## Low carbon intensity CCU (carbon capture & utilization)





- Celanese is pioneering industrial scale CCU to provide access to low carbon intensity methanol
- Carbon capture takes place in the US but has applicability to various sites globally incl Europe
- Our CCU project is the first case to be certified under the newly developed ISCC CFC (carbon footprint certification)
- The versatile C1 chemistry opens a pathway into low carbon intensity feedstock for a broad range of Plastics (POM - Polyacetal) and Chemicals (Acetyl Derivatives) end uses
- **Commercial viability** of low carbon intensity CCU based products is demonstrated by the first commercial successes in the Adhesives, Paints & Coatings market as well as Consumer Home Goods
- The low carbon intensity CCU approach lowers the entry hurdle into carbon capture: affordable products at industrial scale with certified low carbon footprint



 $CO_2 + 3 H_2 \rightarrow CH_3OH + H_2O$ 

Industrial CO2 emissions not related to methanol production (ISCC eligible sources)

>80% from 3<sup>rd</sup> Parties (non-Celanese)

## Co-Product Hydrogen

Made from fossil feedstock but with associated carbon used to make other products

Significantly improved carbon footprint

- Celanese started one of the largest CCU projects in the world in January 2024 as part of Fairway Methanol JV with Mitsui in Clear Lake, TX
- ▶ 180 kto/a of CO2 emissions  $\rightarrow$  130 kto/a of methanol
- CCU methanol can be converted to Chemicals (Acetyls) or Engineered Thermoplastics (POM Polyacetal)



