



Challenge Statement/Synopsis:

Suncor's purpose is to provide trusted energy that enhances people's lives while caring for each other and the earth. Our strategy includes a goal to be a net-zero greenhouse gas (GHG) emissions company by 2050 and substantially contribute to society's net-zero goals. By 2030, we expect to reduce GHG emissions by 10 megatonnes per year across our energy value chain. Expanding our renewable energy portfolio and advancing the transition to a low-carbon future supports our strategy. As part of our Clean Energy and Hydrogen strategic focus area, we are interested in innovations in solar photovoltaic (PV) technologies.

Context:

Through this Challenge Suncor is predominantly seeking technologies that directly generate hydrogen from solar energy. One method to achieve this that is of interest is photoelectrochemical cells that uses solar energy to generate hydrogen from splitting the water molecule, without a separate electrolysis system.

Suncor is also interested in advances in solar PV technology with an opportunity to substantially lower overall system costs and provide improvements to land footprint, energy yield, and reliability. The developments could include:

- improvements to the solar power conversion efficiency
- lower manufacturing complexity and cost (e.g., scalable, high throughput)
- consistent and reliable operation over a wide range of temperatures
- use of alternate materials or other method to reduce toxicity
- methods or techniques to deploy in novel areas (i.e., non-agricultural lands)
- improvements to the time required to achieve carbon lifecycle neutrality
- reduced material use
- addressing challenges with environmental conditions, such as high winds, hail, and heavy snowfall

Through this challenge, Suncor is not requiring technologies that have already reached commercial scale. Promising technologies that have been laboratory scale tested and are progressing towards a pilot demonstration are of interest. We are interested in partnering in the technology development process.

Response Criteria:

- Any technology innovations that offer step change enhancements over current technologies.
- Concentrated solar power technologies are excluded.



- Commercial solar panel and inverter technologies are excluded.

The Opportunity:

- Potential to discuss your technology (if selected) with Canada's leading integrated energy company.
- Engage with a company that actively pursues technology and innovation. Suncor invested \$535 million in technology development, deployment, and digitalization in 2020.
- Meet new customers and enter new markets with your product.

About Suncor:

Suncor Energy is Canada's leading integrated energy company, with a global team of over 30,000 people. Suncor's operations include oil sands development, production and upgrading, offshore oil and gas, petroleum refining in Canada and the US, and our national Petro-Canada retail distribution network (now including our Electric Highway network of fast-charging EV stations). A member of Dow Jones Sustainability indexes, FTSE4Good and CDP, Suncor is responsibly developing petroleum resources, while profitably growing a renewable energy portfolio and advancing the transition to a low-emissions future.

