

# Media Release

## **Clariant and ORLEN Południe announce license agreement on sunliquid® cellulosic ethanol technology**

- **Agreement marks second signed license deal for Clariant’s sunliquid® technology**
- **ORLEN Południe, member of ORLEN Group, intends to realize a full scale commercial plant for the production of cellulosic ethanol at its Jedlicze site in Poland with Clariant’s sunliquid® technology**
- **Cooperation is another major step toward the commercialization of sunliquid® technology for advanced biofuels in Europe**

Muttenz, September 20, 2019 – Clariant, a focused and innovative specialty chemical company, and ORLEN Południe, a member of ORLEN Group, which is a leader in the fuels and energy markets and the largest player in Central and Eastern Europe, today signed a license agreement on sunliquid® cellulosic ethanol technology.

The announcement represents a significant strategic milestone for Clariant as this second license agreement for its sunliquid® technology is another successful step to commercialize its highly innovative and sustainable technology. For ORLEN Południe, the agreement supports the intention to realize a full scale commercial plant for the production of cellulosic ethanol from agricultural residues, which will further solidify the company’s position as a forerunner in the Polish biofuels and bio-component technologies.

“We are excited by the continued interest in our sunliquid® cellulosic ethanol technology and proud to have signed this second license agreement. It shows that our long-term strategic commitment to innovation and sustainability can deliver additional growth above and beyond Clariant's current strong portfolio”, said Hans Bohnen, Clariant’s Chief Operating Officer.

“In line with our strategy, we consistently develop and strengthen the Group companies, including ORLEN Południe. We invest in modern technologies and focus on high-margin products, as they will be crucial to maintaining our leading position in the region in the coming years. At the same time, we do not forget about corporate social responsibility and we apply solutions that significantly mitigate our environmental impact,” said Daniel Obajtek, President of the PKN ORLEN Management Board.

The license agreement enables ORLEN Południe to use Clariant's sunliquid® technology for the project development and plant operation it is planning to execute at its Jedlicze site in southeastern Poland, utilizing available land and the integration potential with the existing Jedlicze petroleum refinery. It is planned that the annual production capacity will be 25.000 tons.

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Clariant is a focused and innovative specialty chemical company, based in Muttenz near Basel/Switzerland. On 31 December 2018 the company employed a total workforce of 17 901. In the financial year 2018, Clariant recorded sales of CHF 4.404 billion for its continuing businesses. The company reports in three business areas: Care Chemicals, Catalysis and Natural Resources. Clariant's corporate strategy is based on five pillars: focus on innovation and R&D, add value with sustainability, reposition portfolio, intensify growth, and increase profitability.

[www.sunliquid.com](http://www.sunliquid.com)

sunliquid is an innovative biotechnological method for manufacturing cellulosic ethanol from agricultural residues such as cereal straw, corn stover or sugarcane bagasse. In the completely integrated process, highly optimized, raw material-specific biocatalysts decompose cellulose and hemicellulose in high yields under stable processing conditions into fermentable sugar. The process-integrated production of the biocatalysts offers flexibility and reduces production costs. In the next step, an optimized fermentation organism simultaneously converts C5 and C6 into ethanol with high yields and short reaction times. A highly optimized purification process is instrumental in enabling all the energy required for the process to be derived from the process byproducts like insoluble lignin. The resulting cellulosic ethanol saves around 95% of CO<sub>2</sub> emissions when compared to fossil gasoline. Since July 2012, Clariant has been operating a precommercial plant in Straubing, which produces up to 1,000 metric tons of cellulosic ethanol every year, confirming technical and economic performance. Clariant licenses the sunliquid technology platform globally. The first license was sold in September 2017. Clariant also announced investment into a first-of-its kind commercial facility in Romania, where groundbreaking took place in September 2018.

[www.orlen.pl](http://www.orlen.pl)

PKN ORLEN is a leading-edge player on the fuels and energy markets, and the largest company in Central and Eastern Europe, listed in prestigious global rankings such as Fortune Global 500, Platts TOP250 and Thompson Reuters TOP100.

The ORLEN Group operates on 6 home markets: in Poland, the Czech Republic, Germany, Lithuania, Slovakia<sup>1</sup> and Canada. It owns state-of-the-art integrated assets capable of processing more than 35 million tons of various crude types per annum and markets its products through the CEE region's largest chain of more than 2,800 service stations. The Group's offering encompasses over 50 top-quality petrochemical and refining products, which are sold in more than 100 countries across 6 continents. PKN ORLEN is also a major player on the Polish energy market and Poland's largest industrial electricity producer, with a generation capacity of 1.9 GWe. The Group's upstream assets include 2P oil and gas reserves estimated at close to 211 mboe at the end of 2018. For several consecutive years, ORLEN has been recognized as the most valuable Polish brand, worth PLN 4.7bn. PKN ORLEN is the only company in the region to be included for the sixth consecutive time in the list of The Most Ethical Companies by the US-based Ethisphere Institute.