Development of an Efficient Microwave System for Material Transformation in energy INtensive processes for an improved Yield



ENJOY READING THE DESTINY NEWSLETTER!

DESTINY is moving forward and the consortium has done lots of interesting findings related to the Key Performance Indicators and corresponding targets set by the SPIRE call.

Every smaller or bigger step forward for reaching the project's aims is always posted on DESTINY website and its LinkedIn and Twitter profile as well; but let's take a detailed look at them!

DESTINY KEY PERFORMANCE INDICATORS (KPIS) AND TARGETS

NTUA conducted the definition of the Key Performance Indicators (KPIs) in order to perform the initial steps towards assessing the industrialization, market penetration and sustainability of the DESTINY high temperature MW process.

The initial pool for selecting the DESTINY KPIs was the large number of performance indicators available in industrial practice and the literature. Having as main criterion the relevance to the quantified impact targets set by the corresponding SPIRE call (shown in the right column of the table below), a DESTINY KPI shortlist was compiled (middle column of table below). The shortlist includes operational, environmental and economic Key Performance Indicators that will directly characterize the performance of DEMO-level system, produced within the DESTINY Project.

Shortlist of DESTINY KPIs and corresponding targets set by the SPIRE call			
Operational	P	Energy Input Flexibility [process efficiency variation - %]	Minimum process efficiency loss within a range of at least ±30% power input from RES
	A BY	Specific Electricity Consumption [kWh _{el} consumed / kg of product]	Improve the energy efficiency by 30%
		Specific Fuel Consumption [kWh _{fuel} consumed / kg of product]	Improve the resource (fuel) efficiency by over 30%
Environmental	E P	Specific CO ₂ emissions [g / kg of product]	Decrease local CO₂ emissions by at least 40%
	5	Specific CO, NO _x , SO _x emissions [g / kg of product]	Overall decrease, depending on emission type
Economy	Ê.	Investment Cost [€/(kg/h of product)]	Decrease CAPEX by 15%
	€	Operating Cost [€/ kg of product]	Decrease OPEX by 15%

One of the focuses of the project is the design and implementation of innovative monitoring and control architectures of the new furnace and the whole system. To these regards, the last six months have been challenging. The partners have been collaborating to release a preliminary architecture of the control system. As for the monitoring strategy at furnace level, a virtual sensor capable of extracting the temperature profile of the material being processed has been designed. The virtual sensor will be tuned in the upcoming months exploiting Al-based approaches and the experimental data that will become available."

DESTINY 4TH GENERAL ASSEMBLY MEETING

From September 8th to 9_{TH} 2020, KERABEN, DESTINY coordinator, virtually hosted the project fourth General Assembly to discuss the first 18 months of the project. The partners presented all the achievements reached in every work package, taking also into account the Covid-19 impact in the activities implemented so far.

The project team has also defined the workplan for the next months, some goals to achieve and expected results.



DESTINY CONSORTIUM



For more info about project visit the DESTINY website at: www.destinyh2020andbeyond.eu



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 820783.

