

DECARBONIZATION STRATEGIES – EXPLORING THE MOST OPTIMUM SUSTAINABILITY ROADMAP FOR THE DOWNSTREAM ENERGY INDUSTRY

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Refiners and petrochemical producers in Europe are faced with challenging requirements to reduce their carbon footprint, processing different feedstocks and to produce renewable products, where possible. In addition, the demand for fossil motor fuels is shrinking, so refiners and petrochemical producers need to consider options to adjust their operations while still securing their margin or improving their margin.

Lummus Technology, as a leading technology licensor, is supporting the downstream energy industry in its transition towards a carbon neutral circular economy through its Green Circle subsidiary. Together with our technology partners, this subsidiary is providing solutions that will help our customers move away from fuel production and pivot to petrochemical production, with the aim to maximize the repurposing of existing processing units.

Examples of these technology solutions are processes that use an alternative feedstock, such as bio-derived ethanol, plastic waste, methane, or CO₂, and through different process pathways produce valuable olefins that can be effectively used to produce polymers with a low carbon footprint.

The downstream energy industry has traditionally been very adaptive to changes and has invested significantly in state-of-the-art technologies in order to meet new specifications while still being able to produce their end-products in an economic way. European refiners and petrochemical producers are again actively exploring options to meet new sustainability requirements. In our presentation, examples will be discussed which have been commercialized, or are ready for commercialization, and that have a significant decarbonization impact. In addition to the availability of these technologies, it is important to prepare a roadmap for reduction of carbon emissions. With a deep understanding of the major process technologies, Lummus Technology is not only able to advise which sustainable technology are best suited for implementation in a revised configuration, but also how this impact the existing assets and at what stage changes should be implemented.