

American Chemical Society

This document provides an extension to information gathered for the report, *Irresponsible Science?: How the fossil fuel and arms industries finance professional engineering and science organizations*, published by Scientists for Global Responsibility (SGR) in October 2019.¹ Information sourced from the American Chemical Society (ACS)'s publicly available documents is provided first, followed by commentary by SGR.

Statement of purpose and values

The ACS summarises its main goals on its website as follows:²

Mission

Our mission is to advance the broader chemistry enterprise and its practitioners for the benefit of Earth and its people.

Vision

Our vision is to improve people's lives through the transforming power of chemistry.

The ACS has four "core values" through which it pursues its main goals. It states these as follows:³

"Passion for Chemistry and the Global Chemistry Enterprise

We harness the power of chemistry and the chemical enterprise to provide solutions to the world's most pressing problems. We promote the health of the chemical enterprise by supporting investments in education, training, entrepreneurship, research, advocacy, and innovation."

"Focus on Members

We develop and deliver programs, products, services, and experiences that make ACS indispensable to the success of all members worldwide regardless of race, religion, country or ethnic origin, citizenship, language, political opinion, sex, gender identity and expression, sexual orientation, disability, age, and economic class in academe, industry, government, and other places. The Society promotes an environment that is supportive of all diverse groups in the interest of advancing science. Celebrating and recognizing the achievements and contributions of ACS members is crucial to the Society's member-value proposition."

"Professionalism, Safety, and Ethics

We support and promote the safe, ethical, responsible, and sustainable practice of chemistry coupled with professional and inclusive behavior and technical competence. We recognize a responsibility to safeguard the health of the planet and the people who live on it, through chemical stewardship."

"Diversity, Equity, Inclusion, and Respect (DEIR)

We embrace and promote diversity in all its forms, not only to create a more inclusive environment for the practice of chemistry, but also to provide fair and just outcomes for all to achieve their full potential. Inclusion of and respect for people of all backgrounds, perspectives, experiences, and ideas will lead to superior solutions to world challenges and advance chemistry as a global, multidisciplinary science."

¹ <https://www.sgr.org.uk/publications/irresponsible-science>

² <https://www.acs.org/content/acs/en/about.html>

³ <https://www.acs.org/content/acs/en/about/strategicplan.html>

Investments

According to its 990 tax return form information obtained via ProPublica, in December 2019 the ACS holds \$1.12bn in publicly traded securities and \$93.1m in other securities, including \$33.4m in hedge funds.⁴ We were unable to obtain further details about these investments.

Investment policy

The ACS does not appear to hold an ethical investment policy.

Transparency

The ACS does not publicly disclose the details of its \$1.22bn investments in publicly traded securities and other securities, giving it zero transparency.⁵

Corporate Patrons

The ACS does not appear to have any significant patrons from the fossil fuel industry.

Education programmes and grants

The ACS controls the Petroleum Research Fund, a Trust set up by seven major oil companies (Shell Oil Company, Standard Oil Company of California, Standard Oil Company of Indiana, Standard Oil Company of New Jersey, The Texas Company, N. V. de Bataafsche Petroleum Maatschappij, and Guaranty Trust Company of New York) in 1944 and transferred to the ACS in 2000.⁶ The ACS gave out \$18.1m in grants from the PRF in 2020, providing significant financial assistance to students considering professions in petroleum engineering.⁷

Events sponsorship

In the ACS's 2020 financial report, the organization listed fossil fuel business ExxonMobil as a sponsor of its ACS Awards.⁸

Environmental policy

The ACS emphasises the following in relation to climate change in the organization's 'Sustainability & the Environment' policy. The ACS will review the "science and recommend action on reducing greenhouse gases as well as climate change adaptation strategies" and encourage "continued research and funding into the effects of climate change, while also emphasizing the importance of educating the public on the issue".⁹

⁴ <https://www.acs.org/content/dam/acsorg/about/aboutacs/financial/2019-irs-form-990.pdf>

⁵ <https://www.acs.org/content/dam/acsorg/about/aboutacs/financial/2019-irs-form-990.pdf>

⁶ <https://www.acs.org/content/dam/acsorg/funding/grants/prf/annual-report/2019/acs-prf-64th.pdf>

⁷ <https://www.acs.org/content/dam/acsorg/funding/grants/prf/about/2020-grants-listing.pdf>

⁸ <https://annualreport.acs.org/content/dam/annualreport/downloads/annual-report-2020.pdf>

⁹ <https://www.acs.org/content/acs/en/policy/publicpolicies/sustainability.html>

The ACS does not appear to have any commitments or targets related to reducing its carbon emissions consistent with the Paris Climate Agreement.

Other relevant information

In 2017 the ACS emphasised the “dire warnings about the fragile state of the Earth’s climate” highlighted in the Fourth National Climate Assessment and the need for US policymakers to take action “to address and mitigate the already apparent and visible impacts of a changing climate in the US and around the world.”¹⁰

C&EN, a weekly news magazine published by the ACS, has regularly written on the damaging effects of climate change.¹¹ Whilst these articles are largely progressive for climate politics within the chemistry and engineering communities, they do regularly emphasise the importance of carbon capture and storage (CCS).¹² We discuss the shortcomings of such a focus below.

The ACS has put together a Climate Science Toolkit that introduces the scientific fundamentals of climate change.¹³

SGR comments

SGR acknowledges that the ACS has made significant efforts to demonstrate its awareness and concern regarding climate change within its position statements and policies.

SGR has continuing concerns, however, on the following aspects:

Transparency

The ACS has very low transparency on its company investments, with there being no public information available on where these are held. It is, therefore, impossible to ascertain the extent to which the ACS is investing in a manner that complies with the spirit of its ‘Sustainability & the Environment Policy’ and its position statement on ‘Global Climate Change’. Without this information, the ACS’s stated role as a thought leader around energy, climate change and future transport is not able to be verified by its actions.

Beyond publicly available information, SGR has repeatedly reached out to executive director of the ACS, Thomas Connelly, along with the organization’s board of directors, but has received no response regarding the organization’s financial transparency.

Given that many members of the public are deeply concerned about climate change and that those with a background in chemistry have been integral in monitoring the Earth’s changing climate and atmosphere, any investment by the ACS in fossil fuel companies would, in our view, undermine their efforts, as we discuss further below.

¹⁰ <https://www.acs.org/content/acs/en/pressroom/newsreleases/2017/november/acs-issues-statement-on-fourth-national-climate-assessment-report.html>

¹¹ <https://cen.acs.org/environment/climate-change/Climate-science-report-paints-dire/99/web/2021/08>

¹² <https://cen.acs.org/environment/greenhouse-gases/capture-flue-gas-co2-emissions/99/i26>

¹³ <https://www.acs.org/content/acs/en/climatescience.html>

Within the ACS's "Scientific Integrity in Public Policy" statement, the organization emphasises the need for government agencies to maintain clear conflict of interest policies.¹⁴ The ACS does not, however, appear to hold itself to the same standards of integrity. Despite the organization's mission "to advance the broader chemistry enterprise and its practitioners for the benefit of Earth and its people", the Society receives significant sponsorship for its ACS Awards from fossil fuel company ExxonMobil - whose highly questionable ethical record we consider below - and also oversees the Petroleum Research Fund, which annually provides many millions of dollars in grants to students considering chemistry careers in the petroleum industry.

Despite an expressed concern with climate change, both in the organization's 'Sustainability & the Environment Policy' and its position statement on 'Global Climate Change', the ACS does not appear to have set any commitments or targets to reduce its carbon emissions.¹⁵

Financial links to fossil fuel corporations

The ACS has known recent financial links with the following companies in the fossil fuel sector:

Sponsorship (education, corporate)

- ExxonMobil

The ACS has significant financial links to ExxonMobil despite their Code of Conduct for its members which states that, as professionals, they "should strive to do their work in ways that are safe and sustainable for the environment" and that protects the "prosperity of future generations."¹⁶ While the ACS expects these standards from its members, the same does not seem to be the case for its corporate partners, such as ExxonMobil.

ExxonMobil has been widely criticised for its efforts over many decades to cast doubt on the scientific evidence on the climate change threat, as well as undermining policies to tackle the problem.¹⁷

There is also evidence that ExxonMobil holds reserves in Athabasca's tar sands, a fuel with particular environmentally-damaging effects that have been documented recently by the ACS's own magazine.¹⁸

In addition, there are concerns about ExxonMobil's wider environmental and corporate performance, including claims of severe environmental damage and the destruction of geological heritage.¹⁹

¹⁴ <https://www.acs.org/content/acs/en/policy/publicpolicies/science-policy/scientificintegrity.html>

¹⁵ <https://www.acs.org/content/acs/en/policy/publicpolicies/sustainability/globalclimatechange.html>

¹⁶ <https://www.acs.org/content/acs/en/careers/career-services/ethics/the-chemical-professionals-code-of-conduct.html>

¹⁷ https://www.sgr.org.uk/sites/default/files/2019-04/SGR_corp_science_full.pdf, <https://exxonknew.org/>, <https://iopscience.iop.org/article/10.1088/1748-9326/aa815f>, <https://www.theguardian.com/environment/2006/sep/20/oilandpetrol.business>,

¹⁸ <https://pubs-acr.org/manchester.idm.oclc.org/doi/pdf/10.1021/cen-09102-notw2>

¹⁹ <https://www.nationalgeographic.com/environment/article/oil-spills-30-years-after-exxon-valdez>

SGR has concerns about investments in and financial ties to fossil fuel companies by professional science and engineering organizations for these reasons:

- Professional science and engineering organizations have considerable influence with politicians and the public and it's crucial that they put in place robust science-based targets and plans that are compatible with the goals of the Paris Agreement - and end lobbying behaviour that could undermine it;
- As the UK Health Alliance on Climate Change puts it, "engaging with companies whose business model relies on fuel extraction is of limited use—only divestment will stop extraction".²⁰ Worldwide, according to the Alliance, over 1,000 organizations with £7 trillion assets have committed to divesting from fossil fuels and instead investing in climate solutions.²¹ Research indicates that divestment reduces the price of fossil fuel shares. According to a team at the University of Waterloo in Canada, "lower share prices increase the costs of capital for the fossil fuel industry, which in turn decreases their ability to explore new resources and exploit proven resources".²² The greater the likelihood of these fossil fuel resources staying in the ground, the more likely we are to meet the international climate change targets agreed under the Paris Agreement in order to prevent potentially catastrophic climate change;
- In order to keep to the below 2°C target, only one-fifth of known fossil fuel reserves can be burned, putting these assets at risk of becoming stranded. The fraction is even smaller when considering how to meet the 1.5°C target. According to the UK Health Alliance on Climate Change, fossil fuels are an increasingly risky investment and fossil fuel free indexes equalled or outperformed unsustainable alternatives for 5-10 years. "Divestment announcements by prominent investors signal financial risks to the market, which in turn depress share prices," say the University of Waterloo researchers. "Therefore, divestment announcements can have a measurable impact on the fossil fuel industry." Shell said in 2018 that divestment had become a material risk to its business.²³ In 2020 fund manager CCLA, which invests on behalf of charities including Church of England dioceses, dropped its investments in oil giants Shell and Total for financial reasons.²⁴ On January 27th 2021, ratings agency S&P warned 13 oil and gas companies, including Royal Dutch Shell and Total, that it is considering downgrading their credit ratings. The agency has increased its risk rating for the oil and gas sector as a whole from "intermediate" to "moderately high" because of the move away from fossil fuels, poor profitability and volatile prices, according to news reports.²⁵ There are also signs that oil companies may struggle to recruit employees with the skills they need.²⁶
- Many fossil fuel companies are relying on carbon capture technology and nature-based solutions being deployed at a huge scale to offset their planned emissions.²⁷ Heavy reliance on the global scale deployment of carbon capture and storage technologies is misplaced

²⁰ <http://ukhealthalliance.org/divestment>

²¹ <https://www.divestinvest.org/11-trillion-counting-divestinvest/>

²² <https://theconversation.com/how-divesting-of-fossil-fuels-could-help-save-the-planet-88147>

²³ <https://www.theguardian.com/commentisfree/2019/oct/13/divestment-bank-european-investment-fossil-fuels>

²⁴ <https://www.divestinvest.org/church-of-england-fund-drops-remaining-fossil-fuel-investments/>

²⁵ <https://www.theguardian.com/business/2021/jan/27/rating-agency-sp-warns-13-oil-and-gas-companies-they>

²⁶ <https://www.ft.com/content/3b53f1bd-4625-4733-afb9-af4301257506>

²⁷ <https://insideclimatenews.org/news/16072020/oil-gas-climate-pledges-bp-shell-exxon/>

given the lack of progress in this area for the last 20 years. According to an international group of 41 scientists and academics, such technologies are “expensive, energy intensive, risky, and their deployment at scale is unproven.”²⁸ It is irresponsible to base net zero targets on the assumption that uncertain future technologies will compensate for present day emissions”

For those keen to retain support for the energy sector, there are plenty of companies that are much more progressive than fossil fuel companies in which to invest. For example, Orsted (formerly DONG, Danish Oil and Natural Gas) has shifted from being a fossil fuel dominated company to one heavily focused on renewable energy. Similarly, some large German engineering companies, such as Siemens and E.ON, have also made major shifts away from fossil-fuel related work.²⁹

There is, of course, a very narrow window of opportunity to keep global temperature rise below 1.5°C that warrants a fast transition away from fossil fuel dependency. We think that investment in the renewable energy and energy storage sectors would meet demand for energy more cost-effectively and more sustainably whilst continuing to provide jobs for scientists and engineers, investment in green chemistry would promote the use of alternative renewable feedstocks, and investment in energy conservation measures would reduce the energy demand.

As well as the long-term financial risk associated with investing in fossil fuels, we propose that divesting from the fossil fuel industry and replacing them as corporate partners will make the ACS’s income stream more sustainable, as well as minimizing risk to its reputation.

²⁸ <https://www.climatechangenews.com/2020/12/11/10-myths-net-zero-targets-carbon-offsetting-busted/>

²⁹ Siemens has committed to the 1.5°C target under the SBTi and E.ON’s carbon emissions are aligned with the below 2°C pathway according to TPI.