

Method for combustion of a fuel using at least one industrial burner (115), which burner (115) is fed with a low-grade, gaseous fuel with a Lower Heating Value (LHV) of 8 MJ/Nm^3 or less and an oxidant. The invention is characterised in that the combustion products from the combustion of the fuel with the oxidant are brought firstly through a first heat exchanging step (150; 201), in which thermal energy is transferred from the combustion products to the fuel which is thereby preheated, and in that the thus cooled combustion products thereafter are brought through a second heat exchanging step (151, 203), in which thermal energy is transferred from the cooled combustion products to the oxidant which is thereby also preheated. The invention also relates to a system for preheating fuel and oxidant.