A+ FOR ENERGY
2026/2027 PROJECT SUMMARY WINNERS

1. Bertha Kennedy Catholic Community School
St. Albert

THE "SMART CITY" ENERGY OPTIMIZATION | *$4,000*

This project idea transforms our classrooms into a "Smart City" living laboratory. Moving beyond traditional textbook or worksheet learning, students will utilize robots to simulate a fleet of autonomous Electric Vehicles navigating a student-built model city. Students will be challenged to act as "Energy Engineers," programming their EVs to navigate from point A to point B using the least amount of battery power possible.

By comparing "inefficient routes" against "optimized routes", students will collect tangible data on energy efficiency. The project will also incorporate a Solar Charging Station, allowing students to harness Alberta's solar potential to power their fleet, thereby tracing the direct line from the sun to the movement of their vehicles, and overall flow of their designed cities.

2. Copperhaven School
Spruce Grove

THE NET-ZERO TINY HOME ARCHITECTS | *$4,992*

Students at Copperhaven School will build 1:24 scale "Net-Zero" tiny homes. The goal is to understand where our power comes from and how we can use it more efficiently through smaller footprints and smart design.

Using a 3D printer, students will design and print the parts needed to mount solar panels and wind turbines to their houses. They will then use Micro:bit microcontrollers and sensors to add "smart" features. Using multimeters, students will track and measure how much energy their solar and wind systems make versus how much their home uses in an attempt to reach a "net-zero" balance.

This project also has a real-world goal: Our school has solar panels that are not currently hooked up. Students will use data from their models to show how much power can be saved and present their findings to our school community. We want to show that renewable energy works and advocate for getting our school's own solar system running again!

3. David Thompson High School
Leslieville

THE KINETIC CAFE | *$5,000*

As a dual-initiative between the Science and Athletic departments, this project involves the design and construction of a human-powered generator station using a stationary bicycle. Students will engineer a system that converts mechanical work into stored electrical energy, which will then be used to power a "reward station" for smoothies, device charging, or low-draw vending. By physically pedaling to generate power, students gain a visceral understanding of energy units and the significant effort required to produce the electricity we often consume mindlessly.

This project transforms the gymnasium into a live physics laboratory, fostering a culture of stewardship and conservation. Through school-wide "Energy Sprint" challenges, the broader student body will participate in quantified energy production, shifting their perspective on grid dependency. We aim to generate and offset 15,000+ Watt-hours of energy annually, tracked via a digital dashboard!

4. École Champs Vallée School & Michael Strembitsky School
Beaumont & Edmonton

AMAZE AMAZE AMAZE-ING ENERGY PROJECTS! CLIMATE CHANGE, SOLAR SOLUTIONS & SUSTAINABLE LIVING | *$5,000*

Inspired by the novel/movie Project Hail Mary, our initiative transforms Grade 9 Science into a high stakes mission to secure Earth's energy future through collaboration and innovation. The journey begins with Phase I, where students from both École Champs Vallée School (ECVS) and Michael Strembitsky School (MSS) investigate solar energy and human impacts on the greenhouse effect using IR sensors and climate modeling, including examining urban heat islands.

In Phase II, led by MSS, students explore how energy is transformed and utilized through photosynthesis, closed-loop hydrogen fuel cells, and carbon-capture technologies. Phase III sees ECVS students transition into sustainable living and circular economies, using Micro:bits and automated gardening kits to design energy-efficient biospheres while collaborating with Grade 7 students to improve habitat structures and heat conservation.

Simultaneously, CTF students will 3D-print solar-tracking arrays using biodegradable filament to model "In-Situ Resource Utilization"—recycling waste into tools to simulate advanced, closed-loop systems. By integrating robotics and renewable energy kits, our students will move beyond theory to engineer the systems required to sustain life on Earth and beyond.

5. École J. H. Picard School
Edmonton

MEASURING THE ENERGY COST OF ARTIFICIAL INTELLIGENCE: AN AI ENERGY METER FOR STUDENT LEARNING | *$5,000*

This project will use the A+ for Energy grant to purchase a single, high-performance standalone PC dedicated to running AI models locally. The computer will not be connected to a network and will instead function as an "AI Energy Meter" that allows students to directly measure how much electrical energy is required to generate an AI response.

Computing Science students will design and refine prompts, query a variety of locally hosted AI models, and measure associated energy use. Students will compare model performance, response quality, and energy consumption while thinking critically about what AI produces.

What are the errors, hallucinations, bias, and limitations in AI generated content? Does the energy consumed impact the quality of output? Students will communicate their findings through presentations to Junior High homeroom classes. This project directly connects energy use to a technology students already rely on daily, making energy tangible, measurable, and relevant while fostering critical thinking and responsible AI use across the school community.

6. Forest Grove School
Sherwood Park

CARBON ZERO CONSERVATION COMICS | *$5,000*

Students will collaborate with local comic book creators to develop an original comic book and graphic novel series centered on the narrative of energy conservation. Through this dual-mentorship partnership, students will gain professional-level skills in narrative structure, digital illustration, and the technical aspects of independent publishing.

Participants will explore the fundamentals of storyboarding, comic book layout, publication, lettering, and symbolism to create a school based comic anthology. This publication will serve as a platform for social commentary and awareness, specifically addressing energy conservation issues identified by the students within their local community, broader society, and the global landscape.

The project will culminate in a community pop-up event, where students will feature their own stories and art along with the sale of the physical comic book. Proceeds will be directed toward local conservation initiatives selected by the students thus providing students with a tangible experience in social entrepreneurship and environmental stewardship.

7. Hilltop Jr/Sr High School
Whitecourt

THE BIO-CIRCUIT: MAPPING ALBERTA'S MICROBIAL ENERGY LANDSCAPE | *$5,000*

Using Microbial Fuel Cells, Science 9 and Biology 20 students will experiment with "electrogenic" bacteria found in our local Alberta dirt. These tiny microbes release electrons as they break down organic matter. By building these fuel cells, Science 9s will get a hands-on way to measure voltage and current, while Biology 20s will get to see cellular respiration in action by tracking how different "fuels" like cafeteria scraps or compost change the power output.

We'll track how much organic waste we're diverting from the trash to "feed" our bacteria, which helps us talk about reducing methane emissions and finding creative ways to reach Net-Zero—a crucial element in the Canadian Net-Zero Emissions Accountability Act. Instead of just teaching about waste, we're showing students how to turn it into something useful. Using our own school organic waste as an energy source helps them understand that reaching 'net-zero' isn't just a theory, it's something we can actually work toward using the principles of biology.

It's a simple but high-impact way to show our community that Alberta's energy future includes biology, biodiversity, and some very hardworking microbes!

8. Holy Trinity Catholic High School
Fort McMurray

FROM SUN TO SALAD – SOLAR POWERED HYDROPONICS | *$5,000*

Our Grade 7 Science classes are looking to move beyond the textbook and turn our classroom into a "Living Energy Lab." Using the A+ for Energy grant, we plan to install a south-facing solar array and a portable power station to run the high-efficiency LED grow lights and water pumps needed to produce fresh greens right here in our school—even in the middle of an Alberta winter. Instead of just reading about sustainability, students will become "Energy Managers," using real-time data to see exactly how much kWh of sunlight it takes to grow a head of lettuce.

The goal is to empower these 12-year-olds to see themselves as problem-solvers. We'll calculate the "Food Miles" we save by growing on-site and discuss how decentralized energy can shrink our carbon footprint. We'll wrap up the year with a Solar Salad Party, where the students lead the school in a discussion about renewables and sustainable food. This isn't just a science experiment; it's a chance for students to build a tangible, low-carbon future they can actually taste.

9. Jasper Jr/Sr High School
Jasper

THE YELLOWHEAD SOLAR-GRID & IOT INITIATIVE | *$5,000*

Our project transforms our students from passive technology consumers into active Systems Engineers. Building upon our STEAM infrastructure, students will design and deploy two mobile, all-terrain solar-powered workstations. These hubs provide resilient, off-grid power for field activities like CanSat launches, directly addressing our students' desire to engineer decentralized energy solutions in the wake of the 2024 Jasper wildfires.

Simultaneously, these workstations will serve as engineering laboratories where students code an Industrial Internet of Things (IIoT) "Smart-Grid." Students will build an offline, air-gapped network to eliminate "phantom power" draw from our school's fleet of iPads, iMacs, and Chromebook carts. They will determine the safe conservation methods for different electrical loads—such as coding hardware toggles for iPads while implementing software-based scheduling for sensitive desktops.

By monitoring real-time power data on custom dashboards, students will quantify the relationship between digital innovation and environmental impact, developing the 21st-century skills necessary to lead Alberta's transition toward a sustainable, resilient energy future.

10. North Haven School
Calgary

POWERING OUR SCHOOL SUSTAINABLY | *$5,000*

This project engages students in exploring renewable energy sources such as solar, wind, and human-powered energy through hands-on experiments and research. Students will conduct a school energy audit to examine how energy is used in their environment. They will collect real data by observing lighting, computer use, and heating systems to better understand energy consumption.

Using this information, students will identify areas where energy is being wasted and suggest practical ways to reduce usage. Students will also explore different renewable energy technologies, such as wind turbines, solar panels, and human-powered devices. By testing models and analyzing their effectiveness, they will compare the efficiency and real-world applications of these energy sources.

In addition, students will learn about sustainable practices including those used by indigenous communities, to develop a broader understanding of energy conservation and environmental responsibility.

11. Our Lady of the Angels Catholic School
Fort Saskatchewan

COMPOST CHAMPIONS 2.0: GROWING A GREEN SCHOOL COMMUNITY | *$5,000*

Building on the success of last year's "Compost Champions" project, this initiative expands composting practices to every classroom at our school. By introducing classroom composting machines and small garden towers, we aim to create a fully integrated, green-friendly school environment where students actively engage in sustainability.

Students will explore energy conservation and environmental impact by learning how composting reduces landfill waste, lowers greenhouse gas emissions, and supports sustainable food systems. They will track waste diversion and observe how organic material transforms into nutrient-rich soil, deepening their understanding of living systems and energy cycles.

Progress and learning will be shared through newsletters and school events, positioning our school as a model for environmental stewardship. "Compost Champions 2.0" empowers students to become environmental leaders while reducing our school's carbon footprint—growing not only gardens, but responsible, eco-conscious citizens.

12. Parkview Adventist Academy
Lacombe

GROW SMART: MEASURING ENERGY, GROWING FOOD | *$1,890*

Our school is building a classroom energy education program around fogponics, a NASA-developed food production technology that was originally designed to solve the energy and water constraints of growing food in space. Using Plantaform Smart Indoor Gardens, students in Grades 10 to 12 will grow food while studying the energy systems that make it possible.

Each unit draws approximately 60 watts, and students will use smart plug monitors to track actual kilowatt-hour consumption across all three units throughout the school year. They will calculate the energy cost of each harvest, compare it to the energy required to transport equivalent produce to Lacombe from commercial growing regions, and investigate why fogponics uses dramatically less energy and water than conventional growing methods. They will also research why NASA developed this technology in the first place, what energy problems it was designed to solve, and what those same constraints mean for food production on the prairies.

13. River Valley School
Calgary

COMPOST CITY | *$4,801*

Students will take the lead in diverting lunchtime organic waste from landfills, using mathematical modelling to quantify the reduction in greenhouse gas emissions. Students will learn about methane, a potent byproduct of landfill energy loss, by weighing and tracking the amount of organic waste our school 'city' produces.

This diverted waste is repurposed into "carbon sponge" soil (compost) for our school garden, demonstrating the power of natural carbon sequestration. The project bridges the entire Junior Kindergarten to grade 6 community, engaging the school Eco Club and "grandparent volunteers" in hands-on stewardship. Beyond just gardening, "Compost City" teaches students about the "hidden energy" in our food systems and the energy-intensive process of traditional waste management.

By localizing this cycle, we significantly reduce our school's carbon footprint and empower students to become proactive energy stewards. Our goal is to prove that small-scale waste diversion leads to large-scale energy conservation and a climate-resilient future.

14. Sir Alexander Mackenzie Elementary School
St. Albert

ENERGIZING STEAM: POWERING INQUIRY THROUGH DATA IN ELEMENTARY EDUCATION | *$4,626*

Our project will enhance student led inquiry in STEAM-related areas by equipping students with scientific tools needed to design, test, and analyze wind and solar energy models and move beyond theoretical learning to engage in authentic, hands-on investigations.

Students will explore how energy is generated from renewable sources by examining variables such as blade design, wind speed, panel angle, light intensity, and energy output. Through experimentation and real-time data collection, they will develop a deeper understanding of energy transfer, efficiency, and optimization.

15. St. Catherine Catholic School
Grande Prairie

ENERGY DETECTIVES: POWERING ALBERTA | *$5,000*

Students will investigate how energy is produced and used within Alberta, with a focus on renewable and non-renewable energy sources. Through hands-on exploration, comparison, and critical thinking, students will evaluate the advantages and disadvantages of different energy sources and consider their environmental and economic impacts.

The project will culminate in an Energy Expo, where students will design and present interactive stations that showcase different energy sources and their impacts. Students will share their learning with peers across the school community, extending the impact of the project beyond the classroom and promoting awareness of energy use and sustainability.

16. St. Joseph School
Coaldale

FROM PALM TREE TO SUNFLOWER! | *$5,000*

Working alongside a local electrical company, students will take part in a hands-on, collaborative project to repair and reimagine our school wind turbine. Students will explore careers in alternative energy trades while gaining firsthand insight into the real-world challenges and innovations involved in renewable energy systems.

In partnership with 1st TechniCall, students will hear about the details of their careers, educational pathways, and the range of projects they work on. They will then have the opportunity to take part in the turbine dismantling and retrofit process right in our own backyard. The project will also breathe new life into our existing palm tree structure by transforming it into a vibrant solar-powered sunflower. By incorporating solar panels and lighting, the new structure will help illuminate our basketball court while showcasing creative and sustainable energy solutions within our school community.

Students will also connect with professionals from Energy Smart, who will demonstrate the many ways homeowners and communities can make greener energy choices. From heat-on-demand systems to residential solar arrays, students will gain a broader understanding of how renewable energy technologies are shaping a more sustainable future.

17. St. Nicholas Catholic Junior High School
Edmonton

THE KNIGHT GARDEN | *$5,000*

We want to create a space where energy education becomes something our WIN Jr. students can see, feel, and learn about in a tangible way. The Knight Garden will use indoor grow towers and outdoor planting bags, to give our students a hands-on and concrete way to explore energy forms, sustainability, and learn how living systems can sustain us year round, in ways that meet their unique learning needs.

Students will investigate how electrical, mechanical, light, solar and thermal energy contribute to plant growth using grow lights, monitoring tools, and data tracking routines and compare different types of growing systems. Students will have the opportunity to see how plants grow with natural versus artificial energy sources, observe the way energy transfers in plants in soil versus hydroponic systems, and discover how renewable energy makes food production more sustainable. This project will empower our students to see themselves as capable contributors and young people who can contribute to our school community and to our society in a meaningful way.

18. STEM Innovation Academy
Calgary

SOARING FOR SOLAR: STEMIA COMMUNITY SOLAR MAPPING PROJECT | *$5,000*

Each semester, approximately 100 students will form Solar Consultancy Teams; moving beyond abstract theory to assess real-world renewable energy potential. Utilizing high-resolution imagery and 3D modeling from aerial imagery data, students will analyze roof orientation, shading, and surface area to calculate the solar potential of local buildings.

This inquiry-based approach transforms students into energy leaders who must evaluate technical trade-offs and environmental constraints. Students take the lead as energy consultants, providing community members and businesses with 'Solar Potential Reports' that quantify annual kWh potential and CO2 reductions. By translating drone-captured data into clear energy literacy for local homes and businesses, students bridge the gap between technology and stewardship.

This immersion in industry-standard mapping prepares them for high-growth careers in energy auditing and renewable resource surveying. Soaring for Solar ensures our students aren't just pilots, but informed environmental stewards capable of driving Alberta's energy transition through data-driven advocacy and 21st-century critical thinking.

19. Sunchild School
Rocky Mountain House

HYDROGEN HORIZONS: SOLAR TO HYDROGEN CARS | *$5,000*

While our students are familiar with energy infrastructure and have explored renewable energy concepts in class, this project moves learning beyond observation into direct application. Students use real PEM electrolyzers to produce hydrogen, store it in systems they assemble themselves, and power fuel-cell cars they design and build. This shift from theory to practice deepens understanding and builds confidence.

Students apply CAD design, analyze performance data, and optimize their vehicles for efficiency and speed. They then compete on the international H2GP leaderboard, connecting students in a remote community to peers around the world and reinforcing that their ideas and skills have global relevance. The program also provides strong support for educators, including over 30 hours of curriculum-aligned content, teacher training, and accessible digital tools.

This ensures successful implementation across multiple subjects and grade levels. Importantly, the project integrates cultural relevance by framing clean energy through a Cree perspective. The focus on water, sunlight, and sustainability aligns with teachings of reciprocity and respect for the land, making the experience both educational and meaningful.