



# **FORD MOTOR COMPANY**

**Philippine GHG Accounting and Reporting Program**

**PhilGARP**

**2007 Report**

**December 2008**

## **Executive Summary:**

Ford Motor Company is proud to be a part of the Philippine GHG Accounting and Reporting Program (PhilGARP) and to submit a second inventory to the program. As the climate change issue continues to receive increased attention, Ford would like to raise internal and external awareness of CO<sub>2</sub> emissions reporting by way of tracking and reporting its GHG emissions. At the local level, reporting supports the government and program's goal to address voluntary GHG actions. From a global standpoint, Ford in the Philippines' participation is consistent with Ford's global efforts to address and report GHG in other countries, such as Australia, Canada, Mexico, Brazil, China, U.S, and EU.

This 2007 report includes data from the 2000-2007 timeframe. Overall, Ford in the Philippines has reduced its Greenhouse Gas (GHG) emissions by 32% in 2007 compared to the baseline years (2002-2005) and 15% compared to 2006. Ford will continue to support and participate in PhilGARP by providing annual updates as it continues to strive to maintain and exceed its environmental standards.

**TABLE OF CONTENTS**

**1. INTRODUCTION..... 5**

    1.1 FORD IN THE PHILIPPINES..... 5

    1.2 FORD MOTOR COMPANY PHILIPPINES, INC. .... 7

        1.2.1 FORD PHILIPPINES COMPONENT MANUFACTURING COMPANY (FPCM).....7

        1.2.2 FORD PHILIPPINES MACHINING COMPANY (FPMC).....8

    1.3 CORPORATE PRACTICES ON CLIMATE CHANGE..... 8

**2. METHODOLOGY ..... 10**

**3. BASE YEARS..... 11**

**4. DATA AND ANALYSIS ..... 11**

    4.1 DIRECT & INDIRECT EMISSIONS ..... 12

    4.2 ABSOLUTE EMISSIONS..... 13

    4.2 EMISSION INTENSITY .....14

**5. CONCLUSION ..... 15**

**ATTACHMENT**

**INVENTORY MANAGEMENT PLAN..... 17**

## **LIST OF FIGURES**

### **FIGURE**

<b>1.1 FORD MOTOR COMPANY PHILIPPINES, INC.....</b>	<b>7</b>
<b>1.2 FORD FOCUS CORE SERIES.....</b>	<b>7</b>
<b>1.3 FORD ESCAPE .....</b>	<b>7</b>
<b>1.4 MAZDA 3 .....</b>	<b>7</b>
<b>4.1 INDIRECT EMISSIONS .....</b>	<b>12</b>
<b>4.2 DIRECT EMISSIONS .....</b>	<b>13</b>
<b>4.3 TOTAL EMISSIONS .....</b>	<b>14</b>
<b>4.4 EMISSION INTENSITY .....</b>	<b>15</b>

## **LIST OF TABLES**

### **TABLE**

<b>2.1 EMISSION FACTORS .....</b>	<b>11</b>
<b>3.1 DIRECT EMISSIONS .....</b>	<b>11</b>
<b>3.2 INDIRECT EMISSIONS .....</b>	<b>11</b>
<b>4.1 ENERGY CONSUMPTION AND PRODUCTION DATA .....</b>	<b>12</b>
<b>4.2 TOTAL ABSOLUTE EMISSIONS .....</b>	<b>13</b>
<b>4.3 EMISSION INTENSITY .....</b>	<b>14</b>

## **1. Introduction:**

### **1.1 Ford in the Philippines:**

Ford in the Philippines includes the following entities:

- Ford Motor Company Philippines, Inc. (FMCP) - the Vehicle Assembly Plant
- Ford Group Philippines - includes the Office of the President, Government and Public Affairs, Sales and Marketing, Accounting, Finance (all of which are Offices)
- Ford Philippines Component Manufacturing Company (FPCM)
- Ford Philippines Machining Company (FPMC)

Ford Motor Company Philippines, Inc (FMCP) – Vehicle Assembly Plant and the Ford Group Philippines including the office of the president, Government and Public Affairs, Sales and Marketing, Accounting and Finance are included in this greenhouse gas inventory. The Ford Philippines Component Manufacturing Company (FPCM) and the Ford Philippines Machining Company (FPMC) electricity usage is included in this inventory as incremental of FMCP as they began operating in June of 2007 and operations at those facilities have not been stable due to new product launch. In 2007 greenhouse gas emissions from these facilities accounted for 9% of the site wide emissions. A complete analysis will be included in next year's inventory once the production stabilizes.

FPMC and FPCM manufacture the E20 FFV engine, which is capable of running on traditional gasoline only or a mix that contains up to 20% bio-ethanol fuel. The engines are used in the Ford Focus 1.8L and 2.0L models produced for both domestic and export markets. The Flex Fuel engines are exported to South Africa as part of the Ford Philippines export program into global market outside the ASEAN region.

Ford Motor Company Philippines assembly plant commenced operations in September of 1999. Situated in Santa Rosa, Laguna, it covers 30,000 square meters in size and has a capacity of 36,000 units per year. By 2004, FMCP launched the Mazda brand, building upon the Ford and Mazda

alliance. Today, the plant produces an extensive lineup of Ford and Mazda vehicles, including the Ford Focus, Ford Escape, Mazda3, and the Mazda Tribute.

The FMCP assembly plant is the *first* in the Ford world to be certified to ISO 14001 prior to plant operations. This environmental management standard is one of the most important initiatives undertaken by Ford Motor Company in all of its worldwide manufacturing facilities, where all aspects of the plant are included: air emissions, waste, water, and energy. In order to remain certified, a facility must undergo a surveillance audit each year that ensures adherence to guidelines and measures the plant's progress against objectives and targets.

The ISO standard is one of the many ways Ford Motor Company has shown a commitment to protect and preserve the environment. To date, the company has evaluated different approaches to address climate change, including emissions trading. Ford participates in various voluntary initiatives including The Chicago Climate Exchange (CCX), the UK Trading Scheme, the Australian GHG Challenge Programme, the Mexico GHG Program, CFMA Chongqing China Reporting, The Climate Registry (TCR) and the Canadian GHG Challenge Registry. Ford is also the first and only automotive manufacturing participant for most of these initiatives.

Ford recognizes the importance of the climate change issue and will continue to work on reducing the greenhouse gas emissions of its vehicles and facilities by way of introducing advanced technology vehicles and improving energy-efficiency of manufacturing operations.

## **1.2 Ford Motor Company Philippines, Inc (FMCP):**

**Product:** Ford Focus, Ford Escape, Mazda3, Mazda Tribute

**Founded:** September 17, 1999

**Plant Capacity:** 36,000 units/year

**Operation:** Assembly

**Employees (2007):** Overall 727 employees

**Site:** 53 hectares

**Floor Space:** 30,000 m<sup>2</sup>

**ISO 14001 Certified:** September 30, 1999



**Figure 1.1 Ford Motor Company Philippines, Inc**



**Figure 1.2 Ford Focus Core Series**



**Figure 1.3 Ford Escape**



**Figure 1.4 Mazda 3**

### **1.2.1 Ford Philippines Component Manufacturing Company (FPCM):**

**Product:** I4 engine

**Founded:** June, 2007

**Operation:** Engine Assembly

**Floor Space:** Part of FMCP

### **1.2.2 Ford Philippines Machining Company (FPMC):**

**Product:** 2.1L & 1.8l Cylinder Heads for I4 engine

**Founded:** June, 2007

**Operation:** Machining

**Floor Space:** Part of FMCP

### **1.3 Corporate Practices on Climate Change:**

Ford Motor Company is proud to participate in various climate initiatives around the world. Ford believes that climate change is a serious environmental issue and recognizes that it is not possible to wait for all uncertainties to be resolved. In addition to participating in the Philippines GHG Accounting and Reporting Program, Ford has also been proactively participating in the following climate change programs:

#### **Chicago Climate Exchange (CCX):**

The Chicago Climate Exchange (CCX) is a greenhouse gas (GHG) emission reduction and trading program for emission sources and projects in North America. It is a self-regulated, rules based exchange designed and governed by CCX members. These members have made a voluntary, legally binding commitment to reduce their emissions of greenhouse gases by six percent below 2000 baseline year by 2010. Ford is the first and only auto manufacturing participant in this program.

#### **CFMA Chongqing – China:**

In 2008 Changan Ford Mazda Assembly Plant in Chongqing, China became the automotive company in China to report its GHG emissions.

#### **The Climate Registry (TCR):**

The Climate Registry is a nonprofit organization that establishes consistent, transparent standards throughout North America for businesses and governments to calculate verify and publicly report their carbon footprints in a single, unified registry. Ford became a founding member in 2008 and is the first and only auto manufacturing participant in the program.

#### **Mexico GHG Pilot Program:**



The Mexico GHG Program started as two year partnership between La Secretaria de Medio Ambiente y Recursos Naturales (SEMARNAT), World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD). It is a voluntary program established to help Mexican companies to quantify greenhouse gas emissions. Ford Motor Company was proud to be the only auto manufacturer to participate in the first phase of the program where we are committed to reporting emissions annually.

**EU Emissions Trading Scheme (EU ETS):**

Ford participates in the EU ETS which commenced in January 2005 and is one of the policies being introduced across Europe to reduce emissions of carbon dioxide and other greenhouse gases. The second phase of this program runs from 2008-2012 and coincides with the first Kyoto Commitment Period. Further 5-year periods are expected subsequently.

**Canadian GHG Challenge Registry:**

Ford voluntarily reports GHG emissions to the Canadian GHG Challenge Registry. It has been reporting annual emissions since 1999. Over the years, it has received the highest level of achievement in the reporting system, which includes two Leadership Awards in the Automotive Manufacturing Sector category as well as qualifying as a Silver Champion level Reporter in 1999 and Gold Champion Level Reporter from 2000 to 2003, 2005 & 2006.

## 2. Methodology:

The data used to calculate the baseline and reporting year is based on actual electricity and liquefied petroleum gas (LPG) invoices. The emissions data reported was generated following the greenhouse gas calculation tools contained in the Corporate GHG Accounting and Reporting Guide, which was developed by the World Resources Institute (WRI) and the World of Business Council for Sustainable Development (WBCSD). Specifically, the calculation tools referenced include *Indirect CO2 emissions from the consumption of purchased electricity, heat, and/or steam* and *Revised tool for direct emissions from stationary combustion*, obtained from the website [www.ghgprotocol.org](http://www.ghgprotocol.org). The report includes "direct" emissions characterized as scope 1 in the WRI/WBCSD protocol and "indirect" or scope 2 emissions from the same protocol. All CO<sub>2</sub> emissions are included and reported in units of metric tons of carbon dioxide (CO<sub>2</sub>). Other Greenhouse gases applicable to combustion processes, CH<sub>4</sub> and N<sub>2</sub>O, are estimated to be less than 1% of the total emissions and hence considered negligible. Other emission sources such as HFCs from refrigerant leakages during the initial vehicle fill process for the air conditioning units are also considered negligible compared to the company's total emissions. PFCs and SF<sub>6</sub> do not apply to the company's manufacturing facilities.

For emissions calculations, the factor of 0.457 metric tons/MWh was used to convert electricity usage to indirect CO<sub>2</sub> emissions based on the latest available emission factor for the consumption of electricity in the Philippines as referenced in the WRI/WBCSD calculation tools. A 38.0 lb C/MMBTU (0.0632 metric tons of CO<sub>2</sub>/MMBTU) emission factor was used to convert liquefied petroleum gas (LPG) usage to direct CO<sub>2</sub> emissions (Table 2.1).

**Table 2.1 Emission Factors**

Type of Emissions	Factor
LPG (WRI/WBCSD)	38.0 lb C/MMBTU (0.0632 metric tons of CO <sub>2</sub> /MMBTU)*
Electricity (WRI/WBCSD)	0.457 metric tons of CO <sub>2</sub> / MWh

\*38.0 lb C/MMBTU x (44 lb CO<sub>2</sub>/12 lb C) x (0.0004536 metric ton/lb) = 0.0632 metric ton CO<sub>2</sub>/MMBTU

### 3. Base Years:

Ford Motor Company Philippines began operations in 1999 and was ramping up production during the first couple years, climbing to a more stable production rate beginning in 2002; hence, the baseline is calculated based on the average of four years after the production rate has started to stabilize, beginning in 2002 through 2005. Tables 3.1 and 3.2 show the base years' average direct and indirect emissions, as well as emissions for 2000, 2001, 2006 and 2007. Please note that indirect emissions from FPMC and FPCM have been added to FMCP indirect emission's totals for 2007. Also FPCM and FMCP did not combust LPG during 2007 and therefore there are no direct emissions associated to these facilities.

**Table 3.1 Direct Emissions**

<b>Direct Emissions (Scope 1) metric tons of CO2</b>								
<b>Baseline Average(2002-2005)</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
<b>1,690</b>	0	152	653	737	2,320	3,050	1,537	1,079

**Table 3.2 Indirect Emissions (Includes FMCP, FPMC and FPCM)**

<b>Indirect Emissions (Scope 2) metric tons of CO2</b>								
<b>Baseline Average(2002-2005)</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007*</b>
<b>5,761</b>	4,315	5,029	5,180	5,403	5,578	6,883	4,400	3,972

\* Includes emissions from FPMC and FPCM

### 4. Data and Analysis:

Ford in the Philippines has always been committed to reducing its emissions. The assembly plant has implemented projects to reduce its electricity and LPG consumption. Activities to reduce electricity include: Reduction of light bulbs at process areas, offices and other unused areas, turning off lights and office equipments during breaktime, replacement of air conditioner refrigerant gas to increase energy efficiency and reduce impact on ozone, turning off compressors during the weekends and repairing air leakages, installation of timing device for automatic switching of high bay lights, and turning off air conditioning units at offices 45 minutes before the end of working hours. Efforts to reduce LPG usage include: Delayed start of paint ovens and early shutoff to maximize oven efficiency. Below is a summary of Ford Philippines' energy consumption from 2000-2007.

**Table 4.1 Ford of Philippines Energy Consumption and Production data**

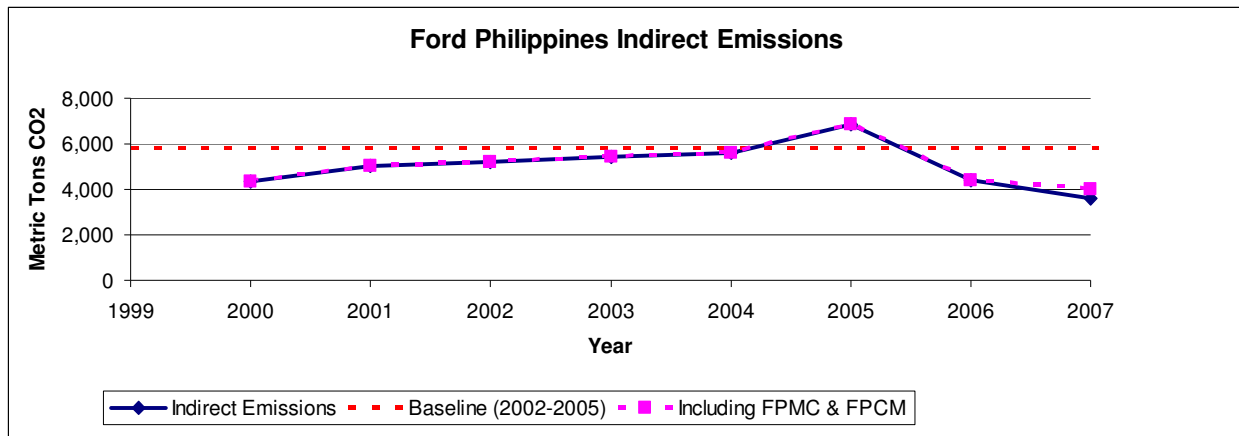
Ford Motor Company Philippines	2000	2001	2002	2003	2004	2005	2006	2007
Vehicles Produced	2,895	2,883	7,236	13,559	14,225	19,440	10,544	7,162
Electricity - MWh	9,4423	11,005	11,335	11,823	12,207	15,063	9,629	8,692*
LPG - mmbtu	0	2,402	10,336	11,675	36,737	48,287	24,332	17,088

\*Electricity includes usage from FMPC and FMCP

**4.1 Direct & Indirect Emissions:**

Greenhouse gas emissions are primarily the result of energy consumption by means of electricity usage (indirect) or LPG combustion (direct). In 2007, Ford in the Philippines reduced its indirect emissions by 31% compared with its average baseline and 10% compared with 2006. This reduction took place despite the addition of the machining and engine operations at the Santa Rosa Site. Figure 4.1 shows the indirect emission reductions for FMCP including FPMC and FPCM (pink dotted line) and the indirect emissions for FMCP only (as reported in previous years). Overall the FPMC and FPCM accounted for 9% of our indirect emissions in 2007.

Ford in the Philippines reduced its direct emissions by 36% compared to the baseline average and 30% compared to 2006 (Figure 4.2). See Tables 3.1 and 3.2 for 2000-2007 direct and indirect emissions data, respectively. Table 4.1 shows energy data utilized to calculate these emissions and production data for FMCP Assembly for the years 2000-2007.



**Figure 4.1 Indirect Emissions**

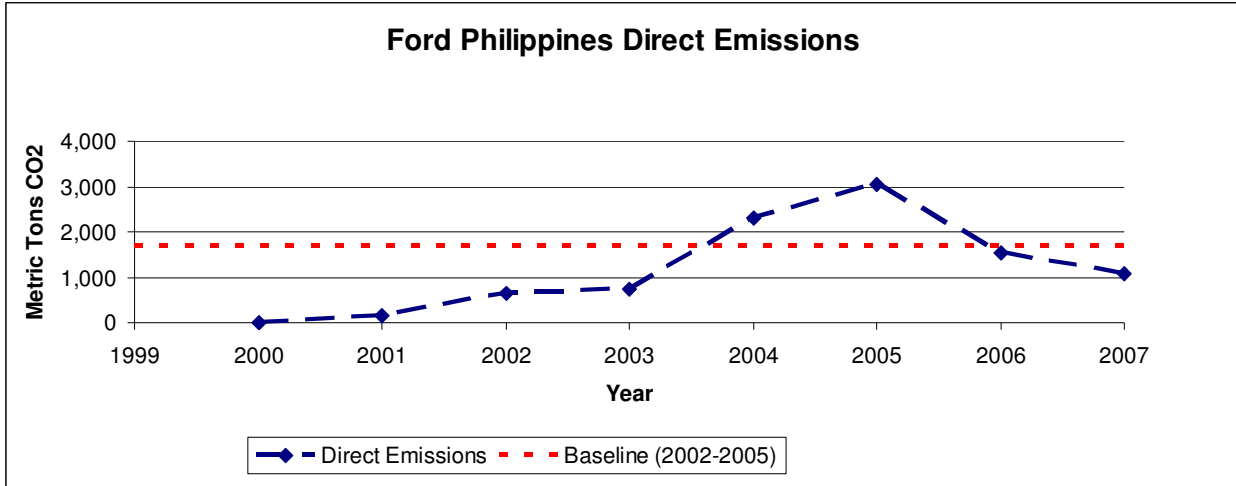


Figure 4.2 Direct Emissions

**4.2 Absolute Emissions:**

Ford in Philippines has reduced its overall GHG absolute emissions by 32% compared to the baseline average and 15% compared to 2006. This is mainly due to the implementation of projects and activities to reduce electricity and LPG consumption over the past year combined with reduced production volumes. As explained in sections above, electricity consumption for FPMC and FPCM has been added to the FMCP electricity usage since the machining and engine operations were in their beginning stages and production was not stable. Figure 4.3 below, shows absolute emissions for FMCP including FPMC and FPCM (pink dotted line) and the emissions for FMCP only (solid line) as reported in previous years.

Table 4.2 Absolute Emissions

Absolute Emissions metric tons of CO2								
Baseline Average(2002-2005)	2000	2001	2002	2003	2004	2005	2006	2007
7,451	4,315	5,181	5,833	6,140	7,898	9,933	5,937	5,051*

\* Includes Absolute emissions from FPMC and FPCM

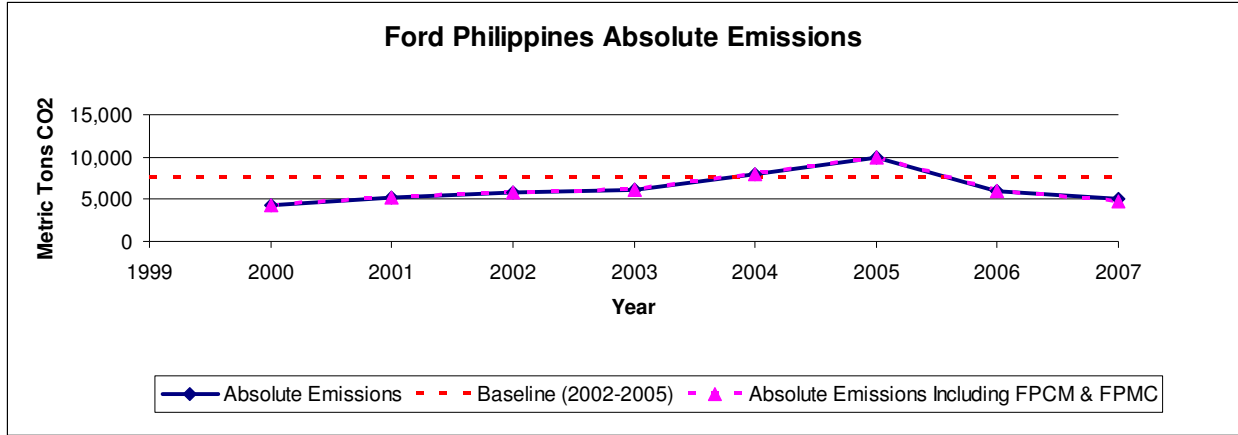


Figure 4.3 Total Emissions

#### 4.2 Emission Intensity:

Ford in the Philippines experienced a significant production decrease in the last couple of years (2006 & 2007) which in consequence increased its GHG emissions intensity (emissions/unit built) by 21% compared with the baseline and 25% compared with 2006 (Figure 4.4). The increased emissions intensity occurred because a fixed portion of energy is required for base facility operations regardless of the number of vehicles produced. However, the emission intensity increase is minimal considering the production decrease (48% compared with the baseline and 32% compared with 2006). The graph below shows the emissions intensity for FMCP including the FPCM and FPMC and the emissions intensity for FMCP as reported in previous years. It is important to note that production from those facilities has not been taken into account in this inventory, increasing the emissions per unit built by FMCP.

Table 4.3 Emission Intensity

Emission Intensity metric tons of CO <sub>2</sub> /Vehicles Built								
Baseline Average(2002-2005)	2000	2001	2002	2003	2004	2005	2006	2007
0.58	1.49	1.80	0.81	0.45	0.56	0.51	0.56	0.71*

\*Includes emissions from FPMC and FPCM

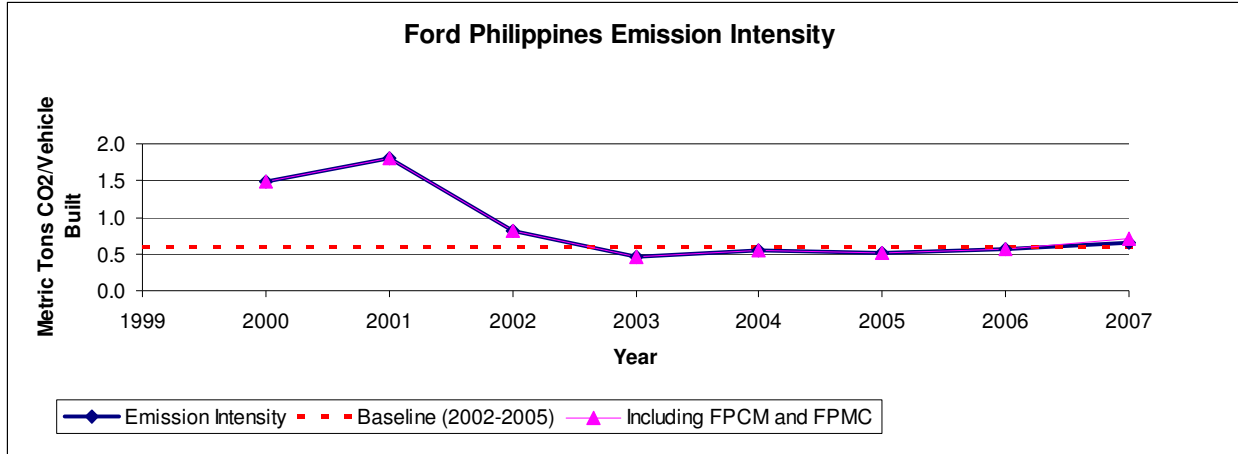


Figure 4.4 Emission Intensity

## 5. Conclusion:

Ford Motor Company is proud to be part of the Philippine GHG Accounting and Reporting Program, and our second report includes data from 2000-2007. Ford recognizes the importance of the climate change issue and supports emissions reporting at a national level. Ford in the Philippines is committed to maintaining and exceeding its environmental standards. Overall, Ford in the Philippines has reduced its Greenhouse Gas (GHG) emissions by 32% in 2007 compared to the baseline years (2002-2005). Ford will continue to support PhilGARP by providing annual updates to the program.

## ATTACHMENT



### **Ford in the Philippines Greenhouse Gas Inventory Management Plan**

Ford in the Philippines includes Ford Motor Company Philippines (FMCP) assembly plant, Ford Group Philippines, which includes the Office of the President, Government and Public Affairs, Sales and Marketing, Accounting, Finance (all of which are Offices), Ford Philippines Component Manufacturing Company, and Ford Philippines Machining Company.

Ford 2007, Ford Motor Company Philippines, Inc (FMCP) – Vehicle Assembly Plant and the Ford Group Philippines including the office of the president, Government and Public Affairs, Sales and Marketing, Accounting and Finance are included. The Ford Philippines Component Manufacturing Company (FPCM) and the Ford Philippines Machining Company (FPMC) electricity usage is included in this inventory as an incremental to FMCP as they began operating in June of 2007 and operations at those facilities have not been stable due to new product launch. In 2007 greenhouse gas emissions from these facilities accounted for 8% of the site wide emissions. A complete analysis will be included in next year's inventory once the production stabilizes.

Ford Motor Company Philippines is located in Santa Rosa, Laguna. With over 30,000 square meter in size, this plant has a capacity of up to 36,000 units per year and produces an extensive lineup of Ford and Mazda vehicles, including the Ford Focus, Ford Escape, Mazda3, and the Mazda Tribute. The FMCP assembly plant is also the first in the Ford world to be certified to ISO 14001 prior to plant operations in 1999.

The ISO standard is one of the many ways Ford Motor Company has shown a commitment to protect and preserve the environment. As the climate change issue is growing, Ford recognizes its importance and supports the initiative to manage and report greenhouse gas inventories. The participation of Ford Motor Company Philippines in the Philippine GHG Accounting and Reporting Program (PhilGARP) shows support for voluntary climate change actions not only at the local level, but at the global level as well. Joining PhilGARP is consistent with Ford's other voluntary GHG reporting in various parts of the world (Australia, Canada, Mexico, U.S.)



## ***IMP Part I***

### **Partner Information**

1. Company Name  
Ford Motor Company Philippines, Inc
2. Corporate Address  
No. 1 American Road  
Greenfield Automotive Park  
Santa Rosa, Laguna  
Philippines 4026
- 3.. Inventory Contact and information

Name: Michael Parondo  
Phone: 49-541-5455  
Email: [mparondo@ford.com](mailto:mparondo@ford.com)  
Address: No. 1 American Road  
Greenfield Autopark  
Santa Rosa, Laguna  
Philippines 4026

Name: Claudya Arana  
Phone: 1-313-323-0383  
Email: [carana@ford.com](mailto:carana@ford.com)  
Address: Fairlane Plaza North,  
Suite 800 290 Town Center Drive Dearborn MI, 48126

## 5. Company Objectives

By way of participating in PhilGARP, Ford would like to increase the internal and external awareness of CO<sub>2</sub> emissions reporting. At the local level, it supports the government and program's goal to encourage voluntary GHG actions. From a global standpoint, Ford in the Philippines' participation will be consistent with Ford's efforts to address and report GHG in other parts of the world (including voluntary reporting in Australia, Canada, Mexico, and U.S.).

By tracking the CO<sub>2</sub> emissions over time, the data could also be used to support potential future energy reduction initiatives.

## **Boundary Conditions**

### **Organizational**

#### 6. Inclusion of Partially Owned or Controlled Assets

Ford in the Philippines will use the Equity Approach to account for its GHG emissions. For 2007 reporting, Ford in the Philippines includes Ford Motor Company Philippines, Inc. and Ford Group Philippines, which includes the Office of the President, Government and Public Affairs, Sales and Marketing, Accounting, Finance (all of which are offices). Ford has 100% ownership over Ford Motor Company Philippines, Inc. and will report the emissions from this facility as well as Ford Group Philippines.

#### 7. Facilities List

Ford Motor Company Philippines, Inc (located in Santa Rosa, Laguna)

Ford Group Philippines

The Ford Philippines Component Manufacturing Company (FPCM)

The Ford Philippines Machining Company (FPMC)

### **Operational**

#### 8. GHG List

The GHG most dominantly emitted and reported for this facility will be CO<sub>2</sub> from electricity and gas consumption. CH<sub>4</sub> and N<sub>2</sub>O emissions produced from combustion processes are estimated to be less than 1% of the total emissions. Due to these small percentages, CH<sub>4</sub>, N<sub>2</sub>O, and HFCs emissions are considered to be negligible. The other two GHG, PFCs and SF<sub>6</sub>, are not applicable and hence not included in the inventory.

#### 9. Emission Source Identification Procedure

Ford follows ISO 14001 procedures to cover various environmental aspects and identify emission sources on an annual basis. For energy-related sources, the facility's direct and indirect emissions are from electricity and LPG usages. A non-energy related source is the minor HFC leakage into the initial vehicle refrigerant fill for the air conditioning units. Based on our calculations, however, the annual CO<sub>2</sub> equivalent emission contributed by refrigerant usage is approximately less than 80 metric tons. This is considered minimal and thus not included in the report.

The emissions calculations follow the greenhouse gas calculation tools contained in the Corporate GHG Accounting and Reporting Guide.

### **IMP Component**

#### 10. Direct Sources

Direct source includes stationary emissions from Liquefied Petroleum Gas (LPG) consumption.

#### 11. Indirect Sources – Energy Import/Export

Purchased electricity is included as an indirect source of emissions.

#### 12. Other Indirect Sources

Other indirect GHG emissions, such as emissions from transportation of materials, employees, and waste, etc, are considered de minimis and are not included in the inventory.

### **Emissions Quantification**

#### 13. Quantification Method

Energy data are based on actual electricity and LPG invoices and are converted to CO<sub>2</sub> emissions based on the calculation tools developed by the World Resources Institute.

#### 14. Emission Factors and Other Constants

Consistent with Ford's global reporting practices, emission factors for electricity and LPG usage are provided by WRI.

For the 2007 Report, a factor of 0.457 metric tons/MWh was used to convert electricity usage to indirect CO<sub>2</sub> emissions based on the latest available emission

factor to date for the Philippines per WRI/WBCSD's tool, *Indirect CO2 emissions from the consumption of purchased electricity, heat, and/or steam*. To convert LPG consumption to CO2, a 38.0 lb C/MMBTU (0.0632 metric tons of CO2/MMBTU) emission factor was used per WRI/WBCSD's *Revised tool for direct emissions from stationary combustion*.

## ***IMP Part II***

### **Data Management**

#### 15. Activity Data

To quantify the annual emissions, the most accurate available data available is used. Electricity and LPG consumption are recorded based on the physical units per monthly invoices and/or meter readings.

#### 16. Data Management

Ford has implemented a global environmental database, Global Emissions Manager (GEM), which serves as a standard repository for facilities to consistently input and assess energy and environmental data.

The activity data is tracked in the database by the local environmental specialist. This approach is consistent with that of its operational counterparts in U.S., Mexico, Australia, and Canada, which have also been reporting GHG emissions through other voluntary initiatives, such as the Chicago Climate Exchange, the Mexico GHG Pilot Program, the Australian GHG Challenge Programme, and the UK Trading Scheme.

#### 17. Data Collection Process – Quality Assurance

Data is monitored and reviewed on a monthly basis as part of Ford's internal management process. Any large variations observed are examined to determine root cause.

#### 18. Data Collection System Security

The GHG data and analysis used for report submission is currently stored on a shared drive with restricted access. GEM was launched in June of 2007 increasing system security.

#### 19. Integrated Tools

GHG reporting data is processed and generated via the GEM database, which is a repository of not only energy data and CO<sub>2</sub> emissions, but also includes waste and water data.

#### 20. Frequency

The data is updated on a monthly basis.

## **Base Year**

### 21. Adjustment – Structural Changes

In the event of an acquisition or subsequent divestiture, the base years (2002-2005) and subsequent years will be adjusted to include or exclude the applicable emissions from each acquisition or divestiture, respectively. If the acquisition or divestiture did not exist in the base years, the base years emissions will not be recalculated and adjustments to the inventory will be made as far back as the data is available.

### 22. Adjustment – Methodology Changes

If any changes to emission factors or calculation methodologies were found to result in significant differences, adjustments will be made to the calculations for the years affected. Likewise, a base year adjustment will be made if changes in calculations for the corresponding time frame or improvements in data accuracy lead to significant differences in emissions. If the change is not significant or the data is not available for all past years, the new methodology or calculation will be addressed in the report without recalculation to enhance transparency.

## **Management Tools**

### 23. Roles and Responsibilities

There will be two primary teams responsible for managing and reporting the data: one being the inventory provider that will input the activity data into the system, and the other which will extract, analyze, and prepare the data for report submissions. The in-plant environmental engineer and Ford's Environmental Quality Office (EQO) will coordinate to perform these tasks, respectively.

### 24. Training

Ford's Environmental Quality Office provides training every year for environmental facility engineers on new regulations and voluntary initiatives.

### 25. Document Retention and Control Policy

Ford's retention period for Greenhouse Gas Emission Compliance Records is 10 years. The IMP is maintained and stored on a shared drive with restricted access. A record of revisions will be appended to the document as future changes are made. Once the official IMP is finalized and submitted, each official update reflecting significant changes will be communicated to PhilGARP and saved to the same location.

## **Auditing & Verification**

### 26. Internal Auditing

Ford Motor Company has implemented ISO 14001 environmental management standard in all of its manufacturing facilities worldwide. Its emissions, as well as other aspects of the plant, are included in the standard. To remain certified, a facility must be audited every year and conduct internal audits throughout the year.

### 27. External Validation and/or Verification

Exclusive of GHG gas reporting, the plant is overall externally verified for ISO 14001.

### 28. Management Review

As part of Ford's Environmental management system, each plant performs management reviews routinely. These reviews include evaluations of environmental performance against objectives and targets and status of Corrective Action Requests (CARS).

For the GHG reporting program, the in-plant environmental engineer reviews and tracks the energy consumption monthly, and EQO's environmental engineer extracts, analyzes, and prepares the data for the annual report submission.

### 29. Corrective Action

Corrective Action Requests (CARS) are logged when potential compliance/ISO 14001 conformance issues are encountered. These CARS are resolved with root cause analysis, and corrective and preventative actions are implemented.