

CV Roadmap™

On-Highway Engine Forecast

Markets, Technologies and Legislation



**Knibb
Gormezano &
Partners**

International Management &
Technology Consultants



KGP's multi-client CV Roadmap™ services provide:

- *The most comprehensive insight and analysis of the global on-road commercial vehicle and engine industry*
- *Reports covering key market and technology topics*
- *A customisable forecast database*
- *Optional consulting support and client specific primary research*

The On-Highway Engines and Aftertreatment service, covering Light, Medium and Heavy Trucks and Heavy Buses, includes the following forecasts:

- *Production*
- *Engine*
- *Emissions compliance and after-treatment*

CV Roadmap services are used by senior managers at over 30 leading companies operating in the On-Road and Off-Road Commercial Vehicle sector to:

- *Budget better*
- *Forecast better*
- *Make decisions better*

Readers use KGP's 25+ years knowledge and experience to compete more effectively in this growing but increasingly complex sector

A collaboration between Knibb, Gormezano and Partners and LMC Automotive

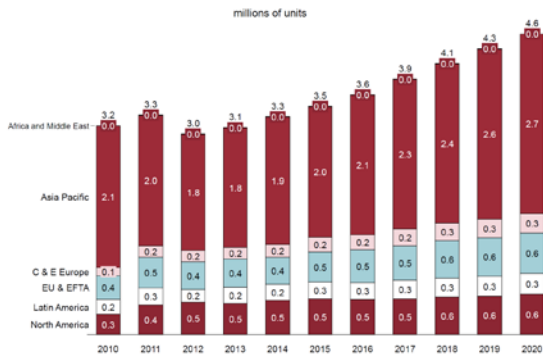


Production Forecast to 2020

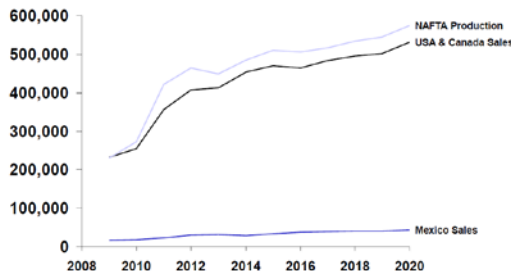
Helps you:

- Evaluate global volumes and growth opportunities
- Track the latest trends and relationships in the industry
- Identify new customers
- Assess the impact of globalisation on your business

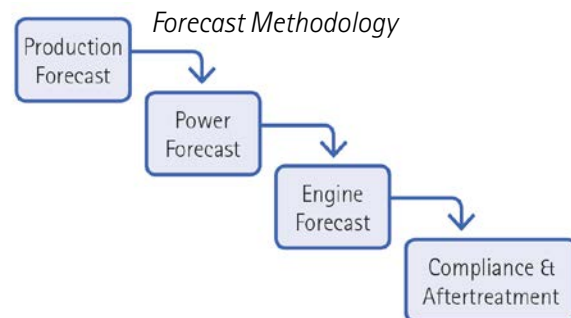
Global Production



Sales Forecast



Geographic Scope



Robust base data

- KGP adds value to LMC Automotive's sales and production forecasts, market data and other industrial indicators by forecasting powertrain production
- Oxford Economics' long term macro-economics and industry forecasts

Forecast split by

- OEM, production country and vehicle segment
- 25 countries
- > 100 manufacturers
- 4 vehicle segments

New for 2014

- Vehicle and engine plant databases providing detail and insight on production
- Financial analysis of major OEMs

Engine Forecast to 2020

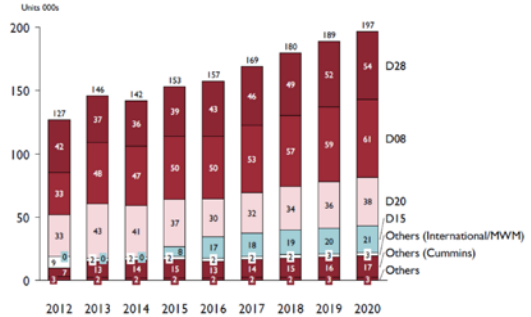
Helps you:

- Evaluate engine volumes by engine OEM and family
- Analyse competitive engine programmes
- Quantify engine technology and market trends

Engine Manufacturer Forecast



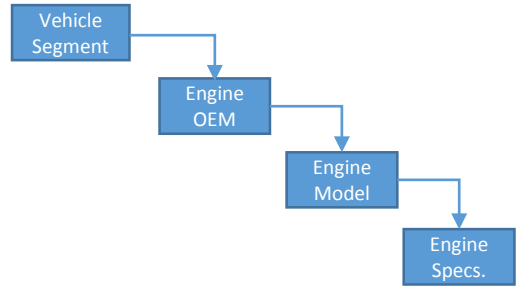
OEM Engine Forecast



OEM Engine Ranges

Manufacturer	Euro 4/5	Euro 6
Mercedes	OM651	OM651
	OM904	OM934 (All New)
	OM906	OM936 (All New)
	OM926	OM470 (All New)
	OM457	OM471 (All New)
	OM501	OM472 (All New)
	OM502	OM473 (All New)
Scania	DC9	DC9
	DC11	DC11
	DC13	DC13
	DC16	DC16
Volvo	D5 (Deutz)	D5 (All new Volvo)
	D7 (Deutz)	D8 (All new Volvo)
	D9	D11
	D11	D13
	D13	D16
	D16	

Forecast Methodology



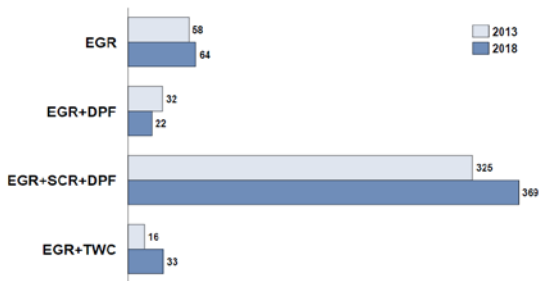
Expands production forecast

- Input from LMC's Global Commercial Vehicle Forecast and reports
 - Primary research with OEM, engine and component supplier and other stakeholder interviews
 - Expert analysis of current and future production forecasts and engine portfolios
 - Engine plant supply by OEM country
- Forecast split by vehicle segment, fuel, engine manufacturer, and model
- >50 engine manufacturers
 - 400 engine models
- New for 2014
- Engine model database
 - Natural gas engines added

Emissions Forecast to 2020

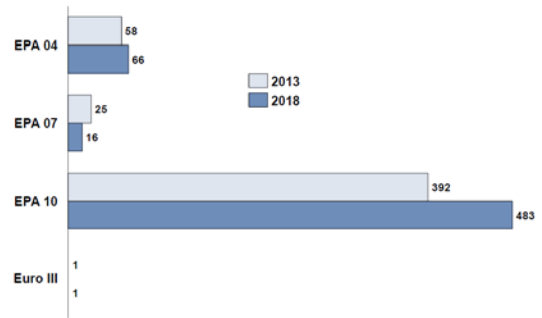
Helps you:

- Compare aftertreatment, CO₂ and fuel economy strategies
- Quantify engine volume by compliance and aftertreatment
- Analyse global engine shipments



Potential timing for heavy truck fuel economy (FE)

Market	Status	Legislation Effective Date
US	Preparation of FE standard	2014-8
EU*	Investigation of potential standards, methodologies for GHG standards	2015/2020
California	Law-making on GHG standards	2011/2
Japan	FE standard legislation introduced in 2007	2015/6
China	Investigation of potential standards on FE	~2015
India	Investigation of potential standards on FE	~2015



Forecasts emissions compliance and aftertreatment

- Benefit from KGP's technology consulting expertise
- Primary research with OEM, engine and component supplier and other stakeholder interviews
- Consolidation of sales vs production forecasts and emissions legislation by vehicle segment
- Takes into account legislation timing and known OEM strategies

Forecast includes Emissions Compliance and Aftertreatment by engine model

- Aligned to regional emissions compliance
 - Aftertreatment including EGR, DOC, DPF, SCR
- ### New for 2014
- Consolidation of engine production and sales analysing global shipments
 - Assessment of strategies to meet future CO₂ and fuel economy strategies

Deliverables

Flexible delivery allows you to:

- Filter, Search and Pivot on your desktop
- Develop your own internal analysis
- Request KGP customised analysis
- Share access across the organisation

The image shows three screenshots of deliverables:

- HVOR Forecast – Truck & Bus Engines & Aftertreatment 4th Quarter 2013:** A report page with a 'Regional Mini Profiles' section. The 'North America Summary' includes bullet points about market growth in China, economic downturns in Europe, and a strong outlook for the US market in 2014.
- Summary Reports:** A page with a large 'Paccar' logo and a table of data. The table has columns for Manufacturer, Group, Region, Power, and Engine. It lists various Paccar models like A-Cameras and ACE Conquest across different regions like Italy, India, and Asia Pacific.
- Excel data:** A screenshot of an Excel spreadsheet showing the same data as the Summary Reports page, with a grid of cells containing manufacturer names, regions, and power ratings.

Summary Reports

Regional & Country Reports

OEM Reports

Excel data

Excel forecast spreadsheet

- Continuous updates
- Monthly updated summary forecast highlighting key OEM, market and technology changes
- Summary pivot table and custom analyses

Summary Report

- Continuous updates,
- 2 comprehensive printed versions per year
- Market report on key regions, legislation and technology trends
- Manufacturer profiles outlining key production volumes and locations, engine supply relationships, joint ventures etc.

New for 2014

- Online access and data analysis in Microsoft Sharepoint and PowerPivot for client delivery and downloads

Custom Research

KGP regularly creates custom research based on our multi-client services, helping further analyse the market and technology trends for individual customers. Single client projects based on KGP's multi-client services include:

- Turbocharger supplier and technology shares
- Sensor fitment trends in on-road and off-road commercial vehicle applications
- DPF and SCR volume and value for future emissions legislation
- Euro VI technology strategies
- Commercial Vehicle transmission supply chain
- Advanced technologies for Tier 4 compliance engines
- Parc forecasts for on-road and off-road equipment
- Hybrid commercial vehicle market assessment

Single client and customised projects are quoted after discussing client's needs and assessing feasibility, please contact us for further detail.

Some of our customers



About us



Knibb, Gormezano & Partners

- *Knibb, Gormezano and Partners (KGP) provides consultancy services to the automotive and related industries worldwide. Since our foundation in 1988 we have helped over 500 companies worldwide grow and globalise.*
- *KGP extensive global network is constantly being expanded to meet most customer requirements. You can find more about our capabilities by visiting our website or requesting an informal discussion with one of our senior consultants.*
- *To provide KGP's client with the very best service KGP partners with other specialist consultancies including:*
 - *LMC Automotive Forecasting*
 - *Off-Highway Research¹*
 - *Integer Research*

LMC Automotive

- *LMC Automotive is the leading provider of automotive production, sales and powertrain forecasts and automotive industry market intelligence. LMC Automotive started operation in 2011, following the demerger of the forecasting division of J.D. Power & Associates, though the group has been in continuous operation since the early 1990s.*
- *Our market analysis and forecasts, carried out from offices across the globe, are supported by experienced professionals with broad, long and varied experience in the automotive sector. Our forecasting and analysis products speak for themselves, but they are supplemented by an unmatched level of customer support from our global team.*

¹With Off-Highway Research KGP publishes the CV Roadmap™ Off-Highway Engine and Aftertreatment Forecast

CV Roadmap™

On-Highway Commercial Vehicle Coverage

Detailed profiles of 8 major OEMs

- CNHi (Iveco)
- Daimler
- International
- Isuzu
- Paccar
- Toyota / Hino
- Volvo
- VW Group (Scania, MAN Truck & Bus)

Minor profiles of:

- Chinese OEMs;
 - Dongfeng
 - Beiqi Futian
 - FAW
 - Sinotruk
 - Others
- India OEMs;
 - Ashok Leyland
 - TATA
 - Mahindra & Mahindra
 - AMW
- Russia OEMs;
 - Kamaz
 - GAZ
- Light/Medium Duty OEMs;
 - GM
 - Ford
 - Chrysler

Information on over 50 engine OEMs

Countries covered

- Argentina
- Austria
- Belarus
- Belgium
- Brazil
- Canada
- China
- Czech Republic
- Finland
- France
- Germany
- India
- Indonesia
- Italy
- Japan
- Korea
- Mexico
- Netherlands
- Poland
- Russia
- Spain
- Sweden
- Thailand
- Turkey
- UK
- USA

Segments covered

- Light Truck (3.5-6t)
- Medium Truck (6-16t)
- Heavy Truck (16t+)
- Heavy Bus (>8t)

Database Fields

- Manufacturer
- Group
- Segment
- Country
- Region
- Engine Manufacturer
- Engine Model
- Emissions Compliance
- Engine Plant
- Engine Production Region
- Aftertreatment
- Base Engine Specifications
- Turbocharger Type
- FIE Type
- Engine Control
- Layout
- Cylinders
- Displacement
- Bore
- Stroke
- Valvetrain
- Valves Per Cylinder
- 2005-2020 Volumes

CV Roadmap™ incorporates KGP and its partner's On-Highway, Off-Highway and Natural Gas engine multi-client research and consulting services

T: +44 (0) 1332 856 301 F: +44 (0) 1332 856302 E: consult@kgpauto.com W: www.kgpauto.com

Contact Us

For further information on any of our services please contact us directly, or return the response form on the following page and we will contact you.

Global Customers
Alex Woodrow
Managing Director
Knibb, Gormezano and Partners

T: +44 (0) 1332 856 301

F: +44 (0) 1332 856 302

E: consult@kqpauto.com

W: www.kqpauto.com

Japan
Michihiro Kawahara
Managing Director
Rayden Research

T: +81 (0) 3 3212 3671

F: +81 (0) 3 3212 3675

E: kawahara@ff.ij4u.or.jp

W: www.rayden.jp

North America
Tom Rhein
President
Rhein Associates

T: +1 (0) 734 451 7615

F: +1 (0) 734 451 7621

E: tomrhein@rheinreport.com

W: www.rheinreport.com

Contact Us

Name

Job Function

Telephone Email

Company Name

Address

City

State / Region

Postal Code / Zip Code Country

I am interest in KGP visiting my company to discuss our specific requirements.

I am interested in receiving more information on the services you offer

Please send me more information on:

On Road HD engine forecast

Off Road driveline

Off Road NRMM engine forecast

Gensets

On Road HD transmission forecast

Off Road aftertreatment analysis

On Road HD parc forecast

Hybrid and EV production

Off Road NRMM parc forecast

Advanced Energy Storage