

Part 2 for Ventura County Air Pollution Control District⁶

Beginning in the year 2000, certain Units will be subject to Title IV of the Federal Clean Air Act for providing SO₂ Allowances to cover related trading costs. Prior to 2000, the ISO Hourly Sulfur Dioxides Trading Credit Cost will be zero. The Owner may make a filing under Section 205 of the Federal Power Act limited to recovering applicable ISO Hourly Sulfur Dioxides Trading Credit Costs when such costs are incurred.

E. ISO Monthly Variable O&M Cost

The ISO Monthly Variable O&M Cost for each Unit shall be the product of the Unit's Billable MWh for the Billing Month and the Unit's Variable O&M Rate. Variable O&M Rate for each Unit shall be:

Table C1-18

<u>Unit</u>	<u>Variable O&M Rate (\$/MWh)</u>

F. ISO Scheduling Coordinator Charge

The ISO Scheduling Coordinator Charge for each Unit shall be the product of PX Administration Charge as charged under the PX Tariff and the Unit's Billable MWh for the Billing Month.

G. ISO ACA Charge

The ISO ACA Charge is the product of the Unit's Billable MWh for the Billing Month and the applicable annual charge for short-term sales under 18 CFR Section 382.201 of the FERC Regulations.

⁶ Ventura County APCD, where Mandalay Generating Station is located, does not require payment of emissions fees, but rather permit renewal fees. The permit renewal fees are included in the fixed O&M costs.

SCHEDULE C

Variable Cost Payment for All Conditions

Part 2 for Geothermal Units

For each Unit each Month, the Variable Cost Payment for Billable MWh from the Unit pursuant to Nonmarket Transactions during that Month shall be the amount calculated in accordance with the following formula:

$$\text{Variable Cost Payment} = \begin{array}{l} \text{A. ISO Monthly Billed Fuel Cost +} \\ \text{B. ISO Monthly Variable O\&M Cost +} \\ \text{C. ISO Scheduling Coordinator Charge +} \\ \text{D. ISO ACA Charge} \end{array}$$

Each component of the Variable Cost Payment for geothermal Units is calculated as described below:

A. ISO Monthly Billed Fuel Cost [for Geysers Main only]

The ISO Monthly Billed Fuel Cost is given by Equation C2-1.

Equation C2-1

$$\text{ISO Monthly Billed Fuel Cost} = \text{Billable MWh} * \text{Steam Price (\$/MWh)}$$

Where:

- Steam Price is \$16.34/MWh.
- For purposes of Equation C2-1, Billable MWh is all Billable MWh Delivered after cumulative Hourly Metered Total Net Generation during the Contract Year from all Units exceeds the Minimum Annual Generation given by Equation C2-2.

Equation C2-2

$$\text{Minimum Annual Generation} = (\text{Annual Average Field Capacity} * 8760 \text{ hours} * 0.4) - (A+B+C)$$

Where:

- Annual Average Field Capacity is the arithmetic average of the two Field Capacities in MW for each Contract Year, determined as described below.

Field Capacity shall be determined for each six-month period from July 1 through December 31 of the preceding calendar year and January 1 through June 30 of the Contract Year. Field Capacity shall be the average of the five highest amounts of net generation (in MWh) simultaneously achieved by all Units during eight-hour periods within the six-month period. The capacity simultaneously achieved by all Units during each eight-hour period shall be the sum of Hourly Metered Total Net Generation for all Units during such eight-hour period, divided by eight hours. Such eight-hour periods shall not overlap or be counted more than once but may be consecutive.

Within 30 days after the end of each six-month period, Owner shall provide ISO and the Responsible Utility with its determination of Field Capacity, including all information necessary to validate that determination.

- A is the amount of Energy that cannot be produced (as defined below) due to the curtailment of a Unit during a test of the Facility, a Unit or the steam field agreed to by ISO and Owner.
- B is the amount of Energy that cannot be produced (as defined below) due to the retirement of a Unit or due to a Unit's Availability remaining at zero after a period of ten Months during which the Unit's Availability has been zero.
- C is the amount of Energy that cannot be produced (as defined below) because a Force Majeure Event reduces a Unit's Availability to zero for at least thirty (30) days or because a Force Majeure Event reduces a Unit's Availability for at least one hundred eighty (180) days to a level below the Unit Availability Limit immediately prior to the Force Majeure Event.
- The amount of Energy that cannot be produced is the sum, for each Settlement Period during which the condition applicable to A, B or C above exists, of the difference between the Unit Availability Limit immediately prior to the condition and the Unit Availability Limit during the condition.

A. ISO Monthly Billed Fuel Cost [for Geysers Units 13 & 16 only]

The ISO Monthly Billed Fuel Cost is given by Equation C2-1.

Equation C2-1

$$\text{ISO Monthly Billed Fuel Cost} = \text{Billable MWh} \times \text{Steam Price (\$/MWh)}$$

Where:

- Steam Price is \$11.25/MWh, which includes the cost of steam condensate re-injection.

B. ISO Monthly Variable O&M Cost

The ISO Monthly Variable O&M Cost for each Unit is given by Equation C2-3 and is the product of the sum of Billable MWh for the Billing Month and the Unit's Variable O&M Rate. Variable O&M Rate for each Unit is shown in Table C2-1:

Equation C2-3

$$\text{ISO Monthly Variable O\&M Cost} = \text{Monthly sum of Billable MWh} \times \text{Variable O\&M Rate}$$

Table C2-1

<u>Unit</u>	<u>Variable O&M Rate (\$/MWh)</u>

C. ISO Scheduling Coordinator Charge

The ISO Scheduling Coordinator Charge for each Unit shall be the product of PX Administration Charge as charged under the PX Tariff and the Unit's of Billable MWh for the Billing Month.

D. ISO ACA Charge

The ISO ACA Charge is the product of the Unit's Billable MWh for the Billing Month and the applicable annual charge for short-term sales under 18 CFR Section 382.201 of the FERC Regulations, to the extent payable by Owner for Billable MWh.

SCHEDULE C

Variable Cost Payment for All Conditions

Part 3 for Conventional Hydro Units

For each month and each Unit, the Variable Cost Payment for Billable MWh from the Unit pursuant to Nonmarket Transactions during that Month shall be the amount calculated in accordance with the following formula:

$$\text{Variable Cost Payment} = \begin{array}{l} \text{A. ISO Scheduling Coordinator Charge} + \\ \text{B. ISO ACA Charge} \end{array}$$

A. ISO Scheduling Coordinator Charge

The ISO Scheduling Coordinator Charge for each Unit shall be the product of PX Administration Charge as charged under the PX Tariff and the Unit's Billable MWh for the Billing Month.

B. ISO ACA Charge

The ISO ACA Charge is the product of the Unit's Billable MWh for the Billing Month and the applicable annual charge for short-term sales under 18 CFR Section 382.201 of the FERC Regulations.

SCHEDULE C

Variable Cost Payment for All Conditions

Part 4 for Pumped Storage Hydro Units

For each month and each Unit, the Variable Cost Payment for Billable MWh from the Unit pursuant to Nonmarket Transactions during that Month shall be the amount calculated in accordance with the following formula:

$$\text{Variable Cost Payment} = \begin{array}{l} \text{A. ISO Monthly Billed Fuel Cost +} \\ \text{B. ISO Scheduling Coordinator Charge +} \\ \text{C. ISO ACA Charge} \end{array}$$

A. ISO Monthly Billed Fuel Cost

The ISO Monthly Billed Fuel Cost is given by Equation C4-1:

Equation C4-1

ISO Monthly Billed Fuel Cost = Year-to-Date ISO Fuel Cost – Sum of Previous Months' ISO Monthly Billed Fuel Cost in the Contract Year

Where:

- Year-to-Date ISO Fuel Cost is given by Equation C4-2.
- Sum of Previous Months' ISO Monthly Billed Fuel Cost in the Contract Year shall be the sum of the ISO Monthly billed Fuel Cost for each Month from January 1 of the Contract Year⁷ through the end of the Month in the Contract Year before the Billing Month.

Equation C4-2

Year-to-Date ISO Fuel Cost = (YTD Pumping Cost/YTD Energy Produced) * YTD Billable MWh

Where:

- YTD Pumping Cost = Total cost of Energy purchased by Owner for pumping, including transmission charges, from January 1 of the Contract Year through the end of the Billing Month.
- YTD Energy Produced = Total Energy produced by the Facility for Market and Nonmarket Transactions from January 1 of the Contract Year through the end of the Billing Month.
- YTD Billable MWh = Total Billable MWh from January 1 of the Contract Year through

⁷ For purposes of Equations C4-1 and C4-2 as applied in 1999, Contract Year includes those months in the year, beginning in January 1999, when the same services as under this Agreement were provided to ISO under a predecessor rate schedule, as well as months when such services are provided under this Agreement.

the end of the Billing Month.

B. ISO Scheduling Coordinator Charge

The ISO Scheduling Coordinator Charge for each Unit shall be the product of PX Administration Charge as charged under the PX Tariff and the Unit's Billable MWh for the Billing Month.

C. ISO ACA Charge

The ISO ACA Charge is the product of the Unit's Billable MWh for the Billing Month and the applicable annual charge for short-term sales under 18 CFR Section 382.201 of the FERC Regulations.

SCHEDULE D

Part 1

Start-up Payment for Condition 1 Units

1. Prepaid Start-up Charge

Prepaid Start-up Charge for each Unit operating under Condition 1 for each Contract Year will be calculated as the Prepaid Start-up Cost times the number of Prepaid Start-ups. The number of Prepaid Start-up equals the Maximum Annual Start-ups per Unit. The Prepaid Start-up Cost will be calculated in accordance with Equation D-1 for Start-up Cost with the following assumptions:

- a) Hourly Fuel Price: For the initial Contract Year the Hourly Fuel Price shall be the simple average of the applicable index prices from Table C1-8 of Schedule C for the period beginning on the later of the initial publication date of such indices or January 1, 1998 and ending December 31, 1998, plus the applicable Transportation Rate under Equation C1-8 as in effect on April 1, 1999. For each subsequent Contract Year, the Hourly Fuel Price shall be agreed upon by ISO and Owner; if there is no agreement, the Hourly Fuel Price shall be the simple average of the Hourly Fuel Prices for the twelve months ending the prior June 30 as calculated in accordance with Equation C1-8 of Schedule C;
- b) Energy Price shall be based on the [insert Applicable UDC Tariff rate], including applicable demand charges, provided that the Applicable UDC Tariff rate shall only be the energy charge rate at those Facilities where Units have the capability to use Energy from other units at the same Facility to effect Start-ups or where generation from other units is otherwise permitted under the ISO Tariff to be netted against auxiliary power needed to effect Start-up of the Unit. For the initial Contract Year, the Energy Price shall be calculated as the total auxiliary power (including Energy for Start-ups) costs charged to the Facility by its supplier of end-use Energy for the six-month period ending December 31, 1998 divided by the auxiliary power (including Energy for Start-ups) consumed at the Facility for that same time period. For Facilities that have not been charged for auxiliary power for the six-month period ending December 31, 1998, the Energy Price for the Initial Contract Year shall be the simple average of the prices for Energy for varying times of day shown in the Applicable UDC Tariff. For each subsequent Contract Year, the Energy Price shall be calculated as the total auxiliary power (including Energy for Start-ups) costs charged to the Facility by its supplier of end-use Energy for the twelve months ending the prior June 30 divided by the auxiliary power (including Energy for Start-ups) consumed at the Facility for that same twelve-month period;
- c) All Start-ups are assumed to be from maximum time off line as shown by value X_{Max} in Table D-1, and
- d) Other Start-up Costs shall be zero (\$0) for non-hydroelectric Units; for hydroelectric Units, other Start-up costs shall be the cost shown in Table D-2 for Normal Work Hours.

The Prepaid Start-up Cost and Prepaid Start-up Charge for the current Contract Year are set forth in Table D-0:

Table D-0

	<u>Number of Prepaid Start-ups</u>	<u>Prepaid Start-up Cost</u>	<u>Prepaid Start-up Charge</u>
Unit			
Unit			
Unit			

2. Start-up Cost

The cost for a Start-up shall be calculated in accordance with Equation D-1:

Equation D-1

$$\begin{array}{r} \text{Start-up} \\ \text{Cost} \\ (\$) \end{array} = \begin{array}{r} \text{Start-up} \\ \text{Fuel Cost} \\ (\$) \end{array} + \begin{array}{r} \text{Start-up} \\ \text{Power Cost} \\ (\$) \end{array} + \begin{array}{r} \text{Other} \\ \text{Start-up Costs} \\ (\$) \end{array} + \begin{array}{r} \text{Shutdown} \\ \text{Power Cost} \\ (\$) \end{array}$$

Each component of the Start-up Cost in Equation D-1 is set forth below.

a. Start-up Fuel Costs

The Start-up Fuel Cost shall be calculated in accordance with Equation D-1a:

Equation D-1a

$$\begin{array}{r} \text{Start-up} \\ \text{Fuel Cost} \\ (\$) \end{array} = \left[\begin{array}{r} (A \\ (\text{MMBtu/hr}) \end{array} * \begin{array}{r} x \\ (\text{hrs}) \end{array} \right] + \begin{array}{r} B \\ (\text{MMBtu}) \end{array} \right] * \begin{array}{r} \text{Hourly} \\ \text{Fuel Price} \\ (\$ \text{MMBtu}) \end{array}$$

Where:

- "x" equals the number of hours since the Unit ceased operation and cannot exceed "x_{Max}".
- The Hourly Fuel Price is calculated pursuant to Schedule C Equation C1-8 for the hour in which the Start-up began.
- The values A, B and x_{Max} for each Unit are given in Table D-1 below.

b. Start-up Power Costs

The Start-up Power Cost shall be calculated in accordance with Equation D-1b:

Equation D-1b

$$\text{Start-up Power Cost (\$)} = \left(\frac{C}{\text{MWh/hr}} * x \right) + \frac{D}{\text{MWh}} * \text{Energy Price (\$/MWh)}$$

Where:

- “x” is equal to the hours since the Unit ceased operation and cannot exceed “x_{Max}”.
- The Energy Price shall be equal to the total auxiliary power (including Energy for Start-ups) costs charged to the Facility by its supplier of end-use Energy for the billing cycle in which the Start-up was initiated divided by the total auxiliary power (including Energy for Start-ups) consumed at the Facility during such billing cycle.
- The values C, D and x_{Max} are given in Table D-1 below.

c. Shutdown Power Costs

The Shutdown Power Cost shall be calculated in accordance with Equation D-1c:

Equation D-1c

$$\text{Shutdown Power Cost (\$)} = \text{Shutdown Power Requirement (MWh)} * \text{Energy Price (\$/MWh)}$$

The Energy Price shall be equal to the total auxiliary power (including Energy for Shutdowns) costs charged to the Facility by its supplier of end-use Energy for the billing cycle in which the Shutdown was initiated divided by the total auxiliary power (including Energy for Shutdowns) consumed at the Facility during such billing cycle. The Shutdown Power Requirement is given in Table D-1 below.

d. Other Start-up Costs for Hydroelectric Only

Other Start-up Costs are the cost of labor to start hydroelectric Units that require an operator to manually parallel, and reflect the labor costs to travel to the site. If the Start-up of a hydroelectric Unit occurs outside normal work hours, the Start-up Costs include the minimum work hours and labor rates as set by the applicable collective bargaining agreement(s).

The Other Start-up Costs shall be calculated in accordance with Equation D1-d. The values for E are provided in Table D-2 for normal work hour and outside of normal work hour situations.

Equation D-1d

$$\text{Other Start-up Costs (\$)} = E$$

Once a Unit has been given a Dispatch Notice to Start-up, other Start-up Costs are incurred.

Table D-1, Start-Up Costs

	x_{Max}	A	B ⁸	C	D	Shutdown Power Requirement
<u>Unit</u>	<u>(Hrs)</u>	<u>(mmBtu)/hr</u>	<u>(mmBtu)</u>	<u>(MWh)/hr</u>	<u>(MWh)</u>	<u>(MWh)</u>

Table D-2, Other Start-Up Costs – Hydroelectric Units

Unit	E (Normal Work Hours)	E (Outside Normal Work Hours)
	<u>(\$)</u>	<u>(\$)</u>

3. Monthly Start-up Adjustment

For each Start-up successfully completed in compliance with a Dispatch Notice during the Billing Month, and each Start-up initiated in compliance with a Dispatch Notice but not successfully completed because it is canceled or rescinded by ISO, until the total Counted Start-ups for the Contract Year equals the number of Prepaid Start-ups for the Contract Year, the Monthly Start-up Adjustment, which shall be a credit or payment, is the sum of Prepaid Start-up Adjustments, and Prepaid Start-up Adjustments for Canceled Start-ups calculated in accordance with Equations D-2 and D-3:

Equation D-2

Prepaid Start-up Adjustment = Prepaid Start-up Cost calculated in accordance with Section 1 minus the actual Start-up Cost calculated in accordance with Equation D-1.

Equation D-3

$$\text{Prepaid Start-up Adjustment for Canceled Start-up} = \frac{\text{Number of hours committed to the Start-up applicable Start-up Lead Time (hrs) as shown in Schedule A, Section 6}}{\text{}} * \text{Prepaid Start-up Adjustment calculated in accordance with Equation D-2}$$

Where:

- The “number of hours committed to the Start-up” is the lesser of (a) time elapsed between the initiation of the Start-up and the cancellation and (b) the applicable Start-up Lead Time.

⁸ Includes fuel consumed from the time Unit reaches Synchronization to the time Unit reaches Minimum Load.

SCHEDULE D

Part 2

Start-up Payment for Condition 2 Units

1. **Start-up Payment**

The Start-up Payment for each Start-up successfully completed for each Unit operating under Condition 2 equals the Start-up Cost calculated using Equation D-1.

2. **Payment for Canceled Start-up**

If Start-up is initiated under a Dispatch Notice but is not successfully completed because it is canceled or rescinded by the ISO, the Start-up Payment is calculated in accordance with Equation D-4:

Equation D-4

$$\begin{array}{rcc} \text{Start-up} & & \text{Number of hours} \\ \text{Payment for} & = & \text{committed to the} \\ \text{Canceled Start-up (\$)} & & \text{Start-up} \\ & & \text{applicable Start-up} \\ & & \text{Lead Time (hrs)} \\ & & \text{as shown in} \\ & & \text{Schedule A, Section 6} \end{array} * \begin{array}{l} \text{Start-up Cost} \\ \text{calculated in} \\ \text{accordance with} \\ \text{Equation D-1 (\$)} \end{array}$$

The "number of hours committed to the Start-up" is the lesser of (a) time elapsed between the initiation of the Start-up and the cancellation or (b) the applicable Start-up Lead Time.

Schedule E

Ancillary Services Part 1 for Condition 1

The ISO may call upon the Unit to provide the following Ancillary Services as defined in the ISO Tariff:

- Regulation
- Spinning Reserve
- Nonspinning Reserve
- Replacement Reserve
- Voltage Support (including synchronous condenser operation)
- Black Start

If the Unit is otherwise generating, the Owner shall be required to operate the Unit within the Power Factor range of the Unit specified in Schedule A to provide Ancillary Services without additional compensation.

Certain Units (hydroelectric and synchronous condensers) can provide Ancillary Services without generating Energy. Under this Condition, Owner will be compensated for Motoring Charges if the Unit is providing Ancillary Services while synchronized without generating Energy.

Motoring Charge

When Units are operated as synchronous condensers (i.e., motored using electric power) to provide Ancillary Services, if applicable, the payment for that service is given by the following formula:

$$\text{Motoring Charge} = (\text{Power consumption rate (MWh/hr)}) * (\text{hours operated}) * (\text{Energy Price})$$

Where the Power consumption rate is given by the following table:

<u>Unit</u>	<u>Power consumption rate (MWh/hour)</u>
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The Energy Price shall be equal to the total power costs charged to the Facility by its supplier of end-use Energy under the Applicable UDC Tariff for the billing cycle in which the Motoring Charge was incurred divided by the total power consumed at the Facility under such tariff during such billing cycle.

Pre-empted Dispatch Payment

If the ISO issues a Dispatch Notice to:

- (i) decrease a Unit's scheduled output of Energy in a Market Transaction to provide Ancillary Services;
- (ii) decrease a Unit's scheduled provision of Ancillary Services capacity in a Market Transaction in order to provide Regulation, Spinning Reserve, Nonspinning Reserve, or Replacement Reserve pursuant to a Dispatch Notice,
- (iii) decrease a Unit's scheduled provision of Ancillary Service capacity in a Market Transaction in order to provide Energy pursuant to a Dispatch Notice,

the ISO shall pay the appropriate Pre-empted Dispatch Payment described below. The Pre-empted Dispatch Payments are intended to make an Owner whole with respect to the original Market Transaction.

A. For Pre-empted Energy Market Transactions:

Pre-empted Dispatch Payment = Imbalance Energy Charge – Cost Savings

- Imbalance Energy Charge = $(X_o - X_n) * \text{Penalty Price}$
- Penalty Price = Unrestricted Imbalance Energy Price + additional penalties (per MWh) imposed by the ISO for failure to comply with Market Schedules due to compliance with Dispatch Notice.
- Cost Savings = Fuel Cost Savings + Emissions Savings + Other Savings

Where:

- X_o = Original Total Schedule in Market and Nonmarket Transactions;
- X_n = New Total Schedule in Market and Nonmarket Transactions;

For fossil fuel Units, the Fuel Cost Savings is calculated as follows:

- Fuel Cost Savings = Fuel Savings x Hourly Fuel Price
- Fuel Savings = $((AX_o^3 + BX_o^2 + CX_o + D) - (AX_n^3 + BX_n^2 + CX_n + D)) * E$
- or
- Fuel Savings = $[(A * (B + CX_o + De^{FX_o})) - (A * (B + CX_n + De^{FX_n}))] * E$
- A, B, C, D, E and F are the coefficients from Table C1-7a or C1-7b, as applicable;
- Hourly Fuel Price is calculated in Equation C1-8.

For geothermal Units, the Fuel Cost Savings is calculated by the following formula:

$$\text{Fuel Cost Savings} = (X_o - X_n) * \text{Hourly Fuel Price}$$

Where:

- Hourly Fuel Price is the Steam Price identified in Equation C2-1 in Schedule C. However, for purposes of this Pre-empted Dispatch Payment calculation, the value for the Steam Price will be set to zero for Geysers Main Units until the cumulative Hourly Metered Total Net Generation for the Contract Year from all Units exceeds the Minimum Annual Generation given in Equation C2-2.

For pumped storage hydroelectric Units, the Fuel Cost Savings is calculated by the following formula:

$$\text{Fuel Cost Savings} = (X_o - X_n) * \text{Hourly Fuel Price}$$

Where:

- Hourly Fuel Price is YTD Pumping Cost / YTD Energy Produced; and YTD Pumping Cost and YTD Energy Produced are as defined in Equation C4-2.

For conventional hydroelectric Units, the Fuel Cost Savings is zero.

Other Savings = $((X_o - X_n) \times (\text{Variable O\&M Rate} + \text{applicable annual charge for short-term sales under 18 CFR 382.201 of the FERC Regulations} + \text{PX Administration Charge as charged under the PX Tariff}))$

Emissions Savings = RECLAIM Savings + NOx Emissions Fee Savings + Organic Gases Fee Savings + Sulfur Oxides Fee Savings + Particulate Matter Savings + Carbon Monoxide Fee Savings

RECLAIM Savings = $((AX_o^2 + BX_o + C) - (AX_n^2 + BX_n + C)) \times \text{RECLAIM NOx Trading Credit Rate}$

Where:

- A, B and C are the coefficients from Table C1-13;
- X_o = Original Total Schedule in Market and Nonmarket Transactions;
- X_n = New Total Schedule in Market and Nonmarket Transactions;

NOx Emissions Fee Savings = $\frac{((AX_o^2 + BX_o + C) - (AX_n^2 + BX_n + C)) \times \text{NO}_x \text{ Emissions Fee}}{2000}$

Where:

- A, B and C are the coefficients from Table C1-13;
- X_o = Original Total Schedule in Market and Nonmarket Transactions;
- X_n = New Total Schedule in Market and Nonmarket Transactions;

Organic Gases Fee Savings =

$4.76 \times 10^{-7} \times \text{Gas Fuel Savings} \times \text{Associated Emission Factor for Organic Gases} \times \text{Associated Emissions Fee for Organic Gases}$

Sulfur Oxides Fee Savings =

$4.76 \times 10^{-7} \times \text{Gas Fuel Savings} \times \text{Associated Emission Factor for Sulfur Oxides} \times \text{Associated Emissions Fee for Sulfur Oxides}$

Particulate Matter Oxides Fee Savings =

$4.76 \times 10^{-7} \times \text{Gas Fuel Savings} \times \text{Associated Emission Factor for Particulate Matter} \times \text{Associated Emission Fee for Particulate Matter}$