



# 7<sup>th</sup> INTERNATIONAL WORKSHOP ADVANCES IN CLEANER PRODUCTION

“CLEANER PRODUCTION FOR ACHIEVING SUSTAINABLE DEVELOPMENT GOALS”

## The Sustainability of the Italian Water Sector: An Empirical Analysis by DEA

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### Abstract

The sustainability of the development of water resources is a pressing challenge. Natural forces, economic pressure and increasing population determine a significant growth in water use and pollution not supported by highly inefficient water supply practices. In this framework, the Italian water services with fragmented management, highly deficient collection and treatment of wastewater - and existing and potential problems in water supply in some areas of the country – explains the reasoning of the drastic restructuring introduced by Law 36/1994 for hydro services. The impossibility of avoiding natural monopoly and the necessity to industrialize the whole sector determined the imposition of a “for the market” competition in order to exploit possible economies of scale and scope. In this work, a group of Italian water utility companies is used to assess the sustainable efficiency of the Italian water sector, using the mathematical/linear programming of Data Envelopment Analysis (DEA). This well-known technique allows evaluating the systems efficiency not only by calculating the efficiency of each unit, but also helping policy makers by suggesting corrective policies and measures which could make the inefficient units efficient. This approach can be useful for policy makers to direct decisions towards a more sustainable and efficient water sector.

*Keywords: Water industry, Efficiency, Sustainability.*