



SAULT STE. MARIE  
**INNOVATION**  
CENTRE

NOTICE  
REQUEST FOR PROPOSAL

Sealed Proposals for Development of a Community Alternative Energy Strategic Plan  
SSMIC,  
until end of business day, 4:30 P.M., Friday April 29th.

All questions concerning this Request for Proposal shall be directed to:

Angie Wagner

Sault Ste. Marie Innovation Centre  
1520 Queen Street East, Room NW 307  
Sault Ste. Marie, ON  
P6A 2G4

E-mail: [awagner@ssmic.com](mailto:awagner@ssmic.com).

The SSMIC reserves the right to reject any or all proposals and to award the contract in its entirety, or in part, whichever in its opinion best serves the interest of SSMIC.

**Executive Summary**

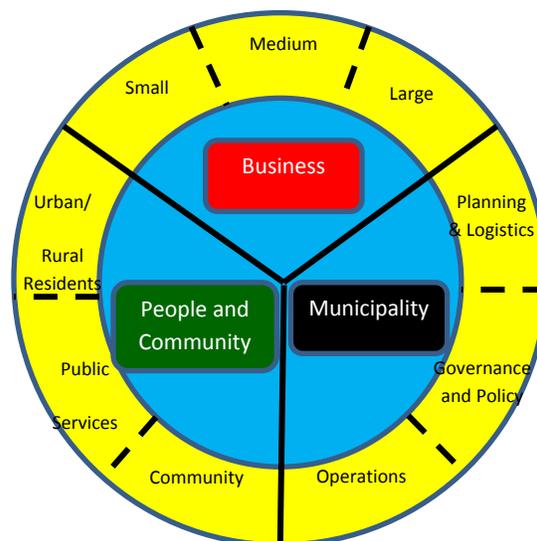
The Sault Ste. Marie Innovation Centre, on behalf of a group of community stakeholders, is pleased to issue this RFP. We are inviting consultants to take part in developing a Community Alternative Energy Strategy for Sault Ste. Marie.

The completion of this Alternative Energy Strategy (AES) is an important step in achieving our vision for the alternative energy sector in the Sault Ste. Marie region. We require a strategy that identifies specific actions we can take and recommendations that will result in capital and human capacity and capability being deployed to drive growth in the alternative energy sector. This growth will result in new alternative energy jobs, businesses, projects, and product-to-market research that will continue the already impressive momentum the community has experienced.

The chosen consultant will be working with a local project team who will take the lead role in ensuring we engage community stakeholders and citizens in the process. The consultant is expected to bring demonstrated experience and knowledge of the alternative energy sector including a) future direction and trends, b) emerging technologies being deployed globally, c) intelligence on companies at the forefront of technology innovation and business best practices, and d) information about other leading communities or jurisdictions in the sector. This information will be compiled into a concrete, strategic action plan.

To achieve our desired end result, we expect the consultant to provide actionable recommendations to each of the primary players identified in three broad segments (diagram below). These recommendations will be based on best practices gathered from the consultant’s experience and will provide community players with the expected results of following these recommendation and the implications of failing to act.

Figure 1: Community Stakeholders



Sault Ste. Marie has achieved an impressive level of activity in the alternative energy sector. We look forward to working with the consultants to develop a strategy that will enable the community to continue to be, “The Alternative Energy Capital of North America”.

## 1. Introduction

This RFP seeks a consultant that will work with local stakeholders to develop an alternative energy strategy for Sault Ste. Marie. The strategy will identify specific actions and provide recommendations that will result in capital and human capacity and capability being deployed to drive growth in the alternative energy sector.

The community has achieved a great deal of success over the past 10 years in attracting large alternative energy projects to the area, and in helping foster the development of smaller businesses seeking to advance their promising technologies or establish commercial activities. It is now looking to build on this success to drive significant advancement in the alternative energy sector in the future.

We are inviting consultants to participate in the process of developing this strategy for Sault Ste. Marie in conjunction with local stakeholders. Although the Alternative Energy Strategy focuses on Sault Ste. Marie (SSM), it is important to consider the broader Central Ontario North (CON) region which plays an integral part in alternative energy sector development. Many local businesses provide products and services to communities and residents in the region, and many alternative energy activities in the surrounding area are supported by Sault Ste. Marie businesses and organizations.

## 2. Background and Context

The attachments to the RFP provide information relevant to activities in Sault Ste. Marie and the Central Ontario North region in the alternative energy sector and reflect both domestic and foreign involvement and investment in large industrial projects, and in smaller projects driven by local public and private sector organizations. Interest in alternative energy and the opportunities for business and economic development is increasing. The need for clear direction and purpose is imperative if the community, its businesses and residents want to capitalize on sector opportunities. The alternative energy strategy is intended to prepare and position Sault Ste. Marie as a centre to facilitate and support initiatives that stimulate business development and product-to-market research, create jobs, foster project partnerships within and across communities, and help ease environmental impacts.

### a. Local History and Success

- i. **Destiny Alternative Energy Committee.** The alternative energy committee was established in 2005 to provide strategic direction and address opportunities to establish renewable energy projects in SSM.
- ii. **Designation as Alternative Energy Capital of North America.** The SSM City Council supported a resolution to recognize SSM as the alternative energy capital of North America in 2009 based on several large renewable energy initiatives completed, approved or planned for SSM.

- iii. Key Energy Projects. The impetus for community leaders to establish of the title “Alternative Energy Capital of North America” was inspired by the size and diversity of projects in Sault Ste. Marie and vicinity. The projects include:
    - Electricity Generation
      - Prince Wind Farm (189 MW) – Brookfield
      - Algoma Hydro Operations (203 MW) – Brookfield
      - Solar Farm (60 MW) – Starwood Group/Pod Generating
      - Co-Generation (70 MW) – Essar Steel (Recovery Gas)
    - Manufacturing
      - Solar Panel Manufacturer – Heliene Canada
      - Solar Ground Mount Manufacturer – Northern Lights Energy
    - Emerging Technologies
      - Waste to Energy Pilot – Elementa (6 MW)
      - Landfill Gas Pilot – PUC (1.6 MW)
      - Tire Remediation Pilot – Ellsin Environmental (0.5 MW)
  - iv. Alternative Energy Position Paper (Appendix A). The position paper documents the alternative energy landscape for SSM in 2010 and was updated in 2011 in preparation for conducting an alternative energy strategy.
  - v. Funding for an Alternative Energy Strategy was secured in April, 2011
- b. Regional History
- Several non-profit organizations and numerous small businesses have been and continue to be active in providing alternative energy products and services across a broad regional area. This began with educational initiatives, and has evolved to include strategic planning in rural communities, mapping of alternative energy assets, and a diversity of business activities providing green/clean alternatives.
- i. Renewable Energy Workshops. Workshops have been presented to 7 Central Ontario North (CON) Communities since 2009. The workshops covered global trends, energy conservation and efficiency, green/clean technologies currently available commercially, and government programs and incentives, particularly the Green Energy Act.
  - ii. Renewable Energy Strategies. Strategies have been conducted for 4 sub-regional areas within Central Ontario North (East Algoma, Central Algoma, Superior East and Hearst). Sault Ste. Marie will be the fifth. The information developed in each of the 4 strategies focused on actions in the form of tasks, activities and projects and has been shared across communities. The SSM alternative energy strategy will, in part, serve to integrate the broader regional needs and interests and help determine capacity and capability needs in SSM to better serve the community and region (Central Algoma example provided – Appendix B).
  - iii. Business Activity. Local businesses specializing in solar PV, solar thermal and/or geo-thermal are providing service in the community and to regional communities, particularly Wawa/Superior East and Blind River/East Algoma.
- c. Future Prospects:

- i. **Going Forward.** Future opportunities in the alternative energy sector for SSM, particularly in the near term, appear outstanding for industry, the community its businesses and residents. It is for this reason that the strategy needs to address both market development opportunities for business, and benefits to the municipality, its institutions and its residents.
- ii. **Market Development.** If the community/region intends to diversify and grow sector opportunities, credible and relevant information is needed to fuel that effort. This is an important component of the strategy. We are seeking advice and direction that will enable local businesses to pursue and secure opportunities that best align with regional resource availability, emerging technologies and investor interests.
- iii. **Sustainable Future.** Given the complexity of global threats affecting economic, environmental and societal factors, we view the Alternative Energy Strategy as integral to future efforts in addressing community sustainability. We want to work toward a level of resilience and self reliance in SSM/CON that will stimulate business innovation, attract domestic and foreign investment, encourage resident innovation, and engage community leaders in projects designed to enhance a local living economy.
- iv. **Planning and Marketing Tools.** The Sault Ste. Marie Innovation Centre’s Community Geomatics Centre (CGC) serves as a key enabler for planning and development of alternative energy opportunities and has proven to be a key asset for decision making by alternative energy sector proponents, domestic and foreign. The CGC has worked cooperatively with several communities in the Central Ontario North region to assist in development of local Green Maps and is seeking financial support to create a web-enabled GIS platform to support business and economic development in the sector in communities and across the region.

### 3. Objectives

The selected consultant will be working with a local project team who will take the lead in ensuring that community stakeholders and citizens are engaged in the process. These activities will be coordinated with the external consultant. We expect the consultant to bring their knowledge of external markets, technologies, businesses and opportunities to the process. Information gathered by the consultant will be integrated with that gathered from within the community and vicinity by the local project team to form the final strategy.

#### a. External Consultant

- i. Identify new opportunities for growing the alternative energy sector in Sault Ste. Marie that increase prosperity including:
  - Job growth
  - Investment attraction
  - Community participation in revenue/wealth generation
- ii. Provide the community, its businesses and its residents with a strategy (or framework) for developing the alternative energy sector.

- b. Local Stakeholders
  - i. Assist in engaging SSM stakeholders through workshops/meetings to receive community input into the Alternative Energy Strategy.
  - ii. Identify local capacities and capabilities required to enable the community and its businesses to capitalize on opportunities in the alternative energy sector.

#### 4. Expected Outcomes

- a. The Alternative energy sector strategy will include:
  - i. Business attraction opportunities for:
    - New commercial businesses providing products or services
    - Pilot projects and “product-to-market” (developmental) research opportunities
    - Manufacturing opportunities
  - ii. Project development opportunities
  - iii. Identification of key businesses, technologies and/or processes that are expected to drive future development of the alternative energy sector
- b. An analysis of assets and attributes in SSM and vicinity, existing and required, which are relevant to the alternative energy sector and critical for attracting investment, (Note: SSMIC assistance will be provided)
- c. An action plan for community stakeholders with specific, prioritized tasks, activities, projects and recommendations for local stakeholders and the Municipality.
- d. A comprehensive market assessment of business and technology opportunities in the alternative energy sector well suited for development in the SSM area. This will include businesses/technology opportunities that encourage local investment, ownership and production/service, while providing a competitive advantage for SSM/CON entrepreneurs.
- e. Data and assessment information relevant to market development opportunities for SSM/CON, that can be mapped and used for planning, forecasting and decision making (Note: The Local Project Team will work with the Consultant and the SSMIC Community Geomatics Centre to help facilitate this outcome).
- f. Identification of initiatives and activities that would be expected to drive the greatest job creation, and position the community strategically for growth in the future
- g. Identification of important actions the community needs to take to develop the alternative energy sector.
  - i. Infrastructure. Core infrastructure required to attract business and/or support local businesses.
  - ii. Capacity/Capability. Actions required by local stakeholders to support growth and/or advancement in the sector (e.g., City of SSM; PUC; EDC; Innovation Centre; Sault College, etc.)
  - iii. Communications. Identify important target audiences and document the best practices for: a) engaging stakeholders, b) maintaining interest and

- momentum, c) promoting the community and proven strategies/tactics for promotion.
- h. Information detailing how local businesses, entrepreneurs and citizens can participate in the development and/or ownership of alternative energy projects with the community, or as cooperatives, including funding similar to Community Energy Partnership Program (CEPP)
  - i. The strategy, and associated actions, will be aligned with the principles inherent in the Growth Plan for Northern Ontario to help optimize funding through government agencies responsible for delivery of the plan.

## 5. The Proposal

- a. **General.** Proposer shall provide the name of the firm, office address, telephone number and facsimile number.
- b. **Proposers Credentials.** Proposers shall provide, in detail, their credentials in the field of providing management consulting services, particularly on alternative energy strategy development, or related technologies/processes.
  - i. Proposers will provide any information which documents successful and reliable experience in past contracts, especially those contracts related to the requirements of this Request for Proposal. Failure to do so may be cause for rejection of proposal. Include a description of the proposer's business history, number of years in operation, and experience.
  - ii. Proposers shall provide the name, title, address and telephone number of persons who will both manage and be assigned to perform the services under the proposal. In the event there would be a change in the persons named and assigned to perform the services under the contract, the contractor shall be required to submit, for approval to the SSMIC, the credentials of the persons the contractor proposes to perform the services under the contract. Failure to do so may be cause for termination of the contract
  - iii. The proposer must be currently in the business of consulting/engineering/planning and must have been engaged in this field for a period of no less than three years.
  - iv. Proposers must be primarily engaged in providing the services as outlined in this Request for Proposal.
  - v. Proposers shall be independent of and not affiliated with any prime service provider or manufacturer.
  - vi. The project personnel engaged in this service requirement shall be knowledgeable in their areas of expertise and have an extremely comprehensive understanding in the areas listed in this Request for Proposal. SSMIC reserves the right to perform investigations as may be deemed necessary to insure that competent persons will be utilized in the performance of the contract.
  - vii. SSMIC reserves the right to check all references furnished and consider the responses received in determining the award of this proposal.

- c. ***Proposers Capabilities.*** The development of the community Alternative Energy Strategy will require diverse and specialized expertise. The consultant team shall include the following professionals
- i. A qualified and highly capable Project Manager who can: a) lead the project and coordinate multiple teams, b) communicate with SSMIC its understanding of the objectives and how that translates into the outcomes, and c) execute the project through the course of schedule commitments and budget allocations.
  - ii. The Project Manager shall fully understand the level of work required for each project objective. The proposal shall demonstrate this knowledge.
  - iii. The proposal will identify from what allied organizations expertise/knowledge may/will be required to fulfill the obligations of the contract by the Project Manager and his/her team. SSMIC reserves the right to recommend cooperation with certain key sector organizations, e.g. OPA, CANSEA, IESO, OSEA, etc.
  - iv. The project team will need to demonstrate experience in the development of community alternative energy strategic plans.
  - v. The proposal shall clearly demonstrate how the consultant will approach the various issues of the strategy based upon the qualifications of the proposed team. An organizational chart and manpower matrix shall be provided to demonstrate the specific technical resources
  - vi. No contract will be awarded except to responsible proposers capable of providing the services contemplated.
- d. ***Project Protocol.***
- i. The Consultant will be retained by the Sault Ste. Marie Innovation Centre and for contract purposes will communicate with the project team who will guide and oversee the process. The project team will include individuals with expertise relevant to the needs of the consulting team, as determined in the initial meeting with the Alternative Energy Committee. Dr. David DeYoe will serve as the local Project Manager.
  - ii. Consultants will communicate regularly with Dr. DeYoe and the project team to ensure expectations are aligned and deliverables are consistent with community needs.
  - iii. Meet with the Local Alternative Energy Committee to refine/finalize critical path, agree on milestones and deliverables, establish a relationship with local contacts with whom your team will be working, and tour the community
  - iv. A minimum of “3” visits to the community, in addition to the welcome visit will be required.
  - v. Consultants will work with the local team to compile results and finalize draft report for review by the committee and are encouraged to provide advice and insight to the broader project, particularly as it relates to changes in community thinking and culture necessary in transitioning to a more green and clean economy and life style

- vi. A Presentation to Council and stakeholders of the results, implications and recommendations will be required.
- e. **References.** Proposers shall provide a list of three (3) applicable customer references who have contracted for services offered by the proposer which is considered identical or similar to the requirements of this Request for Proposal. The list should include the following information:
  - i. Company Name and Address
  - ii. Contracting Officer and Telephone Number
  - iii. A brief, written description of the specific services provided.
- f. **Understanding and Approach.** Proposers shall provide a response to demonstrate understanding of the subject matter, including, but not limited to, the Scope of Work as well as the approach that will be taken to accomplish the objectives related to the strategy.
- g. **Costs.** Price may not be the determining factor for award. The cost shall include the proposers fixed price for this service as outlined in the proposal specifications. Proposers should include the cost proposal, on company letterhead, details of all individual costs of the proposed services. Price data should include fixed price, estimated hours of work by key staff and individual hourly cost for staff. SSMIC may negotiate a final offer with the selected proposer.
- h. **Evaluation.** The evaluation process will be carried out by an evaluating committee who will establish the ranking of all the bidders and produce a short list of proponents. The short-listed proponents may be invited to make a brief presentation. SMMIC intends to make total proposed aware to the responsible, responsive proposer based on the evaluation criteria listed in Table I.

## 6. Evaluation and Selection

The evaluation and selection will follow a point system for the technical portion of the proposal (total 80%) and the fee portion will be worth 20%. Points for the fee portion of the work will be made on a pro-rated basis. The following points allocation is provided for the technical portion of the proposal.

Table I: Evaluation Criteria.

	Points	Consultant A	Consultant B	Consultant C
<b>1. Firm</b>				
✓ Experience with Community Alternative Energy Strategies	15			
✓ Knowledge of global alternative technologies/trends and familiarity with marketplace	10			
✓ Firm Background and Qualifications	5			
<b>2. Project Team</b>				
✓ Project Manager	5			
✓ Project Team members, roles, experience and qualifications	20			
<b>3. Methodology and Approach</b>				
✓ Overall Approach to completing scope of work tasks	20			
✓ Ability to identify and make connections with other jurisdictions and technology companies	10			
✓ Identification and incorporation of external stakeholders	5			
✓ Creativity and innovation	5			
<b>4. Schedule</b>	5			
<b>5. Total Score of</b>	100			

## 7. Award of Proposals

This Request for Proposal should not be construed as a contract to purchase goods or services. Subsequent to the submission of proposals, interviews may be conducted with some of the proponents, but there will be no obligation to receive further information, whether written or oral from any proponent. SSMIC will not be obligated in any manner to any proponent whatsoever until a written contract has been duly executed relating to an approved proposal.

## 8. General Instructions

- **Timing.** Time is of the essence in the contract resulting from this proposal. Delivery of all work should be completed within 5 months from date of purchase order.
- **Contract Administration.** All questions concerning this Request for Proposal shall be directed to: Angie Wagner, Phone 705-942-7927 (x3133), Monday through Friday, 8:30 A.M. to 4:30 P.M. or E-mail to awagner@ssmic.com.
- **Coordination.** After contract award, all coordinating for services will be with David DeYoe or designee. The successful proposer shall designate in writing, a project

manager and all coordination for services between SSMIC and the successful proposer shall be the responsibility of the respective managers.

- **Budget.** The budget for the project is up to \$70,000 for the external consultant.
- **Proponents Expenses.**
  - Proponents are solely responsible for their own expenses in preparing, delivering or presenting a proposal and for subsequent negotiations with SSMIC, if any.
  - The submission of a proposal shall be considered an agreement to all the terms and conditions provided herein and in the various proposal documents, unless specifically noted otherwise in the proposal.
- **Currency and Taxes.** Prices are to be quoted in Canadian Dollars, inclusive of HST.

## 9. Legal

- **Indemnity.** If the contract is awarded, the successful proposer will be required to indemnify and hold SSMIC harmless and against all liability and expenses, including solicitors fees, howsoever arising or incurred, alleging damage to property or injury to, or death of, any person arising out or attributable to the consultants performance of the contract awarded. Any property or work to be provided by the consultant under this contract will remain at the consultants risk until written acceptance by the SSMIC; and the consultant will replace, at the consultant's expense, all property or work damaged or destroyed by any cause whatsoever.
- **Exceptions.** The proposer shall furnish a statement on company letterhead giving complete description of all exceptions to the terms, conditions and specifications. Failure to furnish the statement will mean that the proposer agrees to meet all requirements of the Request for Proposal.
- **Termination for Convenience.** The SSMIC may terminate a contract, in whole or in part, whenever the SSMIC determines that such a termination is in the best interest of the SSMIC, without showing cause, upon giving written notice to the proposer. The SSMIC shall pay all reasonable costs incurred by the proposer up to the date of termination. However, in no event shall the proposer be paid an amount which exceeds the bid price for the work performed. The proposer shall not be reimbursed for any profits which may have been anticipated but which have not been earned up to the date of termination.
- **Termination for Default.** When the proposer has not performed or has unsatisfactorily performed the contract, SSMIC may terminate the contract for default. Upon termination for default, payment will be withheld at the discretion of SSMIC. Failure on the part of the proposer to fulfill the contractual obligations shall be considered just cause for termination of the contract. The proposer will be paid for work satisfactorily performed prior to termination, less any excess costs incurred by the SSMIC in re-procuring and completing the work.
- **Interpretation.** The contract resulting from this Request for Proposal shall be construed under the laws of the Province of Ontario
- **Integration.** This Request for Proposal document, the proposer's response to this solicitation, and subsequent purchase order(s) to the successful proposal contain the

entire understanding between parties, and any additions or modifications hereto may only be made in writing executed by both parties.

- ***Non-Assignment of Contract.*** The proposer shall not assign the contract, or any portion thereof, except upon the written approval of the SSMIC.
- ***Contract Agreement.*** The selected proposer will be required to enter into a contract agreement with SSMIC
- ***Compliance with Laws.*** The contractor will give all the notices and obtain all the licenses and permits, required to perform the work. The contractor will comply with all laws applicable to the work or performance of the contract.
- ***Intellectual Property Rights.*** SSMIC will be the owner of the intellectual property rights, including patent, copyright, trademark, industrial design and trade secrets in any deliverable product or product developed through this contract. Licensing and marketing rights to the developed product will not be granted in the contract.
- ***Confidentiality.*** The selected proposer agrees not to release or in any way cause to release any confidential information of the SSMIC unless they have been specifically approved to so in writing.
- ***Added Value.*** SSMIC is interested in maximizing the value of expenditures as it relates to achieving additional value that would further benefit SSMIC and the city of Sault Ste. Marie. As such, bidders are encouraged to consider, develop and propose value added concepts, programs, components and the like that would further enhance the proposed acquisition represented in this solicitation request.
- ***Disputes.*** In cases of dispute as to whether or not an item or service quoted or delivered meets proposal requirements, the decision of SSMIC, or authorized representatives, shall be final and binding on all parties.
- ***Reservations.*** SSMIC a) reserves the right to reject or accept any or all proposals or parts of proposals, when in this reasoned judgment, the public interest will be served thereby, b) may waive formalities or technicalities in proposals, as deemed necessary, c) may waive minor differences in the proposal provided these differences do not violate the proposal intent.

## Appendix A – Position Paper – Alternative Energy Task Team

### Executive Summary

The Alternative Energy Task Team emerged out of the Destiny Energy Committee, with representatives from the Sault Ste. Marie Innovation Centre, SSM PUC, the EDC, the Municipal Environmental Initiatives Committee, Sault College and the private sector. The first action item of the Task Team was to prepare a position paper intended to:

- help support the vision of Sault Ste. Marie as the Alternative Energy Capital of North America;
- present an overview of the current alternative energy landscape including existing and planned energy and remediation related projects;
- provide an assessment of information, policy and resource requirements important in defining the challenge and advancing the journey toward the vision; and,
- offer guidance to help enable the community to move forward.

The position paper reflects the interests and insights of the Task Team members each of whom envisions Sault Ste. Marie becoming a pioneer in the alternative energy sector by demonstrating how a municipality can attract investment, create business opportunities and create and secure local jobs while taking responsibility for environmental sustainability through planning, due diligence and proactive leadership.

The current alternative energy landscape in Sault Ste. Marie is anchored to several large generating or remediation projects, either in place or planned. These projects have demonstrated the community's willingness to accommodate new or innovative approaches to foster a green and clean direction for Sault Ste. Marie. This paper suggests the community move from an opportunistic to a more strategic mode and charts its destiny in this new territory to the benefit of all community stakeholders.

The Task Team recognizes two major avenues that need to be considered in helping achieve the vision. One avenue represents larger, industrial projects similar to the Prince Wind Farm and Essar Cogeneration facility in operation, and the St. Marys Paper Cogeneration and POD Solar projects currently in the planning phase. The other avenue addresses the residential, commercial and institutional interests in the community, which would reflect individual or cooperative projects important to development and diversification of local business and a more sustainable local economy.

The position paper explores, at a high level, the key enablers required to drive initiatives forward, including communication and education, government policies and processes and local resources, in place or needed, to progress toward the vision. To enact the vision may require an investment in resources dedicated or allocated to the journey. To stay true to the principles inherent in achieving the vision the task team has recommended further actions that will help guide those who will be held accountable for their development and delivery.

Following the review process and adoption of this position paper, dedicated resources will need to be identified to develop and implement a comprehensive and alternative energy strategy and action plan to help Sault Ste. Marie solidify and maintain the title of Alternative Energy Capital of North America.

The Task Team recommends City Council accept this position paper as information, and support the Alternative Energy Committee in its effort to accomplish the following recommended next steps:

1. Develop a governing structure for the committee;
2. Develop a strategy that enables continued growth in the alternative energy sector and report back to City Council; and
3. Ensure appropriate community entities are aligned in their efforts to support the strategy and develop an action plan.

# Alternative Energy Position Paper

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## 1.0 Introduction

The Alternative Energy Task Team emerged out of the Destiny Energy Committee, with representatives from the Sault Ste. Marie Innovation Centre, SSM PUC, the EDC, the Municipal Environmental Initiatives Committee, Sault College and the private sector. The first action of the Task Team was to prepare the following position paper intended to provide information and recommendations to support the alternative energy goals of Sault Ste. Marie.

### *1.1 Background*

The City of Sault Ste. Marie, as a relatively small northern community historically dependent upon natural resource based and industrial businesses to drive its economy, has experienced significant volatility and an overall reduction in employment levels over the last 20 years. With the loss of over 11,000 permanent positions at the largest employer in the region, Algoma Steel (now Essar Steel), in addition to significant reductions throughout the forest products sector, the community has struggled to maintain population levels and the associated services required to maintain a vibrant community. In spite of these challenges, as a result of the determination of the community's leaders and a citizen base that values the way of life in the region, the community has successfully focused on diversifying its economic base and building on recent developments in the alternative energy sector.

Building on a history of hydroelectric development in the region, projects have been implemented by the community's industrial partners over the last 15 years in the areas of natural gas fired cogeneration, coke oven gas fired cogeneration, and wind turbine generation totalling in excess of 250 megawatts of electrical generating capacity, bringing total regional generating capacity to over 400 megawatts. With this momentum, the associated accumulation of knowledge and expertise in the region, and a growing provincial focus on building a future economy based on renewable energy and associated technologies, community leaders saw the opportunity to reinforce its commitment to energy generation and the associated supporting industries.

In the spring of 2007 City Council, recognizing the critical mass of activity building in the sector, boldly proclaimed Sault Ste. Marie as the "Alternative Energy Capital of North America".

### *1.2 Definition of Alternative Energy*

Alternative Energy, as defined by the Task Team in the context of the community's vision, includes renewable energy generation – wind, solar, hydroelectric and geothermal – in addition to municipal solid waste (MSW) gasification, rubber tire energy recovery, and other alternative technologies that result in energy production while reducing environmental impact. Alternative energy in this context also refers to those technologies that can be developed and deployed to recover low grade or waste energy, or reduce energy consumption in residential, commercial, or industrial situations.

### *1.3 Vision*

Sault Ste. Marie - the alternative energy capital of North America

### *1.4 Mission*

Sault Ste. Marie will create the conditions to attract technologies, expertise and capital to our community that will result in an increase in related employment, economic activity, and quality of life, specifically in the field of alternative energy and efficient energy utilization.

### *1.5 High Level Goals*

High level goals need to be established to focus efforts and ensure the vision is achieved. To this end, the city will establish key metrics that will be used to track our progress as we work towards achieving our vision. Annual objectives and long term goals will be established to ensure proper focus and broad consideration of the various impacts relevant to the community resulting from associated initiatives. A draft scorecard reflecting these goals is included in Appendix A.

### *1.6 Strategy*

A strategy will be developed and adjusted over time to ensure the vision is realized and the goals are met in a way that is consistent with the community's needs and preferences. Elements that may be included in the strategic plan are:

- Build an Alternative Energy Framework that identifies the various sources of potential energy generation and methods for utilization of energy efficiency (opportunities that can be capitalized on) in the region, to be used as a communication tool as well as a basis to establish long term targets for development. An overview of the alternative energy projects currently established in Sault Ste. Marie can be found in section 2.0 of this position paper, but will require continuous updating as these progress, and as other sources of potential energy and associated project opportunities arise.
- Establish a communication plan specifically related to alternative energy that is in turn integrated in to the broader communication efforts of all municipal agencies. Activities could include conferences, community trade missions, community outreach efforts, and the development of an online resource.
- Ensure maximum Municipal support through the establishment of community reference guides, a review of municipal processes and incentives available to encourage project development, and by ensuring that all municipal agencies are aligned in their efforts.
- Ensure Provincial and Federal support through the establishment of Provincial and Federal information in a reference guide, identifying community needs from each level of government to facilitate project development and adjust lobby efforts by all municipal agencies and community leaders.
- Establish required resource support in the community by developing education programs and programs through local employment agencies to align with identified upcoming skill set requirements.

## 2.0 Current Landscape

Sault Ste. Marie is a strong leader in alternative energy projects, and has been commended by alternative energy project leaders and investors for having positive support from community leaders. The total amount of energy that is produced from all projects within the community is greater than the amount required to power a city of similar size. The following is a high-level overview of current alternative energy and efficient energy utilization initiatives within the region.

### *2.1 Energy Recovery*

#### *2.1.1 Waste*

##### **2.1.1.1 Municipal Solid Waste**

Elementa Group (formerly EnQuest Power Corp.) established a pilot plant in 2008 at the Sault Ste. Marie landfill site, with the intent of converting garbage into energy. The technology breaks down carbon material (municipal solid waste) at the molecular level using a patented steam-based reformation process. This process produces two to three times more energy than the typical incineration process.

Two solid by-products are recovered in the process. Metals (6-10%) can be recycled, and a mineral granular residue that has the potential to be used in road construction. The pilot project tested approximately 10 tonnes of municipal waste in 2008. Elementa Group and the City of Sault Ste. Marie negotiated a waste supply agreement to progress into the second phase of the project, which consists of a demonstration plant with the potential to generate 6 – 7 megawatts of electricity per year.

#### **2.1.1.2 Tires**

The Ellsin Environmental Ltd. tire recovery pilot project, estimated at \$5.25 million, is currently under construction in Sault Ste. Marie and is expected to be in testing phase in early 2010. It will help to reduce the emission of greenhouse gases and will reduce the amount of tires currently in landfills by recycling a maximum capacity of 900 tires per day. The technology is comprised of Environmental Waste International Inc. (EWI)'s patented Reverse Polymerization™ process which breaks down scrap tires into carbon black, oil, gas and steel by-products. The off-gases from the process will be directed to onsite ultra-clean micro-turbines which will produce up to 0.5 megawatts of electricity, more than the power needed to operate the system. The excess power generated will be sold back to the power grid. This pilot plant will create 15 construction jobs and 25 ongoing jobs in Sault Ste. Marie.

#### **2.1.1.3 Landfill Gas**

The City of Sault Ste. Marie will collect landfill gas from its Fifth Line site through an active gas collection system consisting of new and existing gas extraction wells with lateral and header collection piping and a blower/flare station to burn the collected gas. The project, with an estimated operational date of December 2010, will significantly reduce odours and greenhouse gas emissions. A second phase to this project is proposed to include the Sault Ste. Marie PUC using the landfill gas to drive internal combustion engines generating approximately 1.6 megawatts of electricity.

### **2.1.2 Cogeneration Projects**

#### **2.1.2.1 Essar Steel Algoma**

In 2009 Essar Steel Algoma, Sault Ste. Marie's largest employer, became one of the first integrated steel manufacturers in Canada to construct a cogeneration power project that converts by-product fuels from the coke making and iron making processes into electricity and steam for the steelworks. The \$135-million project produces 70 megawatts of electricity, reduces the company's reliance on the provincial power grid by an average of 50 percent and has expectations of contributing \$30-million in annual consolidated earnings.

#### **2.1.2.2 St. Marys Paper**

St. Marys Paper has proposed the construction of a biomass cogeneration plant in Sault Ste. Marie, to convert woody biomass into electrical and thermal energy. Although the initial proposal has been denied, the \$170 million project is currently under negotiations with the Ontario Power Authority. It is expected to produce 35 megawatts of electricity which will be sold to the grid, and heat and process steam for the mill. In addition, the St. Marys Paper mill is also considering a cellulosic ethanol cogeneration project using steam extraction with hydrolysis and fermentation.

## **2.2 Energy Production**

### **2.2.1 Solar**

POD Generating Group is in the final phase of negotiations to install a 60 megawatt ground mounted solar farm located in Sault Ste. Marie. This \$400 million project will use solar photovoltaic (crystalline

silicon) cells to capture the energy from the sun and convert it into electricity. The farm, expected to commence construction in 2010, will employ 120 construction workers and is expected to create 15 ongoing jobs. The project will be developed in two phases, with the first phase supporting a 20 megawatt installation.

The City of Sault Ste. Marie, with SSM PUC as a potential partner, is investigating the installation of a rooftop solar energy system at the Civic Centre. The potential 10 kilowatt project is expected to reduce 229 tonnes of greenhouse gases over 25 years. The SSM PUC is also proposing a 100 kilowatt installation at the local water treatment plant. The feasibility of implementing additional rooftop solar installation on other municipal and PUC buildings may also be pursued.

Sault Ste. Marie is also the proposed location for a new solar manufacturing facility that will be capable of producing up to 25 megawatts of solar panels annually, and many other local businesses are exploring how to establish products or services that would support the development of solar projects. Sault Ste. Marie is also fortunate to have a long history of local solar panel and equipment suppliers including Northern Lights Energy Ltd.

#### 2.2.2 Wind

Brookfield Renewable Power's Prince Wind Farm was a two-phase project comprised of 126 wind turbines extending over nearly 100 km<sup>2</sup> and employed over 300 engineers, managers, trades and support staff during the construction phase. It is currently the third largest wind farm in Canada. This \$400 million project now employs 17 operators and maintenance workers. The wind farm has a total installed capacity of 189 megawatts and produces enough electricity to power 60,000 homes.

Sault College of Applied Arts and Technology also has an on-site wind turbine that has an installed capacity of 35 kilowatts. The turbine was erected in July 2008 and has since produced 44 megawatt hours of electricity. It is now used as a teaching application for the Mechanical Engineering Technician program.

#### 2.2.3 Hydro

Brookfield Renewable Power has five Sault Hydro Operations sites with hydroelectric generating stations; Francis H. Clergue, Mackay, Gartshore, Hogg, and Andrews, located on the Montreal River and the St. Mary's River in Sault Ste. Marie and surrounding areas. The facilities have an installed capacity of 203 megawatts, producing an average of 928 gigawatt hours of electricity annually. It is unknown how many employees were involved in the construction phase of the facilities; however, they currently employ 27 operators and maintenance workers in Sault Ste. Marie.

#### 2.2.4 Bioenergy

Sault Ste. Marie-based SITTM Technologies has a pilot study underway, producing biodiesel from various feedstocks, including used vegetable oil and coconut oil. This is currently being used to fuel three city buses, and has large potential for future expansion. Biodiesel and fuel pellet agricultural opportunities are growing in the communities east of Sault Ste. Marie, and a consultant has been hired to perform an oil and fibre feasibility study. In addition, SITTM has signed on for a biofuel coop with along with other key players, including the PUC, the Sault Ste. Marie Innovation Centre, Innovation Ontario North, Batchewana Band Industries, and private oil seed producers. They are currently seeking funding to hire a consultant to assist with the development of a business plan.

Other players, including the City of Sault Ste. Marie, are looking to develop a fibre crop industry by growing sunflowers and other plants to extract oil and generate electricity, and efforts have been made by the locally based Canadian Forest Service's Great Lakes Forestry Centre (CFS-GLFC) and the Ontario Forest Research Institute (OFRI) to develop energy plantations with woody species.

#### 2.2.5 Geothermal/ Earth Energy

Still fairly new to Sault Ste. Marie, geothermal energy has been implemented by approximately twenty residents in the area. It is a very environmentally clean, and cost-effective system that uses 40 – 70% less energy than conventional systems. The technology draws heat from the earth to heat buildings in the winter, and reverses in the summer to deposit the heat from the buildings into the earth. This method is also applied in using water sources (lakes, ponds or rivers) for heating and cooling.

#### 2.2.6 Traditional Fuels

In addition, the 110 megawatt Lake Superior Power facility (LSP), a natural gas-fired co-generation plant, operates in conjunction with the hydroelectric power plants in northern Ontario. The facility, fuelled by natural gas, comprises of two 40 megawatt gas turbines and one 30 megawatt steam turbine. Exhaust heat from the gas turbines is used to produce high pressure steam which in turn drives the steam turbine generator.

### 2.3 Conservation and System Efficiency

Currently there are educational programs and government programs available in Sault Ste. Marie for residents and businesses to learn about and benefit from conservation and system efficiency options. An increase in community awareness initiatives will continue to improve the uptake of these opportunities.

#### 2.3.1 Conservation

The first step in any energy program is to encourage commitment on both a personal and organizational level to conserve energy. This will optimize efficiency of energy use and production systems. The City of Sault Ste. Marie has been active in encouraging participation in municipal initiatives to promote energy conservation, and the Sault Ste. Marie PUC is dedicated to promoting the Ontario Power Authority (OPA)'s Brand Standard 'every kilowatt counts' through community tradeshow events and in school workshops. In addition, organizations such as the locally based Upper Lakes Environmental Research Network (ULERN), have delivered educational workshops to the public regarding energy conservation techniques and participate in energy themed tradeshow events.

#### 2.3.2 System Efficiency

In the Canadian environment, system efficiency becomes even more important as the heating of space and water in a building can account for 80% of the building energy needs. This is particularly necessary if the source of heating originates from fossil fuels, directly (heating oil or natural gas), or through electricity production (coal, diesel fuel, or natural gas). Incentives similar to Feed in Tariffs but for saving electricity are beginning to be discussed as a necessary incentive to stimulate a shift.

When considering new building projects, green or clean construction is exemplified by the principles inherent in programs like LEED (Leadership in Engineering and Environmental Design) and Green Build. Following these principles can reduce energy consumption in a home or building by optimizing system efficiency and energy generation strategies. Currently under construction in Sault Ste. Marie, the new Algoma Public Health building and the Bio-Sciences and Technology Convergence Centre at Algoma

University will achieve GOLD LEED certification, and a new addition to the Sault College of Applied Arts and Technology will boast SILVER level status.

#### *2.4 Municipal Environmental Initiatives*

On September 10, 2007, City Council passed a resolution to report on the current corporate environmental activities and the future plan to reduce CO<sub>2</sub> emissions from Municipal operations. As a result, the Municipal Environmental Initiatives Committee (commonly referred to as the Green Committee) was formed with representatives from senior management and staff from various departments and divisions. Over the past two years several initiatives, focused on internal municipal operations, fleet management, waste diversion and public awareness, have been completed. Potential funding sources are also explored and submissions are made where applicable.

##### 2.4.1 Fleet

In 2009, the City of Sault Ste. Marie launched a corporate wide idle-free campaign in order to reduce the amount of fuel consumed by the fleet and subsequent greenhouse gases. In an effort to build on the corporate-wide anti-idling campaign, an application was made on behalf of the Green Committee to the NRCan ecoENERGY for Personal Vehicles program.

The City of Sault Ste. Marie also participated in the Fleet Challenge Ontario Municipal Fleet Review 2009. Data, such as kilometres travelled, fuel consumption and life cycle, was collected for Public Works vehicles during June and July of 2009 to determine fuel efficiency and future vehicle selection recommendations.

Staff education and training in the area of proper vehicle operation and maintenance is a priority and is ongoing.

##### 2.4.2 Municipal Operations

In support of a “culture of conservation” City Council designated the Environmental Initiatives Coordinator position as the Municipal Energy Conservation Officer (MECO). In addition to the designation, the City of Sault Ste. Marie proclaimed May 17-23, 2009, as Energy Conservation Week and participated in the ‘Count Me In!’ community challenge. Locally, the Green Committee and the Sault Ste. Marie PUC encourage community members to sign a pledge for energy conservation.

An energy audit funded by AMO/LAS Ltd. was completed in 2008 for the Civic Centre, and the lighting retrofit recommendation from the audit is currently being implemented with funding from the Municipal Environmental Initiatives Committee. A second energy audit was completed for the Public Works building on Sackville Road in 2009 and other potential projects are being explored.

A Corporate Greenhouse Gas Inventory is currently underway in order to determine Municipal emissions from various sectors, including buildings, vehicle fleet, streetlights, wastewater and corporate refuse. The information from this inventory will provide a benchmark to track progress over time, and assist in future policy development.

##### 2.4.3 Waste Management

One waste management effort the Green Committee financed was the purchase of 20 Super Sorter Three-In-One recycling bins in key locations throughout the city to divert recyclable materials from the landfill and improve corporate recycling overall. A public awareness campaign was launched, in

conjunction with the Sault Ste. Marie Greyhounds to educate patrons of community centres to properly use the bins.

#### 2.4.4 Public Awareness

The Municipal Environmental Initiatives Committee has supported a variety of other green initiatives by inviting guest speakers, participating in teleconference brainstorming sessions with other municipalities, and sponsorship or participation in workshops, corporate and community events.

#### 2.5 GIS Capacity

The city of Sault Ste. Marie possesses a unique asset in helping to plan and develop its alternative energy sector. The Community Geomatics Centre is an award-winning municipal GIS group that has played an important role in assisting economic development activities and private sector companies looking to locate new initiatives in the community.

### 3.0 Action Plan

Once the strategy is finalized, an action plan including the following elements will be established to align community stakeholders with the community vision and with Provincial and Federal programming.

#### 3.1 Communication Plan

An external marketing communication plan will be developed, in which Sault Ste. Marie will need to focus on opportunities to attract alternative energy businesses. Locally, a public awareness and community engagement marketing plan will be designed in line with the current communication policies.

#### 3.2 Policies and Procedures

The policies and processes of all levels of government will impact the planning and implementation of alternative energy projects. In order to encourage growth in the area of alternative energy government policies and procedures have to be conducive to the industry, yet, ensuring public concerns are addressed. Further resources, incentives and opportunities available to assist Sault Ste. Marie in becoming the energy capital can be found in Appendix B.

##### 3.2.1 Municipal

Alternative energy projects must adhere to the Ontario Building Code enforced at the local level; however, for many projects the planning process has been streamlined and defined by the Green Energy and Green Economy Act.

##### 3.2.2 Provincial

###### 3.2.2.1 Green Energy and Green Economy Act

Local projects will have to comply with Provincial legislation, regulation and planning policies. Most recently, the Green Energy and Green Economy Act was passed to encourage growth in green technology, increase employment and “green collar” jobs, and empower the community to participate in green energy projects. Through this legislation, the Ontario Power Authority is offering a Feed-In-Tariff (FIT) program, which provides 20 year contracts with rates associated with various energy generation systems.

###### 3.2.2.2 Northern Growth Plan

Under the Places to Grow Act, the Northern Growth Plan is a strategy to grow and diversify the economy of Northern Ontario. It encourages the further development of human and natural resources and new

economic opportunities. The document devotes a chapter to Green Energy and the important role that the alternative energy sector can play in the future development of Northern Ontario.

### 3.2.3 Federal

As climate Change policy is being further developed in Canada, it may dictate the allowable emissions from industry. These restrictions may increase the participation or encourage the development of carbon trading markets. An increase in alternative energy projects may result in reduced emissions internally, as well as an incentive through carbon credits. However, many questions are currently unanswered related to the current carbon market and trading system.

## 3.3 Servicing Requirements

### 3.3.1 Infrastructure

To support the strategy that evolves from this position paper, it will be necessary to investigate ways to support growth through infrastructure reinforcements and capacity enhancements. The Green Energy and Green Economy Act specifies that a transmitter or distributor shall provide priority connection access to its system for a renewable energy generation facility. In addition, the Ontario Energy Board has established a preliminary and transitional framework which serves to address funding and planning for electric distribution system investments to accommodate the connection of renewable energy generation facilities.

#### 3.3.1.1 Smart -grid

The introduction of smart meters is a first step and the foundation towards the implementation of a smart grid. The smart grid means the advanced information exchange systems and equipment that when utilized together improve the flexibility, security, reliability, efficiency and safety of an integrated power distribution system. One of the main purposes of a smart grid is to enable the increased use of renewable energy sources and technology, including generation facilities connected to the distribution system.

#### 3.3.1.2 Industrial Land

Obtain a complete inventory of current, existing and potential land available, and service industrial land where required for the purpose of fulfilling the strategy and other future initiatives.

#### 3.3.1.3 Transmission and Distribution Infrastructure

Investments and upgrades to transmission and distribution circuits and facilities may be necessary in order to accommodate the interconnection of generation sources to the power grid. Distribution system impact assessments and studies premised on the specific sites under consideration will be required to be performed.

### 3.3.2 Human Resources

#### 3.3.2.1 Skills Development Recruiting

Sault College will be introducing a new program in 2010 designed to increase the size of the workforce in the renewable energy sector. The course, a one-year certificate in Renewable Energy Systems Installation, will provide students with the knowledge and skills needed to install renewable energy systems such as wind turbines, solar panels, and geothermal heaters in residential and commercial buildings. It is expected to produce 30 graduates each year.

### 3.3.2.2 Research and Development

The growth of the alternative energy sector has led a boom in research and development activity in Canada and around the world. Technology supporting this sector has been identified by both the Province of Ontario and the Government of Canada as a key focus area in their respective innovation or science and technology agendas.

The Ontario government states that it has invested more than \$600 million in research projects and companies working on green technologies and initiatives since 2003. As an example, the Province of Ontario recently announced a \$33 million investment at McMaster University to support more than 300 researchers. One of the researchers, Dr. Rafael Kleiman, will receive funding to move beyond current technology to produce a new generation of advanced solar cells that capture and convert much more of the sun's rays.

At the current time, the vast majority of research and development in the local alternative energy sector is conducted by private sector firms. A portion of this work is conducted within the community and the remainder is conducted by researchers located at external locations. Sault Ste. Marie does not currently possess an academic research base in the alternative energy field; however, with the scale of developments taking place in the community there is great potential to drive growth in this area.

With two post-secondary institutions in the community – Sault College and Algoma University – there is opportunity to build a local academic research base that can be utilized to attract funding to the community; create partnerships with private sector companies; and make the community more attractive for future private sector investment. Sault College in particular has a stated goal to develop its Renewable Energy programming and already possesses a fully functioning wind turbine on campus that can be leveraged for research initiatives.

In addition, Lake Superior State University, located in Sault Ste. Marie, Michigan, has an Engineering school and researchers conducting alternative energy work. The state of Michigan has been aggressively investing in alternative energy research and projects and would be a natural partner in research initiatives for local enterprise as well as Sault College and Algoma University.

The funding from the Ministry of Research and Innovation, the Medical and Related Sciences (MaRS) Innovation, the Ontario Centres of Excellence, Industry Canada, and others should not be overlooked in the development of our alternative energy eco-system. Given the nascent state of the research sector in Sault Ste. Marie, it will be important to identify strategic partners that will be interested in working on local projects and providing capacity and mentoring in this area. A plan to induce research and development activities into the community will be developed.

### 3.3.2.3 Development and Implementation

Following the review process and confirmation of this position paper, dedicated resources will need to be identified to develop and implement a comprehensive and strategic alternative energy action plan to help Sault Ste. Marie solidify and maintain the title of Alternative Energy Capital of North America. In addition, funding options will need to be explored to help support the possibility of a permanent alternative energy coordinator position.

### 3.3.3 Financing and Incentives

#### 3.3.3.1 Tax Incentives

There are a few tax incentives available in Ontario for residential, business and industrial sectors that are quickly approaching their deadline dates. Most purchases must have been made by the end of January 2010, and forms must be filed within 4 years of purchase to obtain the tax rebates. It has not yet been announced if these incentives will continue in 2010. These range from the Home Renovation Tax Credit to various Retail Sales Tax exemptions on energy related purchases. A summary of these incentives and further details regarding their requirements has been prepared and is available for Council upon request.

#### 3.3.3.2 Funding Programs

There are currently over 40 funding and loan programs supporting alternative energy and energy conservation projects in Ontario. These include financing for agricultural biofuel initiatives, biogas systems, cogeneration facilities, solar thermal heating, and other alternative energy projects and retrofit programs. The funding may support research and development, demonstration projects, job creation and other capital costs. A complete list of the Agri/Clean/Green Tech Company Funding Programs has been prepared and is available for Council upon request.

### 4.0 Conclusion

This position paper has established a current landscape to support the vision that Sault Ste. Marie is the Alternative Energy Capital of North America and identified key community partners who will continue to contribute to achieving the community's mission. Sault Ste. Marie is a significant leader in alternative technologies, and to maintain this vision, the community must continue to be on the forefront of sustainable environmental practices. A strategic plan should be developed using the starting blocks discussed throughout this paper to ensure that Sault Ste. Marie continues along the correct path and to help align community entities in this endeavour.

**The Task Team recommends City Council accept this position paper as information, and support the Alternative Energy Committee in its effort to accomplish the following recommended next steps:**

- 1. Develop a governing structure for the committee;**
- 2. Develop a strategy that enables continued growth in the alternative energy sector and report back to City Council; and**
- 3. Ensure appropriate community entities are aligned in their efforts to support the strategy and develop an action plan.**

Position Paper Appendix A

**Draft Scorecard**

- I Active Projects** (Appendix A-1)
- II Projects Under Development** (Appendix A-2)

I Active Projects

Alternative Energy Project	Business activity and/or Fuel Source	Energy Impact			Core Technology	Capital Cost (\$M)	Environmental Impact			Employment Created			Status	Operational Date
		Generation (MW)	Recovery (MW)	Conservation (MW)			GHG Emissions	Landfill Impact	Other	Construction Phase	Direct Ongoing	Indirect Ongoing		
Brookfield Prince Wind Farm	Wind	189			126 GE 1.5MW wind turbine generators	\$ 400	600,000 tonnes/yr		Produces electrical energy	300	17	68	Operational	2006
Brookfield Sault Hydro Operations	Traditional hydro electric	203			5 hydroelectric stations				Produces electrical energy		27	108	Operational	5 stations between 1916 and 1975
Elementa Pilot Project	Municipal Solid Waste				Breaks down carbon material (MSW) at the molecular level using a patented steam-based reformation process.		Net-zero air emissions	Converts municipal solid waste - significant impact		27	6	20	Pilot Study	2008
Essar Cogeneration Project	Coke Oven gas		70		Uses excess gases from steel making process	\$ 135			Reduces the company's reliance on the power grid by an average of 50%				Operational	2009
Sault College Wind Turbine (Energie PGE)	Wind	0.032			1 PGE 20m/32kW wind turbine for lower wind speed zones	\$ 0.20			Produces electrical energy				Operational	2008
SITTM Technologies	Biodiesel				Produces biodiesel from used vegetable oil and coconut oil.		3 city buses now run on biodiesel. Eventually the entire fleet will run on 5% biodiesel.						Pilot Study	2008
<b>Total</b>		<b>392.032</b>	<b>70</b>			<b>\$535.20</b>				<b>327</b>	<b>50</b>	<b>196</b>		

II Projects Under Development

Alternative Energy Project	Business activity and/or Fuel Source	Energy Impact			Core Technology	Capital Cost (\$M)	Environmental Impact			Employment Created			Status	Operational Date
		Generation (MW)	Recovery (MW)	Conservation (MW)			GHG Emissions	Landfill Impact	Other	Construction Phase	Direct Ongoing	Indirect Ongoing		
City of Sault Ste Marie	Landfill Gas to Energy	1.6			Landfill gas collection and conversion to energy via use of internal combustion engines	\$ 4		Significant impact - reduction of landfill gas emissions and odour	Produces electrical energy	25	1		Detail Design and Tender	Dec-2010
City of Sault Ste. Marie	Roof top solar	0.01			Rooftop solar electric energy system on city hall and other city buildings	\$ 0.10	229 tonnes over 25 years	N/A					Proposed	
Elementa Demonstration Plant	Municipal Solid Waste	6			Breaks down carbon material (MSW) at the molecular level using a patented steam-based reformation process.	\$ 32	Net-zero air emissions	Converts municipal solid waste - significant impact		278	55	70	Proposed	
Ellsin Environmental Ltd.	Tire recycling	0.5			Reverse polymerization of tires to produce fuel which is consumed in a gas engine generator set. Electricity produced is consumed in the plant first then balance sent to the grid.	\$ 5.25		100% of scrap tires reused to produce new products	Produces electrical energy	15	25	100	Pilot Study - Construction Phase	2010
POD Generating	Ground mounted solar	60			Solar photovoltaic (crystalline silicon)	\$ 400				170	15		Proposed	Phase 1 2010
Sault Ste. Marie P.U.C. - Water Treat Plant	Roof top solar	0.1												
St. Marys Paper Cogeneration	Biomass cogeneration		35		Uses biomass as feedstock to generate electricity: Bubbling		Continuous emissions		Selective catalytic reduction system,	150		125	Proposed	

					fluidized bed		monitoring		bag house					
St. Marys Paper Cellulosic Ethanol	Cellulosic Ethanol		25,000 L of cellulosic ethanol		Steam extraction with hydrolysis and fermentation				Fermentation scrubber	75		26		
<b>Total</b>		<b>68.21</b>	<b>35</b>			<b>\$441.35</b>				<b>713</b>	<b>96</b>	<b>321</b>		

## Position Paper Appendix B

### Resources

- OSEA (Ontario Sustainable Energy Association)      website:      [www.ontario-sea.org](http://www.ontario-sea.org)
- OPA (Ontario Power Authority)      website:      [www.powerauthority.on.ca](http://www.powerauthority.on.ca)
- GEAA (Green Energy Act Alliance)      website:      [www.greenenergyact.ca](http://www.greenenergyact.ca)
- FIT (Feed-in-Tariff) program      website:      [fit.powerauthority.on.ca](http://fit.powerauthority.on.ca)
- Green Energy and Green Economy Act  
website:      [www.ontla.on.ca/web/bills/bills\\_detail.do?locale=en&BillID=2145](http://www.ontla.on.ca/web/bills/bills_detail.do?locale=en&BillID=2145)
- Places to Grow Act, the Northern Growth Plan  
website:  
[https://www.placestogrow.ca/index.php?option=com\\_content&task=view&id=53&Itemid=65](https://www.placestogrow.ca/index.php?option=com_content&task=view&id=53&Itemid=65)

## RFP Appendix B

A copy of the Central Algoma Alternative Energy Framework can be found at:

<http://www.ssmic.com/UploadedFiles/files/2011%2004%2004%20CA%20RESF%20Report%20-%20Final.pdf>