2020-21 Future of Energy Challenge: Net-zero Emissions

Sponsored by Shell

The Future of Energy Challenge is back! Apply now to further develop your solution towards a scalable enterprise.

Selected teams will proceed to an eight-week accelerator program co-sponsored by Shell and Net Impact. Shell encourages innovation through a variety of initiatives and investments. Globally, it runs several startup and entrepreneurship programs aimed at learning from each other, adapting existing technologies and creating new ones.

Participating teams will receive mentoring by industry experts and can expect to arrive at a Proof of Concept stage at the end of their participation in the Challenge. Teams will compete at a pitch session to win $10,000 in funding and other resources to help bring their solutions to life.

The Challenge

Society faces a dual challenge: how to transition to a low-carbon energy future to manage the risks of climate change, while also extending the benefits of energy to everyone on the planet. Tackling this challenge starts by being aware of our impact so that investors, companies, cities, and governments can make the right choices. It requires us to come up with new ways for how energy is produced, used, and accessed by people while drastically cutting down on emissions.

The GHG Protocol Corporate Standard is an international guideline designed to help companies and other organizations identify, calculate, and report GHG emissions. It classifies emissions into three scopes:

- Scope 1: direct emissions produced by company-owned facilities and operations
- Scope 2: value chain emissions outside scope 1 operations. They are indirect emissions from the generation of purchased energy, sourced from outside facilities
- Scope 3: value chain emissions outside scope 1 and 2, including emissions from suppliers, employees, and product users. E.g., in the case of Shell, scope 3 emissions include those that come from customer use of refinery and natural gas products (individual and commercial).

Businesses are playing a role in the transition to net-zero emissions. For many companies, especially those that have already taken action around their facilities, operations, and purchased energy (scope 1 and 2), the bulk of their climate impact is now located outside of their direct control, in the scope 3 emissions that their products produce. To reiterate, scope 3 emissions are GHG emissions that are a consequence of an organization's business activities but not owned or controlled by them. The Future of Energy Challenge Net-zero Emissions will focus on addressing scope 3 GHG emissions.

Scope 3 emissions tend to be greater volumetrically than scope 1 and 2 combined. These emissions are wide-ranging in what they encompass and vary significantly by company. Scope 3 emissions are often the most complex portion of a company's GHG footprint, and because they are indirect emissions that take place down the supply chain and outside the company's direct control, it is often more difficult for companies to address them in efforts to reduce their overall carbon footprint. Shell aims to reduce the net carbon footprint of the energy products it sells in step with society by around 65% by 2050 – an ambition that requires consideration of scope 3 emissions produced by customers.

As you would expect, several difficulties arise when companies try to address scope 3 emissions. One of those challenges is data collection. For example, accurately measuring what percentage of a company's emissions are scope 3 emissions, or a specific product's impact—whether positive or negative—can be challenging. Another difficulty companies face is aligning procurement realities and sustainability goals.

The Challenge Question

Amidst the complexity of supply chains, addressing scope 3 GHG emissions is an area with substantial opportunities for aspiring entrepreneurs looking to have an impact in the energy space. Sustainability experts and global companies are increasingly looking for ways to tackle scope 3 emissions, setting goals, and tracking improvements. We invite you, the next generation of innovators and entrepreneurs, to submit your responses to the following question:

What solutions, whether applied to individual consumer or commercial activities, could support significant scope 3 emissions reductions?

Challenge Parameters

At the end of the 8-week Challenge teams would be expected to have a Proof of Concept stage (if technical TRL3 minimum). This means having demonstrated a proof of concept either analytically and/or experientially.

Solutions may address the following areas and examples:

- Carbon technology (e.g. carbon capture and/or storage, direct air capture)
- Infrastructure efficiency (e.g. smart buildings or fugitive emissions from gas usage in a community)
- Material circularity (e.g. materials recycling and re-use, excluding plastics)
- City-level solutions (e.g. electrifying infrastructure, green urban planning, carpooling incentives, smart cities)
- Power: hydrogen, renewable, Storage (e.g. wind, solar, tidal energies)
- Regenerative energy (e.g. waste to energy systems, wind turbines on highways, microturbines on rainwater runoff)
- Energy access (e.g. microgrids in disadvantaged communities, resilient energy supplies)
- Energy education (e.g. learning programs on efficient energy usage)

The following areas are out of scope for this Challenge:

- Mobility (e.g. electric transportation)
- Plastics (e.g. recycling, pyrolysis)

Timeline

Phase1

November 16, 2020: Challenge promotion and submission recruitment starts
February 15 - Early bird deadline for first-round submissions. Teams who submit by either one of the two early bird deadlines will get personalized feedback from Net Impact. Your team will then have the option to revise and resubmit before the final deadline.
March 15, 2021: Early bird deadline for second-round submissions.
April 9, 2021 Final deadline for submissions.
April 10 – April 30, 2021: Judges from Net Impact, Shell & GTL evaluate all submissions and teams are notified.
May 14, 2021: Confirmation by participants

Phase 2

May 31 – July 23, 2021 (8 weeks): Selected teams become Future of Energy Scholars. Scholars develop their solutions as they participate in the Challenge, a virtual accelerator
July 26 – 30, 2021: Final pitch presentations to a panel of expert judges. If a live event is possible, travel expenses will be provided. The winning team will be selected.

Prize: The winning team will receive $10,000 of non-dilutive funding and resources to invest in the next stage of developing their clean energy start-up. The specific benefit of this prize will be curated to the winning team's fit-for-purpose needs which will be determined through their participation in the accelerator. This could be funding for another accelerator program, access to working space or a laboratory, hiring a consultant, etc. This is not a blank check to the start-up, but funding for their next step in development.

The Challenge Accelerator

The virtual accelerator experience will support teams by:

- Facilitating access to a network of mentor industry experts;
- Providing customized coaching to refine execution and commercialization plans;
- Supporting the development of a marketing strategy.

Teams chosen for the accelerator will form a cohort of climate-focused social entrepreneurs, the Net Impact Future of Energy Scholars. Scholars are expected to commit to a period of intense participation, dedicating approximately 15 hours per month over two months, refining their solutions via virtual group training and coaching calls with mentors and experts from Shell, Greentown Labs, and other partners that may be a good fit

for our participating startups. Participants can expect to receive support to build out both the technical and non-technical elements of their solution, e.g. support with business development and landscape analysis, as well as insights to take their technology from initial R&D to rapid prototyping.

At the culmination of the accelerator, teams will be invited to pitch their solutions to a panel of judges that represent expertise in energy. Teams will receive coaching in preparation for their pitch and the winning team will have access to expert mentors in clean energy.

Forming a Team

- Undergraduate students, graduate students, and professionals are welcome to apply
- Submissions must come from teams of 2 to 4 members, ideally with a variety of academic backgrounds or perspectives. If your team has more than 4 people, up to 4 can be chosen to participate in the final pitch competition. Please reach out for special circumstances.
- Teams must be based in the United States and be committed to launching the idea over the next 3-5 years within the U.S. market.
- If selected, participants will join the Future of Energy Scholars and commit their participation in the Accelerator– a 20 hour per month commitment – from May 31 through July 30, 2021.
- Future of Energy Scholars must commit at least 2 team members' participation in the final pitch competition to be held at the conclusion of the accelerator at the end of July.

Submission Details

Each team is required to apply to the Challenge by submitting their proposal using this application form [http://www2.netimpact.org/future-of-energy-application]. **Submissions will be accepted up to 11:59 pm Pacific Time on April 9, 2021.**

Note: Teams who submit by the early-bird deadline of February 15, 2021 will get personalized feedback from Net Impact. Your team will then have the option to revise and resubmit your application by the final deadline on April 9, 2021.

Selection Criteria

- Submissions will be reviewed by Net Impact and Shell. Successful proposals will be those that best demonstrate ability to reach a Proof of Concept stage (TRL 3 minimum for novel technology solutions) at the end of the accelerator, while exhibiting:
- **Clarity of goals and objectives**: Clearly identify which part of the problem (which players, part of the value chain, etc.) you're addressing. The solution should reduce emissions from energy products, while providing energy for a low or no-emission future

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- **Innovation**: The proposal should be fundamentally innovative and generate value by applying a unique solution or an existing solution in a new way.
- **Feasibility**: The proposal could be reasonably implemented in the next 3-5 years and could create substantial new value, i.e. >$ 1M of value per year. *Special consideration will be given to teams who demonstrate a commitment to launching their solution
- **Breakthrough potential**: The proposal focuses on systemic thought and strategy rather than single-solution gadgets, apps, or products. This is innovation in two ways, either it's a brand new solution or an existing solution used in a completely new way.