Understanding the role of oil and gas companies in the current sustainability trends. An application of the sustainable business model archetypes

Jaime Menéndez-Sánchez[1,2,3], Jorge Fernández-Gómez[1,2], Andrés Araujo-de-la-Mata[3,4]

[1]Orkestra-Basque Institute of Competitiveness (Deusto Foundation)

[2]Deusto Business School (University of Deusto)

[3]University of the Basque Country (UPV/EHU)

[4]Built Heritage Research Group (GPAC)

The oil and gas (O&G) industry reflects well the different shocks and crises affecting the global society. On the one hand, energy production and consumption forecasts strongly suggest that petroleum and natural gas will still play a leading role in the future energy landscape, mainly driven by the needs of a growing population and urbanization trends in emerging economies (EIA, 2021; UN, 2022). Therefore, this is a sector with relevant just (or fair) transition and sustainable development connotations (McCauley & Heffron, 2018; Krawchenko & Gordon, 2022). On the other hand, O&G companies face a complex process of evolution and adaptation to a new business reality determined by current sustainability trends (Pickl, 2019; Morgunova & Shaton, 2022). These firms show a large potential of innovation (Roberts & Flin, 2020), but how their business models can successfully respond to sustainability needs remains unclear.

In order to shed light on this issue, we reviewed the corporate sustainability strategies of a series of relevant O&G companies. The analysis sample was chosen following a previous analysis by the IEA (2020). Based on this, we applied the sustainable business model archetypes (SBMAs) taxonomy (Bocken et al., 2014; 2021), aiming to understand how technological innovation and business transformation by O&G companies fit into sustainability requirements. Furthermore, we focused on one O&G firm with large socio-economic importance in the Basque Country region (Northern Spain), with the purpose of mapping with detail its multi-stakeholder interactions with the surrounding innovation ecosystem.

Our results show that O&G companies are developing innovative technologies closely aligned with the needs of sustainable development and climate change mitigation.

Hydrogen, circular economy and the urban sustainable transition are fields with particular strategic importance for this sector. In addition, our focus analysis on a regional case in the Basque Country indicate that public-private multi-stakeholder collaboration is key for a successful quest of sustainability. Specifically, regional industrial cluster associations emerge as powerful partners, suggesting implications for the theory of creating shared value (Porter & Kramer, 2011) and opening promising avenues of further research for regional sustainable development.

References

Bocken, N. M. P., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production, 65*, 42-56. doi:10.1016/j.jclepro.2013.11.039

Bocken, N. M. P. & Short, S. W. (2021). Unsustainable business models – recognising and resolving institutionalised social and environmental harm. *Journal of Cleaner Production*, 312, 127828. doi:10.1016/j.jclepro.2021.127828

EIA (2021). International energy outlook 2021. Consumption. Retrieved from https://www.eia.gov/outlooks/ieo/consumption/sub-topic-01.php

IEA (2020). The oil and gas industry in energy transitions. World energy outlook special report. Retrieved from https://www.iea.org/reports/the-oil-and-gas-industry-in-energy-transitions

Krawchenko, T. A., & Gordon, M. (2022). Just transitions for oil and gas regions and the role of regional development policies. *Energies, 15*(13), 4834. doi:10.3390/en15134834

McCauley, D., & Heffron, R. (2018). Just transition: Integrating climate, energy and environmental justice. *Energy Policy, 119*, 1-7. doi:10.1016/j.enpol.2018.04.014

Morgunova, M., & Shaton, K. (2022). The role of incumbents in energy transitions: Investigating the perceptions and strategies of the oil and gas industry. *Energy Research & Social Science, 89*, 102573. doi:10.1016/j.erss.2022.102573

Pickl, M. J. (2019). The renewable energy strategies of oil majors - from oil to energy? *Energy Strategy Reviews, 26*, UNSP 100370. doi:10.1016/j.esr.2019.100370

Porter, M. E., & Kramer, M. R. (2011). Creating shared value. How to reinvent capitalism—and unleash a wave of innovation and growth. *Harvard Business Review, 89*(nos. 1-2), 62–77.

Roberts, R., & Flin, R. (2020). Unlocking the potential: Understanding the psychological factors that influence technology adoption in the upstream oil and gas industry. *SPE Journal, 25*(01), 515-528. doi:10.2118/198903-PA

UN (2022). World population prospects 2022: Summary of results. *UN DESA/POP/2022/TR/NO. 3*.