

Abstract – Maelenn Ravard

TotalEnergies Corbion produces polylactic acid (PLA) resins, a biobased, compostable and recyclable polymer. This bioplastic presents multiple advantages in terms of functionality and environmental impact, notably its low carbon footprint. In fact, using biomass as a feedstock reduces the dependence on fossil resources and allows a significant reduction in the polymer carbon footprint. PLA is 100% made of renewable carbon coming from biomass; This biobased carbon comes from the carbon absorbed from the atmosphere by the plant and is stored in the product. To lower the global warming potential, keeping the carbon in the loop and avoiding its release is key. TotalEnergies Corbion contributes to this temporary carbon storage in developing the recycling of Luminy PLA. In fact, recycling PLA avoids the agricultural stages of the virgin PLA life cycle and the CO₂ releases from a final end-of-life like incineration. In that case, we talk about “temporary carbon storage”. This environmental benefit is measured for virgin Luminy PLA and recycled PLA. LCA assessment for recycled biobased polymers is still in development and is key in for a sustainable bioeconomy in the future.