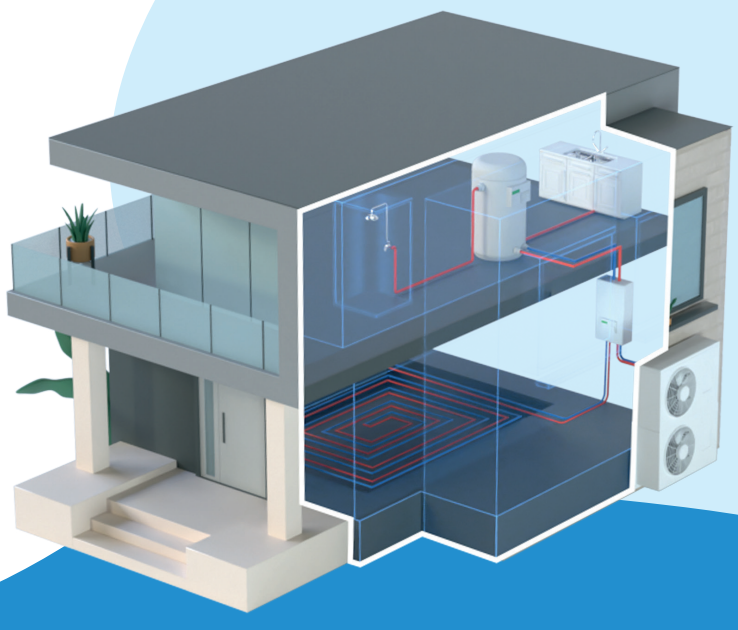
Opteon™ XL20
Refrigerant (R-454C)

Leading Efficiency and Savings in Heating

Heat pumps are an essential technology to help enable decarbonization through the electrification of heating. **Refrigerant choice** is a critical factor in attaining energy efficiency.

Heat pumps optimized for latest generation F-gas R-454C can enable **up to 29% higher Energy Efficiency** and **up to 49% higher Capacity,** while **reducing emissions** by up to 22% compared to standard R-290 (Propane) equipment.*

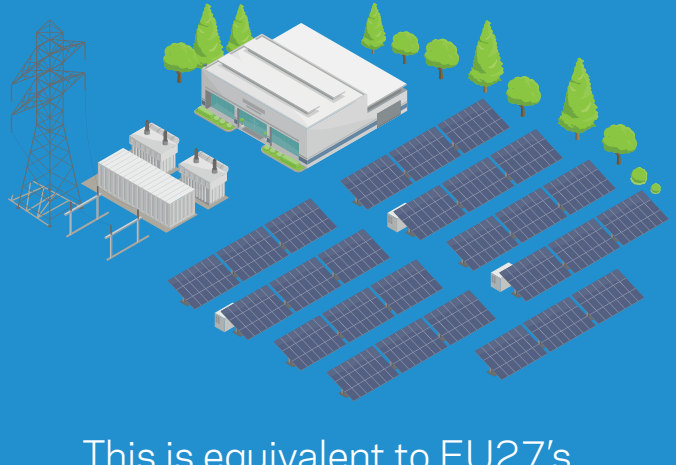
Opteon™ XL20 Heat Pumps can provide **significant CO_2 emission savings.**



The adoption of XL20 can enable **energy saving of over**

150TWh

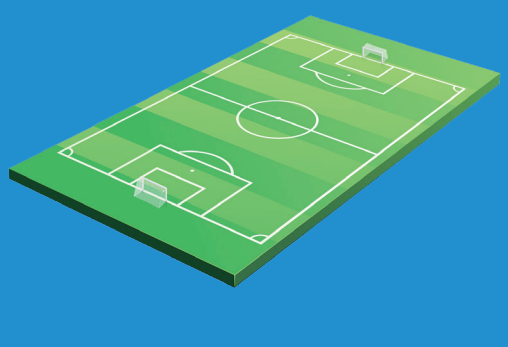
over the 2024–2030 period, compared to standard R-290 solutions.



This is equivalent to EU27's

entire yearly

photovoltaic production**



which would require the same area as

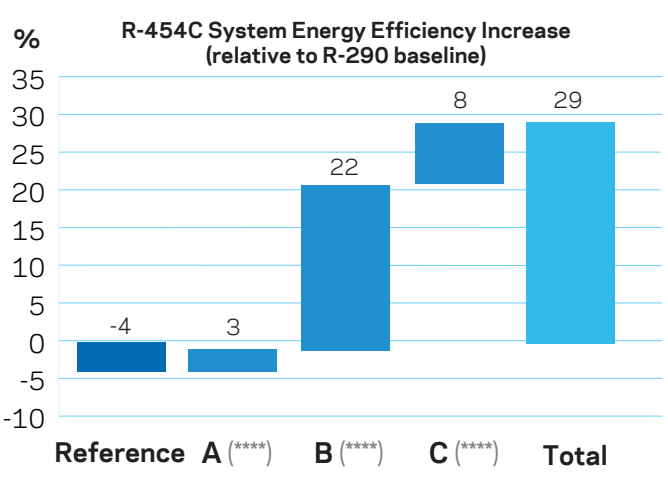
54,000

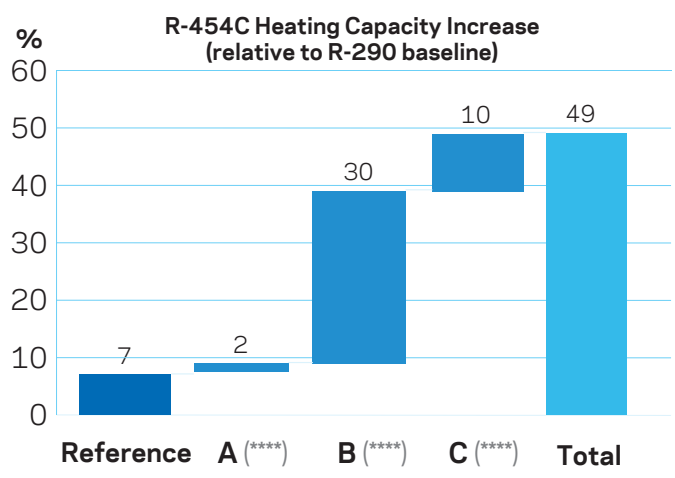
football fields of solar panels.***

Over **50 million** tons of **CO_2 emissions could be saved.**

Heat pumps optimized for latest generation F-gas R-454C can unleash performance improvements versus standard **R-290 (Propane)** equipment.

up to **29%** better COP* and up to **49%** better capacity*





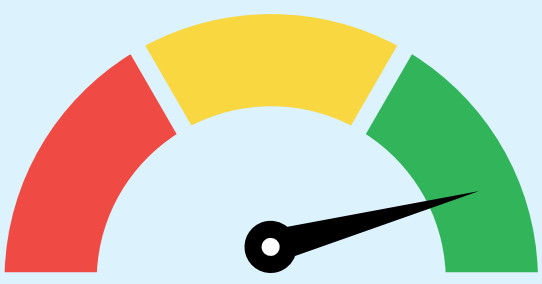
The COP improvements of an optimized R-454C heat pump provide additional environmental advantages versus a standard R-290 equipment.

Up to **22%** lower indirect emissions.

Direct emissions of R-454C systems represent around 1% of the total CO_2 equivalent system emissions. Increasing the COP by 29% results in a decrease in total emissions by **over 21%.**

The capacity improvements of an optimized R-454C design provide additional performance advantages versus a standard R-290 heat pump.

Up to **49%** capacity improvement with additional design flexibility. *****



* Measurements and modeling carried out by an independent Research Institute in Germany.

** 2021 Eurostat Data.

*** Equal to a surface of 384 Million Square Meters.

**** Identified design optimizations A, B and C heat pump system parameters.

***** The inherently lower flammability of A2L refrigerants (like R-454C) versus R-290 allows for greater flexibility in system design. The reduced risk of flammability allows for charge sizes up to 12 times higher than propane with A2L 's which provides greater opportunity for system capacity and efficiency optimization.

Chemours™