**“Under Pressure” — Scaling Circular and Renewable Carbon for the Chemical Industry**

De-fossilising the chemical industry requires scalable solutions that can complement existing infrastructure while enabling a transition toward renewable and circular carbon sources. Among the most promising pathways are chemical recycling and the integration of renewable feedstocks into the chemical value chain. These approaches make it possible to reduce reliance on fossil-based naphtha while supporting the production of both commodity and specialty chemicals.

A key challenge for chemical recycling lies in moving from demonstration-scale technologies to industrial-scale operations. This includes not only scaling up recycling facilities but also ensuring that the resulting pyrolysis oils can be effectively upgraded and integrated into existing refinery and petrochemical processes. The upgrading step is critical for meeting the quality requirements of steam crackers and other downstream units, while the incorporation of such assets into operating refineries enables the use of existing infrastructure and operational expertise to accelerate deployment.

Drawing on the experience of Neste in developing renewable and circular solutions, this presentation will provide a hands-on example of how chemical recycling and renewable feedstocks can be incorporated into an industrial refining environment. The talk will highlight practical learnings from scaling up facilities, upgrading circular feedstocks, and integrating them into running refinery assets. In parallel, it will explore how expanding a renewable feedstock portfolio—based on waste- and residue-derived raw materials—supports the transition toward sustainability driven value chains for the chemical industry.

Together, these approaches illustrate how combining renewable and recycled carbon streams can support the broader de-fossilisation of the chemical industry while maintaining competitiveness and enabling long-term strategic autonomy.

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