RECP Best Practices Catalogue

Replacing the liquid paint-based process with a process using powder paint Developed within the framework of MED TEST II







SECTOR:	Metal, electrical and motor vehicle parts
Branch:	Manufacture of parts and accessories for motor vehicles
CATEGORY	Process control or modification
APPLICABILITY	Process

COMPANY SIZE 500







Description of the Problem (Base Scenario): The use of liquid paints causes the following inefficiencies:

- Creating 30 to 40% losses of material due to overspray
- Generation of hazardous sludge

•High energy consumption (furnaces, enhancers, application, etc.)

•High water consumption

•High maintenance costs for cleaning operations, sludge management, personnel management, plant maintenance management, spare parts management, etc.)









Description of the Solution

The transition to powder paint generates material losses of less than 8%, and does not use solvent or generate sludge, all that with a reduced water and energy consumption.









The SwitchMed Programme is funded by the European Union

Economic Gains	€ 259,000
	 Higher production rates than with liquid paints.
	•Energy Costs: \textcircled 14/hour for liquid paint and \textcircled 10/hour for powder paint (furnaces, enhancers, application, etc.)
	 Maintenance: € 160/hour for liquid paint and € 42/hour for powder paint. (Cleaning, sludge, personnel, plant maintenance and spare parts management, etc.)
	•Other Expenses: 5% of all expenses for liquid paint and 2% for powder paint
	•The profit of the paint in the application per m^2 and μm , is ${\bf \in 0.0038}$ for the powder
Environmental Gains	-Reduction of 93,473 kg in paint loss, or 35% -Reduction of 130 MWh in energy, or 0.22% of overall consumption -Reduction of 85 tons of CO_2 , or 0.52% of overall consumption -200 m ³ of water savings, which is 0.8% of overall consumption
Health and Safety Impact	Improvement of work conditions







Capital Investments & Financial Indicators	€ 500,000 Time for Return on Investment: 2 years
Supplier Information	•Paint manufacturers
Other Aspects	The parts should not have too many hollow areas where the powder would have difficulty being deposited, which is a Faraday cage problem.
Implementation	Under implementation







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