

Ref: C0578

## ***Energy efficiency (EE) and cost-effective means to increase EE and to mitigate the climate change of pork and broiler meat production in five European countries***

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### **Abstract**

Production of pork and broiler meat in the European Union (EU) has increased by 7.8 and 16.1%, respectively, in the period of 2001 – 2011. At that time pork and broiler meat produced, amounted together to over four times the cattle meat. Meat is an important protein source in human diet, but on the other hand, livestock uses globally 30% of ice-free terrestrial land and produces 18% of global greenhouse gas (GHG) emissions. This exceeds the global emissions of the transport sector. Furthermore, energy ratio (output/input) for meat production is less than 1.0 in general and it is much lower than that of plant production. This paper presents cost-effectiveness of EE measures in pork and broiler meat production and it is based on the results of the Agriculture and Energy Efficiency Project ([www.AGREE.aua.gr](http://www.AGREE.aua.gr)).

The structure of the energy input appeared to be very similar in pork and broiler meat production. Feed was found to be the major indirect energy input. Its contribution to the total energy demand varied from 51% to 82% in pork production and from 55% to 94% in broiler meat production. The percentage of feed was the lowest in the Northern European countries and the highest in the south. This difference was mainly attributable to the demand for heating of animal houses during the winter period. Differences could also be found in the absolute energy input of feed. It indicated that there may be possibilities to improve feeding strategies or feed conversion rate of animals. In pork production, the energy input of feed was 12.5 GJ t<sup>-1</sup> (live weight) in average and 8.6 GJ t<sup>-1</sup> (live weight) in broiler production. The difference between pork and broiler meat is a consequence of the higher feed conversion rate of broilers in contrast to pigs. The category “Other energy use” was the second highest energy