# THE ROLE OF NATURE IN CLIMATE ACTION FOR THE OIL AND GAS SECTOR

**Enhancing Ambition from Carbon Intensive Industries | May 2019**

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## Executive Summary

Major emitting sectors must reduce their greenhouse gas emissions significantly to make the long-term goals of the Paris Agreement achievable. Companies in the oil and gas sector - from exploration and production to refining and retailing to consumers - require bold strategies to reduce emissions. This is particularly true of emissions generated by consumers when they burn fuels ("Scope 3" emissions). Enhanced government policies in line with the Paris Agreement's long-term goals would be the primary route to reducing emissions from these sectors. However, the level of ambition at the national level is, to date, not commensurate with the threat posed by climate change. The current set of goals proposed by countries, known within the Paris Agreement as nationally determined contributions (NDCs), would lead to a temperature increase of around 3 degrees Celsius by 2100.[1] If countries fail to do more, voluntary commitments by companies should play a potentially significant role.

There is a significant gap between the sector's current level of emissions and the level required to achieve the goals of the Paris Agreement. This paper highlights the additional emission reductions required, and the opportunities available, to close this gap, using a sample of leading European oil and gas majors.

All oil and gas companies have multiple options to do more, including investments in renewable energy or electric vehicles to improve their operational efficiency. In addition, they can pursue Natural Climate Solutions (NCS), such as reforestation or avoiding deforestation, as a way to offset their Scope 3 emissions. This would complement rather than replace changes to the company's practices and business model.

Indeed, some leading companies in the sector are already expressing interest in NCS. For example, there has been some initial momentum to include NCS as part of corporate efforts to reduce emissions. In March 2019, the Italian oil company Eni announced it would purchase up to 20 million metric tons of carbon offsets from offset projects in Africa.[2] On April 8, 2019 Royal Dutch Shell committed $300 million over three years to reforestation in the Netherlands and Spain, with the potential to source additional reductions from Malaysia's Sarawak region. The reductions will be offered to consumers in the Netherlands as an "offset" for the Scope 3 emissions associated with their petrol or diesel consumption.[3]

Building on this initial momentum, this paper recommends the following:

- Oil and gas companies should advance ambitious greenhouse gas targets consistent with the Paris Agreement's long-term vision, including a roadmap for addressing Scope 3 emissions.
- Leading companies should encourage commitments from their peers within the oil and gas sector and other carbon-intensive industries.
- NCS could form part of the commitments as supplemental ambition to what companies achieve through their own operations and by transition of their business models.
- NCS commitments should prioritize investments in developing countries, where sources of finance for interventions to halt deforestation, conserve standing forests, and promote reforestation are desperately needed.

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[1] Climate Action Tracker, *The CAT Thermometer,* Available: https://climateactiontracker.org/global/cat-thermometer/
[2] Eni, Press Release March 15, 2019. Available: https://www.eni.com/docs/en_IT/enicom/media/press-release/2019/03/PR-eni-2019-2022-strategic-plan.pdf
[3] Royal Dutch Shell, *Shell invests in nature as part of broad drive to tackle CO2 emissions,* April 8, 2019. Available: https://www.shell.com/media/news-and-media-releases/2019/shell-invests-in-nature-to-tackle-co2-emissions.html

- Looking more broadly at their operations, oil and gas companies should commit to minimize impacts on natural protected areas and indigenous peoples' territories and recognize the rights of indigenous peoples and other local communities to their lands.
- Further work is required by civil society and experts to develop a set of "policy guardrails" to clarify what constitutes a high-quality commitment to external investment by carbon-intensive industries, including in NCS.

# I. Background

All sectors face an imperative to reduce their greenhouse gas emissions to reach the long-term goals of the Paris Agreement. However, this will be especially challenging for carbon intensive industries – such as mining, cement, steel, aluminum, aviation and shipping, and oil and natural gas production. Although the primary responsibility for achieving these goals lies with government policy-makers and regulators, where policy is not sufficient, companies should adopt additional ambition internally. They would benefit, therefore, from innovative thinking about new ways they can contribute significantly more to global climate efforts.

This paper focuses on the oil and gas sector. Within the global energy sector, oil and natural gas account for approximately half of total greenhouse gas emissions.[4] This means that achieving the Paris Agreement's goals requires significant reductions in the emissions caused by the oil and natural gas sector in the coming decades (see Figure 1, next page), even as natural gas replaces more carbon intensive coal-fired power in certain markets. On the other hand, these fuels currently play a major role in key aspects of the contemporary economy, from transportation fuels, to generating power for industry, to heating homes.

The sector was therefore chosen because oil and gas companies face major technical, financial, and corporate challenges to reduce sectoral emissions, both from their operations and from the products they sell. For portions of the analysis, we use a sample of five leading European oil and gas majors – BP, Eni, Equinor, Shell and Total. We include these companies in our sample because they are among the group of firms within the oil and natural gas sector that have expressed a commitment to act on climate change.[5] In addition, all these firms have either prior experience with offsetting in the land sector or have expressed an interest in making these investments in the future.

This paper will focus on the challenge oil and gas companies face, before turning attention to the potential for NCS to form part of a viable solution.

[4] CDP (2018), *Beyond the cycle: which oil & gas companies are ready for the low-carbon transition?* Available: https://www.cdp.net/en/investor/sector-research/oil-and-gas-report

[5] Ibid. (All sample firms rank within the top 10 firms assessed by CDP)

## II. Examining the Role of NCS for High Emitting Sectors

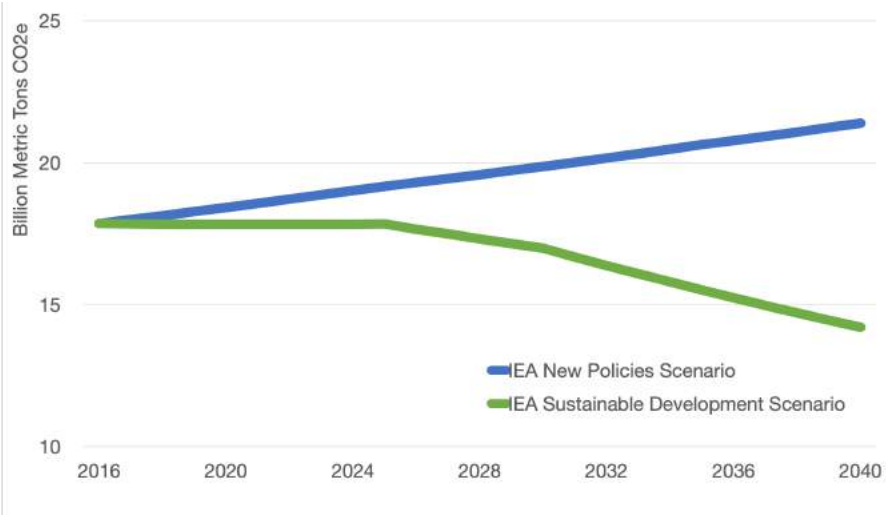
While ambition is needed across all sectors of the global economy, fossil fuel companies such as the oil and gas sector face particular challenges. This section highlights the extent of additional ambition required, assesses the options available to companies to meet this challenge, and then specifically focuses on the potential role that nature can play as a component of a successful strategy.

### More Climate Ambition from the Oil and Gas Sector is Needed

The International Energy Agency (IEA) concludes that current and anticipated policies fail to achieve three critical Sustainable Development Goals (SDGs) – universal energy access, reduced health impacts from air pollution, and combatting climate change. It's Sustainable Development Scenario (SDS) sets out a pathway to achieve each of these goals, including an emissions trajectory within the range of possibilities for reducing warming to below 1.5C as set out by the Intergovernmental Panel on Climate Change (IPCC).[6]

This emissions gap is evident for both the oil and natural gas sectors. Using IEA's scenarios, **Figure 1** projects the difference in emissions from these sectors between our current pathway and a pathway consistent with achieving the SDS' three key goals.

**Figure 1: Oil and Natural Gas Greenhouse Gas Emissions 2016-2040**




Source: International Energy Agency (IEA) World Economic Outlook 2018

More ambitious public policies in both developed and developing countries would significantly aid this transformation. Current pledges under the Paris Agreement amount to an estimated 2.7-3°C of warming by 2100, with current policies pointing closer to 3-3.5°C of warming.[7] To shift from our current trajectory to a 1.5°C pathway, we will need to close an annual emissions gap that will reach 12-14 gigatons of $CO_2$-equivalent by 2025 and 26-29 gigatons of $CO_2$-equivalent by 2030 (limiting warming to 2°C requires closing an emissions gap of 6-9 gigatons $CO_2$-equivalent by 2025 and 15-18 gigatons $CO_2$-equivalent by 2030).[8]

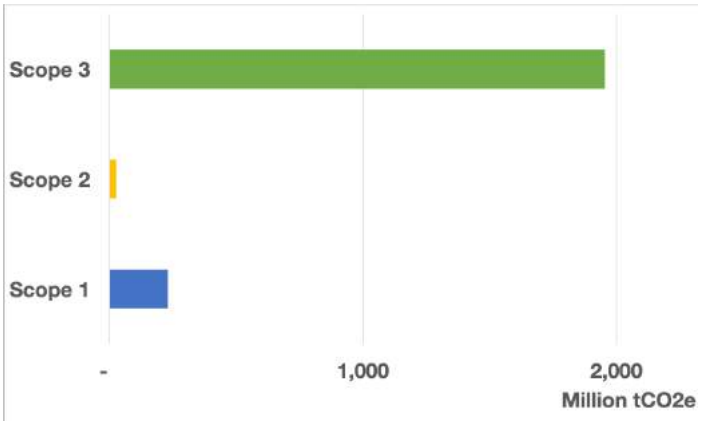
[6] International Energy Agency (2018), *World Energy Outlook Model, Sustainable Development Scenario.* Available: https://www.iea.org/weo/weomodel/sds/
[7] Climate Action Tracker, *Global Temperatures,* Available: https://climateactiontracker.org/global/temperatures/
[8] Climate Action Tracker, *Emissions Gaps,* Available: https://climateactiontracker.org/global/cat-emissions-gaps/

Meeting this challenge requires major investments by high emitting sectors, including the oil and gas industry. Failure to be ambitious risks these companies losing their social license to operate, a risk that some companies already publicly acknowledge.[9] Environmental groups have noted that issues such as methane leaks could "profoundly undermine [oil and gas companies'] social license to operate."[10] Losing public trust could affect the company's performance, from recruiting young talent[11] to securing stable financing from institutional investors.[12]

## Acting Where the Emissions Are

Oil and gas companies should focus climate action where their greenhouse gas emissions are. The vast majority of emissions are generated through the consumption of products they sell (e.g. burning petroleum in cars) rather than their operations (such as exploration, production or refining). **Figure 2** demonstrates this disparity between operational emissions (referred to as Scopes 1 and 2 under the WRI Greenhouse Gas Protocol[13]) and those related to the use of products (Scope 3) for the companies sampled in this report.

**Figure 2: Sample Oil and Gas Company 2017 Greenhouse Gas Emissions, by Scope**

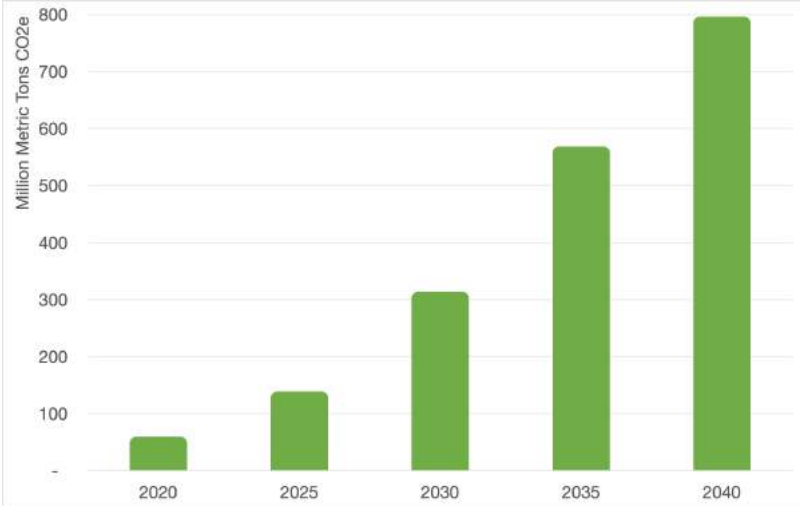



Source: Data retrieved via sustainability reports and CDP submissions

If action is limited to current and announced government policies, the Scope 3 emissions gap for the sample companies would reach over 700 million metric tons by 2040. **Figure 3** shows the growth in the emissions gap between current and future policies and the IEA's SDS, based on a projection by Climate Advisers.

[9] For example, Eldar Sætre, Chief Executive Officer of Equinor, address to CERA Week, March 11, 2019. Speech available at: https://www.equinor.com/en/magazine/eldar-saetre-at-cera-week-2019.html
[10] Environmental Defense Fund, *Smart Oil and Gas Methane Regulations Could Speed Environmental Innovation,* April 4, 2019. Available: https://www.edf.org/media/smart-oil-and-gas-methane-regulations-could-speed-environmental-innovation
[11] ADNOC, *Oil and Gas 4.0: Attracting the Workforce of the Future,* March 2019. Available: https://www.adnoc.ae/en/corporate-responsibility/workforce-of-the-future
[12] See for example, Ceres *Carbon Asset Risk.* Available: https://www.ceres.org/our-work/carbon-asset-risk
[13] For more information on WRI's Greenhouse Gas Protocol, including the composition of Scope 1, 2 and 3 emissions, please refer to: http://ghgprotocol.org/

**Figure 3: Projected Scope 3 Emissions Gap for Sample Oil and Gas Companies Between Current and Announced Policies and Paris-Compliant Pathway, 2020-2040**




Source: Projection by Climate Advisers using IEA data

An ideal response would consist of government policy increasing ambition in line with the IEA's SDS. However, this path is highly unlikely, particularly in the short term, due to a lack of political will. On our current pathway, the future growth in emissions will vary significantly by region and more specifically between industrialized economies and emerging markets. According to the IEA, emissions from oil and natural gas consumption will rise by 51 percent in developing economies between 2016 and 2040, whereas in advanced economies they will decline by 14 percent.[14] Some developing countries currently lack regulations on greenhouse gas emissions, and therefore companies either operating in those countries or retailing their products there are not motivated by policy to do more.

Companies have sought to fill part of that void through announcing their own corporate greenhouse gas targets. All the oil and gas companies included in the sample have taken this action, as described in **Table 1.**

**Table 1: Current Greenhouse Gas Targets by Sample Oil and Gas Companies**

| Company | Baseline Year | Target Year | Targets | Scope (1,2 and/or 3) |
|---|---|---|---|---|
| **BP** | 2015 | Ongoing | Offset any increase in emissions above 2015 levels not covered by sustainable reductions activity (see below) | Scope 1 |
| | N/A | N/A | Reduce 3.5 million metric tons through sustainable emission reductions activities | Scope 1 |
| **Eni** | 2014 | 2025 | Reduction in GHG emission intensity for upstream operations by 43% | Scope 1 |
| | N/A | 2030 | Net zero upstream carbon emissions by 2030 | Scope 1 |

[14] Data retrieved from International Energy Agency (IEA), *World Energy Outlook 2018.* Available: https://www.iea.org/weo2018/

| | | | | |
|---|---|---|---|---|
| **Equinor** | 2017 | 2030 | 3 million annual $CO_2$ reductions | Scope 1 |
| | 2017 | 2020 | Reduction in GHG emissions intensity from 10 to 9 Kg $CO_2$/boe for upstream oil and gas | Scope 1 |
| | 2017 | 2030 | Reduction in GHG emissions intensity from 10 to 8 Kg $CO_2$/boe for upstream oil and gas | Scope 1 |
| **Shell** | 2016 | 2022 | Reduction in Net Carbon Footprint by 2-3% | All scopes |
| | 2016 | 2035 | Reduction in Net Carbon Footprint by 20% | All scopes |
| | 2016 | 2050 | Reduction in Net Carbon Footprint by approx. 50% | All scopes |
| **Total S.A.** | N/A | 2035 | Natural gas will make up more than 60% of the firm's hydrocarbon mix | N/A |

These targets represent the company's current voluntary ambition. However, these targets are challenging to analyze for various reasons. Firstly, many of the targets are not quantified in the terms of metric tons $CO_2$e. This makes projecting their impact on corporate emissions more challenging. For example, a carbon intensity goal's impact on overall emissions depends on future oil or natural gas production levels to determine an aggregate level of emissions. Shell expresses its target as a net carbon footprint (grams of $CO_2$-equivalent produced per megajoule of energy consumed) and has tied its target to the net carbon footprint it calculates as necessary to achieve the IEA SDS and its own "Sky" Scenario for meeting the Paris Agreement's goal.[15] However, it does not state what its absolute greenhouse gas emissions level will be in 2050, or at the interim target set for 2035.

Secondly, the targets generally focus on Scope 1 and 2 rather than Scope 3 emissions, which omits the major source of emissions. Finally, it is not always possible to project whether part of a corporate target will be met through compliance with public policy – adhering to performance standards, acquiring permits in an emissions trading system, etc. – rather than through supplemental, voluntary action.

Ideally, companies would put forward absolute greenhouse gas emissions targets across the broadest scope of greenhouse gas emissions possible, noting the target's additional greenhouse gas reductions above what is mandated through existing policies.

Despite the challenges for quantifying each company's ambition, these targets do not appear to reach a level of ambition that is consistent with the IEA's SDS. Therefore, there is an opportunity for supplemental ambition by oil and gas companies to bridge closer to a Paris-compliant pathway.

## Options to Fill the Emissions Gap

Carbon intensive industries will require a significant shift in strategy to significantly reduce their greenhouse gas emissions. For oil and natural gas companies, their operations produce greenhouse gas emissions and further emissions are generated when consumers use their products.

[15] Shell, *Shell's Net Carbon Footprint Ambition: Frequently Asked Questions,* Available: https://www.shell.com/energy-and-innovation/the-energy-future/what-is-shells-net-carbon-footprint-ambition/faq.html

Major companies in the fossil fuel sector have signaled a need to adjust their business models, citing the beginning of a shift away from fossil fuels. Shell, for example, has made clear that its intention is to grow its retail electricity business globally, including providing 100 percent renewable electricity to customers.[16] Major oil and gas companies certainly have the capital budgets to finance such shifts in their business models.

Closing the emissions gap in the oil and gas sector will require a range of solutions, including an energy transition. These companies have capital available to transition toward new business models. Many major oil companies have prior experience investing in new technologies. California-based oil major Chevron, for example, established Chevron Technology Ventures in 1999 to deploy and commercialize new technologies applicable to the fossil fuel sector.[17] More recently, however, oil and gas companies have ramped up equity investments in technology companies deploying technologies consistent with a low-carbon economy. **Table 2** summarizes equity investments (excluding acquisitions of individual projects) made by the sample companies since 2017.

**Table 2: Investments and Acquisitions by Sample Oil and Gas Companies in Clean Energy Companies Since 2017**

| Company | Year | Investment amount | Company Invested in* | Company Type |
|---|---|---|---|---|
| **BP** | 2018 | $200 million | Lightsource | Renewable Energy Generation |
| | 2018 | $170 million (approx.) | Chargemaster | Electric Vehicle Charging |
| | 2018 | $5 million | FreeWire Technologies | Electric Vehicle Charging |
| **Equinor** | 2018 | $82.4 million | Scatec Solar | Renewable Energy Generation |
| **Shell** | 2019 | undisclosed | Greenlots | Electric Vehicle Charging |
| | 2017 | undisclosed | First Utility | Renewable Electricity Retail |
| | 2017 | undisclosed | NewMotion | Electric Vehicle Charging |
| **Total S.A.** | 2018 | $83.4 million | Clean Energy Fuels Corp. | Renewable Natural Gas |
| | 2018 | Undisclosed | G2Mobility | Electric Vehicle Charging |
| | 2018 | $1.7 billion | Direct Energie | Renewable Electricity Retail |
| | 2017 | EUR 237.5 million | EREN RE | Renewable Energy Generation |
| | 2017 | Undisclosed | PitPoint | Electric Vehicle Charging |

Source: Data collected by Climate Advisers from company sources.

[16] Shell, *Another Step Towards a Global Electricity Business,* Available: https://www.shell.com/energy-and-innovation/electricity/shellenergy.html

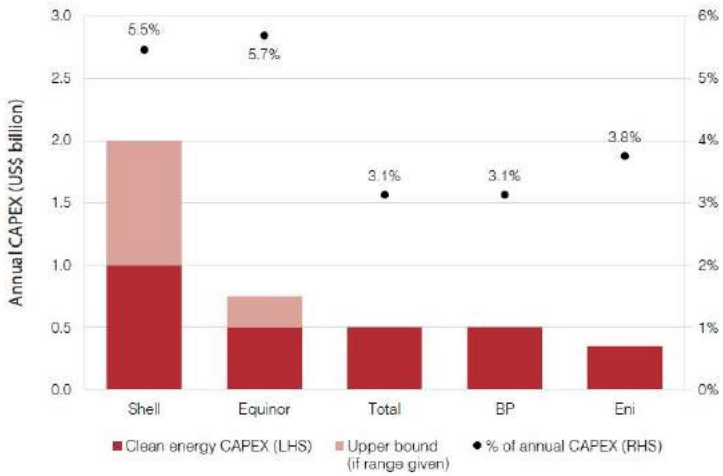
[17] For more information, please see: https://www.chevron.com/technology/technology-ventures

**Note: Company's name at time of acquisition, prior to any rebranding (e.g. First Utility is now Shell Energy Retail).*

These acquisitions do not reflect separate business units within the companies, such as Equinor's successful offshore wind power operations, or partnerships such as Total's work with U.S. company ChargePoint to retail electric vehicle chargers in the United Kingdom.

In sum, this capital deployment is significant, with European oil and gas companies outpacing other regions for clean energy investment. Globally, however, only 1.3 percent of 2018 capital expenditure was allocated to low carbon investments, according to CDP.[18] Even among the sample companies, planned capital expenditures for clean energy are dwarfed by investments in their traditional business lines of oil and natural gas, as **Figure 6** demonstrates.

**Figure 6: Sample Oil and Gas Company Planned Annual Capital Expenditures (CAPEX) in Clean Energy Investments and as Percentage of Total CAPEX**




Source: Graphic from Reuters (2019)[19]

It is clear that these companies have sufficient cash reserves to finance investments in climate solutions, but will need to accelerate rapidly to low carbon technologies to meet Paris-compliant emission reduction goals.

## A Role for Natural Climate Solutions

Oil and gas companies can use their capital budgets to transform their business models. However, investments within their own operations may not be sufficient to close their emissions gap to a Paris-compliant pathway. As a result, investments in external sectors offer a potential tool for supplemental climate action.

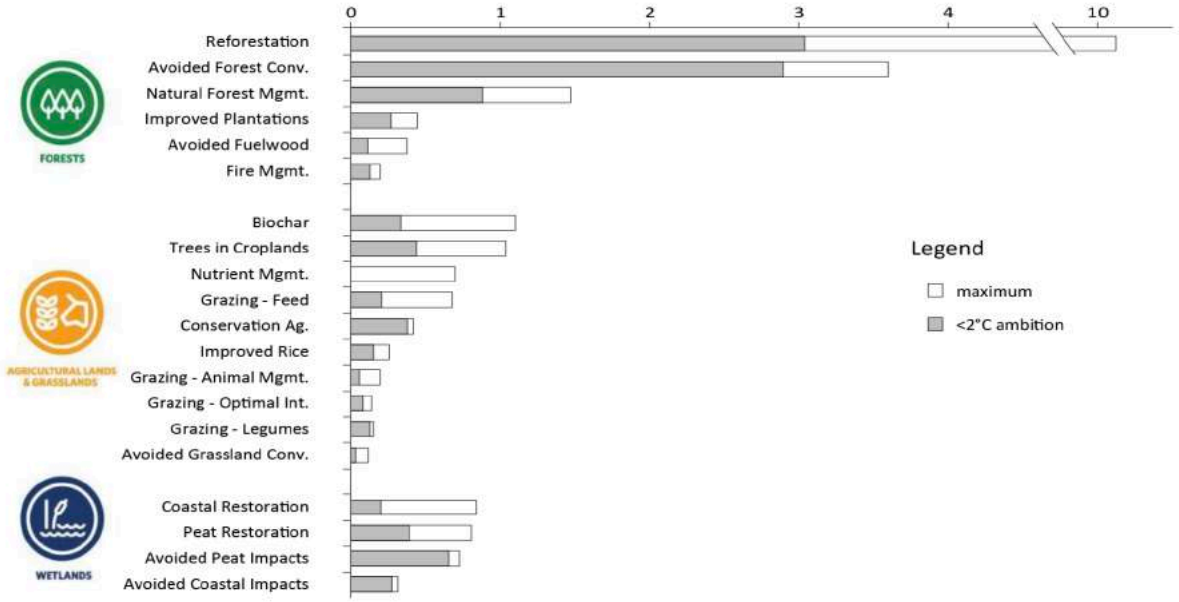
These investments could take place across different sectors, from energy efficient buildings to improved waste management. Natural Climate Solutions (NCS), which encompass interventions related to land and oceans, are a particularly appealing category, however.

[18] CDP, *Beyond the cycle,* November 12, 2018. Available: https://www.cdp.net/en/articles/investor/european-oil-majors-spending-up-to-7-on-low-carbon-but-wider-industry-needs-to-step-up
[19] Graphic Available: https://fingfx.thomsonreuters.com/gfx/ce/7/1801/1800/Pasted%20Image.jpg

Focusing on the land sector, significant efforts to halt deforestation, advance forest restoration, and improve land management practices are essential to reach the goals of the Paris Agreement. The importance of tackling deforestation, in particular, was formalized in Goal 3 of the 2014 New York Declaration on Forests, including the need to reduce deforestation and minimize the impacts that extractive industries have on land.[20]

The sector requires significant global attention. Indeed, the recent IPCC Special Report on limiting warming to 1.5°C finds that this goal is out of reach without significant action across agriculture, land use, and forests. A 2017 study by Griscolm et al. estimates that NCS can contribute up to 37 percent of the cost-effective mitigation needed through 2030 for a >60 percent chance of limiting warming to 2.0°C.[21] This mitigation potential is possible across various types of intervention, as demonstrated in **Figure 3.**

**Figure 3: Climate Mitigation Potential from Natural Climate Solutions (Gigatons $CO_2e$ per year)**




Source: Griscolm et al. (2017) PNAS 2017;114:44:11645-11650. Graphic Adapted by The Nature Conservancy[22]

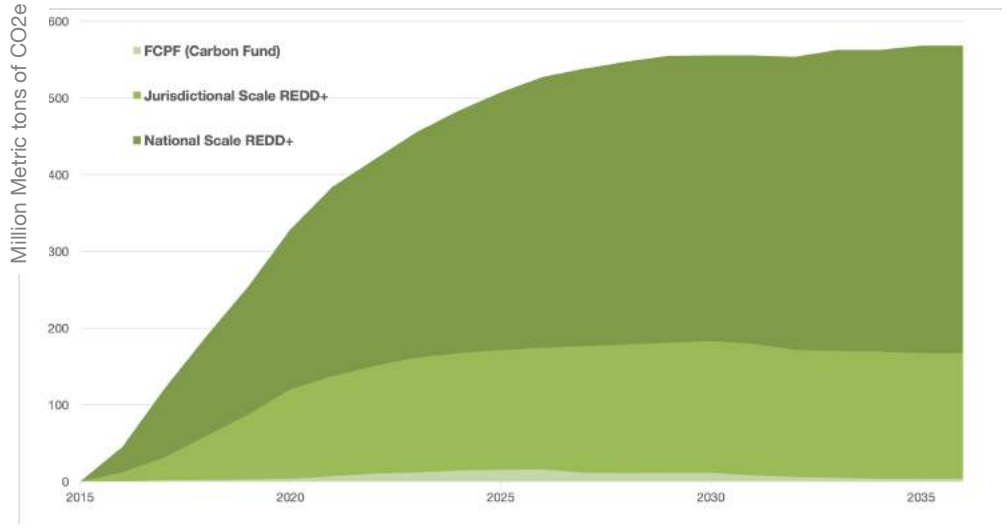
One particularly pressing concern is the continuing decline in forests in many developing countries. A framework for addressing deforestation developed through the United Nations, known as REDD+[23], could unlock significant mitigation. **Figure 4** provides estimates of the supply of emission reductions potentially available through REDD+ using different approaches. Firstly, the World Bank's Forest Carbon Partnership Facility (FCPF), an initiative that supports the development ("Readiness Fund") and implementation

[20] New York Declaration on Forests, 2014, Goal 3: Significantly reduce deforestation derived from other economic sectors by 2020. Available: https://forestdeclaration.org/goal/goal-3/
[21] Griscolm et. Al (2017), *Natural Climate Solutions,* http://www.pnas.org/content/114/44/11645
[22] Bossio, D, *Land Restoration and Climate,* May 2018. Available: https://sustainabledevelopment.un.org/content/documents/26933Bossio_SDG15_Session_8.pdf
[23] Reduced Emissions from Deforestation and Forest Degradation, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries.

("Carbon Fund") of country-level REDD+ programs[24]. Secondly, the potential reductions through jurisdictional or sub-national programs. Finally, the total emission reductions possible through national level REDD+ implementation, going beyond reductions currently projected under the FCPF. Even with investments in all potential reductions, the supply would not satisfy Scope 3 greenhouse gas emissions for the sample companies. This reinforces the supplemental role NCS can play in the oil and gas sector, with necessary changes primarily required within each company's operations and business model.

[24] For more information, see https://www.forestcarbonpartnership.org

**Figure 4: Potential Emission Reductions Through REDD+ Through the FCPF Carbon Fund, Jurisdictional Programs and National Scale Implementation, 2015-2035.**




Source: Data from Climate Advisers (2015)

A key barrier to achieving these reductions is a lack of capital to finance REDD+ implementation. Forests may present nearly a third of the climate solution, but currently they receive less than 3 percent of public climate finance to developing countries.[25] Even if this percentage increases in the future, public sources of finance are unlikely to be sufficient to support the scale of emission reductions necessary. Between 2009 and 2014, only 10 percent of REDD funding came from private sources of capital.[26] Mobilizing greater levels of private finance is a way to bridge the finance gap that supports REDD+ and other critical interventions in the land sector.

There has been some momentum to include NCS as part of corporate efforts to reduce emissions. In March 2019, Italian oil company Eni announced it would purchase up to 20 million metric tons of carbon offsets from projects in Africa.[27] On April 8, 2019, Royal Dutch Shell committed $300 million over three years to reforestation in the Netherlands and Spain, with potentially additional reductions sourced from Malaysia's Sarawak region. The reductions will be offered to Netherlands consumers as an "offset" for the Scope 3 emissions associated with their petrol or diesel consumption.[28] While these are the most recent commitments to NCS, there is a prior history of investing in forests. BP's Target Neutral program, a not-for-profit initiative of the U.K based oil and gas major, has invested in a portfolio of offset projects since 2006, including forest protection in Zambia.[29] BP has also contributed $5 million to the FCPF's Carbon Fund.[30]

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[25] Climate Policy Initiative (2017), *Global Landscape of Climate Finance 2017,* Available: https://climatepolicyinitiative.org/wp-content/uploads/2017/10/2017-Global-Landscape-of-Climate-Finance.pdf
[26] Silva-Chávez, Gustavo et al. (2014). REDD+ Finance Flows 2009-2014: Trends and Lessons Learned in REDDX Countries. Available: http://redd.unfccc.int/uploads/2194_1_redd_2B_finance_flows_2009-2014.Pdf
[27] Eni, Press Release March 15, 2019. Available: https://www.eni.com/docs/en_IT/enicom/media/press-release/2019/03/PR-eni-2019-2022-strategic-plan.pdf
[28] Royal Dutch Shell, *Shell invests in nature as part of broad drive to tackle CO2 emissions,* April 8, 2019. Available: https://www.shell.com/media/news-and-media-releases/2019/shell-invests-in-nature-to-tackle-co2-emissions.html
[29] BP Target Neutral, *Forest Protection, Zambia.* Available: https://www.bptargetneutral.com/us/how-we-work/our-projects/forest-protection-zambia/
[30] Simon Whitehouse, *Overview of the Forest Carbon Partnership Facility,* Presentation to International Civil Aviation Organisation (ICAO), February 2018. Available: https://www.icao.int/Meetings/carbonmarkets/Documents/04_Session5_Whitehouse_FCPF.pdf

These efforts are encouraging. The challenge now is to ensure that NCS forms a supplemental component of a broader strategy from within the oil and gas sector to push for more ambition.

## The Need for Policy Guardrails to Evaluate NCS Commitments

Momentum is growing from oil and gas companies to invest in NCS. However, no clear set of guidelines or "policy guardrails" yet exists for determining how to view the commitments made by carbon intensive companies to invest in emission reductions in other sectors as part of their overall greenhouse gas reductions.[31]

Guidance that enables an evaluation of the "quality" of NCS commitments would serve two valuable functions. First, to assess the NCS commitment's role within a broader commitment to reform corporate strategy in a Paris-compliant manner. For example, a commitment to reforestation without any additional alterations to a firm's existing business model is not consistent with the scale of change needed to address climate change. Second, to determine whether the nature of the NCS commitment complies with relevant international rules, such as the Warsaw Framework for REDD+ or Article 6 of the Paris Agreement.

Furthermore, a strong agreed standard provides a roadmap for companies that are examining the role NCS can play in a commitment that would be recognized by stakeholders as sufficient.

Relevant issues that policy guardrails could elaborate on include (but are not limited to):

- What NCS investments should companies invest in, and what are the best approaches to achieve high environmental integrity?
- Should there be a minimum threshold for a company's internal ambition, or the ambition of its overall target, before it can look to external sectors for emission reductions?
- Should external sector investments be a transitory or long-term tool available to companies? If so, for how long should companies invest in reductions occurring in external sectors and what is the rate or trajectory that this phaseout of external investments should follow?
- What is the claim made by the company for the emission reductions in which it invests? If it is used toward a voluntary corporate target, what implications does that have for the company or the country hosting the project?

This report does not provide concrete answers to these questions. Instead, we recommend that civil society and technical experts develop the policy guardrails that promote the most ambitious, effective and ethical use of these investments in economic sectors with a challenging decarbonization pathway.

[31] This report specifically looks at the role of NCS within voluntary carbon targets by oil and gas companies as going beyond current and proposed government policies. NCS also plays a role in some carbon pricing programs, such as California's cap-and-trade program. These policies set particular guardrails on NCS uses, such as California's limit of 4% for sectoral offsets under the cap-and-trade program. Particular guardrails such as these are set based on the individual circumstances within that jurisdiction. A process to develop guardrails for companies voluntarily using NCS may adopt the same parameters as existing carbon pricing policies or form a different set of guardrails.

## III. Recommendations and Next Steps

The oil and gas sector needs to do more. Companies in this industry will play an essential role in fulfilling the Paris Agreement's long-term goals. Closing the gap from current policies to a sustainable development pathway will require the sector as a whole to go further. Some leading companies, including those in our research sample, are beginning to scale-up investments in NCS. The challenge is to broaden this action across the sector, and other carbon intensive industries, while also placing these investments within a Paris-compliant emission reduction strategy.

Therefore, this paper makes the following recommendations:

- Oil and gas companies should advance ambitious greenhouse gas targets consistent with the Paris Agreement's long-term vision, including a roadmap for addressing Scope 3 emissions.[32]
- Leading companies should encourage commitments from other companies within their sector and other carbon intensive industries.
- NCS could form part of the commitment as supplemental ambition to what the company achieves through its own operations and by transition of its business model.
- NCS commitments should prioritize investments in developing countries, where sources of finance for interventions to halt deforestation, conserve standing forests and promote reforestation are desperately needed.
- Looking more broadly at their operations, oil and gas companies should commit to minimize impacts on natural protected areas and indigenous peoples' territories and recognize the rights of indigenous peoples and other local communities to their lands.
- Further work is required by civil society and experts to develop a set of "policy guardrails" to clarify what constitutes a high-quality commitment to external investment by carbon intensive industries, including in NCS.

Given the urgency for enhanced ambition, the UN Secretary General's Summit in New York in September 2019 is an opportunity for leading companies to bring forward commitments and encourage others to do the same. A pathway to decarbonization for carbon intensive industries can include investing to enhance mitigation through natural solutions. This is an important moment for industry to signal the ambition necessary to rise to the climate challenge.

[32] A structured supplier and downstream engagement plan such as U.S. retailer Walmart's Project Gigaton could serve as a model for companies to deliver such a commitment. For more information see https://news.walmart.com/2017/04/19/walmart-launches-project-gigaton-to-reduce-emissions-in-companys-supply-chain