

Market overview

Pump technology has a long history, closely associated with the industrial development of the global economy. Today pumps are used in a very wide variety of end markets, and the basic concept of a pump has been adapted for use in many different applications. In Concentric's end markets, while basic mechanical pumps are now standardised products, pump companies continue to refine the technology of their pumps, producing more specialized pumps to increase performance in specific applications. Traditional mechanical pumps, both oil pumps and water pumps, are evolving into infinitely variable flow versions, via hydraulic or electronic control, thereby offering power savings, improved engine fuel efficiency, more accurate temperature stabilization and overall reduced emissions and noise. It is however critical to maintain the durability and reliability expected in the commercial diesel engine sector, for engines with long expected lives. The focus on efficient use of energy is also leading to the development of hybrid hydraulic drive systems that allow simultaneous energy exchange between vehicle functions, and in doing so can demonstrate significant fuel savings as energy within the vehicle or machine is captured and reused.

Hydraulic powered machines typically have a primary pump, for their main designated purpose, and then a range of additional pumps powering secondary circuits that are vital to the functioning of the engine or machine, for example, hydraulic fan drives for cooling fans, supplementary steering systems or similar additional hydraulic power. The primary pumps are more standardized, and are usually piston pumps. Secondary circuit pumps are typically gear pumps, requiring more customization and optimization to maximize performance given limitations in available space, permissible emissions and noise levels.

Trends

Environment and legislation

Concentric's pump solutions allow its customers to improve the performance of their machinery in three main areas, fuel efficiency, emissions reduction, and noise reduction

There is a strong trend in society to use energy resources more efficiently. This is reflected in higher costs for fuel, and incentivizes the OEM customers of Concentric to develop more fuel-efficient machinery and engines, to lower the operating costs of their products, for the benefit of their customers. An increase in the price of fuel also incentivizes end-customers to invest in new more fuel efficient machinery, as the current machinery is rendered less economic.

The trend to use energy efficiently is also closely linked with the desire to reduce the impact of society on the envi-

ronment, specifically to cut emissions of CO₂ (carbon dioxide) and other gases. In this case, changes are being driven both through market-based price mechanisms, such as CO₂ emission permits, and also by significant regulation, imposed at regional and country level, to reduce emissions from transport and machinery. The regulation has moved at different speeds in different regions, but in general North America and Europe have more developed regulation, and tighter emission standards than developing economies such as the so called BRIC group.

One example is commercial diesel engines for U.S. and European trucks. Euro VI emission standards introduced by the European Union in Regulation 595/2009 in July 2009, offer a significant opportunity to increase sales. These new standards comparable in stringency to the U.S. 2010 standards, will become effective progressively from 2013 and apply to all new Truck legislations by 2014.

To meet these new standards both existing customers and significantly, four new European and North American engine manufacturers have entered development agreements to develop new intelligent variable flow oil and water pumps for introduction in late 2012. These exciting new products are enablers to allow the engine to be emissions compliant to the new standards and additionally provide fuel savings in the range 1–5 percent per pump installation.

In addition, for non-road diesel engine applications, both the United States and the European Union passed in May 2004, the new Tier 4 standards which are to be phased in over the period 2008–2015. These standards require emissions of NO_x (nitrogen oxides) and particulates to be reduced by about 90 percent and the Group is currently introducing many new pumps to support customer Tier 4 programmes.

Increasing attention is also being paid to the issue of noise, both for the sake of the operator or driver, and for those affected in the workplace. A particular example is fork lift truck applications, used inside factories and locations where Concentric's extensive development of gear tooth profiles has resulted in a new, low-noise hydraulic pump and a significant increase in sales and market share.

Global infrastructure growth

The continued economic growth of developing countries, in particular the so called BRIC countries, is increasing demand for Concentric products in all major end markets. As a global supplier, with a strong local presence and production in India and China, Concentric is well positioned to benefit from an expected continued higher than average economic growth of these economies.

Actual and forecasted real GDP growth (% change, year on year)

Country/ region	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Brazil	3.2	4.0	6.1	5.2	(0.6)	7.5	4.5	4.1	4.1	4.2	4.2
China	11.3	12.7	14.2	9.6	9.2	10.3	9.6	9.5	9.5	9.5	9.5
Euro area	1.7	3.1	2.9	0.4	(4.1)	1.7	1.6	1.8	1.8	1.9	1.8
India	9.2	9.7	9.9	6.2	6.8	10.4	8.2	7.8	8.2	8.1	8.1
Japan	1.9	2.0	2.4	(1.2)	(6.3)	3.9	1.4	2.1	1.7	1.5	1.3
Unites States	3.1	2.7	1.9	0.0	(2.6)	2.8	2.8	2.9	2.7	2.7	2.7

Source: International Monetary Fund, World Economic Outlook Database, April 2011

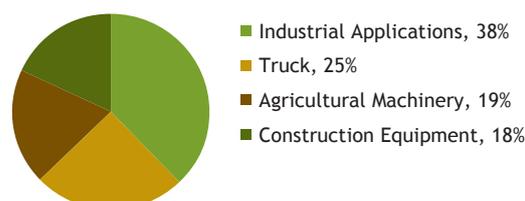
Rapid economic growth in emerging markets has caused a significant increase in global infrastructure investments in recent years. As emerging economies grow global investment will shift, from typical mature economy investment in upgrading capital stock, towards investments more typical for emerging economies, such as infrastructure and housing.

The global infrastructure investment rate grew from a recent low of about 20.8 percent of GDP in 2002 to 23.7 percent in 2008 according to McKinsey Global Institute's December 2010 report. The growth was mainly driven by the very high investment rates in China and India, (consistently above 40 percent and 30 percent respectively in years through 2004 to 2008 according to Business Monitor International) and with other emerging economies contributing as well. Considering the comparatively low levels of physical-capital stock these emerging economies have accumulated so far, and if the forecasts on GDP growth are realised, it is likely that the high investment rates will continue.

End markets

Concentric supplies its solutions to customers in a wide range of end markets, which it groups in to four main end-use applications: industrial applications, trucks, agricultural machinery and construction equipment¹⁾. Hydraulic pumps and power packs are supplied directly to machinery and vehicle builders. Engine pumps are supplied to diesel engine manufacturers who supply the same machinery manufacturers. Concentric does not have direct information on which end markets its products are used in, however management estimates this based on public information given by the machinery and vehicle manufactures about their own end markets. In 2010 Concentric had 724 active customers across its diverse end markets:

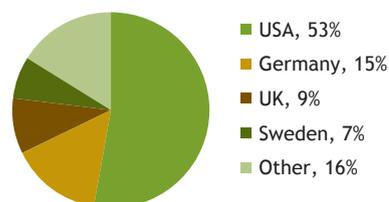
2010 Sales by end market



Note: Based on Concentric's sales by direct customer and management estimates of those customers end markets

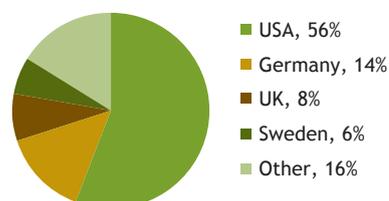
A greater part of Concentric's sales is destined to European and North American customers, with a smaller portion of the sales made to China and India as well as Latin America. Concentric's sales are driven by the sales of its customers in particular regions, and therefore the Company monitors the growth of the various end-markets within its different geographies.

2010 Sales by customer location



Note: Other mainly consists of China, India and Latin America

2009 Sales by customer location

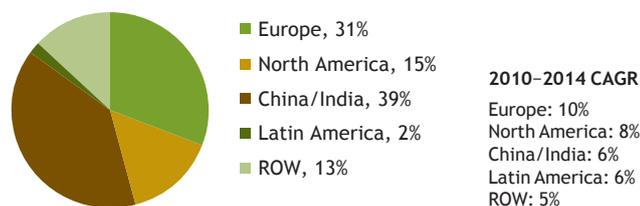


Note: Other mainly consists of China, India and Latin America

¹⁾When analyzing market data, management use information from external resources, particularly Power Systems Research. The data refers to the number of engines that will be supplied. This is used as an indicator of market growth both for engine pump products and for hydraulic products, as the machinery with the engine typically also includes hydraulic pumps of the type supplied by Concentric. Concentric focuses on specific niches within the engine pump and hydraulic products markets.

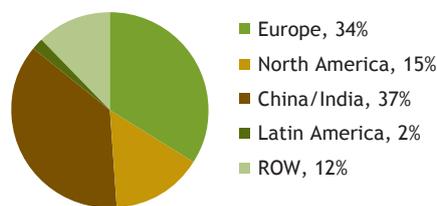
Forecasted industrial applications market growth

Total 2010 market volume: 0.9m



2010–2014 CAGR
 Europe: 10%
 North America: 8%
 China/India: 6%
 Latin America: 6%
 ROW: 5%

Total 2014 market volume: 1.1m



Note: Units refer to number of engines in particular segment and geography. CAGR=Compound Annual Growth Rate
 Source: Power Systems Research, January 2011

Industrial applications

Industrial applications encompass a wide range of different applications, from forklifts used in retail outlets, to heavy machinery used in mining. There are also generation sets for power production, compressors, cranes, refrigeration, municipal equipment such as road sweepers, military and airport vehicles. By and large these machines and vehicles use standard power trains and engine pumps, and similar hydraulics equipment to machinery in the other three end markets.

As industrial applications encompass a wide range of different applications, there are no single market estimates for this end market. Market estimates for lift trucks show that hydraulic products, used in, for example, forklifts and aerial access equipment, can be expected to grow at per annum rates of 10 percent and 8 percent in Europe and North America respectively.

Mining end markets are also currently growing strongly, driven by high commodity prices, whereas the retail area is comparatively slow, given the slow economic recovery in Europe. The Company currently estimates that these product markets are on average growing at about 8–10 percent per annum, across the markets in which Concentric is active.

Trucks

Concentric provides its solutions to OEMs and diesel engine producers in the truck segment. The solutions are for generation of flow for fuel, oil and cooling water, and for crank-

case cleaning of oil droplets using Alfdex oil mist separators. Concentric typically offers products for use on medium duty trucks, above 7.5 tons and heavy duty trucks, above 16 tons.

The North American and European markets are expected to grow on average at 9 percent and 14 percent respectively over the 2010–2014 period, driven by current and future emissions legislation U.S. 2010 and Euro VI.

Growth rates in the developing economies are currently being driven by the high levels of infrastructure and construction development. Over time though, legislation will become an increasingly important factor in these regions as larger trucks with larger engines increase the size of the market for more advanced pump products.

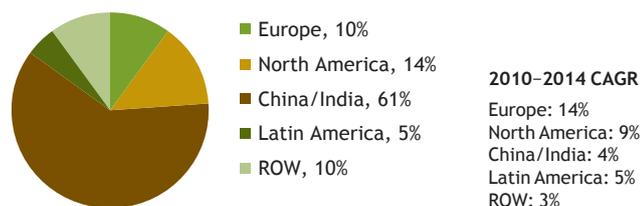
Agricultural machinery

Concentric provides its solutions to OEMs of agricultural equipment. The main solutions are engine pumps, hydraulic fan drives and ancillary hydraulic pumps for tractors, combines and other specialty equipment, harvesters, balers and windrowers. Many agricultural machines use on-highway engines and truck engine derivatives, and there are many OEMs that operate both in the truck and agriculture machinery sectors.

The long term trend for agricultural production is a function of demographics and rising living standards, largely in the developing economies. This will maintain upwards pressure on the productivity of farmland, and sustain demand for agricultural products. The market for agricultural ma-

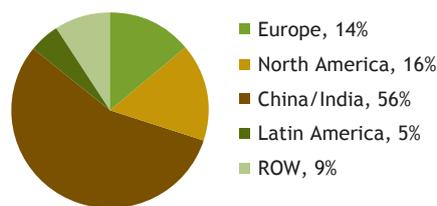
Forecasted truck market growth

Total 2010 market volume: 4.7m



2010–2014 CAGR
 Europe: 14%
 North America: 9%
 China/India: 4%
 Latin America: 5%
 ROW: 3%

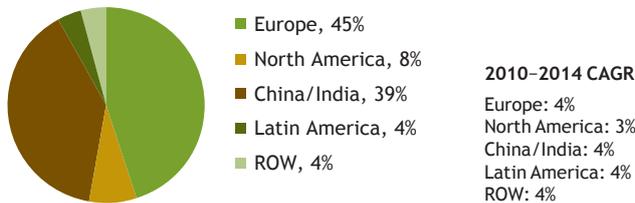
Total 2014 market volume: 5.9m



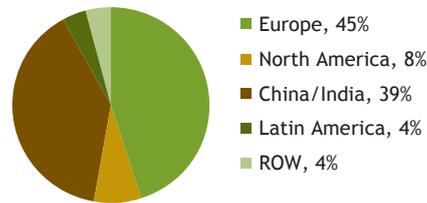
Note: Units refer to number of engines in particular segment and geography. CAGR=Compound Annual Growth Rate
 Source: Power Systems Research, January 2011

Forecasted agricultural machinery market growth

Total 2010 market volume: 0.9m



Total 2014 market volume: 1.1m



2010–2014 CAGR
 Europe: 4%
 North America: 3%
 China/India: 4%
 Latin America: 4%
 ROW: 4%

Note: Units refer to number of engines in particular segment and geography. CAGR=Compound Annual Growth Rate
 Source: Power Systems Research, January 2011

chines is driven by investments made by farmers. Although food production is relatively stable, commodity food prices vary considerably so investments by farmers are less stable.

The growth rate for agriculture equipment markets is relatively stable across all regions. Market estimates indicate growth rates of some 3–4 percent in North America and Europe, with only slightly higher growth in developing countries, driven by new investments in food production.

Construction equipment

Concentric solutions are used in a wide range of construction machinery and vehicles. The main solutions are for engine pumps, hydraulic fan drives and ancillary hydraulic pumps. These are used on smaller equipment such as skid steer and backhoe loaders, and on heavier equipment such as wheel loaders, bulldozers and excavators at the heavier end. The engines used in this end market are often similar to those used in trucks, and subject to a similar regulation and development cycle.

Current market estimates indicate double digit growth rates in the market for construction equipment in most regions, driven by emission regulations in North America and Europe and infrastructure investment in China, India and other developing economies.

To date, construction equipment manufactured in India and China for domestic consumption has tended to be simple

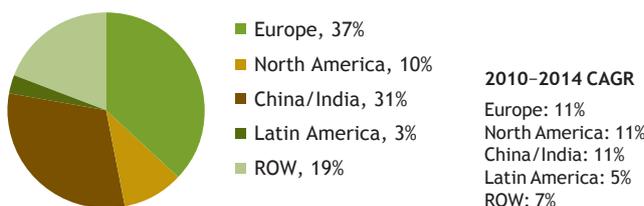
machines with less complicated hydraulics than equivalent machines produced in the United States, Europe and Japan – as a result, sales of hydraulic products have been limited as there has been less use of secondary hydraulic circuits to drive ancillary functions. This situation is now changing as domestic markets grow and mature, and is particularly evident in China where domestic manufacturers are starting to export to surrounding Asian countries which demand higher specification machinery. In both India and China, the Company is well placed to use the existing facilities to launch hydraulic products as both markets start to develop.

Competitive situation

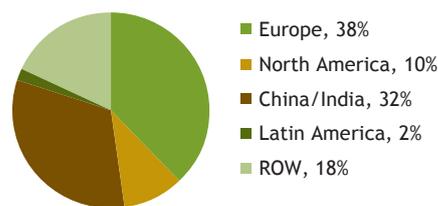
The global market for hydraulic pumps has several large players, such as Bosch Rexroth, Parker Hannifin, Eaton and Sauer Danfoss, who all operate in high volume areas of the market. There are also regional competitors in Japan such as Shimadzu and Kayaba, and other regions, such as Hve in Europe and HPI in the United States. The market is very diverse. Concentric tends to compete with these companies only in certain niches where there is typically a higher technological content to the products, or where Concentric can differentiate its products through the provision of specific solutions to its customers. Concentric has a high market share in specific niches such as hydraulic fan drives, supplemental steering pumps and other specialist applications

Forecasted construction equipment market growth

Total 2010 market volume: 0.5m



Total 2014 market volume: 0.7m



2010–2014 CAGR
 Europe: 11%
 North America: 11%
 China/India: 11%
 Latin America: 5%
 ROW: 7%

Note: Units refer to number of engines in particular segment and geography. CAGR=Compound Annual Growth Rate
 Source: Power Systems Research, January 2011

where customers value low noise capability and compact size and weight.

The market for pumps for diesel engines is more easily defined, with a few large suppliers in each region. Concentric is the only global company and competes against a number of regionally focused companies.

Many of these competitors produce a wider range of products for diesel engines for passenger car applications or

are technology followers rather than leaders. As a result, only Concentric globally concentrates its development effort on best-in-class pump technology designed for the robust environment of a commercial diesel engine in the 0.8 to 2 litre per cylinder segment used in construction machinery, agricultural tractors and medium to heavy trucks.

Competitors in engine products

Europe	United States	India	Brazil	China	Japan
SHW	EMP	Autolec	Vetore	GPM	TBK
OMP	TBK	Myung Wha	Hunan	Hunan	
Pierburg	Magna	Lubricare	Melling	TBK	
GPM	Pierburg (Mack)		Myung Wha		
Myung Wha	OMP (Paccar)				
Hunan	Linemar				
GKN	Hunan				
Mahle	Autolec				
Superpar (fuel transfer)					