

BUSINESS REVIEW

Operations – Environmental Technologies Division

	Year to 31st March			% at constant rates
	2009 £ million	2008 £ million	% change	
Revenue	2,226	2,290	-3	-9
Sales excluding precious metals	1,135	1,140	-	-7
Operating profit*	124.3	147.3	-16	-22

* before amortisation of acquired intangibles.

Description of the Business

Environmental Technologies Division is a global supplier of catalysts and related technologies for applications which benefit the environment such as pollution control, cleaner fuel, more efficient use of hydrocarbons and the hydrogen economy. The division consists of three global businesses:

Emission Control Technologies (ECT)

ECT comprises Johnson Matthey's global autocatalyst, heavy duty diesel and stationary emissions control businesses. We are a world leading manufacturer of catalysts for vehicle exhaust emission control and a leader in catalyst systems for the reduction of emissions from industrial processes. Manufacturing takes place in the UK, Germany, Belgium, Russia, USA, Mexico, Argentina, South Africa, Japan, Malaysia, India, China and South Korea. R&D facilities are in the USA, UK, Germany, Sweden, Japan, South Korea and Brazil.

Process Technologies

Process Technologies manufactures process catalysts for the syngas, methanol, ammonia, hydrogen, gas / coal to products, oil refineries and gas processing industries. Davy Process Technology develops chemical process technologies and licenses them to customers in the oil, gas and petrochemical industries. Our Tracerco business is an industrial leader in specialist technology for the diagnostics, measurement and analysis of process plant conditions across the hydrocarbon chain. Process Technologies is a global business with manufacturing sites in the UK, India and China, supported by several UK based technology centres and technical offices in key centres around the world.

Fuel Cells

Johnson Matthey is a world leader in catalysts and catalysed components for fuel cells.

Key Statistics

Return on sales excluding precious metals	10.9%
Return on invested capital (ROIC)	10.5%
Capital expenditure	£160.2m
Capex / depreciation	2.4 times
Average invested capital	£1,186m
Employees	4,623

Performance in 2008/09

Environmental Technologies Division experienced mixed market conditions during the year. The division achieved good growth in the first half with both ECT and Process Technologies performing well. Demand for autocatalysts fell sharply in the second half of the year while demand for our other catalyst products and services remained strong. For the year as a whole, revenue fell by 3% to £2,226 million; sales excluding precious metals were £4.4 million down at £1,135 million; and underlying operating profit (before amortisation of acquired intangibles) fell by 16% to £124.3 million. Translated at constant exchange rates, sales excluding precious metals fell by 7% and underlying operating profit was 22% lower.

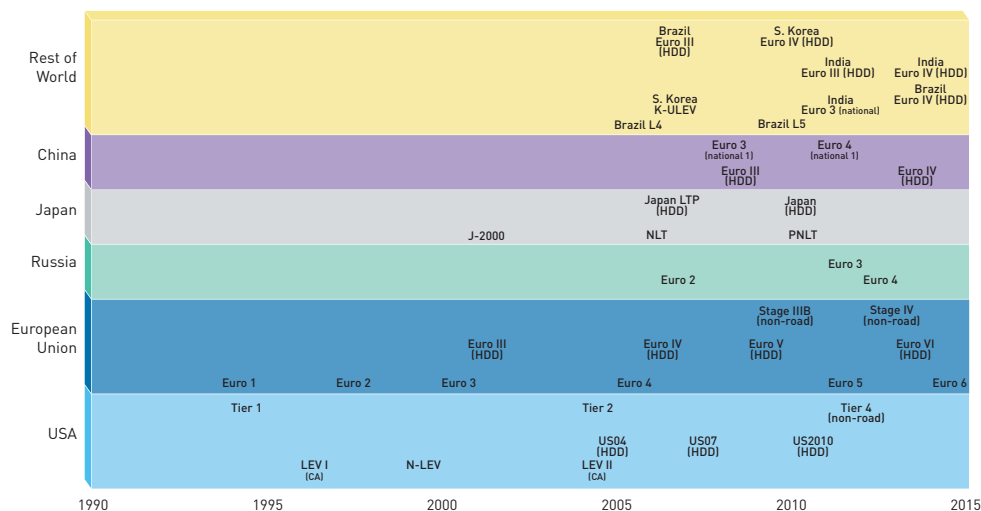
Emission Control Technologies

Emission Control Technologies' sales excluding precious metals fell by 3% to £872 million. Sales excluding precious metals grew by 10% in the first half of the year, followed by a drop of 16% in the second half. At constant exchange rates, sales excluding precious metals were 11% down for the year with 8% growth in the first half followed by a 26% decline in the second half.

In Johnson Matthey's financial year to 31st March 2009 global light duty vehicle sales fell by 12% to 60.3 million. Production declined by 13% with a small decrease in inventories. All of the reduction occurred in the second six months of the financial year when global car production fell by 26%. Johnson Matthey's sales volumes of autocatalysts fell by more than 30% in the second half of the year, which was greater than the fall in global car production as a result of car companies and exhaust system suppliers reducing inventories of catalysts.

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Vehicle Emissions Legislation Timeline



Estimated Light Vehicle Sales and Production

		Year to 31st March		
		2009	2008	change
		millions	millions	%
North America	Sales	14.4	18.6	-22.6%
	Production	10.8	14.7	-26.5%
Total Europe	Sales	19.1	22.0	-13.2%
	Production	18.9	22.5	-16.0%
Asia	Sales	16.7	17.2	-2.9%
	Production	25.8	27.4	-5.8%
Global	Sales	60.3	68.5	-12.0%
	Production	61.6	71.1	-13.4%

Source: Global Insight

The decline in sales of diesel particulate filters (DPFs) was less than that for flow through catalysts. Around seven million diesel cars were sold in Western Europe last year of which about half were fitted with DPFs. Over the next 18 months the DPF market is set to double as all new diesel cars sold in the European Union will require fitment in January 2011.

In response to the fall in demand ECT increased its programme to reduce costs. Total headcount fell by 13%, the majority of whom were agency workers. Production efficiency has been improved with reject costs more than halved. Distribution costs per unit have also been reduced. On an annualised basis these latter two initiatives have reduced costs by £10 million at current volume levels.

Sales excluding precious metals of emission control catalysts to markets other than light duty vehicles grew by 10% on a constant currency basis. These products include heavy duty diesel (HDD) catalysts for trucks, buses and non-road vehicles, and stationary emissions control (SEC) systems for reducing emissions in a wide range of applications including power generation, industrial processes, coal power plants, marine and locomotives. Currently these applications account for 25% of ECT's sales excluding precious metals and are expected to grow significantly over the next few years despite the current economic recession. Growth in 2008/09 was mainly the result of a good contribution from Argillon which was acquired in February 2008.

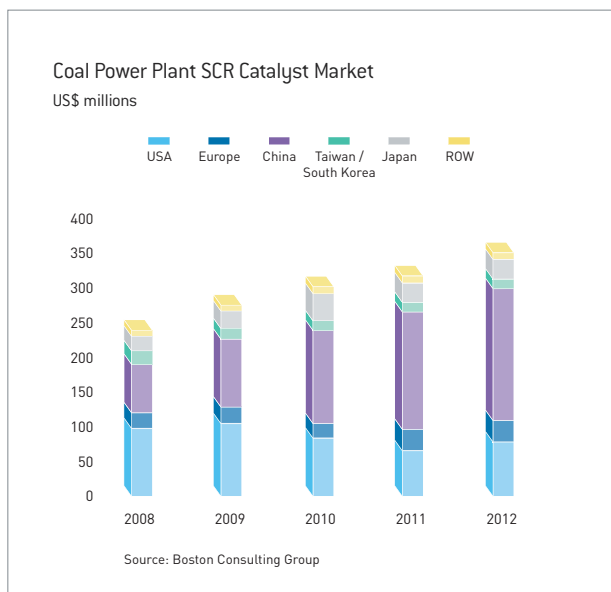
Sales of trucks fell sharply in the second half of the year, particularly in Europe. We estimate the market for HDD catalysts was around US \$600 million of sales excluding precious metals in calendar year 2008 with Johnson Matthey increasing its leading market share. Given current economic conditions it is difficult to predict truck sales in the future. Some governments in developing countries may slow down introduction of emissions legislation because of the lack of availability of low sulphur diesel fuel. However, based on existing legislation for on road and non-road vehicles and industry forecasts for truck sales, we still expect the market for HDD catalysts to quadruple by the end of 2014.

During the year we completed most of the construction of two new facilities, one in western Pennsylvania, USA, to manufacture the additional catalysts required to meet the new HDD legislation in North America which takes effect from 1st January 2010, and the other in Macedonia to manufacture catalysts for both light duty and heavy duty vehicles in Europe. Both of these facilities are expected to be operational by the autumn of 2009.

China is the world's largest producer and consumer of coal and more than 70% of the country's NOx emissions are generated by coal fired power plants. These harmful emissions result in high levels of ozone and acid rain. The State Environmental Protection Administration in China is expected to issue NOx control regulations that will come into effect in 2011. In advance of these regulations many new coal fired power plants have begun to purchase and install selective catalytic reduction (SCR) systems to control their NOx emissions. Our SEC business already sells plate catalysts manufactured in Redwitz, Germany to the Chinese market and we are constructing a new facility in Shanghai, China to manufacture these products locally to meet the rapid increase in demand in 2011.

Process Technologies

Process Technologies' sales excluding precious metals grew by 11%. Translated at constant exchange rates the growth was 8%. The Ammonia, Methanol, Oil and Gas (AMOG) business was well ahead of last year with continued strong demand for catalysts and purification materials for industries where hydrogen or synthesis gas are key intermediates.



Demand for methanol catalysts was strong in the second half of the year as a result of good catalyst sales for new projects. There is increasing global interest in methanol as an alternative fuel constituent, particularly in China, where a number of new methanol plants came on stream. Despite the fall in the oil price, demand for hydrogen catalysts was strong throughout the year. Hydrogen is an essential component in refinery desulphurisation processes and growing demand continues to be supported by legislation requiring low sulphur diesel, particularly in the developing world. In the coming decade increasingly stringent regulation of marine diesel is likely to further increase the requirement for fuel desulphurisation.

The Refineries and Purification business continued to grow well, with increasing demand for gas and liquid stream purification products in refineries and in primary gas production. Legislative and commercial concerns regarding impurities such as sulphur, chlorine and mercury continue to underpin growing demand for purification products.

Davy Process Technology (DPT) had another good year, securing licence and engineering sales for two oxo alcohol plants, a butanediol plant and a biodiesel plant. DPT was also successful in licensing four new methanol plants. Although new project activity around the world has reduced because of the global recession and the credit crunch, concerns over energy security continue to drive coal based projects in countries such as China which want to reduce their reliance on imported oil, and DPT has leading technology in this area.

At the end of the financial year, we were in the final stages of constructing a new world scale and class leading methanol synthesis catalyst facility at Clitheroe, UK. The new catalysts from this plant will build upon our long experience in methanol synthesis and will provide significant benefits to customers, enabling them to increase throughput and operational efficiency.

Process Technologies has also developed other technologies which have potential to lower energy use and reduce CO₂ emissions for our customers. Increased interest in coal to products and low carbon technologies provides additional support to long term growth.



– Air Products' industrial gas facility at Convent, Louisiana, USA.

Fuel Cells

The net expense of our Fuel Cells business continues to fall as demand for its products grows. In 2008/09 the net expense fell by £0.7 million to £5.7 million. As the early markets for fuel cells continue to develop there was growing demand for our range of customised membrane electrode assemblies from both existing and new customers.

The ease of deployment of direct methanol fuel cells (DMFC) has helped to grow sales of portable devices for leisure and military markets. Several companies are at an advanced stage in the development of DMFC battery rechargers that remove the dependence of batteries on mains charging.

We view the high profile announcements on support for electric vehicles by the US and UK governments as very positive for the future use of fuel cells in vehicles. Hybrid electric vehicles currently require an internal combustion engine (ICE) to recharge the battery or extend the battery range before mains recharging. Replacing the ICE with a more efficient fuel cell is straightforward and results in a completely zero emission vehicle.

Fuel cell systems using natural gas as a fuel have negligible environmental impact and enable the deployment of combined heat and power units in urban areas at the scale of a commercial building. This allows significant reductions in carbon emissions while providing other benefits such as backup power to offices, hotels and hospitals in a cost effective package. The use of fuel cells to provide power for the new Freedom Tower in New York is an example of the commercial development of this market and the substantial government support available in the USA for this technology should stimulate further demand for fuel cells.