Grilling with charcoal less climate-friendly than grilling with propane

May 12 2009

Do biofuels always create smaller carbon footprints than their fossil-fuel competitors? Not necessarily, finds a paper published in Elsevier's Environmental Impact Assessment Review. The article, "Charcoal versus LPG grilling: a carbon-footprint comparison," reports that in the UK, the carbon footprint for charcoal grilling is almost three times as large as that for LPG* grilling.

The overwhelming factors behind the difference, notes author Eric Johnson, are that as a fuel, LPG is dramatically more efficient than charcoal in its production and considerably more efficient in cooking. Charcoal is produced by heating wood in a kiln; commercial yields of charcoal are only in the 20-35% range, i.e. most of the rest of the wood is converted to gas and emitted into the atmosphere. Yields of LPG, by contrast, are greater than 90%.

LPG grills are akin to conventional cookers and ovens, in that they have power ratings and can easily be switched on and off. By contrast, charcoal grills do not offer easy mechanisms for regulating fuel consumption, and Johnson explained: "The primary factor in determining fuel consumption is the griller's loading, which is determined by the amount of charcoal that is used along with the quality and quantity of starting-aid that is required. "

Developing countries, primarily in Africa, are likely to be the source of charcoal loaded in the UK, the study points out. Contrary to a claim by the European Commission that "Trade in charcoal from Africa to the EU

is not significant," in 2008, the UK imported 80% of its charcoal from developing countries, and 50% of its charcoal from Africa. Nearly 70% of the total import comes from South Africa, Argentina, Namibia and Nigeria.

Forest stocks in the latter three countries are in decline, according to the UN's Food and Agricultural Organization, as they are on a global scale, especially in the developing world.

*Liquefied petroleum gas (LPG), often referred to as propane, is a mixture of mostly propane and butane.
More information: "Charcoal versus LPG grilling: A carbon-footprint comparison", Environmental Impact Assessment Review, doi:10.1016/j.eiar.2009.02.004