PROJECT SUMMARY

12th ERA-NET Bioenergy Joint Call / 2nd add. call of BESTF3

PROJECT TITLE: Development of a new low-cost low-emission micro-scale pellet stove with advanced process control

PROJECT ACRONYM: LowEmi-MicroStove

ABSTRACT

Improved energy efficiency of new and renovated buildings results in a decrease of their heating demand. Thus, fossil fuel fired boilers and heat pumps are presently, due to their typically lower nominal capacities and low investment costs, often more attractive for consumers than pellet stoves. To make pellet stoves more competitive against these technologies, the project aims at the development of an innovative, low-cost low-emission microscale (1 to 4 kW) pellet stove. Core elements of the new technology shall be a new pellet feeding system tailored to the demands of steady fuel transport at low fuel demands, a novel grate system and a CFD designed combustion chamber with an improved insulation strategy, which shall provide the basis for a low-emission combustion over a wide load range. A control concept based on innovative sensors shall secure that the potential for low-emission and high efficiency operation can be fully utilised during steady state and transient operation. The low-cost target will be supported by innovative production techniques (e.g. 3D printing).

Start date: 01/2019

End date: 12/2021

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