Carbon Dioxide Emissions Reduction by Renewable Energy Employment in Romania

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***Abstract*—Meeting environmental constraints represents a particularly important condition that energy systems are currently facing, especially with the emphasis on mitigating global warming process. Reducing carbon dioxide emissions is therefore one of the main practices that can be used to achieve the objectives set by energy policies in this regard. This paper aims to assess the decrease of these emissions over a short timeframe, based on historical records regarding instantaneous electricity demand and generation by sources for the last ten years in Romania. For this purpose, an algorithm was developed in Matlab to calculate several quantities including total energy generated annually, average used capacity for each type of primary source and total carbon dioxide emissions. The predictor variable used to evaluate the yearly amount of emissions as the outcome variable was the total renewable energy share in electricity demand. The variation in time of the determined quantities is presented, as well as their approximate trend of evolution in order to foresight their values by 2020.**

***Keywords*— Carbon dioxide, Climate change, Emissions reduction, Environmental constraints, Renewable energy.**

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