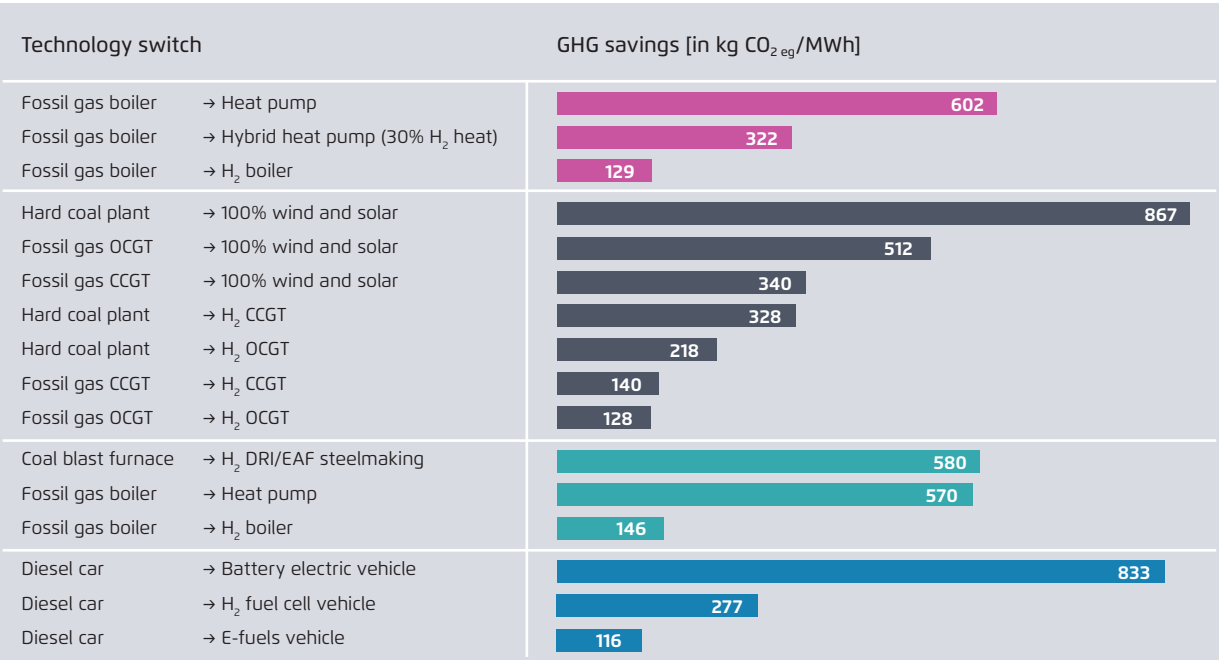
GHG emissions reductions in kg of CO_{2eq} when using 1 MWh* of renewable electricity to substitute fossil fuels in different applications

Figure 20



Efficiency assumptions

Buildings

Hybrid heat pump: 145%
(HP 450%, Boiler: 90%)
Heat pump: 300%
Boiler: 90%

Energy sector

Hard coal plant: 39%
OCGT: 39%
CCGT: 59%

Industry

BF: 2t CO_{2eq}/t steel
DRI/EAF: 3.4 MWh_{el}/t steel
Heat pump: 300%
Boiler: 95%

Transport

BEV: 18 KWh/100 km
Fuel cell: 0.89 kg/100 km
Diesel & E-fuels: 6 l/100km

* 1 MWh represents roughly the annual electricity production of 1 kWp solar PV
Emissions intensities (in g CO_2/kWhPE) = Hard coal (338.2), Fossil gas (200.8), Diesel (266.5)
HP = Heat pump, H_2 = Hydrogen, OCGT = Open cycle gas turbine, CCGT = Closed cycle gas turbine,
BF = Blast furnace, DRI = Directly reduced iron, EAF = Electric Arc Furnace, BEV = Battery electric vehicle