

RESEARCH ARTICLE

An ecosystems perspective on the reconversion of offshore platforms: Towards a multi-level governance

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Abstract

The decommissioning of offshore platforms has been increasingly discussed due to its economic, social, and environmental impacts. The high complexity of this multi-level context pushes for the adoption of a service ecosystem view to explore the value propositions and actors' relations involved in resource exchanges. This study follows a mixed-method approach based on semistructured interviews conducted with oil and gas stakeholders and content analysis of the secondary data collected. The results highlight the ecosystem elements and identify the main drivers for sustainable growth in the process of the reconversion of oil and gas assets. A “meta” level is theorized to investigate how the actors' purposes can be harmonized with an ecosystem's goal to encourage the diffusion of a sustainable-oriented culture in the context of offshore decommissioning. In this sense, the study provides several insights for researchers and professionals in both the local and national governance field and the oil and gas industry.

KEYWORDS

decommissioning, mixed-method approach, offshore platform, service ecosystem, sustainable development, value proposition

1 | INTRODUCTION

Worldwide, the future of offshore platforms is increasingly discussed, mainly because their service lives are coming to an end (Day & Gusmita, 2016; Kruse et al., 2015; Tan et al., 2018). Offshore platforms are highly complex engineering structures that, over the years, have led to several environmental, economic, and social reflections (El-Reedy, 2019). When these constructions are in operation, they offer a valuable source of wealth by extracting hydrocarbons from the sea. On the other hand, when the oil deposit is exhausted, the management of these platforms can become particularly complex from an engineering standpoint and expensive in the process of decommissioning. In fact, under international rules, decommissioning is generally intended as the process of dismantling, removal of platforms, and restoration of the natural state of the area that has been the subject of engineering interventions.

However, the significant costs related to the process of decommissioning and environmental considerations have led to a gradual change in international guidelines and have paved the way for a more flexible approach based on the partial removal or reconversion of facilities according to a case-by-case approach (Henrion et al., 2015). A sustainable approach in the process of decommissioning has increasingly emerged due to the diffusion of readaptation of reuse initiatives, which can offer several advantages to the community and the environment (Basile et al., 2021; Capobianco et al., 2021).

Therefore, how to manage these facilities has become increasingly a collective problem due to their social, economic, and ecological impacts (Lakhal et al., 2009). The complexity of each activity, the high costs involved, the intricacy of the regulatory framework (Hamzah, 2003), the environmental impact (Kruse et al., 2015; Parente et al., 2006; Schroeder & Love, 2004), and the push to adopt an ecosystem view can help to explore the different resources, value propositions and co-creation practices arising from actors' engagement in