

An ex-post analysis of the effect of renewables and cogeneration on Spanish electricity prices

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Abstract— Growing concerns about climate change and energy dependence are driving specific policies to support renewable or more efficient energy sources such as cogeneration in many regions, particularly in the production of electricity. These policies have a non-negligible cost, and therefore a careful assessment of their impacts seems necessary. In particular, one of the most-debated impacts is their effect on electricity prices, for which there have been some ex-ante studies, but few ex-post studies. This article presents a full ex-post empirical analysis, by looking at use of technologies and hourly electricity prices for 2005–2009 in Spain, to study the effects that the introduction of renewable electricity and cogeneration has had on wholesale electricity prices. It is particularly interesting to perform this study in Spain where an active system of public support to renewables and cogeneration has led to a considerable expansion of these energy sources and electricity pricing is at the center of intense debate. The paper reports that a marginal increase of 1 GWh of electricity production using renewables and cogeneration is associated with a reduction of almost 2 € per MWh in electricity prices (around 4% of the average price for the analyzed period).

Index Terms— Prices; Renewables; Cogeneration; Electricity; Supply; Spain

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