



PLANETAIR ÉTS PORTFOLIO (APPLIED RESEARCH)



Location: Canada (Québec) and various countries

Portfolio Type: Mixed Portfolio - Gold Standard projects and climate research projects

Our Planetair ÉTS Portfolio is a two-pronged approach designed to bolster your climate commitment with robust integrity and credibility.



The first component of our portfolio allows you to offset all your greenhouse gas (GHG) emissions through Gold Standard-certified climate projects. The Gold Standard is globally recognized for its stringent criteria and effectiveness in reducing GHG emissions, thereby ensuring the high quality of the projects. Each tonne of GHG offset by these projects is traceable through a unique carbon offset certificate, proving an assurance of the integrity, reliability, efficiency, and credibility of the offset.

The second component of our portfolio provides you with an opportunity to also support the ÉTS Research Fund on Climate Change, which finances applied engineering university research on the fight against climate change. The research projects focus on technologies for reducing and adapting to climate change, as well as on measurement and modeling.

Thus, your contribution enables Planetair to support both Gold Standard-certified projects and applied research in Canada that will improve our understanding of climate change and support the development of technological solutions.

In recognition of your commitment to combatting climate change, Planetair will send you a carbon offset certificate. The certificate will detail the number of tonnes of CO₂e that your contribution has helped to reduce.¹

The two components of the portfolio are further described below.

¹ The certificate is only intended to recognize your contribution: it has no cash value and cannot be traded or sold.



COMPONENT 1 - GOLD STANDARD-CERTIFIED PROJECTS

By contributing to the first component of our portfolio, you offset 100% of your GHG emissions by supporting Gold Standard certified climate projects. This internationally renowned certification guarantees real, measured, transparent, additional, and verified neutralization of GHG emissions. It stands as the benchmark in voluntary GHG offsetting. The climate benefits of these projects are confirmed by carbon offset credits, each representing one tonne less of greenhouse gas in the atmosphere.

We select innovative projects such as solar and wind energy generation, improved domestic stoves, and optimized waste management. These projects are highly effective carbon offsetting mechanisms, as they prevent GHG emissions at the source. For instance, harnessing solar or wind energy to generate electricity reduces our reliance on fossil fuels like coal and oil, important sources of GHG emissions. Furthermore, advanced waste management techniques, such as the recovery and reuse of organic waste to generate energy, contribute to the reduction of methane emissions, a notably potent greenhouse gas.



Unlike tree planting projects that require time to sequester carbon, the Gold Standard projects we select yield an immediate positive impact on the climate, making them a more appropriate response to the urgency of the climate crisis. Furthermore, Gold Standard certification requires projects to contribute to at least three UN Sustainable Development Goals, including Goal 13: Climate Action.

For an overview of recent Gold Standard projects supported by Planetair, please refer to the table located at the end of this brochure.



COMPONENT 2 - ÉTS RESEARCH PROJECTS

The second component of our portfolio is dedicated to financing the ÉTS Climate Change Research Fund (FRECC). Your contribution thus supports applied research projects selected by the FRECC. We allocate 25% of your contribution to this component.

ÉTS Research Fund on Climate Change

In June 2021, ÉTS created the ÉTS Research Fund on Climate Change (FRECC). The FRECC was created to:

- Stimulate research contributing to the fight against climate change by mobilizing more resources;
- Contribute to raising awareness in the ÉTS community on issues concerning the fight against climate change.

The FRECC will launch at least one call for projects per year for projects aimed at developing technologies to reduce greenhouse gas emissions. The themes of calls for projects could also target measurement, modeling, and adaptation to climate change.

A scientific committee, made up of internal and external experts, is responsible for managing the calls for projects and choosing the recipients of the funds on the basis of the criteria established by the FRECC.

First call for projects (2021)

A first call for projects was launched by the FRECC in 2021 to support research projects aimed at reducing greenhouse gas emissions.

It is a photocatalytic cell project aimed at the degradation of CO₂ using solar energy that was selected following the first call for projects. The innovative side of this project lies in a process for the synthesis of titanium dioxide (TiO₂) that requires less energy and is better at absorbing sunlight to carry out photocatalysis.

Second call for projects (2022)

In 2022, a second call for projects was launched by the FRECC. The Scientific Committee has selected a project aimed at reducing greenhouse gas emissions related to ground movements of aircraft.

The optimization of aircraft movements on the tarmac reduces CO₂ emissions by 45 kg per trip. This represents an average reduction of 7.2 million kg of CO₂ per year, for Montréal-Trudeau International Airport alone.

Third Call for Projects (2023)

The third call for projects took place in 2023. The selected project under this competition aims to reduce greenhouse gas (GHG) emissions and promote the use of rice straw in an innovative circular bioeconomy approach. Large quantities of rice straw are generated during rice processing. Rice producers in Ghana often burn these residues to dispose of them, as they lack a better solution.

Within this project, the possibility of using rice straw, a by-product of rice cultivation, instead of wood residues, will be explored to produce energy briquettes used in industrial settings and by small-scale traders.

This project, funded by FRECC, offers numerous benefits:

- Potential reduction of 580 to 980 tonnes of GHG emissions per year.
- Decreased health impacts on the population due to a significant reduction in rice straw burning.
- Use of energy briquettes instead of wood, reducing wood harvesting and slowing down desertification, a major concern in certain regions of the world.
- Continuation of compost production at the energy briquette production facility, enhancing soil quality in the region and making it more resilient to the impacts of climate change.

First Team Project Call (2023)

A first team project call also took place in 2023. The project "Potential Integration of Thermal Storage to Support the Decarbonization of Small-Scale Greenhouses" was selected under this call. Thermal storage, which involves storing energy in the form of heat or cold, proves to be useful in the fight against climate change in this context.

While the production of fruits and vegetables in controlled environments is increasingly encouraged and supported in Quebec, small-scale greenhouses often lack access to electricity. Consequently, they resort to fossil fuels to heat their greenhouses and extend the production season.

In this context, the project aims to propose strategies for utilizing thermal storage in greenhouses to extend the growing season while reducing the use of fossil fuels. This helps reduce costs and support the development of food self-sufficiency without compromising the province's carbon undertakings.

The ÉTS

Specializing in teaching and applied research in engineering and in technology transfer, ÉTS, a school of the University of Québec in Montréal, trains engineers and researchers recognized for their practical and innovative approach.



ÉTS is engineering for industry... and for society. ÉTS trains a quarter of Quebec engineers and aims to be a tool for positive change through technological innovation addressing environmental and societal issues. The professors-researchers carry out several activities within the university's various laboratories, chairs, and research groups. Their work makes a concrete contribution to scientific progress and to the training of a highly qualified workforce.

In the fight against climate change, ÉTS professors work in a wide range of activities to improve understanding of the phenomenon as well as the development of innovative solutions to counter it. The areas of expertise involved are diverse and increasing in number over time: measurement-modeling-simulation, energy, mobility, buildings, materials, supply, waste management, life-cycle analysis, circular economy, hydrology, aeronautics, etc.



ABOUT PLANETAIR

Planetair is a climate change initiative launched in 2005 by the UNISFERA International Centre, a non-profit organization (unisfera.org). The initiative is now administered by the Planetair Centre (planetair.ca), also a non-profit organization. We are committed to promoting sustainable development and making a significant contribution to the fight against climate change, both in terms of mitigation and adaptation. Our operations are funded through grants and contributions we receive for our climate change initiatives and, to some extent, through the consulting services we offer.

Each year, the commitments we make to our contributors are audited by certified professional accountants (CPAs). The most recent audit report is always available for review on our website: planetair.ca.

ProtégezVous.


We are proud to highlight that Planetair is the only organization recommended by Protégez-Vous, the leading consumer protection magazine, for greenhouse gas offsetting. You can find the link to the analysis conducted by Protégez-Vous on our homepage as well.



Questions and Comments



For any questions or comments, please feel free to contact us at: info@planetair.ca.



Your support is crucial to our mission, and we sincerely thank you for your commitment alongside us!

SOME OF THE GOLD STANDARD PROJECTS TO WHICH PLANETAIR HAS CONTRIBUTED

Project/technology/country	Climate solution
<p data-bbox="354 394 709 461">Efficient Cooking Ovens Project Nepal/Asia</p> 	<p data-bbox="884 394 1885 500">Problem: Nepal is a mountainous country with difficult topographical and socio-economic conditions. A quarter of its population lives below the poverty line. Besides economic poverty, this population lacks modern energy services for cooking and depends on inefficient and unhealthy open fire stoves.</p> <p data-bbox="884 548 1885 691">Solution: This home energy efficiency project distributes modern and improved stoves to socially marginalized groups in southeastern Nepal in the districts of Rautahat, Sarlahi and Mahottari. The stoves provide a clean cooking solution for households in these communities, improving health, reducing greenhouse gas emissions, conserving local forests, and promoting gender equality.</p> <p data-bbox="884 740 1885 919">Thus, in addition to reducing emissions, the stoves allow complete combustion of the fuel, minimizing air pollution, for healthier cooking that protects the health of the inhabitants. More efficient, the stoves also require up to 50% less wood fuel, alleviating deforestation pressures on nearby ecosystems and reducing the time needed to collect wood. The project also creates jobs for local men and women, who are trained by the project promoter in the installation and construction of the stoves.</p>

Project/technology/country	Climate solution
<p data-bbox="384 305 682 334">Cururos Wind Park Project</p> <p data-bbox="432 342 634 371">Chile/South America</p> 	<p data-bbox="884 305 1881 375">Problem: In Chile, some of the country's electricity is generated from fossil fuels, which produce significant amounts of greenhouse gas emissions.</p> <p data-bbox="884 418 1881 639">Solution: The Cururos project encompasses two wind farms located in the Coquimbo region of Chile with a total installed capacity of 109.6 MW and an average annual output of 290 GWh. The wind farms are connected to the Central Interconnected System (SIC). By displacing fossil fuel-based electricity in the grid, it has the potential to reduce greenhouse gas emissions by approximately 173,819 tonnes of CO₂e per year, which equates to 1,390,550 tonnes of CO₂e over the 7-year renewable accreditation period.</p>
<p data-bbox="264 836 800 865">Efficient Cookstoves and Drinking Water Project</p> <p data-bbox="363 873 701 902">Kenya, Uganda, and Rwanda/Africa</p> 	<p data-bbox="884 836 1881 976">Problem: In rural areas of Kenya, Uganda, and Rwanda, a large portion of the population lacks access to clean water and relies on wood and charcoal for cooking and water purification. This leads to environmental (deforestation, greenhouse gas emissions), health (indoor air quality), and economic (cost of wood and time required for wood collection) challenges.</p> <p data-bbox="884 1019 1881 1203">Solution: To address these issues, the projects subsidize the production and distribution of efficient stoves for low-income families. These efficient stoves help to reduce firewood consumption by approximately 50%. Some of the projects also support the rehabilitation of water boreholes to provide clean water to communities and the installation of water treatment systems at communal water sources, which saves families from having to boil water.</p>

Project/technology/country	Climate solution
<p data-bbox="415 305 653 334">Solar Energy Projects</p> <p data-bbox="369 342 699 371">India and Turkey/Europe and Asia</p> 	<p data-bbox="884 305 1881 407">Problem: In India and Turkey, a significant portion of electricity is generated from fossil fuels that emit large amounts of greenhouse gases. This method of producing electricity remains the cheapest in these countries.</p> <p data-bbox="884 456 1881 524">Solution: Solar park projects allow for the substitution of fossil fuels by solar energy, thereby reducing the greenhouse gas emissions associated with electricity production in these populous countries.</p>
<p data-bbox="415 714 653 743">Wind Energy Projects</p> <p data-bbox="369 751 699 781">India and Turkey/Europe and Asia</p> 	<p data-bbox="884 714 1881 816">Problem: In India and Turkey, a significant portion of electricity is generated from fossil fuels that emit large amounts of greenhouse gases. This method of producing electricity remains the cheapest in these countries.</p> <p data-bbox="884 865 1881 933">Solution: Wind park projects allow for the substitution of fossil fuels by wind energy, thereby reducing the greenhouse gas emissions associated with electricity production in these populous countries.</p>

Project/technology/country	Climate solution
<p data-bbox="367 305 699 332">Landfill Gas to Energy Project</p> <p data-bbox="436 342 627 370">Turkey/Europe/Asia</p> 	<p data-bbox="884 305 1850 370">Problem: Organic matter (i.e. food, paper, etc.) in landfills decompose and release methane gas (a very potent greenhouse gas) into the atmosphere contributing to climate change.</p> <p data-bbox="884 418 1877 638">Solution: The project aims at avoiding greenhouse gas (GHG) emissions from an existing landfill by collecting biogas to generate electricity. In addition to the direct avoidance of GHG emissions, further indirect emission reductions are achieved through the CO₂-neutral replacement of fossil fuels used for power generation. The activity includes the installation of a landfill gas extraction system, an enclosed flare as well as a biogas driven genset for electricity production. The biogas power project is built near the Molu village of Koca in the province of Kayseri in Turkey.</p>
<p data-bbox="361 776 705 803">Wastewater Treatment Project</p> <p data-bbox="464 813 602 841">Thailand/Asia</p> 	<p data-bbox="884 776 1881 841">Problem: The wastewater treatment facility uses fossil fuels to operate. The former operation of the plant also led to unpleasant smells, impacting people in the surrounding communities.</p> <p data-bbox="884 889 1881 1027">Solution: Thanks to the project, methane generated by the process is now captured, preventing it from contributing to climate change. In addition, it is used to generate energy and thus limits the need to resort to additional fossil fuels. Moreover, the project generates jobs for the local population, and it supports social and educational activities in the community.</p>