



Air emissions and Climate change from gasoline

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ABSTRACT

Environmental impacts of energy use can impose large costs on society. We quantify and monetize the life-cycle climate-change and health effects of greenhouse gas (GHG) and fine particulate matter (PM) emissions from gasoline. For each billion gallons of fuel produced and combusted in India, the combined climate-change and health costs are Rs. 469 million for gasoline. Moreover, a geographically explicit life-cycle analysis that tracks PM emissions and exposure relative to Indian population shows regional shifts in health costs dependent on fuel production systems. Because biofuels can offer health benefits from PM reduction that are of comparable importance to its climate-change benefits from GHG reduction, a shift from gasoline to biofuels has greater advantages than previously recognized. These advantages are critically dependent on the source of land used to produce biomass for biofuels, on the magnitude of any indirect land use that may result, and on other as yet unmeasured environmental impacts of biofuels.

Keywords: fine particulate matter, biofuel, biomass, greenhouse gas.
