

Renewable Materials Conference, “The vertical integration of Biorefineries”

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Novamont is an Italian industrial company whose roots lie in the Montedison School of Materials Science and which was set up to implement the ambitious project of some researchers from the chemical corporation: to integrate chemistry, agriculture and the environment. Founded in 1990, it is now a Benefit Company, certified B Corporation, world's leader in the bioplastics sector and in the development of biochemicals and bioproducts from renewable origins. Novamont promotes a circular approach to bioeconomy based on three pillars. The first one is the reindustrialisation of no longer competitive or decommissioned plants through world-first proprietary technologies. Examples of this kind of regeneration are Mater-Biotech, the company born from the reconversion of a decommissioned industrial site in north-east Italy into the first dedicated industrial plant at world level to produce bio-butenediol through fermentative processes and Mater-Biopolymer, a plant located in central Italy which produces biodegradable biopolymers as a result of the conversion of a PET production plant. The second pillar is represented by low impact agricultural value chains through the valorisation of marginal land not in competition with food production, integrated in local areas and connected with the biorefineries. The third pillar is represented by biodegradable products designed to reduce environmental impacts and to preserve precious natural resources such as water and soil. These products are conceived only for applications where there is real added value, for example to facilitate the end-of-life management when recycling is not easy or possible, or for sectors where dispersion in the environment is highly probable. This is the case of biodegradable and compostable bioplastics, biolubricants, bioherbicides and biodegradable cosmetic ingredients. Mater-Bi is the range of bio-based, biodegradable and compostable bioplastics, developed by Novamont. Mater-Bi, which comes from nature and can return to nature, was created thanks to the upstream integration of four proprietary Novamont technologies: 1) the complexation of starch 2) a process to obtain biodegradable polyesters (Origo-Bi) from vegetable oils 3) a unique process for the oxidative cleavage of vegetable oils for the obtainment of azelaic acid, used as a building block for the production of Origo-Bi and 4) a unique one step biotechnological process to obtain the bio-butenediol (1,4 bio-BDO) from the fermentation of sugars. Strongly convinced that the transition to circular models can play a key role in halting the degradation of ecosystems and decoupling economic development from resource use, Novamont has always deployed new innovative and sustainable processes to develop low-impact intermediates and building blocks, by exploiting new feedstocks such as biomass from low input dry crops that can grow on marginal land, or waste from the agro-industrial value chain, or waste, such as the organic fraction, or cellulose from sanitary products for absorbency, or waste water. With 640 employees (2021), Novamont group posted sales of €287 million in 2020 and made continuous investments in research and development activities: about 5% of its turnover, more than 20% of people (2020 consolidated financial statements). It has a portfolio of around 1,400 patents and patent applications.