

PRESS RELEASE

‘All that is gold does not glitter*’ – chemical recyclers’ quest for feedstock emphasises the necessary shift from “waste” to “resource”

AMI, Bristol, 28/11/2022 – AMI has published its 2nd authoritative report on the [global Chemical Recycling Industry](#). A discussion of the industry’s feedstock requirements and emerging models of feedstock sourcing and preparation form a central part of the analysis provided.

In its report “Global Plastics Outlook: Policy Scenarios to 2060” the OECD describes plastic pollution as one of the great environmental challenges of the 21st century. Under current policies the report states that, by 2060, both the use of plastics and the amount of plastic waste could almost triple globally, with half of all plastic waste still being landfilled and less than a fifth recycled.

Theoretically, there should thus be plenty of feedstock available for both mechanical and chemical recycling. The challenges lie in the fields of waste collection and sorting – only plastic waste that is collected and, at the same time or in a subsequent step, separated from non-plastic waste and sorted and cleansed is available for recycling processes. Feedstock sourcing can thus be challenging for both mechanical and chemical recycling facilities, with the extent of the challenge growing with a facility’s input capacity.

Depolymerisation plants and providers of solvent-based purification/dissolution technologies, with some exceptions, tend to design facilities with more moderate annual feedstock volume requirements, as the need to be more selective in the feedstocks they can process presents additional feedstock sourcing challenges. In contrast, some pyrolysis and gasification plants are designed at larger capacities, based on the claim to be able to process a more diverse mix of plastic waste and thus encountering fewer challenges in accessing suitable feedstocks.

When looking at facilities’ capacities it also has to be taken into account that feedstock volumes in excess of stated capacities have to be sourced to account for feedstock loss during the material preparation process. In any case, chemical recyclers need to make the securing of sufficient feedstock supplies a key focus for their activities, with investors demanding evidence of feedstock security as one of the criteria when making investment decisions. Key questions to be asked include the following:

Volumes

- How much feedstock is required for a given time period as well as for the years ahead based on any capacity expansion plans?

Security of supply

- How secure are the volumes available from the feedstock sources/suppliers under consideration going forward, which contractual arrangements are necessary to secure supplies?

Composition

- How much detail is available on feedstock composition and how homogenous are the volumes delivered over a course of time?

Pre-processing

- How much pre-processing is required (sorting, cleaning etc.)?

Cost

- Is there a cost or a revenue stream associated with feedstock sourcing?

Logistics

- Over what distances does the feedstock have to be transported and what are the cost implications?

Despite chemical recyclers' pledges to focus on feedstock not suitable for mechanical recycling, at present, no clearly defined line can be drawn between feedstocks going to mechanical recycling and those targeted by chemical recyclers. As a result, concerns have been raised within the industry about the growing feedstock requirements of the chemical recycling industry creating competition for feedstock with mechanical recyclers.

Our detailed assessment of chemical recyclers' feedstock requirements by technology suggests that market forces, i.e. developments in the pricing of different types of feedstocks, will have their part to play in deciding which feedstocks will be accessible to the different elements in the recycling industry.

Rather than focusing on the potential competition between two sets of technologies, each of which will need to play its part in improving recycling rates, a whole system approach to waste management and recycling needs to be developed. For this to happen, the focus of attention needs to shift to the ways in which waste material streams are being managed today. This would see the waste management industry evolving from a system that channels significant volumes of unsorted waste into landfill and incineration solutions, towards a system that aims to bring as many materials as possible back into circularity in a clear and decisive recognition of post-use plastics as a valuable resource rather than waste.

In many cases, this will require letting go of long-established vested interests and solidified structures of managing waste, and to move towards a higher level of co-operation and partnerships with the common goal of turning waste into valuable resources.

Our market report [Chemical Recycling – Global Status 2022](#) is available to order now. For further information please contact Silke Einschütz, Senior Consultant Recycling & Sustainability

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Stay connected with your industry by joining us at one of the of our Chemical Recycling events in [Houston, USA](#) and [Frankfurt, Germany](#) and during 2023.

*(*in reference to what J.R.R. Tolkien fans will already have identified as the first line of “The Riddle of Strider”)*