

Press release

Groundbreaking for Clariant's sunliquid® cellulosic ethanol plant in Romania

- **Investment represents biggest industrial commitment by an international corporation in the region of Craiova**
- **Location chosen for combination of feedstock supply and infrastructure**
- **Annual production capacity of 50 000 tons of cellulosic ethanol**

Muttenz, September 12, 2018 – Clariant, a world leader in specialty chemicals, today officially started construction of the first large-scale commercial sunliquid® plant for the production of cellulosic ethanol made from agricultural residues. At the flagship facility, the sunliquid® technology developed by the company is being used on an industrial scale for the first time. The occasion was marked with a traditional groundbreaking ceremony in Podari near Craiova in southwestern Romania, which was attended by official representatives of the Romanian government, the Swiss Ambassador Urs Herren, and a Clariant representation headed by Christian Kohlpaintner, Member of the Executive Committee.

Clariant Executive Committee Member Christian Kohlpaintner: “After more than a decade of research and development, Clariant is investing more than EUR 100 million in its first sunliquid® plant. This technology is pioneering not only in Europe but also globally. Furthermore, in cooperation with European and national institutions, Clariant supports the industrial conversion of a region with this significant investment.”

The realization of the plant represents the biggest industrial commitment by an international corporation in this region. At full capacity, the plant will process around 250 000 tons of wheat and other cereal straw sourced from local farmers to 50 000 tons of cellulosic ethanol annually. By-products from the process will be used for the generation of renewable energy with the goal of making the plant independent from fossil energy sources. The resulting cellulosic ethanol is therefore an advanced biofuel that is practically carbon-neutral.

The project receives funding from the European Union's Seventh Framework Program for research, technological development and demonstration under Grant Agreement no. 322386 (FP7 SUNLIQUID) and from the Bio-Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation program under Grant Agreement no. 709606 (BBI LIGNOFLAG).

The flagship plant testifies to the competitive viability and sustainability of the sunliquid® technology on an industrial scale, and at the same time fulfils an important function as a reference facility for the worldwide marketing of sunliquid® licenses.

The decision in favor of Craiova was due partly to the existence of a secure regional supply of feedstock and partly to the region's existing logistic and industrial infrastructure. Construction of the plant will provide a whole range of benefits for the surrounding region of Craiova. It will allow local farmers to industrially market straw for the first time, which was previously practically unutilized agricultural residue.

During the construction phase of the new plant, several hundred construction workers will be employed from locally based companies wherever possible. After completion, the plant is expected to provide around 300 permanent jobs in supporting industries serving the site, and in the transportation and storage of the feedstock. The plant itself will employ a workforce of between 100 and 120. Clariant plans to recruit its workforce locally, and provide training both in its own laboratories in Planegg near Munich and at the pre-commercial sunliquid® plant in Straubing, Bavaria.

sunliquid® – a sustainable and advanced biofuel

Cellulosic ethanol is an advanced, sustainable and practically carbon-neutral biofuel. It is produced from agricultural residue such as wheat straw and corn stover which is supplied by farmers. The straw is converted into cellulosic sugars. This is followed by fermentation to produce cellulosic ethanol. By using plant residues, cellulosic ethanol can extend the current production of biofuels to new feedstock and contributes to optimizing the efficiency and sustainability of biofuels. Cellulosic sugars also have the potential to serve as a building block for future production of bio-based chemicals.

The sunliquid® technology offers a fully integrated process design built on established process technology. Innovative technology features such as chemical-free pretreatment, the integrated production of feedstock-and process-specific enzymes, and simultaneous C5 and C6 sugar fermentation ensure optimum cost-effectiveness.



Groundbreaking ceremony for the new sunliquid® plant in Craiova/Romania (from left to right): Urs Herren, Ambassador of Swiss Confederation, Claudiu Mares, State Secretary at the Ministry of Agriculture, Anton Anton, Minister of Energy, Paula Pîrvănescu, State Secretary at the Ministry of Business Environment, Commerce and Entrepreneurship, Christian Kohlpaintner, Member of the Executive Committee Clariant, Ion Prioteasa, Dolj County Council President, Philippe Mengal, Executive Director BBI JU, Constantin Gheorghita, Mayor of Podari, Oliver Kinkel, Head of Region Europe Clariant, Dragos Gavriluta, Clariant Project Director sunliquid Romania, Markus Rarbach, Head of Business Line Biofuels & Derivatives, Clariant, Martin Vollmer, Chief Technology Officer Clariant (Photo: Clariant)



FP7
European Union Funding for Technological
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