

Jiangling Motors Corporation Ltd. (JMC)
江铃汽车股份有限公司



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

Executive Summary 摘要:

Jiangling Motors Corporation Ltd. (JMC) – a publicly-traded company in China with Ford as a 32% shareholder – is issuing the first report of JMC2-XL's greenhouse gas emissions (GHG). JMC believes that the starting point of a corporate GHG strategy is to better understand its emissions. JMC is aware of the importance of Climate Change and it is committed to continuous improvement in its environmental performance and sharing the results with others.

江铃汽车股份有限公司（以下简称 JMC）是一家境内的上市公司，其中福特汽车公司占 32% 股份，现公布 JMC 小蓝工厂第一份温室气体总量报告。JMC 相信一个公司的 GHG 战略出发点是为了更好地了解自身排放情况。JMC 已经认识到气候变化的重要性，并致力于不断提高自身的环境业绩，同时与其它公司分享结果。

JMC assembles the Ford Transit van and other non-Ford-technology-based vehicles for distribution in China. Ford is proud to participate in different greenhouse gas management initiatives worldwide including: The Chicago Climate Exchange (CCX), 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).

JMC 主要进行福特全顺系列车型和其它非福特技术汽车的总装以及在中国的经销。在全球范围内，福特汽车公司非常荣幸地参与了多个国家的 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 温室气体排放报告计划。

The 2014 GHG inventory includes JMC2-XL data from 2013-2014.

JMC 2014 GHG Inventory

JMC 的 2014 年度 GHG 总量报告包括 JMC 小蓝工厂 2013 年至 2014 年度的数据。

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

JMC 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
JMC2-XL 小蓝工厂	9
Corporate Climate Change Initiatives 集团气候变化管理计划	11
Methodology 方法.....	15
Base Years 基准年	17
GHG Emissions Data GHG 排放数据.....	18
Data Analysis 数据分析	20
Conclusions 结论.....	21

List of Figures

Figure 1: V348 LWB Ford Transit.....	10
--------------------------------------	----

List of Tables

Table 1: Emission Factors.....	16
Table 2: Direct and Indirect Emissions Baseline	17
Table 3: JMC2-XL Energy Consumption From 2013-2014.....	18
Table 4: JMC2-XL Total Emissions and Emission Intensity	19

图表目录

图 1: 福特全顺 V348 LWB.....	10
-------------------------	----

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: JMC2-XL 2013 - 2014 年能耗.....	18
表 4: JMC2-XL 排放总量及排放强度	19

Introduction 介绍

Jiangling Motors Corporation, Ltd. (JMC) main plant is located in Jiangxi province, Nanchang and is a key player in China commercial vehicle market. In November 1993, JMC successfully issued a share in Shenzhen Stock Exchange and became the first listed company in Jiangxi Province. Furthermore, JMC was the first one to issue B share by ADRs to introduce foreign strategic partner in 1995. Ford Motor Company (“Ford”) currently holds 32% of equity share in JMC.

江铃汽车股份有限公司（以下简称 JMC）主厂区位于江西省南昌市，是中国商用车市场的佼佼者。1993 年 11 月，公司成功在深圳证券交易所发行 A 股，成为江西省第一家上市公司，并于 1995 年在中国第一个以 ADRs 发行 B 股方式引入外资战略合作伙伴。美国福特汽车公司（“福特”）现持有公司 32% 股份。

JMC and Ford worked together to develop The Ford Transit in 1997

1997 年，JMC 和福特汽车公司联合开发推出福特全顺系列车型。

JMC2-XL is moved from JMC Transit plant and is now located at No.1 South Zhen Ling Road, Xiao Lan Industrial Development Zone, Nanchang. JMC2-XL currently has a capacity of 200,000 units per year. The plant first began production of V348 Ford VAN Transit in June 2013.

JMC 全顺工厂于 2013 年 6 月搬迁至 JMC 小蓝工厂，小蓝工厂位于南昌小蓝经济开发区振铃南路 1 号。目前拥有 20 万台的年产能。该厂于 2013 年 6 月首先投产福特新世代全顺汽车。

One of the most important initiatives undertaken by JMC 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. JMC Transit Plant became ISO 14001 certified in 1999 and also obtained the National Environmental Label Certification in 2003. In 2003 JMC implemented ISO/TS16949, an internationally recognized quality management system for the automotive industry'. In 2009 JMC received the National Enterprise Environmental Achievement Award. JMC was the only automaker to receive this award. JMC2-XL also follows the same environmental management standard

JMC 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。为了维护该认证，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。JMC 全顺厂于 1999 年取得 ISO14001 认证，并在 2003 年获得国家环境标志产品认证。2003 年，JMC 开始执行被全球认可的汽车行业的质量管理体系 ISO/TS16949。2009 年，JMC 获得全国企业环保成就奖。JMC 是唯一获此殊荣的汽车生产商。JMC2-XL 也沿用该环境管理标准。

.A highlight of JMC's performance is the use of detailed management systems for all resource use (energy, solid and liquid waste, solvent use and water). Energy targets are set for each operation and monitoring systems are in place in all areas. Performance against these targets is taken very seriously. Energy engineers report out to senior management on performance against their respective targets on a weekly basis. Other environmental initiatives include: energy efficiency projects and educational programs for employees.

JMC 其中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。厂内所有场所均有安装监测系统，并对每个工艺提出能源目标。工厂对目标能耗的达标要求十分严格，能源工程师每星期直接向高级管理层汇报成效。其它环境计划包括：节能项目和员工教育计划。

JMC 2014 GHG Inventory

JMC recognizes the importance of the climate change issue and continues to work on reducing GHG emissions of our vehicles and facilities by way of introducing advanced technology vehicles and improving energy efficiency in our manufacturing operations.

JMC 认识到气候变化问题的重要性，并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。

JMC2-XL 小蓝工厂

Product: Transit with Multiple Configurations, Everest, 2.0GDTI Gasoline engine

Founded: 2013

Plant Capacity: 200,000 unit/year

Operation: Stamping-Welding - paint - Assembly

Employees: 2600

Site: 1,333,400m²

Floor Space: 541,876.66m²

ISO 14001 Certified: 2014

产品: 全顺系列撼路者, 2.0GDTi 汽油发动机

成立年份: 2013

产能: 20 万辆/年

工艺: 冲压-焊装-涂装-总装

员工人数: 2600

占地面积: 1,333,400 平方米

建筑面积: 541,876.66 平方米

ISO 14001:认证年份: 2014



Figure 1: V348 LWB Ford Transit

图 1: 福特全顺 V348 LWB

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

JMC 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 gaining considerable experience in GHG reporting. Some of the initiatives are listed below:

JMC 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 ran from 2008-2012 and coincided with the first Kyoto Commitment Period. The third phase of the program began in 2013.

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. 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。福特于 2012 年关闭了菲律宾工厂，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

JMC 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 updated 2008 WRI emission factors are used in this report.

JMC 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所（WRI）建立的 GHG 计算工具计算得出。请注意，2013 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	<i>0.001885tCO₂/m³</i>
Electricity (2008) 电 (2008)	<i>0.0006892tCO₂/KWh</i>
Note: From WRI/WBCSD 来源: WRI和WBCSD	

Base Years 基准年

JMC2-XL began operations in 2013 and has increased production since then. We have selected the annual emissions in 2014 as our representative baseline going forward. The baseline takes into account all years for which we have accurate and complete energy data. Table 2 shows the direct and indirect emissions used to obtain the baseline. Note: Direct emissions are those generated on site (i.e. from diesel, petroleum fuel and coal use). Indirect emissions are those generated off site but attributable to car manufacturing (i.e. electricity used on site).

JMC 小蓝工厂于 2013 年开始运行，产量开始递增。我们选取 2014 年度的平均年排放量作为我们的基准值。该基准值考虑到所有能源数据精确而完整的年份。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

JMC2-XL		
Direct Emissions (metric tCO ₂) 直接排放 (吨 CO ₂)	Indirect Emissions (metric tCO ₂) 间接排放 (吨 CO ₂)	Production 产量
2014	2014	2014
17,142	43,165	84,853

GHG Emissions Data GHG 排放数据

JMC2-XL started operation in June, 2013 and has since increased production. We have selected year 2014 as our representative baseline going forward.

JMC 小蓝工厂由 2013 年 6 月投产并提高产量。我们选择 2014 年作为我们的基准年。

JMC2-XL was constructed with state of the art technology that allows the plants to operate in an energy efficient manner. JMC's internal energy management and control process allows the plants to monitor energy usage throughout the facilities and identify areas that can be improved.

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

Table 3 below summarizes JMC2-XL plant energy consumption from 2013-2014.

表 3 汇总了 JMC 小蓝工厂 2013—2014 年度的能耗。

Table 3: JMC2-XL Energy Consumption From 2013-2014

表 3: JMC2-XL 2013 - 2014 年能耗

JMC2-XL		
Period 年份	Natural Gas (m ³) 天然气 (m ³)	Electricity (KWH) 电 (KWH)
2013	3,331,124	23,128,374
2014	9,093,795	62,630,883

Direct Emissions:

Direct Emissions result from combusting natural gas at the JMC plants.

直接排放:

JMC 的直接排放来自于燃烧天然气。

Indirect Emissions

JMC Indirect Emissions include all emissions generated outside the site's perimeter such as emissions from burning fossil fuel to generate electricity. JMC 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 direct and indirect emissions per year from 2013-2014.

间接排放:

JMC 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。JMC 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 2013-2014 年的直接，间接排放量以及排放强度。

Table 4: JMC2-XL Total Emissions and Emission Intensity

表 4: JMC2-XL 排放总量及排放强度

JMC2-XL			
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)	
2013	6,279	15,940	0.85
2014	17,142	43,165	0.71

Disclaimer: The calculation is based on electricity emission factors provided by WRI every year. Please note the most up to date 2008 WRI electricity emission factors were used for the 2008-2012 CO₂ emission calculations.

注：所有排放总量的计算都是基于 WRI 每年更新的系数。2008 年至 2012 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

Emission intensity is calculated by dividing total emissions by the number of production units (vehicles built).

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）。

Total emission of JMC2-XL in 2013 was 22,219t, and emission intensity (per unit) was 0.85 t/vehicle. Because JMC2-XL started full production in 2014, year 2014 has been selected as baseline year for JMC2-XL. JMC2-XL 2014 total emission was 60,307t, and emission intensity (per unit) was 0.71 t/vehicle.

2013 年小蓝工厂排放总量为 22,219 吨，排放强度为 0.85 吨/车。由于小蓝工厂于 2014 年开始全面投产，所以 2014 年被设定成为基准年。小蓝工厂 2014 年排放总量为 60,307 吨，排放强度为 0.71 吨/车。

Conclusions 结论

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

江铃汽车股份有限公司（简称 JMC）作为中国大陆首家自愿公布其工厂 GHG 排放的汽车公司，现隆重发布第一份 JMC 小蓝工厂 GHG 排放总量报告。JMC 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。JMC 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。