

Chang'an Ford Automobile Co., Ltd. (CAF)

长安福特汽车有限公司 (CAF)



2014 Greenhouse Gas Inventory
2014 年度温室气体总量

Executive Summary 摘要:

Chang'an Ford Automobile Co., Ltd. (CAF) is proud to present its seventh 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 includes both CAF1-CQ , CAF2-CQ, CAF3-CQ, CAFEP, and CAFTP). CAF believes that the starting point of a corporate GHG strategy is to better understand its emissions. CAF 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，长安福特汽车有限公司重庆工厂（以下简称 CAF）在此隆重发布第七份 GHG 排放总量报告（注：此报告包括了长安福特汽车有限公司重庆一工厂、重庆二工厂、重庆三工厂、发动机工厂和变速器工厂）。CAF 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。CAF 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 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、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 2014 GHG inventory includes CAF data from 2003-2014. CAF1-CQ total emission decreased 2.4% from 2013 to 2014 with a production increase of 14.1%.

Total emissions for 2014 increased over 39.6% from the baseline period (2005-2006), due to significant production increases.

2014 年 GHG 总量报告包括 CAF 2003 至 2014 年度的数据。重庆一工厂从 2013 年到 2014 年产量上升了 14.1%但排放总量下降 2.4%。由于产量大幅上升，2014 年的排放总量比自基准时期（2005~2006 年）以来上升了 39.6%以上。

The 2014 CAF1-CQ emission intensity (per unit) decreased over 11.1% from 2013, and emission intensity decreased almost 58% from the baseline period (2005-2006).

2014 年重庆一工厂排放强度（每单位）比 2013 年下降了 11.1%以上，且 2014 年的排放强度比基准时期（2005~2006 年）以来下降约 58%。

CAF2-CQ total emission increased 5.3% from 2013-2014 with a production increase of 18.2%. The 2014 CAF2-CQ emission intensity (per unit) decreased over 13.6% from baseline (2013).

重庆二工厂从 2013 年到 2014 年产量上升了 18.2%但排放总量仅上升 5.3%。2014 年重庆二工厂的排放强度比基准时期 (2013 年) 排放强度降低 13.6%。

CAF will provide annual updates as it continues to strive to meet or exceed environmental standards.

CAF 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
CAF1-CQ – 长安福特重庆一工厂	9
CAF2-CQ – 长安福特重庆二工厂	10
CAF3-CQ – 长安福特重庆三工厂	11
CAFEP –长安福特汽车有限公司动力系统分公司发动机工厂	12
CAFTP –长安福特汽车有限公司动力系统分公司变速器工厂	13
Corporate Climate Change Initiatives 集团气候变化管理计划	16
Methodology 方法	20
Base Year 基准年	22
GHG Emissions Data GHG 排放数据	24
Data Analysis 数据分析	29
Conclusions 结论	32

List of Figures

Figure 1: Classic Ford Focus	14
Figure 2: New Ford Focus	14
Figure 3: Ford Ecosport	14
Figure 4: Ford Kuga	14
Figure 5: Ford New Mondeo	14
Figure 6: Zhisheng	14
Figure 7: All New Ford Escort	15
Figure 8:CAF1-CQ and CAF2-CQ Total GHG Emissions	31
Figure 9: CAF1-CQ and CAF2-CQ Plants GHG Emissions Intensity	31

List of Tables

Table 1: Emission Factors	21
Table 2: Direct and Indirect Emissions Baseline for CAF plants	23

Table 3: CAF VO Energy Consumption From 2003-2014	25
Table 4: CAF PTO Energy Consumption From 2013-2014	25
Table 5: CAF VO Total Emission and Emission Intensity	27
Table 6: CAF PTO Total Emission and Emission Intensity	28

图表目录

图 1: 福特经典福克斯	14
图 2: 福特新福克斯	14
图 3: 福特翼搏	14
图 4: 福特翼虎	14
图 5: 福特新蒙迪欧	14
图 6: 致胜	14
图 7: 全新福特福睿斯	15
图 8: CAF 重庆一、二工厂 GHG 排放总量	31
图 9: CAF 重庆一、二工厂 GHG 排放强度	31

表格目录

表 1: 排放指标	21
表 2: 直接和间接排放基准值	23
表 3: CAF 整车厂 2003-2014 年能耗	25
表 4: CAF 动力总成厂 2013-2014 年能耗	25
表 5: CAF 整车厂 排放总量及排放强度	27
表 6: CAF 动力总成厂排放总量及排放强度	28

Introduction 介绍

The GHG inventory contained in this report includes data from all Chang'an Ford Automobile Co., Ltd (CAF) entities listed below including office buildings:

本报告里的 GHG 总量包含下列所有长安福特汽车有限公司（以下简称 CAF）的实体单位的数据，包括办公楼在内。

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。

CAF now produces and sells the following models: the All New Ford Escort, the Ford New Mondeo, Zhi Sheng, the Classic Ford Focus, the New Ford Focus, the Ford Kuga, the Ford Ecosport, etc. CAF1-CQ is located in the Northern Development Region, Chongqing. The plant first began production April, 2001.

目前长安福特生产和销售的车型有：全福特福睿斯、福特新蒙迪欧、致胜、福特经典福克斯、福特新福克斯、福特翼虎、福特翼搏等。重庆一工厂位于重庆北部新区。该厂于 2001 年 4 月正式投产。

CAF2-CQ is located in No.666, Jinshan Avenue, Chongqing Northern Development Region. CAF 2 has increased Ford annual capacity to 600,000 vehicles in China. The plant first began production of the New Ford Focus in February, 2012, followed by the Ford Kuga (December, 2012).

重庆二工厂位于重庆北部新区金山大道 666 号，距 CAF1-CQ 不足 10km。长安福特重庆二工厂将使福特在华的乘用车产能提升三分之一，突破年产能 60 万辆。该厂于

2012 年 2 月正式投产第一款车型为福特新福克斯，随后是福特翼虎（2012 年 12 月）车型生产。

CAF3-CQ is located in No.888, Jinshan Avenue, Chongqing Northern Development Region. CAF3-CQ expands the capacity of CAF by 360,000 units per year. The plant first began production of the All New Ford Escort in November, 2014.

重庆三工厂位于重庆北部新区金山大道 888 号，距一工厂不足 10km，使长安福特年产能提升 36 万辆。该厂于 2014 年 11 月正式投产第一款车型为全新福特福睿斯。

CAFEP is located in No 1, North Lihuan Road, Northern New District, Chongqing, with the initial capacity of 400,000 units per year. The plant first began production of the Ford Engine in July, 2013.

长安福特汽车有限公司动力系统分公司发动机工厂（以下简称发动机工厂）位于重庆北部新区礼环北路 1 号，初期设计产能 40 万台。该厂于 2013 年 7 月正式投产第一台发动机。

CAFTP is located in No 1, North Lihuan Road, Northern New District, Chongqing, with the initial capacity of 400,000 units per year. The plant first began production of the Ford Transmission in June, 2014.

长安福特汽车有限公司动力系统分公司变速器工厂（以下简称变速器工厂）位于重庆北部新区礼环北路 1 号，初期设计产能 40 万台。该厂于 2014 年 6 月正式投产第一台变速器。

One of the most important initiatives undertaken by CAF 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 CAF'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.

CAF 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，CAF 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、溶剂和水）进行细致的体系化管理。CAF 的其它环境计划包括各场所的能效计划和员工教育计划。

Chang'an Ford Automobile Co., Ltd. recognized 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.

长安福特汽车有限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。

CAF1-CQ – 长安福特重庆一工厂

Founded: April, 2001

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

Employees: 8000 employees (2014)

Site: 460,000m²

Floor Space: 322,000m²

ISO 14001 Certified: 2013

成立年份: 2001 年 4 月

工艺: 总装车间、涂装车间、冲压车间、焊接车间、发动机车间、检测中心、技术开发中心

员工人数: 8000 人 (2014)

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: 2013 年

CAF2-CQ – 长安福特重庆二工厂

Founded: February, 2012

Operation: TCF, Paint Shop, Stamping Shop, Body Shop, CAL Line, Sales Department

Employees: 5,000 employees (2014)

Site: 700,000m²

Floor Space: 235,000m²

ISO 14001 Certified: 2013

成立年份: 2012 年 2 月

工艺: 总装车间、涂装车间、冲压车间、焊接车间、CAL 线、销售公司

员工人数: 5000 人 (2014)

占地面积: 70 万平方米

建筑面积: 23.5 万平方米

ISO 14001 认证年份: 2013 年

CAF3-CQ – 长安福特重庆三工厂

Founded: 2014

Operation: TCF, Paint Shop, Stamping Shop, BIW

Employees: 3351 employees (June, 2015)

Site: 1025522m²

Floor Space: 222252.22m²

ISO 14001 Certified: Certification audit planed in 2016

成立年份: 2014 年

工艺: 总装车间、涂装车间、冲压车间、焊接车间

员工人数: 3351 (2015 年 6 月)

占地面积: 102 万平方米

建筑面积: 22.2 万平方米

ISO 14001 认证年份: 2016 年进行首次认证审核

CAFEP –长安福特汽车有限公司动力系统分公司发动机工厂

Founded: 2013

Operation: Cylinder block machining, crank shaft machining, cylinder head

Employees: 1338 employees (June, 2015)

Site: 401000m²

Floor Space: 165000m²

ISO 14001 Certified: Certification audit planed in 2015

成立年份: 2013 年

工艺: 缸体机械加工、曲轴机加工、缸盖机加工、发动机装配线发动机测试、发动机装运

员工人数: 1338 (2015 年 6 月)

占地面积: 40.1 万平方米

建筑面积: 16.5 万平方米

ISO 14001 认证年份: 2015 年进行首次认证审核

CAFTP –长安福特汽车有限公司动力系统分公司变速器工厂

Founded: 2014

Operation: transmission body, torque converter shell, valve body machining, gear

Employees: 1287 employees (May 2015)

Site: 247000.6 m²

Floor Space: 867329.2 m²

ISO 14001 Certified: Certification audit planed in 2016

成立年份: 2014 年

工艺: 箱体、阀体、壳体机加工; 齿轮机加工及热处理; 装配、测试;

员工人数: 1287 (2015 年 5 月)

占地面积: 24.7 万平方米

建筑面积: 86.7 万平方米

ISO 14001 认证年份: 2016 年进行首次认证审核



Figure 1: Classic Ford Focus

图 1: 福特经典福克斯



Figure 2: New Ford Focus

图 2: 福特新福克斯



Figure 3: Ford Ecosport

图 3: 福特翼搏



Figure 4: Ford Kuga

图 4: 福特翼虎



Figure 5: Ford New Mondeo

图 5: 福特新蒙迪欧



Figure 6: Zhisheng

图 6: 致胜



Figure 7: All New Ford Escort

图 7: 全新福特福睿斯

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

CAF 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:

CAF 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.

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。

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. Ford ceased operations in the Philippines in 2012 and therefore will no longer participate in the program.

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。福特在 2012 年关闭了菲律宾工厂，因此也不再参与该计划。

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

CAF uses a best in class energy monitoring system and an industry-leading Global Emissions Manager (GEM) database to ensure environmental metrics such as CO₂ 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 CO₂ 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 2008~2014 CO₂ emission calculations.

CAF 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 2014 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 CO₂ emissions are included and reported in units of metric tons of carbon dioxide (CO₂). Other GHG applicable to combustion processes, CH₄ and N₂O, 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 SF₆ do not apply to the company's manufacturing facilities. Emission factors in Table 1 were used to calculate CO₂ emissions.

本报告包括由 WRI 和 WBCSD 协议里定义为范围一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

Fuel 燃料	Factor 排放指标
Natural Gas 天然气	0.001885tCO₂/m³
Gasoline/Petroleum 汽油/石油	0.002272tCO₂/l
Electricity (2006) 电 (2006)	0.0007846tCO₂/KWh
Electricity (2007) 电 (2007)	0.0007744tCO₂/KWh
Electricity (2008) 电 (2008)	0.0006892tCO₂/KWh
Note: From WRI/WBCSD 来源: WRI和WBCSD	

Base Year 基准年

CAF1-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).

重庆一工厂于 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）。

CAF2-CQ began operations in Feb, 2012 and has since increased production. We have selected 2013 year as our representative baseline because CAF2-CQ started full year production in 2013.

重庆二工厂于 2012 年 2 月开始投产并提高产量。我们选择 2013 年为我们的基准年因为 2013 年开始全面投产。

CAFEP began operations in July, 2013 and has since increased production. We have selected 2014 year as our representative baseline because CAFEP started full year production in 2014. Table 2 shows the direct and indirect emissions used to obtain the baseline.

重庆发动机工厂于 2013 年 7 月开始投产并提高产量。我们选择 2014 年为我们的基准年因为 2014 年开始全年投产。表 2 显示了用作计算基准值的直接和间接排放。

Table 2: Direct and Indirect Emissions Baseline for CAF plants

表 2: 直接和间接排放基准值

Plant 工厂	Baseline Year 基准年份	Direct Emissions (metric t CO2) 直接排放 (吨 CO2)	Indirect Emissions (metric t CO2) 间接排放 (吨 CO2)	Production 产量
CAF1-CQ	2005	16,485	40,114	59,827
	2006	22,246	59,288	137,782
	Average 平均数	19,366	49,701	98,805
CAF2-CQ	2013	18,960	66,977	344,748
CAFEP	2014	1,465	16,833	178,921

GHG Emissions Data GHG 排放数据

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

CAF 运用最先进的技术建造工厂使其运作可以达到高效节能。CAF 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。

CAFEP started operation in July, 2013 and has since increased production. We have selected year 2014 as our representative baseline going forward. There are two plants started operation in 2014 and have since increased production: CAF3-CQ in Nov 2014 and CAFTP in June 2014. This report will also report out 2014 CAF3-CQ, and CAFTP emissions but 2014 will not be considered as their baseline year.

长安福特发动机工厂由 2013 年 7 月投产并提高产量。我们选择 2014 年作为我们的基准年。长安福特三工厂，以及变速器工厂分别由 2014 年 11 月和 2014 年 6 月投产并提高产量。本报告也会报告 2014 年三工厂、以及变速器工厂的年度排放数据，但 2014 年并不会作为三工厂和变速器工厂的基准年来比较。

Table 3 and Table 4 below summarizes CAF energy consumption from 2003-2014.

表 3 和表 4 汇总了 CAF 2003—2014 年度的能耗。

Table 3: CAF VO Energy Consumption From 2003-2014

表 3: CAF 整车厂 2003-2014 年能耗

Period 年份	Natural Gas (m ³) 天然气 (m3)	Gasoline (l) 汽油 (l)	Electricity (KWH) 电 (KWH)
CAF1-CQ			
2003	2,143,408	153,624	17,164,020
2004	4,353,949	573,033	26,915,840
2005	8,000,597	603,244	51,126,800
2006	11,326,710	387,420	75,564,337
2007	13,137,293	735,932	97,571,938
2008	10,978,815	856,282	84,109,652
2009	13,493,805	852,151	99,236,420
2010	13,853,452	1,061,503	101,110,828
2011	14,360,198	1,323,350	102,280,493
2012	12,490,855	472,532	93,386,704
2013	13,838,404	701,411	101,960,264
2014	14,217,166	100,010	102,966,742
CAF2-CQ			
2012	5,804,200	64,208	57,304,500
2013	10,004,413	44,645	97,181,010
2014	10,864,051	0	101,563,100
CAF3-CQ			
2014	1,798,850	0	16,048,195

Table 4: CAF PTO Energy Consumption From 2013-2014

表 4: CAF 动力总成厂 2013-2014 年能耗

Period 年份	Natural Gas (m3) 天然气 (m3)	Gasoline (l) 汽油 (l)	Electricity (KWH) 电 (KWH)
CAFEP			
2013	619,875	0	11,143,599
2014	777,607	0	24,424,518
CAFTP			
2014	562,627	0	25,608,007

Direct Emissions:

Direct Emissions result from combusting fuels at the CAF site including natural gas and gasoline.

直接排放:

CAF 的直接排放来自燃烧天然气以及汽油的排放。

Indirect Emissions:

CAF Indirect Emissions include all emissions generated outside the site's perimeter such as emissions from burning fossil fuel to generate electricity. CAF continuously monitors its electricity consumption. However the rate of energy consumption depends heavily on production, and if production increases, so will energy consumption. Table 5 and Table 6 show the total direct and indirect emissions for CAF VO and PTO by year.

间接排放:

CAF 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。CAF 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 5 和表 6 显示了整装工厂和动力总成工厂的直接，间接排放量以及排放强度。

Table 5: CAF VO Total Emission and Emission Intensity

表 5: CAF 整车厂 排放总量及排放强度

Year 年份	Total Emission (tCO ₂) 排放总量 (吨 CO ₂)		Emission Intensity (tCO ₂ /unit) 排放强度 (吨 CO ₂ /车)
	Direct Emissions (tCO ₂) 直接排放 (吨 CO ₂)	Indirect Emissions (tCO ₂) 间接排放 (吨 CO ₂)	
CAF1-CQ			
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
2012	24,619	64,362	0.39
2013	27,679	70,271	0.33
2014	27,027	70,965	0.29
CAF2-CQ			
2012	11,087	39,494	0.35
2013	18,960	66,977	0.25
2014	20,479	69,997	0.22
CAF3-CQ			
2014	3,391	11,060	2.52
<p>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 CO₂ 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 2008-2013 CO₂ emission calculations.</p> <p>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 2014 年二氧化碳排放的计算是基于最新的 2008 年电排放系数。</p>			

Table 6: CAF PTO Total Emission and Emission Intensity

表 6: CAF 动力总成厂排放总量及排放强度

New Operating Plants in Year 2014 data			
Year 年份	Total Emission (tCO2) 排放总量 (吨 CO2)		Emission Intensity (tCO2/unit) 排放强度 (吨 CO2/车)
	Direct Emissions (tCO2) 直接排放 (吨 CO2)	Indirect Emissions (tCO2) 间接排放 (吨 CO2)	
CAFEP			
2013	1,168	7,680	0.22
2014	1,466	16,833	0.10
CAFTP			
2014	1,061	17,649	0.16
<p>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 CO2 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 2008~2013 CO2 emission calculations.</p> <p>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 2014 年二氧化碳排放的计算是基于最新的 2008 年电排放系数。</p>			

Data Analysis 数据分析

CAF1-CQ site experienced an increase of 14.1% in production from 2013-2014 resulting in an emission decrease of 2.4%. The total emissions in 2014 increased approximately 39.6% from the baseline period (2005-2006), due to significant production increases.

Figure 13 below shows CAF1-CQ and CAF2-CQ total Emissions trends from 2003 to 2014.

重庆一工厂 2014 年的产量比 2013 年上升了 14.1%，排放总量相应比 2013 下降了 2.4%。由于产量大幅增加，2014 年的排放总量比基准时期（2005—2006 年）上升 39.6%。

图 13 显示了 CAF1-CQ 从 2003 年至 2014 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 14, 2014 CAF1-CQ emissions intensity (per unit) decreased over 11.1% from 2013. 2014 emission intensity decreased dramatically of 58% 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 14 所示，2014 年重庆一工厂的排放强度（每单位）比 2013 年下降了 11.1% 以上，2014 年的排放强度比基准时期（2005—2006 年）大幅降低 58% 左右。

. CAF2-CQ site experienced an increase of 18.2% in production from 2013-2014 resulting in an emission increase of 5.3%. CAF2-CQ 2014 total emission was 90,476 t, and emission intensity (per unit) was 0.22 t /vehicle. As shown in Figure 14, 2014 CAF2-CQ emissions intensity (per unit) decreased over 13.6% from 2013.

重庆二工厂 2014 年的产量比 2013 年上升了 18.2%，排放总量相应比 2013 上升了 5.3%。重庆二工厂 2014 年排放总量为 90,476 吨，排放强度为 0.22 吨/车。如图 14 所示，2014 年的排放强度比基准时期 (2013 年) 排放强度降低 13.6%。

CAF3-CQ total emission in 2014 was 14,451 t, and emission intensity (per unit) was 2.52 t/vehicle. Please note that 2014 will not be considered as the baseline year for CAF3-CQ since production began in November. A baseline for CAF3-CQ will be developed when a year of full production is available.

2014 年重庆三工厂排放总量为 14,451 吨，排放强度为 2.52 吨/车。由于重庆三工厂于 2014 年 11 月开始生产，所以 2014 年将不会作为其基准年来进行比较。当三工厂某一年全面投入生产的时候，将会定为其基准年。

CAFEP total emission in 2014 was 18,299 t, and emission intensity (per unit) was 0.10 t/unit. Because CAFEP started full year production in 2014, year 2014 has been selected as baseline year for CAFEP.

2014 年发动机工厂排放总量为 18,299 吨，排放强度为 0.10 吨/台。由于发动机工厂于 2014 年开始全年投入生产，所以 2014 年被设定为其基准年。

CAFTP total emission in 2014 was 18,710 t, and emission intensity (per unit) was 0.16 t/unit. Please note that 2014 will not be considered as the baseline year for CAFTP since production began in June 2014. A baseline for CAFTP will be developed when a year of full production is available.

2014 年变速器工厂排放总量为 18,710 吨，排放强度为 0.16 吨/台。由于变速器工厂于 2014 年 6 月开始生产，所以 2014 年将不会作为其基准年来进行比较。当变速器工厂某一年全面投入生产的时候，将会定为其基准年。

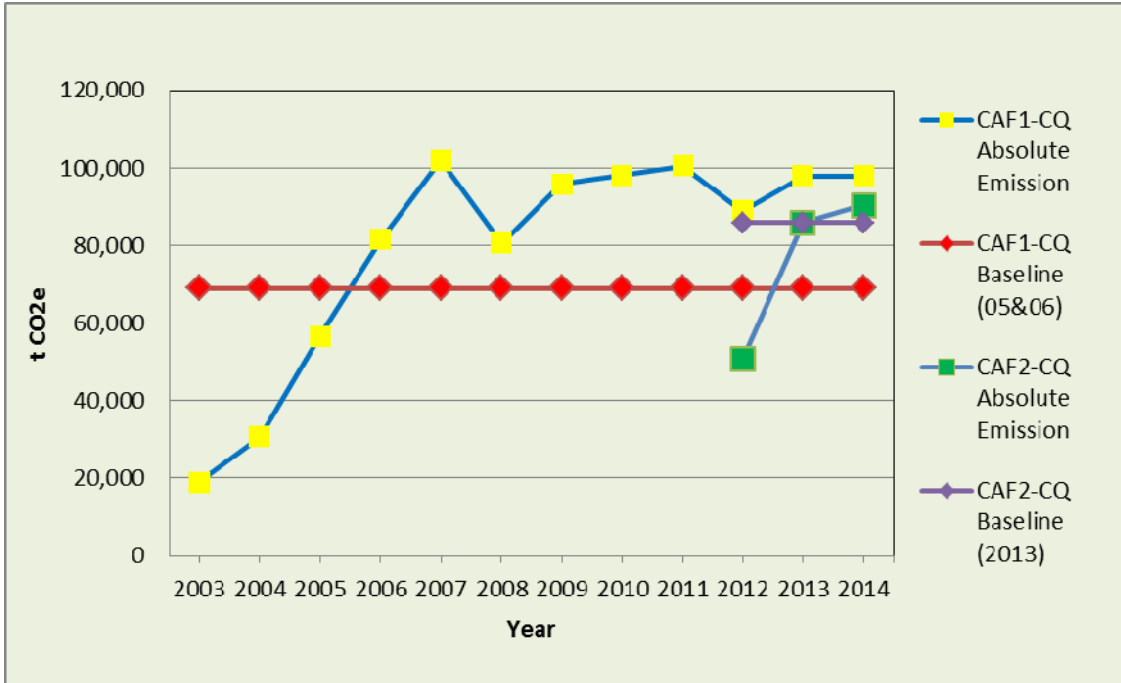


Figure 8:CAF1-CQ and CAF2-CQ Total GHG Emissions

图 8: CAF 重庆一、二工厂 GHG 排放总量

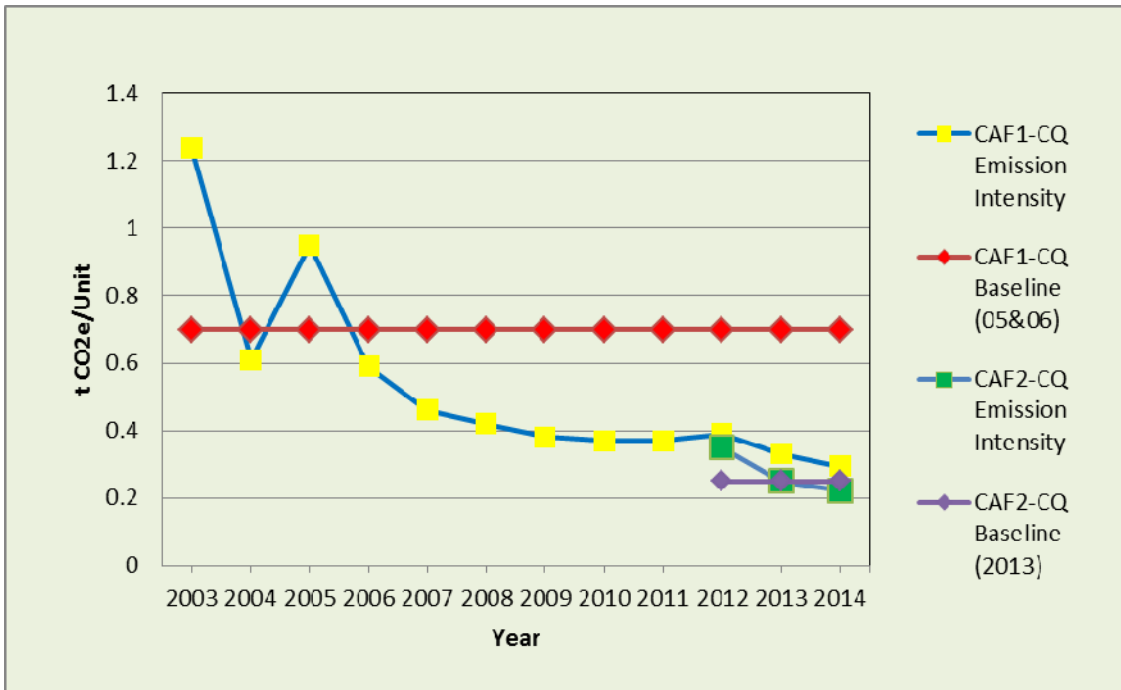


Figure 9: CAF1-CQ and CAF2-CQ Plants GHG Emissions Intensity

图 9: CAF 重庆一、二工厂 GHG 排放强度

Conclusions 结论

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

CAF 作为中国大陆首家自愿公布其工厂 GHG 排放的汽车公司，现隆重发布第七份 GHG 排放总量报告。CAF 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。CAF 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。