The European Market for Plastic Sorting and Recycling

Locations, plants, backgrounds and market estimations

Cologne, September 2015
The European Market for Plastic Sorting and Recycling

The demand for plastic recycling plants in Europe will increase significantly in the years to come: by 2025, sorting and recycling plants with an estimated capacity of 5.2 million tons will be commissioned. This is a growth of 25% and the number of plants will increase by about 300.

Today, Europe has almost 1,200 active plastic sorting and recycling plants. However, this portfolio will not be large enough as recycling becomes increasingly important.

The EU Waste Framework Directive will be the main market driver. By 2020, 50% of the plastic in MSW have to undergo material recovery. Almost no EU member state has yet reached this goal, which creates financial challenges for many countries.

South Europe has the largest market potential: France, Spain and Italy are three populous states with a lot of catching up to do.

Many European waste management systems that are considered as more advanced also do not yet reach MSW recycling quotas complying with the targets. This holds e.g. true for the Netherlands, Denmark, Austria, Sweden and Norway. These states have to withdraw plastic wastes from thermal recovery in order to increase their recycling quotas.

Many countries increase their sorting capacities by expanding or building additional plants at already existing sites.

Against this backdrop, ecoprog has analysed the plastic sorting and recycling plants throughout Europe and developed a market forecast on the basis of a transparent methodology.

The study “The European Market for Plastic Sorting and Recycling” includes:

- The collection of information on and analysis of 1,200 plastic sorting plants in Europe, including technical data and contact addresses.
- A valid estimation of the future market development by country, based on a transparent methodology.
- A competition analysis of the most important operators of sorting and recycling capacities in the European market.
- An overview of the most important plant technology and the cost dimensions within the plastic recycling industry.
- A sound explanation of the European legal framework.

The study is available in English and German and from 3,400,- € plus VAT.

Contact:
Marcel Siebertz
ecoprog GmbH
Tel. +49 221 788 03 88 – 14
m.siebertz@ecoprog.com
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At present, however, the market for primary plastics shows a seldom and temporary reverse price development. Even though crude oil prices have remained low, prices for primary plastics have been increasing considerably since March 2015 and in May reached a higher level than in the previous year.

This is due to a significantly insufficient supply on the market. Producers of plastic products complain about lacking deliveries of primary plastics, even under existing supply contracts. According to the industry, high export amounts and many plant failures as well as gambling on price increases are the reasons for the short supply.

However, plastics recycling companies can only benefit from this price development to a limited extent, as in Europe prices for waste plastics, which is the input material of plastics recycling plants, have increased significantly within the same period.
On the one hand, there are different collection systems. In the UK and Greece, for instance, all recyclable materials are collected in a dry recyclables bin, which can include plastics, paper and metals, but also glass and small electrical devices. In Germany and Lithuania, by contrast, the collection of lightweight packaging prevails. This collection includes plastic waste, but also light metal packagings and beverage cartons.

These plants are called combined systems, as they do not only sort plastic wastes. However, there are also plants that process plastic wastes only. They often use presorted heterogeneous waste or homogeneous wastes from the commercial sector or from deposit systems for non-refillable beverage containers.

The combined systems are usually much larger than the plants that recycle plastics only. They are larger because of the heterogeneous waste they accept, whose amounts are larger than the plastic waste amounts. This heterogeneous waste also needs more complex technical sorting.

The high investments for several sorting technologies only pay off with larger throughputs. The plastics share of the overall amount the sorting plants in the UK process amounts to an average of about 18%. The UK thus has the largest plants, reaching an average capacity of 59,000 annual tons.

On European average, the lightweight packaging plants are the largest, reaching a capacity of 48,000 annual tons. By comparison, the plants based on the waste from the dry recyclables bin are smaller, as the large plants in the UK are relativised by the small plants in Romania and Greece.

The type of separate collection, however, is not the only factor determining the plant structure. The amounts and the quality of the plastic waste are crucial as well. Whereas only about 20% of the population in Romania has been connected to a separate collection for only a few years, Germany has had an extensive separate collection system at the households for 20 years. The collected amounts and the recycling shares are thus larger and larger plants are needed for sorting these amounts. […]

**Figure 37: Average plant size, by input material**

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<table>
<thead>
<tr>
<th>Population [million]</th>
<th>Number of plastics sorting plants</th>
<th>MSW 2013 [1,000 t/a]</th>
<th>Sorting capacity, estimated in 1,000 t/a</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.2</td>
<td>7</td>
<td>5,708</td>
<td>80</td>
</tr>
<tr>
<td>Material recovery share in %</td>
<td>Ø plant size, estimated in 1,000 t/a</td>
<td>Plastic packaging waste 2012 [1,000 t/a]</td>
<td>18.5</td>
</tr>
<tr>
<td>34</td>
<td>80</td>
<td>n/a</td>
<td>ecoprog market development index (1-10, 10 max)</td>
</tr>
<tr>
<td>Material recovery share in %</td>
<td>18.5</td>
<td>10</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Management summary

Switzerland only reaches a 10% material recovery share of plastic wastes and focuses on waste incineration. However, the environmental legislation is currently being revised and should shift towards improving separated waste collection and recycling, meaning that significantly larger plastic waste amounts could be made available for material recovery in the years to come.

Background / legislation

Switzerland is no EU member state and thus not obliged to fulfil the goals of the European waste policy. However, as Switzerland does not have extensive areas for landfill sites and the national economy is well-advanced, an ecological awareness has developed already early. Switzerland’s waste legislation is based on the Environmental Protection Act (EPA), which firstly came into effect in 1986.

Figure 114: Incineration, recycling and landfilling of MSW in Switzerland

Switzerland does not have a packaging ordinance for regulating packaging wastes, as is common in many other European countries. Switzerland thus does not either have a regulation obliging the distributors of the packaging wastes to collect and dispose them of. The only regulation in effect is a minimum recovery share of 75% for non-refillable PET bottles. […]
Current disposal

In 2013, 85% of the 627,000 tons of MSW in Latvia was landfilled. Only 66,000 tons underwent material recovery, which is about 11%.

Figure 73: Amounts and treatment of plastic packaging wastes in Latvia

About 24% (9,000 tons) of the 37,000 tons of plastic packaging wastes were recycled in 2012. This is about the same amount as the one in Luxembourg, even though Latvia’s population is more than three times as large.

This is firstly due to the yet very high landfiling share. In 2012, about three fourths of the plastic packaging waste was landfilled without prior treatment. Secondly, the on average produced amount of waste per head (312 kg in 2013) was not even half of the produced amount in Luxembourg (653 kg).

Plants

Latvia has 5 active plastic sorting plants with an overall treatment capacity of 43,000 annual tons.

The facility in Jelgava has a capacity of 24,000 t/a and is, according to the operator, the largest plastic recycling plant in the Baltic states. The other 4 plants have capacities of 2,500 to 8,400 annual tons and are thus considerably smaller than an average plant in Germany or the UK (with 40,000 to 50,000 t/a).

All 5 plants produce flakes or granulates, which are as recycled raw materials either further processed in Latvia or exported. The inputs of the plants range from the separated collection of plastic packaging waste from the MSW sector to presorted foils from the industry. […]
Market development

In Spain, the expansion of sorting capacities is often based on extending existing plant sites or on developing an additional site close to an existing facility. Due to the local structure of operators in the country, in many of these cases there neither is a press releases nor any reporting in the media.

It is thus difficult to observe the current market activities and the Spanish public authorities and associations we contacted can also only give overviews on these present developments.

It is nevertheless certain that Spain has to further intensify the material recovery of plastics in order to reach the goals of the European Waste Framework Directive. Due to the financial and economic crisis, however, only limited amounts were invested into the waste management sector in the past years. This means that many parts of the sector continue to suffer from investment lags.

Spain’s political plans focus on installing further MBT plants. Future investment decisions will thus also probably focus on MBT technology. This will also indirectly affect the need for sorting plants in the plastic sector, as on the one hand, important additional waste amounts could be produced for further plastics sorting plants. On the other, an adequate presorting of waste streams in the MBT plants could produce plastic wastes that plastics sorting plants could process into granulate, for instance.

Under our methodology, Spain reaches a market development index of 8.5 and thus is the fourth strongest market in Europe. Important incentives for an increasing market dynamic in the years to come are the size of the market and in particular the investment lag as well as the pressure to adjust the system towards complying with EU legislation.

Competition

All sorting plant operators are Spanish companies. We do not have any information that international companies participate in any way in the Spanish market.

There is no dominating company among the Spanish operators. Spanish plastics recycling company Biotran Gestion de Residuos S.L. runs 5 plants and is therefore the largest operator in the country. Reciclados La Red, S.L. operates 3 facilities.

Plastic sorting and recycling plants in Spain

**Buñol / Spain**
Operator: TRADING plastics S.L. & MANC RECYCLAPLAST S.L.
P.I. El Llano C/7 parc. 34
46360 Buñol
Tel.: 0034 962503709
Fax: 0034 962503791
www.tradingplastics.com

Start of operation: 1997
Throughput (t/a): 30.000
Input category: lightweight packaging
Input: plastic and light metal packaging, beverage cartons
Output category: granulate
Output: plastic film granulate (HDPE, LDPEE, PP, PVC, PET, PC, ABS) [...]

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Plastic sorting and recycling plants in Romania

Bucharest 5 / Romania
Operator: Cami Comexim
Bd. Precizei, 32
62204 Bucharest
Tel.: 0040 212694049
Fax: 0040 212694200
www.reciclare-hartie.ro

Start of operation: 1992
Throughput (t/a): 10.000
Input category: dry recyclables
Input: paper, cardboard, plastics(PET), Copper, Aluminum
Output category: bales
Employees: 35

Output: recycled Polyester Staple Fibers, PET Strapping and rPET granulate,
Employees: 200

Caracal / Romania
Operator: POP Prodplast S.A.
Str. Infratiri Nr.3
235200 Caracal
Tel.: 0040 766547343
Fax: 0040 349809773

Start of operation: 2005
Input category: multiple plastics
Input: waste polyethylene , polypropylene
Output category: granulate
Output: granulate PE, PP
Employees: 42.282

Buzau 1 (Greentech S.A.) / Romania
Operator: Green Tech SA
Group affiliation: Green Group
Aleea Industriilor nr. 17
120224 Buzau
Tel.: 0040 238725759
Fax: 0040 23875796
www.greentech.ro

Start of operation: 2002
Throughput (t/a): 54.000
Input category: multiple plastics
Input: plastic waste, PET
Output category: flakes
Output: flakes, pellets

External remarks: Input: 48.000 t/a (from PET)
plus 6000 t/a from polyethylene

Constanta 1 / Romania
Operator: S.C. Evergreen Recycling
17 I.C. Bratianu Bd.
900270 Constanta
Tel.: 0040 786607094
Fax: 0040 241582753
www.evergreenrecycling.ro

Start of operation: 2011
Input category: single plastics
Input: plastic, focusing on PP
Output category: flakes
Output: PP repro pellets

Buzau 2 (Sediul Central) / Romania
Operator: GreenFiber international S.A.
Group affiliation: Green Group
Aleea Industriilor nr. 17
120224 Buzau
Tel.: 0040 238711020
Fax: 0040 238717686
www.greenfiber.ro

Start of operation: 2004
Throughput (t/a): 40.000
Input category: lightweight packaging
Input: plastic and light metal packaging, beverage cartons, PET bottles
Output category: granulate

Constanta 2 / Romania
Operator: M&M Recycling s.r.l.
Bd. Vlaicu Aurel, 290A
900145 Constanta
Tel.: 0040 723372163
www.mmrecycling.aaz.ro

Start of operation: 2001
Throughput (t/a): 1.200
Input category: multiple plastics
Input: plastic waste (at least PET)
Output category: flakes
Output: PET waste in washed flakes, LLDPEE, LDPEE, HDPE, PP,BOPP granulate(pellets)

[...]
Plastic sorting and recycling plants in the UK

Enfield / UK
Operator: Powerday
EN2 6LN Enfield
www.powerday.co.uk

Start of operation: not operational yet, under construction, commissioning expected in 2015
Throughput (t/a): 330.000
Input category: multiple plastics
Input: plastic waste
Output category: bales
Output: sorted bales, RDF
Employees: 60
Investment sum: GBP 10 million

Enstone (Enstone Airfield) / UK
Operator: Oxford City Council
Unit 1, Enstone Airfield
OX7 4NP Enstone
www.oxford.gov.uk

Start of operation: 2005
Throughput (t/a): 50.050
Input category: dry recyclables
Input: paper and cardboard, plastics, aluminium and metal cans, beverage cartons
Output category: bales
Output: sorted bales
Main technical parts: single stream, single glass stream

Enviro Hub / UK
Operator: Devon Contact waste Ltd
Barton Road
EX2 8NU Exeter
Tel.: 0044 1392361300
www.dcw.co.uk

Start of operation: 2011
Throughput (t/a): 75.000
Input category: dry recyclables
Input: paper and cardboard, plastics, aluminium and metal cans, beverage cartons
Output category: bales
Output: sorted bales
Main technical parts: trommel, shredder, ballistic separator, magnets, laser detections

External remarks: Throughput value is the permitted maximum capacity of the plant.

Essex (Juliette Way Materials Recycling & WEEE ATF) / UK
Operator: B P R Group Europe Ltd
Juliette Way
RM15 4YA Essex

Start of operation: 2011
Throughput (t/a): 35.000
Input category: dry recyclables
Input: paper and cardboard, plastics, aluminium and metal cans, beverage cartons
Output category: bales
Output: sorted bales
Main manufacturer: O.k. engineering gmbh

Exeter / UK
Operator: Exeter City Council
Exton Road
EX2 8LX Exeter
www.devon.gov.uk

Start of operation: 2001
Throughput (t/a): 11.000
Input category: dry recyclables
Input: paper and cardboard, plastics, aluminium and metal cans, beverage cartons
Output category: bales
Output: sorted bales
Employees: 26
Main technical parts: single stream, see Link in external remarks
External remarks: Capacity of the plant amounts to 11,000. Real throughput amounts to 9,000 t/a.Proportion that is household recyclables: 100%.

Ford / UK
Operator: Viridor
Group affiliation: Viridor
Ford Road
BN18 0FL Ford, Arundel
Tel.: 0044 1903712620
Fax: 0044 1903712658
www.viridor.co.uk

Start of operation: 2009
Throughput (t/a): 62.300
Input category: dry recyclables
Input: paper and cardboard, plastics, aluminium and metal cans, beverage cartons, glass
Output category: bales
Output: sorted bales

 […]
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