



Columbia Center on Sustainable Investment

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How International Oil Companies Could Assist Greece to Achieve the Sustainable Development Goals: A Conversation Starter

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Executive Summary

This policy paper focuses on how sustainability can be at the forefront of natural resource management, aiming at facilitating greater stakeholder dialogue on how the oil and gas industry can contribute to the 2030 Sustainable Development Goals (SDGs). In recent years, Greece has taken significant steps to stimulate exploration efforts and revive its oil and gas industry. This optimism about Greece's potential to become a major hydrocarbons producer is, nevertheless, combined with scepticism regarding whether tapping this potential can be combined with the protection of the country's ecosystem and its sustainable development. This paper wishes to be a timely contribution towards a fruitful debate among stakeholders; it urges International Oil Companies (IOCs) to examine how the critical SDGs for Greece can be integrated into their core business so that the oil and gas industry can contribute to the country's sustainable growth. For instance, IOCs can help Greece reduce its emissions and achieve its objectives under the Paris agreement by minimizing themselves their emissions and assisting the country in developing and implementing a national energy and climate plan for 2030 where gas and renewable energies would replace coal and oil in the energy mix (SDGs 7 and 13). Since IOCs operating in Greece ought to adopt high environmental standards in order to preserve the sensitive Mediterranean local ecosystem, coordinating in that matter with local scientists will ensure that all knowledge is gathered to protect the marine life and environment (SDGs 14 and 15). A key issue in Greece is the malfunctioning of the administrative system. The IOCs could train the relevant regulators and policymakers so as to strengthen the administrative capacity of the country in developing its natural resources; principles of integrity, transparency and openness should be at the core of this undertaking (SDG 16). Given the high unemployment rate in Greece and economic inequality, which have increased considerably since the financial crisis, IOCs have an opportunity to make a contribution to the economic development of the country by focusing on job creation and local content building through training programs (SDGs 10 and 8), and the development of the capability of the Greek Small and Medium Enterprises (SMEs) in order for them to participate in the oil and gas value chain and then export their specialized services to other markets (SDG 9). IOCs could fund programs that support innovation, research and development in the natural gas industry. They should also encourage female employment in the industry (SDG 5). They could collaborate with academic institutions in order to encourage the preference towards STEM education (SDG 4). The development of a highly skilled local labor force would reduce the 'brain drain' phenomenon in Greece.

The successful implementation of the sustainable development goals presupposes a multi-stakeholder partnership and collaboration. Though not an easy exercise in a society that is generally skeptical about the benefits of oil and gas development as in the case of Greece, it is a great opportunity for IOCs to engage with all involved parties and ensure the sustainable development of the oil and gas sector in the country (SDG17). This will enhance the public trust in IOCs operations in the country, which is key for their social license to operate.

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Introduction

Greece is at a critical turning point in its modern history. Greece aims to turn the page from a long period of deep economic recession to a dynamic recovery and sustainable growth. Thus, working decisively towards the Sustainable Development Goals (SDGs), which emphasize that economic growth needs to be accompanied by social fairness and environmental sustainability, would be of paramount importance.¹ The SDGs which should be prioritized in the case of Greece are those which address inefficiencies related to the high dependence on imports for energy production, high carbon emissions, lack of clean energy, lack of innovation and local dynamic industry, poor infrastructure, inefficient public bureaucracy, high degree of income inequality, high degree of corruption, high poverty rates, gender inequalities and high public debt. According to Professor Jeffrey Sachs, “Greece needs fairness, to cut corruption, empower women – too few are in Parliament – and help the poor. And it needs a green economy, with less pollution, protection for the Mediterranean, and sales of renewable energy – wind and solar – to the rest of Europe.”²

Therefore, the SDGs which are priorities for Greece are SDG7: Affordable and Clean Energy, SDG 13: Climate Action, SDG 14: Life Below Water, SDG 15: Life on Land, SDG 16: Good Governance and SDG 17: Partnership, SDG 8: Decent Work and Economic

¹ UN General Assembly. 2015. Transforming our world: the 2030 Agenda for Sustainable Development. Available at: http://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf

² Paleologos Y. 2017. Greece needs sustainable development – and debt relief. Ekathimerini. Available at <http://www.ekathimerini.com/221410/article/ekathimerini/comment/greece-needs-sustainable-development--and-debt-relief>

Growth, SDG 9: Innovation and Infrastructure Industry, SDG 10: Reduced Inequalities, SDG4: Quality Education, and SDG 5: Gender Equality. Greece is currently ranked 38th out of 157 countries in progress towards the SDGs in the SDG Index.³

The development of a sustainable and business-enabling oil & gas sector and especially a sustainable natural gas sector could significantly contribute towards the efforts of any country to achieve the SDGs.⁴ The development of the sector could generate job and business opportunities, local content development and significant government revenues.⁵ All the above could only be achieved provided that all stakeholders, national governments, the private sector institutions, local communities, civil society and non-governmental organizations and academia are collaborating so as to achieve the SDGs (SDG 17).

Hydrocarbon exploration in the Greek territory has been dormant since the mid-1990s. At that time there were unsuccessful drilling exploration attempts mainly in western Greece and afterwards the operations reduced for almost fifteen years. A domestic private oil company is currently the country's only offshore oil producer, in northeastern Greece, with an average production of about 2,800 barrels per day last year. Right in the heart of the crisis and invigorated by the successful discoveries in other countries' waters in the Mediterranean basin, Greece decided in 2011 to re-launch its effort and attract international and domestic companies interested in

³ It needs to be highlighted that SDGs are inter-related; for instance, improving the quality and accessibility of education results in a more skillful workforce, reduces socio-economic inequalities and leads to a more competitive economy.

⁴ IPIECA. UNDP. IFC. 2017. Mapping the oil and gas industry to the Sustainable Development Goals: An Atlas. Available at: <http://www.ipieca.org/resources/awareness-briefing/mapping-the-oil-and-gas-industry-to-the-sustainable-development-goals-an-atlas/>

⁵ The Global Economy.com. Oil Revenue Country Rankings. Available at: https://www.theglobaleconomy.com/rankings/Oil_revenue/

investing in the exploration and exploitation of hydrocarbons in the country.⁶ The government launched an open tender in 2012, and in 2014, it signed three exploration licenses for one onshore and two offshore blocks in Western Greece.⁷ The government continued with two further licensing rounds, for 3 onshore and 20 offshore blocks, in 2014. So far, seven blocks have been awarded to domestic and international oil companies (IOCs) while ExxonMobil, Total and Repsol in Joint Ventures with local Hellenic Petroleum S.A. have recently been awarded a concession to explore offshore Crete and in the Ionian Sea.⁸

Recent investments and interest for hydrocarbon exploration in Greece by oil and gas majors are a great chance for both the local stakeholders and the IOCs to think, at an early stage, how their investments in the exploration and exploitation of natural resources could also contribute towards the country's achievement of the SDGs.⁹ For IOCs, contributing to SDGs carries many benefits; in addition to obtaining long-term 'social license' where they operate, they could also accrue reputational benefits in the home country and abroad, and enhance their chances of being the government's preferred partner for future developments.¹⁰

⁶ Kourniotis Y. 2016. The oil and gas review – Edition 4. The law reviews.

Available at: <https://thelawreviews.co.uk/edition/the-oil-and-gas-law-review-edition-4/1140330/greece>

⁷ Laggou C. 2014 Hydrocarbon contracts open a new market. Ekathimerini. Available at:

<http://www.ekathimerini.com/159940/article/ekathimerini/business/hydrocarbon-contracts-open-a-new-market>

⁸ Oil and Gas Journal. 2017. Greece opens frontier Ionian sea, south of Crete exploration. Available at:

<https://www.ogj.com/articles/print/volume-115/issue-8/special-report-offshore-europe/greece-opens-frontier-ionian-sea-south-of-crete-exploration.html>

⁹ For more information on Greece's natural gas sector's legal framework See: Norton Rose Fullbright, Oil and gas in Greece. Available at

<http://www.nortonrosefullbright.com/knowledge/publications/126390/oil-and-gas-in-greece>

¹⁰ Tideman D., Kombargi R., Oushoorn R., Rizzi C., Landau R. 2012. Government- facing strategy for oil and gas companies Developing a productive relationship with host governments. Strategy&

Available at: https://www.strategyand.pwc.com/media/file/Strategyand_Government-facing-strategy-for-oil-and-gas.pdf

Affordable and Clean Energy (SDG 7), Climate Action (SDG 13),
Life Below Water (SDG 14), Life on Land (SDG 15)



In summary:

SDGs 7 and 13 call on IOCs to facilitate access to clean energy research, promote investment in energy infrastructure and clean energy technology and improve energy efficiency. IOCs could help governments achieve these goals by increasing the share of low carbon energies and technologies in the global energy mix (SDG7). Additionally, IOCs should develop their business strategy towards reducing the carbon emissions from their operations (SDG13).

SDG 14 requires IOCs to sustainably manage and protect marine and coastal ecosystems from pollution, as well as to minimize the impacts of ocean acidification. Given that a significant part of oil and gas extraction comes from offshore deposits, with high risk exposure to marine biodiversity, it is imperative for IOCs to engage first in extensive preliminary scientific research, in partnership with national or local institutions, so as to get a thorough understanding of the region's marine ecosystem, into which they will operate. In parallel, IOCs should adopt standards, procedures and safety systems in every phase of operation to prevent an incident or effectively respond to it. Similarly, SDG 15 focuses specifically on managing forests sustainably, halting and reversing land and natural habitat degradation. IOCs should also scale up research in innovation and technology that aim at reducing the impact and related risks of their operations on local biodiversity (SDG15). Through establishing

biodiversity and ecosystem protection principles into the corporate governance and business practices, IOCs will have more leverage to secure their project's social license.

Greece imports almost 100% of its oil and gas supply, which accounts for nearly two-thirds of its total primary energy supply (TPES); it has the seventh-highest fossil fuel share (84%) among International Energy Agency (IEA) member countries.¹¹ Greece also relies on coal for its electricity production so the country is characterized by a “high carbon intensity of the economy.”¹² The Government seeks to diversify energy sources and reduce the CO₂ intensity of the economy. Under the EU Renewable Directive, Greece should achieve 18% of its gross final energy consumption being produced from renewables by 2020; in 2016, the country had managed to reach 16% of the 18% target.¹³ Greece has managed to decrease carbon emissions considerably since 2007 because of an increase in the use of natural gas and renewables for power generation which has reduced the carbon intensity of the power sector by 26% (as of 2015), but Greece is still above the IEA average and needs to make further efforts.¹⁴ The IEA highlights that although the current policies would allow the country to achieve the EU2020 carbon-emission reduction target, this emission reduction is

¹¹ IEA. 2017. Greece 2017 Review. Available at: <https://www.iea.org/publications/freepublications/publication/EnergyPoliciesofIEACountriesGreeceReview2017.pdf>

¹² Ibid.p.83

¹³ Assimakiis D., Kitsilis M. 2017. Shifting to auctions for renewable energy capacity in Greece. Norton Rose Fulbright. Available at:

<http://www.nortonrosefulbright.com/knowledge/publications/148943/shifting-to-auctions-for-renewable-energy-capacity-in-greece>

For Greece's plan to auction 2.6 gigawatts of solar and wind projects See: Bloomberg. 2018. Greece Kicks Off \$3.6Billion Program for Solar, Wind Projects. Available at:

<https://www.bloomberg.com/news/articles/2018-04-30/greece-kicks-off-3-6-billion-program-for-solar-wind-projects>

¹⁴ IEA. 2017. Greece 2017 Review.

mainly related to the fact that demand for energy has decreased due to the financial crisis. Thus, when the economy recovers, the current policies will not be efficient, so the government needs to formulate a long-term plan which will further increase the use of renewables in the energy mix.¹⁵

In a recent report by the UK Sustainable Investment and Finance Association (UKSIF), the reputational damages and litigations expected from the (justified) perception of the role of IOCs in climate change are expected to have a direct impact on the valuation of the companies.¹⁶ Therefore, it is immensely important for the IOCs operating in Greece to contribute actively to the formation of a ‘low-carbon, secure, competitive economy’ in Greece under the EU Climate Strategy.¹⁷ IOCs could assist Greece to gradually reduce the use of oil and coal for energy production by encouraging the use of natural gas and renewables in the energy mix, consequently lowering GHG emissions and leading towards a decarbonized economy powered by renewables.¹⁸

The great potential of the renewables sector in Greece was highlighted in a recent IEA report: Greece has more than 250 days of sunshine a year and a significant wind capacity, which pose a great business opportunity for IOCs that have already been

¹⁵ IEA. 2017. Greece 2017 Review.

¹⁶ UKSIF.2018. Not long now, Survey of fund managers’ responses to climate-related risks facing fossil fuel companies. Available at: <http://uksif.org/wp-content/uploads/2018/04/UPDATED-UKSIF-Not-Long-Now-Survey-report-2018-ilovepdf-compressed.pdf> [Accessed 20.05.2018.]

¹⁷ European Commission.2018. Energy Union and Climate. Available at https://ec.europa.eu/commission/priorities/energy-union-and-climate_en [Accessed 20.05.2018.]
Enterprise Greece. 2018. Energy. Available at <https://www.enterprisegreece.gov.gr/en/invest-in-greece/sectors-for-growth/energy>

¹⁸ IPIECA. UNDP. IFC. 2017. Mapping the oil and gas industry to the Sustainable Development Goals: An Atlas.

investing in renewables all over the world.¹⁹ Shell, for example, is investing up to \$2 billion in new energies per year up to 2020.²⁰ Indeed, IOCs are adapting to this period of transition into a low-carbon economy, and some have been acquiring a number of electricity providers in order to provide cleaner energy to consumers.²¹ For instance, Total plans to sell electricity to consumers generated from natural gas extracted by the company and from solar energy.²² Total has acquired a local electricity provider Direct Energie in a €1.4bn deal which Total's chief executive and chairman said "is part of the group's strategy to expand along the entire gas-electricity value chain and to develop low-carbon energies."²³ In a similar action, Shell acquired First Utility in 2017.²⁴ Greece's plan for the privatization of the key electricity provider, PPC SA (DEI), could also be a great opportunity for the IOCs operating in Greece's upstream business; they could supply the market with electricity powered by domestic natural gas and renewable sources of energy which they would produce in a competitive environment. By investing in the renewable sector of Greece, IOCs could help Greece achieve the EU goal of 18% renewable target by 2020 and subsequently the 27% renewable target by 2030 and to gradually achieve the Paris Agreement goals for the

¹⁹ IEA. 2017. Greece 2017 Review.

²⁰ Craig. R. 2018. Shell to invest 'up to \$2 billion' in New Energies. Wind Power Monthly. Available at: <https://www.windpowermonthly.com/article/1461955/shell-invest-up-2-billion-new-energies>

²¹ Ward. A. Lesile H. 2018. Major dilemma: oil companies hedge bets on low-carbon future. Financial Times. Available at: <https://www.ft.com/content/eaccce64-4211-11e8-803a-295c97e6fd0b>

Reed. S. 2017. Shell, Seeking to Curb Its Carbon Footprint, Buys Electricity Provider. New York Times. Available at: <https://www.nytimes.com/2017/12/21/business/energy-environment/shell-first-utility-carbon-emissions.html>

²² The Wall Street Journal. 2017. Total Eclipse: Oil Giant Sees Its Future in Electricity. Available at: <https://www.wsj.com/articles/when-total-a-global-oil-giant-imagines-the-futureits-electric-149736628>

²³ Ward. A. Lesile H. 2018. Major dilemma: oil companies hedge bets on low-carbon future. Keohane D., Oliver J., Ward A. 2018. Total buys electricity retailer Direct Energie for €1.4bn. Financial Times. Available at <https://www.ft.com/content/c083e56a-42e9-11e8-803a-295c97e6fd0b>

²⁴ Ward. A. Lesile H. 2018. Major dilemma: oil companies hedge bets on low-carbon future

decarbonization of the economy.²⁵ Investing in solar power could not only help Greece reduce carbon emissions but, since it is a domestic source of energy in comparison with imported oil, would also decrease electricity prices and reduce the degree of energy poverty in Greece where “six out of every 10 households are struggling to pay their energy bills.”²⁶ So investing in renewables would allow IOCs to maintain their social license and improve their public image in the country, and could also enable them to attract top talent, especially bright millennials, who are less and less inclined to seek careers in oil and gas due to the negative connotations associated with the industry.²⁷ This investment could happen in collaboration with other multilateral institutions such as the European Bank for Reconstruction and Development (EBRD), which already has in place a €300 million renewables framework.²⁸

Since IOCs have experience in different countries, they could also assist Greek stakeholders in the development of a national climate policy and energy framework for 2030 (as recommended by the IEA).²⁹ The IOCs could collaborate with local universities and other related institutions and provide expertise and fund programs on further research into climate change, the responsible use of energy and energy

²⁵ Enterprise Greece. 2018. Energy.

²⁶ Naidoo K. 2015. Solarizing Greece is a way out of the crisis. Available at: <https://www.greenpeace.org/archive-international/en/news/Blogs/makingwaves/Solarizing-Greece/blog/53662/>

²⁷ World Economic Forum. 2016. Future of Oil & Gas.
Adomaitis. N. 2018. Statoil to become Equinor, dropping 'oil' to attract young talent. Reuters. Available at: <https://uk.reuters.com/article/us-statoil-agm-equinor/statoil-to-become-equinor-dropping-oil-to-attract-young-talent-idUKKCN1IGOMN> [Accessed 23.06.2018.]
Statoil has changed its name into Equinor in order to be able to attract millennial and younger employees in general.

²⁸ Berenguel-Anter A. 2018. Improving the safety of oil production in Greece. EBRD. Available at: <http://www.ebrd.com/news/2018/improving-the-safety-of-oil-production-in-greece.html>

²⁹ IEA. 2017. Greece 2017 Review.

efficiency. Finally, IOCs could also use advertising campaigns to educate the public on the responsible use of energy and on forms of clean energy.³⁰

Offshore oil and gas development, by its nature, has an environmental impact on the marine, coastal and terrestrial ecosystem. Potential environmental impacts include, among others: methane emissions, impact on biodiversity, marine and freshwater pollution, soil and groundwater contamination.³¹ Greece is considered a “hot spot” for biodiversity, hosting a valuable and unique ecosystem.³² Therefore, it should be a priority for world-class IOCs, which have started or will start onshore operations in Greece, to adopt high environmental standards at the project level and integrate in their management systems, practices and technologies that minimize the impact on the marine, coastal and terrestrial environment as well as biodiversity (SDG 14 & 15).³³ Moreover, the preservation of the local ecosystem requires a synergistic approach among local policymakers, IOCs and in particular local scientists who have deep knowledge about the sensitivities of the local environment. Therefore, the IOCs, before proceeding to operations, should partner with and fund local scientists and

³⁰ IPIECA. UNDP. IFC. 2017. Mapping the oil and gas industry to the Sustainable Development Goals: An Atlas.

³¹ UNEP.1997. Environmental management in oil and gas exploration and production. Available at: <https://wedocs.unep.org/bitstream/handle/20.500.11822/8275/-Environmental%20Management%20in%20Oil%20&%20Gas%20Exploration%20&%20Production-19972123.pdf?sequence=2&isAllowed=y>

³² European Environment Agency. 2015. Greece country briefing - The European environment — state and outlook 2015. Available at <https://www.eea.europa.eu/soer-2015/countries/greece#tab-related-briefings> As an acknowledgment of its significance for the country, the government launched in 2014 the National Biodiversity Strategy Action Plan

Hellenic Republic Ministry of Environment, Energy & Climate Change.2014. National Biodiversity and Strategy Action Plan. Available at: <https://www.cbd.int/doc/world/gr/gr-nbsap-01-en.pdf>

Valanidis A. 2018. Environmental Pollution of Marine and Coastal Areas in Greece. Chem-Tox-Ecotox. Available at: <http://chem-tox-ecotox.org/wp-content/uploads/2018/02/SEA-COASTAL-AREAS-PDF-GREECE-POLLUTION-August-2017-2.pdf>

³³ IPIECA. UNDP. IFC. 2017.

scientific institutions to conduct studies examining and providing research on the region's ecosystem and the potential impacts on it from oil and gas operations.³⁴

Last year's oil spill in Greece, across the Saronic Gulf coastline, caused extended ecological damage on the ecosystem.³⁵ The administration's response to the accident came late and lacked sufficient coordination.³⁶ To this end, the IOCs could initiate a Joint Industry Project, in collaboration with the relevant Greek governmental authorities, to adopt the highest standard guidelines for oil spill preparedness; the IOCs could also provide specific training to public officials for responsiveness in case of spills and accidents from large-scale oil activities. That would be in line with the spirit with the Global Initiative (GI) established by the International Petroleum Industry Environmental Conservation Association (IPIECA); it brings together industry and governments in order to provide guidance to countries in effective oil spill frameworks.³⁷

As governments around the world become more willing to advance offshore and onshore resources exploitation, in numerous instances they underestimate the ecological impact that the oil and gas industry could have on other vital industries of the economy such as fishing and tourism. For instance, the decision of the Portuguese government to support oil exploration off the Algarve coast, a region that generates considerable revenue from tourism, faced such a strong criticism from political

³⁴ IAP. 2017. Supporting the Sustainable Development Goals: A Guide for Merit-Based Academies. Available at: http://www.interacademies.org/IAP_SDG_Guide.aspx

³⁵ Smith H. 2017. Greek oil spill forces closure of Athens beaches. Guardian. Available at <https://www.theguardian.com/world/2017/sep/14/greek-oil-spill-forces-closure-athens-beaches>

³⁶ Hadoulis J. 2017. Blame game in Greece as oil spill spreads to Piraeus port. Phys Org. Available at: <https://phys.org/news/2017-09-blame-game-greece-oil-piraeus.html>

³⁷ IPIECA. UNDP. IFC. 2017.

parties, interest groups and civil society that the government was forced to suspend operations.³⁸ Indicatively, the Association of Hotels in Portugal (AHP) pointed out that “sustainable tourism and oil exploration are not compatible as this decision will damage the image of the region as a whole as a tourist destination.”³⁹ In Greece, the tourism industry, followed by the fishing and agricultural sector, is a significant source of economic growth and employment. Thus, any activity that could potentially negatively affect these sectors, would also have negative impact for the local economy. Crete and the Ionian Sea are the next areas now licensed for exploration and exploitation.⁴⁰ These areas are very popular tourist destinations in Greece: hence there is an opportunity for both government and IOCs to consider implementing a number of policies and measures that will ensure the preservation of the ecological integrity of the area. The Greek government, in collaboration with the IOCs, could develop or finance an integrated marine management plan⁴¹ for the sea areas of Crete and the Ionian islands. The plan should be drawn up by a group of local and international experts following the example of the Norwegian government.⁴²

³⁸ De Beer B. 2018. Algarve oil drilling approved. Portugal News. Available at: <http://www.theportugalnews.com/news/algarve-oil-drilling-approved/45624>

³⁹ Donn. N. 2018. 'Why risk Portugal's biggest export industry?' Portugal's hoteliers' issue anti-oil statement. Algarve Daily News. Available at: <https://www.algarvedailynews.com/news/14312-why-risk-portugal-s-biggest-export-industry-portugal-s-hoteliers-issue-anti-oil-statement>

⁴⁰ ANA-MPA. 2017. Greece launches tenders for hydrocarbon exploration/exploitation. Available at: <http://www.amna.gr/en/article/210715/Greece-launches-tenders-for-hydrocarbon-explorationexploitation>.

⁴¹ A marine management plan should include information on environmental conditions of the area (including the identification of particularly valuable and vulnerable areas), commercial activities in the sea area (fisheries, maritime transport) and other socioeconomic conditions, with the aim to provide an overall framework for both existing and new activities in the area and to facilitate the coexistence of conflicting industries and activities that affect the marine environment through a monitoring process.

⁴² Norwegian Environment Agency. 2013. Conflicting interests and the need for coordination. Available at: <http://www.miljodirektoratet.no/old/klif/publikasjoner/2929/ta2929.pdf>

Good Governance (SDG 16) Partnership (SDG 17)



In summary:

SDG 16 calls for peaceful and inclusive societies, based on the rule of law and good governance at all levels. It also envisions transparent, effective and accountable institutions. Therefore, IOCs should embed a triptych into their business strategy: (1) to strengthen governance institutions through building administrative capacity and expert knowledge; (2) to abide by and promote strong anti-bribery and anti-corruption rules; and (3) to put strong emphasis on 'inclusive societies' by enhancing participation and inclusivity in decision-making.

The SDGs can only be met if all stakeholders work together. SDG 17 requires the governments, NGOs, scientists, businesses, local communities, and international organizations to collaborate so as to achieve the SDGs. IOCs should bring together all the relevant stakeholders and create platforms for setting shared goals in the countries where they operate.

One of the crucial factors delaying reforms in economy and society in Greece is the malfunctioning of the administrative system,⁴³ which has been highlighted in numerous reports that claim enhancing administrative capacity (that is, the efficiency of public administration) is a key issue in Greece.⁴⁴

⁴³ OECD. OECD Public Governance Reviews - Greece: Review of the Central Administration. Available at: <http://www.oecd.org/gov/oecdpublicgovernancereviews-greecereviewofthecentraladministration.htm>

⁴⁴ OECD. 2017. Reform Agenda for 2017. Overview and Country Notes: Greece.

The matter is worse when it comes to the administration of the oil and gas industry since it is a relatively new industry in Greece:⁴⁵ the Greek government lacks the capacity to design, implement and monitor policies and procedures for oil and gas project development. Greece is among the countries that have not yet built adequate administrative capacity and expert knowledge regarding offshore environmental health and safety regulations.⁴⁶ For instance, an EBRD report emphasized that the capacity of the Hellenic Hydrocarbons Resource Management (HHRM) should be strengthened.⁴⁷ HHRM needs to further develop the required regulatory and technical package, systems and guidelines for the industry, including, among others, hazard identification and impact assessment models and detailed emergency response plans so as to ensure the satisfactory implementation of the requirements of the European Directive on offshore safety.⁴⁸

The IOCs, through training of the relevant regulators and policymakers, could help strengthen the administrative capacity of the country. The training of public officials could be a combination of undertaking training courses in independent international

IMF. 2017. Greece: 2017 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Greece. Available at:

<https://www.imf.org/en/Publications/CR/Issues/2017/02/07/Greece-2017-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-by-the-44630>

OECD. 2016. Tackling poverty and inequality in Greece is crucial to recovery from crisis. Available at <http://www.oecd.org/greece/tackling-poverty-and-inequality-in-greece-is-crucial-to-recovery-from-crisis.htm>

⁴⁵ Upstream natural gas in Greece exists but is minimal. Prinos, for example, discovered gas in 1930 and started development in 1970. Other than that, the country has not developed any other gas fields.

⁴⁶ European Commission. 2016. Report from the Commission on the adequacy of national expert resources for complying with the regulatory functions pursuant to Article 27(4) of Directive 2013/30/EU. Available at: <https://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:52016DC0318&from=en>

⁴⁷ EBRD. 2016. Strategy for Greece.

⁴⁸ DIRECTIVE 2013/30/EU of the European Parliament and of the Council of 12 June 2013 on safety of offshore oil and gas operations and amending Directive 2004/35/EC. Available at: https://www.greekhydrocarbons.gr/pdfs/offShoreSafety/Directive_2013_30.pdf

training centers around the world such as OPITO (Offshore Petroleum Industry Training Organization) and CCSI (Columbia University Centre on Sustainable Investment)⁴⁹ and “on the job” training on IOC premises as observers, i.e. in oil rigs and platforms in the sea and deserts, in refineries, etc. Although “on the job training” diverges from the traditional way of public official training, it would provide the officials with technical competency, as they would have the chance to apply what they have learned during the training courses in real life situations. Training of public officials and regulators on matters related to oil and natural gas would also benefit the IOCs, as it will improve the communication between the government and the companies and would minimize undue delays regarding policy implementation.⁵⁰ The response of British Gas (BG) to the request of the prime minister of Kazakhstan for improved in-country training on environmental management seems to be a good example of strengthening the skills and the capacity of civil servants.⁵¹ BG has funded a training program in environmental issues and technology and hired professors from academic institutions from the UK to train the public officials.⁵²

In many cases, the discovery of natural resources has negative effects on local institutions, increases the degree of corruption and leads to the resource curse if the

⁴⁹ Toledano P., Tornaritis A. 2018. How International Oil Companies Could Assist the Republic of Cyprus to Achieve the Sustainable Development Goals. Columbia Centre on Sustainable Investment.

⁵⁰ IEA. 2017. Greece 2017 Review.

⁵¹ McPhail K. Davy A. 1998. Integrating Social Concerns into Private Sector Decision making. World Bank. Available at: <http://documents.worldbank.org/curated/en/286821468770431941/pdf/multi-page.pdf>

⁵² McPhail K. Davy A. 1998. Integrating Social Concerns into Private Sector Decision making. World Bank. Available at: <http://documents.worldbank.org/curated/en/286821468770431941/pdf/multi-page.pdf>

Norway has “local content provision” in its legal framework providing that a licensee is obliged to provide local training to civil servants from Norwegian authorities with the aim to develop skillful personnel. For more info see: Toledano P., Thomashausen S., Jia S. 2016. Local Content: Norway-Petroleum. CCSI. Available at: <http://ccsi.columbia.edu/files/2014/03/Local-Content-Norway-Petroleum-CCSI-May-2016.pdf>

resources are not properly managed.⁵³ In a 2013 poll, the oil and gas industry was voted the least-trusted industry.⁵⁴ Greece has been affected by numerous corruption scandals in recent years.⁵⁵ The Transparency International corruption index 2017 ranked Greece at 59, making it among the most corrupt EU states.⁵⁶ Moreover, there is a widespread perception among the Greek public that the country's current economic misfortune is closely related to the high degree of corruption, so adhering to a strict anti-corruption process is key for the social license to operate in Greece.⁵⁷ IOCs should also demand that anti-corruption systems be put in place by their local partners through the value chain. The adoption of open contracts would enhance the public's trust in IOCs' operations in the country.⁵⁸

Multi-stakeholder partnerships and collaborations are essential for the successful implementation of the SDGs.⁵⁹ Therefore, since the development of the oil and gas sector is still at an early stage in Greece, it is essential for the IOCs to already commit to mutually beneficial collaboration initiatives with multi-sector partners, NGOs, academia, and the local scientific community so as to ensure a successful and durable partnership model for their investments.⁶⁰

⁵³ *ibid.*

⁵⁴ World Economic Forum. 2016. Future of Oil & Gas. Available at: http://www3.weforum.org/docs/GACFutureofOilandGas_Executive_Summary.pdf.

⁵⁵ Johnston A. 2017. The rains of Athens: Stopping the floods. Transparency International. Available at: <https://transparency.eu/the-rains-of-athens/>

⁵⁶ Transparency International. 2017. Greece. Available at: <https://www.transparency.org/country/GRC>

⁵⁷ Dolan. C. 2017. Crisis? What crisis? Transparency International. Available at: <https://transparency.eu/cpi16/>

⁵⁸ Munilla I., Brophy. K. Contract Disclosure Survey. OXFAM. Available at <https://www.oxfam.org/en/research/contract-disclosure-survey-2018>

⁵⁹ UN. 2002. The Johannesburg Declaration on Sustainable Development. Available at <http://www.un-documents.net/jburgdec.htm>

UN. 1992. United Nations Conference on Environment and Development, Rio de Janeiro, June 1992, Agenda 21. Available at <https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>

⁶⁰ IPIECA. UNDP. IFC. 2017.

A segment of the Greek public is already very skeptical about Greece's plans for oil and gas development. They believe that oil and gas development will harm the environment and the potential of local economies for economic development. Last month thirty four non-governmental organizations addressed a joint letter to the Prime Minister of Greece, requesting the cancellation of all investments on fossil fuels in order to meet the climate change targets and secure a clean future.⁶¹ In north-western Greece, a local Initiative, "Against Drilling in Epirus", has recently been formed;⁶² it involves environmental organizations and local groups that are opposed to the plans of the oil company Repsol for onshore extraction, with the argument that the operation is going to undermine the life of the locals and that the concession areas affect important protected sites. Actually the social resistance against the gold mining investment project of Eldorado Gold in the environmentally sensitive Halkidiki region has created a bad precedent for natural resource investments.⁶³ Therefore, it is a critical time for IOCs to partner with the affected communities and NGOs with the aim to achieve a) an environment where the IOCs could efficiently operate in; and b) tangible economic and social benefits for society.

The formation of a robust and dynamic relationship among the IOCs with the local community is crucial, as it is the party affected the most by the impact of oil and gas operations. IOCs recognize that a conflict with the local community can cost huge amounts of money and set the investment back by years. Thus, they tend to turn their

⁶¹ <https://www.insider.gr/eidiseis/politiki/102329/34-mko-zitoyn-parembasi-tsipra-gia-tin-klimatiki-politiki>

⁶² Save Epirus. 2018. Available at: <https://saveepirus.gr/about>

⁶³ Nikas S., Tugwell P., Bochove D. 2017. Greece: Where Literally Sitting on Goldmine Is Not Enough to Make Money. Bloomberg. Available at: <https://www.bloomberg.com/news/articles/2017-09-11/eldorado-s-greek-suspension-threatens-country-s-investment-image>

business strategy and behavior to a more “inclusive” approach. IOCs are now starting their community engagement efforts at least one or two years prior to expected project approval.⁶⁴ As a measure to overcome the initial reluctance of local communities and authorities, IOCs could organize periodic discussion with regional government departments and other local stakeholders to provide information about the project and later on, updates on the progress. Taking a participatory approach avoids the risk of being seen as arrogant and encourages local people to feel ownership of the project and thus become more active. For instance, IOCs should encourage community involvement in their environmental impact assessment (EIA) procedures; that is, ask community members to help collect social and economic data and participate in meetings to review and express their opinion for draft EIA documents. With this approach for transparency and public participation, IOCs will face significantly less community opposition during the project approval process.

In a parallel effort, IOCs can conduct a “needs assessment” in order to identify the critical priorities of the community. For instance, British Petroleum Exploration Colombia (BPXC), in its oil project in Colombia, worked together with affected communities to identify their development needs and concerns. The latter specified their demands (schools, health clinics, water supply, and sanitation) and accordingly the development projects were prepared by the company and submitted to the local authorities for approval before the operations commenced. That sharing of

⁶⁴ IPIECA. UNDP. IFC. 2017.

responsibility created a sense of co-ownership of the project and the outcome was beneficial for both sides.⁶⁵

An example where the partnership between the IOCs and the local communities was a great success is that of the Norwegian Arctic town of Hammerfest, where natural gas development contributed towards the economic development of the community.⁶⁶ Natural gas activities have benefited the town economically and socially; the benefits include job creation, an increased demand for local suppliers of goods and services, a transformation of the town into an attractive, livable place, improvement of public services, such as better educational facilities, and finally opportunities to enjoy cultural and sport events.⁶⁷

Finally, it would be useful to reach, from an early stage, a tripartite agreement between the company, local government and community (e.g. by signing a Memorandum of Understanding). The agreement should guarantee a framework of collaboration between all the parties on equal footing and should stipulate multi-stakeholder governance mechanisms that in particular would ensure that IOCs would not deviate from the agreed provisions. In the case of Sakhalin island in Russia, where one of the largest oil and gas projects is being taking place, social and environmental movements were campaigning against the oil and gas development, concerned with the damage to rivers and disturbances to traditional practices, such as reindeer

⁶⁵ Davy A. McPhail K. Moreno F. S. 1999. BPXC's Operations in Casanare, Colombia: Factoring social concerns into development decision-making. World Bank. Available at: <http://siteresources.worldbank.org/INTRANETSOCIALDEVELOPMENT/873467-1111741676294/20502179/SDP31-bpxc.pdf>

⁶⁶ Loe, J.S. and Kelman, I., 2016. Arctic petroleum's community impacts: Local perceptions from Hammerfest, Norway. *Energy Research & Social Science*, 16, pp.25-34.

⁶⁷ Ibid.

herding and seasonal fishing.⁶⁸ As a result, the operator IOCs entered into a tripartite partnership with the regional government and regional authorized representatives of indigenous people in order to design a development plan with benefit sharing arrangements to indigenous communities.

Since NGOs are vocal against oil and gas development (the World Wildlife Fund launched a voting campaign against oil and gas drilling in Greece, for instance),⁶⁹ IOCs should establish a dynamic platform of dialogue and collaborate with NGOs that represent communities and interest groups so as to achieve the sustainable development of the industry. Moreover, IOCs should cooperate with local NGOs to design and implement the companies' Social Investment Programs.⁷⁰ This strategy would strengthen the capacity of local NGOs. Such a successful partnership took place in Azerbaijan, where BP provided the Open Society Institute (PSI-AF), as facilitator, with funds to organize the necessary training, mentoring and developing of skills of local NGOs, in order to build the capacity to monitor the social and environmental performance of the Baku-Ceyhan-Tbilisi (BCT) and the South Caucasus Pipeline (SCP) projects.⁷¹

⁶⁸ M.Tysiachniouk, L.Henry, M.Lamers, Jan P.M van Tatethove, 2018. Oil and indigenous people in sub-Arctic Russia: Rethinking equity and governance in benefit sharing agreements. *Energy Research & Social Science*, 37, pp.140-152

⁶⁹ Ekathimerini. 2018. Eco groups seek to block drilling off and on Greece's western coast. Available at: <http://www.ekathimerini.com/226230/article/ekathimerini/news/eco-groups-seek-to-block-drilling-off-and-on-greeces-western-coast>
<https://support.wwf.gr/action/say-no-to-oil>

WWF. 2018. WWF Ελλάς και Greenpeace για την εξόρυξη υδρογονανθράκων στην Ήπειρο. Available at: <http://www.wwf.gr/news/2055-eksoryksi-ydrogonanthrakon-stin-ipeiro>

⁷⁰ IPIECA. UNDP. IFC. 2017. Social investment (SI) programs are defined as the voluntary contributions companies make to the communities and broader societies where they operate, with the objective of benefiting external stakeholders, typically through the transfer of skills or resources.

⁷¹ IPIECA. UNDP. IFC. 2017.

Quality Education (SDG 4), Gender Inequality (SDG 5), Decent Work and Economic Growth (SDG 8), Industry, Innovation and Infrastructure (SDG 9), Reduced Inequalities (SDG 10)



In summary:

SDG4 is about the formation of a high-standard education system in a country which is equally accessible by all citizens. Education of a high standard is key for countries to achieve higher rates of sustainable economic growth. IOCs could help to achieve this by getting into partnerships with and assisting local schools and universities, by developing high-standard STEM curricula and degrees, and by helping in the creation of local technical academies for a new generation of competent oil and gas technicians and engineers to emerge.

SDG5 is intended to end gender inequalities. By encouraging more women to join the oil and gas industry and by offering equal opportunities to both women and men, IOCs could help to end gender inequality in the countries where they operate.

SDG8 is about achieving sustainable economic growth which can offer decent job opportunities to all people and minimize unemployment levels all over the world. By assisting local companies to develop a local capacity to support the IOCs' operations in the country, by hiring local employees and by adhering to the highest labor standards, IOCs could contribute towards this goal.

The objective of SDG9 is the enhancement and the encouragement of innovation among local entrepreneurs, the development of robust and sustainable local industries and the development of infrastructure of a high standard. IOCs can play an important role in the achievement of this goal by developing and funding local schemes to encourage local entrepreneurship, and by collaborating with governments, they could finance the construction of a high-quality infrastructure.

SDG10 is about the eradication of economic and social inequalities. IOCs could contribute to the eradication of socio-economic inequalities by creating jobs accessible to locals, investing in local content development, assisting in the development of local service companies in the countries where they operate.

It is commonly accepted that the economic policies of the past thirty years by successive governments in Greece distorted the growth model of the country and led it to the brink of bankruptcy in 2010.⁷² That led to the signing of three Memorandums (Economic Adjustment Programmes) — in fact, Bailout Loan Agreements, totaling €246 billion (2010, 2012, 2015). The Greek economy is now moving from a state of prolonged economic crisis to a state of economic recovery. Following a very strict economic and fiscal policy as imposed by the international creditors-lenders, GDP has only recently started to recover after having fallen by a quarter from 2008 to 2016.⁷³ In 2017, Greece's GDP expanded by 1.4 %, marking the first time that real GDP growth has exceeded 1% since 2007.⁷⁴ GDP growth is projected to accelerate to 2% in 2018 and 2.3% in 2019.⁷⁵ The OECD's 2018 Economic Survey of Greece suggests that maintaining the reform momentum will be essential to sustaining the recovery and moving towards a more inclusive and prosperous society.⁷⁶

Nevertheless, the stabilization of the economy came at a high human cost in terms of unemployment, poverty and shrinkage of incomes.⁷⁷ In a 2016 survey by the OECD,

⁷² The Bank of Greece. 2014. The Chronicle of the Great Crisis, 2008-2013. Available at:

<https://www.bankofgreece.gr/BogEkdoseis/The%20Chronicle%20of%20the%20Great%20Crisis.pdf>

⁷³ Hellenic Statistical Authority. 2018. The Greek Economy, Hellenic Statistical Authority. Available at:

http://www.statistics.gr/documents/20181/7146171/greek_economy_02_03_2018.pdf/6f383063-d9df-4dc7-9a34-a852057a9fdf

⁷⁴ European Commission. 2018. Economic forecast for Greece. Available at:

https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-performance-country/greece/economic-forecast-greece_en

⁷⁵ OECD. 2018 Economic Survey of Greece. Available at <http://www.oecd.org/eco/surveys/Greece-2018-OECD-economic-survey-overview.pdf>.

Foundation for Economic & Industrial Research. 2018. The Greek Economy Quarterly Bulletin.

Available at: http://iobe.gr/docs/economy/ECO_QI_2018_REP_GR.pdf

⁷⁶ Piso M., Bulman T. Achieving an inclusive and sustainable recovery in Greece. OECD. Available at

<https://oecdecoscope.wordpress.com/2018/04/30/achieving-an-inclusive-and-sustainable-recovery-in-greece/>

⁷⁷ Andriopoulou E. Karakitsios A. Tsakoglou. P. 2017. Inequality and Poverty in Greece: Changes in

Times of Crisis. LSE Hellenic Observatory Papers. Available at

<http://eprints.lse.ac.uk/85329/1/GreeSE%20116.pdf>

the findings showed that poverty in Greece had risen dramatically since the financial crisis in 2009, currently affecting a third of the population.⁷⁸ Economic inequality has also increased considerably since the financial crisis, with the income of the poorest segments of society affected the most.⁷⁹ The OECD found that the gap between the richest and the poorest was substantial (the top 20% had six times the income of the bottom 20%).⁸⁰ The unemployment rate in Greece is also very high (20.9%) in particular among the younger generation (around 43.7% in 2017),⁸¹ and the female unemployment rate is also one of the highest in the EU.⁸² The OECD report highlighted that “tackling poverty and inequality must be urgent priorities.”⁸³

High degrees of poverty and income inequality could have a negative impact on IOCs’ operations around the world, as they are associated with a high degree of policy

⁷⁸ OECD. 2016. Tackling poverty and inequality in Greece is crucial to recovery from crisis. Available at: <http://www.oecd.org/greece/tackling-poverty-and-inequality-in-greece-is-crucial-to-recovery-from-crisis.htm>

<http://eprints.lse.ac.uk/85329/1/GreeSE%20116.pdf>

⁷⁹ OECD. 2017. Reform Agenda for 2017. Overview and Country Notes: Greece. Available at: <https://www.oecd.org/eco/growth/Going-for-Growth-Greece-2017.pdf>

⁸⁰ OECD. 2016. Better Life Index: Greece. Available at: <http://www.oecdbetterlifeindex.org/countries/greece/> [Accessed 21.06.2018.]

⁸¹ OECD. 2016. Better Life Index: Greece.

Hellenic Statistical Authority. 2018. Available at <http://www.statistics.gr/en/home/> [Accessed 21.06.2018.]

Reuters. 2018. Greek unemployment steady at 20.9 percent in November, more than twice euro zone's. Available at: <https://www.reuters.com/article/us-eurozone-greece-unemployment/greek-unemployment-steady-at-20-9-percent-in-november-more-than-twice-euro-zones-idUSKBN1FS1CT> [Accessed 21.06.2018.]

⁸² Andriopoulou E. Karakitsios A. Tsakoglou. P. 2017. Inequality and Poverty in Greece: Changes in Times of Crisis.

IMF. 2017. Greece: 2017 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for Greece. Available at <https://www.imf.org/en/Publications/CR/Issues/2017/02/07/Greece-2017-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-by-the-44630>

The IMF (2017) p.2. acknowledges the severe impact of fiscal consolidation on Greek society: “extensive fiscal consolidation and internal devaluation have come at a high cost to society, reflected in declining incomes and exceptionally high unemployment”

⁸³ OECD. 2016. Tackling poverty and inequality in Greece is crucial to recovery from crisis.

uncertainty and with policies related to populism and economic nationalism.⁸⁴ It is therefore in the immediate interest of IOCs to contribute to sustainable and inclusive economic development in Greece. They should contribute to long-term goals for poverty alleviation and economic inequality in Greece, focusing on job creation, investment in research and development, local content development, and service industry development.

As a first measure, IOCs should establish a strategy to assess the skill gaps in the labor market through the value chain and then implement specific training programs accordingly.⁸⁵ IOCs should collaborate with key academic institutions, including higher schools in Greece, and through mentorship schemes and presentations could encourage the preference of students, in particular female students, for STEM subjects from an early age (the demand for STEM graduates is increasing rapidly all over the world).⁸⁶ IOCs could also provide training and resources to local teachers in order for them to be able to deliver classes efficiently on STEM subjects and entrepreneurship to young students.⁸⁷

The example of Chevron's strategy on STEM promotion could also be replicated by the IOCs operating in Greece. Chevron has programs in place which support STEM subjects at all levels of education all over the world; in specific countries it has even established

⁸⁴ Fails, M.D., 2012. Inequality, institutions, and the risks to foreign investment. *International Studies Quarterly*, 56(3), pp.516-529.

Alesina, A., Özler, S., Roubini, N. and Swagel, P., 1996. Political instability and economic growth. *Journal of Economic growth*, 1(2), pp.189-211.

⁸⁵ IPIECA. UNDP. IFC. 2017. Mapping the oil and gas industry to the Sustainable Development Goals: An Atlas.

⁸⁶ Shrimpsley R. 2018. Taking an arts degree? Do the maths. *Financial Times*. Available at <https://www.ft.com/content/df7d429a-169d-11e8-9376-4a6390addb44>

⁸⁷ IPIECA. UNDP. IFC. 2017. Mapping the oil and gas industry to the Sustainable Development Goals: An Atlas.

STEM-oriented academies. For example, in the US, one target of those STEM programs is to encourage innovation and invention among students from a very early age, so they then continue up to the university level with a creative mind-set. It also has programs in place to train teachers to deliver STEM subjects more efficiently.⁸⁸

IOCs could also provide scholarships for students to pursue degrees in oil and gas and could partner with local universities in order to establish high-quality undergraduate and master's industry-oriented programs (with a year spent in the industry as an internship/apprenticeship).⁸⁹ The involvement and contribution of IOC executives, with years of industry experience, in local universities would also benefit the academic institutions themselves, as it would link theory with practice, and would transform them into hubs where the world of technocrats, policymaking and academia meet.

Moreover, an issue in Greece according to local employers is the lack of candidates with high-standard technical qualifications.⁹⁰ It would therefore also be useful for IOCs to assist local technical academies and training providers in designing courses and training qualified workers and technicians; the training of technical staff could be achieved in a relatively short time and hence should be prioritized.⁹¹

It would also be crucial to promote gender equality and encourage more women to join the industry by providing them with opportunities to develop the skills required in order to excel in the sector, e.g. encouraging more women to follow STEM academic

⁸⁸ Chevron. 2018. STEM education partners and programs. Available at: <https://www.chevron.com/corporate-responsibility/creating-prosperity/education/partners-programs>

⁸⁹ IPIECA. UNDP. IFC. 2017. Mapping the oil and gas industry to the Sustainable Development Goals: An Atlas.

⁹⁰ EBRD. 2016. Strategy for Greece. Available at: <https://www.ebrd.com/home> [Accessed 21.06.2018.]

⁹¹ ILO. 2012. Wanted: Local workers for the oil and gas industry. http://www.ilo.org/global/about-the-ilo/newsroom/features/WCMS_195532/lang--en/index.htm

and career pathways at an early age. Moreover, providing women with incentives to join the industry such as equal pay and quotas for hiring women at all levels are vital in an industry with the lowest proportion of women at the director level.⁹² Repsol, for example, in the framework of its Sustainable Goals for 2020, has committed to ensure 30% of leadership positions will be held by women in the year 2020.⁹³

The development of a well-qualified local labor force brings mutual benefits for both the IOCs and the host country as it decreases unemployment, reduces ‘brain drain’ from the country and makes the local economy more competitive. At the same time, it produces a local labor force with the specific and high-standard skills required by IOCs and also helps secure the social license to operate in the country; for instance, in Uganda, the employment of so few locals in the industry triggered public hostility against the companies.⁹⁴ Hiring local staff also enhances the local knowledge of an IOC and helps the company learn the institutional idiosyncrasies of the host country so it will therefore be able to navigate within the local institutional set-up more easily.⁹⁵ Since in general a very high proportion of the IOCs’ operations in a host country is allocated to sub-contractors, similar requirements with regards to hiring and training and workforce development should be applied to these companies too.

Beyond the relatively limited direct employment opportunities which accrue from the exploration and exploitation of the natural gas sector, IOCs could contribute to the

⁹² IPIECA. UNDP. IFC. 2017. Mapping the oil and gas industry to the Sustainable Development Goals: An Atlas.

⁹³ Repsol. 2017. Sustainability Information. Available at: https://www.repsol.com/imagenes/global/en/2017_sustainability_report_tcm14-130393.pdf

⁹⁴ Ongode B. 2014. Oil companies try their best to hire locals. Oil in Uganda. Available at: <http://www.oilinuganda.org/features/local-content/oil-companies-try-their-best-to-hire-locals.html>

⁹⁵ Tideman D., Kombargi R., Oushoorn R., Rizzi C., Landau R. 2012. Government-facing strategy for oil and gas companies Developing a productive relationship with host governments.

development of local content by assisting Greece in developing a service support sector for their operations. SMEs in Greece have been severely affected by the financial crisis,⁹⁶ so through SME development programs, IOCs could allow local SMEs to develop capacity in order to participate in the oil and gas value chain, and eventually develop a competitive and capable local industry to support IOCs' operations.⁹⁷ The IOCs should first provide support and assistance to those local SMEs which are most ready to offer support services to IOCs' operations in the country.⁹⁸ Once specialization is developed, SMEs could also export their services to other countries in the region which are currently developing or are planning to develop their natural gas industries. Increasing the efficiency of local contractors would also benefit the IOCs as it would provide them with competent local partners.

Professor Jeffery Sachs has stated that "Greece needs to restore prosperity by building up a new innovation sector" as the development of an innovation sector would have positive social and economic impact. The EBRD recognizes that there is a "strong and vibrant entrepreneurial spirit" in Greece which needs to be supported in order for it to flourish.⁹⁹ Through SME development programs, the IOCs could provide consultancy and finance and encourage innovation in technologies related to the natural gas industry,¹⁰⁰ along with the creation of energy efficiency and climate

⁹⁶ EBRD. 2016. Strategy for Greece.

⁹⁷ IPIECA. UNDP. IFC. 2017. Mapping the oil and gas industry to the Sustainable Development Goals: An Atlas.

Tideman D., Kombargi R., Oushoorn R., Rizzi C., Landau R. 2012. Government- facing strategy for oil and gas companies Developing a productive relationship with host governments.

⁹⁸ Tideman D., Kombargi R., Oushoorn R., Rizzi C., Landau R. 2012. Government- facing strategy for oil and gas companies Developing a productive relationship with host governments.

⁹⁹ Aristeidou O. 2018. Advisory support to boost small businesses in Greece. EBRD.

Available at: <http://www.ebrd.com/news/2018/advisory-support-to-boost-small-businesses-in-greece.html> [Accessed 23.08.2018.]

¹⁰⁰ *ibid.*

change technologies.¹⁰¹ Moreover, as a consequence of austerity measures, research and development funding has been slashed in Greece, so IOCs could financially support programs under the Greek Strategy for Research and Innovation (GSRI 2014-2020).¹⁰² Examples of IOCs supporting innovation abound:

Noble's Country Manager in Israel recognizes the importance of innovation for the natural gas industry and even went as far to say that "Natural gas is part of the tech industry."¹⁰³ Repsol has an entrepreneurs' fund to support entrepreneurs on projects on energy efficiency and climate change, and BP's MIPED initiative provides finance, assistance and loans for locals to start their own businesses.¹⁰⁴ Both could be replicated in Greece.

The quality of the infrastructure in Greece is ranked 26th among the EU countries¹⁰⁵ and the majority of infrastructure spending in Greece is on energy and transportation.¹⁰⁶ IOCs should identify opportunities where the infrastructure constructed could also benefit the local communities; for instance, Greece needs an advanced logistics infrastructure, so improving roads and ports while keeping them open access would automatically benefit the locals and local industry.¹⁰⁷ They could

¹⁰¹ For more info on Start-ups on Climate Change See: World Energy Council.2018. Innovative start-ups to present business models for climate protection at SET Tech Festival. Available at: <https://www.worldenergy.org/news-and-media/news/innovative-start-ups-to-present-business-models-for-climate-protection-at-set-tech-festival/>

¹⁰² IEA. 2017. Greece 2017 Review.

¹⁰³ ZOMER, B. 2013. O&G Technology Conference, Israel Available at:

<https://www.youtube.com/watch?v=MXxet9GE4G0>

¹⁰⁴ IPIECA. UNDP. IFC. 2017. Mapping the oil and gas industry to the Sustainable Development Goals: An Atlas.

See: Mayaro Initiative for Private Enterprise Development. MIPED covers all the business sectors not necessarily natural gas. <http://miped.org>

¹⁰⁵ PWC. 2017. Infrastructure in Greece. Funding the future. Available at:

<https://www.pwc.com/gr/en/publications/greek-thought-leadership/infrastructure-in-greece-2016-en.pdf>

¹⁰⁶ Ibid.

¹⁰⁷ EBRD. 2016. Strategy for Greece.

also possibly co-finance, in collaboration with the government and other institutions, shared infrastructure. For instance, due to the financial crisis, waste-management projects that would have allowed Greece to treat its waste in a more sustainable way (waste disposal, reuse and recycling) have been postponed and only two projects are expected to finish by 2019.¹⁰⁸ The majority of waste is landfilled in Greece, to a much higher extent than the EU average; as a result of these practices Greece has been fined (€10 million) by the European Court of Justice.¹⁰⁹ IOCs will need effective waste-management facilities for the waste emerging from their operations, so in this case, IOCs could co-finance a waste management system with the government which would benefit both parties.¹¹⁰

Conclusion

As Professor Steinar Holden argues, “the quality of political institutions,” “reliable public bureaucracy,” “little corruption,” and a “transparent fiscal system” are crucial in order for a country to be an attractive area for business, and thus enable economic growth led by natural resources.¹¹¹ The IOCs, in partnership with the local stakeholders, such as the Greek government, academia, civil society can achieve as much.

The IOCs, with their superior resources, knowledge, technology, and capital, have a crucial role to play in the sustainable development of the industry and the country.

¹⁰⁸ PWC.2017. Infrastructure in Greece. Funding the future.

¹⁰⁹ Ibid.

¹¹⁰ Ibid.

¹¹¹ Holden, Steinar. “Avoiding the resource curse: The case Norway.” *Energy Policy* 63 (2013): 870–76

Although contributing to social and economic development could become expensive, it is nevertheless feasible for world class IOCs to satisfy demands for socio-economic development as responsible corporate citizens would do, while maintaining the profitability of the project.¹¹² The importance of the integration of the SDGs in the business model is recognized by the majority of Greek companies which participated in a survey held by Ernst and Young; 90% of them considered the integration to be extremely important and 60% expressed willingness to proceed to the next level of implementation of SDGs by 2030, recognizing that “companies cannot succeed in societies that fail.”¹¹³ Thus, in integrating the SDGs in their corporate strategies, IOCs could pave the way for all the other industries in Greece.

¹¹² Tideman D. et.al 2012. Government- facing strategy for oil and gas companies Developing a productive relationship with host governments.

¹¹³ EY.2017. Study on the UN Sustainable Development Goals in Greece: The business perspective. Available at:https://sdghub.com/wp-content/uploads/2018/02/SEV_BCSO-Study-on-the-SDGs_Brief_Edition_ENG.pdf