The following three grant proposals are all previous winners of an A+ for Energy grant. We thank these schools for allowing us to share their winning proposals with you.

Some text in the proposals below may have been edited for privacy reasons for use on the A+ for Energy website. Note that some sections within past A+ for Energy applications may be slightly different than those contained in the current year’s application form.

Flagged (➡) text in green, italicized font indicates comments provided by an A+ for Energy grant reader (an Alberta educator) to help you understand why these proposals succeeded, as well as note instances where they could have been even better (space permitting).

We hope that viewing these actual proposals will help you to craft your own winning proposal for an A+ for Energy grant!

Proposal #1

REQUEST FOR SUPPORT

School: A.E. Cross School

PROJECT SUMMARY

Project name: Petroleum Perspectives: a Documentary Series
Project type: New project
Submission type: Group
Total amount of request: $10,000
Province program implemented: Alberta
Grade level(s): Grade 9
Number of Students: 60
Number of Teachers: 2
Energy topic(s): Petroleum, Energy conservation, Wind, Hydropower

Summary

‘Nowhere on Earth is more earth being moved these days than in the Athabasca valley’
-National Geographic, March 2009

Petroleum Perspectives: A Documentary Series is a case study of the Alberta oil sands and the political, economic and environmental implications of the continued growth of the oil industry in Alberta. This project complements the issues-based approach to the new Grade 9 Social Studies curriculum and will be driven by current events and affairs related to Alberta’s energy sector. As we delve further into the case study, students will examine alternative energy projects within the province such as wind and hydro-power, and investigate solutions to decrease our economic dependency on oil and its boom and bust cycle.

➡ This project will have excellent links to STSE curriculum with a focus on social, economic and political perspectives.
This is a Grade 9, interdisciplinary project spanning approximately 6-8 weeks. Students will assume the roles of promising journalists on an assignment proposed by Prime Minister Stephen Harper. Their task will be to tour Alberta and gather information about the oil sands from all stakeholders. This part of the project will be similar to 'The Amazing Race'. All teams will begin in Calgary and travel to twelve different learning stations, all representing various locations in Alberta. By completing each station activity, students will gain an understanding of the different viewpoints Albertans have about oil sands. Evidence of their learning will be captured on electronic portfolios. The culminating activity will be to produce a documentary showcasing these multiple perspectives, as well as stating and supporting the students’ own opinion about the Alberta oil sands.

**The research component with each of the 12 sites will have a great provincial context with students developing many ICT outcomes.**

In the 2009-2010 school year, the school will be leaders in the implementation of an 'Integrated Middle School Learning Framework'. This framework entails developing cross-curricular projects, incorporating both core subjects and CTS (Career and Technology Studies). Students will engage in a variety of activities that will provide them with the opportunity to:
- engage in critical thinking challenges and how the classroom curriculum applies to real-life situations
- use technology to enhance and support learning
- reflect on their thinking and learning (metacognition)
- build relationships both inside the school and within the community
- engage in inquiry around relevant current events
- address multiple-intelligences and individual styles (personalization)

A grant from BP Energy would enable us to implement this to its fullest potential, while also supporting both goals of the school’s School Development and Renewal Plan.

**Goals are well stated in the summary and an emphasis is given to cross-curricular connections.**

**PROJECT DESCRIPTION**

**Energy content**

This project is a Humanities endeavor that also draws upon content from various science units.

**Social Studies 9**

An in-depth study of the petrochemical industry and the Alberta oil sands will introduce and reinforce the following key terms and concepts:
- 3 factors of production: land, labor and capital
- Science of scarcity
- How supply & demand determines prices
- Sales & profits
- Competition vs. Monopoly
- Producers & consumers
- ‘Boom & bust’ cycle of the oil industry and its impact on Alberta’s economic cycle (prosperity, recession, depression, recovery)
- Privately owned vs. publicly owned energy companies (Mexico’s Pemex)
- Crown Corporations & privately owned businesses (Petro-Canada)
- Role of government intervention in mixed (Canada) & market (USA) economies
- Impact of federal & provincial legislation and policies on business (royalties, GHG emissions standards-Clean Air Act)

As students become familiar with politics and economics associated with the oil industry in Alberta, we will broaden our focus by examining how continued industrialization affects people’s quality of life and the environment. Students will learn how our federal government is increasing funds to develop renewable energy technologies, such as wind turbines and solar panels, as well as funding to increase the production of biofuels to
reduce GHG emissions. However, the provincial government has already leased more than 1400 sq miles of land in Northern Alberta to oil companies and has yet to turn down a single applicant. We will debate how much, if any, government intervention is necessary to protect and preserve our natural resources and which economic system best addresses the needs of its citizens.

➤ Excellent to include the need to develop critical thinking skills as a component of citizenship.

Science 9
Biodiversity
- Examine human impact on biological diversity. Students learn about pollution, urbanization, commercial development & industry disturbing ecosystems.
- Study how oil & gas development in Alberta’s boreal forest have disturbed habitat of Woodland caribou (threatened species)
- Ecosystems also have cultural & spiritual importance for First Nations, Métis, & Inuit people who depend on the land and the wild food sources. The perspective of Aboriginal groups will be carefully considered.
- Environmental Chemistry
- Learn about oil recovery processes & technologies, environmental landscaping, environmental stewardship, plans in place to reclaim land once oil companies leave the area.
- Electrical Principles & Technologies
- Study energy usage (individually and societal).
- Use of electrical energy & how that affects society & the environment.
- Explore how electricity is generated from a number of sources, including fossil fuels, hydro-electric, solar, wind, tidal and nuclear (SEEDS Energy Literacy series)

Language Arts 9
- Activities in this project will allow students to broaden their skills in each of the six strands of Language Arts: reading, writing, listening, speaking, viewing and representing.

➤ The inclusion of specific curricular learning outcomes is essential and proposal markers are looking for these in successful projects.

Goals

Target audience: 2 Gr. 9 classes of 30 students each. Ten students will be part of the integrated Learning & Literacy program. These students have laptops & software to assist their organization & work completion. We have implemented multiple-intelligences in our activities to reach the diverse skill set of the learners in our classroom. To accommodate students with learning disabilities & ESL, certain learning stations will have differentiated materials (ie. level appropriate readings, graphic organizers). Technology is a great motivator & it is our belief every student will thrive when presented with challenge of planning, filming & editing their own documentary.

➤ Well linked to technology with opportunities for students to build skills for use in future CTS programs.

The case study, or information-gathering portion of the project, will last 4-5 weeks. Students will rotate through 12 learning stations, spending 2 classes at each one. Documentary planning, filming & editing will take 2 weeks. Our project will commence mid-April, once students have acquired background knowledge on concepts such as governance, legislation, economics, quality of life, biological diversity and environmental chemistry. At this time, Gr. 9s study the material in Ch. 8 of the text, Issues for Canadians. The inquiry question posed is, 'How should governments in Canada respond to political and economic issues?' The text specifically recommends exploring the oil sands. Therefore, we are confident that in terms of content and time, this project is aligned with the Program of Studies.

Skills and processes of the social studies program achieved through this project are:
- Using critical thinking skills to determine validity of information
- Interpreting thematic maps to analyze economic & political issues
- Developing informed positions & respecting positions of others
- Stating an opinion & reflecting on changes of opinion based on information gathered & research conducted
- Appreciating & respecting multiple perspectives that shape Canada
- Media literacy
- Fostering development of citizens who are informed & engaged in current affairs
- Demonstrating a consciousness for the limits of the natural environment, stewardship for the land & an understanding of the principles of sustainability

Science Program of Studies visions:
- Encourage students to develop a critical sense of wonder & curiosity about scientific & technological endeavours
- Prepare students to critically address science-related societal, economic, ethical & environmental issues

➤ Give both general and specific learning outcomes where possible.

Requested resources in the budget will be:
- Consumables to create workstations
- Equipment & software to produce documentaries.

It will be easy to sustain this project for years to come due to a new SS curriculum. Stations may need to be updated with current articles & information but otherwise the project is ‘ready to use’ year after year. Cameras & equipment would be available for future use in other subject areas. This would provide a great opportunity for embedding CTS and ‘real world’ connections.

➤ A more detailed time line would strengthen this part of the proposal.

Activities

Concepts pertaining to all subject areas will be covered throughout the year, but this project will be the ‘real world’ application of their prior knowledge.

Scenario: “US President Obama will be arriving in Calgary to meet with the Prime Minister & key energy executives to discuss current environmental & economic issues. In his previous visit, President Obama referred to Alberta’s oil sands as a ‘big carbon footprint’ and vowed to decrease our dependency on ‘dirty, dwindling and expensive’ oil.

You are an aspiring journalist hired by Mr. Harper to research, collate & produce a film documenting various perspectives citizens have about oil sands. This documentary will brief the President on this issue before his arrival at the conference table. To ensure he receives the best possible product, Mr. Harper has assigned this task to 11 other filmmakers. Upon viewing all submitted films, a panel of judges will make a recommendation as to which documentary should receive the honor of educating the President.

In order to include all viewpoints, you must set out on a 12 stop tour to gather information & interview important stakeholders. You know the other journalists are not far behind & thus an Alberta Amazing Race ensues. Mr. Harper wants to make sure he’s getting what he paid for so he brings the players together in Calgary & issues them a passport which will need to be stamped at each location. He pays just enough of the transportation costs to get you to your first destination. You will need to earn the rest of your fare by successfully completing the tasks. You want to work diligently & precisely because you can’t begin filming your documentary until you have gathered all the research & arrived back in Calgary.”

12 learning stations include:
- Calgary (student perspective): personal response to National Geographic article
- Edmonton (gov’t persp): examining legislation
- Fort McMurray (workers’ persp): jobs, wages, quality of life
- Athabasca Valley (oil company persp): economic benefits to further development
- Northern Alberta: reclamation
- Fort Chipewyan (First Nations’ persp): view documentary "Downstream"
The selection and identification of these 12 ‘sites’ was very helpful and a necessary part of this proposal.

Specific activities have not been assigned to each station as we will need to wait until the new year to have the most current information. To address multiple intelligences & different outcomes in the content areas, we know station activities will be: journal response, Venn diagram, business letter, documentary viewing, political cartoon, commercial jingle, pamphlet, photo study, bitumen lab, editorial writing, mock interview

Excellent use of a variety of instructional strategies and skills development.

Student leadership

'It’s a struggle to balance the needs of today and tomorrow when you look at the environment we’re going to live in. In Northern Alberta the question of how to strike that balance has been left to the free market, and its answer has been to forget about tomorrow. Tomorrow is not its job.’
-National Geographic, March 2009

Our students are the leaders of tomorrow and therefore, addressing an issue such as this becomes their job. The new curriculum strives to build young activists and students who advocate for causes they are passionate about. An essential part of being a leader is to listen and respect everyone’s perspective and that is why the multiple viewpoints presented in this project are so vital. Since students are working in a group to complete each station task, leadership begins on a small scale in the classroom. While we will facilitate the research process by asking all students to rotate through every station, students ultimately have the input in how to best present this material to their audience.

The focus on multiple perspectives supported by the activities section of this proposal was well recognized and appreciated by the evaluators.

To ensure that our documentaries reach the masses, each group of students will be assigned to a homeroom (Grade 7, 8 and 9) in the school. This homeroom will be the viewing audience in the first week of June. This is a win-win situation because our Grade 9s can showcase their knowledge while other students in our school community can learn about a current and controversial issue in Alberta. After each viewing, there is a ‘question and answer’ period so our Grade 9s will have to demonstrate confidence and poise when answering impromptu questions. Community members will be invited to sit on our panel of judges.

These Grade 9s are the role models of a school-wide goal of a ‘call to action’. Using a number of programs and directives throughout the school, students’ awareness of local and global issues is increased. They are encouraged to ‘make a difference’ in their world now that they have a greater knowledge of the world around them. This project runs parallel to others already operating within the school.

Community involvement

This project entails two classes of Grade 9, with approximately 30 students in each class, producing documentaries to share their knowledge related to energy with the wider school community.

Grade 9 students will create their documentaries and share these with Gr. 7, 8 and 9 students. The winning documentary will be showcased at the school’s Term 4 Celebration of Learning.
A number of guest speakers will be invited to visit the school and present their perspective on oil sands to the classes. Guests invited would include:
- CPAWS (Canadian Parks and Wilderness Society)
- Engineers without Borders (“Energy Matters” Program)
- Environmental chemist (Inglewood Wildlands)
- ZooMobile (biological diversity reduction)
- Native elder from Glenbow museum (native culture and treaty rights)
- Inside Education (school program: forest ecology and land use)
- Member of the oil and gas field

Many of these partnerships have already been established as these groups and/or individuals have visited the school in previous years. Community members will be invited to sit on our panel of judges once the documentaries have been produced.

➤ This project is well connected to the community with many contacts already being made. Great community inclusion!

To support the actual film-making, an experienced filmmaker from Calgary Board of Education’s Curriculum and Learning Technologies department will be brought in to teach students how to plan, film and edit their movies.

To make a difference in their school community, students will be encouraged to recycle plastic bottles, created from materials that are a by-product of petroleum. The funds from the recycling will be used to provide a water filtration system for a village in India, which the school is adopting. This is a part of the school’s global initiative.

Project evaluation

Following two classes at each learning station, students will submit their completed task. Each task will have an accompanying rubric focusing on achieving specific skills and knowledge, with each station being worth an equal number of points. Teachers will assess student performance and provide immediate feedback. Marks will be recorded in the student passport and students can only travel to the next station if they have achieved a certain level of understanding (assessment of learning). Success will be measured through documentaries that reflect student understanding of the multiple perspectives relating to political and economic issues in Alberta.

The first station students visit will ask them to read the National Geographic article “Scraping Bottom” and form an initial opinion on the Alberta oil sands. When our “journalists” return to Calgary they will be asked to examine how new information has shaped and/or changed their original viewpoint. This will take the form of a class discussion and demonstrate their growth as informed citizens.

Tasks include, but are not limited to: personal journal response, Venn diagram, business letter, documentary viewing, political cartoon, commercial jingle, pamphlet, photo study, bitumen lab, editorial writing, mock interview. Please note: tasks within stations will be differentiated to accommodate for different learner abilities. While the learning outcomes will be the same, the end product for the station may look different. Students will save their work in an electronic portfolio and be able to refer to this information when developing their documentary.

Teachers will circulate throughout the day as students work to gather anecdotal evidence of learning (assessment as learning), answer questions and gauge understanding (assessment for learning).

We will capture student learning through work samples, photographs, student self-assessment and culminating reflection paper. Teachers will create a film that documents the student learning process and final products and submit this to BP as part of our final report. We hope you will support us in our endeavor.

➤ This section contains many ways of capturing student learning, well done.
## PROJECT BUDGET

<table>
<thead>
<tr>
<th>Expense</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities (technology equipment needed for creating student documentaries): video cameras, tripods, DV tapes, back-up batteries, camera bags, firewires, DVDs to burn documentaries to, software, USB drives as digital journals</td>
<td>$6,692</td>
</tr>
<tr>
<td>Activities (materials for station creation): colour photocopying, consumables including construction paper, poster paper, storage boxes (for station materials), lamination roll, scissors, glue, markers/pencil crayons, trifolds, etc)</td>
<td>$1,015</td>
</tr>
<tr>
<td>Professional development for documentary creation (Windows Moviemaker, Final Cut Express)</td>
<td>$1,100</td>
</tr>
<tr>
<td>First Nations speaker from Glenbow Museum (2 classes)</td>
<td>$320</td>
</tr>
<tr>
<td>honorariums for guest speakers (CPAWS, Engineers without Borders, environmental chemist, businessperson in the oil and gas industry, MLA)</td>
<td>$250</td>
</tr>
<tr>
<td>substitutes for planning (3 days at $200/day)</td>
<td>$600</td>
</tr>
<tr>
<td>coffee, chocolate and Red Bull :)</td>
<td>$23</td>
</tr>
<tr>
<td><strong>Total expenses</strong></td>
<td><strong>$10,000</strong></td>
</tr>
</tbody>
</table>

> *Note: The A+ for Energy application’s budget section now contains additional space to enable applicants to include specific items, product information and costs and to explain how budget items align with project activities.*
Proposal #2

REQUEST FOR SUPPORT

School: Name withheld at school request

PROJECT SUMMARY

Project name: Ecological Literacy Film Festival
Project type: New project
Submission type: Group
Total amount of request: $10,000
Province program implemented: Alberta
Grade level(s): Grade 3, Grade 4, Grade 5, Grade 6, Grade 7, Grade 8, Grade 9
Number of Students: 135
Number of Teachers: 28

➢ This project has an excellent Arts and Humanities focus with multiple energy sources identified.

Summary

How can we reduce our energy consumption and ecological footprint as citizens in this 21st century? The Ecological Film Festival is a literacy based energy awareness and education project. It will utilize literacy strategies to increase students’ environmental knowledge and expand their awareness of energy conservation.

This project will reach a diverse group of students in grades 3-9 who are diagnosed with learning disabilities. Students will have opportunities to participate in classroom lessons and activities, as well as school-wide initiatives to inspire their natural inquisitiveness into how energy is produced and consumed. Utilizing a variety of mediums; such as fieldtrips, guest speakers, texts, videoconferencing, and multimedia explorations, our school will explore how personal, societal, and commercial energy choices are impacting our daily lives, as well as our future.

Students will examine how our energy consumption practices are influencing the availability of non-renewable energy resources. Adopting renewable energy solutions such as solar, wind, water, geothermal and biomass will allow us to meet our increasing energy needs. Students will use a variety of digital technologies to learn about these alternative energy solutions. This will enable them to document their learning, explore energy consumption practices in their communities, and explore the impact of energy choices on the environment at a global level.

➢ Broad goals are given in the summary with great connections to STSE and ICT components.

PROJECT DESCRIPTION

Energy content

How can we reduce our energy consumption and ecological footprint as citizens in this 21st century? Our main focus is waste reduction, water conservation, and minimized consumption of our primary energy sources. Ideas associated with conservation, sustainable actions, and global awareness form a foundation for this project.

- Energy sources include renewable energy sources such as solar, wind, water, geothermal and biomass.
- School wide project with specific learning outcomes varying by grade level.
- Our school has a literacy focus and is exempt teaching the entire science and social studies curriculum. The implementation of this program will facilitate the integration of the science and social studies curriculum appropriate for our students. Guided by a literacy focus, environmental consciousness and global citizenship themes will define our approach.
Our school is divided into seven colour teams. Each team will focus on the general learner expectations listed below:

- Students will listen, speak, read, write, view and represent to explore thoughts, ideas, feelings and experiences about energy conservation.
- Students will listen, speak, read, write, view and represent to comprehend and respond personally and critically to oral, print and other media texts based on energy conservation, sustainability, and environmental awareness.
- Students will listen, speak, read, write, view and represent ideas to understand energy consumption practices and our natural environment.

Our anticipated outcomes are aligned with the Calgary Board of Education End Goals. Upon completion of the Ecological Film Festival:

- Each student will be a responsible environmentally conscious citizen by being an informed and involved member in his or her local, national, and global communities.
- Each student will acquire the skills, attitudes and knowledge to achieve personal highest potential and maximum awareness of their ecological footprint.
- Each student will possess the character to do what is right, act morally with wisdom, and balance individual concerns with the rights and needs of others and their natural environment.

Furthermore, the objectives of this project are aligned with the school’s 2008/2009 School Development Plan:

- It enables at-risk learners to achieve their personal potential as 21st Century learners through hands-on activities utilizing multiple literacy’s and technologies.
- Students will further develop their resiliency skills; increase their self - esteem and self - advocacy skills.
- Students will develop an awareness and ability to use assistive technology to develop their skills.
- All staff will develop a deeper understanding of our complex learners and their abilities to become resilient citizens.

This section is well developed and contains many references to curricular, district and school learning outcomes. The specific parts of this information strengthen this proposal.

Goals

This project will target a unique audience of students with complex learning disabilities. The school is a middle school (Gr. 3 - 9) designed to provide a 2 year intensive literacy program. The goal of the school is to assist each child in gaining skills, knowledge, and competencies to reach their full academic, social, and emotional potential. The emphasis of instruction is on developing literacy skills. This project will enable students to continue to focus on literacy skills with an emphasis on energy conservation and sustainable consumption practices.

Our goal is to involve students in a school-wide, art-based; multiple literacy projects focused on energy conservation and sustainable consumption practices. This project will allow students to actualize environmental issues, relate them to their everyday lives, and make connections to the lives of other students living abroad.

This Ecological Film Festival Project will be a multi-layered project. School presentations, guest speakers, and field trips will provide students with a foundation of knowledge based on energy conservation. Multiple-copy literacy based materials will help students learn content focused on these areas. Designing multi-media projects such as an online monthly newspaper, discussion forum and video conferencing partnerships with students living abroad will support the school’s commitment to fostering 21st Century learning skills.

The project goals are well explained as they relate to literacy and key elements of energy conservation and consumptive practices are essential to the evaluation of this application.

Students will:

- Develop an awareness and understanding of their energy consumption and will develop a variety of ways to demonstrate sustainable practices.
- Learn to make educated decisions and think critically about how to reduce their energy use and minimize their ecological footprint.

At the beginning of this project a representative sample of students will be asked to participate in an interview process. This will help to assess students’ background knowledge and provide information for comparison upon the completion of this project. Observations will take place throughout the project to ensure students are meeting established goals and will provide feedback to inform necessary modifications. They will also help ensure we are meeting the needs of individual students. At the conclusion of the project our representative sample will again be interviewed as a means of assessing success.

Timeline by term:

- Introduction
- Preliminary interview
- Lights-off challenge
- Field trip to landfill
- Environmental resources administered
- Environmental initiatives begin
- Begin filming
- Observations for assessment
- Video editing tutorial
- Evergreen Theatre Company begins residency
- Performances are recorded
- Promotion of film festival
- Ecological Film Festival
- Follow-up interviews
- Assessment and evaluation

Adding in specific dates (months) to the timeline would be very helpful and they will support the tracking of project throughout the year.

Sustainability / Opportunities for Continuation
- Continue film festival as an annual event
- Program evaluation will inform future plans
- Development and compilation of teaching resources

Activities

Project leaders introduce staff to the overall project ($125 for professional develop with Clean Calgary Association).

Lights-off challenge begins. This student-driven school wide initiative ensures students and staff are reducing their energy consumption.

Fieldtrip to the landfill for all teams. Teachers organize the fieldtrips following all Calgary Board of Education procedures and safety protocols.

Guest Speakers - Clean Calgary Association ($250 - one presentation per team)

Variety of levelled texts, with a focus on energy conservation, purchase and distributed. Utilize during school time and are permitted to sign them to take them home. $700 for books, cds, dvds, etc.

School video cameras (7 @ $300 = $2100) and tripods (7 @ $65 = approx $450) purchased and distributed. Each team receives one camera and one tripod to document any important events. Students and teachers to capture
teachable moments, as well as interesting performances throughout the year. These videos will be compiled by students, edited and made into feature films for the festival. All students will be trained on the equipment (both the video camera and Microsoft Photo Story) to ensure they understand and respect these tools. Students and staff follow all FOIP (Freedom of Information Policy) protocols.

➤ Always good to point out that the project will be following FOIP requirements.

Evergreen Theatre Company at school ($6000 for entire school). Each team works with an Artist, for one week, to create a performance about energy conservation. This initiative enables students to design and create a performance and then follow through with presenting it to the school. It is an opportunity for students to work on their self-confidence and self-advocacy skills by performing in front of the school community.

➤ This is an excellent and significant part of the proposal which could be strengthened by additional information about the work of the theatre group (e.g. a link to the group’s website would be helpful to the evaluators).

Video editing workshops take place throughout the year to help students develop their editing skills. Each colour team has a video-editing mentor to pass the information from the editing workshop to their class.

Ambassadors help to promote the film festival through the school website, at staff meetings, school assemblies, parent council meetings and school district meetings.

The proposed school newspaper incorporates a section on this project. Students and staff work together to keep our community members up-to-date.

Videoconferencing with students from abroad to talk about energy consumption practices.

The D2L forum is a learning management system that enables students to discuss a variety of energy conservation topics.

The Festival is an opportunity for students to present their work about energy conservation. Students submit their films to be previewed to ensure appropriateness. Representatives from BP Energy, parents, community members, students and staff have are welcome to attend. The films are assessed based on content and creativity. $375 for promotional materials such as posters, news articles, flyers, decorations, and prizes.

Student leadership

Sharing Knowledge
- Classroom discussions based on themed units/lessons taught about energy conservation, awareness and protection.
- School Assemblies (Students will be able to share new knowledge and initiatives in a variety of forms as part of the Environment Club)
- School Website (Information of upcoming school events and initiatives).
- D2L content and discussion forums.
- Video Conferencing.
- Ecological Literacy Film Festival (provides an opportunity for students of various age groups to focus on unique aspects of energy conservation and to creatively express their views, opinions, and ideas about our natural environment).
- Students are ambassadors and when transitioning back to their home school can share this information with their new community.

Student Learning
- Students develop a knowledge base about their energy consumption practices and the impacts of their actions on the environment.
- Students are empowered to be stewards of the environment and share the information learned from the project’s initiatives, programming and visions.
Environment Club members are involved in presentations and initiatives that impact our school, community and world.
- The Ecological Film Festival will provide opportunities for student leadership.
- Students will create awareness campaigns and informational films to gather attention and inform our public of environmentally conscious energy practices

➤ This project contains many ways for students to share their knowledge and learning. Well done!

Student Direction
- Student ideas are at the forefront, driving this program.
- Environmental Films are written and directed by students with the support of teachers.
- Teachers act as mentors to help guide, supervise and organize student projects.
- Student voice will guide school wide initiatives.

Differentiation
- All students are on Individualized Program Plans and therefore we have a mandate to help each individual reach their own unique potential through working to their strengths.
- Assistive technology and other forms of technology will be employed to help students understand and develop their knowledge. (Read and Write Gold/Video Conferencing/ Dragon Speak/ Filming)

School Partnerships
- Environment Club helps to promote and implement initiatives that affect all those at the school.
- The Ecological Literacy Film Festival is an opportunity for our students to make meaning of their learning experiences.
- It enables them to share and learn about the experiences of others through this multimedia project.

➤ Provide some additional specific learning outcomes in this part of the proposal. Links to curriculum are an essential part of any project.

Community involvement

Our school is a special setting for students with Learning Disabilities. The school is for students in grades 3-9 and has 7 classes divided by color teams. Each class is made up of students from a variety of ages and grade levels.

- All students are bussed to the school from all parts of the city. We represent all parts of the City of Calgary.
- Each class has 2 teachers and the teacher-student ratio is 1:10
- The school primary focus is Literacy.
- Students come to the program based on an application/criteria based on literacy challenges/difficulties.
- Students may only stay at the school for a maximum of two years, and then they are re-immersed back into the regular classroom setting.
- Half of the school population changes each year.
- Students are exposed to assistive technology throughout the school and are encouraged to learn and to use technology to help them in all aspects of their education.
- Students follow a very structured routine with a focus on Reading, Writing and Math activities. Students also have daily physical education and are offered a wide variety of clubs and intramurals to engage their interests during free time.

The school is centrally situated in (Marda Loop) Calgary South West. The area is a 10 minute drive to downtown Calgary

Partnership Building:

We plan to continue to develop partnerships across grade levels through;
- School Wide Environmental Initiatives
- Regular monthly assemblies and environment club updates. Interest retention by using characters (Captain Planet and Mother Earth) as voices for school initiatives and whole school activities. As a community building
initiative, students are evenly distributed on 4 house teams with students from each class. This enables them to have opportunities to develop whole school bonding and inclusion experiences.

- We hope to invite other schools and other members of the community to our Ecological Film Festival in order to broaden our community and further develop partnerships.

Partnership Strategy:

Our Ecological Film Festival will offer an opportunity to develop relationships with a variety of schools and community members not only next year but also into the future.

Extended expertise:

Greenzone Sustainability Blitz (CFL Players providing environmental awareness)
ABCRC (Alberta Beverage container Recycling Cooperation)
Earth Care (Online Environmental Education Partnership)
CBE Ecoteam (CBE Energy Environment Support Network)
Inside Education (Presenters/Resources)
Calgary Waste Management Team
Destination Conservation
Alberta 1 Simple Act (Online Resource)
Evergreen Theatre
Alberta Energy
Natural Resources Canada
Canadian Solar Industries Association
Canadian Electricity Association
Canadian Wind Energy Association
Canadian Energy Efficiency Alliance
Centre for Energy
Re-Energy
Canadian Energy Research Institute
Climate Change Central
The SEEDS Foundation

➤ Very well done and the identification of these groups/organizations will enrich the students experiences. The inclusion of this information is very helpful to the evaluators.

Project evaluation

- Pre- and post-project interviews will take place with students to ensure student learning, growth and environmental citizenship.
- Checklist to ensure that all goals are being met.
- Feedback from visitors and attendees of the Ecological Film Festival - written survey to indicate interest level and overall informative nature of the event.
- Ask students for input and feedback about environmental initiatives and activities taking place throughout the year.

Project End Goals

- Each student will be a responsible and environmentally conscious citizen by being an informed and involved member in his or her local, nation, and global communities.
- Students will participate in videoconferences discussing energy conservation practices with professionals and students from abroad.
- Students will take responsibility for their own actions by reducing and recycling their waste, as well as participating in school wide initiatives.
- Students will demonstrate overall awareness, knowledge and understand of their energy consumption practices and ecological footprint.
- Each student will acquire the skills, attitudes and knowledge to achieve personal highest potential.
- Students will have the opportunities to participate in fieldtrips, presentation, school programs, and community initiatives revolving around energy conservation.

➢ Additional student evaluation and assessment information could be added at this point. How learning outcomes will be assessed is essential for high scores in this section.

Each student will possess the character to do what is right, act morally with wisdom, and balance individual concerns with the rights and needs of others.
- By providing a background of knowledge it is our hope that students will be responsible citizens and act consciously with respect for our natural environment.

Our major tool for capturing student learning is the Ecological Film Festival. Individual films will be avenues to observe student knowledge as well as their understanding of the importance of energy conservation.

PROJECT BUDGET

<table>
<thead>
<tr>
<th>Expense</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evergreen Theatre</td>
<td>$6,000</td>
</tr>
<tr>
<td>Video Cameras</td>
<td>$2,100</td>
</tr>
<tr>
<td>Ecological Literacy Materials (books, cds, dvds, etc.)</td>
<td>$700</td>
</tr>
<tr>
<td>Promotional Materials for the Film Festival</td>
<td>$375</td>
</tr>
<tr>
<td>Professional Development for teachers – Clean Calgary Association</td>
<td>$125</td>
</tr>
<tr>
<td>Clean Calgary Association Presentation – Waste and Our World and/or Clean Air Champions, Environmental Round Table</td>
<td>$250</td>
</tr>
<tr>
<td>Tripods</td>
<td>$450</td>
</tr>
<tr>
<td>Videoconferencing equipment to rent through Calgary Board of Education</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total expenses</strong></td>
<td><strong>$10,000</strong></td>
</tr>
</tbody>
</table>

➢ A list of specific materials would be very helpful to the evaluators, e.g. applicants could provide the type (make or model) of the cameras to be purchased.

➢ Note: The A+ for Energy application’s budget section now contains additional space to enable applicants to include specific items, product information and costs and to explain how budget items align with project activities.
Proposal #3

REQUEST FOR SUPPORT

School name: St. Joseph School

PROJECT SUMMARY

Project name: Energy Literacy, an A+ for Energy Proposal for Grades 9-12
Project type: New project
Submission type: Group
Total amount of request: $10,000
Province program implemented: Alberta
Grade level(s): Grade 9, Grade 10, Grade 11, Grade 12
Number of Students: 500
Number of Teachers: 30

Summary

Energy Sources: Wind, Solar, Energy Efficiency and Conservation
Proposed Budget: $10000

This project will focus on the role of renewable (wind/solar) energy alternatives and compare them to traditional fossil fuel sources. An emphasis will be placed on enabling students to examine energy technologies and evaluate them on the criteria of efficiency and ecological impact. Grade 9-12 students will collaboratively work on energy projects:
- Within subject specific courses (Science 9, 10, 14, 24 biology/chemistry/physics 20 and 30).
- Between science course levels (i.e. physics20/30 with science 9)
- Display/share these projects with grade 4-12 students, parents and the community of Whitecourt.

▶ Excellent cross grade component within the science curriculum.

An additional component of this initiative will include the development of energy learning resources that will be retained at the school, shared with the Centre for Mathematics and Science Technology Education (CMaSTE) at the University of Alberta and printed as reusable energy education posters (future sustainability).

Our principal and three additional science teachers (with the lead teacher) will:
- Establish an energy literacy group of students to meet monthly and this group will have leadership and organizational responsibilities.
- Facilitate subject specific and cross grade energy education projects aligned with identified learning outcomes within Alberta's curriculum.
- Coordinate an 'Energy Day' (science fair) in conjunction with the spring parent-teacher interviews.
- Collect/retain (electronically) energy projects and assist in the design and evaluation of energy education materials related to the project.
- Collaborate in the overall evaluation of the project making this available to district schools and A+ for Energy representatives.

This initiative will support 150 grade 9-12 students and 300 additional students in grades 4-8. Although the project is centered in science, students will be able to use the skills and knowledge developed to further their understandings in mathematics and social studies. Parents will also be able to participate in energy challenge activities and community representatives will assist as project judges.

▶ The proposed project contains many opportunities for sharing information beyond the school and into the community.
PROJECT DESCRIPTION

Energy content

Sources: Wind, Solar, Energy Efficiency & Conservation
This project recognizes that students will be able to collaborate & share their understandings on energy & collectively contribute to improving energy literacy. Course & cross grade activities related to wind/solar energy will be combined with student projects focusing on energy efficiency & conservation.

NOTE: student projects (with outcomes) are part of the energy content & goals for this application.

Physics 30 -student projects on: nuclear fission/fusion, solar panels, the photoelectric effect, & light energy. Learning outcomes:
30-C2.1k define the photon as a quantum of EMR & calculate its energy
30-C2.4k describe photoelectric emission, using concepts related to energy conservation
30-D3.5k compare/contrast fission/fusion & chemical reactions

Chem 30 -student projects on: fossil fuels, combustion/redox reactions, enthalpy calculations, fuel cells & nuclear energy.
Learning outcomes
30-A1.6k predict enthalpy change for chemical equations using heats of formation
30-B1.4k identify electron transfer, oxidizing/reducing agents in redox reactions.
30-B2.8k calculate current & time in voltaic & electrolytic cells.
30-C2.1sts explain how science and technology meet societal needs.

Physics 20 -student projects on: kinetic & potential energy, circular motion & the mechanics of wind turbines. Learning outcomes:
20-C2.3k analyze dynamics problems that relate to the conservation of mechanical energy.
20-C2.2sts explain that the products of technology are devices, & processes that meet societal needs
20-C2.3s analyze data to develop effective energy conservation strategies.

Chem 20 -student projects on: STS connections, the stoichiometry of combustion reactions, & CO2 production.
Learning outcomes:
20-D1.1k predict the products of combustion reactions
20-D1.5k calculate the quantities of reactants and/or products using gravimetric, & gas stoichiometry.
20-D1.3s analyze data & apply mathematical & conceptual models to develop & assess possible solutions.

Bio 20/30 -student projects on: chemical potential energy, the implications of solar energy & energy in the biosphere.
Learning outcomes:
20-C1.2sts explain that the risks & benefits of technologies need to be assessed from a variety of perspectives
20-C1.3s apply models to examine photosynthesis & solar generating systems
30-D2.1sts explain how research and technology facilitate a sustainable society, economy & environment.

The inclusion and identification the specific learning outcomes within this proposal add greatly to the scope of the project. Evaluators will be looking carefully at this part as if further supports the project evaluation and assessment areas.

This project will be an integral part of the schools (and districts) instructional program. The formation of an energy literacy group will foster student leadership and support project activities. All students will contribute to an "Energy Day" where they will also be able to participate in Energy Challenge activities.

The budget supports the inclusion of solar (panels), wind (turbines) & fuel cell technologies into our school (needs identified by our staff).
Goals

Developing energy literacy will enable students to further understand the complexity of energy: forms of energy, energy transformations (efficiency), the importance of conservation & the diversity of energy technologies. Every student (inclusive) will be encouraged to participate (gr. 9-12) in ‘Energy Day’ projects. All (gr 4-12) students & parents will also be able to enter the ‘Energy Day’ challenge activities.

Grade level assessment rubrics will be developed before student projects begin.

Sci 10,14, 24 & 9 contributions include:

Sci 10 - student projects on: energy technologies, energy flow in global systems, energy conservation, & STS perspectives.
Learning outcomes:
- Describe energy transfer in: coal & hydroelectric generators, solar panels, windmills & fuel cells.
- Apply the principles of thermodynamics to investigate technological systems
- Investigate climate change & the risks & benefits of human activity.

Sci 14/24 - student projects on: energy transfer technologies, alternative energy sources, combustion reactions & energy conversations systems.
Learning outcomes:
- Investigate the transformation and conservation in technological systems
- Investigate electrical energy conversion devices for efficiency
- Describe electrical power generation: Thermal/Hydro Wind/Solar/Nuclear
- Explain the importance of the fossil fuel industry in Alberta.

Sci 9 - student projects on: environmental monitoring, biodiversity, forms of energy & electricity generation from solar panels & wind turbines.
Learning outcomes:
- Investigate and evaluate the use of chemicals for electrical storage cells.
- Construct devices for mechanical/electrical energy transformations
- Identify energy inputs & outputs for the efficiency of energy conversions.
- Describe the societal & environmental implications of the use of electrical energy:
- Identify processes for measuring & monitoring air & water quality.

➢ Well tied into and cross referenced to the science curriculum. Additional opportunities exist to work within the social studies program and adding this would strengthen this component of the proposal.

A proposed timeline includes:
June 2009 Project Team Organizational Meeting
Sept Student ‘Energy Literacy’ Team identified
Evaluation rubrics & projects explained to students
Solar panels/ wind turbine installed
Oct - Ongoing project development & cross grade sessions
March Monthly meetings for student & teacher groups
April ‘Energy Day’ & Challenge activities/ Project evaluations
May- June Energy resources identified/ evaluated
Project evaluation & completion

➢ A timeline organized by month is very helpful to the evaluators and supports the tracking of projects as they develop. Applicants should provide some details for evaluators.

On Sustainability: The solar/ wind & fuel cell equipment will continue to support learning outcomes on alternative energy technologies. The project will also generate selected energy resources that may be shared across our
The identification of equipment that will support future learning is significant in demonstrating the sustainability of your project. Any information provided will greatly assist evaluators when looking at your project.

Activities

The Energy Literacy Group/Team: This student group will have leadership & organizational responsibilities. It will meet monthly, reporting back to classes & act as ambassadors for the project. They will assist significantly in the ‘Energy Day’

Class Science Projects: Within each class, groups or individuals will submit projects for display/judging on ‘Energy Day’.

Cross Class Activities: students will share their observations, research & conclusions on energy concepts and principles.

Solar Panel Technology Activities 1-2 (budget)
Activity 1: Physics 30 & Gr 9 students will examine: light energy, electrical energy data, the photoelectric effect, voltage, current & power & examine simple circuits
Activity 2: Science 10, 14, & 24 classes. This group will share projects on: alternative energy technologies, methods for evaluating technologies & calculate energy efficiency.

Activity 3: Biology 20, 30, & Sci 9 classes. This group will share projects on energy & the environment, climate change, biodiversity & impacts on the biosphere.

Wind Turbine Technology (budget), Activity 4: Physics 20, 30, & Gr 9 students will examine: DC electric motors, electrical energy data, kinetic energy, voltage, current, power, circular motion & simple circuits.

Activity 5: Chemistry 20, 30, & Sci 10 will examine: calculating enthalpy changes & the mass of CO2 produced for 1 Kg of Coal, Methane, & Octane (combustion reactions) using gravimetric stoichiometry. The group will share ideas on the implications of using fossil fuels & the importance of alternative energy technologies (wind/ solar).

Fuel Cell Technology (budget), Activity 6: Chem 30, Sci 10, 14, & 24 students will examine: redox reactions to explain & evaluate the electrochemical operation & use of fuel cells.

Activities in this part of the proposal are well identified, relevant and curriculum specific. A detailed explanation of the activities within the project is essential.

‘Energy Day’ (budget) Individual & group projects will be displayed, presented & judged. Gr.4 to 8 students, all parents & the community at large will be invited to view projects. Prizes are awarded (gr 9-12) with a $250 scholarship for the most outstanding project. Judges will come from our local ‘energy’ businesses.

Energy Day Challenge Activities (3) (budget)
Activity 1: How far can your car go? Presentation: Physics 20 students will explain energy conversions & discuss friction and motion.
(4 categories: gr. 4-6, 7-9, 10-12; & parents & teachers). An individually made ‘car’ (up to 2 kg) dropped from a ramp 1.3 m high. (The farthest car wins.)
Activity 2: Energy & Society Debate (gr 9-12). Five 4-member teams (one per grade) will debate each of the scientific, technological, economic, political & ecological perspectives on energy as an STS issue.
Activity 3: (Fun) Bring your remote controlled car & be ready to race.
The inclusion of a variety of activities supports this project well. Students will benefit from the debate and challenge activities as they are extensions of identified learning outcomes.

Project Wrap Up & Resource Development (evaluation completed). Resources sent to U of A (CMASTE & poster production (budget))

Safety: All projects will be screened by the teaching staff for safety using Safety in the Science Classroom.

Student leadership

Many opportunities exist for students to develop and demonstrate their leadership abilities. The energy literacy group will enable a representative group of students to assist in the organization of activities throughout the year. Individuals and groups of students can achieve and excel in class, grade and cross grade activities while serving as mentors and role models for students in the younger grades. The breadth of energy topics will allow students to explore an area of energy education literacy specific to their own interests and share their confidence and knowledge. As projects are designed to support curriculum learning outcomes, achievement within grades is supported and bridges are made to future science courses so that learning can be extended into higher levels.

Science teachers will support a diversity of projects enabling students to present their work in unique and creative ways. A variety of visual and artistic media will be accepted within the project assessment rubrics. Since there is a breadth of grade/cross-grade and cross school activities with opportunities to involve parents and the community, it is proposed that this project will have a sincere and sustained impact towards energy literacy in Whitecourt.

Community involvement

Whitecourt is an energy community in an energy province. There will be little difficulty in obtaining judges and community representatives from energy and industry service companies. Potential members can be identified from: Alberta Newsprint Company, Millar Western, BP Canada, Canadian Fracmaster, Central Alberta Midstream, Davio Pressure Welding, Flint Energy, Husky Oil, Midfield Supply, Mobil Oil Canada, Pengrowth corporation, Select Controls and many more. Shuck Steel will fabricate and design the supports and metal frames for the wind turbine, solar panels and electrical devices (donated) and installation will be approved and supervised by the school districts facilities manager (Mr. Kevin Robinson). Energy sector businesses will be invited to attend and support the ‘energy Day’ activities in any way that they can. Town of Whitecourt and county of Woodlands with our MLA and MP will also be invited to attend, serve as judges or make a short presentation to students on the importance of energy education. Dr. Frank Jenkins co-director of CMASTE at the University of Alberta has agreed to assist in the distribution of all resources developed to pre-service and in-service teachers and post these materials on the CMASTE website.

Community partners are well identified within the project and the sharing of learning resources beyond the school is an excellent component.

Project evaluation

As each student project is tied to specific learning outcomes, science teachers will be able to use existing evaluation methods. Assessment rubrics will aid students in project development indicating content and presentation requirements. Administration will approve any adjustments to course outlines and evaluation processes. Assessment will occur throughout the year as work will proceed across full-year and semestered courses. Judges will be provided with evaluation criteria as well as suggested tips for fostering learning and encouraging academic growth. Projects and activities will be recorded as power point presentations, videos, images, and text files. Any issues concerning FOIP will be screened before any materials move beyond the school. A full project evaluation will be completed by the teaching and administrative staff with opportunities to include student input.
Some additional information here would be helpful to evaluators (recognizing that some information on this section is contained within other parts of the proposal). Greater emphasis on measurement would strengthen this part of the project.

PROJECT BUDGET

<table>
<thead>
<tr>
<th>Expense</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment and materials</td>
<td>$8,665</td>
</tr>
<tr>
<td>Activity Prizes and scholarship</td>
<td>$978</td>
</tr>
<tr>
<td>Teacher Sub days (matched by school)</td>
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</tr>
<tr>
<td>Stipends, Fees for Service, Guest Speakers</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total expenses</strong></td>
<td><strong>$10,000</strong></td>
</tr>
</tbody>
</table>

This proposal would be strengthened by the inclusion of more detailed descriptions of the requested items in the budget section (this proposal does provide additional detail on budget items within the Activities section but it is best to highlight budget information within the Project Budget section).

Note: The A+ for Energy application’s budget section now contains additional space to enable applicants to include specific items, product information and costs and to explain how budget items align with project activities.