

## TOP TEN

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# Cold Ironing Implementation at the Port of Piraeus

Commercial Shipping greatly contributes to greenhouse gases emissions. It is estimated that more than 840 Mt of CO<sub>2</sub> were emitted by the world fleet in 2020, representing about 2.5% of global CO<sub>2</sub> emissions. However, emissions are not limited to CO<sub>2</sub>, but also include SO<sub>x</sub>, NO<sub>x</sub>, PM among others, which are well-known pollutants contributing to climate change. This project's main goal is to provide an evaluation of a cold ironing station in the Mediterranean's largest commercial port to comply with future IMO regulations and help contribute to sustainable shipping is the main goal of this project. Specifically, this research is aiming at the comprehensive evaluation of the implementation of a cold ironing station in the containership terminal of the port of Piraeus. This project focuses on the technical and economic analysis of a shore power supply system, which supplies power generated from a nearby renewable power station. The power supplied from the cold ironing station will be estimated by computing the vessels' power demand while at berth. The typical cold ironing system layout will be applied and retrofitted for the port of Piraeus. A crucial factor, which enhances the sustainability of the provision of shore power, is the generation of the power supplied from renewables. Thus, this research will evaluate the development of a photovoltaic power station, while appraising the technical and economic requirements of such infrastructure. Consequently, the outcome of the project is to investigate whether the implementation of the cold ironing station in the port of Piraeus not only offers the potential for reducing GHG emissions, but also the potential to be a profitable investment for the shareholder of the project.

