

# Modifying the energy mix of operations by integrating biomass waste as a source of energy



Imerys invests in new facilities to decarbonize its Andersonville site's energy mix by integrating biomass waste as a source of energy.

<b>Starting date of the project</b>	2018 – Pilot test on the kiln 2019 – Phase 1 : preparation 2020 – Phase 2 : Implementation starts																	
<b>Project Localisation</b>  Places of implementation of the project at this stage and targeted geography if replicable.	Andersonville, Georgia, United States  Future candidates for similar conversions are under study.																	
<b>Project objectives</b>  Type of climate innovation of the project with a description of the problem/issue addressed	The project goal is to fit the installations to integrate biomass waste as an energy source, to modify the energy mix. It will enable significant reduction in operation carbon fossil emissions (scope 1 emissions).  Upon completion, the combustion mix should be modified, passing from a historic of 100% fossil fuel (47% coal / 53% natural gas) to a ratio of 56% biomass (milled peanut shells) / 29% natural gas and 15% coal.																	
<b>Detailed project description</b>	For many years Imerys has identified and implemented project aiming at replacing fossil fuel by biomass fuel in its rotating kilns. This started at Clérac, in France, and then at other groups' Europeans sites.  More recently in 2019, the Group launched a project aiming at reducing carbon emissions, at its installation in Andersonville, Georgia, in the United States. Carbon emissions from Andersonville's factory are among the Group's highest, representing 5% of the group total CO2 emissions (2018 considered as the baseline year).  This project encompasses installing new burners, more optimal for biomass usage (rather than for coal) at Andersonville's site.  After a pilot test initiated in 2018 on one kiln, Imerys launched a study project on kilns conversion, for peanut shells usage as a biomass fuel.  The project includes the conception of: new burners, storage and <b>feed systems</b> , automatization and renovation of electrical installations.  Upon completion, the project will lead to a 3% CO2 emission reduction (100 kt/year), for the entire Group.																	
<b>Main project's drivers for reducing the greenhouse gas emissions</b>	<table border="1"> <thead> <tr> <th>Reduction levers</th> <th>Details on the aspects of the project</th> </tr> </thead> <tbody> <tr> <td> <input type="checkbox"/> Energy and resource efficiency (including behaviour)                             </td> <td></td> </tr> <tr> <td> <input checked="" type="checkbox"/> Energy Decarbonisation                             </td> <td>                                 Biomass usage to replace fossil fuel energy in heat production.                             </td> </tr> <tr> <td> <input type="checkbox"/> Energy efficiency improvements                             </td> <td></td> </tr> <tr> <td> <input type="checkbox"/> Improving efficiency in non-energy resources                             </td> <td></td> </tr> <tr> <td> <input type="checkbox"/> Emissions absorption: creation of carbon sinks, negative emissions (BECCS, CCU/S, ...)                             </td> <td></td> </tr> <tr> <td> <input type="checkbox"/> Financing low-carbon producers or disinvestment from carbon assets                             </td> <td></td> </tr> <tr> <td> <input type="checkbox"/> Reduction of other greenhouse gases emission                             </td> <td></td> </tr> </tbody> </table>	Reduction levers	Details on the aspects of the project	<input type="checkbox"/> Energy and resource efficiency (including behaviour)		<input checked="" type="checkbox"/> Energy Decarbonisation	Biomass usage to replace fossil fuel energy in heat production.	<input type="checkbox"/> Energy efficiency improvements		<input type="checkbox"/> Improving efficiency in non-energy resources		<input type="checkbox"/> Emissions absorption: creation of carbon sinks, negative emissions (BECCS, CCU/S, ...)		<input type="checkbox"/> Financing low-carbon producers or disinvestment from carbon assets		<input type="checkbox"/> Reduction of other greenhouse gases emission		
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<b>Emission scope(s) on which the project has a significant impact and quantification of GHG emission reductions per emission scope</b>	<table border="1"> <tr> <td>                 Aspects of the project contributing to the reduction of emissions by emission category             </td> <td>                 Quantification of associated GHG emissions by emission category                   Please follow the quantification methodology used in <a href="#">the Afep guidelines</a>.             </td> </tr> <tr> <td colspan="2"> <b>Reduction of the company's carbon dependency</b> </td> </tr> </table>		Aspects of the project contributing to the reduction of emissions by emission category	Quantification of associated GHG emissions by emission category  Please follow the quantification methodology used in <a href="#">the Afep guidelines</a> .	<b>Reduction of the company's carbon dependency</b>													
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	<b>Scope 1</b> <i>Direct emissions generated by the company's activity.</i>	Biomass usage to replace fossil fuel energy in heat production.	-103 ktCO <sub>2</sub> e/year
	<b>Scope 2</b> <i>Indirect emissions associated with the company's electricity and heat consumption.</i>		
	<b>Scope 3</b> <i>Emissions induced (upstream or downstream) by the company's activities, products and/or services in its value chain.</i>		
	<b>Increase of carbon sinks</b>		
	<b>Emissions Absorption</b> <i>Carbon sinks creation, (BECCS, CCU/S, ...)</i>		
	<b>GHG emissions avoided by the company at third parties</b>		
	<b>Avoided Emissions</b> <i>Emissions avoided by the activities, products and/or services in charge of the project, or by the financing of emission reduction projects.</i>		
<p><b>Clarification on the calculation or other remarks:</b> Reduction = New site's CO<sub>2</sub> emissions from coal + New site's CO<sub>2</sub> emissions from gas – total site's CO<sub>2</sub> emission.</p> <p>Past energy mix with 57% coal and 43% natural gas. It will be replaced by 170 KMT of peanut shells, available in large quantity in the region (160 km around). The target is to reach a ratio of 56% biomass (milled peanut shells) / 29% natural gas and 15% coal.</p> <p>Peanut shells will be transported by truck, with an average distance of 100 km.</p> <p>Peanut shells bought by Imerys were due to be destroyed.</p>			
<b>Modality of verification of the quantification.</b>	<p><b>Calculation standard used (ADEME base, GHG protocol, etc.):</b> Internal computation based on reduction of coal and natural gas quantity used.</p> <p><b>Verification of the calculation (internal or external):</b> Quantification will be verified during the annual verification process of external CO<sub>2</sub> reporting.</p>		
<b>Other environmental and social benefits of the project</b>	<p>This project contributes to SDG goal 12 "Ensure sustainable consumption and production patterns". In fact, this new energy source, peanut shells are wastes generated by another industry. It thus contribute to the SDG target 12.5 : "By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse".</p>		
<b>Project maturity level</b>	<p> <input type="checkbox"/> Prototype laboratory test (TRL 7)  <input type="checkbox"/> Real life testing (TRL 7-8)  <input type="checkbox"/> Pre-commercial prototype (TRL 9)  <input checked="" type="checkbox"/> Small-scale implementation  <input type="checkbox"/> Medium to large scale implementation </p> <p><b>Remarks :</b> Pilot phase terminated, ongoing implementation.</p>		
<b>Capacity and conditions of the project reproducibility, with associated climate impact mitigation potential</b>	<p>The project is reproducible in other zones where there exists sufficient source of biomass waste, compatible with specific industrial processes.</p>		
<b>Amount of investment made (in €)</b>	€8.3 m of investment		
<b>Economic profitability of the project (ROI)</b>	<p> <input type="checkbox"/> ST (0-3 years)  <input checked="" type="checkbox"/> MT (4-10 years)  <input type="checkbox"/> LT (&gt; 10 years) </p> <p><b>Remarks:</b> In addition to reducing carbon emissions, the project is economically beneficial over the middle term. In fact, due to abundant biomass waste (peanut shells) availability near Andersonville's region, alternative fuel costs are lower than those of coal and natural gas.</p>		
<b>Engaged partnerships</b>	<p>Multiple contracts have been signed with local suppliers, to ensure a constant supply of biomass waste. Those multi-year contracts provide a predictable source of revenue for local suppliers.</p>		
<b>Open comments from the project owner</b>	/		

<b>More about the project</b>	
<b>Contact the company carrying the project</b>	<a href="mailto:olivier.berger@imerys.com">olivier.berger@imerys.com</a>
<b>Project URL links</b>	/
<b>Illustrations of the project</b>	