

Deliverable D3.6

Prototype of the machine with low environmental impact refrigerant fluid

WP3

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Dissemination Level

PU	Public	
CO	Confidential, only for members of the consortium (including the Commission Services)	X
CI	Classified, as referred to in Commission Decision 2001/844/EC	

Publishable summary

The deliverable D3.6 “Prototype of the machine with low environmental impact refrigerant fluid” is a confidential document delivered in the context of WP3, Task 3.5 which scope is the development and testing of an innovative high temperature hybrid heat pump for renovated civil and historical buildings. The document is divided in two parts.

In the first one, a series of low GWP (<150) refrigerants is evaluated from the thermodynamic point of view in different heat pump cycles with the aim to select the most promising fluids as substitutes for R134a and R410A, the most used refrigerant at present, which have to be banned in the future due to their high GWP. The fluids are evaluated at the most typical working conditions (user secondary fluid temperatures and ground source secondary fluid temperatures) in the European area. The most promising fluid will be adopted as the working fluid for the innovative hybrid heat pump scope of the task.

In the second part of the document, a description of the innovative hybrid heat pump will be given, together with the results of the heat pump tests to be performed at the CNR demo site in Padova. At the moment, the deadline for this part of the task has been delayed due to the COVID-19 and the new deadline has not been defined yet. This part of the document will be filled at the actual conclusion of the task.