



## 2019-20 Future of Energy Challenge: Mobility

Sponsored by Shell

Compete to participate in the Future of Energy Accelerator and develop your solution from an idea to a scalable concept. Selected teams will win a trip to the final pitch off competition at SXSW 2020 in Austin, Texas.

### Timeline

- **November 15:** Early bird deadline for first round submissions. Teams who submit by the early deadline will get personalized feedback from Net Impact. Your team will then have the option to revise and resubmit your submission by the final deadline.
- **November 25:** Deadline for submissions.
- **December 6:** Judges from Net Impact and Shell evaluate all submissions and teams are notified. The top 5-10 teams are accepted as Energy Scholars and will spend approximately 10-15 hours per month refining their concepts with the help of business coaches and mobility experts from Shell. In the month of December, Energy Scholars will meet over an introductory webinar session.
- **January-March 2020:** Energy Scholars develop their concept into a robust solution as they participate in the 10-week Accelerator. This Accelerator experience is a period of intense mutual commitment. The Energy Scholars refine their solutions with ongoing support via webinars and coaching calls with mentors and experts as part of the Future of Energy Accelerator. You can expect to build out both the technical and non-technical elements of your proposal.
- **March 2020-** Final in-person coaching session and pitch presentations for Shell at SXSW in Austin, Texas during the second weekend of the month. Travel expenses provided. Winning team selected.

### Forming a Team

- Undergraduate students, graduate students and professionals are welcome to apply
- Submissions must come from teams of 2-4 members, ideally with a variety of academic backgrounds/perspectives
- Teams must be based in the United States
- If selected, finalists will join the Energy Scholars and commit their participation in the Future of Mobility Accelerator--involving a 10-15 hour per month commitment from mid-December through mid-March. Additionally, Energy Scholars must commit at least one team member to attending an in-person session and final live pitch event at SXSW in Austin, TX during the second weekend in March.

### Challenge Questions

In the Future of Energy Challenge, we ask the next generation of thinkers, inventors and entrepreneurs to design collaborative and innovative ideas addressing mobility in one of the following issue topics:

- Alternative Fuels
- Electric Mobility



- Access to Energy
- Retail Stations
- Nature Based Solutions

- 1. Alternative Fuels:** Alternative fuels can play an important role in reducing carbon dioxide (CO<sub>2</sub>) emissions in the decades ahead. There are great opportunities to innovate in the scaling up of alternative fuels. For example, most of the technology required to scale hydrogen, whether as fuel or for its own storage, is already available, but it needs to be developed into robust, safe, and fit-for-purpose products. Some alternative fuels can be blended with existing fuels like gasoline and diesel and used in today's vehicles and existing infrastructure. Currently, only biodiesel and hydro-treated vegetable oil are commercialized, and these fuels are limited by the availability of feedstocks. The production of biofuels, produced specifically for airplanes and ships, is technically viable, but the availability of those suitable fuels is also low. Sustainability should be a fundamental consideration in the creation of a biofuel supply chain. This will ensure the scaling up of alternative fuels delivers more social, economic and environmental benefits--including reducing lifecycle greenhouse gas (GHG) emissions reductions. How might we intervene, within the supply chain, to improve alternative fuel production in order to bring it to scale, either at a regional or global level? For ideas about electric-powered alternatives, please see question 2.
- 2. Electric Mobility:** According to a report by the United Nations' Intergovernmental Panel on Climate Change, humanity has around 12 years to avoid the most severe environmental impacts. To achieve this goal, GHG emissions must be reduced by 45% from 2010 levels, and by 100% by 2050, as reported by the New York Times last year. Once in use, electric vehicles do not produce emissions and are more energy-efficient than internal combustion engines. In the US close to 200,000 electric vehicles (both plug-in and hybrid) were sold in 2017. This makes up only 1.5% of car sales for that year. As with other technological advances, the more demand for electric vehicles there is, the more accessible and cost-effective they will become. In many cities around the country, there is much focus on building an efficient network of charging stations which is helping move EV adoption forward. Despite the current cost of this technology, and outside of policy changes, how might we nudge a wider adoption of electric transportation of all kinds in the interest of shifting towards widespread usage in the near future? How might we influence or incentivize consumers to invest in electric mobility?
- 3. Access to Energy:** Microwaving your dinner and fast charging a phone are luxuries many people take for granted. Yet many in the world still do not have access to consistent and sustainable energy sources. Developing and adopting technologies at scale can open and accelerate the market for decentralized energy solutions. This can help drive production of a wider range of sustainable fuel sources. What business models and innovative technologies might drive a future that promotes more inclusion and access to energy resources, either locally or worldwide?
- 4. Retail Stations:** Studies have indicated that American consumers increasingly expect retail companies to make a positive contribution to society, and the public has a particularly strong interest in companies





focusing on environmental sustainability. Some large companies are leveraging their size to scale up sustainable strategies while also driving business through their investments. With roughly 44,000 Shell retail sites in nearly 80 countries, the reach and potential impact of sustainability initiatives and local programs is significant. At the same time, similar to many other American fuel providers, Shell's retail fuel business today is primarily operated by independent wholesalers. So, while the name on the sign is Shell, the day-to-day site operations are the legal responsibility of the wholesaler and/or operator. Moving forward, Shell is exploring ways to roll out a new convenience retail option called 'Shell Select'. This is different from traditional convenience stores in that it provides Shell-branded, high quality, fresh, culinary-inspired food and beverage options for customers who are on the go. Whether Shell retail sites are operated by wholesalers or are part of the 'Shell Select' concept, any successful sustainability initiative has to achieve two goals simultaneously; move us towards a sustainable planet while also driving customers to our retail sites. The program will provide a business benefit to the wholesalers-- who will ultimately execute the initiative. Taking into consideration the importance of delivering benefits to broader society, as well as our local wholesalers, how might Shell leverage its vast, networked retail presence to address pressing sustainability challenges?

\*\*For this prompt, make sure to include maturity criteria on the cost/benefit to wholesalers and include your thought process in your response.

- 5. Nature Based Solutions:** According to research by The Nature Conservancy and the World Resources Institute, stopping deforestation, restoring forests and improving forestry practices could cost-effectively remove 7 billion metric tons of carbon dioxide annually by 2030. However, there are several challenges to maximizing nature -based solutions as a viable carbon reduction tool. These include public understanding and acceptance of the science related to measuring carbon reductions from natural sources; global agreement on a methodology of accounting for carbon credits (Article 6 of the Paris Agreement) and the mechanism needed to bring the necessary resources (money, land, people, etc.) to scale. What is the critical factor(s) for success, in North America, in increasing the credibility of nature-based solutions in the eyes of consumers? How should the concept of offsetting individual carbon footprint with NBS be approached, and by whom?

### Submission Details

Each team is required to submit their proposal by applying via the program webpage <https://www.netimpact.org/programs/future-of-energy>. Submission must occur prior to 11:59pm Pacific Time on November 25, 2019.

- Note: Teams who submit by the early deadline of November 15<sup>th</sup> will get personalized feedback from Net Impact. Your team will then have the option to revise and resubmit your submissions by the final deadline on November 25<sup>th</sup>





## Selection Criteria

Submissions will be reviewed by Net Impact and Shell. Successful proposals will be those that best demonstrate:

- **Clarity of goals and objectives.** It is easy to understand what problem the proposal is trying to solve, and the goals address the Challenge's theme.
- **Innovation.** The proposal generates value by applying a unique concept or an existing concept in a new way.
- **Feasibility.** The proposal could be reasonably implemented in the next ten years by building on existing research and technology and could provide ongoing value by growing or evolving if short-term goals were met.
- **Breakthrough potential.** The proposal focuses on systemic thought and strategy rather than single-solution gadgets, apps, or products. *\*\*\*If you are submitting an idea for retail stations criteria, make sure to include maturity criteria on the cost/benefit to wholesalers and include your thought process in your response.*

## Resources

The links below are intended to get you started thinking about how Shell is approaching the future of mobility. We encourage you to pursue additional resources and information as you construct your proposal.

**The Energy Mobility:** <https://www.shell.com/energy-and-innovation/the-energy-future/future-cities/city-innovation/driving-the-future-of-mobility.html>

**Innovation through R&D:** <http://www.shell.com/energy-and-innovation/overcoming-technology-challenges/innovation-through-research-and-development.html>

**New Shell Scenarios:** <http://www.shell.com/energy-and-innovation/the-energy-future/scenarios.html>

**Nature Based Solutions:** <https://www.shell.com/media/news-and-media-releases/2019/shell-invests-in-nature-to-tackle-co2-emissions.html>

**Future Transport:** <https://www.shell.com/energy-and-innovation/the-energy-future/future-transport.html>

**Cleaner Mobility:** <https://www.shell.com/make-the-future/cleaner-mobility.html>

**Access to Energy:** <https://www.shell.com/sustainability/communities/access-to-energy.html>

