

Energ'Iss, heating the city of Issoire with our casting furnaces

 Constellium



This project, conducted with Dalkia and the city of Issoire, will make it possible to use the waste heat from the foundry furnaces of our industrial site located in the city to heat a large number of city buildings (45 buildings).

Starting date of the project	2018		
Project Localisation Places of implementation of the project at this stage and targeted geography if replicable.	Issoir, Puy de Dôme		
Project objectives Type of climate innovation of the project with a description of the problem/issue addressed	The objective is to use the waste heat from our casting furnaces, thanks to the installation of heat capture systems and heat exchangers. This heat recovery will supply part of the city's heating needs via a new network, avoiding the necessary energy consumption (mainly gas).		
Detailed project description	Constellium has innovated and invested in systems for capturing and filtering the waste from aluminum casting furnaces. These rejects at 500°C allow to heat the city water at 95°C via heat exchangers. This allows to heat about 45 buildings (hospital, high school, swimming pool, house...) of the city via a network of 11km. Thanks to the installation of a biomass boiler room, the city of Issoire will be heated by more than 90% renewable energy and will save 4,874 tons of CO2 per year for the region, the equivalent of removing 2,700 cars from the road. - An exemplary energy mix with 90% Renewable and Recoverable Energy, broken down into 36% wood energy (biomass) and 54% waste heat recovered from the Constellium industrial plant (+ 10% gas to reach 100% and to respond to peak consumption).		
Main project's drivers for reducing the greenhouse gas emissions Enter the information in the appropriate boxes	Reduction levers	Details on the aspects of the project	
	☐ Energy and resource efficiency (including behaviour)		
	☒ Energy Decarbonisation	It is about replacing fossile powered heating systems with systems relying on renewable and recuperated energy	
	☒ Energy efficiency improvements	It is about taking advantage of a heat source that without the installation would be lost (less energy is consumed for the same service)	
	☐ Improving efficiency in non-energy resources		
	☐ Emissions absorption: creation of carbon sinks, negative emissions (BECCS, CCU/S, ...)		
	☐ Financing low-carbon producers or disinvestment from carbon assets		
	☐ Reduction of other greenhouse gases emission		
Emission scope(s) on which the project has a significant impact and quantification of GHG emission reductions per emission scope Indicate the aspects of the project that contribute to the reduction of emissions per category of emissions considered (left-hand column) and the quantification of associated emissions.	Aspects of the project contributing to the reduction of emissions by emission category		Quantification of associated GHG emissions by emission category Please follow the quantification methodology used in the Afep guidelines .
	Reduction of the company's carbon dependency		
	Scope 1 <i>Direct emissions generated by the company's activity.</i>	Installation and operation of new equipment	

Indicate the main hypotheses and calculation steps in the intended section (below the table) For further details, please refer to the methodology guidelines.	Scope 2 <i>Indirect emissions associated with the company's electricity and heat consumption.</i>		
	Scope 3 <i>Emissions induced (upstream or downstream) by the company's activities, products and/or services in its value chain.</i>		
	Increase of carbon sinks		
	Emissions Absorption <i>Carbon sinks creation, (BECCS, CCU/S, ...)</i>		
	GHG emissions avoided by the company at third parties		
	Avoided Emissions <i>Emissions avoided by the activities, products and/or services in charge of the project, or by the financing of emission reduction projects.</i>	To avoid the CO2 emissions of the city of Issoire thanks to heating provided by our activity.	4874 tCO2eq (Constellium + heating with biomass)
Clarification on the calculation or other remarks: cThe project's installations will allow the recovery and injection into the city's heating network of nearly 25 GWh of heat per year, 54% of which will come from Constellium (13.5 GWh per year). The biomass heating plant will be able to produce 9 GWh/year with an emission factor of 0 gCO2/kWh (if we exclude the road transport of the biomass).			
Modality of verification of the quantification.	Calculation standard used (ADEME base, GHG protocol, etc.): click here to enter the information ADEME Verification of the calculation (internal or external): Verification by Ademe to be able to benefit from the Heat Fund and the CEE (energy saving certificate) click here to enter the information		
Other environmental and social benefits of the project If possible, list the impacts and Sustainable Development Objectives concerned	xxx		
Project maturity level Tick the corresponding current maturity level	☐ Prototype laboratory test (TRL 7) ☐ Real life testing (TRL 7-8) ☐ Pre-commercial prototype (TRL 9) ☐ Small-scale implementation ☒ Medium to large scale implementation Remarks: click here to enter the level of maturity of the project		
Capacity and conditions of the project reproducibility, with associated climate impact mitigation potential	This is a first step that can be followed by others to increase the city's heating coverage.		
Amount of investment made (in €)	1,3 M€ for the recovery part at Constellium - 14 M€ for the construction of the network + the biomass boiler room (of which 60% subsidy by Ademe and CEE)		
Economic profitability of the project (ROI)	☐ ST (0-3 years) ☐ MT (4-10 years) ☐ LT (> 10 years) Remarks: Not disclosed		
Engaged partnerships	Dalkia, the city of Issoire Dalkia has signed a 20-year public service delegation agreement with the city of Issoire. Dalkia is responsible for building the network of pipes, constructing the biomass and gas-fired boiler rooms that supplement the 54% of heat recovered from Constellium, connecting subscribers, and operating the service on a daily basis. As part of the public service delegation, Dalkia finances and bears the commercial risk.		
Open comments from the project owner	This project is fully in line with the strategic sustainable development program undertaken by Constellium		
More about the project			
Contact the company carrying the project	mireille.tournie@constellium.com		

Please specify an ad hoc e-mail address that will allow the reader to contact the project company directly	
Project URL links	xxx
Titre SEO	Waste heat recovery from foundry furnaces
Méta Description	Constellium, in partnership with Dalkia and the city of Issoire, is investing in systems to capture heat from foundry furnaces to heat city buildings.
Illustrations of the project 3 photos/videos minimum (in HD format to be attached)	