

Off-Highway Engines and Aftertreatment

Forecast 2005-2015 A Multi-Client Service

Aims and Objectives

The primary aim of this project, which was started by Knibb, Gormezano and Partners in 2009 was to develop a global quantitative analysis of off-road mobile equipment production, engine fitment and emissions after-treatment systems requirements.

Qualitative views on trends in off-road engine technology were sought to assist in development of the forecasts. The study will be released in Summer 2010, with updates planned on a semi-annual basis.

This study should therefore be of interest to the following audiences:

- Off-road mobile equipment manufacturers
- Engine producers
- Component and systems producers
- Design engineering companies
- Industry investors

Some of the questions asked by KGP customers, which the report answers include:

- What will be the impact of rationalisation and globalisation on off-road engine families, production volumes and technology markets?
- Which technologies will be adopted to meet future emissions legislation?
- What will be the impact of future legislation related to fuel economy and CO₂?
- What engines will be used in India and China, and other growth markets?
- What would be the impact of mergers between vehicle producers?
- What are the investment opportunities in the off-road engine and aftertreatment sector?

Scope and Coverage

This major research project aims to include over 90 per cent of standard off-highway equipment above 30 horsepower depending on the equipment type and market.

Equipment Coverage

- Agricultural Tractors
- Articulated Dump Trucks
- Asphalt Finishers
- Backhoe Loaders
- Compaction Equipment
- Crawler Dozers
- Crawler Excavators
- Mini Excavators
- Mobile Cranes
- Motor Graders
- Motor Scrapers
- Rigid Dump Trucks
- RTLs Masted
- RTLs – Telescopic
- Skid-Steer Loaders
- Wheeled Excavators
- Wheeled Loaders

Market Coverage

- Western Europe
- North America
- Japan
- Korea
- Brazil
- Russia
- India
- China
- Others



Company Coverage

The following major manufacturers will be the focus of detailed profiles, with those in the developing markets being covered in somewhat less detail. A summary of the smaller manufacturers globally will also be included in the profiles.

Construction Equipment Manufacturers

- Caterpillar
- CNH
- Doosan
- Hitachi
- Hyundai
- JCB
- John Deere
- Komatsu
- Kubota
- Liebherr
- Liugong
- Longgong
- Manitou
- Sumitomo Heavy Ind.
- Takeuchi
- Terex
- Volvo
- XCMG
- XEMC
- Yanmar

Agricultural Tractor Manufacturers

- AGCO
- Argo
- Claas
- CNH
- Dongfeng
- Escorts
- First Tractor
- Foton
- International Tractors
- John Deere
- Mahindra and Mahindra
- Ningbo
- Same Deutz Fahr
- Tafe
- Yancheng

Engine Manufacturers

- Agco Sisu Power
- Caterpillar/Perkins
- Cummins
- Deutz
- Doosan
- Fiat Powertrain Technologies
- International
- Isuzu
- John Deere
- Kamaz
- Komatsu
- Kubota
- Lombardini
- MTU
- Scania
- Volvo
- Weichai
- Yamaz
- Yanmar
- Yuchai

Deliverables

The key deliverables will feature a forecast spreadsheet, OEM profiles and a summary report to include:

Forecast Spreadsheet

- OEM
- Production country
- Equipment type
- Power band
- Engine manufacturer
- Engine model, displacement
- Emissions compliance
- Aftertreatment type
- Volumes 2005-2015

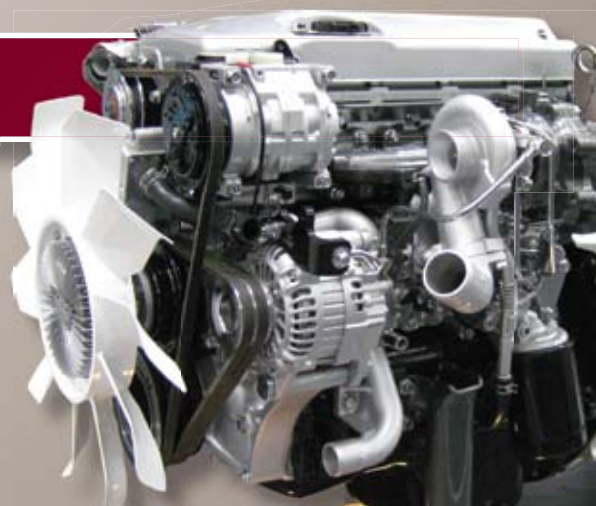
OEM Profiles

- Introduction
- Production summary
- Engine usage
- Aftertreatment and emissions summary

Engine Specification Database

- Key specifications on all engines
- Base specification
- Aftertreatment types
- Performance ratings

SUMMARY REPORT: A summary of the above information will be included, featuring analyses of global and regional production and parc estimates. Where possible this data will be presented for all manufacturers, however in some cases it may only be possible to split out engine manufacturer, rather than engine model volumes, in which case supporting commentary and analysis will be provided. A summary report tailored to the client's specific requirements will also be available. Supplementary Ad-hoc research projects leading on from this may be discussed with the consultants.



The Consultants

Knibb, Gormezano and Partners (KGP): a management and technology consultancy specialising in the automotive industry. Clients include major vehicle manufacturers, component suppliers, finance and venture industries, international and regional government, etc worldwide.

Powertrain and environmental technologies have been a major focus of its activities since it was founded in 1988. In 2005 it launched an on-road heavy engine forecast, in conjunction with J.D. Power, as a result of customer demand. At the time of its launch it was the only complete multi-client heavy engine forecast available. The service has been very successful, and counts over 25 companies as its customers over the past three years. The service is now offered on an annual basis, with a quarterly forecast and annual report.

Since the launch of the on-highway service KGP's clients have requested that it develop a complementary off highway engine forecast. Increasing complexity in the market and the adoption of stringent emissions legislation has lead many suppliers to increase their need for information in this area. This proposal outlines the aims and objectives and deliverables as part of this service.

Off-Highway Research: the world's largest consultancy that specialises in the research and analysis of international markets for construction equipment and agricultural tractors. Its existing databases, together with its in-depth knowledge of past and future trends, will provide an invaluable resource into this major research programme

The combined expertise of KGP and Off-Highway Research will offer clients of the 'Off-Highway Engine Forecast' an unprecedented insight into this vital sector.

Timing

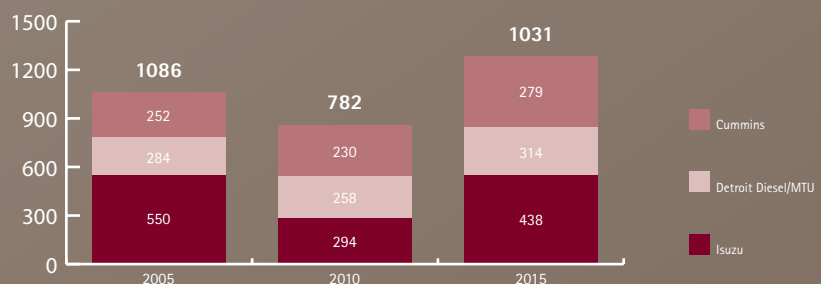
The report will be completed by July 2010. Early subscribers will have the opportunity to tailor the content to their requirements.

Custom Research and Consulting

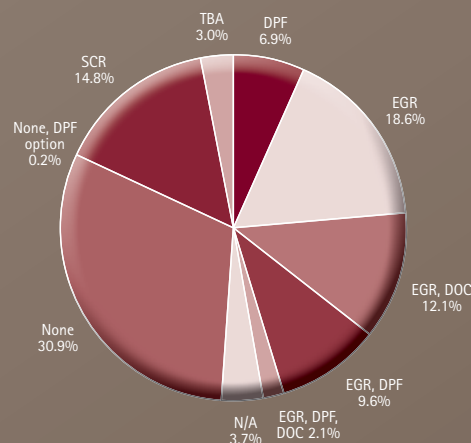
A subscription to the Off-Highway Engine and Aftertreatment Forecast entitles customers to an element of custom research related to the topic. In addition KGP and Off-Highway Research also offer ad-hoc consulting and research relating to all aspects of the industry, covering equipment, powertrain and related issues.

Customers to the Off-Highway Engine Forecast service can also take advantage of discounts on KGP's On-Highway Heavy Engine and Aftertreatment forecast, which was launched in 2006 in co-operation with J.D. Power Automotive Forecasting.

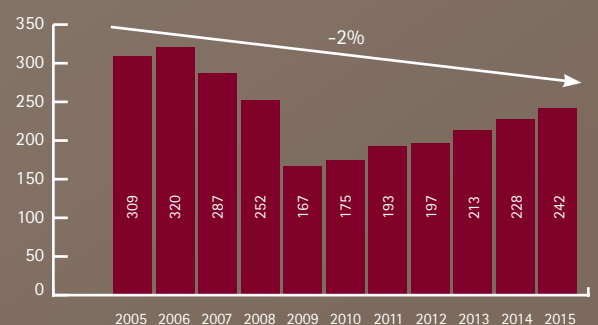
Manufacturer XXX NAFTA Production Forecast by Engine Supplier



EU Off-Highway Production Forecast by Aftertreatment 2011



NAFTA Off-Highway Production Forecast - 2015



Source: KGP-Off-Highway Research Off-Highway Engine and Aftertreatment Forecast

Off-Highway Engines and Aftertreatment

Order Form via Off-Highway Research or KGP

We would like to order the following off-road services:

- Full Service : €30,000
- By Manufacturer Group : €3,000
- By Region:
 - NAFTA : €10,000
 - Western Europe : €10,000
 - Asia Pacific : €12,500
 - Others (Brazil, Russia) : €2,500 each

Please invoice me in:

Euros Sterling US Dollars

Company: _____

Address: _____

Contact: _____

Signature: _____

EU VAT No.: _____

e-mail: _____

Please send me more information on KGP's other products and services:

On-Road Heavy Engine Forecast Full Report

On-Road Heavy Engine Forecast Summary Report

On-Road Heavy Engine Forecast Region/
Manufacturer Report (Please specify)

I am interested in other KGP and Off-Highway Research services and custom research. Please contact me about:

TO PLACE AN ORDER OR FOR FURTHER DETAILS PLEASE CONTACT:

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