IEAGHG Information Paper; 2014-IP8: The Added Benefit Greenhouse Gas Mitigation has in Reducing Air Pollution

We are well aware of the growing problem of air pollution in developing countries and in particular fast growing economies like China and India and the social and economic impacts that arise. A recent study published in Nature Climate Change entitled "Air-pollution emission ranges consistent with the representative concentration pathways" Nature Climate Change 4, 446–450 (2014) has been published based on work by Scientists at IIASA. See http://www.iiasa.ac.at/web/home/about/news/20140519-NCC-AirPollution.html

The IIASA scientists have used the scenarios used in the recent IPCC Assessment Report to study how air pollution could develop under the different climate change scenarios.

Unsurprisingly they found that the drastic cuts in greenhouse gas emissions associated with the most optimistic climate scenarios in AR5 would also lead to major reductions in air pollution. However under the more pessimistic climate scenarios in AR5 they finds the range of possibilities for air pollution is much more uncertain, and depends far more on air quality policies.

The researchers claim that their work adds to a growing body of research that shows that policies to reduce greenhouse gas emissions will have a positive effect, or co-benefits, for simultaneously reducing air pollution. Greenhouse gases and air pollutants come from many of the same sources. Coal power plants, for example, emit not only carbon dioxide, but also black carbon, sulphur, and nitrogen compounds that pollute the air and can lead to lung and heart disease.

So there is a double bonus from cutting fossil fuel burning; cutting emissions air pollutants, as well as the greenhouse gases that contribute to climate change. The researchers claim that these co-benefits had not been assessed in connection to the new framework of scenarios that underlie the most recent IPCC report, the Representative Concentration Pathways (RCPs) had not been considered before.

IIASA Energy Program Director Keywan Riahi, a study co-author, says, "Our study helps the scientific community not only to better understand co-benefits of climate change mitigation measures, but also the associated uncertainty of possible air pollution pathways consistent with the RCPs."

IEAGHG's study "Emissions of Substances Other than CO_2 from Power Plants with CCS" Report No. IEAGHG 2012/13 we looked at the emissions reduction potential for air pollutants like SOX, NOx and particulates from applying in all cases but most strikingly for Oxy combustion there were significant reductions in airborne air pollutants as well as CO_2 emission reductions.

So there does seem to be some merit in selling CCS both as a GHG mitigation tool and one which when applied has the potential to reduce air pollution as well.

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