



# Final practice abstract WP6: Demonstrations of best technologies in key products and cross sectors

Substantial emissions reductions—up to 50%—can be achieved using technologies that already exist.

In the ENOUGH project, the success of 21 real-world demonstrations across Europe proves that these solutions are feasible, scalable and adaptable to different products and sectors, offering a clear path to decarbonising the food supply chain. Demonstrators rely on natural refrigerants-based technologies, integrated thermal flows, application of energy storage, heat recovery, use of waste heat, and implementation of electrification for industrial processing, heating and transport. Innovative storage and processing reduce food waste at professional and domestic level. Finally, interaction with the grid and advanced control guarantee emission reduction and trustability of the chain. As examples, the two dairy sites in Austria and Norway demonstrated significant energy savings and CO<sub>2</sub> reductions using natural refrigerants, innovative heating and cooling systems, and thermal energy storage. The transport demonstrator in Italy proved the viability of natural refrigerant and electric-powered refrigerated transport, offering a scalable model for sustainable logistics. Other demonstrated technologies include advanced freezing technologies (e.g., brine, blast, CO<sub>2</sub> plate freezing), energy-efficient fruit storage using dynamic controlled atmospheres (DCA), sustainable packaging for fruit punnets, optimised retail technologies (e.g., heat reclaim, thermal storage, demand-side response), and domestic innovations like freeze dryers and efficient refrigerators. The highest technology readiness level achieved is TRL 9, indicating full market readiness.

More details and photos, including final reports from each demonstrator is available at the ENOUGH webpage [enough-emissions.eu](https://enough-emissions.eu).



<sup>1</sup>FAOSTAT Analytical Brief 50: GHG emissions from agrifood systems: Global, regional and country trends.

