90 % d'ENR&R grâce au bois de récupération dans le mix énergétique du réseau de chaleur du Grand Reims

Grand Reims and ENGIE Solutions are working with the support of Ademe to integrate recovered wood ("bois B") into the energy mix of the Reims urban network. The development of this new energy source will produce 90% renewable heat by the end of the year. A two-year project that is fully in line with the achievement of the environmental objectives of Greater Reims: sustainably integrating the heating network into the urban fabric by promoting the use of renewable and recovered energy.

Starting date of the project	2020
Project Localisation Places of implementation of the project at this stage and targeted geography if replicable.	Reims
Project objectives Type of climate innovation of the project with a description of the problem/issue addressed	The project aims to supply Reims with 90% renewable heat by 2024 This ambitious project, financially supported by Ademe, results from the common desire of Grand Reims and ENGIE Solutions to green the Reims heating network and thus act on air quality and the climate performance of the territory.
Detailed project description	Operated through a public service delegation by Soccram, a local subsidiary of ENGIE Solutions, the Reims heating network provides heating and domestic hot water to the equivalent of 17,000 homes, mainly from the incineration of waste from the *Centre de Valorisation Energétique (C.V.E) Remival* and woodchips (shredded wood from logging residues, by-products from the wood industry). The current rate of renewable energy and energy recovery (ReR&R) of 60%, which the project to integrate recovered wood will bring to 90% by 2024. For this, it is necessary to adapt the existing boiler room. 2,500 additional housing equivalents will benefit from this renewable heat at the end of 2022, as the Châtillons district will soon be connected to the network. In total, from 2024, the equivalent of 20,000 homes will benefit from this heating and domestic hot water solution. To green the urban heating and cooling network, ENGIE Solutions is deploying its expertise, in particular by removing coal from the energy mix and by integrating wood biomass, ultimately up to 46%. The circular economy is favored by the use of wood from the region, from waste collection centers, demolitions or salvage from industries and businesses. The addition of recovered wood, from furniture and construction waste, among the sources of heat production in the Greater Reims network, has many advantages: ● Definitively put an end to coal and thus go from an EnR&R rate of 60 to 90% by dividing CO2 emissions by six. ● Continue to develop the network by offering renewable heat to ever more users, in particular by connecting the Châtillons district, i.e. 2,500 additional homes. ● Propose to the Reims territory a solution for the recovery of recovered wood, a local waste which will offer a second use by becoming a source of heat production for housing, municipal buildings and offices. ● Continue the development and greening of the network by favoring local production sources and promoting the circular economy: the wood chips currently used on the production site come from a radius of around 100 km, a local supply that the stakeholders wish to conserve as part of the integration of reclaimed wood. ● Guarantee control of the price of heat for subscribers to the Grand Reims heating network.

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	Exit from coal and integration of recovery wood into the energy mix of the Reims urban network Division by 6 of CO2 emissions
☐ Energy efficiency improvements	
☐ 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.

Indicate the main hypotheses and calculation steps in the intended section (below the table)

For further details, please refer to the methodology guidelines.

	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 *Direct emissions generated by the company's activity.*	Exit from coal and integration of recovery wood into the energy mix of the Reims urban network Division by 6 of CO2 emissions	Reduction of 19 600 tCO2e per year
Scope 2 *Indirect emissions associated with the company's electricity and heat consumption.*		
Scope 3 *Emissions induced (upstream or downstream) by the company's activities, products and/or services in its value chain.*		
Increase of carbon sinks		
Emissions Absorption *Carbon sinks creation, (BECCS, CCU/S, …)*		
GHG emissions avoided by the company at third parties		
Avoided Emissions *Emissions avoided by the activities, products and/or services in charge of the project, or by the financing of emission reduction projects.*		

Clarification on the calculation or other remarks: The emission factor was 120 gCO2e/kWh. Completion of the project significantly reduces this factor to reach 20 gCO2e/kWh of heat produced (division by 6). Based on a projection of approximately 196 GWh produced per year, the associated reduction in CO2 emissions therefore amounts to 19,600 tCO2e/year.

Modality of verification of the quantification.

Calculation standard used (ADEME base, GHG protocol, etc.): click here to enter the information

Verification of the calculation (internal or external): click here to enter the information

Other environmental and social benefits of the project

If possible, list the impacts and Sustainable Development Objectives concerned

- Put an end to coal for good SDG 3 3: GOOD HEALTH AND WELL-BEING (linked to improving air quality)
- Continue the development of the network by offering renewable heat to ever more users, in particular by connecting the Châtillons district, i.e. 2,000 additional dwellings SDG 7: CLEAN ENERGY AT AN AFFORDABLE COST
- Propose to the Reims territory a solution for the recovery of recovered wood, a local waste which will offer a second use by becoming a source of heat production for housing, municipal buildings and offices. SDG 11: SUSTAINABLE CITIES AND COMMUNITIES & SDG 12: SUSTAINABLE CONSUMPTION AND PRODUCTION
- Continue the development and greening of the network by favoring local production sources and promoting the circular economy: the wood chips currently used on the production site come from a radius of around 100 km, a local supply that the stakeholders wish to conserve as part of the integration of reclaimed wood. SDG 11 11: SUSTAINABLE CITIES AND COMMUNITIES & SDG 12: SUSTAINABLE CONSUMPTION AND PRODUCTION
- Guarantee control of the price of heat for subscribers to the Grand Reims heating network. SDG 7: CLEAN AND AFFORDABLE ENERGY

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	Project reproducible to any heating network subject to the territorial potential for recovery wood availability
Amount of investment made (in €)	20 M€
Economic profitability of the project (ROI)	☐ ST (0-3 years) ☐ MT (4-10 years) ☒ LT (> 10 years) **Remarks:** click here to enter the information
Engaged partnerships	Partnership ENGIE Solutions, Grand Reims and City of Reims, with the support of ADEME
Open comments from the project owner	xxx
More about the project	
Contact the company carrying the project Please specify an ad hoc e-mail address that will allow the reader to contact the project company directly	ENGIE Solutions marion.prieur@engie.com
Project URL links	https://www.rezomee.fr/reseau-chaleur-reims/
Illustrations of the project 3 photos/videos minimum (in HD format to be attached)	https://www.youtube.com/watch?v=e0X_PORCwpo&feature=emb_rel_end