law should come to be that no person could build a five-story building on his land, the totality of privileges that every person has who owns land would be correspondingly diminished. So if a zoning ordinance were passed, the totality of interests would be affected, to the extent of the ordinance, for persons owning land within the district to which the ordinance applied. At any one time and place, however, there is a maximum combination of rights, privileges, powers, and immunities in the land that is legally possible, and which constitutes complete property in the land, or thing other than land.

32. Cole, *supra* note 21.

33. *Id.* For a discussion of de facto rights that are property rights except in name, see RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 51-53 (5th ed. 1992) which gives broadcast frequencies as an example of de facto property rights). See also Bruce Yandle, *Grasping for the Heavens: 3-D Property Rights and the Global Commons*, 10 DUKE ENVTL. L. & POL'Y F. 13, 20 & n.32 (1999), which offers the example of Japanese sunshine rights as de facto property rights. While de facto property rights clearly do exist, one must also be cognizant of their limited extent.

34. See Annex I on several existing initiatives.

35. This issue was addressed in *Martin v. Hunter's Lessee*, 14 U.S. (1 Wheat.) 304, 347-48 (1816) (Story, J.).

36. 194 F. Supp. 2d 147, 32 ELR 20553 (N.D.N.Y. 2002). The state of New York tried to amend the trading system to address the acid rain problem in the Adirondack mountains by disallowing selected credits from upwind states for compliance. But the U.S. District Court for the Federal Circuit decided that U.S. states had no jurisdiction over the national trading system, compare Fichthorn & Wood, *supra* note 30 analyzing *Clean Air Markets Group*, which can be found on the Internet at www.nysd.uscourts.gov/courtweb/pdf/D02NYNC/02-03325.PDF.

First, although the characterization of an allowance as a property right is excluded from the CAA, these still have many elements of a property right. Allowances might even be characterized as de facto property rights between private parties, though not vis-à-vis governments.

It seems difficult to prevent an allowance (in this case, the acid rain allowances) from acquiring the characteristics of a property right, even if an explicit provision is made in the domestic legislation governing the allowances that this is not the case. Over time, and through litigation, there is a tendency, in order to facilitate the trading systems, that the units acquire de facto property rights, making them more difficult to regulate. For ERCs, generated in the context of a baseline-and-credit system, it might be even more difficult for a government to retain control of credits and prevent private property rights in them from arising, because in many cases such credits are often generated in jurisdictions different from those recognizing the credit.³⁸ As such, any domestic legal regime would need to be carefully constructed to provide for the particular property rights such project-based credits would acquire. Further, contractual provisions governing the generation or transfer of such credits, including the rights of other firms or investors, require careful legal construction. For ERCs, these contractual agreements could, as in the *Ormet* case, be found to govern any disputes between private entities, investors and potentially, even vis-à-vis the governments.

A second lesson also emerges from this case study, as mentioned above. In the design of domestic legislation ruling, the generation and trade of allowances jurisdiction over disputes is important—whether between private parties or even between a private entity and the government. While there are no property rights in allowances vis-à-vis the state, the ownership of allowances can be contested, as a civil matter, in the courts. Such disputes would be determined primarily by the contractual relationship between the parties, and the legal requirement for a Certificate of Representation is a useful legal mechanism to limit such disputes and achieve greater legal clarity.³⁹ In federal legal systems, powers are divided between national and subnational jurisdictions. Disputes, if possible within the domestic legal system in question,⁴⁰ should be resolved in courts specific to the national level. The experiences of the *Ormet* and *Clean Air Markets Group* cases suggest that, in the interest of uniformity and consistency in the legal character of the unit to be commercially traded, a single national definition of the nature of the credit should apply.

37. Using the same arguments European private sector companies currently show their disapproval for an ETS established using the instrument of a directive instead of a regulation, which would have allowed to harmonize the legal nature of EU allowances throughout the EU.

38. Such is the case of Joint Implementation and the Clean Development Mechanism, under which CERs and ERUs are created in jurisdictions different from those under which the credits will be used for compliance.

39. It is interesting to note that the Executive Board of the Clean Development Mechanism requires a similar certificate signed by all participating parties in a Clean Development Mechanism project at the time of issuance of the CERs into the national registry accounts.

B. Title, Transfer, Taxation, Accounting

1. Title and Transfer

In the U.S. ETS for SO_x and NO_x, title (although not defined as such) lies with allowance holders, or more specifically, it lies with their responsible official. As discussed above, the acid rain ETS does *not* create or assign new property rights in allowances, though many functions normally attributed to property rights are granted to allowance holders. Although the allowance is not a property right, it has qualities of ownership in the sense that the allowance holder can exclude all others from the usus, fructus, and abusus of his or her allowances (with the exception of the federal government). This includes the right to possess, exclude, and transfer the emission allowances.

The transfer of emission allowances happens through the EPA registry, which is available online to record transfers. According to §403(b) of the CAA, the “[t]ransfers of allowances shall not be effective until written certification of the transfer, signed by a responsible official of each party to the transfer, is received and recorded by the Administrator.” The market maker of the Acid Rain Program is the Chicago Board of Trade and one of the main brokers is Cantor Fitzgerald Environmental Brokerage Services.

2. Accounting

There is no unified accounting standard in the United States for the SO_x allowances. The U.S. Securities and Exchange Commission (SEC) has not yet made any decisions with regard to SO_x allowances or ERCs and does not (yet) seem to regard the rights as falling under its jurisdiction. This approach is very similar to the soft touch approach of Australia and the United Kingdom.⁴¹ This means that emission trading is not considered relevant to the securities regulator, unless the market develops further and creates much higher flow of capital. Only the utilities regulator in Oregon issued an official decision.⁴² It granted a blanket authorization for a utilities company to sell allowances. It only requested that the contracts should be registered in the Federal Energy Regulatory Commission Account 411.8, Gains From Disposition of Allowances. The general accounting rules of the United States appear to be that an asset is booked at the price paid for it. Only in very exceptional cases do state accounting rules allow an asset to be listed at its fair market value such as the trading of shares in exchanges, bonds, or derivatives if they are not intended for long-term investment but trade. Recently, certain irregularities in the Enron Corporation bankruptcy case have called further attention to the particularities of these accounting rules. Enron used market-to-market accounting and apparently the exotic nature of certain assets allowed it to assign aggressively favorable valuations.⁴³ In the aftermath of these events, much debate. It is important to note, however, that International

40. Some countries might not have a federal court, and alternative administrative law structures could be more appropriate in such instances.

41. See Simon Page, *Focusing on the Bottom Line*, ENVTL. FIN., Sept. 2002, at 26.

42. Public Utility Commission of Oregon, Order No. 96-023 (Jan. 12, 1996).

Accounting Standards Board (IASB) is currently developing international standards for accounting for emission allowances in the context of the International Financial Reporting Standards (IFRS). The work, which is conducted by the International Financial Reporting Interpretations Committee (IFRIC), a part of the IASB, has been triggered by the establishment of the EU ETS. In May 2003, the IFRIC circulated a draft paper addressing the appropriate treatment of allowances traded within an ETS.⁴⁴

According to the paper, allowances are intangible assets rather than financial assets (IAS 38 Intangible Assets). The obligation to deliver allowances equal to emissions that have been produced is a liability and, where allowances are allocated for free or below-market value, they constitute a government grant (IAS 20). This IFRIC interpretation received substantial criticism that it would distort the market, because an increase in value of the liability (increase of emissions) and an increase of value of allowances (taken to the company's reserves) would be accounted for at different times. Taking into account the comments received, the IFRIC recommended in December 2003, that a separate class of intangible assets be created within an amended IAS 38 for allowances.⁴⁵ The IASB is currently amending and revising IAS 38 and IAS 20 to, among other things, reflect these changes.⁴⁶

3. Taxation

Currently, SO_x allowances are taxed on a zero-cost basis. This is positive for the tax treatment of allowances held by operators, as they pay no tax. But once a sale (or trade) takes place, the full price counts as income and the relevant taxes apply. This indirect taxation method encourages firms to hold onto allowances over the long term—it would appear to be a disincentive for trading. Larry Parker and Donald Kiefer in their Congressional Research Service report from March 2003, state:

Under a net income tax regime, income is subject to taxation and the cost of earning the income is deductible. Hence, the cost of allowances used by a utility in connection with the generation of electricity sold during a year should be deductible in that year. If allowances are sold, the sales proceeds minus the cost of the allowances should be taxable.⁴⁷

The tax treatment was uncertain before general guidance was provided by the Internal Revenue Service (IRS) in late 1992.

Under the IRS tax rules interpretation, allowances deriving from the EPA allocation process are not regarded as receipt of taxable income. Generally, emission allowances are regarded as capital assets of utilities:

The costs of acquiring and holding the allowances, including any amount paid to purchase them or legal or accounting fees, must be capitalized. The costs cannot be depreciated or otherwise deducted prior to the time the allowances are used. The costs constitute the utility's tax "basis" in the allowances. Generally, a utility will be allowed to deduct the basis of allowances used to offset emissions during a year. If allowances are sold or exchanged, the proceeds minus the basis of the allowances will be treated as a capital gain or loss.⁴⁸

Capital gains are taxed in the United States the same as other business income. Capital losses, however, can be deducted back three years and forward five years to offset capital gains.

For the purpose of future policy lessons, do the U.S. taxation rules increase the cost of the acid rain allowance trading system? The answer is that, for the most part, they do not appear to do so. The cost effects of taxation, for acid rain allowances, are different from other costs (such as transactions costs or monitoring costs, which occur in addition to the costs of purchasing and accounting for emission allowances). If the tax system imposes costs, these are probably simply reflected in the price of emission allowances. And even if there were no effect on the price of allowances, then the only effect of the tax system would be to reduce profit from the sale of allowances—profits that would not exist in the absence of the allowance trading system. The effects of tax costs in different hypothetical situations can be estimated, and only appear relevant in two instances. First, a firm might invest in emissions reductions beyond the necessary caps, to generate emissions for sale. It is generally thought that income tax provisions would mitigate this effect. Second, allowances may be purchased to hold for future sale. This effect could be small as it involves only allowances which are purchased for future sale, but not those allocated to the firm, then held for future sale. As such, Parker and Kiefer find that, except for this fairly minor exception regarding capital losses on purchased allowances held for future sale, the U.S. taxation method does not seem to impose additional costs on the allowance trading system.⁴⁹

43. See Jeremy Weinstein, *Examining Enron's SO₂ Emission Trades*, ENVTL. FIN., Mar. 2003, at 22. Enron did apparently also engage in mock sales and assigned high value for those transactions as well.

44. The draft paper is available on the Internet at <http://www.iasc.org.uk/docs/ifric-d01/d-01.pdf>.

45. IASB to revise emissions trading account standard, <http://www.Pointcarbon.com/article.php?articleID=3013&categoryID=147&PHPSESSID=5596fbb0906acbf9c2cc8da75680ad7>.

46. For more detail, see International Workshop on the Legal Nature of Emissions Reductions (unpublished background paper, May 25-26, 2003).

47. Larry B. Parker & Donald W. Kiefer, *Implementing SO₂ Allowance Trading: Implications of Transaction Costs and Taxes*, Congressional Research Service Rep., Mar. 12, 1993, available at <http://www.ncseonline.org/nle/crsreports/air/air-11.cfm?&CFID=8617666&CFTOKEN=94846491#TAX%20IMPLICATIONS%20FOR%20ALLOWANCE%20TRADING>.

48. *Id.*

IV. U.S. NO_x Trading Schemes

A. Ozone Transport Commission (OTC) NO_x Budget Program

Another model for an ETS which has been operating for some time is the U.S. NO_x Trading Scheme. In September 1994, the OTC⁵⁰ adopted a memorandum of understanding (MOU) to achieve regional emission reductions of NO_x.⁵¹ These reductions were additional to previous state efforts to control NO_x emissions, which included the installation of reasonably available control technology. In signing the MOU, states committed to developing and adopting regulations that would reduce regional NO_x emissions. The goal of the NO_x Budget Program is to reduce regional summertime NO_x emissions as a part of each state's effort to attain the national ambient air quality standards for ground-level ozone.⁵² These NO_x reductions will take place in two phases: the first phase began on May 1, 1999, and the second phase was scheduled to begin on May 1, 2003.

The NO_x Budget Program is meant to create an integrated interstate emissions trading program to reduce NO_x emissions among the OTC states. To achieve this, OTC states developed a model rule identifying the key elements that should be kept consistent in the design of regulations, for all participating states (see Box 3).

All state members of the OTC, with the exception of Vir-

Box 3: Consistent Elements of Model NO_x Rule

- Program applicability,
- Control period,
- NO_x emissions limitations,
- Emissions monitoring,
- Recordkeeping of emissions and allowances, and
- Electronic reporting requirements.

ginia, have adopted laws that transpose the model rule into state legislation, though they do differ in some details (see below). The overall NO_x budget was established by applying the OTC MOU emission reduction targets to each source contributing to the 1990 baseline for NO_x emissions. The NO_x budget was then divided among the participating states, which allocate allowances to their respective sources based on their state regulations.

The NO_x Budget Program involves an allowance trading system similar to the Acid Rain Program described above. Each allowance permits a source to emit one ton of NO_x during the control period for which it is allocated. For each ton of NO_x discharged in a given control period, one allowance is retired and can no longer be used. Allowances may be bought, sold, or banked. Each source must demonstrate at the end of each control period that actual emissions do not

exceed the amount of allowances held for that period. However, regardless of the number of allowances a source holds, it cannot emit at levels that would violate other federal or state limits.

Generally, the program affects electric utilities and large industrial boilers. Specifically, the program affects all fossil fuel-fired boilers or indirect heat exchangers with a maximum rated heat input capacity of 250 million British thermal units per hour or more; and all electric-generating facilities with a rated output of 15 megawatts or more. In addition, states have the option of subjecting additional source categories not mentioned in the MOU to the program. Other stationary sources of NO_x emissions have the option of voluntarily complying with the program, i.e., opt-in, on an individual basis.

1. Legal Nature of NO_x Allowances

The OTC NO_x Budget Model Rule (model law) proposes the following definitions with respect to allowances:

Allowance means the limited authorization to emit one ton of NO_x during a specified control period, or any control period thereafter subject to the terms and conditions for use of banked allowances as defined by this rule. All allowances shall be allocated, transferred, or used as whole allowances. To determine the number of whole allowances, the number of allowances shall be rounded down for decimals less than 0.50 and rounded up for decimals of 0.50 or greater.⁵³

As suggested above, there are certain differences in the details of state laws. For example, the New York Environmental Conservation Law §227-3.3(b)(6) defines NO_x allowances as “[t]he limited authorization to emit one ton of NO_x during a specified control period, or any control period thereafter. An allowance shall not constitute a security or other form of property.”

The term allowance shows that the members of the OTC were careful not to choose the term “right,” due to the considerations discussed above for the acid rain ETS. The definition chosen by New York emphasizes this by noting that a NO_x allowance does “not constitute a security or other form of property.” This excludes the jurisdiction of the SEC and any takings claim under the federal Constitution or the New York Constitution.

This definition of the allowances echo the legal issues noted above with respect to the Acid Rain Program. The issue is made particularly stark in the New York definition—while the allowance does not constitute a security or other form of property, it can be allocated, transferred, or used as whole allowances, and can even be transferred and used in the following compliance period, a right which is commonly referred to as the bankability of credits and allowances. This means unused credits and allowances do not lose their entire value but provide an additional incentive for overcompliance, even if a company does not trade, or makes trading more interesting for companies that have reached a level of compliance but want to prepare for the years to come.

The OTC NO_x Budget Model Rule (model law) proposes

49. *Id.*

50. The OTC is comprised of the U.S. states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, the District of Columbia, and the northern counties of Virginia.

51. Virginia did not sign the MOU.

52. See U.S. EPA, *Clean Air Market Programs*, at

the following definitions with respect to allowance transfers:

Allowance transfer means the conveyance to another account of one or more allowances from one person to another by whatever means, including but not limited to purchase, trade, auction, or gift in accordance with the procedures established in Section (8) of this rule, effected by the submission of an allowance transfer request to the NO_x allowance trading program (NATS) Administrator.⁵⁴

As such, an allowance can be “purchase[d], trade[d], auction[ed], or gift[ed]” though only “in accordance with the procedures established in Section (8) of this rule.” Two issues are of particular interest here, for future domestic legislation concerning emissions allowances and other legal constructs.

First, while NO_x allowances can be accumulated, even banked, they cannot be used to push emissions beyond legal caps or limits of other federal or state programs. This is due to the extremely local effects of low-level ozone—whose effects in this regard significantly differ from those of CO₂, which does not constitute a local pollutant. Should one source be able to obtain enough allowances to pollute too much, it leads to a situation in which the very nature of the allowances is actually limited by the number of allowances a source holds. Too far over other regulatory limits, and their allowances become worthless to them—they cannot be used, only traded.

Second, all transfers only take place in accordance with the procedures established by the law and approved by the environmental regulator. A request to transfer must be approved by EPA. As such, the government retains quite strict control over the emissions.

B. CAA §126 and the Federal NO_x Budget Trading Program

The federal NO_x Budget Trading Program is another potential federal ETS available to states. The federal NO_x Budget Trading Program was established in May 1999, as part of the NO_x state implementation plan (SIP) call.⁵⁵ This is a federal order to establish SIPs for federal air quality standards. CAA §110 authorizes EPA to call for plans by which individual states lay out their plans to adhere to federal air quality standards. The trading program is meant to be the general control remedy for sources that will be subject to any future finding under petitions under CAA §126 (ozone transport rule). The trading program includes provisions for applicability, allocations, monitoring, banking, penalties, trading protocols, and program administration. States choosing to participate in the NO_x Budget Trading Program have the flexibility to modify certain provisions within the model rule.

One innovative provision stands out in particular, the special demand-driven stimulus mechanism attempted for the system as a whole. Under CAA §126, states may petition EPA to take action to mitigate significant transport of NO_x,

one of the main precursors of ozone. As a result of petitions already filed, 392 facilities in Delaware, the District of Columbia, Indiana, Kentucky, Maryland, Michigan, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Virginia, and West Virginia are required to reduce annual emissions by a total of nearly 510,000 tons from 2007 levels. According to the rule, each affected facility will participate in the federal NO_x Budget Trading Program.

Due to court challenges,⁵⁶ however, the §126 rule and the SIP call have not been effectively implemented.⁵⁷ On March 27, 2003, EPA proposed to withdraw the §126 rule, because it saw a doubling with the SIP call. EPA's long-term goal under the SIP call is to harmonize and integrate the SIP call with the OTC system.

V. Ontario's Mixed ETS

Ontario's ETS is the first provincial air emissions trading program in Canada. The scheme includes the Emissions Trading Code, which introduces the use of market-based instruments for reducing emissions of NO_x and SO_x in the province.⁵⁸ The code is intended to supplement Ontario Regulation 397/01, which governs emissions trading under the Ontario Environmental Protection Act.⁵⁹ Emissions trading officially began on December 31, 2001.

The Ontario system is designed as a cap, credit, and trade variety, which combines cap-and-trade features with those of a baseline-and-credit system.⁶⁰ As such, it offers some ideas of how programs based on allowances can fit together with programs based on credits, as well as the challenges that the linking of the different type of systems implies.

Only the six fossil fuel-fired power plants of the provincially owned Ontario Power Generation (OPG) are currently included in the scheme; however, beginning in 2004, the provincial government plans on expanding the system to include other emitters, such as currently uncapped electricity generators as well as major industrial emitters (the pulp and paper sector, cement and concrete manufacturers, iron and steel manufacturers, petroleum refineries, chemical manufacturers, and non-iron smelters).

During the first phase of the program, the Ontario Minis-

54. *Id.*

55. U.S. EPA, Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone, 40 C.F.R. pt. 52 (1997).

56. For example, on May 15, 2001, the court issued a decision in *Appalachian Power v. EPA*, 249 F.3d 1032, 31 ELR 20635 (D.C. Cir. 2001) concerning the §126 Rule (§126 Decision). As part of that decision, the court remanded the heat input growth rates that EPA used to calculate NO_x emission budgets set in response to several petitions by northeastern states under §126 of the CAA. The court remanded these growth rates to EPA to either properly justify the growth rates currently used by EPA or to develop and justify new growth rates. On June 8, 2001, the court issued a similar decision in *Appalachian Power v. EPA*, 251 F.3d 1026, 31 ELR 20670 (D.C. Cir. 2001) concerning heat input growth rates used to develop NO_x emission budgets used in the NO_x SIP call related to interstate transport of ozone (Technical Amendments Decision). The court raised concerns about EPA's explanation of the methodology for developing projected heat input growth rates and about states for which heat input for electric-generating units had already exceeded the heat input that EPA projected for 2007.

57. For details, see ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 591 (3d ed. 2000).

58. Future considerations include adding GHGs such as CO₂ to the list,

<http://www.epa.gov/airmarkets/otc/index.html>.

59. See U.S. EPA, *OTC NO_x Budget Model Rule*, at <http://www.epa.gov/airmarkets/otc/otcrule.zip>.

try of the Environment was responsible for allocating NO_x and SO_x emission allowances to OPG, which then distributed these allowances among their stations, free of charge. Beginning in 2004 for SO_x, and in 2008 for NO_x, all electricity generators in the province will apply individually for allowance allocations based on their production estimates for the coming year. With a cap on the total number of emissions, allowances will be allocated by the Ontario government to these additional generators at the end of the year based on each station's electricity production during the year.

Unlike the allowances, which are assigned to help firms become compliant with regulatory limits, ERCs are generated by the firms themselves. In order to obtain ERCs for use or trade, companies must implement an emission reduction project in accordance with approved standard methods (SMs). Companies can either use one of the pre-approved SMs⁶¹ or can propose a new method, which must be approved by the Ministry. This approach is intended to enable the Ministry to ensure that proponents' projects are consistently evaluated and determined, and that the process is predictable and transparent. Both types of credits can equally be used for compliance purposes.

A company may only use a limited amount of ERCs. The regulation sets the ratio between allowances and credits in the following way: the maximum allowable use of ERCs to an emitter will be limited to 33% of allowances used for NO_x and 10% of allowances used for SO_x. In addition, there will be a 10% discount of all retired (used) ERCs for the benefit of the environment. In other words, no more than 33% of the NO_x obligation can be met by created ERCs and not more than 10% of the SO_x. This limitation was set to ensure that the local air quality actually benefits from the system. It still leaves 90% of the generated ERCs to be used by emitters to meet compliance obligations.⁶² So a new SM would need to be approved by the Ministry, but would then generate a set of credits for the firm in question, 10% of these would be retired, while the others could be traded or sold on the SO_x and NO_x markets to other firms.

A. Legal Nature of Allowances and Credits

A rather circulatory definition of allowances and credits for the Ontario scheme is found in Article 1 of the Emissions Trading Regulation (O. Reg. 397/01):

Definitions — In this Regulation, [. . .]

as well as toxic and cancer-causing compounds such as mercury, cadmium, and arsenic.

59. Ontario Emissions Trading Code, at http://www.ene.gov.on.ca/envision/env_reg/er/documents/2003/XA03E0001.pdf.

60. The U.K. Trading Scheme also includes a baseline-and-credit system, which complements the cap-and-trade system.

61. For example, the installation of low NO_x burners on electricity generators. These are designed to reduce NO_x production in boilers by controlling air/fuel mixing to affect combustion reaction.

62. The provision reads rather complicated. Section 26 of the Ontario Regulation on emissions trading, Limits on retirement of ERCs—ratio of credits to allowances limits:

(1) The owner of a facility may not retire an amount of nitric oxide emission reduction credits in a year for the purpose of subsection 20 (4) [use for compliance] unless the following statement is true: $(A - B) \times 0.9 = C \times 0.33$ where, A = the total amount of nitric oxide emission reduction credits that are retired in the year for the purpose of subsection 20 (4), B = the

emission allowances means nitric oxide emission allowances or sulphur dioxide emission allowances;

emission reduction credits means nitric oxide emission reduction credits or sulphur dioxide emission reduction credits [. . .].⁶³

The combination of an allowance cap-and-trade and a baseline credit system is particularly interesting for our analysis. The use of credits to fulfill emissions obligations is innovative, as the two systems are normally kept separate. The goal of air quality protection clearly remains at the heart of the Ontario scheme; the likely result of massive credit creation would mean substantial increase in the number of energy saving projects, but also substantially lessen the desired improvement of air quality. This is particularly important, because the cap only applies to allowances and not to credits. This explains the different treatment of ERCs and emission allowances.

B. Title and Transfer

The Ontario Legislature has limited the creation of credits in foreign countries by recognizing only those credits created through approved activities using SMs and only those created in Ontario or the OTC states.⁶⁴ Though not explicitly stated in the Ontario regulation, there seems to be some understanding that after the relatively complicated approval process, title to these credits is held by the owner of the reduction project.

The restriction on the U.S. states of origin, preventing them from being permitted to generate recognized credits, is currently being challenged. An applicant is trying to get very significant NO_x reductions from a plant in Missouri recognized as ERCs.⁶⁵ Relying on §18(3) of the Regulations, the applicant submits that the Ontario government cannot refuse to recognize the credits simply because they were created outside the preferred areas:

Despite subsection (2), emission reduction credits may be created as a result of an emission reduction project undertaken outside the areas referred to in subsection (2) (basically all areas in Canada and in the US those States that have NO_x trading schemes) if the Director is satisfied that reductions of nitric oxide emissions or sulphur dioxide emissions achieved by the project have a measurable effect in Ontario.⁶⁶

However, rather than questioning the alleged effects in Ontario, the Ministry disputed the ownership of the credits under §18(1) and (2). Section 18 states: “(1) Subject to subsections (2) and (3), a person may create emission reduction credits in accordance with the Ontario Emissions Trading Code” and “(2) Emission reduction credits may be created only as a result of an emission reduction project undertaken in Ontario [. . .]” or in the preferred areas in the United States. The Ministry raised the question of who actually created the credits—the owner of the facility, the applicant or somebody else. The case has not yet been resolved, but it appears that the applicant will likely turn out to be the creator

amount of nitric oxide emitted from the facility in the previous year because of reliability must run contracts as defined in the market rules or directions given by the IMO under the authority of the market rules, C = the total amount of nitric oxide emission allowances that are retired in the year for the purpose of subsection 20 (4).

of the new ERCs, as only the applicant has an interest in creating credits for the purpose of the Ontario regulation.

Both allowances and ERCs can be traded freely, within the limits of certain specific restrictions applying mainly to the credits. First, the use of ERCs to meet emissions obligations is limited to those whose emissions originated in Ontario, the 12 key states named in the Ozone Annex⁶⁷ or the District of Columbia. Second, credits can only be claimed for a 12-month accumulation period, and allowances and ERCs may only be used once. Third, while unused allowances and ERCs may be banked for future use, they are subject to a discount factor.

The Ontario Emissions Trading Regulation also contains rules for the Emissions Trading Registry.⁶⁸

Box 4: Ontario Emissions Trading Registry Functions

- Provides notice to the public of the distribution of NO_x and SO_x Emission Allowances,
- Provides notice of the application for and the creation of NO_x and SO_x ERCs,
- Provides public access to all documentation submitted in support of an application to create an ERC, and
- Records decisions about credit creation and credit and allowance retirement.

VI. General Conclusions

The above case studies of existing ETS provide valuable insights on the legal nature of allowances and ERCs. For domestic legal systems addressing credits and allowances, or mixtures of both the following points can be highlighted from the legal experiences of the case studies.

A. On the Legal Nature of Allowances

In the U.S. experience, in particular, there have been substantive discussions about the legal nature of future allowances. The term allowance was chosen to reflect the governmental nature of the allocation and to explicitly exclude the idea that a property right was being created. On the one hand it is recognized that some form of ownership is necessary to have a meaningful market and to initiate trading; but, on the other hand, it is recognized that the reduction of the overall number of allowances is a necessary environmental policy measure. The characterization of the legal nature of an allowance oscillates between these two poles. We conclude that the ownership of allowances does not include the right to exclude the government, but rather only the right to exclude other private or public entities that take part in the market place.

B. On Title and Transfer

As has been suggested, the legal nature of allowances is difficult to describe; however, some level of ownership is necessary to have a meaningful marketplace. The transfer of credits and allowances within the trading system is done through registries which, in most cases are free and computerized, making this activity quite simple. The linkages between different trading systems is illustrated in the example of Ontario. The Ontario Emission Trading Code sets specific criteria about the transfer of foreign, i.e., U.S., allowances or the creation of credits in a foreign country. With respect to credits there do not seem to be any import duties or the application of customs laws. However, it should be noted that their creation needs to be verified and tightly documented.

VII. Legal and Policy Lessons From SO_x and NO_x Allowances and Credit Systems

A. Clear Legal Definitions Are Essential

The concrete domestic legal definition of emission trading credits determines crucial aspects of the trading. The U.S. Acid Rain Program showed that the refusal to create a property right to prevent takings claims did not harm the trading since the program clearly defined the rights and duties of all parties involved. The properties identified in the U.S. SO_x and NO_x regimes give a good example of a starting point for such legal definitions.

B. Different De Facto Property Rights Apply to Governments Versus Private Actors

There is no property right in allowances vis-à-vis the U.S. government. This gives the federal government the necessary freedom to change the system, and withdraw allowances from the market. However, allowances appear to function as de facto property rights with regard to sub-national entities (states) and even more so with regard to other firms, investors, or citizens. The Certificate of Representation required by the U.S. SO_x program is one legal mechanism to ensure that assigned rights, including provisions for specific investors and creditors, are recognized in the context of contractual undertakings.

C. Assignment of Legal Title Is Necessary as a Basis for Trading

The assignment of title is necessary for trading despite unclear definitions of property rights. The legal elements and objectives of the Ontario Transfer Registry provide one useful example of the legal functions of an Emissions Trading Registry which functions in a mixed credit and allowance system.

D. In Federal Legal Systems, Consistency Is Desired

63. See http://www.ene.gov.on.ca/envision/env_reg/er/documents/2001/RA01E0020-A.pdf.

64. See *supra* note 31.

pretations and definitions, where a single jurisdiction or uniform law is not possible.

In addition, as found in the *Ormet* case for U.S. acid rain allowances, disputes should be settled in federal courts, with one consistent interpretation of the relevant law between private parties and governments, and even between two private parties.

E. It Is Possible to Design a Mixed Allowance and Credit Scheme

Legal practice with regard to the generation of emission credits under the Ontario ETS bears some valuable lessons for the future treatment of created carbon emission reduction credits. It shows that the linkage of an allowance and a credit system is possible.

F. Indirect Taxation Can Create Disincentives

Direct taxation of credits does not exist in the case study systems evaluated above, and is highly unlikely to be established. However, various methods of indirect taxation appear to exist, and in the context of U.S. legislation, have been affirmed by the IRS. These currently create a slight disincentive for sale, trade, and transfer of allowances, though the charges are thought to become quickly reflected in the price of emissions. These provisions can affect varied factual situations differently, and the main problems occur only in limited situations where a firm purchases allowances to save them for resale.

Example of Indirect Taxation Rules on Allowances⁶⁹

- If a utility receives assigned allowances and using it to offset emissions during a year, there are little or no tax consequences. The allowances have no effect on the utility's tax status when they are received; they have a zero basis. So when used, they will not result in a deduction.
- If the utility sells assigned allowances, the proceeds of the sale will be taxable, and, since the basis of the allowances is zero, there will be no deduction to offset the income.
- If the utility invests in further reductions, in order to generate extra allowances for sale, the situation will be the same. The cost of the reduction investment will not become the basis of the allowances. The cost of the investment in pollution control equipment (or fuel switching equipment, etc.) will be capitalized and depreciated, just as in the past. The extra assigned allowances will still have zero basis, so the proceeds of their sale will be fully taxable.
- If the utility purchases allowances, the purchase price (plus any other costs such as brokerage fees associated with the purchase) will be the basis of the allowances. When the allowances are used, a tax deduction can be taken for their basis. If purchased allowances are later sold, the proceeds minus the basis will be a capital gain or capital loss.

It is also worth noting that in cases of the transnational trades in allowances and credits, value added taxes (VAT) issues need to be considered. With respect to the EU ETS, it is the British government's view is that an EU allowance will be classed as a supply of services and as such will be subject to VAT at the standard rate when traded on the open market.⁷⁰ An important question in this context is the question of the place of supply, i.e., whether the place the recipient of the supplier of allowances is located. Finally, there are still open questions as to the requirement of VAT taxation of the issuance and allocation of EU allowances.⁷¹

G. There Is a Need for Standardized Allowance and Credit Accounting Methods

International formal accounting rules for emission allowances are currently being developed.

The accounting of emission credits is being handled heterogeneously. There is, as of yet, not one accounting standard. One of the questions remains whether assigned allowances need to be treated differently from allowances that have been acquired through sale or auctions and thus have a price to go into the books. The newness of the instrument has allowed traders to put fantasy numbers into their balance sheets. More homogeneity in the accounting is desirable and emerging in Europe, but those standards might need to be elaborated and applied in developing countries and for other regions.

66. §18(3) Ontario Emissions Trading Regulation, O. Reg. 397/01.

67. See *supra* Part IV.

65. Missouri is not one of the recognized OTC states.

Annex I—ETS and Emission Registries

Country/State/ Province	Law(s) governing the ETS or Emission Registry	Internet link to the legal text	Definition of Carbon Credit/Emission Reduction
			Article 3 1. The Parties included in Annex I shall, individually or jointly, ensure that their aggregate anthropogenic CO ₂ equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts, calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B and in accordance with the provisions of this Article, with a view to reducing their overall emissions of such gases by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012.
	Directive 2003/. . ./ EC of the European Parliament and of the Council of establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC. (Proposed 18 March 2003)	http://europa.eu.int/comm/environment/climat/030318commonposition_en.pdf	Article 3 Definitions For the purposes of this Directive the following definitions shall apply: (a) “allowance” means an allowance to emit one tonne of CO ₂ equivalent during a specified period valid only for the purposes of meeting the requirements of this Directive and which is transferable in accordance with the provisions of this Directive; (b) “emissions” means the release of greenhouse gases into the atmosphere from sources in an installation; (c) “greenhouse gases” means the gases listed in Annex II; (d) “greenhouse gas emissions permit” means the permit issued in accordance with Articles 5 and 6; . . .
			Schedule 1 – Interpretation: “annual target” means, in relation to a direct participant, the participant’s original annual target (being the amount by which the participant must reduce his annual emissions in each commitment year), determined in accordance with Part 1 of Schedule 2, as amended from time to time in accordance with Schedule 3. “CO ₂ equivalent” or “CO ₂ e” means: (a) in relation to CO ₂ the actual quantity of those emissions; and (b) in relation to any other greenhouse gas the quantity of CO ₂ which has the same global warming potential as those emissions (as specified by the Intergovernmental Panel on Climate Change in their Second Assessment Report “1995 IPCC GWP values”). “emissions” means emissions, measured in tonnes of CO ₂ equivalent, of one or more greenhouse gases, including both direct and indirect emissions. “greenhouse gases” means CO ₂ , methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride and any other gas added to the list in Annex A to the Kyoto Protocol from time to time.
	Act on CO ₂ quotas for electricity production - Act No. 376 of June 2, 1999.		Individual electricity producers are operating under an annual CO ₂ emission cap in the period 2000-2003. Tradable emission allowances are given to the power producers, using an adjusted version of the grandfathering principle. The allowances are bankable. If an emission cap is exceeded, a tax of DKK 40 per tonne of CO ₂ is paid to the state. Any tax revenue is to be used for energy-saving measures.
			Artículo 3. - Para los efectos de esta ley, se entenderá por: (a) Bono de descontaminación: Instrumento público susceptible de todo acto, contrato o gravamen, transable en el Sistema de Bonos de Descontaminación, que representa total o parcialmente un cupo de emisión, considerando su periodo de vigencia y/o la magnitud de emisión que representa. (c) Cupo de emisión: Magnitud determinada de emisión de un contaminante específico, autorizada para una fuente existente o participante, considerando un determinado periodo de vigencia y fase. Este cupo podrá ser divisible tanto en su magnitud, como en su vigencia, pudiendo transferirse, de acuerdo a las disposiciones de la presente ley, en la medida que se haya constituido el respectivo bono de descontaminación.

Annex I—ETS and Emission Registries (cont.)

Country/State/ Province	Law(s) governing the ETS or Emission Registry	Internet link to the legal text	Definition of Carbon Credit/Emission Reduction
	Protection of the Environment Operations Amendment (Tradable Emission Schemes) Act 2000 No 91 – Now Part 9.3A of the Protection of the Environment Operations Act 1997 No 156. Hunter River Salinity Trading Scheme – Regulation 2002		
	Voluntary Greenhouse Gas Emissions Reductions Registry – Chapter Env-A 3800 Discrete Emissions Reduction Trading Program – Chap. Env-A 3100 Emissions Reduction Credits Trading Program – Chap. Env-A 3000	http://www.des.state.nh.us/ard/enva3800.pdf http://www.des.state.nh.us/ard/enva3100.pdf http://www.des.state.nh.us/ard/enva3000.pdf	Env-A 3803.01: GHG means but is not limited to such gases as CO ₂ , methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, or sulfur hexafluoride. Env-A 3803.04: Is applicable to “any entity, building, structure, facility, installation, article, or thing which, in the opinion of the commissioner, emits or may emit a greenhouse gas.” Env-A 3808.01: The amount of GHG voluntary emission reductions (VERs) shall be calculated in accordance with the general guidelines for the voluntary reporting of GHGs under section 1605(b) of the Energy Policy Act of 1992 and this part. Env-A 3102.13 “Discrete emission reduction (DER)” means “discrete emission reduction (DER)” as defined in the US EPA’s proposed Model Open Market Trading Rule (60 FR 39668, August 3, 1995), namely, “an emission reduction generated over a discrete period of time, and measured in weight (e.g., tons).” Env-A 3002.12 “Emissions reduction credits (ERCs)” mean “ERCs” as defined in RSA 125-J:1, XIV, namely “the actual air pollutant reductions from an ERC emission source that have been certified by the department as: (a) Enforceable; (b) Permanent; (c) Quantifiable; (d) Real; and (e) Surplus.”
	Open Market Emissions Trading Program (Effective 15 May 2000), NJ Administrative Code, Title 7, Chapter 27, Subchapter 30. (N.J.A.C. 7:27-30)	http://www.state.nj.us/dep/aqm/njac-30.pdf	7:27-30.2 Definitions “Carbon equivalent” means the weight of a quantity of a greenhouse gas multiplied by its global warming potential and then also multiplied by the ratio of the molecular weight of carbon to that of CO ₂ . “Creditable emission reduction” shall have the meaning defined for this term at N.J.A.C. 7:27-18.1. “DER credit” or “credit” means a tradable entity, based on discrete emission reductions which meet the applicable requirements in this subchapter at N.J.A.C. 7:27-30.4(e) or (f) and at N.J.A.C. 7:27-30.6. The value of such a credit shall be given in units of weight, such as pounds or tons. There are three types of DER credits: VOC credits, NO _x credits, and GHG credits. “Discrete emission reduction” (DER) means a quantity of emission reductions, given in units of weight such as pounds or tons, that were realized over a finite period of time and have been quantified in accordance with this subchapter. “GHG credit” means a DER credit based on reductions of a greenhouse gas. One GHG credit has an assigned value of one metric ton (2,205 pounds) of carbon equivalent.

Annex I—ETS and Emission Registries (cont.)

Country/State/ Province	Law(s) governing the ETS or Emission Registry	Internet link to the legal text	Definition of Carbon Credit/Emission Reduction
	Voluntary Emission Reduction Registry, Chapter NR 437 (Effective 1 November 2002)		NR 437.02 Definitions: (2) “Carbon dioxide equivalent” means the amount of CO₂ that would have the same global warming potential as a given amount of another greenhouse gas. The CO₂ equivalent amount of any greenhouse gas is calculated by multiplying the mass of the greenhouse gas by the global warming potential for that gas. (4) “carbon sequestration” means the establishment or enhancement of a carbon reserve. (14) “Voluntary emissions reduction” or “VER” means any emission reduction, avoided emissions or carbon sequestration that occurs before it is required by law or that results in emissions that are lower than those allowed by law. NR 437.03 – Defines when a VER is eligible for registration. NR 437.06 (1) VERs and baselines shall be quantified on either a mass or a rate basis, or both. Mass-based VERs shall be quantified and registered as total tons or pounds per year. Rate-based VERs shall be quantified and registered as tons or pounds per unit of input or output.
	The California Climate Action Registry – SB 1771, with technical amendments made through SB 527 (signed 13 October 2001 finalizing structure of Registry) Registry officially launched 13 October 2002.	Link to program description: http://www.climateregistry.org/ Link to enabling legislation: http://www.climateregistry.org/files/SB1771.pdf Amended by: http://www.climateregistry.org/files/SB527.pdf	See Art. 4: Both gross emissions and efficiency metrics will be recorded. The Registry requires the inclusion of all direct GHG emissions, along with indirect GHG emissions from electricity use. The Registry will require the reporting of only CO₂ emissions for the first three years of participation, although participants are encouraged to report the remaining five GHGs covered in the Kyoto Protocol (CH₄, N₂O, HFCs, PFCs, and SF₆). The reporting of all six gases is required after three years of Registry participation. Art. 4 (c) (4) – Emissions and reductions of all gases under this subdivision shall be reported by multiplying actual measured emissions times their global warming potential for the 100-year timeframe, expressed as an equivalent of pounds of CO₂ as established by the IPCC.
U.S. SO ₂ Trading	Acid Rain Program – SO ₂ Cap & Trade program	SO ₂ Cap & Trade: http://www.epa.gov/airmarkets/arp/regs/index.html	SO₂ Program: Each allowance authorizes one ton of SO₂ emissions. 42 U.S.C. 7651b - Sulfur Dioxide Allowance Program for Existing and New Units “(a) ALLOCATIONS OF ANNUAL ALLOWANCES FOR EXISTING AND NEW UNITS.-(1) For the emission limitation programs under this title, the Administrator shall allocate annual allowances for the unit, to be held or distributed by the designated representative of the owner or operator of each affected unit at an affected source in accordance with this title, in an amount equal to the annual tonnage emission limitation calculated under section[s] 404, 405, 406, 409, or 410 except as otherwise specifically provided elsewhere in this title. Except as provided in sections 405(a)(2), 405(a)(3), 409 and 410, beginning January 1, 2000, the Administrator shall not allocate annual allowances to emit sulfur dioxide pursuant to section 405 in such an amount as would result in total annual emissions of sulfur dioxide from utility units in excess of 8.90 million tons except that the Administrator shall not take into account unused allowances carried forward by owners and operators of affected units or by other persons holding such allowances, following the year for which they were allocated.

Annex I—ETS and Emission Registries (cont.)

Country/State/ Province	Law(s) governing the ETS or Emission Registry	Internet link to the legal text	Definition of Carbon Credit/Emission Reduction
U.S. SO ₂ Trading (cont.)			
U.S. NO _x Trading (not a federal program, only applicable to some States in the United States)	Ozone Transport Commission NO _x Budget Program NO _x Budget Trading Program under the NO _x SIP call	http://www.epa.gov/airmarkets/otc/index.html http://www.epa.gov/airmarkets/fednox/index.html#noxsipcall <i>Laws:</i> Connecticut: 22a-174-22a Delaware: Regulation No. 37 District of Columbia Massachusetts: 310 CMR 7:27 Maryland: Maryland Register, Vol. 25, Issue 11 Friday, May 22, 1998 New Hampshire: Chapter Env-A 3200 New Jersey: N.J.A.C. 7:27-31 New York: Subpart 227-3 Pennsylvania: 25 Pa. Code Chapters 121 and 123 Rhode Island: Regulation No. 38	OTC NO _x Budget Model Rule (model law): Allowance means the limited authorization to emit one ton of NO _x during a specified control period, or any control period thereafter subject to the terms and conditions for use of banked allowances as defined by this rule. All allowances shall be allocated, transferred, or used as whole allowances. To determine the number of whole allowances, the number of allowances shall be rounded down for decimals less than 0.50 and rounded up for decimals of 0.50 or greater. Allowance transfer means the conveyance to another account of one or more allowances from one person to another by whatever means, including but not limited to purchase, trade, auction, or gift in accordance with the procedures established in Section (8) of this rule, effected by the submission of an allowance transfer request to the NATS Administrator. All state laws follow the model rule, but they differ in some of the details, see New York Environmental Conservation law §227-3.3(b) (6) <i>Allowance</i> . The limited authorization to emit one ton of NO _x during a specified control period, or any control period thereafter. An allowance shall not constitute a security or other form of property.

Annex I—ETS and Emission Registries (cont.)

Country/State/ Province	Law(s) governing the ETS or Emission Registry	Internet link to the legal text	Definition of Carbon Credit/Emission Reduction
Ontario SO ₂ /NO _x Trading		Regulation: http://www.ene.gov.on.ca/ envision/env_reg/er/ documents/2001/ RA01E0020-A.pdf http://www.ene.gov.on.ca/ envision/env_reg/er/ documents/2001/ RA01E0020-B.pdf Technical descriptions of NO _x /SO ₂ emission reductions: http://www.ene.gov.on.ca/ envision/env_reg/er/ documents/2001/ RA01E0020-C.pdf Ontario Emissions Trading Code: http://www.ene.gov.on.ca/ envision/env_reg/er/ documents/2003/ XA03E0001.pdf	