

# **Impact of the Kyoto Protocol on the Iberian electricity market: A scenario analysis**

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## **Abstract-**

**This paper presents an assessment of the impact of the Kyoto Protocol on the Iberian Electricity Market during two periods: the first phase (2005&ndash;2007) and the second phase (2008&ndash;2012). A market-equilibrium model is used in order to analyze different conditions faced by generation companies. Scenarios involving CO<sub>2</sub>-emission prices, hydro conditions, demand, fuel prices and renewable generation are considered. This valuation will show the significance of CO<sub>2</sub>-emission prices as regards Spanish and Portuguese electricity prices, generation mix, utilities profits and the total CO<sub>2</sub> emissions. Furthermore, the results will illustrate how energy policies implemented by regulators are critical for Spain and Portugal in order to mitigate the negative impact of the Kyoto Protocol. In conclusion, the Iberian electricity system will not be able to reach the Kyoto targets, except in very favorable conditions (CO<sub>2</sub>-emission prices over h15/ton and the implementation of very efficient energy policies).**

**Index Terms-** CO<sub>2</sub> emissions; Kyoto Protocol; Scenario analysis

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