CASTINGS AND FORGINGS

The EU market for pumps and pump castings

Publication date: June 2008

Report summary
This CBI market survey discusses the following highlights for the EU market for pumps and pump castings:

- Demand for pumps saw a strong increase in 2005 and 2006, reaching €8.8 billion. The EU demand is expected to grow a further 2-3% per year in 2007-2009. It is estimated that the water and sewerage industries and the oil and chemical industries together account for 40% of the pump market.
- European pump production showed good results, also indicated by the large trade surplus and the good growth of exports. However, according to industry specialists, several companies are expected to relocate production to low-wage locations within the next 5 years. This process is only just beginning and will intensify in the next few years.
- EU import value of pumps increased by 7.3% per year since 2002, reaching €10.6 billion in 2006. The share of intra-EU imports increased from 73% to 79% and the share of imports from developing countries (DCs) also increased (from 2.9% to 3.8%). This was at the cost of the share of EU imports from outside the EU (down from 24% to 16%).
- As in 2002, China was the most important supplier to all EU countries. Compared to 2002, DCs that showed good growth beside China were Azerbaijan, Tunisia, China, Pakistan, Turkey, India, Thailand, Brazil and South Africa.
- The best opportunities arise from supplying pump castings to EU pump manufacturers. Additionally, DC exporters have some opportunities in the pump market, starting in the market segments with requirements which are relatively easy to meet, and provided the quality meets the demands of the EU-customers.
- Standard pumps have small margins, 3-5% for the DC exporter and 2-3% for the EU importer. Contrary to that, margins for special pumps are far higher.

This survey aims to provide developing-country exporters of pump castings with product-specific market information related to gaining access to the EU market(s). By focusing on the EU market(s) for one group of products, this document provides additional in-depth information, complementary to the more general information and data provided in the CBI market survey 'The castings and forgings market in the EU', which can be downloaded from http://www.cbi.eu/marketinfo. Detailed information on the selected group of products is given in appendix A. This survey discusses the EU in general and the following markets in particular: France, Germany, Italy, Spain, the Netherlands and the UK.

1 Market description: industrial demand and production

Please note that pump castings are not incorporated separately in the Eurostat product classification. Therefore, the focus in this section and also in the rest of the survey is on (finished) pumps. Market characteristics of pumps present a useful indication of market characteristics of pump castings. Also note that industrial demand is calculated by using Prodcom data for production, exports and imports (demand = production + imports – exports). These are the best detailed data available.

Industrial demand

The period 2003-2004 showed a decline in demand, caused by low investment levels, which were in narrow relation with low economic growth in these years. After these difficult years, the EU market for pumps revived strongly in 2005 and 2006, reaching €8.8 billion in that year. The quick growth in 2005-2006 was caused by a strong growth in investments, in combination

with increasing raw material costs which were passed on to the customer, substantially more than in the years before. EU demand accounted for 25-30% of the total global demand, comparable to the South and North American market combined. The highest growth is registered by the Asian market, and this will remain the same over the years to come.

On a product level, centrifugal pumps formed the largest segment, representing more than 50% of all pumps (one research agency even mentions a 70% share). Second was reciprocating pumps (13% of total demand), and third was rotary pumps (11%). France accounted for 18% of EU demand, followed by Germany (16%) and the UK and Italy (both 15% of EU demand). Together, these four leading markets accounted for more than 60% of the total EU demand. The Spanish demand grew the fastest (+8.1% annually), but most growth was booked in 2003 and 2006. Opposed to the French market, the German market showed a dip in 2004 (€607 million), after which demand improved strongly to reach €1.4 billion in 2006. The British and Italian demand also saw some fluctuations, but on average, demand increased by 3.3% and 1.5% per year, respectively. Strong fluctuations were also seen in the Netherlands, where demand in 2006 reached only €95 million, less than half of the 2002 value. Other countries with a relatively large demand (€300-500 million) for pumps and pump castings were Sweden, Poland, the Czech Republic, Denmark, Austria, Belgium and Hungary.

Table 1.1 Apparent demand for pumps and pump castings, EU and selected countries, 2002-2006, € million

	2002	2003	2004	2005	2006	Change '02-'06 (CAGR*)
EU	**8,067**	**7,664**	**7,016**	**8,109**	**8,773**	**2.1%**
France	1,240	1,460	1,683	1,665	1,605	6.7%
Germany	1,607	1,129	607	1,031	1,395	-3.5%
UK	1,173	1,049	1,131	998	1,338	3.3%
Italy	1,203	1,222	944	1,021	1,279	1.5%
Spain	621	745	768	761	848	8.1%
The Netherlands	218	144	57	108	95	-18.8%

Source: Eurostat Prodcom (2008)
* Compound Annual Growth Rate

Average growth in the period 2007-2009 is forecast to be 2-3% per year, due to expected economic growth in the EU and due to the trend that Southern European and CEE countries move to comply with EU energy and water directives (also refer to trends). Worldwide, the demand is expected to grow slightly faster (3-4% per year) in that period. While the Western European pump market is slowly becoming a mature market in which maintenance and repair operations (MRO) take a major share of demand, Central and Eastern European (CEE) countries continue to account for the larger growth figures due to large investments in new process equipment and underdeveloped infrastructures of water, waste water and oil. Additionally, these countries move to comply with EU energy and water directives; the same goes for the Southern European countries.

Market segmentation

The water and sewerage industries and the oil and chemical industries together are estimated to account for 40% of the world pump market. In the EU, the water and waste water industry segment is also considered to be the leading segment for pumps in the EU, taking 15% of the EU market, followed by the oil and refining industries segment. When pumps for construction dewatering and other construction service applications are included, this figure would even reach 25%. Generally speaking, it may be assumed that the market segmentation in the EU does not differ much from the global picture. However, there may be some variations among the different EU countries. In the period until 2012, countries like France, Italy and Spain will be characterised by large investments in water and waste water treatment, due to EU legislation. In these countries, the market share of the water and sewerage industries will be

around 20% and maybe even higher. Other examples of variation among EU countries are Spain, which is home to a relatively large marine industry, and the Netherlands, which has a relatively large petrochemical industry and a relatively large pipeline network.

From Table 1.2 can be seen that the oil and refining industries segment is expected to show high growth figures (4.0% on average) in the years to come. In the EU, growth of this segment will be also high. This is because many investments will be made in building new storage facilities for oil, because sources in and around the EU are becoming exhausted and the EU will need to buy oil from distant countries and store it close to home. Even higher growth will be expected for the power generation industry segment (+4.9%) and for the chemical industry segment (+4.2%). Generally speaking, growth will mainly be caused by the increasing demand for energy, and the growing need for energy efficient installations with low emissions. Market data on the oil and gas-, water-, and food processing industries can be found in the CBI market survey 'The pipes and process equipment market in the EU'.

Table 1.2 World pump market, by segment, 2007, shares, and growth forecast

Market Segment	Share	CAGR '07-'12
Water and sewerage industries	15%	2.0%
Oil and refining industries	14%	4.0%
Chemical industry	11%	4.2%
Power generation industry	8%	4.9%
Building services	7%	2.4%
Food, drink and pharmaceuticals	5%	2.7%
Construction dewatering	5%	2.7%
Metal manufacturing industry	4%	2.7%
Mineral mining/processing industry	3%	3.9%
Pulp and paper industry	3%	3.9%
Other industries	25%	3.0%

Source: European Industrial Forecasting (2008)

Worldwide, standard pumps account for some 80% of the market, with the remainder left for tailor-made pump units with a capacity of more than 20,000 m3 per day. Of these tailor-made pumps, almost 75% is for nuclear and thermal power applications, with the balance for the chemical, mineral, oil and water industries. In the EU, the share of tailor-made pump units is above the world average.

Table 1.3 gives the main characteristics, requirements and materials for the major market segments. This table gives an indication of the level of requirements per market segment. The higher the figure, the more difficult it is to supply pumps and parts of pumps to that certain market. It is also an indication of the level of casting know-how necessary to cast parts for these pumps. The more difficult it is to cast parts for a certain pump, the higher the risk on rejects, but also the higher the margins for the foundry.

Table 1.3 Characteristics and requirements pumps and pump castings, by application

Market segment	Characteristics	Requirements (Scale 1-20*)	Materials
Power generation industry	Tailor made	20	Major part stainless and/or heat resistant steel. Duplex, nickel, molybdenum.
Chemical industry	Tailor made	19	Major part stainless and/or heat resistant steel. Duplex, nickel, molybdenum.
Mineral mining/ processing industry	Individual company standards. Both standard and tailor made	17	Cast nodular iron, also steel

Market segment	Characteristics	Requirements (Scale 1-20*)	Materials
	pumps.		
Building services	Concrete pumps	10	Ni-resist cast iron
Pulp and paper industry	Standard pumps	7-10	Cast nodular iron, also stainless steel
Food, drink and pharmaceuticals	Standard pumps (small size), high requirements for surface finishing.	7	Stainless steel, ceramic parts***
Oil and refining industries	Individual company standards. Both standard and tailor made pumps.	5	Cast nodular iron, also steel (for complex wells).
Metal manufacturing industry	Other than centrifugal pumps	5	Aluminium
Water and sewerage industries	Standard pumps (centrifugal type), only few pumps are tailor-made.	1	Nodular cast iron**, alloy nodular cast iron, ni-resist cast iron
Construction dewatering	Standard pumps	1	Nodular cast iron or alloy nodular cast iron

Source: industry experts
*1 means 'relatively easy to meet', 20 is very high.
**Water pumps are made more and more from nodular cast iron, because with this material the pumps are safer and have a better durability.
***Application of ceramic parts in pumps is expected to decline, since ceramic is not recyclable.

For a DC foundry, the above presented table can be used to get an indication of potential market segments. Of course, additional customized market research is necessary. Refer to the case below for an example.

From Practice I - Dredging industry
The mineral mining and processing industry comprises a number of subindustries, such as the dredging industry. The dredge industry needs tailor made slurry pumps for its suction dreggers. Requirements are generally high (20 in the terminology used in Table 1.3), and the critical parts are made of Ni-resist cast iron, and other wear-resistant such as manganese steel 30Mn5, Bainitic Nodulair, and Ni-hard 4. The suction dreggers are primarily used to keep harbours and waterways clear of sandbanks or to help reposition soil in land reclamation projects. Some quick research using the internet learns that the most important manufacturers and operators of such ships are based in Belgium and the Netherlands. One of the suppliers of slurry pumps to this industry is KSB, but probably also in Belgium and the Netherlands there will be production of these slurry pumps because of historical ties between the local pump producers and dredge operators. Additionally, a short interview with an industry specialist in the Netherlands showed that one Dutch supplier of dredging equipment sourced pump castings, used for maintenance and repair operations, from a Polish foundry. However, this company was not satisfied with the quality of the pump castings and was therefore looking for other sources. Refer to Section 2 for more sources where to find pump producers and consult 'From survey to success - export guidelines' how to perform market research.

Production

As shown by Table 1.4, production value in the EU increased 8.1% in the period 2002-2006 to €15.7 billion in 2006. Growth was mainly export driven (to countries outside the EU), but to some extent also occurred at the cost of imports from other developed countries (such as the US and Japan). In the period under review, EU manufacturers continued to focus on specialties, such as pumps that can be used in complex oil wells (refer to trends). Germany accounted for more than 35% of total EU production value. Italy took second place with 18%, followed by France (10%), the UK (8%) and Spain (4%). Other EU countries with a relatively large production of pumps and pump castings were the Czech Republic (€1.0 billion; 7% of EU production), Denmark (€785 million; 5%), Sweden (€568 million; 4%), Hungary (€383 million; 2%) and Austria (€258 million; 2%). Hungary saw an enormous growth in pump production (more than 130% per year on average) and also production output of Austria (+27%) and the Czech Republic (+22%) increased fast.

Table 1.4 Production of pumps and pump castings, EU and selected countries, 2002-2006, € million

	2002	2003	2004	2005	2006	CAGR
EU27	**11,513**	**11,900**	**12,959**	**13,515**	**15,717**	**8.1%**
Germany	4,359	4,545	5,002	5,344	5,905	7.9%
Italy	2,239	2,439	2,374	2,412	2,811	5.9%
France	1,135	1,159	1,446	1,477	1,574	8.5%
UK	1,082	1,068	1,070	1,008	1,232	3.3%
Spain	552	498	539	466	550	-0.1%
Netherlands	179	147	99	124	174	-0.6%

Source: Eurostat Prodcom (2008)

Worldwide, the ten largest pump manufacturers represent 50% of the pump market. Despite several mergers and acquisitions in the past, the global pump industry remains fragmented, with many niche suppliers. ITT, one of the leading pump suppliers, indicated that they lead the world market for both waste water and water pumps with 11% and 8% market share respectively, but their main competitors in both segments are different. In the waste water segment, its main competitors took 5%, 2% and 2% share, and in the water segment this was 10%, 10% and 5%. In turn, in the process industries (oil, chemical, food, pulp and paper), this company only took 3% share, after five (again: other) pump suppliers which accounted for a market share of 5-8%. Competition among the large pump suppliers is generally based on delivery time, expertise, price, width of product ranges, contractual terms, previous installation history and reputation for quality. Most customers prefer to have a simple supply base and therefore have aligned with global full service suppliers. This is also a major driver for (possible) further consolidation of the pump industry.

In the EU, the leading suppliers are KSB from Germany, ITT Flygt from Sweden, Grundfos from Denmark, Flowserve from the US and Wilo from Germany. After a range of mergers and acquisitions (KSB acquired Bombas Itur and DP Industries, Wilo merged with Samson, Grundfos and Weir acquired several smaller suppliers), these companies together take between 45-60% of the EU market. Clearly, the EU market is more concentrated than the global market. This has led to an intensification of competition among pump suppliers. As a result, the small and medium sized pump producers had to differentiate their strategy towards supplying pumps as customised solutions for niche applications.

Central and Eastern Europe

Production of the Central and Eastern European (CEE) countries accounted for only 10% of total EU production in 2006. Most pumps were produced in the Czech Republic, at a distance followed by Hungary and Slovenia. Most production output of these countries, however, comes from plants of the main pump producers from Western Europe. Some examples of original CEE pump manufacturers are:

- Aversa (Romania) - http://www.aversa.ro - centrifugal pumps for water, waste water and power generation applications.
- BBA (Czech Republic) - http://www.bbapumps.cz
- Elko Maribor (Slovenia) - http://www.elkomb.si – water pumps
- Ganz Energetika (Hungary) - http://www.ganz-holding.hu - Hungarian engineering conglomerate that also produces pumps. Also refer to the textbox below.
- Leszczyńska Fabryka Pomp (Poland) - http://www.lfp.com.pl – pumps, and parts, and other process equipment
- Turbo-C (Bulgaria) - http://www.turbo-cb.com - water pumps
- Vulcan (Romania) – http://www.vulcan.ro - pumps for, among other things, power generation applications.

From practice II
Ganz Energetika is part of Ganz Holding (http://www.ganz-holding.hu), a Hungarian engineering conglomerate. It is internationally successful with large liquid pumps, applied in the petrochemical and other process industries. One of the most important sales regions has been the Middle East. The technology is of a high level compared to competitors from Central and Eastern Europe and even when compared to its competitors from Western Europe. However, there is a strategic disadvantage which has become more important since 2000. The company only supplies pumps, whereas competitors from Western Europe offer a more comprehensive product programme. They provide complete systems and customised solutions to clients and are as a result less exposed to price competition than Ganz Energetika. Even financial services are offered by the more important European companies.

Major producers in the EU

In virtually each EU country there are at least some pump producers. In line with the production statistics of the EU, most producers are located in Germany, Italy, France and the UK. The number of pump operations in Spain is much smaller than in these four largest producing countries, while the Netherlands is home to only a few pump manufacturers. Examples of the (in total more than 300) pump manufacturers in the EU are:

- Alma Pompe (Italy) - http://www.almapompe.it - submersible pumps for drainage and waste water applications.
- Ampo (Spain) - http://www.ampo.es – pump castings
- Andritz AG (Austria) - http://www.andritz.com – production of pumps for water, sewerage, pulp and paper and power generation. Part of Siemens VA Tech - http://www.vatech.at. Beside production sites in Austria and Finland, Andritz also runs a plant in China. According to the company, Andritz pumps from China are made according to European standards but at a very competitive price.
- Arven (Italy) - http://www.arven.it - submersible stainless steel pumps for drainage and waste water applications.
- DP Pumps (the Netherlands) - http://www.dp.nl and http://www.dp-pumps.com. Only the Dutch version contains an interesting supplier information section. This company produces, among other things, high-efficiency pumps.
- Emmanuel N. Kazis (Greece) - http://www.kazis.gr - pumps
- Johnson Pump - http://www.johnson-pump.com – this pump division of American process equipment producer SPX has plants in the Netherlands, Belgium, Sweden and India.
- Larox (Finland) - http://www.larox.fi – peristaltic pumps for the process industry.
- Lewa (Germany) - http://www.lewa.com – pumps for the oil, chemical and pharmaceutical industries. Lewa received an award of the market intelligence agency Frost & Sullivan for '"Product Line Strategy for Pumps in the European Oil and gas industry" - http://www.lewa.com/main/en/3019.
- Metso Automation (Finland) - http://www.metso.com - operations in several EU countries, such as France and the UK (Jamesbury - http://www.jamesbury.com), produces pumps for the pulp and paper industry, minerals processing, and power generation.
- Nijhuis Pompen (the Netherlands) - http://www.nijhuis.com - large water pumps.
- Papantonatos (Greece) - http://www.papantonatos.gr – pumps for water and sewerage applications, but also pumps of duplex steel for desalination applications.
- Seepex (Germany) - http://www.seepex.com – progressive cavity pumps for aggressive and abrasive media, plants in Germany, China and the USA.
- Söndgerath Pumpen (Germany) - http://www.spt-pumpen.de – pumps for water, sewerage and slurry applications.
- Spechtenhauser (Germany) - http://www.spechtenhauser.de –pumps for water and waste water.
- Spirax-Sarco (UK) - http://www.spiraxsarcoengineering.com – peristaltic pumps.

Most of the manufacturers' websites offer details on their product range (including specifications and other technical details), press releases and other relevant information.

The leading pump manufacturers in the EU (and in the world) are:

- Flow Serve (US) - http://www.flowserve.com

- Grundfos (Denmark) – http://www.grundfos.com/industry - since 2000, the company has invested much in production and expansion of production in Hungary. In 2008, Hungarian operations involved four sites, employing 1,500 employees.
- ITT Flygt (Sweden) - http://www.flygt.com
- KSB (Germany) - http://www.ksb.com
- Sulzer Pumps (Switzerland) - http://www.sulzerpumps.com
- Weir Pumps (UK) - http://www.weir.co.uk – pumps
- Wilo (Germany) – http://www.wilo.de

The largest pump manufacturer in 2006 was ITT Flygt, followed by Ebara, Grundfos, Flowserve, Sulzer, Weir, KSB and Wilo. Note that their rankings differ from segment to segment. For example, Sulzer leads the upstream oil segment, while Flowserve dominates in the power generation segment, and Iwaki from Japan leads in the chemical industry segment. Additionally, their rankings may also differ from pump type to type. For one thing, the EU market for peristaltic hose and tube pumps is dominated by Watson Marlow / Sprirax Sarco from the UK.

Trends and characteristics

- ***Purchasing decision in the light of life cycle costs***. In the several end-user industries, the search for energy efficiency and the limitation of CO_2 and NO_x emissions has led and should lead to the increased use of innovative production techniques resulting in better efficiency and less waste. It is not so much the initial expenses anymore, but the purchasing decision for a pump is increasingly made in the light of lifecycle costs. For a pump for example, energy consumption and maintenance costs, including down time, are nowadays leading in the purchasing decision. Note that energy consumption of the pump is a more important issue nowadays, as a result of the increasing energy prices in the EU (also refer to next bullet and to Section 4).
- ***Focus on energy consumption reduction***. Pumps consume a lot of energy, especially when they are over dimensioned. According to survey of the British Government, pumping systems consume 13% of all electrical energy consumed in the UK. The potential saving of a huge amount of energy by better design and operation of pumping systems has led to the government setting targets to reduce energy consumption of pumps by 6TWh/year by 2020.
- ***EU directives become more stringent***. EU directives for energy efficiency and emissions will probably become more stringent in the future. Pump suppliers to the EU market are expected to face difficulties in complying with the numerous applicable standards, related to things like noise levels, emissions, hygiene, quality and reliability.
- ***More demand for intelligent pump systems***. The trends related to increasing regulation in the EU are also the leading drivers for growth in the demand for intelligent pump systems, expected to more than double in size in the next 3-5 years. These systems combine the pump function with a control function, and as such a system can prevent pump damage, the life cycle costs of such a system are relatively low. The margins of such sophisticated pumps that meet regulatory requirements are generally higher than of standard pumps.
- ***Price gains in importance***. In the last few years, price has won in importance, especially with regard to standard centrifugal pumps. Due to increased competition among EU suppliers (the result of ongoing rationalisation; earlier mentioned above) and from suppliers from low-cost countries (LCCs), such as China and Brazil, price levels showed a declining trend. In the next 5-10 years, suppliers from China are expected to become strong competitors in the EU pump market.
- ***Increasing globalisation leads to specialisation I.*** Globalisation has led to pressure on prices and has stimulated or even forced EU manufacturers to specialise and to focus on high value added products. Meanwhile, the sourcing and production of standard pumps is gradually shifting to LCCs, which may be underlined by the fact that imports from DCs rose quickly in the period 2002-2006 (refer to Section 3). According to industry specialists, several companies are expected to relocate part of their sourcing activities and also assembly activities to low-wage locations within the next 5 years. This process is only just

beginning and will continue in the next few years. Special pumps may also become subject to relocation, although this is not expected to happen in the near future. To compete in the world market, the remaining EU pump suppliers are now focussing on their technological skills, selecting niche markets which require complex products with high precision, specific quality requirements, or those that need a quick or just-in-time delivery (also see next bullet). To support this strategy, they put an ever-increasing effort into research and development, sales and marketing.

- ***Increasing globalisation leads to specialisation II.*** Strong competition from Chinese and other low-cost manufacturers from Asia, mainly in the downstream oil segment, is forcing EU pump manufacturers to improve production efficiency, in order to (re)gain a higher margin. Additionally, they have a continuous focus on increasing their service and distribution system. This is done by starting new subsidiaries and quality agencies, or forming relationships with other suppliers, in other countries to give 24-hour end-user support. One recent example of a pump manufacturer which extended its service network in the EU is Pompetravaini (http://www.pompetravaini.it), starting a new service centre in Poland for sales promotion and service purposes focussed on CEE countries.
- ***Southern European and CEE countries move to comply with EU energy and water directives***. At present, countries such as Spain, Portugal, Greece, Poland, Romania, Bulgaria and Hungary have poor networking with respect to water distribution and wastewater treatment. In order to meet the requirements of the EU Water Framework Directive by 2015, many small wastewater treatment plants will be built in these countries in the coming years, as all communities with more than 2,000 inhabitants must be connected to a water sewage installation. Note that also in some Western European countries, such as the UK and Germany, renewal of water cleaning and sewer systems will result in many investments. Also note that the water and wastewater treatment equipment market in CEE countries is - generally speaking - very price sensitive. The choice for treatment processes and equipment is often based on price and made to meet the stipulated legislative guidelines rather than on taking advantage of the long-term benefits of advanced treatment systems.
- ***Increasing share of duplex steel in pumps.*** Duplex steel has improved strength over austenitic stainless steel and also better resistance to localised corrosion, particularly pitting, crevice corrosion and stress corrosion cracking. Although it is more expensive, it lasts longer and application of this steel in pumps is increasing. Typical end-users for such products include the oil, chemical and power generation industries.
- ***Complex oil wells need pumps of special grades.*** As can be read from the CBI market survey on the pipes and process equipment market in the EU, there has been a move towards investments in oil wells in higher-cost offshore territories, in more complicated geographic places and in more difficult geological formations, frequently concerning the extraction of more corrosive products. This leads to an increasing demand for pumps with greater capabilities and higher specialisation grades.

Opportunities and threats

Trends and market developments offer opportunities and threats to exporters. A given trend can be a threat to some and an opportunity to others at the same time. The following trends should therefore always be analysed in relation to your specific circumstances. Refer to Section 7 of the CBI market survey covering the EU market for castings and forgings for further information.

+ The EU demand is expected to grow by 2-3% per year in the 2007-2009 period. The pump demand in CEE countries and some Southern European countries is expected to increase faster than in Western Europe. Demand from some segments is expected to grow even faster, for example demand from the oil and refining industries is expected to grow by 4.0% per year.
+ According to industry specialists, several companies are expected to relocate part of their sourcing activities and also assembly activities to LCCs.

± DCs have some opportunities in the pump market, provided the quality[1] meets the demands of the EU customers. Their most important advantage lies in labour costs. As DC wages are (much) lower, DCs have a strategic advantage compared to EU manufacturers. From a technical point of view, it is estimated that 80% of all pumps (the standard pumps) can be produced in DCs. The rest can only be produced in the EU, as very high skills and expertise are needed, for example pumps for the chemical and power generation industries.
± EU directives for energy efficiency and emissions will probably become more stringent in the future.
– European production showed good results, also indicated by the large, and growing trade surplus and the good growth of exports (refer to Section 2). The competitive position of the EU pumps industry seems to be strong.
– Western European customers are increasingly considering their investments in the light of life cycle costs. Therefore, it is essential to offer pumps which are characterised by low maintenance costs and low energy consumption. So far, customers heavily rely on EU (brand) manufacturers for these kind of advanced pumps.

Although opportunities for DC exporters to supply pumps to the EU market are there, it is not as easy as it seems to be. Although imports of pumps from China increased fast in the period 2002-2006, this figure also includes pumps made in China in plants of the leading brand manufacturers. At the same time, industry specialists question the durability of pumps from original Chinese fabrication, believing many of them would only last five years or less. Industry specialists share the opinion that a DC supplier of pumps to the EU market can only become successful if they hire technological expertise from the EU, or at least make use of a technologically competent importer. Still, far more opportunities arise from supplying pump parts to EU manufacturers (refer to Section 2 for more information).

Useful sources

- Annual Pump Market Report of European Industrial Forecasting - http://www.eif4cast.com/wrldpuspec2007.pdf
- Association of European Pump Constructors - http://www.europump.org
- Association of German Engineering - http://www.vdma.com
- British Pump Manufacturers' Association - http://www.bpma.org.uk
- Chemical Business - http://chemicalbusinnes.wordpress.com
- Flow Serve - http://www.flowserve.com
- French Association for Pumps, Valves and Compressors – http://www.profluid.org
- ITT Flygt (Sweden) - http://www.flygt.com
- McIlvaine's Pumps World Markets report - http://www.mcilvainecompany.com
- Pump Engineer - http://www.pumpengineer.net
- Sulzer Pumps (Switzerland) - http://www.sulzerpumps.com
- World Pumps online magazine - http://www.worldpumps.com

2 Trade channels for market entry

Trade channels

For a better comprehension of the trade structure of pump castings and (finished) pumps, both the trade structures are briefly explained in this subsection.

Pump castings

Trade channels for pump castings do not differ from trade channels for castings and forgings. Refer to the CBI market survey 'The castings and forgings market in the EU' for more information on these trade channels. In this situation, end-users of pumps castings are the pump manufacturers. As with castings and forgings in general, 'direct sales' to the end-user is

[1] For example, hardness and mechanical properties of products in the EU are verified by certified test equipment and material section quality will be verified by special NDT techniques that require sophisticated test equipment, like x-ray and ultrasonic test equipment.

the preferred trade channel for exporting pump castings to the EU. More about this end-user – the pump manufacturer – can be read below.

Pumps

Trade channels for (finished) pumps are different from trade channels for pump castings. These trade channels are described in the CBI market survey 'The pipes and process equipment market in the EU'. The end-users may be oil refineries or other companies that use machinery and/or plants with pumps as a component, such as dairy companies. The most common trade channels are importers, subcontractors and system suppliers, agents and direct sourcing. The importer is less important with regard to complex pumps than standard pumps, but still remains the most important channel for DC exporters. Most importers also function as a distributor, and they keep some stock, based on historic replacement demand from their customers. This is because in the case of a breakdown of a pump, customers want to have the pump replaced or repaired as soon as possible. Agents play a minor role for pumps, they are only active as sourcing agents for very special pumps.

Pump manufacturer / Subcontractor

Also in the trade channel structure for pumps, one of the chains is the EU (pump) manufacturer. These companies are often called 'subcontractor', as the engineering service company – the contractor which performs the repair and maintenance (RMO) activities and turnkey projects for the process equipment owners – subcontracts the supply and manufacturing of process equipment to the 'subcontractor'. Another name for 'subcontractor' is 'system supplier', as they often supply a process equipment system to the engineering service company. Increasingly, they offer service packages, in which both initial system costs and maintenance and repair costs are included in one contract. For this aim, they often keep stock. Subcontractors are almost always EU-based. The final assembly happens in the EU because of product liability. Pumps must meet severe requirements, and if a mistake occurs, the supplier can be held liable for the error. In the EU, manufacturers want to prevent this from happening. They want to keep control over the final assembly process and make sure their pumps are 100% reliable and safe. If full assembly were to be done in DCs, no control would be possible. This is in fact a barrier for DCs.

Tip
Ideally, DC exporters should strive to establish partnerships with subcontractors directly. This will cut off the intermediary channel and will result in better margins. However, this is not an easy process and will take some time. It is recommended to start doing business with an importer and then, in the long run, form a group of suppliers and set up your own distribution network.

Examples of subcontractors/pump manufacturers can be found in Section 1. Some examples of contractors are:

- Water industry: Veolia, AGBB, Alstom and IBB.
- Oil industry: AkerKvaerner, Technip, Fluor, JGC and KBR.
- Power generation industry: Siemens, Ansaldo, Alstom, Bechtel, Black and Veatch.
- Pulp and paper industry: Andritz, Voith, Metso.

Importer

Especially for more or less standard pumps, importers play a role. This is the case in, for example, the water and food processing industry. Note that most importers also have a distributor function, they function as a representative, also taking care of service activities. Some examples of importers are:

- Armatury (Czech Republic) - http://www.armaturygroup.cz - according to this company, it is one of the major pump suppliers in the Czech Republic.
- Axflow (Germany) – http://www.axflow.de
- Central Pumps (the UK) - http://www.centralpumps.co.uk
- Empo-Verder (Belgium) - http://www.empo-verder.be
- Fail (Italy) - http://www.fail.it
- Geveke (the Netherlands) - http://www.geveke-pompen.nl

- Javarex (Czech Republic) - http://www.javarex.cz
- Landustrie (the Netherlands) - http://www.landustrie.nl/en/index.html - this company supplies pumps from own production, but also represents other pump manufacturers.
- Pomp.nl (the Netherlands) - http://www.pomp.nl
- Sercom (France) - http://www.sercom-france.com
- Sulteq (the Netherlands) - http://www.sulteq.com
- Van Wijk & Boerma (the Netherlands) - http://www.wijkboerma.nl
- Varisco (Italy) - http://www.variscosrl.com

Price structure

There is a difference in (parts for) standard pumps and special pumps. Standard pumps have small margins, 3-5% for the DC exporter and 2-3% for the EU importer. Contrary to that, margins for special pumps are far higher, for example 20% for a European producer. In general, the following links in the chain earn more than the producer. Main subcontractors, for example, charge 20-25% to the OEMs. Importers generally work with margins between 2-15%. The mark up of agents varies between 1-8%, depending on, for example, the character of the product and the size of the order.

Selecting a suitable trading partner

The Internet is an excellent source to identify potential buyers in the EU. Some examples follow below.

- Association of European Pump Constructors - http://www.europump.org - click on 'member catalogue'. It is possible to select pump producers by type of product or market segment.
- British Pump Manufacturers Association - http://www.bpma.org.uk ➔ go to 'BPMA members'.
- Buyer'sGuide+Online of Pump Engineer - http://www.pumpengineer.net/cyberguide - it is possible to place an advertise in both the Buyers'Guide+Online section of Pump Engineer Magazine, and on the website.
- Company database with a focus on the Netherlands or on France - http://www.abcdirect.nl or http://www.abc-d.fr
- Database of the German Engineering Association – http://www.vdma-e-market.com/en/products-services/pumps/index.html
- Direct Industry - http://www.directindustry.com/cat/pumps-compressors-R.html. Also catalogues of pump manufacturers.
- Dutch suppliers of pumps and parts - http://www.pomprevisie.nl/leveranciers.html
- French Pump Compressor and Valve Association – http://www.profluid.org - select the English language and search in the member directory.
- Global Spec - http://flow-control.globalspec.com/ProductFinder/Flow_Transfer_Control/Pumps
- Holland Pump Group - http://www.hollandpompgroep.nl - click on 'members'
- Italian Association of Pump Manufacturers - http://www.assopompe.it – click on 'English' and on 'List of members'.
- Offshore-Technology.com - http://www.offshore-technology.com/contractors/pumps
- Pumps Directory - http://www.pumps-directory.com – pump suppliers all over the world.
- Specific suppliers in the UK - http://www.applegate.co.uk
- Swedish Pump Suppliers Association - http://www.swepump.org – click on 'Medlemmar'.
- Thomas Global Register Europe - http://www.trem.biz

For more details on how to search some of these databases, please refer to the CBI Export Manual 'Digging for Gold'. Additionally, websites of trade fairs contain very useful databases with exhibitors, often searchable by name, product and/or country. Examples are:

- Aquatech - http://www.aquatechtrade.com
- Pumps and Valves - http://www2.fairtec.com/pumps/2006/antwerpen/en/?exposanten2006.

Also refer to the websites of trade associations mentioned in Section 1, which often contain a list of members.

For more names and websites of associations, intermediaries, end-users and manufacturers per country, refer to the CBI surveys covering the castings and forgings, or pipes and process equipment market in individual EU countries. Another option may be to make use of sources in your own country:

- The Economic Affairs departments of the official representative (Embassy or Consulate) of a specific EU country. Find the specific country's embassy in your country at http://www.embassyworld.com. Another suggestion may be to contact the consul of your own country in the country of your choice.
- Public and private trade promotion bodies.

3 Trade: imports and exports

Imports

The total EU import value increased by 7.3% per year since 2002, to €10.6 billion in 2006. On average, imports of the CEE member states accounted for the highest growth figures. The share of intra-EU imports increased from 73% in 2002 to 79% in 2004; after 2004 this share remained stable. The share of DC-imports increased as well. This was at the cost of the share of extra-EU imports (from 24% to 17% in 2004 and 16% in 2006). All countries under review saw good growth in imports, varying from 7.7% per year for Italy to 3.5% for the UK.

Transit trade (re-exports) of pumps and parts from DCs plays a minor role in the EU. Although the exact value of re-exports cannot be given by means of Eurostat, it is estimated that the share of re-exports is less than 5% of total intra-EU imports. Virtually all countries under review are net-exporters, with Germany being the leader by a long distance with a trade surplus of €3.8 billion in 2006, followed by Italy (€941 million). Only Spain had a small trade deficit (€17 million).

The DC share in import value grew fast, from 2.9% in 2002 to 3.8% in 2004 and 5.3% in 2006. In volume, this share increased even faster (from 4.1% to 10.7% and 16.3%). China was the most important supplier to all highlighted EU countries - as in 2002. Compared to 2002, among DCs that showed the largest growth were Azerbaijan (+53% per year to €1.9 million), Tunisia (+43% per year to €4.4 million), China (+39% to €298 million), Pakistan (+27% to €1.6 million) and Turkey (+25% to €56.4 million). Other main DC suppliers with growing exports to the EU were India (+25% to €59.2 million), Thailand (+22% to €12 million), Brazil (+19% to €60.2 million) and South Africa (+18% to €9.6 million).

Table 3.1 Imports and leading suppliers of pumps and parts of pumps, to the EU and selected countries, 2002-2006, share in % of value

Product	2002 € mln	2004 € mln	2006 € mln	Leading suppliers in 2006 (share in %)	Share (%)
EU27	5,866	7,603	8,394	Intra EU : Germany (30), Italy (11), France (9), UK (5), Denmark (4)	79
	1,926	1,598	1,662	Extra EU ex. DC : USA (7), Japan (3), Switzerland (3), Norway (1), South Korea (<0.5)	16
	231	364	560	DC : China (3), Brazil (1), India (1), Turkey (1), Thai land (<0.5), South Africa (<0.5), Mexico (<0.5), Malaysia (<0.5), Indonesia (<0.5), Croatia (<0.5)	5
Germany	905	1,097	1,264	Intra EU : France (15), Italy (13), Denmark (9), UK (6), Czech Rep. (6)	70
	577	456	399	Extra EU ex. DC : Switzerland (8), USA (8), Japan (4), South Korea (1), Taiwan (<0.5)	22
	73	105	150	DC : China (4), Turkey (2), Brazil (1), India (1), Indonesia (<0.5), Mexico (<0.5), Bosnia and Herz. (<0.5), Pakistan (<0.5), Malaysia (<0.5), Croatia (<0.5)	8
France	1,081	1,377	1,323	Intra EU : Germany (37), Italy (15), UK (9), Denmark (6), Sweden (5)	87
	188	168	135	Extra EU ex. DC : USA (5), Switzerland (2), Japan (1), South Korea (<0.5), Taiwan (<0.5)	9
	30	40	57	DC : China (2), India (1), Turkey (<0.5), Tunisia (<0.5), Brazil (<0.5), Argentina (<0.5), Indonesia (<0.5), Thailand (<0.5), Algeria (<0.5), Mexico (<0.5)	4
UK	703	727	806	Intra EU : Germany (26), France (9), Italy (8), Denmark (5), Spain (4)	64
	348	311	348	Extra EU ex. DC : USA (16), Japan (6), Norway (1), Switzerland (1), Canada (1)	28
	47	74	104	DC : China (2), Brazil (2), India (2), Turkey (1), Malaysia (<0.5), South Africa (<0.5), Thailand (<0.5), Saudi Arabia (<0.5), Azerbaijan (<0.5), Mexico (<0.5)	8
Italy	635	764	856	Intra EU : Germany (42), France (19), UK (5), Spain (3), Sweden (3)	83
	113	96	111	Extra EU ex. DC : USA (5), Switzerland (2), Japan (2), Taiwan (<0.5), South Korea (<0.5)	11
	18	30	64	DC : China (5), India (<0.5), Turkey (<0.5), Brazil (<0.5), Thailand (<0.5), Bosnia and Herz. (<0.5), Mexico (<0.5), Serbia (<0.5), South Africa (<0.5), Malaysia (<0.5)	6
Spain	412	465	511	Intra EU : Germany (25), Italy (21), France (18), Netherlands (5), UK (5)	88
	73	50	50	Extra EU ex. DC : USA (3), Japan (2), Switzerland (1), South Korea (1), Norway (<0.5)	9
	5	11	22	DC : China (3), South Africa (<0.5), India (<0.5), Turkey (<0.5), Thailand (<0.5), Brazil (<0.5), Chile (<0.5), Argentina (<0.5), Malaysia (<0.5), Mexico (<0.5)	4
The Netherlands	264	326	358	Intra EU : Germany (29), UK (10), Italy (10), Denmark (4), Belgium (4)	67
	161	113	147	Extra EU ex. DC : USA (17), Japan (3), Norway (3), Switzerland (2), South Korea (1)	28
	10	15	28	DC : China (4), India (1), Turkey (<0.5), Mexico (<0.5), Brazil (<0.5), Argentina (<0.5), Saudi Arabia (<0.5), Peru (<0.5), Iran (<0.5), Thailand (<0.5)	5

Source: Eurostat (2007)

Exports

The EU export value of pumps was higher than the import value in the period under review. This makes the EU a net-exporter. The value of exports increased considerably: 8% per year since 2002, to €15.4 billion in 2006. Again, CEE countries showed the highest growth figures. Germany was the largest exporter by far, and accounted for more than 35% of total EU export value. The export value of Germany grew 9.6% per year since 2002, which was the second best of the countries under review, behind the Netherlands that saw an annual growth of 10.1%. The Italian, French and British export value also showed respectable growth (6.5%,

4.3% and 3.9% respectively), while the Spanish export value declined by 5.7% per year. Unfortunately, data for re-exports can not be given by means of Eurostat.

Opportunities and threats

The main opportunities and threats for DC exporters are the following:

+ The total import value increased in recent years and the (value) share of DCs in total imports increased from 2.9% in 2002 to 3.8% in 2006.
+ Compared to 2002, DCs that showed the largest growth were Azerbaijan, Tunisia, China, Pakistan, Turkey, India, Thailand, Brazil and South Africa.
+ Imports from CEE countries grew fast. There is one indication (refer to Section 1) that in CEE countries the choice for pumps is based on price. Exporting pumps or pump parts to the CEE market could therefore be a good starting point for a DC pump exporter.
± Imports from China represented a considerable share of DC imports (more than 50%).
– The EU is a large net exporter of pumps. In the period under review, the trade surplus increased from €3.3 billion to €4.8 billion.

Please note that an opportunity for one exporter may be a threat for another exporter, depending on individual situations. Therefore, please analyse if the developments and trends discussed in the previous sections provide opportunities or threats. Refer to Section 7 of the EU survey for an example of such an analysis.

Useful sources

- EU Expanding Exports Helpdesk - http://exporthelp.europa.eu ➔ go to: trade statistics
- Eurostat - official statistical office of the EU - http://epp.eurostat.ec.europa.eu ➔ go to 'themes' on the left side of the home page ➔ go to 'external trade' ➔ go to 'data – full view' ➔ go to 'external trade - detailed data'.
- Understanding Eurostat: Quick guide to EasyComext - http://epp.eurostat.ec.europa.eu/newxtweb/assets/User_guide_Easy_Comext_20080117.pdf

4 Price developments

After a period of heavy downward price pressure in the period 2000-2004, there has been some price pressure relief since then. Starting in 2004, prices rose considerably as a result of rising raw material prices. In general, pump manufacturers in the EU were able to pass on the higher prices to the customers, so that there was only limited pressure on margins. However, the global competitive pressure remained very strong with regard to standard pumps. Importers, agents, subcontractors and system suppliers will therefore keep on looking for opportunities to reduce sourcing costs for standard pumps and parts thereof.

A quick analysis of import value and volume shows that import prices of pumps and parts sourced from developing countries (€4 per kilogram) are far below import prices of pumps and parts sourced from other (developed) countries (€15 per kilogram). This underlines the fact that, in general, the pumps and parts sourced in DCs are of a relatively low quality. Please refer to the CBI market surveys covering the EU market for castings and forgings and for pipes and process equipment for more information on trends related to price developments.

Useful sources

It is not common to publish price lists of pumps on the web, as opposed to 'stock products' such as valves. Nevertheless, one example of a company presenting prices can be found: Biral - http://www.biral.ch/index-nl.php - click on 'Prijslijst'.

5 Market access requirements

As a manufacturer in a DC preparing to access the EU, you should be aware of the market access requirements of your trading partners. Requirements are demanded through legislation and through labels, codes and management systems. These requirements are based on

environmental, consumer health and safety and social concerns. Pumps and pump units are subject of the "Machinery"-Directive 98/37/EC and are supplied with a "Declaration by the manufacturer" and/or with an "EC-Declaration of conformity" as well as with the CE-marking as defined by the "Machinery"-Directive. This also encompasses conformity with the "Low Voltage"-Directive. You may also need to comply with other EU legislation, such as:

- EC-Directive 2000/14/EC „Noise emission in the environment by equipment for use outdoors" in respect to pumps and pump units.
- EC Directive 94/9/EC applies to equipment, protective systems and components intended for use in potentially explosive atmospheres (ATEX 100a).
- Other directives, depending upon the intended use.

Also be aware of the additional non-legislative requirements that your trading partners in the EU might request. Furthermore, note that pumps and pump units are excluded from the scope of the Pressure Equipment Directive (PED), but on the other hand, some pump components could be subject to the PED. For information on legislative and non-legislative requirements, go to 'Search CBI database' at http://www.cbi.eu/marketinfo, select castings and forgings and the EU in the category search, click on the search button and click on market access requirements.

Packaging and imprinting

Pumps and parts of pumps are packed individually in crates or boxes, mostly of wood. Of course, the packaging depends on the size of the pump or part. Plastics or coating are also used for extra packaging purposes. The pump (part) type (number) should be imprinted on the package. Moreover, it could be very well the case that the customer has his own (additional) packaging and imprinting requirements and preferences.

Useful sources

- Additional information on packaging can be found at the website of ITC on export packaging: http://www.intracen.org/ep/packaging/packit.htm.
- Information on tariffs and quota can be found at http://exporthelp.europa.eu.
- Association of European Pump Constructors - http://www.europump.org – click on 'Europump guides' to find a list of PDF documents on EU directives applicable to pumps.

6 Doing business

General information on doing business, such as approaching potential business partners, building up a relationship, drawing up an offer, handling the contract (methods of payment, and terms of delivery) can be found in the CBI market survey covering the EU market for castings and forgings and in CBI's export manuals 'Export Planner' and 'Your image builder'. Furthermore, cultural awareness is a critical skill in securing success as an exporter. Information on cultural differences in the EU can be found in Section 3 of CBI's export manual 'Exporting to the EU'. These manuals can be downloaded from http://www.cbi.eu/marketinfo - go to 'search CBI publications'.

Sales promotion

For DC exporters, trade press and trade fairs are among the most important promotional tools; they are briefly discussed below. Additionally, some other important tools are discussed.

Trade fairs

Visiting and participating in a trade fair abroad can be an efficient tool to communicate with prospective customers. It provides more facilities for bringing across the message than any other trade promotional tool. It can also be an important source of information on market development, production techniques and interesting varieties. Examples of relevant trade fairs for pumps and pump castings in the EU are:

- Achema - http://www.achema.de – process equipment, triennially, May, Frankfurt, Germany. Next event: 2009.

- Aquatech - http://www.aquatechtrade.com/amsterdam - process, drinking and waste water, biennially, even years, October, Amsterdam, the Netherlands.
- Hannover Messe - http://www.hannovermesse.de - process equipment, annually, April, Hannover, Germany.
- IFAT - http://www.ifat.de - water and sewerage industry, triennially, May, Munich, Germany. Next venue: 2011.
- Industrial Maintenance - http://www.industrialmaintenance.nl – biennially, uneven years, April, Rotterdam, the Netherlands.
- Industrial Processing - http://www.industrialprocessing.nl - biennially, even years, October, Utrecht, the Netherlands.
- Midest - http://www.midest.com - subcontracting, annually, November, Paris, France.
- Offshore Mediterranena - http://www.omc.it - annually, March, Ravenna, Italy.
- Pumps & Valves - http://www.pumps-valves.com - biennially, even years, October, Antwerp, Belgium.
- Sepem Industries Est / Nord - http://www.sepem-industries.com - process and maintenance, annually, June, Colmar/Douai, France.
- Sub-contratación - http://www.bilbaoexhibitioncentre.com – subcontracting, annually, September, Bilbao, Spain.

Of course, there are many more trade fairs that could be interesting, depending on the market segment a DC exporter focuses on. Find more trade fairs at http://www.eventseye.com and http://www.auma.de.

Trade press

Trade magazines dedicated to pumps are:

- Impeller online pump magazine - http://impeller.net
- Pump Engineer - http://www.pumpengineer.net
- Pumps Magazine (Dutch language) - http://www.mainpress.com/english/magazines/pumps.htm
- World Pumps online magazine - http://www.worldpumps.com

Refer to the CBI market surveys covering the castings and forgings market, and pipes and process equipment market, in individual countries for more (general) trade magazines.

Other trade promotion tools

- **Professional website**. A brief scan of the presentation of pump manufacturers and their suppliers shows that their presentation is (very) proficient. Most of them have a professional website. The CBI Export Manual 'How to promote your website to the EU' gives DC exporters some excellent suggestions for marketing their website (http://www.cbi.eu/marketinfo).
- **Purchase partner application form**. An interesting e-business application is a so called purchase partner application form on a EU buyer website, which gives opportunities to come into contact with potential clients and gives information about buyers' requirements. A good example with regard to pumps can be found on http://www.ksb.com. Click on 'corporate' and then on 'procurement'.
- **E-market places**. E-marketplaces are very well suited for first contact and continuous contacts if a good relationship already exists. Some examples are:
  - Sourcing parts E-market place - http://www.sourcingparts.com
  - Subcontract solutions E-market place - http://www.subcontractsolutions.com
  - Forge Finder - http://www.forgefinder.com
  - Market place for water and waste water equipment - http://www.water-waste-environment-marketplace.com
  - Vorras Trading Forums - http://www.vorras.net

This survey was compiled for CBI by Facts Figures Future
in collaboration with Gietech and Effox Turbine.

APPENDIX A GENERAL PRODUCT DESCRIPTION

This product survey covers pumps and parts of pumps, which are obtained by casting. Since pump castings are not incorporated separately in the Eurostat product classification, for the purpose of this survey not only parts of pumps but also (finished) pumps have been selected. This selection is shown in Table A.1. They will be treated as one product group in this product survey. When 'pumps' are referred to in this survey, it involves the selection of the products in the table below, unless stated otherwise.

Table A.1 Product classification, based on CN and Prodcom nomenclature

CN	Prodcom	Description
8413*	2912-21/22/23/24	Pumps for liquids

Source: Eurostat (2007)
*with the exception of 84133020 – injection pumps for internal combustion piston engines.

Pumps are devices which are applied to transport/move a medium, such as liquids or slurries. Pumps move liquids or gases from lower pressure to higher pressure, and overcome this difference in pressure by adding energy, e.g. electrical energy, to the system. They are used in a wide range of industries. On average, pump castings take about 70% of the value of a pump. More information on pumps can be found at Wikipedia Pumps - http://en.wikipedia.org/wiki/Pump.

Eurostat has been chosen as the main source for trade, production and apparent demand data. Although it is the most reliable statistical source available, and covers all EU-members, please take into account some considerations when interpreting data from this source. First, data from Eurostat are in fact as reliable as the companies that report them. The terminology used by official bodies will differ to a great extent from that used in daily practice. As a consequence, there is a risk of reporting data under the wrong terminology. Moreover, some companies may report products under the most favourable import tariff that applies. For example, pumps may be reported under 'pumps'. But they could also be reported under 'parts of pumps' or 'part of process installation'. Therefore, exporters are advised to always use their experience and market knowledge in order to make estimations regarding market sizes for their specific products. Nevertheless, data in this survey could be used to get an indication of the market.