

EUR24_23 - Challenges, Solutions & Opportunities for PV Solar Power for Offshore Facilities

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Abstract:

This paper presents a case study for a recent Company approved offshore oil and gas development project aims to install 19 platforms with off-grid photovoltaic (PV) and battery storage systems for economic and decarbonization purposes. The study explains the current practice and assesses challenges, of existing off-grid PV installations at similar platforms. The paper addresses identified challenges by analyzing and optimizing the electrical load profiles, adopting alternative technology solutions, introducing new engineering standards requirements, and establishing 3rd party services for operation and maintenance. Furthermore, this paper evaluates the economic feasibility for photovoltaic and battery storage compared to the conventional grid power to supply these platforms utilizing subsea cables. At the end, the study recommends future opportunities for offshore and onshore applications and highlights potential area of improvements, paving the road for future design enhancements and sustainable energy deployment.