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Regional credit trading: Economic and GHG impacts of a national low carbon fuel standard

Jonathan Rubin, Professor of Economics, The University of Maine, USA

Department of Mechanical Materials and Manufacturing Engineering, University Park, Nottingham, NG7 2RD, UK

Abstract

This research examines the economic implications of different designs for a national low carbon fuel standard (NLCFS) for the road transportation sector based on the regional availability of low carbon fuels, carbon intensities and costs. A NLCFS based on the average carbon intensity (CI) of all fuels sold generates an incentive for fuel suppliers to reduce the measured CI of their fuels. A NLCFS will build on and encompass the existing and regional low carbon fuels standard in California and the proposed systems for the Northeast and Mid-Atlantic States. The economic impacts are determined by the availability of low carbon fuels, estimates of which can vary widely. Also important are the compliance path, reference level CI, and the design of the credit system, particularly the opportunities for trading and banking. To quantitatively examine the implications of a NLCFS, we adapt the Transportation Regulation and Credit Trading (TRACT) Model to allow for regional differences. TRACT models national-level low carbon credit trading among profit maximizing fuel suppliers for the United States light- and heavy-duty vehicle fuel use from 2015 – 2035. This research estimates the economic and GHG impacts of regional factors on a NLCFS. These impacts can include changes to use and shipment of petroleum feedstocks and refined products in the US.

Biography

Jonathan Rubin, Professor, Margaret Chase Smith Policy Center and School of Economics, The University of Maine, Orono, USA, rubinj@maine.edu

Dr. Rubin specializes in the economics of energy, light-duty transportation, greenhouse gas emissions and alternative fuels. His research investigates low carbon transportation fuels, biofuel pathways, and the potential economic and environmental impacts from trading greenhouse gases and fuel efficiency credits for automobiles and light-duty trucks. Dr. Rubin is the Chair of the Committee on Transportation Energy, US Transportation Research Board of the National Academies. He was previously a Fulbright Scholar at the Clean Energy Research Centre at the University of Botswana and a Visiting Fellow at the Cambridge Centre for Climate Change Mitigation Research at the University of Cambridge. Dr. Rubin received his Ph.D. in Agricultural Economics from the University of California, Davis in 1993