How do European companies respond to rising material prices? The latest Eurobarometer survey asked European companies about their eco-innovation performance.

The issue
One of the key research subjects of the Eco-Innovation Observatory (EIO) is the relationship between resource use and innovation activity of companies. This brief focuses on material efficiency eco-innovation. These are innovations leading to a reduced material use per unit output. The findings are based on the recent Eurobarometer survey gathering evidence on eco-innovation activity processes and their material efficiency effects in SMEs across the EU.

The Flash Eurobarometer “Attitudes of European entrepreneurs towards eco-innovation” (2011) focuses on material eco-innovation covering more than five thousand small and medium-sized companies from five sectors:\n
The trends

Material costs are high and are expected to increase

Material costs in European firms are high. According to the Eurobarometer survey (2011) in more than half of European small and medium companies the share of material costs is at least 30% of the total costs in more than half of European small and medium-sized companies. The share of material costs differs substantially from country to country: in Poland, nearly every second company have a share of at least 50% whereas in Luxembourg only 7% of companies having a material cost share of 50% or more. The EU-27 average (i.e. including service companies) is around 24%.

Figure 1: Material cost shares

Key factors influencing the share of material costs in the total cost borne by companies include most notably:

- **Sector of activity**: Material costs differ across sectors. Among the sectors covered by Eurobarometer, firms from the manufacturing sector, the construction and the agricultural sectors have the highest material cost shares.

- **Position in the supply chain**: Firms upstream will typically have higher material costs as they extract or purchase raw materials.

- **Material prices**: Nearly eight in ten firms had to face increasing material costs in the past five years. Moreover, almost nine in ten firms expect prices to rise in the coming five to ten years.

- **Innovation attitudes**: Although material prices are high and expected to rise, 55% of EU companies have not yet introduced innovation aimed at reducing their material use and thus potentially reducing their material costs.

Source: Eurobarometer 2011, Question Q1: “What percentage of your company’s total cost – i.e. gross production value – is material cost?”; N=5222, EU27
Roughly half of EU firms have introduced eco-innovations

In 2009-2010 nearly one in two (45%) of European SMEs introduced at least one new eco-innovative solution, notably new production processes reducing material use and material costs.

The overwhelming majority of EU companies (86%) implemented at least one change in order to reduce their material costs in the past five years. Purchasing and developing more efficient technologies were the most often implemented actions followed by introducing better recycling methods and improved material flows in the supply chain. It is remarkable that three in four respondents invested in eco-innovations in the last 5 years, resulting in a more efficient use of materials, energy and water.
Eco-innovation improves material efficiency

More than a half of the companies (56%) surveyed reported at least a 5% reduction of material input per unit output resulting from the eco-innovation they implemented. The biggest group of companies (42%) reported 5% to 19% reductions. Radical material reductions of 40% or more were very rare.

Eco-innovations resulted in the more efficient use of materials across all sectors. Firms from the agriculture and fishing sector achieved a minimum material reduction of 5% most often, followed by SMEs from food services, construction, water supply and manufacturing.

**Figure 4: Success of introduced eco-innovations in the EU27 and per sector**

<table>
<thead>
<tr>
<th>Relevance of introduced innovations related to resource efficiency:</th>
<th>EU27</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 60% reduction of material use per unit output</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Between 40% to 60% reduction of material use per unit output</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>Between 20% to 39% reduction of material use per unit output</td>
<td>10%</td>
<td>12%</td>
</tr>
<tr>
<td>Between 5% to 19% reduction of material use per unit output</td>
<td>42%</td>
<td>47%</td>
</tr>
<tr>
<td>Less than 5% reduction of material use per unit output</td>
<td>34%</td>
<td>29%</td>
</tr>
<tr>
<td>Don’t know/No answer</td>
<td>10%</td>
<td>9%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Eurobarometer 2011, Question Q0: „How would you describe the relevance of innovations you have introduced in the past 24 months in terms of resource efficiency?“, the darker shadings mark the values equal or higher than the row average
Eco-innovation performance differs between countries

In 2009-2010 **Poland** had the highest share of companies introducing eco-innovation (with 63%) followed by Malta and Greece. When it comes to the material efficiency effects of the introduced eco-innovation, **Luxembourg and Portugal** had the highest share of companies (11%) having a **20% or higher reduction of material use** per unit output. In general, eco-innovation activities and their success differ substantially among countries, which indicates unexplored dissemination potential in the future.

**Figure 5: Eco-innovators and eco-innovation effects**

![Bar chart showing eco-innovators and eco-innovation effects across different countries.]

* The term “Effective eco-Innovators” refers to the companies that achieved at least a 20% reduction of material input per unit output as a result of eco-innovation.

Source: Eurobarometer 2011, Question D5: „During the past 24 months have you introduced the following eco-innovation?“, own calculations based on Question Q0: „How would you describe the relevance of innovations you have introduced in the past 24 months in terms of resource efficiency?“, in %

Barriers and drivers for eco-innovations

According to the Eurobarometer survey, the **most significant barriers to ecoinnovation are related to economic and financial factors**, notably to the lack of funds within the enterprise (36% companies ranked this barrier as “very serious”), uncertain demand from the market (34%), uncertain return on investment (32%) and the lack of external financing (31%). The insufficient access to public subsidies and fiscal incentives are closely following market factors with every third company considering them a “very serious” barrier.

Improved knowledge about these barriers can help to overcome them, enabling **policy actions** that effectively support companies toward reaching their full eco-innovation potential. Examples include better access to financing as well as new financing tools, the development of ambitious regulations, and increasing market demand for eco-innovative products with public procurement. Importantly, the **current and future rising prices of energy and materials** can also be expected to drive eco-innovations in the future.
Key messages

- Nearly every second European SME has introduced an eco-innovation during the past two years. A great majority of these companies, however, achieved incremental material efficiency improvements measured by the material input per unit output. Radical improvements are rare.

- Companies consider high material and energy prices to be the most important driver of eco-innovation. Given the high share of material costs in running a business, notably in manufacturing sectors, companies have a strong rationale to eco-innovate.

- Remarkable differences in the intensity of eco-innovating activities and their results exist between countries as well as between sectors, which reveals substantial potential for improving material productivity and calls for effective policies promoting eco-innovation throughout the EU-27.

Further links and resources

If you want to know more about the Eco-Innovation Observatory, please visit http://www.eco-innovation.eu

The following (freely available) sources could be of special interest for you:

- The Eco-innovation challenge: Pathways to a resource-efficient Europe: The fourth chapter of this EIO annual report offers an overview of European eco-innovation activity in sectors with a special focus on materials:
  http://www.eco-innovation.eu/reports

- The EIO Database: You can have a more detailed look at several datasets related to materials in our database:
  http://database.eco-innovation.eu

For more on information on the Flash Eurobarometer 315, please visit