**Management Summary**

Between 2007 and 2015, the European kraft paper and paper sack industry made continued and significant improvements to its carbon footprint:

- The carbon intensity of 1 tonne of average European kraft paper – which accounts for 60% of the carbon footprint of a paper sack – was optimised by 20%.
- In the further course from cradle to gate, the overall carbon intensity of one individual paper sack has improved by 22%, partly due to lightweighting efforts.

Extending the analysis to include additional aspects would give an even more complete picture of the carbon footprint of European paper sacks.

- Taking into account end-of-life emissions and any benefits arising from emissions avoided due to recovery and waste management activities reduces the carbon footprint per average European paper sack to 85 gCO2e (instead of 92 gCO2e).
- It is a well-known fact that forests sequester and store carbon. The sustainable management and growth of forest areas in Europe is a central element of the value chain for paper sacks. If the increasing biomass in Europe’s forests were considered in the calculation, the carbon footprint would actually be negative, at –214 gCO2e per sack.

**Impact of improvement**

Comparing the results for 2007 to those for 2015, the total CO2e improvement for one year equals

-22%

**CO2 FOOTPRINT OF THE EUROPEAN PAPER SACK IN 2015**

<table>
<thead>
<tr>
<th>Carbon intensity of 1 tonne of average European kraft paper</th>
<th>2007</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>-7% Production of purchased fuels and other non-fibre resources</td>
<td>570 kgCO2e</td>
<td>459 kgCO2e</td>
</tr>
<tr>
<td>-15% Direct emissions at production site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-30% Production of purchased electricity</td>
<td></td>
<td></td>
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<tr>
<td>-50% Transport to mill</td>
<td></td>
<td></td>
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<tr>
<td>-27% Forestry</td>
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</tr>
</tbody>
</table>

**Carbon intensity of 1 average European paper sack**

-22%

**Good to know**

Sustainably managed forests act as a carbon sink. 1m³ of wood captures 1 t of carbon dioxide while emitting 0.7 t of oxygen.

**What is CO2e?**

CO2 equivalent (CO2e) is a measure for describing how much global warming a given type and amount of greenhouse gas may cause, using the functionally equivalent amount or concentration of carbon dioxide (CO2) as a benchmark.