FONDAZIONE BRUNO KESSLER
MAGAZINE

Riplaid, the first plastic-to-fuel plant is made in Trentino

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From non-recyclable plastic to Eco Fuel, a fuel oil that meets transportation standards, can be used in existing engines or in industrial plants

A new model of development that has its pillars in the Circular Economy, and in the synergy of experiences and skills. Thus, **RIPLAID**, the project launched by Trentino-based **Firmin Srl**, in which also **Fondazione Bruno Kessler** participates, intends to build ***the first industrial-scale plant for the conversion of non-recyclable polyolefin plastic into biofuel*** to be placed directly on the market.
In order to bring this initiative into life, Firmin established **Lifenergy Italia** and involved in the project, in addition to FBK, **Demont** (Plant engineering company in the energy and Oil & Gas industries) and the **CINSA Consortium** (National Inter-university Consortium for the development of Environmental Science, based at the University of Parma).

Fondazione Bruno Kessler will contribute in a strategic way to the project by bringing scientific and technological skills, critical to production processes characterized by a high degree of innovation and complexity.

“The presence of FBK will enable the testing of dynamic modeling methods for processes and the identification of advanced control methods for them inspired by Industry 4.0 – said **Alessandro Bozzoli**, Head of FBK’s Knowledge Transfer Area Office and scientific liaison for the project for the Foundation -. We are excited to contribute to a project that has such a significant technological relevance making it possible to introduce a new economic vision of the world of plastics, which today is often demonized”.

Specifically, **three FBK teams** will be involved in the various phases of the project.

ARES, a Research Unit directed by Luigi Crema that has been engaged for years in research and development of technologies and energy systems mainly in the concentrating solar power and hydrogen sectors, will play a critical role in the early design stage and will deal with the dynamic modeling of the future plant, defining its functional scheme and the most effective sizing of its

various components.

The **ES Unit**, directed by Alessandro Cimatti, will focus on the development and tuning of the control system, implementing management models with the related interface, the development of FDIR models (Fault Detection, Identification and Recovery), the processing of algorithms for predictive management and scalability analysis.

The **MNF Unit**, operating in the field of micro-manufacturing and materials analysis, will be coordinated, for the material characterization aspects, by Giancarlo Pepponi and will focus on sampling and measurements. In particular, this team will develop specific methodologies, analysis and evaluation for the various process materials, will identify parameters to optimize processes and develop thermodynamic models, and will assess the results in the different steps of the project.

Fondazione Bruno Kessler's know-how was precisely the key factor why Firmin chose Trentino as the ideal place to start a new ambitious project.

"The high attractiveness of Trentino and the precious synergies with the research partners, in particular with FBK, among the most appreciated Italian Research Institutes in the European landscape, and with the industrial partners based in our province, have been the dominant factors that prompted us to confirm the choice of this investment within our local area – rich in sustainable development and environment protection oriented technical skills – **Nicola Minzocchi**, CEO of FIRMIN Srl said -. For our company, this synergy is an opportunity for further growth and development of its business with low environmental impact through the direct marketing of locally produced fuels"

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