

The American Society for Engineering Education

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*¹, published by Scientists for Global Responsibility (SGR) in October 2019. Information sourced from the American Society for Engineering Education's publicly available documents is provided first, followed by commentary by SGR.

The American Society for Engineering Education —or simply the ASEE – is a large professional organization with over 12,000 members.² Its creation dates to 1893 following significant growth in US higher education institutions. The organization initially set out to foreground the scientific and engineering principles that underlie practical knowledge for a more rigorous engineering education landscape.³

Statement of purpose and values

The ASEE summarises its main goals on its website as follows.⁴

“Our Goals

ASEE recognizes the term “engineering education” to encompass the full academic spectrum of instruction, research, scholarship, practice, and service. ASEE also has an enduring commitment to continuous improvement.

In the context of the above two statements, ASEE pursues the following goals:

Innovation - ASEE will advance the development of innovative approaches and solutions to engineering education.

Excellence - ASEE will advance excellence in all aspects of engineering education while continuously improving the member experience.

Access - ASEE will advocate for equal access to engineering educational opportunities for all.

Advocacy and Public Policy - ASEE will be the leading advocate for advancing the broad interests of engineering education.

Communities - ASEE will cultivate an inclusive community that engages all members and values the contributions of all stakeholders.

Communication - ASEE will implement a robust and transparent communication strategy effectively linking all stakeholders.

Diversity and Inclusion - ASEE will promote diversity, broadly defined, by modelling equity and inclusion through its policies and practices.

Internal Organization - ASEE will be a strategic and dynamic organization, with a knowledgeable and responsive staff, that enhances stakeholder engagement.

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

² <https://www.asee.org/about-us/the-organization>

³ <https://www.asee.org/about-us/who-we-are/about-asee>

⁴ <https://www.asee.org/about-us/who-we-are/Our-Vision-Mission-and-Goals>

Financial Stability - ASEE must carefully balance opportunities for investments in activities and programs to meet future needs with our current responsibilities, developing and maintaining a robust cash reserve, and ensuring that expenditures align with the organization's mission."

Communities & Communications:

ASEE will expand its membership base, promote member engagement, celebrate the rich diversity and breadth of our membership, gather member input, serve member needs, and connect members to each other and the broader communities of stakeholders. ASEE will make informed decisions and disseminate information in a transparent and open manner.

Innovation & Excellence:

ASEE will strengthen our technological and programmatic infrastructure to advance innovation and excellence in teaching, scholarship, research, and service. ASEE will foster the highest level of ethical behavior by all members and staff.

Access, Diversity, & Inclusion:

ASEE will catalyze open and thoughtful dialogue to identify and acknowledge underserved constituencies and advocate for their enhanced participation, inclusion, and success. ASEE will promote promising practices of inclusiveness and model public accountability.

Advocacy & Public Policy:

ASEE will inform our members and society-at-large of engineering education issues affecting their lives, study, and work, supporting the Society's advocacy and members' engagement of policymakers at all levels.

Financial Sustainability & Internal Organization:

ASEE will continue to develop responsible fiscal policies and exercise the financial discipline and managerial excellence necessary to meet the needs of its members, now and in the future.

Investments

According to 990 tax return information obtained via ProPublica, in December 2019 the ASEE held \$2.55m in publicly traded securities.⁵

After contacting ASEE's Executive Director, Norman Fortenberry, SGR was informed that 'energy' makes up 2.58% of ASEE's investment portfolio of which they were unsure how much of this was related to fossil fuels.

Investment policy

While the ASEE does have an investment policy, there is no mention of an ethical framework for these investments. The closest the policy comes to any kind of ethical constraints is judicial: "the

5

https://projects.propublica.org/nonprofits/display_990/370730118/10_2020_prefixes_36-38%2F370730118_201909_990_2020100717356134?_cf_chl_jschl_tk_=pmd_K9.lpWITnMRhhWY1juKRZgwyR0Z0SR51iU8mmX1VT8-1634825953-0-gqNtZGzNArucnBszQr9

basic investment standards shall be those of a prudent investor as articulated in applicable state laws.”⁶

Transparency

The ASEE does not publicly disclose where it holds any of its \$2.55m in investments, giving it zero transparency.

Corporate Patrons

The ASEE lists fossil fuel business Chevron as a “Champion Partner”, meaning the company has provided sponsorship and/or donations in excess of \$75,000. Arms company Boeing is also listed, amongst others, as a “Contributing Partner”, meaning that the company has provided between \$25,000 and \$50,000 in sponsorship and/or donations.⁷

While sponsorship received from Boeing does not directly indicate that the ASEE holds direct or indirect investments in fossil fuels, it is concerning that the organization is willing to accept financial support from companies involved in unethical industries, such as the arms trade.

Education programmes and grants

The ASEE does not appear to be accepting corporate sponsorship for its education programmes and grants.

Events sponsorship

The ASEE does not have any events sponsored by fossil fuel corporations.⁸

Investment policy

We were unable to find any evidence of an investment policy.

Environmental policy

Beyond a statement indicating ASEE’s support for educating engineers in sustainable techniques, we were unable to find a policy relating the organization’s actions in relation to the environment.⁹

Other relevant information

The ASEE has, in its 2020 Code of Ethics, highlighted “the need for sustainable development and social justice and how engineers can contribute to both”.¹⁰

The organization also has a public statement that emphasises its belief “that engineering graduates must be prepared by their education to use sustainable engineering techniques in the practice of

⁶ <https://www.asee.org/about-us/what-we-do/policy/investment-policy>

⁷ <https://www.asee.org/about-us/our-partners/premier-corporate-partners>

⁸ <https://www.aps.org/meetings/>

⁹

<https://www.asee.org/about-us/who-we-are/our-vision-mission-and-goals/statements/sustainable-development-education>

¹⁰

https://aseecmsdug.blob.core.windows.net/aseecmsdev/asee/media/content/about%20us/pdfs/asee_code_of_ethics_2020.pdf

their profession and to take leadership roles in facilitating sustainable development in their communities”.¹¹

Sustainability and climate change are regular topics at ASEE conferences around the US.¹² At the ASEE’s last annual conference, for example, delegates presented a paper on the transition to Net-Zero energy buildings.¹³ This shows a clear concern amongst members of the ASEE about the environment.

SGR comments

SGR acknowledges that the ASEE has made some effort to acknowledge the important role of engineering education in mitigating the causes of climate change.

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

Transparency

The ASEE has very low public transparency on its company investments, with there being no accessible information available on where the \$2.55m highlighted in the company’s 990 form for 2019 is held. After contacting executive director of the ASEE Norman Fortenberry, SGR was informed that the organization’s investments are held in various mutual funds managed by TIAA. Joe Dillon, ASEE’s CFO, has since followed up and informed SGR that “energy” makes up 2.58% of the organization’s investment portfolio (roughly \$65,790, according to SGR’s calculations) but that they were unsure how much of this was fossil fuel related.

Whilst SGR appreciates that the ASEE provided more information than several of the other professional organizations we contacted in the US, without access to further information, we are unable to confirm how much the ASEE has invested in fossil fuels. TIAA is, however, as an investment manager known to hold significant investments in fossil fuels. As Fossil Free Funds has discovered, across 76 funds, TIAA is reported to hold investments in fossil fuels that total \$12.72 billion, making up 5.21% of its assets across this sample.¹⁴

Given that many members of the public are deeply concerned about climate change and that those with a background in engineering have a current and future role in mitigating and adapting to the effects of climate change, any investment by the ASEE in fossil fuel companies would be concerning.

¹¹

<https://www.asee.org/about-us/who-we-are/our-vision-mission-and-goals/statements/sustainable-development-education>

¹² <https://peer.asee.org/sustainability-in-food-services-and-materials>;
<https://peer.asee.org/improving-climate-change-educational-outcomes-for-first-year-students-through-multidisciplinary-instruction>;
<https://peer.asee.org/educating-engineers-in-coastal-resiliency-with-a-global-perspective-on-climate-change>;
<https://peer.asee.org/the-effects-of-global-warming-and-possible-engineering-solutions-involving-renewable-energy>

¹³ <https://monolith.asee.org/public/conferences/172/papers/29403/view>

¹⁴ <https://fossilfreefunds.org/families?q=TIAA%20Investments>

Without full transparency regarding the ASEE's investments or the public availability of an ethical investment policy, it is impossible to rule out that the ASEE is investing in fossil fuels to some degree within their mutual investment funds.

Corporate Patrons

ASEE's commitment to Chevron as a "Champion Partner" is particularly alarming not least because of its language. By presenting a fossil fuel corporation such as Chevron as a "champion" firm within the engineering community, the ASEE is championing those corporations that donate the most, regardless of their damage to the climate¹⁵.

As the third largest fossil fuel corporation globally and one of the primary investors in the Athabasca tar sands project Chevron is also, as an individual firm, an especially concerning corporation to accept as a patron.¹⁶

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".¹⁷ 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.¹⁸ 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".¹⁹ 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

¹⁵ <https://www.theguardian.com/environment/2019/oct/09/revealed-20-firms-third-carbon-emissions/>

¹⁶ [https://www.visualcapitalist.com/ranked-the-largest-oil-and-gas-companies-in-the-world/;](https://www.visualcapitalist.com/ranked-the-largest-oil-and-gas-companies-in-the-world/)
<https://canada.chevron.com/our-businesses/oil-sands#:~:text=Chevron%20Canada%20has%20a%2020,River%20and%20the%20Jackpine%20mines.>

¹⁷ <http://ukhealthalliance.org/divestment>

¹⁸ <https://www.divestinvest.org/11-trillion-counting-divestinvest/>

¹⁹ <https://theconversation.com/how-divesting-of-fossil-fuels-could-help-save-the-planet-88147>

become a material risk to its business.²⁰ 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.²¹ 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.²² There are also signs that oil companies may struggle to recruit employees with the skills they need.²³

- 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.²⁴ Heavy reliance on the global scale deployment of carbon capture and storage technologies is misplaced 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.”²⁵ 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.²⁶

There is, of course, a 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 geologists, investment in green chemistry would promote the use of alternative renewable feedstocks, and investment in energy conservation measures would reduce the energy demand.

As with the long-term financial risk associated with investing in fossil fuels, we propose that divesting fossil fuel firms as corporate patrons for the ASEE will make this income stream more sustainable as a long-term proposition, as well as minimizing risk to the ASEE’s reputation.

²⁰

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

²¹ <https://www.divestinvest.org/church-of-england-fund-drops-remaining-fossil-fuel-investments/>

²²

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

²³ <https://www.ft.com/content/3b53f1bd-4625-4733-afb9-af4301257506/>

²⁴ <https://insideclimatenews.org/news/16072020/oil-gas-climate-pledges-bp-shell-exxon/>

²⁵ <https://www.climatechangenews.com/2020/12/11/10-myths-net-zero-targets-carbon-offsetting-busted/>

²⁶ 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.