

**Changan Ford Mazda Automobile Co., Ltd. (CFMA) Chongqing Plant**

**长安福特马自达汽车有限公司 (CFMA) 重庆工厂**

**(CFMA – CQ)**



**2010 and 2011 Greenhouse Gas Inventory**

**2010 以及 2011 年度温室气体总量**

### **Executive Summary 摘要:**

CFMA - CQ is proud to present its fourth Greenhouse Gas (GHG) emissions inventory and to be the first automobile company in Mainland China to voluntarily report its Facility GHG emissions. (Note, this report only include CFMA CAF1) CFMA - CQ believes that the starting point of a corporate GHG strategy is to better understand its emissions. CFMA - CQ is aware of the importance of Climate Change and is committed to the continuous improvement in its environmental performance and sharing the results with others.

做为中国大陆首家自愿公布工厂温室气体（以下简称 GHG）排放的汽车公司，长安福特马自达汽车有限公司重庆工厂（以下简称 CFMA – CQ）在此隆重发布第四份 GHG 排放总量报告（注：此报告只包括了长安福特马自达汽车有限公司重庆一工厂）。CFMA – CQ 相信公司的 GHG 战略出发点是为了更好地了解自身排放情况。CFMA – CQ 已经认识到气候变化的重要性，并且承诺将持续地改进自身环境业绩，同时与其它公司共享结果。

Ford is proud to participate in different greenhouse gas management initiatives worldwide including: The Mexican GHG Program, The Philippines Greenhouse Gas Accounting and Reporting Program (PhilGARP), The Australian National Greenhouse Emissions Reporting System (NGERS), The Climate Registry (TCR), The Brazilian GHG Program, The EU Emissions Trading Scheme (EU ETS), and The Canadian GHG Emissions Reporting Program (GHGRP).

福特汽车公司非常荣幸地参与了各种世界 GHG 管理计划，包括芝加哥气候交易所（CCX）、墨西哥 GHG 计划、菲律宾 GHG 核算与报告计划（PhilGARP）、澳大利亚国内温室排放报告系统、气候登记（TCR）、巴西 GHG 计划、欧盟排放交易计划（EU ETS）以及加拿大 GHG 排放报告计划。

The 2010 and 2011 GHG inventory includes CFMA - CQ data from 2003-2011. Total emissions increased by approximately 2.5% from 2009 to 2010. In addition, 2011 total emissions were 2.4% higher in 2010. The total emissions for 2010 and 2011 increased approximately 42.2% and 45.6% respectively, from the baseline period (2005-2006), due to significant production increases.

2010 年以及 2011 年 GHG 总量报告包括 CFMA – CQ 2003 至 2011 年度的数据。GHG 排放总量从 2009 年到 2010 年上升 2.5%以上，另，2011 年的排放总量比 2010 年上升了 2.4%。由于产量大幅上升，2010 以及 2011 年的排放总量分别比自基准时期（2005~2006 年）以来上升了 42.2%以及 45.6%以上。

However, the 2010 emission intensity (per unit) decreased over 2.9% from 2009, while the emission intensity from 2011 was 0.3% lower than 2010. The emission intensities from 2010 and 2011 decreased almost 46.6% and 46.8%, respectively from the baseline period (2005-2006).

2010 年排放强度（每单位）比 2009 年下降 2.9%以上，2011 年的排放强度比 2010 年降低 0.3%。2010 以及 2011 年的排放强度分别比自基准时期（2005~2006 年）以来下降了 46.6%以及 46.8%以上。

CFMA - CQ will provide annual updates as it continues to strive to meet or exceed environmental standards.

CFMA - CQ 将每年提供更新资料，并继续努力保持和超越自身的环境标准。

**Table of Contents**

**目录**

Introduction 介绍.....6

CFMA in Chongqing–CFMA 在重庆 .....9

Corporate Climate Change Initiatives 集团气候变化管理计划 .....11

Methodology 方法.....15

Base Year 基准年.....17

GHG Emissions Data GHG 排放数据 .....18

Data Analysis 数据分析.....21

Conclusions 结论 .....23

**List of Figures**

Figure 1: Ford Focus ..... 10

Figure 2: Volvo S40..... 10

Figure 3: Ford Mondeo..... 10

Figure 4: Mazda 3 ..... 10

Figure 5: Ford S-Max ..... 10

Figure 6: Volvo S 80..... 10

Figure 7: CFMA – CQ Total GHG Emissions ..... 22

Figure 8: CFMA – CQ GHG Emissions Intensity ..... 22

**List of Tables**

Table 1: Emission Factors..... 16

Table 2: Direct and Indirect Emissions Baseline ..... 17

Table 3: CFMA – CQ Energy Consumption From 2003-2011 ..... 19

Table 4: CFMA – CQ Total Emission and Emission Intensity..... 20

图表目录

图 1: 福特福克斯 .....	10
图 2: 沃尔沃 S40 .....	10
图 3: 福特蒙迪欧 .....	10
图 4: 马自达 3 .....	10
图 5: 福特麦柯斯 .....	10
图 6: 沃尔沃 S 80 .....	10
图 7: CFMA- CQ GHG 排放总量 .....	22
图 8: CFMA- CQ GHG 排放强度 .....	22

表格目录

表 1: 排放指标 .....	16
表 2: 直接和间接排放基准值 .....	17
表 3: CFMA – CQ 2003—2011 年能耗 .....	19
表 4: CFMA – CQ 排放总量及排放强度 .....	20

## Introduction 介绍

The GHG inventory contained in this report includes data from all Changan Ford Mazda Assembly Chongqing (CFMA - CQ) entities listed below including office buildings:

- CFMA – CQ Assembly Plant
- CFMA – CQ Stamping Plant
- CFMA – CQ Product Development
- CFMA – CQ Administration Facilities
- CFMA – CQ Engine Plant

本报告里的 GHG 总量包含下列所有长安福特马自达汽车有限公司重庆（以下简称 CFMA - CQ）的实体单位的数据，包括办公楼在内：

- CFMA – CQ 装配厂
- CFMA – CQ 冲压厂
- CFMA – CQ 产品开发
- CFMA – CQ 行政管理部门
- CFMA – CQ 发动机厂

It should be noted that vehicle fleet and other mobile sources are not included in this inventory.

值得注意的是车队和其它移动排放源未计算在内。

Changan Ford Automobile Co., Ltd, a joint venture between Chongqing Changan Automobile Co., Ltd. and Ford Motor Company, was established in April of 2001. In March 2006, with the participation of Mazda, the company was renamed Changan Ford Mazda Automobile Co., Ltd. (CFMA). CFMA - CQ is located in the Northern Development Region, Chongqing, and currently has a capacity of 267,000 units per

year. The plant first began production of the Ford Fiesta on January 18, 2003, followed by Ford Mondeo (Mar. 20, 2004); 4-door Ford Focus (Sep. 21, 2005); Mazda3 (Feb. 27, 2006); Volvo S40 (July 17, 2006); 5-door Ford Focus (Aug. 23, 2006); Ford S-MAX (Mar. 15, 2007) and Volvo S80 (February, 2009). CFMA - CQ has a sister plant in Nanjing. Chongqing Changan Automobile Co., Ltd., Ford Motor Company and Mazda Motor Company also operate an engine plant (CFME) in Nanjing. These facilities are not included in this report as separate inventories have been developed for them.

长安福特汽车有限公司是由重庆长安汽车股份有限公司和福特汽车公司于 2001 年 4 月成立的合资公司。2006 年 3 月，马自达汽车公司参股长安福特汽车有限公司，公司正式更名为“长安福特马自达汽车有限公司”。CFMA—CQ 位于重庆北部新区，目前拥有 26.7 万辆的年产能。该厂最先于 2003 年 1 月 18 日开始福特嘉年华车型的生产，随后是福特蒙迪欧（2004 年 3 月 20 日）、四门福特福克斯（2005 年 9 月 21 日）、马自达 3（2006 年 2 月 27 日）、沃尔沃 S40（2006 年 7 月 17 日）、五门福特福克斯（2006 年 8 月 23 日）、福特 S-MAX（2007 年 3 月 15 日）和沃尔沃 S80（2009 年 2 月）车型的生产。CFMA – CQ 有一家兄弟厂在南京。重庆长安汽车股份有限公司、福特汽车公司和马自达汽车公司在南京也经营一家发动机厂（CFME）。这些工厂将单独计算其排放总量，并未包括在本报告里。

One of the most important initiatives undertaken by CFMA - CQ is the implementation of the ISO 14001 environmental management standard, where all aspects of the facility 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. A highlight of CFMA - CQ's performance is the use of detailed management systems for all resource use (energy, solid and liquid waste, solvent use and water). Other environmental initiatives include: energy efficiency projects at the sites and educational programs for employees.

CFMA - CQ 采取的最重要举措之一是执行了 ISO 14001 环境管理标准，该标准涵盖了工厂环境管理的各个方面，包括大气排放、废物、水和能源。为了保持认证，工厂必须每年进行一次监督审核以确保工厂达标，同时衡量工厂所取得的进步。这当中，CFMA – CQ 获得的一个显著的成效是对资源利用（包括：能源、固体和液体废物、溶液和水）进行细致的体系化管理。CFMA – CQ 的其它环境计划包括各场所的能效计划和员工教育计划。

Chongqing Changan Automobile Co., Ltd., Ford Motor Company and Mazda Motor Company recognize the importance of the climate change issue and will continue to work on reducing the GHG emissions of our vehicles and facilities by introducing advanced technology vehicles and improving energy efficiency in manufacturing operations.

重庆长安汽车股份有限公司、福特汽车公司和马自达汽车公司认识到气候变化问题的重要性，并将通过引进含有先进技术的汽车和提高生产过程中的能效来继续减少其汽车和工厂的 GHG 排放。



**CFMA in Chongqing—CFMA 在重庆**

**Product:** Ford Focus, Ford Fiesta, Ford Mondeo, Ford S-MAX, Mazda3, Volvo S40, Volvo S80

**Founded:** April, 2001

**Plant Capacity:** 267,000 units/year

**Operation:** TCF, Paint Shop, Stamping Shop, Body Shop, Engine Plant, Test Line, Technical Development Center

**Employees:** 6,000 employees (2010)

**Site:** 460,000m<sup>2</sup>

**Floor Space:** 322,000m<sup>2</sup>

**ISO 14001 Certified:** 2003

**产品:** 福特福克斯、福特嘉年华、福特蒙迪欧、福特 S-MAX、马自达 3、沃尔沃 S40、沃尔沃 S80

**成立年份:** 2001 年 4 月

**产能:** 26.7 万/年

**工艺:** 总装厂、涂装厂、冲压厂、焊接厂、发动机厂、检测中心、技术发展中心

**员工人数:** 6,000 人 (2010)

**占地面积:** 46 万平方米

**建筑面积:** 32.2 万平方米

**ISO 14001 认证年份:** 2003 年



Figure 1: Ford Focus  
图 1: 福特福克斯



Figure 2: Volvo S40  
图 2: 沃尔沃 S40



Figure 3: Ford Mondeo  
图 3: 福特蒙迪欧



Figure 4: Mazda 3  
图 4: 马自达 3



Figure 5 : Ford S-Max  
图 5: 福特麦柯斯



Figure 6: Volvo S 80  
图 6: 沃尔沃 S 80

## **Corporate Climate Change Initiatives 集团气候变化管理计划**

CFMA - CQ is proud to be one of the first automobile companies to voluntarily report its GHG emissions in Mainland China. We believe that climate change is a serious environmental issue and recognize that it is not possible to wait for all the scientific uncertainties to be resolved. Ford Motor Company is actively participating in various programs around the world and gaining considerable experience in GHG reporting. Some of the initiatives are listed below:

CFMA – CQ 是中国大陆首批自愿公布其 GHG 排放的汽车公司之一，为此我们感到非常骄傲。我们相信气候变化是一个严重的环境问题，并认为我们不能等待所有的科学不确定性明朗以后再来行动。福特汽车公司正积极地参与全世界各种 GHG 计划并获得了一定的 GHG 报告的经验。以下是我们参与过的部分 GHG 管理计划：

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

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

### **芝加哥气候交易所 (CCX)**

芝加哥气候交易所 (CCX) 是北美地区的 GHG 减排与交易系统。CCX 是由会员设计和治理，自愿形成的一套交易体系。这些成员自愿地通过法律约定的承诺在 2010 年前，基于 2000 年的基准值消减 GHG 排放量 6%。福特汽车公司是第一家，也是唯一一家参与这个计划的汽车制造公司。这个交易所已于 2010 年 11 月关闭。

### **Mexico GHG Pilot Program**

The Mexico GHG Program started as a 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.

### **墨西哥 GHG 试验计划**

墨西哥 GHG 试验计划是由 La Secretaria de Medio Ambiente y Recursos Naturales (SEMARNAT)、世界资源研究所 (WRI) 和世界可持续发展工商理事会 (WBCSD) 发起的为期两年的合作计划。作为一个自愿性计划，墨西哥 GHG 试验计划的成立旨在协助墨西哥企业计算其 GHG 排放量。福特汽车公司是唯一一家参与该计划的第一阶段的汽车制造企业，并承诺每年报告其排放量。

### **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. Details of the third phase of the program, beginning in 2013, are currently being finalized.

### **欧盟排放权交易方案(EU ETS)**

福特汽车公司参与的 EU ETS 于 2005 年 1 月正式启动，是欧洲减少二氧化碳和其它 GHG 排放的方针的其中一个。该方案的第二阶段于 2008 年到 2012 年实施，这一时期也是《京都议定书》首次正式实施的时间。该方案的第三期最近已经完成，由 2013 年开始。

### **Canadian Voluntary Challenge and Registry**

Ford voluntarily reported GHG emissions to the Canadian Voluntary Challenge and Registry (VCR) from 1999 to 2006. Over the years, it 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. The Challenge Registry ceased taking submissions effective, January 1, 2012. Ford now participates in the Canadian Greenhouse Gas Reporting Program.

#### **加拿大 GHG 挑战与登记**

从 1999 年起到 2006 年，福特汽车公司自愿向加拿大 GHG 挑战与登记（VCR）报告其年度 GHG 排放量。时至今日，福特汽车公司已经在 VCR 的报告系统里取得最高级别的成绩，包括获得汽车行业两次领导力奖，1999 年获得报告银奖以及在 2000~2003 年，2005~2006 年报告金奖。加拿大挑战与登记已经于 2012 年 1 月 1 日停止。福特汽车公司现正参加加拿大温室气体报告计划。

### **Philippines GHG Program**

The Philippine Greenhouse Gas Accounting and Reporting Program (PhilGARP) partnership between Klima Climate Change Center of the Manila Observatory, Philippine Business for the Environment, the Department of the Environment and Natural Resources, Department of Energy, WBCSD, and WRI – was launched in November 2006.

#### **菲律宾 GHG 计划**

菲律宾 GHG 计算与报告计划（PhilGARP）由马尼拉天文台的 Klima 气候变化中心、菲律宾环境商务部、环境与自然资源部、能源部、WBCSD 和 WRI 于 2006 年 11 月联合发起。

## **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 was the first auto manufacturing participant in the program. In 2011, Ford became a Climate Registered member of TCR with the independent third party verification of all of Ford's North American GHG emissions.

## **气候变化注册组织 (TCR)**

北美的气候变化注册组织 (TCR) 提供精准和透明的 GHG 排放测量方法，并保证各行业和地区使用一致的度量法。气候变化注册组织的下属统计机构即支持自愿的，也支持法定的管理计划。福特汽车公司是气候变化注册组织的创始成员，也是第一家加入该组织的汽车制造商。福特在 2011 年由独立第三方验证了所有福特北美温室气体排放量之后，成为气候变化组织的注册成员。

## **Brazilian GHG Reporting Program**

The Brazil Greenhouse Gas program is a partnership of Brazil's Ministry of Environment, the Brazilian Business Council for Sustainable Development, the Fundação Getúlio Vargas, the World Business Council on Sustainable Development, and the World Resources Institute (WRI). Ford of Brazil is proud to be the first automobile company in Brazil to voluntarily report its Facility Greenhouse Gas (GHG) emissions.

## **巴西 GHG 报告计划**

巴西 GHG 计划由巴西环境部、巴西可持续发展商业理事会、the Fundação Getúlio Vargas、WBCSD 和 WRI 共同发起。巴西的福特汽车公司是巴西国内第一家自愿报告其 GHG 排放量的汽车制造商。



## **Methodology 方法**

CFMA - CQ uses a best in class energy monitoring system and an industry-leading Global Emissions Manager (GEM) database to ensure environmental metrics such as CO<sub>2</sub> emissions are tracked consistently. All energy data contained in this report is available within GEM and it is tracked and revised by the facility. The emissions data reported was generated following the GHG calculation tools developed by the World Resources Institute (WRI). Please note that the 2006 WRI electricity emission factor was used for 2004~2006 CO<sub>2</sub> emission calculations. The 2007 WRI factor was used for 2007 data. In addition, the most up to date 2008 WRI electricity emission factors were used for the 2008~2011 CO<sub>2</sub> emission calculations.

CFMA – CQ 运用最高等级的能源监控系统 and 行业领先的全球排放管理（GEM）数据库，以确保环境因素例如二氧化碳排放量得到持续一致的跟踪。本报告的所有能源数据均包含在 GEM 里，并通过工厂进行跟踪和修正。本报告的排放数据是通过世界能源研究院（WRI）建立的 GHG 计算工具计算得出。请注意 2004 年至 2006 年的排放计算是基于 2006 年的 WRI 电排放系数，2007 年的计算是基于 2007 年的电排放系数，另，2008 年至 2011 年二氧化碳排放的计算是基于最新的 2008 年电排放系数。

This 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 GHG 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 minimal at less than 1.7% of total emissions. PFCs and SF<sub>6</sub> do not apply to the company's manufacturing facilities. Emission factors in Table 1 were used to calculate CO<sub>2</sub> emissions.

本报告包括由 WRI 和 WBCSD 协议里定义为范围一的直接排放源和范围二的间接排放源。报告里所有的二氧化碳排放量单位均为公制吨二氧化碳当量。其它 GHG，例如甲烷和一氧化二氮的排放估量在总排放量的 1% 以下，因此忽略不计。其它排放源，如在汽车空调初填充制冷剂时渗漏的含氟烃类，其排放量可视为总排放量 1.7% 以下。本公司的制造工厂没有使用到全氟烃类和六氟化硫。表 1 里的排放指标是用作二氧化碳排放量的计算。

**Table 1: Emission Factors**

表 1: 排放指标

<b>Fuel 燃料</b>	<b>Factor 排放指标</b>
Natural Gas 天然气	<b><i>0.001885tCO<sub>2</sub>/m<sup>3</sup></i></b>
Gasoline/Petroleum 汽油/石油	<b><i>0.002272tCO<sub>2</sub>/l</i></b>
Electricity (2006) 电 (2006)	<b><i>0.0007846tCO<sub>2</sub>/KWh</i></b>
Electricity (2007) 电 (2007)	<b><i>0.0007744tCO<sub>2</sub>/KWh</i></b>
Electricity (2008) 电 (2008)	<b><i>0.0006892tCO<sub>2</sub>/KWh</i></b>
Note: From WRI/WBCSD 来源: WRI和WBCSD	



**Base Year 基准年**

CFMA - CQ began operations in 2003 and has since increased production. We have selected 2005 and 2006 years as our representative baseline going forward. Table 2 shows the direct and indirect emissions used to obtain the baseline. Note: Direct emissions are those generated on site (i.e. from gas and petroleum fuel use). Indirect emissions are those generated off site but attributable to car manufacturing (i.e. electricity used on site).

CFMA - CQ 于 2003 年投产并逐年提高产量。我们选择 2005 和 2006 年的平均值作为我们的基准年。表 2 显示了用作计算基准值的直接和间接排放。注：直接排放来自厂内（如燃烧天然气以及石油类燃料）。间接排放来自于厂外，但是归于汽车制造过程（如厂内用电）。

**Table 2: Direct and Indirect Emissions Baseline**

表 2: 直接和间接排放基准值

<b>Direct Emissions (metric tCO<sub>2</sub>)</b> 直接排放 (吨 CO <sub>2</sub> )		
<b>2005</b>	<b>2006</b>	<b>Baseline</b>
16,485	22,246	19,366
<b>Indirect Emissions (metric tCO<sub>2</sub>)</b> 间接排放 (吨 CO <sub>2</sub> )		
<b>2005</b>	<b>2006</b>	<b>Baseline</b>
40,114	59,288	49,701
<b>Production</b> 产量		
<b>2005</b>	<b>2006</b>	<b>Baseline</b>
59,827	137,782	98,805

## **GHG Emissions Data GHG 排放数据**

CFMA - CQ was constructed with state of the art technology that allows the plants to operate in an energy efficient manner. CFMA - CQ's internal energy management and control process allows the plants to monitor energy usage throughout the facilities and identify areas that can be improved.

CFMA - CQ 运用最先进的技术建造工厂使其运作可以达到高效节能。CFMA - CQ 的内部能源管理和控制流程可以监控工厂内各部门的能源使用并识别出可以改进的地方。

CFMA - CQ is committed to improving energy efficiency and reducing its GHG emissions. The plants have implemented several projects in recent years to reduce energy consumption (electricity and natural gas) including:

- Optimize TCF maintenance;
- Optimize paint shop-Primer booth cleaning mode;
- Adjust booth manual spray air speed;
- Reuse distilled solvent;
- Recycle PE-Wastewater into paint shop.

CFMA - CQ 致力于提高能效并减少温室气体排放。工厂在近年实施了几个减低能耗（电和天然气）的措施，包括：

- 优化 TCF 维护程序；
- 优化涂装车间中涂间清洗模式；
- 调整喷漆间手动喷漆空气流速；
- 蒸馏涂料以回用；
- 把 PE 部门产生的污水回用至涂装车间。

Table 3 below summarizes CFMA - CQ energy consumption from 2003-2011.

表 3 汇总了 CFMA – CQ 2003—2011 年度的能耗。

**Table 3: CFMA – CQ Energy Consumption From 2003-2011**

**表 3: CFMA – CQ 2003-2011 年能耗**

Period 年份	Production 产量	Natural Gas (m <sup>3</sup> ) 天然气 (m3)	Gasoline (l) 汽油 (l)	Electricity (KWH) 电 (KWH)
2003	14,465	2,143,408	153,624	17,164,020
2004	50,020	4,353,949	573,033	26,915,840
2005	59,827	8,000,597	603,244	51,126,800
2006	137,782	11,326,710	387,420	75,564,337
2007	223,602	13,137,293	735,932	97,571,938
2008	190,746	10,978,815	856,282	84,109,652
2009	248,992	13,493,805	852,151	99,236,420
2010	262,986	13,853,452	1,061,503	101,110,828
2011	270,232	14,360,198	1,323,350	102,280,493
<b>Total</b>	<b>1,458,652</b>	<b>91,648,227</b>	<b>6,546,539</b>	<b>655,080,328</b>

**Direct Emissions:**

Direct Emissions result from combusting fuels at the CFMA - CQ site including natural gas and gasoline. Most gasoline purchased is used to fill new vehicle fuel tanks leaving the site and not for on-site combustion.

**直接排放:**

CFMA - CQ 的直接排放来自燃烧天然气以及汽油的排放。大部分购买的汽油用于新车出厂前油箱的填充而不是厂内燃烧用的。

**Indirect Emissions:**

CFMA - CQ Indirect Emissions include all emissions generated outside the site's perimeter such as emissions from burning fossil fuel to generate electricity. CFMA - CQ continuously monitors its electricity consumption. However the rate of energy consumption depends heavily on production, and if production increases, so will energy consumption. Table 4 shows the total direct and indirect emissions from 2003-2011 by year.

**间接排放:**

CFMA – CQ 的间接排放包括厂外产生的全部排放，例如用来发电的化石燃料。CFMA - CQ 长期监控其用电量。但是用电量受生产影响较大，生产量加大，用电量也随之增大。表 4 显示了工厂 2003—2011 年的直接，间接排放量以及排放强度。

**Table 4: CFMA – CQ Total Emission and Emission Intensity****表 4: CFMA – CQ 排放总量及排放强度**

Year 年份	Total Emission (tCO <sub>2</sub> ) 排放总量 (吨 CO <sub>2</sub> )		Emission Intensity (tCO <sub>2</sub> /unit) 排放强度 (吨 CO <sub>2</sub> /车)
	Direct Emissions (tCO <sub>2</sub> ) 直接排放 (吨 CO <sub>2</sub> )	Indirect Emissions (tCO <sub>2</sub> ) 间接排放 (吨 CO <sub>2</sub> )	
2003	4,398	14,572	1.24
2004	9,544	21,118	0.61
2005	16,485	40,114	0.95
2006	22,246	59,288	0.59
2007	26,473	75,560	0.46
2008	22,688	57,952	0.42
2009	27,417	68,374	0.38
2010	28,525	69,665	0.37
2011	30,076	70,471	0.37

Disclaimer: The calculation is based on electricity emission factors provided by WRI every year. Please note that the 2006 WRI electricity emission factor was used for 2003~2006 CO<sub>2</sub> emission calculations. The 2007 WRI factor was used for 2007 data. In addition, the most up to date 2008 WRI electricity emission factors were used for the 2008~2011 CO<sub>2</sub> emission calculations.

注：所有排放总量的计算都是基于 WRI 每年更新的系数。2003 年至 2006 年的排放计算是基于 2006 年的 WRI 电排放系数，2007 年的计算是基于 2007 年的电排放系数，另，2008 年至 2011 年二氧化碳排放的计算是基于最新的 2008 年电排放系数。

## **Data Analysis 数据分析**

CFMA - CQ site experienced a 5.6% increase in production from 2009 to 2010 and a 2.7% increase in 2011 compared to 2010. Table 3 shows CFMA - CQ production data from 2003-2011.

CFMA – CQ 2010 年的产量比 2009 年增长了 5.6%，2011 年的产量比 2010 年增长了 2.7%；表 3 显示了 CFMA – CQ 从 2003 年至 2011 年的产量数据。

Total emissions increased by approximately 2.5% from 2009 to 2010. In addition, 2011 total emissions were 2.4% higher than 2010. The total emissions from 2010 and 2011 increased approximately 42.2% and 45.6%, respectively from the baseline period (2005-2006), due to significant production increases. Figure 7 below shows CFMA – CQ total Emissions trends from 2004 to 2011.

2010 年排放总量比 2009 年上升 2.5%以上，另，2011 年的排放总量比 2010 年上升了 2.4%。2010 以及 2011 年的排放总量比基准时期（2005—2006 年）分别上升 42.2% 以及 45.6%。图 7 显示了 CFMA – CQ 从 2004 年至 2011 年排放总量的趋势。

Emission intensity is calculated by dividing total emissions by the number of production units (vehicles built). As shown in Figure 8, 2010 emissions intensity (per unit) decreased approximately 2.9% from 2009; while emission intensity in 2011 was 0.3% lower than 2010. The 2010 and 2011 emission intensities decreased approximately 46.6% and 46.8%, respectively from the baseline period (2005-2006).

排放强度的计算是基于排放总量除以生产单位的个数（即汽车）。如图 8 所示，2010 年的排放强度（每单位）比 2009 年起下降了 2.9%，2011 年的排放强度相比 2010 年又下降了 0.3%。2010 年以及 2011 年的排放强度分别比基准时期（2005—2006 年）降低 46.6% 和 46.8%左右。

Figure 7: CFMA – CQ Total GHG Emissions

图 7: CFMA- CQ GHG 排放总量

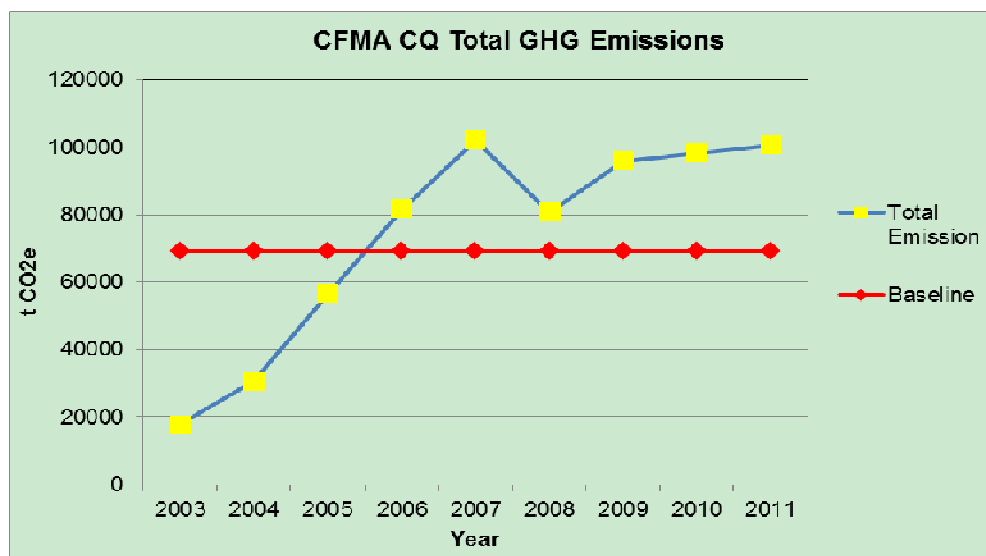
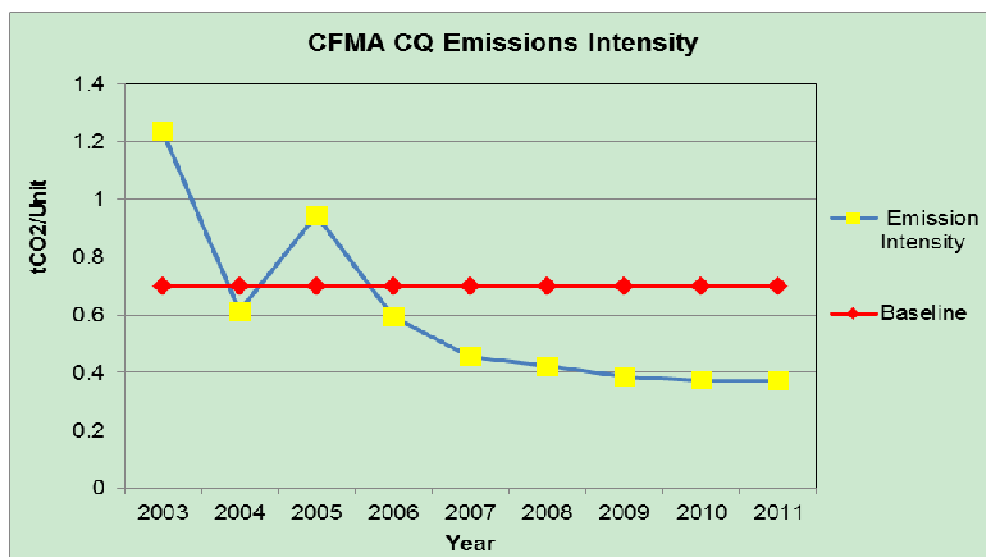


Figure 8: CFMA – CQ GHG Emissions Intensity

图 8: CFMA- CQ GHG 排放强度



## **Conclusions** 结论

CFMA - CQ is proud to present its fourth GHG emissions inventory building upon the prior achievement of becoming the first automobile company in Mainland China to voluntarily report its facility GHG emissions. CFMA - CQ recognizes the importance of the climate change issue and supports emissions reporting at a national level. CFMA - CQ is committed to improving energy efficiency, reducing GHG emissions, and meeting or exceeding environmental standards.

CFMA - CQ 作为中国大陆首家自愿公布其工厂 GHG 排放的汽车公司，现隆重发布第四份 GHG 排放总量报告。CFMA - CQ 认识到气候变化问题的重要性，并在国家层面上支持 GHG 排放的公布。CFMA - CQ 致力于提高能效，减少温室气体排放，同时保持并超越自身的环境标准。