

This document replaces a previous version which is now out of date. The previous version of “Emissions Trading and NO_x and SO₂ Emissions Limits for Ontario’s Electricity Sector” is [still available](#).

Emissions Trading and NO_x and SO₂ Emissions Limits for Ontario’s Electricity Sector

A Technical Description of the Regulation:

The regulation sets limits for airborne emissions of nitrogen oxides (NO_x) and sulphur dioxide (SO₂) from Ontario’s larger electricity generators and defines the rules (the Code) for the creation and trading of the associated emissions reduction credits (ERCs) and allowances. Both NO_x and SO₂ lead to smog and acid rain.

Commencing in 2002, the regulation applied to the coal and oil-fired electric generating facilities of Lakeview, Nanticoke, Lambton, Atikokan, Thunder Bay and Lennox, all owned and operated by Ontario Power Generation (OPG).

In 2004, the regulation was expanded to cover:

- all generators over 25 megawatts (MW) capacity;
- who generate more than 20,000 megawatt-hours (MWh) of electricity and convey it to the Ontario Independent Electricity System Operator (IESO)-controlled transmission grid in a year; and
- who emit more than trace amounts of NO_x and SO₂; or
- generators who apply for and receive emission allowances.

In 2006, the regulation was expanded again to cover electricity generators in Ontario regardless of whether they sell to the IESO controlled grid.

The regulation also defines rules (the Code) for a system of emissions trading to provide a market-based mechanism to provide incentives for emissions reductions in all sectors of the economy. The Code can be modified as new “standard methods” for credit creation and accepted methods of measurement and electricity conservation actions are defined and added.

Four fundamental processes define Ontario’s system of emissions caps and emissions reduction trading:

- a) Establishing Emissions Limits and Allocating the Allowances
- b) Credit Creation
- c) Credit and Allowance Use
- d) Trading Administration

A. Establishing Emissions Limits and Allocating Allowances

NO_x

Annual Allocations for NO_x are outlined in Table 1: Emission Limits under O. Reg. 397/01.

Starting in 2007, special provisions are made to ensure that the allocation of NO_x allowances recognizes obligations under Annex 3 of the Agreement between the Government of Canada and the Government of the United States on air quality, distinguishing generators north and south of the 48th parallel (the latter being the Pollution Emission Management Area - PEMA).

For the independent fossil-fired generators NO_x allowances are allocated to these generators based on their electricity production. For example, if all the submitted information shows that a certain station will generate 25 per cent of the total power generated by all of the independent stations during the compliance year, say 2005, then this station would receive 25 per cent of the allowances allocated for that year for use in meeting their 2005 emissions obligation. The allowance application has to be made by June 1 of the preceding year with the allocation decision made by October 1. The station will be deemed to have received its allocation by January 1 of the compliance year. The actual true-up (leveling the difference between the actual emissions and the allowance allocation), would occur in the first few months of the following year (in 2006), when all regulated generators' power production and emissions for the compliance year (2005) are known.

Starting in 2008, all generators (including stations owned by OPG) must apply for NO_x allowance allocations based on their electricity production estimates for the coming year. The total NO_x allowances for the province will be 42.8 kilotonnes/yr; of this, the maximum allowance allocation for the PEMA will be 39.0 kilotonnes/yr.

SO₂

Annual SO₂ allowances are listed in Table 1. As with NO_x, the SO₂ allocation will be made at the beginning of the compliance year and in proportion to the estimated power produced by the specific generator relative to the total estimated power produced by all generators covered by the regulation. There is no PEMA qualifier for SO₂ allocations.

Set Aside

A "set aside" of emissions allowances of 1.5 kilotonne per year (kt/yr) of NO_x, and 4 kt/yr of SO₂ is created from within the allowances currently allocated to fossil-fuel-fired plants. These have already been deducted from the NO_x and SO₂ allocations that appear in Table 1. The "set aside" is accessible to approved new conservation and renewable energy projects which displace electricity produced from coal or oil-fired plants. Electricity savings will be measured in accordance with the "International Performance Measurement and Verification Protocol," sponsored by the Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy. If there are unused portions of the set aside at the end of the year, they will be returned to OPG up until the end of 2007; commencing in 2008, they will be returned to the common allowance pool.

Table 1: Emission Limits under O. Reg. 397/01

Year	IPP Allowances ¹ (kilotonnes)		OPG Allowances ¹ (kilotonnes)		Total Sector Allowances including Set Aside Allowance (kilotonnes)	
	NO/NO _x	SO ₂	NO/NO _x	SO ₂	NO/NO _x	SO ₂
2002	-	-	35 (NO)	153.5	36 (NO)	157.5
2004 ²	10 (NO)	-	25 (NO)	153.5	36 (NO)	157.5
2005 ³	12.6 (NO)	-	22.4 (NO)	-	36 (NO)	157.5
2006	21.3 (NO_x)	-	32.3 (NO_x)	-	55.1 (NO_x)	157.5
2007 ⁴	15.3 (NO_x)	-	26 (NO_x)	-	42.8 (NO_x)	131
	PEMA * 13.9 (NO_x)		PEMA * 23.7			
	Non-PEMA 1.4 (NO_x)		Non-PEMA 2.3			
2008	-	-	-	-	42.8 (NO _x)	131
					PEMA* 39	
					Non-PEMA 3.8	

The reporting metric changed from NO to NO_x effective January 1, 2006. 1 tonne NO 1.53 tonne of NO_x

In summary, allocation of NO_x allowances are guaranteed to OPG facilities until the end of 2007. In 2008, all facilities facing NO_x obligations under the regulation will compete for allowances on the basis of their electricity production. The

Notes

¹ Refers to stations Lambton, Nanticoke, Atikokan, Thunder Bay, Lennox and Lakeview

² Beginning in 2004, generating stations over 25 MW capacity that sold more than 20,000 MWh to the IESO controlled grid and that emitted more than trace amounts of NO_x and/or SO₂ were subject to the regulation. Their allowances are allocated in proportion to the power produced by their specific generator relative to the total power produced by all generators covered by the cap. In 2006 the regulation was expanded to cover all electricity generators in Ontario regardless of whether they sell to the IESO grid.

³ Prorated for partial year since Lakeview was required to cease burning coal by the end of April 2005 - * PEMA - Ontario generators located in the PEMA (Pollution Emission Management Area) of southern Ontario; Non-PEMA - Ontario generators located in the Non-PEMA area of Ontario

⁴) To meet the requirements of the Ozone Annex, NO_x allowances allocated to facilities south of the 48th parallel must not exceed 39.0 kilotonnes. For example, with the partitioning in 2007 and the renewable "set-aside", allocations to the large coal and oil-fired generators in the south are limited to 26 kilotonnes for OPG and 15.3 kilotonnes for IPPs (Independent Power Producers).

competitive allocation system for SO₂ allowances began in 2004. All allocations are made prior to the compliance year (“ex-ante”).

All generators facing NO_x and SO₂ limits under the regulation will be required to install continuous emission monitors (CEMs), or other emissions monitoring methods approved by the Ministry of the Environment that are at least as accurate as the estimates from CEMs.

B. Credit Creation

Eligibility for emissions reduction credit (ERC) creation is limited to emitters in 12 key states named in the Ozone Annex (New York, Pennsylvania, New Jersey, Delaware, Maryland, West Virginia, Kentucky, Ohio, Michigan, Indiana, Illinois, Wisconsin), the District of Columbia and Ontario. The regulation allows a “scientific over-ride” for credits created beyond these states. If acceptable scientific evidence is produced to show that emissions reductions at places outside these states will improve Ontario’s air quality, then these credits can be used (with appropriate discounting of the value of the credits) to meet the obligations under the Ontario emissions trading regulation.

Emissions reduction credits can be created by any emitter in the aforementioned area not facing obligations under the regulation but who takes positive action to reduce emissions at their site. The emissions baseline for any emitter will be set against emission rates in the year prior to when the credit creating action was taken. Credits will result from actions taken at the project level rather than the corporate level. Credits cannot be created by a company that reduces its emissions by going out of business or by cutting back on production.

Credits can only be claimed using a 12 month accumulation period, and only for actions taken since January 1, 2000, when the government formally proposed emissions trading.

For credit creation actions before January 2000, ERCs shall only be accepted if they:

- were submitted to the Pilot Emissions Reduction Trading (PERT) program for review and registration;
- meet the credit creation rules outlined in the Code; and
- are for emissions reductions created since July 1, 1998.

A reduction initiative or action will be able to create ERCs for a period of seven years from the date the initiative becomes operational; or until emissions from the subject facility or sector are included in emissions trading regulations; or until other emissions regulations reduce allowable emissions.

The Ontario Emissions Trading Code has been developed to define requirements for credit creation protocols and quantification and verification reports. The Code defines the process for adding new credit creation technologies and actions to the list of those that are acceptable.

New NO_x or SO₂ sources not subject to the regulation, such as alternative power stations or cogeneration power plants, cannot create ERCs by displacing electricity production from traditional generators subject to the regulation. However, new NO_x or SO₂ sources can create ERCs by lowering emissions from other on-site emission sources (e.g. by lowering the emissions from a plant that is being served by the new NO_x source).

The Ministry of the Environment will approve ERCs prior to registration with the Emissions Trading Registry. ERCs will be deemed to exist only after they have been created (by being approved by the Director) and registered.

C. Credit and Allowance Use

An emitter that is subject to the regulation and whose emissions exceed the sum of its allowances plus acceptable ERCs presented for use, will face penalties. The maximum allowable use of ERCs to an emitter will be limited to 33 per cent of allowances used for NO_x and 10 per cent of allowances used for SO₂. In addition, there will be a 10 per cent discount of all retired (used) ERCs for the benefit of the environment. In fact, only 90 per cent of an ERC presented and accepted may be used by emitters for meeting compliance obligations. On an annual basis, at true-up time, the allowances plus 90 per cent of the ERCs to be retired must be equal to or greater than the amount of emissions from the facility. Environmental retirement will occur at the time of use. Credits and allowances may only be used once.

The 33% and 10% limits do not apply with respect to emissions that are a result of a request from the IESO to continue operating. However, even if this is done, the emitter must still retire allowances and /or ERCs to compensate for this overrun.

Allowances issued by other jurisdictions within the 12 aforementioned states and the District of Columbia will be accepted as ERC-equivalents if they meet the requirements for ERC creation.

Allowances and ERCs may be traded freely, but the use of ERCs to meet emissions obligations in Ontario will be limited to those that originated in Ontario, the 12 aforementioned states and the District of Columbia. If acceptable scientific evidence is produced to show that emissions reductions at places outside these states will improve Ontario's air quality, then these credits can be used (with appropriate discounting of the value of the credits) to meet the obligations under the Ontario emissions trading regulation.

Banking of ERCs and allowances will be allowed without restrictions.

NO_x ERCs will also be identified according to the season in which they are created. There will be ozone season and non-ozone-season ERCs. The ozone season will be the five month period from May 1 to September 30. The non-ozone season will be the seven month period from October 1 to April 30. The ratio of retired ozone-season NO_x ERCs to non-ozone-season NO_x ERCs must

reflect the ratio of a facility's emissions in the ozone season to those produced outside the ozone season.

D. D. Trading Administration

The Ministry of the Environment will establish, maintain and operate the Ontario Emissions Trading Registry. The ministry may also, by written agreement, delegate to any person any of the powers or duties relating to the establishment, maintenance and operation of the Registry.

To be acceptable for the purposes of this regulation, the Trading Registry must be:

- accessible by the Ontario public
- must review ERC documentation in line with the Ontario regulation and Code for completeness and validity; and
- post the ERCs for trading (tracking of ownership and use).

MOE will determine the acceptability of the credits for use in Ontario notwithstanding the position or opinion of the Registry regarding the validity of the credits. MOE will have final say on the validity and use of ERCs prior to retirement.

Information and supporting documentation on which a submitted report is based (to either the Registry or the Director) must be kept for five years.