

nova-Institut GmbH (www.nova-institut.eu)

PRESS RELEASE

The Advanced Recycling Conference 2023 – A Success Story Beyond Chemical Recycling

With an impressive increase of almost 30 % to nearly 300 participants from 26 countries, the Advanced Recycling Conference (ARC) has established itself as the leading event for innovation in recycling in just one year.

Hürth, 05 December 2023: With an overwhelming positive response the Advanced Recycling Conference took place on 28-29 November 2023, in Cologne, Germany and set several records in terms of the number of participants as well as presentations, posters, and exhibitors. The astonishing response not only reflects the growing interest and commitment of the global industrial community to advanced recycling technologies, but also highlights the increasing need for enabling policies and supportive measures in the wake of rising recycling quotas. The programme of this year's international conference addressed a wide range of waste streams from plastics and PET to composites and textiles. Participants were offered innovative technological solutions for various key issues that reach far beyond chemical recycling.

Numerous presentations and discussion panels highlighted the industry's latest developments in this context. From pyrolysis and other thermochemical approaches to the dissolution of plastics, gasification and depolymerisation through to the versatility of extruders and pre- and post-treatment, the conference offered comprehensive insights into the wide range of chemical recycling technologies. Other sessions such as "Markets and Policy" and "LCA" provided information on relevant sustainability aspects and accounting methods that will prepare industries for recycling quotas of up to 70 % for packaging materials and 55 % for plastics. Numerous exhibitors presented their innovative services, strategies and technology solutions, while participants labelled the continuation of ARC a complete success.

On the status of advanced recycling and future developments

For the first time Lars Krause from the nova-Institute presented the institute's latest study results on the worldwide capacities of advanced recycling to a larger audience. The publication is expected in January 2024 as part of an update of an earlier study on advanced recycling. In global comparison, Europe currently represents the leading area of chemical recycling. Whether it is the number of technology providers, the amount of installed and operating plants or the availability of input and output capacities for materials and chemicals based on renewable carbon, Europe is demonstrating its considerable know-how, pioneering development, and potential for the future. Currently a majority of Europe's 358 kt/a input capacity of advanced recycling results from pyrolysis, followed by solvolysis, dissolution, enzymolysis and gasification. Overall, Europe covers an impressive percentage of 36 % of the installed

global production capacity of polymers, monomers, naphtha, and Secondary Valuable Chemicals (SVC). Here, the product-shares and capacities of advanced recycling mirror Europe's strong trend to circularity, surpassing other regions that show higher product-shares of fuels & energy, while shares of polymers, monomers, and naphtha are lower.

In the upcoming five years the sector expects a strong increase of Europe's advanced recycling production capacities for polymers, monomers, and naphtha, likely to exceed 500 kt per annum after 2027. The downside of this initially positive scenario is the impact of inadequate political framework conditions and supporting measures. Until these are strategically developed or brought to life, investments in new plants or the upscaling of existing ones will fail to materialise. At this stage, expected growth rates seem insufficient to fulfil the existing recycling quotas or to satisfy the currently developed mandatory recycled content in plastic packaging and beyond. These findings underscore the ongoing challenges, emphasizing the crucial role of political decision-makers in unlocking and maximizing Europe's existing potential. They further highlight the imperative for swift and strategic action to capitalize on these opportunities before they diminish, making this a pivotal moment for decisive political engagement.

How to elevate awareness: fostering dialogue between physical recycling and chemical recycling

The industry needs physical recycling based on dissolution as a strong ally, which, together with chemical recycling, will result in a cohesive concept of closed and open recycling loops, following the waste hierarchy. Here, speakers from the field of physical recycling welcomed the fact that the Advanced Recycling Conference 2023 offered a clear distinction from chemical recycling. At the same time it provided an equal forum for physical recycling solutions, becoming one of the few events to follow this concept. The audience response validated this approach, proving the lack of awareness for dissolution technology providers. Changes and progress are required, in order to realise a complementary approach in which all advanced recycling technologies are implemented to unlock the maximum value out of plastic waste streams.

Embarking on a dynamic path: The Advanced Recycling Conference's ongoing evolution unveils exciting new concepts

The Advanced Recycling Conference 2023 left participants inspired and motivated to strive for new and best possible recycling solutions. All introduced technologies prove that industries can successfully incorporate smart solutions, effective recycling methods, and renewable material into their processes and hereby close the carbon loop for a sustainable future. Advanced recycling not only offers recycling solutions for difficult waste streams, but also presents a key source for a variety of renewable raw materials. It hereby secures the renewable carbon supply for the chemical and materials industry at large. This year's program showed, that plenty more developments lay ahead of advanced recycling.

The conference will extend its continuum with the forthcoming edition, scheduled for **20-21 November 2024**, in Cologne, Germany and online. Additional information is available at www.advanced-recycling.eu. An experienced team of experts at nova-Institute will ensure a positive and enriching event experience. The conference will further evolve with the help of feedback received and evaluated from participants and speakers to develop in line with the sector's requirements.

A supportive network of sponsors and media partners

The nova-Institute kindly thanks the sponsors DePoly (CH), Erema Group (AT), and YNCORIS (DE) for their support. Special thanks go to the conference partners BCNP Consultants (DE), C.A.R.M.E.N. (DE), ChemCologne (DE), Chemical Recycling Europe (EU), Circular Plastics NL (NL), CLIB - Cluster Industrial Biotechnology (DE), IBB - Industrielle Biotechnologie Bayern (DE), ITA - Institut für

Textiltechnik of RWTH Aachen University (DE), kunststoffland.NRW (DE), PlasticsEurope Deutschland (DE) and the RCI - Renewable Carbon Initiative (International).

The conference proceedings will be available from mid-January for € 150:

<https://renewable-carbon.eu/publications/?search=1&publication-type=proceedings>

The full spectrum of advanced recycling solutions is presented in nova's comprehensive market report "Mapping of advanced recycling – Providers, technologies, and partnerships". Interested parties can currently benefit from a 20 % winter special discount by using the code **Winter2023** until 31 January 2024. The report is available at: <https://renewable-carbon.eu/publications/>

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nova-Institut GmbH has been working in the field of sustainability since the mid-1990s and focuses today primarily on the topic of renewable carbon cycles (recycling, bioeconomy and CO₂ utilization/CCU).

As an independent research institute, **nova** supports in particular customers in chemical, plastics and materials industries with the transformation from fossil to renewable carbon from biomass, direct CO₂ utilization and recycling.

Both in the accompanying research of international innovation projects and in individual, scientifically based management consulting, a multidisciplinary team of scientists at **nova** deals with the entire range of topics from renewable raw materials, technologies and markets, economics, political framework conditions, life cycle assessments and sustainability to communication, target groups and strategy development.

50 experts from various disciplines are working together on the defossilization of the industry and for a climate neutral future. More information at: nova-institute.eu – renewable-carbon.eu

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