# Texas Commission on Environmental Quality
## Emissions Banking and Trading Program

MECT Program Audit
May 2006

# Introduction

The Texas Commission on Environmental Quality's (TCEQ) Emission Banking and Trading Program (EBTP) was established in 1993 to provide additional flexibility for complying with certain state and federal air quality requirements, while creating a net reduction in total air emissions. Originally outlined under 30 Texas Administrative Code § 101.29 (30 TAC § 101.29), the EBTP was designed to provide a market-based framework for trading reductions in volatile organic compounds (VOC), nitrogen oxides ($NO_X$) and certain other criteria pollutant emissions from stationary, area, and mobile sources. On December 6, 2000, the rules governing the EBTP were organized into four divisions and relocated to 30 TAC Chapter 101, Subchapter H. The Mass Emission Cap & Trade Program (MECT), outlined in Division 3 of Subchapter H, will be addressed in this audit.

Prior to discussing the trading activity and effects of the MECT program, a brief overview of the MECT Program's structure and intent will aid in understanding the program. It will also serve as a foundation for understanding the factors that influence the level of trading and the outcomes achieved.

Unlike the traditional emission credit programs previously established by the TCEQ, the MECT program establishes a mandatory annual $NO_x$ emission cap on certain existing stationary facilities located in the Houston-Galveston nonattainment area (HGA). The cap has been established at levels demonstrated as necessary for HGA to attain the National Ambient Air Quality Standard for 1-hour ozone. The emission cap requirements began on January 1, 2002 at historical emission levels, with mandatory reductions increasing over time until final cap emission levels are reached. Additionally, all new or modified facilities in HGA, subject to MECT, must obtain unused allowances from other facilities already participating under the cap to offset any increased $NO_x$ emissions.

Specifically subject to the cap are those facilities that have state implementation plan emission requirements in 30 TAC § 117.106 (Emission Specifications for Attainment Demonstrations), 30 TAC § 117.206 (Emission Specifications for Attainment Demonstrations), and 30 TAC § 117.475 (Emission Specifications) and are located either at a site which is a major source on or after December 31, 2000 or where the site collectively has the uncontrolled design capacity of ten tons or more per year (tpy) of $NO_X$ (on a sitewide basis).

Table 1. Sites subject to the MECT Program.

| ***Sites with a facility subject to:*** |
|---|
| 30 TAC § 117.106, § 117.206, or § 117.475 |
| ***and either:*** |
| is a major source for NOx |
| has a collective uncontrolled design capacity to emit 10 tpy NOx or more |

In the MECT program, an allowance represents 1 ton of NOx emissions. Allowances are allocated to existing facilities on January 1 of each control period, where the control period is equivalent to a calendar year. Allowances may be used and traded in tenth of ton increments. For sites subject to the MECT program, the site must hold a number of allowances in its compliance account equal to or greater than the site's actual emissions during the control period.

There are currently two types of allowances within the MECT program, allowances based on historical emissions and allowances based on permit allowables. For existing facilities, historical allowances are based on the average of 1997, 1998, and 1999 actual emissions. For new or modified facilities, historical allowances will be allocated once a two-year baseline is established. Allowances based on historical activity may be used for the facility which generated the allowance, used for other facilities at the same site, traded to other sites within the MECT program, or banked for use in the following control period.

Table 2. Sites and Allowances within the MECT program.

| Site | Allowance |
|---|---|
| Facilities in operation prior to January 1, 1997 | Allowances based on 1997, 1998, and 1999 actual emissions |
| New or modified facilities with a permit administratively complete prior to January 2, 2001 | Initially receive allowances based on maximum permitted activity and emissions |
| | Later receive allowances based on historical activity using two consecutive baseline years within the first 5 full years of operations |
| New facilities permitted after January 2, 2001 | receives no allowances; must use allowances from existing facilities |

For new or modified facilities with a permit application administratively complete prior to January 2, 2001, allowances are based on the maximum permitted level of activity until a two-year baseline can be established. Allowances based on permit allowables can only be used for the facility for which the allowance was allocated. Allowances based on permit allowables may not be traded to other sites, used for other facilities at the same site, or banked for use in the following control period.

Allowances based on historical emissions are valid for use in the control period they were allocated, or may be banked for use in the following control period. Any allowances which have not been used within two control periods expire and are removed from the site's allowance account. When using allowances for compliance with the MECT program, allowances allocated for the current control period must be used before banked allowances may be used. Allowances for future years may not be used for control periods prior to their deposit into a site's compliance account.

Allowances may be traded in three ways, current year trades, individual future year trades, and stream trades. Current year trades involve the immediate transfer of current or vintage allowances. Individual future year and stream trades involve the transfer of future allowances, with the difference being stream trades involving a transfer of allowances in perpetuity.

Compliance dates for the MECT program are as follows. Sites were required to certify level of activity by June 30, 2001 for existing sites. In addition, sites becoming subject to the MECT program due to new construction or rule changes must certify level of activity within 90 days of triggering MECT applicability. A site must hold an amount of allowances to cover actual emissions by March 1 following the end of every control period. The MECT rules require applications for transfer of allowances to be received 30 days prior to deposit, therefore, trades involving allowances needed for compliance with a control period must be received by January 30 in order to be placed in the compliance account by March 1. An annual report is due by March 31 following the end of the control period. Figure 1 outlines the procedures of the MECT program.

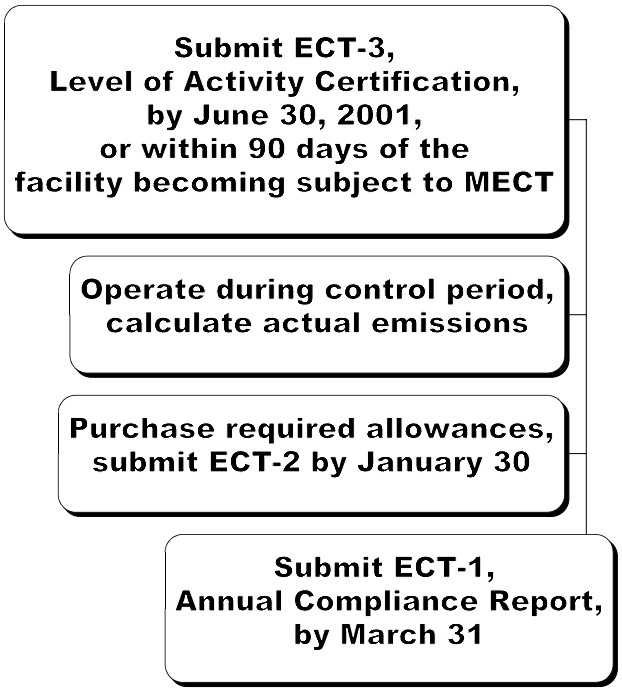



Figure 1. Flowchart of MECT program procedures.

## ALLOWANCES AND TRADING

Allowances are placed into the site's compliance account at the beginning of each control period. Originally, allowances were allocated based on 1997, 1998, and 1999 historical emissions or permit allowables. The amount of allowances were then reduced on a yearly basis to reach target goals of 35% reduction by April 1, 2004, 60% reduction by April 1, 2005, 70% reduction by April 1, 2006, and 75% reduction by April 1, 2007. Table 3 shows the total amount of allowances allocated during 2002 and 2003, and projected allowances for 2004 - 2008, based on current regulations. In the following tables, 'Historical' refers to allowances based on historical operations and 'Permit' refers to allowances based on permit allowables.

Table 3. Total Projected Allowances by Type.

| Allowance Type | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|
| Historical (tons) | 175,224.3 | 157,642.1 | 101,214.9 | 61,107.8 | 43,607.3 | 31,962.4 | 29,136.1 |
| Permit (tons) | 55,880.5 | 53,689.7 | 39,813.7 | 26,050.8 | 21,126.3 | 18,956.1 | 18,615.3 |
| Total (tons) | 231,104.8 | 211,331.8 | 141,028.6 | 87,158.6 | 64,733.6 | 50,918.5 | 47,751.4 |
| Total (tons/day) | 633.2 | 579.0 | 386.4 | 238.8 | 177.4 | 139.5 | 130.8 |

Table 4 breaks down the projected allowances for each county within the eight county HGA. Figure 2 presents a graphical comparison of the allowance allocation for 2003 between the eight counties.

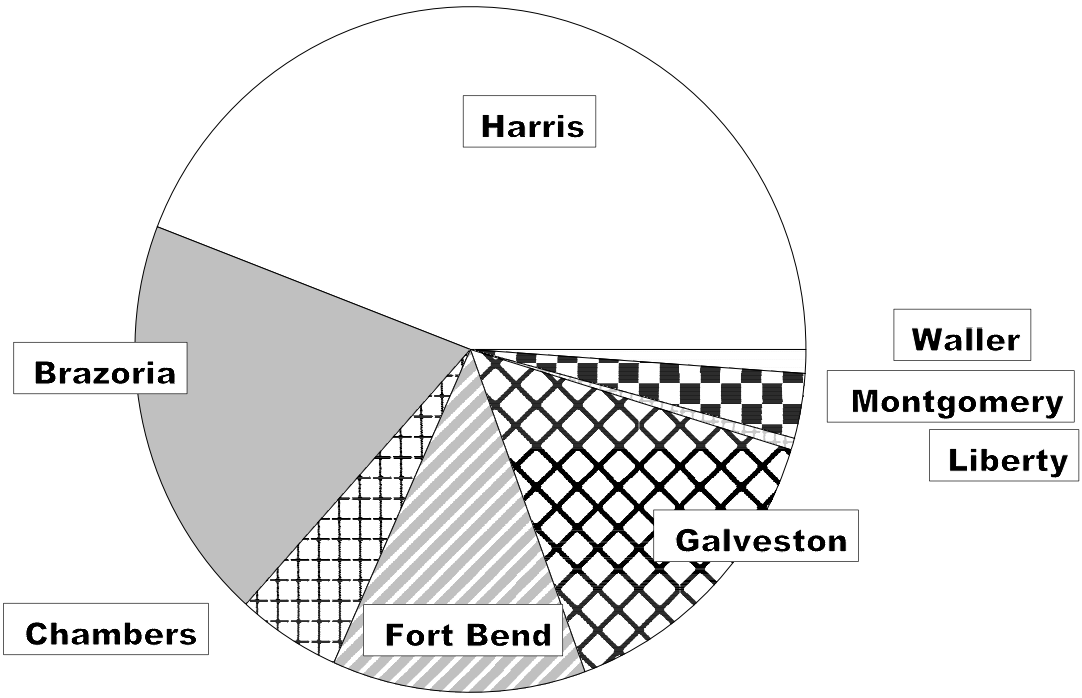
Table 4. Projected Allowances by County.

| County | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|
| Brazoria | 40,452.8 | 40,455.9 | 29,312.4 | 17,446.9 | 12,315.8 | 9,322.6 | 8,608.5 |
| Chambers | 12,149.6 | 10,388.0 | 6,681.7 | 4,786.5 | 4,139.1 | 3,671.5 | 3,554.9 |
| Fort Bend | 37,057.5 | 25,961.8 | 10,542.5 | 6,202.6 | 5,886.7 | 5,552.6 | 5,460.8 |
| Galveston | 34,032.4 | 31,151.6 | 20,943.5 | 13,642.7 | 10,519.5 | 8,867.9 | 8,570.3 |
| Harris | 96,987.1 | 93,793.5 | 67,048.3 | 41,022.5 | 28,909.3 | 21,635.1 | 19,987.3 |
| Liberty | 1,108.7 | 1,104.6 | 860.0 | 604.5 | 477.4 | 354.2 | 320.7 |
| Montgomery | 6,954.8 | 6,223.7 | 3,988.1 | 2,427.7 | 1,772.3 | 1,106.3 | 923.5 |
| Waller | 2,361.9 | 2,252.7 | 1,652.1 | 1,025.2 | 713.5 | 408.3 | 325.4 |
| Total | 231,104.8 | 211,331.8 | 141,028.6 | 87,158.6 | 64,733.6 | 50,918.5 | 47,751.4 |

The amount of total allocation between 2002 and 2003 has been reduced by 19,773 tons, or an 8.5% reduction. This reduction can be attributed to three primary factors, the certification of facilities from permit allowables to historical allowances, recertification of existing facilities based on updated emission data, and the first step-down reduction for utilities within the HGA. This step down for utilities is the most significant reason for the change between 2002 and 2003 allowances.

Based on the 2004-2008 projected allowances, there is a 39% reduction by 2004, a 62.3% reduction by 2005, a 72% reduction by 2006, a 78% reduction by 2007, and a 79.3% reduction by 2008. These projections remain 2-3% higher than the target reductions of the program. Future regulatory changes and certification of facilities receiving permit allowables will change the total allowances allocated in the 2004-2008 control periods. It is projected that these changes will produce further reductions in the total allowance allocations.

As shown in the data, industry in Harris county accounts for the largest amount of allowances, with 44.4% of the total MECT allowances for the 2003 control period. Brazoria county is the second largest recipient, with 19.1% of the allowances. On the other end of the spectrum, Liberty county is the recipient of the smallest amount of allowances, receiving only 0.5% of the total 2003 allowances.



## ALLOWANCE USE

Considering only allowances based on historical operations, emissions from the 2002 control period were reduced by 49% from the baseline emissions. Emissions from the 2003 control period were 58.2% lower than the baseline emissions. Tables 5 and 6 summarize the allowance use for each county and area total for the 2002 and 2003 control periods.

Table 5. Allowance Use by County, 2002 Control Period.

| County | Type | Allowances | Actual Emissions | Difference |
|---|---|---|---|---|
| **Brazoria** | Historical | 29,831.7 | 15,073.5 | 14,758.2 |
| | Permit | 10,621.1 | 2,624.2 | 7,996.9 |
| **Chambers** | Historical | 10,477.6 | 4,018.8 | 6,458.8 |
| | Permit | 1,672.0 | 567.2 | 1,104.8 |
| **Fort Bend** | Historical | 36,448.2 | 17,173.5 | 19,274.7 |
| | Permit | 609.3 | 85.1 | 524.2 |
| **Galveston** | Historical | 26,394.2 | 13,446.3 | 12,947.9 |
| | Permit | 7,638.2 | 3,068.2 | 4,570.0 |
| **Harris** | Historical | 62,482.0 | 33,082.2 | 29,399.8 |
| | Permit | 34,505.1 | 11,854.4 | 22,650.7 |
| **Liberty** | Historical | 876.6 | 1,165.1 | -288.5 |
| | Permit | 232.1 | 0.7 | 231.4 |
| **Montgomery** | Historical | 6,544.2 | 3,702.1 | 2,842.1 |
| | Permit | 410.6 | 92.6 | 318.0 |
| **Waller** | Historical | 2,169.8 | 1,694.8 | 475.0 |
| | Permit | 192.1 | 0.0 | 192.1 |
| **Total** | Historical | 175,224.3 | 89,356.7 | 85,867.6 |
| | Permit | 55,880.5 | 18,292.4 | 37,588.1 |
| | All | 231,104.8 | 107,649.1 | 123,455.7 |

In both control periods, only Liberty county has used more allowances than generated. In the 2002 control period, Chambers county had the largest reduction in actual emissions compared to historical emissions, with a reduction of 61.6%. Fort Bend county had the second largest reduction in actual emissions, with a reduction of 52.9%. Harris county produced the largest reduction in tons, and a 47.1% reduction from the historical baseline.

In the 2003 control period, Montgomery county produced the largest reduction in actual emissions compared to historical emissions, with a reduction of 81.6%. Again, Harris county produced the largest reduction in tons, and an overall reduction of 62.2% compared to the historical baseline. Based on these results, Harris county is already approaching the 2005 emissions targets, while the entire HGA was well below the 2004 emissions targets.

Table 6. Allowance Use by County, 2003 Control Period.

| County | Type | Allowances | Actual Emissions | Difference |
|---|---|---|---|---|
| **Brazoria** | Historical | 29,834.8 | 14,307.4 | 15,527.4 |
| | Permit | 10,621.1 | 4,392.9 | 6,228.2 |
| **Chambers** | Historical | 8,726.4 | 3,419.3 | 5,307.1 |
| | Permit | 1,661.6 | 575.1 | 1,086.5 |
| **Fort Bend** | Historical | 25,352.5 | 11,557.3 | 13,795.2 |
| | Permit | 609.3 | 204.6 | 404.7 |
| **Galveston** | Historical | 23,513.4 | 10,595.7 | 12,917.7 |
| | Permit | 7,638.2 | 2,811.5 | 4,826.7 |
| **Harris** | Historical | 61,468.8 | 23,205.0 | 38,263.8 |
| | Permit | 32,324.7 | 12,758.5 | 19,566.2 |
| **Liberty** | Historical | 872.5 | 1,054.2 | -181.7 |
| | Permit | 232.1 | 0.1 | 232.0 |
| **Montgomery** | Historical | 5,813.1 | 1,069.3 | 4,743.8 |
| | Permit | 410.6 | 81.3 | 329.3 |
| **Waller** | Historical | 2,060.6 | 732.5 | 1,328.1 |
| | Permit | 192.1 | 4.7 | 187.4 |
| **Total** | Historical | 157,642.1 | 65,864.3 | 91,777.8 |
| | Permit | 53,689.7 | 20,828.6 | 32,861.1 |
| | All | 211,331.8 | 86,692.9 | 124,638.9 |

## TRADING OF ALLOWANCES

Table 7 shows the total allowance trades performed within the MECT program, listed by allowance control period. It can be seen that approximately 20% of the allowances for each control period have been traded. From this figure, as well as the volume of post-2004 trades compared to current year (2002 - 2004) trades, it can be seen that many companies are actively positioning themselves for compliance with the MECT program for future control periods.

Table 7. Total allowance trades by control period.

| Control Period | Total Tons Traded | Number of Trades | Average Tons per Trade | % of Historical Allowances Traded |
|---|---|---|---|---|
| 2002 | 62,758.7 | 145 | 432.82 | 35.8 |
| 2003 | 37,480.9 | 124 | 302.27 | 23.8 |
| 2004 | 20,790.2 | 113 | 183.98 | 20.6 |
| 2005 | 14,755.6 | 110 | 134.14 | 24.2 |
| 2006 | 11,214.0 | 107 | 104.80 | 25.8 |
| 2007 | 7,595.3 | 100 | 75.95 | 23.8 |
| 2008 | 6,077.8 | 88 | 69.07 | 20.9 |
| **Total** | 160,672.5 | 787 | 204.16 | |

Table 8 summarizes trade participation during the 2002, 2003, and 2004 (partial year 1/1/04 - 11/15/04) control periods. The total tonnage of trades occurring during the 2002 control period has been the highest to date, possibly indicating larger companies getting an early start in positioning themselves for future compliance. The total number of trades increased in 2003, although the total tons involved decreased. Year 2004 data only includes trades through November 15, 2004. Considering years 2002 and 2003, the bulk of trades occur during the January following the end of the control period, so no conclusions can be drawn on the 2004 data at this time.

Table 8. Trade Activity During Previous Control Periods.

| Trade Period | Total Tons Traded | Number of Trades | Avg Tons per Trade |
|---|---|---|---|
| 2002 | 80,632.2 | 300 | 268.77 |
| 2003 | 67,641.3 | 358 | 188.94 |
| 2004 | 12,399.0 | 129 | 96.12 |

Table 9 shows total trades by county and allowance year for the completed control periods. The trade of 2002 vintage allowances were separated from the trade of 2002 allowances since the vintage allowances were for use in the 2003 control period. Finally, trades by brokers are separated, since brokers may hold allowances for trade in the following control period. The trades by county can show whether any county or counties are disproportionally purchasing allowances, potentially increasing NOx concentrations within the area. From this data, again only Liberty county has had more allowances traded into the county than out of the county during 2002 and 2003. Fort Bend and Harris counties had a significant amount of 2002 vintage allowances traded into the counties. However, as can be seen in Table 5, this did not result in greater emissions activity in these counties.

Table 9. 2002, Vintage 2002, and 2003 Allowance Trades by County.

| **2002** | **Tons Purchased in County** | **Tons Sold in County** | **Net Trades in County** |
|---|---|---|---|
| Brazoria | 641.7 | 6,667.4 | -6,025.7 |
| Chambers | 32.0 | 298.7 | -266.7 |
| Fort Bend | 102.8 | 16,606.1 | -16,503.3 |
| Galveston | 70.8 | 1,546.8 | -1,476.0 |
| Harris | 3,581.3 | 9,650.9 | -6,069.6 |
| Liberty | 602.3 | 120.3 | 482.0 |
| Montgomery | 0.0 | 41.0 | -41.0 |
| Waller | 0.0 | 40.0 | -40.0 |
| Broker Accounts | 32,449.5 | 2,509.2 | 29,940.3 |

The MECT Program allows for conversion of Emissions Reduction Credits (ERCs) into MECT allowances and the use of Discrete Emission Reduction Credits (DERCs) in lieu of allowances. A conversion of ERCs into allowances produces a stream of allowances equal to the tons per year value of the ERC certificate. DERCs are not converted directly into allowances, but rather are used in lieu of allowances strictly for compliance with current year emissions. To date, there have been five ERC conversions, producing 81.1 tons of allowances per year. There have been no DERC uses in lieu of MECT allowances. Total DERC/ERC conversions are 0.16% of the total 2008 projected allowances, therefore DERC/ERC conversions have not significantly increased the NOx cap.

A registry of all Mass Emission Cap and Trade Program transactions, as well as site balances, forms, and guidance documents can be found at the Emissions Banking and Trading website at http://www.tceq.state.tx.us/permitting/air/nav/air_banking.html

Table 9 (con't). 2002, Vintage 2002, and 2003 Allowance Trades by County.

| **2002 Vintage** | **Tons Purchased in County** | **Tons Sold in County** | **Net Trades in County** |
|---|---|---|---|
| Brazoria | 3.6 | 13.1 | -9.5 |
| Chambers | 70.7 | 53.9 | 16.8 |
| Fort Bend | 11,029.8 | 0.6 | 11,029.2 |
| Galveston | 308.3 | 258.9 | 49.4 |
| Harris | 2,873.5 | 1,866.8 | 1,006.7 |
| Liberty | 274.6 | 0.0 | 274.6 |
| Montgomery | 0.0 | 55.1 | -55.1 |
| Waller | 0.0 | 1.1 | -1.1 |
| Broker Accounts | 10,717.8 | 23,028.8 | -12,311.0 |
| **2003** | **Tons Purchased in County** | **Tons Sold in County** | **Net Trades in County** |
| Brazoria | 609.6 | 5,195.7 | -4,586.1 |
| Chambers | 155.4 | 606.3 | -450.9 |
| Fort Bend | 1,501.3 | 2,003.5 | -502.2 |
| Galveston | 2,995.3 | 4,561.0 | -1,565.7 |
| Harris | 5,532.3 | 10,853.9 | -5,321.6 |
| Liberty | 180.2 | 144.0 | 36.2 |
| Montgomery | 0.0 | 15.0 | -15.0 |
| Waller | 0.0 | 0.0 | 0.0 |
| Broker Accounts | 25,146.1 | 12,740.8 | 12,405.3 |

## PRICING OF ALLOWANCES

30 TAC §101.356 states that the price paid per allowance must be included with each transaction, except for trades involving sites under common ownership or control. Table 10 shows the average price paid per ton of allowances, per allowance year, for the 2002, 2003, and 2004 trading periods. Table 10 also shows the average price per ton, on a 2008

basis, for stream trades occurring in the 2002, 2003, and 2004 trading periods. Since a site must hold allowances in its account to cover actual emissions by March 1, the trading period for this section is described as a year from March 1 to February 28 (i.e., the 2004 trading period dates from March 1, 2004 through February 28, 2005).

Table 10. Average price per ton per allowance, by trading period.

| Allowance Year | 2002 Trading Period | 2003 Trading Period | 2004 Trading Period | Average (all periods) |
|---|---|---|---|---|
| 2002 | $103.99 | $57.43 | -- | $82.68 |
| 2003 | $143.95 | $125.03 | $50.92 | $131.08 |
| 2004 | $752.63 | $318.40 | $381.55 | $483.82 |
| 2005 | $1,500.00 | $395.82 | $484.54 | $435.11 |
| 2006 | $3,250.00 | $299.64 | $540.50 | $650.21 |
| 2007 | -- | $252.14 | $185.00 | $244.52 |
| Stream Trades | $5,236.77 | $38,777.22 | $27,114.28 | $26,351.96 |

As can be seen from this table, there is a general trend that allowances from later years are more expensive per ton than allowances from earlier years. A good example is the price of a current year allowance, which started at $103.99 per ton in 2002, rose to $125.03 per ton in 2003, and is currently at $381.55 per ton in 2004. The price per ton of stream trades has fluctuated throughout the program, and is currently at an average of $26,351.96 per ton of 2008 allowance, although recent trades are approaching $40,000 per ton of 2008 allowance.

Table 11. Average price per type of allowance, averaged over all trade periods.

| Allowance Type | Average Price per Ton | Total number of trades |
|---|---|---|
| Vintage Year | $57.17 | 38 |
| Current Year | $115.17 | 97 |
| Next Year | $167.11 | 19 |
| +2 Year | $563.18 | 14 |
| +3 Year | $314.00 | 5 |

Table 11 shows the average price per ton of allowance by the allowance type, averaged over all trading periods. In this comparison, the allowances are split into vintage (banked previous year allowances), current year, and future year allowances for one, two, and three years into the future. The data of Table 11 is averaged from the 2002, 2003, and 2004

trading periods. In this comparison, the allowances are split into vintage (banked previous year allowances), current year, and future year allowances for one, two, and three years into the future. The data of Table 11 is averaged from the 2002, 2003, and 2004 trading periods. Since there has been an abundance of allowances during the 2002-2004 control periods, the pricing between these years is similar enough to make comparisons. However, as allowances become more scarce, the prices paid for vintage and current year allowances should begin to increase. The data of Table 11 shows vintage allowances selling for approximately half of the price of current year allowances. In addition, it appears that the price per ton of allowances peaks for future year allowances from two years into the future. This could be a result of planning for future compliance, since the volume of trades for allowances one and two years into the future far exceeds the volume of trades for allowances three years into the future. Therefore, it could be beneficial for companies to plan three or more years into the future for compliance.

Figure 3 provides a trend line for the price variation as the trading period progresses, for current year and vintage year allowances. The price per ton of a 2002 allowance fluctuated throughout the 2002 trading period, more or less settling under $100 per ton during the latter half of the trading period. During the 2003 trading period, the prices for vintage 2002 and current 2003 allowances were much more stable than during the 2002 trading period. In 2003, it can be seen that the price of current year allowances decreased in the latter half of the trade period, while the price of vintage allowances spiked immediately before the trade deadline.

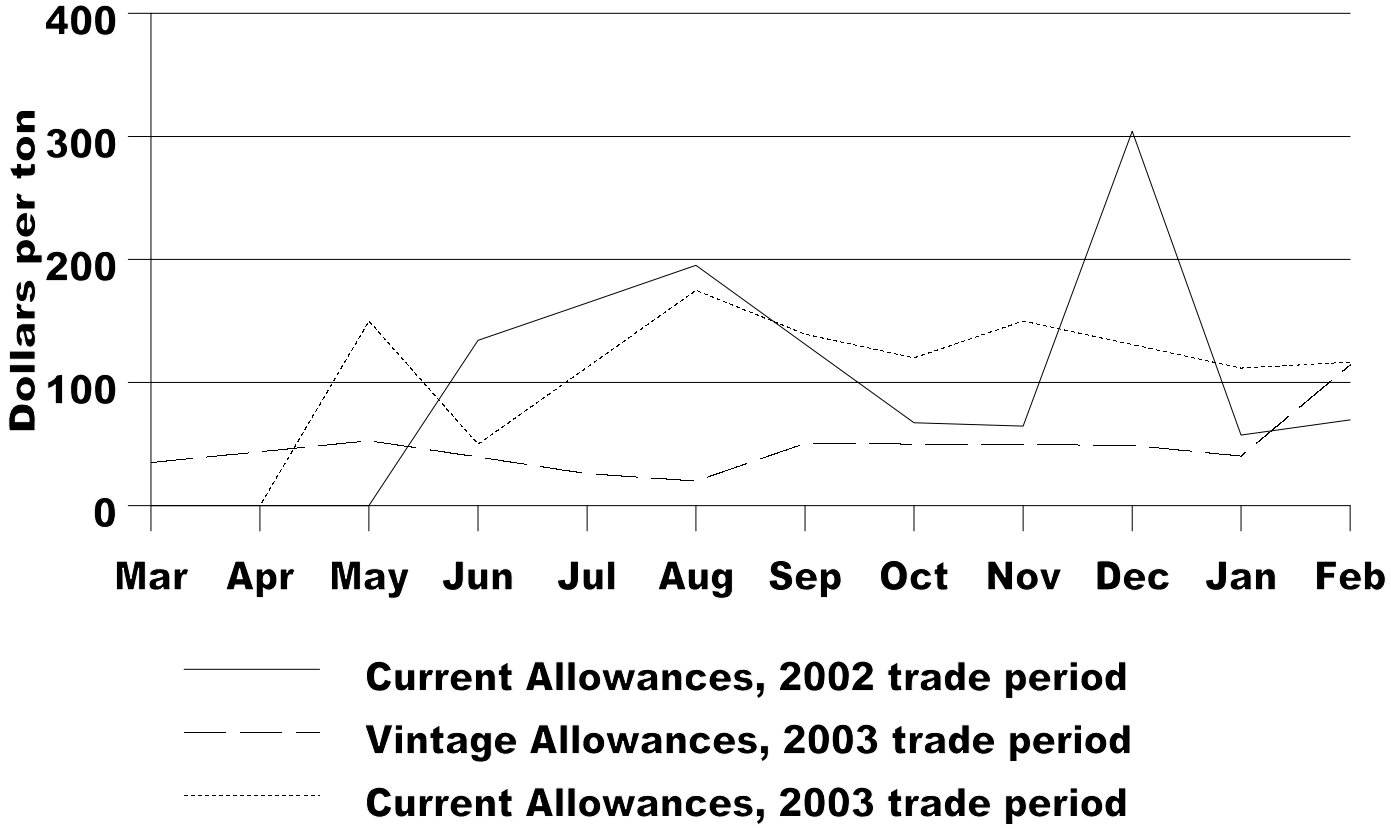



Figure 3. Pricing trends within the trade periods.

### EXPIRED ALLOWANCES

Allowances which are not used in the control period in which they are allocated are banked and may be used for compliance in the following control period. Banked allowances expire after the following year, and if unused, are removed from the MECT program. At this point, any 2002 allowances not used for compliance in 2002 or 2003 are expired. A total of 85,118.4 tons of 2002 allowances were unused in the 2002 and 2003 control periods and have now expired. This represents 48.6% of the total 2002 allowances.

Allowances based on permit allowables may not be banked or used for a facility other than the facility the allowance was allocated for. Therefore, any unused allowances based on permit allowables immediately expire and are removed from the MECT program. For the 2002 control period, 37,588.1 tons, or 67.3% of the allowances based on permit allowables were unused. The 2003 control period had 32,861.1 tons, or 61.2% of the allowances based on permit allowables unused.

## COMPLIANCE and PROGRAM PARTICIPATION

Table 12 shows the number of active sites, sites submitting an ECT-3 (certification), sites submitting an ECT-1 (annual report), and sites submitting an ECT-2, -4, or -5 (trade). Please note that there are several sites which were certified, and have since ceased operations, and several new sites which have no certification, but are required to submit an annual report. Therefore, the number of sites submitting an ECT-1 or an ECT-3 is not an indicator of compliance with the MECT program. As of November 15, 2004, there are 356 active sites participating in the MECT program.

Table 12. Participation in the MECT Program.

| Category | Number of Sites |
|---|---|
| Active Sites in the MECT Program | 356 |
| Brokers* | 15 |
| Total Participants | 371 |
| Sites Submitting an ECT-1 (annual report) | 345 |
| Sites Submitting an ECT-3 (certification) | 322 |
| Sites Participating in a Trade | 174 |

*Brokers which have purchased/sold allowances

Participation in the MECT program has been very satisfactory. Of all sites, 93.5% which submitted a level of activity certification have followed up by submitting an annual report. Again, not all sites submitting a certification are required to submit an annual report, since permitted facilities could be certified, but may not be actually constructed. Of sites certifying facilities based on historical activity, 100% have followed up with the submission of an annual report. All but 11 sites which submitted an annual report in 2002 also submitted an annual report in 2003. Again, site closures which have transferred their allowances are not required to submit an annual report. From Table 9, we can see that 46.9% of the total participants have taken part in a trade.

Violations in the MECT program can be classified into two broad categories: late or missing forms, and emissions exceeding allowances. Violations for late or missing forms are referred to the TCEQ Office of Compliance and Enforcement (OCE), where an enforcement action is processed. A monetary fine is imposed on the site for late or missing forms, however no penalties are directly taken from the MECT allowances, although late or missing forms can delay the deposit or use of allowances, which may result in allowance violations. Compliance dates for the MECT Program are as follows. The Form ECT-3 must be submitted by June 1, 2001, for existing sites, or within 90 days of a site or facility becoming subject to the MECT program. The Form ECT-1 is due by March 31 following the end of the control period.

There have been 27 total violations for emissions exceeding allowances during the 2002 and 2003 control periods. Violations involving excess emissions have the amount of emissions excess plus a 10% penalty deducted from the site's allowance account for the following control period. In addition, the site is referred to OCE, where additional monetary fines may be applied. For the 2002 control period, there were 11 instances of emissions exceeding allowances, for a total emissions excess of 139.6 tons, which resulted in total additional penalties of 14.6 tons. For the 2003 control period, there were 16 instances of emissions exceeding allowances, for a total emissions excess of 180.3 tons, which resulted in total additional penalties of 19.1 tons.

# IMPACT ON ATTAINMENT

Although it is too early in the MECT Program to ultimately judge whether or not ground level ozone concentrations within the HGA have been positively affected by the MECT Program, several trends can be observed in this early stage. The primary observations are the low total NOx emissions compared to the baseline years, and the lack of any one county becoming a "sink" for allowances by buying allowances on the open market.

For the 2002 control period, a total of 231,104.8 tons of allowances were assigned to the facilities within the MECT Program. However, only 107,649.1 tons of actual emissions were reported by these facilities. Similarly, a total of 211,331.8 tons of allowances were allocated for the 2003 control period, while only 86,692.9 tons of actual emissions were reported. Therefore, the total 2003 emissions are already below the total 2005 emissions cap. There are several factors which have to be considered to account for this reduction in emissions.

One issue to consider is the assignment of allowances based on permit allowables, rather than historical operating data. In actual operations, few facilities operate at maximum permitted levels. However, the allowances for new or modified facilities, permitted before January 1, 2001, are based on these maximum permitted levels until a two-year baseline of actual operations can be established. In 2002, there were 55,880.5 tons of allowances based on permit allowables, of which only 18,292.4 tons were used. In 2003, there were 65,864.3 tons of allowances based on permit allowables, of which only 20,828.6 tons were used. Therefore, as these facilities establish a baseline and become certified with allowances based on historical activity, the total cap will reduce to more closely reflect actual operations of new facilities.

Another issue to consider is the economic factor. The baseline years of 1997, 1998, and 1999 were during a very strong economy, while the reporting years of 2002 and 2003 were during an economic downturn. Energy prices during 2002 and 2003 were on average higher than the period of 1997 - 1999. For example, crude oil prices in January of 1998 were $15.19 a barrel, while in January 2003 were $31.18 a barrel. Associated higher natural gas prices and the overall economy may be responsible for a reduction in operations during 2002 and 2003. However, certain industries within the HGA, such as the oil and gas production and synthetic polymers industries, benefit from higher crude oil prices, and have increased output.

This is not to say that actual emissions reductions have not been achieved with the MECT Program. Several companies have added emissions controls or replaced existing equipment with more modern equipment. Electric generation utilities were required to make their first reduction during 2003, and most facilities had already added emissions controls in preparation for the new rates. As mentioned in the allowance use section, 85,118.4 tons of 2002 allowances have expired. These are allowances based on historical operating data, not permit allowables. Taking into account the 18,292.4 tons of emissions from facilities operating under permit allowables, which were not in operation during the baseline years, there is a net reduction of 66,826 tons of NOx from the 1997, 1998, and 1999 average emissions. Table 12 gives the emissions breakdown for the 2002 control period.

Table 12. Total emissions reduction for 2002 from baseline.

| | |
|---|---|
| Total 2002 historical allowances | 175,224.3 |
| Allowances used in 2002 | 89,356.7 |
| Vintage 2002 allowances used in 2003 | 749.2 |
| **Unused 2002 allowances** | **85,118.4** |
| Emissions from new sources | 18,292.4 |
| **Total emissions removed for 2002** | **66,826.0** |

One concern with any emissions trading program is that reductions will occur only in certain areas, and the bulk of emissions will become concentrated in other areas. In this scenario, although total emissions are capped, there could be localized increases in emissions. During the public comment phase of the MECT program, several groups expressed concern that this situation may arise in parts of Harris county. Again, although it is too early in the life of the MECT program to determine a long term distribution of emissions, data from the 2002 and 2003 control periods has shown no evidence of this situation occurring. As is shown in Table 8, no single county has shown excessive trades of allowances, compared to the other counties within the HGA, with the exception of vintage 2002 allowances. However, as mentioned earlier, these vintage 2002 allowances did not result in greater 2003 emissions, and have now expired. Therefore, at this time, there have been no significant changes in allowance distribution within the HGA.

## PROGRAM RECOMMENDATIONS

A few issues have come up during the first two years of administering the MECT program. There have been no major issues concerning the actual program rules, *i.e.* allocation and use of allowances, however communication and distribution of information could be improved. The following recommendations are currently being considered and implemented for the MECT program:

- Better data management: Currently, a new Information Management System (IMS) is being developed for the TCEQ Banking Programs. The current system (used in the 2002 - 2003 control periods) relies on filed records and individual spreadsheets for each account. These records and spreadsheets must be individually updated with each account activity. This places data in many locations and allows for error since an individual spreadsheet may not be edited with the most current activity. The IMS, which is under development, will place all accounts in a single database which is automatically updated as transactions are entered. This will allow for quicker access to data and more accurate data for both TCEQ staff and MECT program participants.

- Better reporting of MECT accounts on the TCEQ website: Several proposals are under review to streamline MECT data available on the web. Currently, individual web sheets must be updated after each transaction. This results in a slow update process, extra work for TCEQ staff, and the possibility of error when entering data. In addition, the layout of the Banking and Trading webpage should be improved so users can quickly find the information they need, including forms and guidance. Current proposals would automate the updating of information on the web, as well as redesign the webpage to ease navigation.

- Increased communication with sites subject to the MECT program: Currently, there is no system in place to notify companies of past due dates or missing forms. If a site in the MECT program does not submit an annual report, no action is taken until the site subsequently submits another annual report or trade. At that point, steps are taken to bring the site to current compliance. This results in extra work for both the TCEQ and

participating site, delays in closing accounts, and delayed/unreported enforcement actions. In addition, with the high volume of reports received, there are several misdirected annual reports which are sent to the wrong location in the agency. Although the sites are in compliance in this case, this will still result in delays to future transactions for the site. Therefore, a process should be created which automatically determines sites from which the TCEQ has not received an annual report, and generates correspondence to notify the sites well before the next control period.

- Update MECT forms: The forms for the MECT program should be reviewed again to eliminate duplicate information, remove information which is not used, and clarify what information is required by the submitting site. This would save time for both MECT participants and TCEQ staff.