Energy Efficiency and Renewable Energy Standards for New Buildings

A Toolkit for Businesses & Institutions in the NWT

ARCTIC ENERGY ALLIANCE

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1. Introduction

This toolkit has information about how businesses can use standards so that new houses and other buildings use less energy. It offers some basic information about:

- What standards are and why they're important.
- Existing energy efficiency standards for buildings.
- Existing standards for appliances and equipment.
- Renewable energy standards.
- How businesses can apply energy efficiency and renewable energy standards to new construction.

Northern homes and other buildings use a lot of energy and people want to take action to use less energy and save money.

Who should use this toolkit?

The Arctic Energy Alliance developed this toolkit for businesses, decision makers and other people involved with designing and constructing new houses and other buildings. The toolkit explains some of the things you need to consider to use energy efficiency and renewable energy standards. It includes some useful tools to help find the right standards for your new building.

2. Word definitions

Architect

Architects are professional men and women that help design homes and other buildings. In the NWT only registered members of the NWT Architectural Association can design buildings larger than 600 m^2 or public assembly buildings as defined by the National Building Code. Their Code of Ethics says registered architects are responsible to serve and protect the public interest.

Building footprint

Building footprint is the area of the first floor of a building – the amount of ground in square meters that the first floor covers.

Co-generation

Co-generation is when a community recovers the waste heat from a diesel generator to heat a building or hot water. The community gets both heat and electricity from the generator.

Energy efficient

Energy efficient means to use less energy and still do the same amount of work. An energy efficient building uses less fuel than an energy inefficient building, to heat it to the same temperature.

Energy efficient wood stove - EPA approved

EPA approved means a wood stove meets the Environmental Protection Agency (EPA) emissions regulations. An energy efficient wood stove uses less wood than an inefficient stove to produce the same heat.

Engineer

In this context engineers are professional women and men that help design the basic structure and different systems for new buildings. In the NWT only registered members of the Association of Professional Engineers, Geologists, and Geophysicists of the NWT and Nunavut (NAPEGG) can do engineering work. Their Code of Ethics says engineers are responsible to serve and protect the public interest.

Fossil fuels

Fossil fuels include oil, coal, propane, natural gas, and other fuels made from hydrocarbons.

Good building practice for northern facilities (GBP)

The GBP gives architects, engineers, building contractors, and facility administrators and operators a set of northern guidelines for public buildings in the NWT. The Department of Public Works, Government of the NWT produced the GBP. Buildings that follow the GBP usually meet the MNECB+25 energy efficiency standard.

All buildings must also meet mandatory codes or regulations such as the National Building Code of Canada.

Integrated design process

The integrated design process happens when architects, engineers, and other people work closely together when they design and construct new buildings. They wisely integrate the mechanical, electrical, plumbing, and heating systems with the building design to maximize energy efficiency.

LEED® Standard

LEED® is a recognized standard for large, new buildings. The LEED® standard applies five principles:

- Sustainable site.

- Water efficiency.
- Energy and atmosphere.
- Materials and resources.
- Interior environmental quality.

LEED® certified buildings meet the MNECB+25 energy efficiency standard.

Model National Energy Code for Buildings

The Model National Energy Code of Canada for Buildings (MNECB) identifies minimum energy efficiency standards for buildings. It takes into account regional issues such as construction costs, heating fuel types and costs, and climatic differences. Various sections of the code have information about major energy savings related to:

- Building envelope.
- Water heating.
- Lighting.
- HVAC systems – heating, ventilation, air conditioning.
- Electrical power.

Model National Energy Code for Buildings + 25%

MNECB + 25 identifies energy efficiency standards for buildings that use 25% less energy than an MNECB reference building.

Model National Energy Code for Buildings + 40%

MNECB + 40 identifies energy efficiency standards for buildings that use 40% less energy than an MNECB reference building.

National Building Code standards

All new homes and other buildings in Canada must meet National Building Code standards. The National Building Code does not include any standards related to energy efficiency or renewable energy.

Passive solar

Passive solar means that a building uses heat and light from the sun without using any technology. Buildings face south so they are exposed to the best sunlight. South-facing windows let the heat of the sun warm the building. Increased sunlight also provides more natural lighting.

Plans and specifications

Plans and specifications are the written descriptions that go with the drawings for a house or other building. Plans usually include different drawings that show floor plans, elevations, sections, and details.

RETScreen

RETScreen is a software program that can analyse which renewable energy technology is best for a home or other building. RETScreen can compare the cost to buy and operate a renewable energy system with that of a fossil fuel based system. RETScreen calculates how many tonnes of greenhouse gas emissions the renewable energy system can save.

The Arctic Energy Alliance offers training sessions for anyone interested in learning how to use RETScreen.

www.retscreen.net

Renewable energy

Renewable energy comes from things that last forever. Some examples of renewable energy sources include the sun, wind, rivers, and wood.

Renewable energy technology

Renewable energy technology is anything that uses renewable energy to do work. Some examples include wood stoves or wood pellet boilers, wind turbines, solar electric or hot water panels, and hydroelectric systems.

Revolving loan funds

Revolving loan funds start with a grant. A person or business borrows money to invest in projects that save money. They pay back the loan from the savings.

People set up the fund so that it grows over time and supports more projects. Some community governments set up a similar system to always invest savings in their own buildings and operations.

Water saving devices

A water saving device uses about half the water that a non-water saving device uses. Energy efficiency includes water saving devices because it takes energy to build and operate water and sewer infrastructure – especially if the community uses trucked water and sewer.

3. Basic information about standards

What are energy efficiency and renewable energy standards?

Standards are criteria that set out specific ways to clearly define and measure something. Energy efficiency standards clearly define what it means to build energy efficient houses or other buildings. Renewable

energy standards clearly define what it means to build a home or other building that uses renewable energy.

It is important to have clear and specific definitions or standards. It is not enough to say "we want to build an energy efficient building" or "we want to build houses that use renewable energy". Standards give clear direction to the people that design and build a home or other building. Standards give you something to measure, to make sure new homes and other buildings use less energy.

Standards already exist that can be combined and used in a way that is right for your new building.

Why do we need standards?

Energy efficiency and renewable energy standards are one of many tools you can use to help save energy. Standards help make sure that new houses and other buildings are energy efficient and use renewable energy as much as possible. This means that we use less fossil fuel. Benefits include:

- Lower costs for heating and electricity.
- Less greenhouse gas emissions and other air pollution.
- Less risk of fuel spills.
- More comfortable homes and other buildings.

Energy efficient buildings and those that use renewable energy can be cheaper to build. When building designers, architects, and engineers use an integrated process, they work together to design a building that will be cheaper to build, more energy efficient, and that may use renewable energy.

4. Energy efficiency standards for buildings

This section has information about existing Canadian energy efficiency standards for buildings. Energy efficiency standards define the minimum level of energy efficiency required so that the savings pay for any extra investment in a reasonable length of time.

Model National Energy Code (MNECB) and MNECB+40

The MNECB is a good standard for small buildings – buildings with a footprint less than 600 m^2. The building footprint is the area of the first floor or the amount of space the first floor covers in square meters.

Natural Resources Canada (NRCan) developed the MNECB as an energy efficiency standard for commercial and institutional buildings - not homes. The MNECB standard outlines recommended insulation values, lighting levels, ventilation rates, and other things that make an energy efficient building.

The MNECB+40 standard outlines similar factors so that buildings use 40% less energy than an MNECB reference building.

NRCan offers a screening tool online that people can use to see if a building meets the standard. The Arctic Energy Alliance can help you use this tool.

For more information about the screening tool: http://screen.nrcan.gc.ca

EnerGuide for New Houses (EGNH-80)

The EnerGuide for New Houses (EGNH) offers expert advice and standards to help design and build an energy efficient house. The EGNH system rates energy use. An excellent rating for a new house is 80 or higher.

Type of House	EGNH Rating
Older house not upgraded.	0 to 50
Upgraded old house.	51 to 65
Energy-efficient upgraded old house or usual new house.	66 to 74
Energy efficient new house.	75 to 79
Highly energy efficient new house.	80 to 90
'Advanced house' - uses little or no energy that people have to buy from someone else.	91 to 100

A certified EGNH advisor uses a computer program called HOT2000 to evaluate the plans for a new home, to see if it reaches the EGNH-80 standard. The advisor can recommend changes to the plans so the house meets the standards. Changes may include things such as:

- ✓ Add more insulation to walls, ceiling, and floor.
- ✓ Use fewer windows or better windows with higher insulation value.
- ✓ Use more energy efficient heating appliances.

For more information about EGNH-80:
http://oee.nrcan.gc.ca/residential/energuide-new-houses.cfm?attr=0

LEED® Canada

LEED® is short for Leadership in Energy and Environmental Design. It is the best standard for new construction and major renovations for large

buildings – buildings with a footprint more than 600 m^2. The building footprint is the area of the first floor or the amount of space the first floor covers in square meters.

The Canada Green Building Council certifies the LEED® standard. The standard has four levels:

- Certified.
- Silver.
- Gold.
- Platinum.

A LEED® certified building must meet the MNECB+25 energy efficiency standard. The Arctic Energy Alliance recommends that you specify that the building use at least 40% less energy than the MNECB. The Greenstone Building in Yellowknife uses 65% less energy than the MNECB standard.

The Canada Green Building Council rates each building project. They organize prerequisites and credits into five categories:

- Sustainable site.
- Water efficiency.
- Energy and atmosphere.

- Materials and resources.
- Indoor environmental quality.

The Council independently reviews the building plans and other documents from the design and constructions team. They rate and certify each project based on a total point score.

A basic LEED rating requires that the

For more information about LEED®: http://www.cagbc.org

5. Standards for appliances and equipment

This section has information about existing Canadian energy efficiency standards for appliances and equipment.

Energy Star®

Consumers can use the Energy Star® symbol to find energy efficient products. Depending on the product an Energy Star® model will be 10% to 50% more efficient than another model. Products must meet Energy Star® standards before manufacturers and retailers can use the label on their products.

For more information about Energy Star®:
http://www.oee.nrcan.gc.ca/energystar

Domestic hot water

Many northern communities produce electricity with a diesel generator. In those communities electric water heaters are only 30% to 35% efficient because the generator is that efficient. Oil-fired water heaters can be more than 70% efficient.

In communities with diesel generators oil-fired water heaters can:

- Greatly reduce the amount of diesel people use.
- Reduce the community's greenhouse gas emissions.
- Save everyone money, year after year.

Communities with hydroelectric power can use either electric or oil-fired water heaters. All communities can consider solar powered hot water.

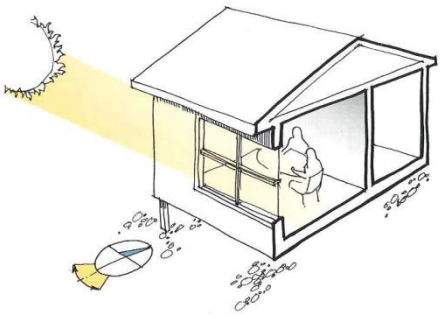
Water-saving devices

Water-saving devices are called that because they use about half the water of regular products. Some examples of water-saving devices include:

- Water-saving toilets - use 6 litres or less per flush.
- Low-flow showerheads - use 9.8 litres or less per minute.
- Low-flow bathroom and kitchen faucets - use 8.3 litres or less per minute.

Passive solar design

Passive solar means a house or building uses heat or light from the sun without using technology. Passive solar design means that homes or other buildings face south and most of the windows face south, east, and west. South-facing windows let the sun's light and heat enter the building.



A floor plan based on passive solar design includes features such as:

- Bedrooms face east. The sun's heat and light enter the rooms in the morning when people get up.

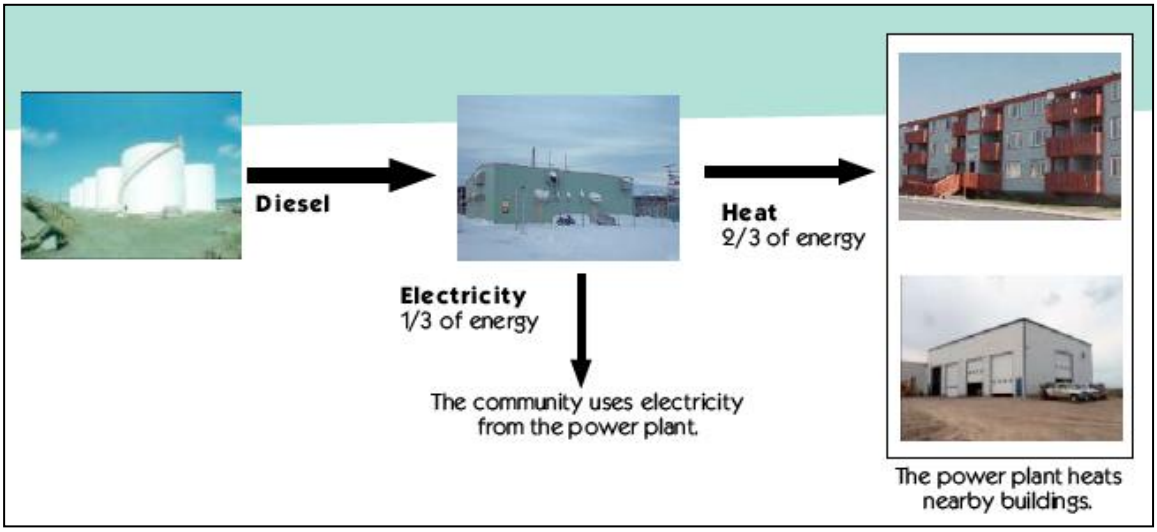
- Living and dining areas face west. This may reduce the amount of artificial light you need in the evening when people are home.

Co-generation

Many NWT communities get electricity from a diesel generator. About 30% to 35% of the energy that a diesel generator produces is electricity. The rest is heat energy and it often gets wasted.

Co-generation happens when a community also recovers heat from the generator and uses it to heat a nearby building.

The waste heat can be recovered and used to heat nearby homes or other buildings, or to produce hot water. A single building that has its own generator can use co-generation to recover the heat for heating or hot water.



Diesel generators are most efficient when they work at or near their rated load. The Arctic Energy Alliance recommends that you look at using co-generation when a building or group of buildings has a base electricity load of 10 kW or more.

6. Renewable energy standards

Canada has no national standards for using renewable energy in houses and other buildings. Renewable energy sources include the sun, wind, rivers and other moving water, and wood.

Technology that uses renewable energy sources includes:

- solar panels for electricity and hot water,
- wind turbines,
- a hydroelectric system, and
- wood and pellet stoves.

Renewable energy building standards

Many governments and organizations have 'green power' or 'green heat' standards. These standards say that a certain percent of electricity or heat that a building uses must come from renewable energy sources.

Toronto has a 'Green building standard'. Five percent to 10% of a building's energy should come from renewable energy.[1]

NWT communities may decide to define their own renewable energy standard. Depending on location each community has its own potential supply of renewable energy sources.

[1] http://www.toronto.ca/environment/greendevelopment.htm

RETScreen

RETScreen is a free software program from Natural Resources Canada (NRCan). You use RETScreen to figure out what renewable energy technology is best for your home or other building. RETScreen compares the cost to buy and operate a renewable energy system with the cost to buy and operate a fossil fuel based system. It also calculates how many tonnes of greenhouse gas emissions the renewable energy system saves.

A building designer can do a RETScreen analysis and implement economically feasible technologies to achieve a standard. For more information about RETScreen: www.restscreen.net

Wood and pellets

Wood is a renewable energy source that many NWT residents already use for heat. The US Environmental Protection Agency (EPA) certifies efficient wood stoves that reduce greenhouse gas emissions and other pollution from smoke particles. Any new home or other building with a wood stove should have an 'EPA approved' stove.

Wood is a renewable energy source only when and if we manage the forest in a sustainable way – planting as many trees as we cut, cutting trees at the same rate as they grow.

For more information about EPA approved stoves:

Pellet boiler at Sir John Franklin School in Yellowknife.

http://www.epa.gov/woodstoves/efficiently.html

Wood pellets are another renewable energy source of heat. Pellets are made from wood waste and can be used in homes – in a stove, furnace, or boiler; or larger buildings – in a large-scale boiler.

7. Summary of standards

Large buildings – footprint more than 600 m^2	Small buildings – footprint less than 600 m^2, not a house	Houses
✓ **LEED® standard with MNECB +40%.**	✓ **MNECB+40% standard.**	✓ **EGNH-80 standard**
		
Stores, hotels, office buildings, restaurants, schools, warehouses, health care facilities, maintenance shops, churches, large apartment buildings.	Stores, offices, repair shops, garages, mid-sized apartment buildings.	Homes, small apartment buildings, triplexes, bed and breakfast places.

ALL new houses and other buildings

- ✓ Energy Star appliances and equipment.
- ✓ Oil-fired water heaters in communities with a diesel generator.
- ✓ Low-flow water saving devices.
- ✓ South facing to maximize passive solar gain.
- ✓ Look at Co-generation.
- ✓ 'x'% of building's energy comes from renewable sources.

Enforcing standards

When you decide to use energy efficiency or renewable energy standards someone has to make sure that houses and other buildings meet the standards. This should happen at least at two basic stages:

- Building design stage.
- Construction completed stage.

Building design stage

The design stage is the best time to make sure that a new building will be energy efficient or use renewable energy according to standards. Architects, engineers, certified energy advisors, or other qualified staff people can review the plans and specifications. If something needs to change, this can happen before it's too late. Use independent professionals to review the plans – different people than the professionals that made the plans and specifications in the first place.

Construction completed stage

You need to inspect newly constructed buildings to make sure they actually did follow the design and meet the standards. The GNWT has inspectors that look at fire safety, electrical systems, and mechanical systems. You may need to hire other inspectors to confirm that the building meets energy efficiency or renewable energy standards.

8. Sample energy efficiency and renewable energy standards

Here is a sample northern energy efficiency and renewable energy standard.

These standards apply to all new houses and other buildings:

a) *Design and construct new buildings according to the 'Good Building Practice for Northern Facilities' (GBP).*

b) *Use an integrated design process to ensure that people bring together the mechanical, electrical, plumbing, and heating systems with the building design, to maximize energy efficiency.*

c) *Design and construct new buildings to meet the following energy standards:*

   i) *Buildings with a footprint less than 600 m² must meet the MNECB+40% standard, confirmed with the NRCan Building Screening tool.*

   ii) *Homes must have an 80 rating with the EnerGuide for New Houses (EGNH) evaluation process.*

   iii) *Large buildings with a footprint more than 600 m² must meet LEED® Certified, Silver, Gold, or Platinum standards and meet the MNECB +40% standard.*

d) *Use only Energy Star® rated appliances and equipment.*

e) *Use only oil-fired water heaters if the community's electricity supply comes from a diesel generator.*

f) *Use only low-flow water-saving devices for all plumbing fixtures including toilets, showerheads, and faucets.*

g) *Design and orient new buildings to take maximum advantage of passive solar heat and light.*

h) *Consider co-generation if the base electrical load of the building or group of buildings and homes is 10 kW or more.*

i) *Meet 25%[2] of the total heating and electrical energy needs from a renewable energy source, or from waste heat from electricity generation. Use a RETScreen analysis to show that the building meets the standard. Potential energy sources include, but are not limited to the following:*

   - ✓ *Renewable source of electricity such as wind, solar, or hydro.*
   - ✓ *Co-generation.*
   - ✓ *Passive solar heat.*

[2] Recommended value. Your renewable energy standard can be more or less than 25%

- ✓ *Solar wall for air heating.*
- ✓ *Solar water heating.*
- ✓ *Certified wood pellet boiler, furnace, or stove.*
- ✓ *EPA approved efficient wood stove.*

9. How can you use energy efficiency and renewable energy standards?

A business or organization will most likely use energy efficiency and renewable energy standards in many ways when planning and building a new building.

When you build a new building make sure it meets the standards.

Different people are responsible for planning and building different types of new buildings in every community. Various factors affect this such as:

- What type of building is it?
- Who is the owner?
- Who will design it?
- Who will build it?

Houses

Businesses and organizations can set standards for new homes that they want to build. For example a standard might say:

- All new homes must meet the EGNH-80 standard.
- All people who build new homes must submit their plans before they begin construction and have the Arctic Energy Alliance (AEA) or other approved professional confirm that the plans meet the EGNH-80 standard.

The Arctic Energy Alliance (AEA) or another specialist reviews the house plans to make sure that they meet the standards. They recommend changes if the plans fall short of the EGNH-80 standard. An EGNH-80 evaluation costs about $400 per house with the AEA.

Public buildings such as schools and health centres

In many communities the Government of the NWT (GNWT) builds and owns many public buildings such as schools and health centres.

Right now the GNWT has no renewable energy standards for buildings. They do follow some good practices to make sure that these public buildings meet energy efficiency standards:

- Since 2007 new buildings must meet the MNECB+25 standard.
- Architects and engineers to must follow Good Building Practices for Northern Facilities when they design buildings.
- GNWT staff people make sure buildings get inspected during construction.
- GNWT pays contractors in full only after the architect confirms that the building was completed as planned.

Community buildings

Local community governments usually own buildings such as the fire hall, arena, garage, and an office building. Community governments can use standards to make sure their new buildings meet energy efficiency and renewable energy standards.

For example a community standard might say:

- New buildings must meet LEED® certification criteria and meet the MNECB+40 standard. The community government must include the details of the standard in the request for proposals to design and build the building.
- All building designers and contractors must show how they plan to meet the standard in their proposal.
- The community government must include the standards in the contract and identify what penalties they plan to impose if the contractors don't meet the standards.

- The community government reviews the project at two stages at least, to enforce the standards: design stage and construction completed stage. They hire independent professionals to make sure the plans and the completed building meet the standards.

Large commercial buildings or large multi-family housing

Large buildings have a footprint more than 600 m^2. People that want to build a large building must hire architects and engineers to design it. Examples include hotels, office buildings, stores, and multi-family housing.

Businesses and organizations can use standards to make sure large buildings meet energy efficiency and renewable energy standards. For example a standard might say:

- An architect must confirm that the building meets the LEED® standard and meets the MNECB+40 standard.

OR

- The Canadian Green Building Council must certify the building to the LEED® standard and the MNECB+40 standard.

In many cases the architect or builder must hire a LEED® Accredited Professional (AP) to guide them through the process. The AP can help prepare the documents that the Canadian Green Building Council needs to certify the building.

It costs less than 1% of the total construction cost to hire a LEED® AP consultant. The building owner or contractor may pay extra for travel depending on how many times the AP consultant has to visit the building site. The Canadian Green Building Council charges about $6,000 for registration and certification fees. Energy savings can quickly pay back this investment.

Small buildings

People that want to build a small commercial building don't necessarily have to hire architects or engineers to design their building. Small buildings have a footprint less than 600 m^2. Examples include a store, office, repair shop, garage, or mid sized apartment building.

Businesses and organizations can use standards to make sure small commercial buildings meet energy efficiency and renewable energy standards. For example a standard might say:

- The designer must confirm with the Arctic Energy Alliance (AEA) or other approved and independent professional that the building meets the MNECB+40 standard for small buildings.

10. Sample RFP - Appendix

A sample Request for Proposals is included as an appendix to this guide. Call the Arctic Energy Alliance if you need more copies.

Request for Proposal Template

Sample template only, should be reviewed by legal personnel or your organization prior to issuing.

Note that this template is intended for municipalities, but can be modified for other businesses / organisations.

_____ of _____
(name)

Request for Proposal

RFP for the construction of a new _____ incorporating energy efficient and renewable energy technologies.
Issued _____.
(date)

Contact Person:
All enquires to this Request for Proposal, including any requests for information and clarification, are to be directed to the following person:

Closing Time & Location:
Complete copies of each proposal must be received either electronically or courier no later than _____, _____, **20**___ by Noon MST.

At the following address:
Email:
Physical Address:

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11. Section A – Definitions and Administrative Requirements

12. Definitions

Throughout this Request for Proposal, the following definitions apply:

a) "Contract" means the written agreement resulting from this Request for Proposal executed by the Municipality and the Contractor;
b) "Contractor" means the successful Proponent to this Request for Proposal who enters into a written Contract with the municipality;
c) "Municipality" means the municipal corporation of _____ of _____.
d) "must" or "mandatory" means a requirement that must be met in order for a proposal to receive consideration;
e) "Proponent" means an individual or a company that submits, or intends to submit, a proposal in response to this Request for Proposal;
f) "should" or "desirable" means a requirement having a significant degree of importance to the objectives of the Request for Proposal.

13. Terms and Conditions

The following terms and conditions will apply to this Request for Proposal. Submission of a proposal in response to this Request for Proposal indicates acceptance of all the terms that follow and that are included in any addenda issued by the Municipality. Provisions in proposals that contradict any of the terms of this Request for Proposal will be as if not written and do not exist.

14. Receipt Confirmation Form

Proponents are advised to fill out and return the attached Receipt Confirmation Form (Appendix A) immediately. All subsequent information regarding this Request for Proposal, including changes made to this Request for Proposal will be directed only to those Proponents who return the form and will be distributed by the method authorized on the form.

15. Late Proposals

Late proposals will not be accepted and will be returned to the Proponent.

16. Evaluation

Evaluation of proposals will be performed by an Evaluation and Selection Committee formed by the Municipality and may include members of like-minded agencies. The intent of the Municipality is to enter into a Contract with the Proponent who has the highest overall ranking and meets all eligibility requirements.

17. Negotiation Delay

If a written Contract cannot be negotiated within thirty days notification of the successful Proponent, the Municipality may, at its sole discretion at any time thereafter, terminate negotiations with that Proponent and either negotiate a Contract with the next qualified Proponent or choose to terminate the Request for Proposal process and not enter into a Contract with any of the Proponents.

18. Debriefing

At the conclusion of the Request for Proposal process, all Proponents will be notified. Unsuccessful Proponents may request a debriefing meeting with the Municipality, at the expense of the unsuccessful Proponent(s).

19. Alternative Solutions

If alternative solutions are offered, the information is to be presented in the same format but as a separate proposal.

20. Changes to Proposals

By submission of a clear and detailed written notice, the Proponent may amend or withdraw its proposal prior to the closing date and time. Upon closing time, all proposals become irrevocable. The Proponent will not change the wording of its proposal after closing and no words or comments will be added to the proposal unless requested by the Municipality for purposes of clarification.

21. Proponents' Expenses

Proponents are solely responsible for their own expenses in preparing a proposal and for subsequent negotiations with the Municipality, if any. If the Municipality elects to reject all proposals, the Municipality will not be liable to any Proponent for any claims, whether for costs or damages incurred by the Proponent in preparing the proposal, loss of anticipated profit in connection with any final Contract, or any other matter whatsoever.

22. Limitation of Damages

Further to the proceeding paragraph, the Proponent, by submitting a proposal, agrees that it will not claim damages, for whatever reason, relating to the Contract or in respect of the competitive process, in excess

of an amount equivalent to the reasonable costs incurred by the Proponent in preparing its proposal. The Proponent, by submitting a proposal, waives any claim for loss of profits if no Contract is made with the Proponent.

23. Proposal Validity

Proposals will be open for acceptance for at least 90 days after the closing date.

24. Firm Pricing

Prices will be firm for the entire Contract period unless this Request for Proposal specifically states otherwise.

25. Currency and Taxes

Prices quoted are to be:

a) in Canadian dollars;
b) inclusive of duty, where applicable; FOB destination, delivery charges included where applicable; and
c) inclusive of Goods and Services Tax and Provincial Sales Tax, if applicable.

26. Completeness of Proposal

By submission of a proposal the Proponent warrants that, if this Request for Proposal is to design, create or provide a system or manage a program, all components required to run the system or manage the program have been identified in the proposal or will be provided by the Contractor at no charge.

27. Sub-Contracting

a) Using a sub-contractor (who should be clearly identified in the proposal) is acceptable. This includes a joint submission by two Proponents having no formal corporate links. However, in this case, one of these Proponents must be prepared to take overall responsibility for successful performance of the Contract and this should be clearly defined in the proposal.
b) Sub-contracting to any firm or individual who's current or past corporate or other interests may, in the Municipality's opinion, give rise to a conflict of interest in connection with the project or program described in this Request for Proposal will not be permitted. This includes, but is not limited to, any firm or individual involved in the preparation of this Request for Proposal. If a Proponent is in doubt as to whether a proposed subcontractor gives rise to a conflict of interest, the Proponent should consult with the contact for the Municipality listed on page 1 prior to submitting a proposal.
c) Where applicable, the names of approved sub-contractors listed in the proposal will be included in the Contract. No additional subcontractors will be either added, nor other changes made, to this list in the Contract without the written consent of the Municipality.

28. Acceptance of Proposals

a) This Request for Proposal should not be construed as an agreement to purchase goods or services. The Municipality is not bound to enter into a Contract with the Proponent who submits the lowest priced proposal or with any Proponent. Proposals will be assessed in light of the evaluation criteria. The Municipality will be under no obligation to receive further information, whether written or oral, from any Proponent.
b) Neither acceptance of a proposal nor execution of a Contract will constitute approval of any activity or development contemplated in any proposal that requires any approval, permit or license pursuant to any federal, provincial, regional district or municipal statute, regulation or by-law.

29. Definition of Contract

Notice via telephone to a Proponent that it has been identified as the successful Proponent and the subsequent full execution of a written Contract will constitute a Contract for the goods or services, and no Proponent will acquire any legal or equitable rights or privileges relative to the goods or services until the occurrence of both such events.

30. Contract

By submission of a proposal, the Proponent agrees that should its proposal be successful, the Proponent will negotiate a Contract with the Municipality.

31. Liability for Errors

While the Municipality has expended considerable effort to ensure information in this Request for Proposal is accurate, the information contained in this Request for Proposal is supplied solely as a guideline for Proponents. The information is not guaranteed or warranted to be accurate by the Municipality, nor is it necessarily comprehensive or exhaustive. Nothing in this Request for Proposal is intended to prevent Proponents from forming their own opinions and conclusions with respect to the matters addressed in this Request for Proposal.

32. Modification of Terms

The Municipality reserves the right to modify the terms of this Request for Proposal at any time at its sole discretion. This includes the right to cancel this Request for Proposal at any time prior to entering into a Contract with the successful Proponent.

33. Ownership of Proposals

All proposals submitted to the Municipality become the property of the Municipality. They will be received and held in confidence by the Municipality.

34. Use of Request for Proposal

Any portion of this document, or any information supplied by the Municipality in relation to this Request for Proposal may not be used or disclosed, for any purpose other than for the submission of proposals. Without limiting the generality of the foregoing, by submission of a proposal, the Proponent agrees to hold in confidence all information supplied by the Municipality in relation to this Request for Proposal.

35. No Lobbying

Proponents must not attempt to communicate directly or indirectly with any employee, contractor or representative of the Municipality, including the Evaluation and Selection Committee, or with members of the public or the media, about the project described in this RFP or otherwise in respect of the RFP, other than as expressly directed or permitted by the Municipality.

36. Section B - Requirements and Response

37. Summary of Requirements

Our community is concerned about the rising cost of energy, building operating costs and maintenance, and climate change affecting the north. It is very important to us that all new buildings are energy efficient, take advantage of renewable energy sources whenever possible, and allow reduced water use.

38. Project Scope and Requirements

All new buildings shall:

a. Be designed and constructed in accordance with the guidelines of the "Good Building Practice for Northern Facilities (GBP).
b. Be designed using an integrated design process to ensure that mechanical, electrical, plumbing and heating systems are intelligently integrated with the building design to maximize energy efficiency
c. Houses shall achieve a rating of 80 using the EnerGuide for New Houses (EGNH) program.
d. Large buildings with building footprint area greater than 600 m^2 must be LEED ® (Certified, Silver, Gold, or Platinum).
e. Small buildings with building footprint area smaller than 600 m^2 must meet the performance standards of energy consumption at least 40% lower than the Model National Energy Code for Buildings (MNECB) and be verified using the NRCan Screening Tool.
f. Use only Energy Star® rated appliances and equipment.
g. Use only fuel-fired water heaters if the community's electricity supply is by diesel generator.

h. Use only low-flow water saving devices for all plumbing fixtures including toilets, showerheads, and faucets
i. Be oriented to allow maximum passive solar heating
j. Consider co-generation if the base electrical load of the building, or group of buildings or houses is greater than 10 kW.
k. Meet 25% of the total of their heating and electrical energy needs from a renewable energy source or from waste heat from electricity generation. The designer should demonstrate that they will meet the standard using a RETScreen analysis selected from, but not limited to the following options:
    i. A renewable electricity source in the community (such as wind or hydro);
    ii. Solar electricity;
    iii. Micro cogeneration;
    iv. Waste heat recovery from the community power plant
    v. Passive solar heating;
    vi. Solar air heating (solar wall)
    vii. Solar water heating;
    viii. Wood pellet boiler / furnace / stove
    ix. EPA approved efficient wood stove;

The Proponent is expected to provide the following professional services:

a) Develop and deliver a **draft** design of the proposed new _____ that includes the minimum outcomes as outlined above. The Draft Design will be delivered to the Municipality for review and comment by approximately _____, 20__.

b) The community needs to consider design alternatives at all stages of design. In order to allow them to make informed decisions,

complete information about capital costs, annual energy costs and greenhouse gas emissions must accompany each design submission.

c) Develop and deliver a **final** approved design to the Municipality that will be communicated to key stakeholders, potential partners and others by approximately _____, 20__. The Proponent will be expected to attend approximately three meetings (consisting of face-to-face and/or video conferencing) with the Municipality during the term of the contract. Travel arrangements e.g. accommodation, meals and incidentals will be coordinated by the Municipality staff in order to reduce costs by the Proponent, thus the RFP should reflect professional services and minimal expenses only.

The Proponent is responsible to the Municipality to fulfill the terms and conditions of the contract.

The proposed contract will run from approximately _____, 20__ to _____, 20__. The value of this contract depends upon the phases identified by the Proponent and agreed upon by representatives of the Municipality, as well as funding available. The Municipality has the right not to accept any of the applicants if such proposals do not meet the criteria or exceed a reasonable estimate for such a project or does not meet the criteria.

39. Education and Experiential Requirements

The Proponent(s) should have:

- Comprehensive knowledge of fundraising initiatives, resources and contacts for not-for-profit, sustainable building projects;

- Minimum five years experience in designing and developing energy efficient and renewable energy projects;
- Be an individual who is a member or licensee of the Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories duly entitled to engage in the practice of engineering in the Northwest Territories or an architect who holds professional liability insurance to act as an architect in the Northwest Territories and is a member of a provincial association;
- Examples of successful designs and developments of energy efficient and renewable energy projects, and project management including facilitation and implementation;
- Excellent verbal and written communication skills; good judgment and diplomacy when pursuing partnerships; excellent time management and interpersonal skills; and
- Demonstrated experience working with smaller and/or northern communities and a willingness to travel to the Northwest Territories.

40. Evaluation

Proposals will be evaluated with particular attention paid to:

a) your firm's past experience with energy efficient design;
b) the method proposed to achieve the required energy standards and ensure that the completed building meets that standard.

41. Mandatory Criteria

a) The proposal must be received in the format requested (see Section 7 *Proponent Response and Proposal Format*) and submitted either electronically (__email address__) or via courier (___mailing address ____) by 12:00 noon (MST) on _____, _____, 20__.

b) The proposals must include details of the methodology to be used to complete the project and meet requirements outlined in Section B.2 Project Scope and Requirements.
c) Three reliable professional or industry references of individuals or organizations for whom the Proponent has worked who can provide an accurate and honest assessment of the Proponent's ability to deliver the services contemplated in this RFP. The reference information must include a brief description of services, date of services, contact name, telephone number and email address.
d) The Proponent must submit three references from previous employers, if applicable. The reference information must include a contact name, telephone number and occupation.

42. Rating Schedule for Proposal

No.	Rating Criteria	Assigned Weight (A)	Unit Points Awarded (B)	Total Points A x B (C)	Remarks
1	Personnel to be assigned or made available to the project	20			
2	Methodology or approach	15			
3	Past relevant experience	15			
4	Project schedule	10			
5*	Fees and expenses as compared to estimate	25			
6	Past performance appraisals	15			
	TOTALS	100		Maximum 1000	

* For proponents qualifying for northern preference, the fees and estimates should be adjusted in accordance with the Government's Business Incentive Policy.[i]

INSTRUCTIONS FOR PREPARING AND USING THE RATING SCHEDULE

Note: A copy of the Rating Schedule form should be issued and explained within the Request for Proposal documents.

1. Assign a weight to each criterion based on its relative importance. (For convenience, use a total weight of 100 so each weight is a percentage.) The weights and the criteria may vary from contract to contract depending on the nature of the work, except that price information is always required. Include the assigned weights in the Rating Schedule form issued within the Request for Proposals. Every proposal must be evaluated using the same weights.

2. Using a separate form for each proposal received; enter a rating score for each criterion in Column B, according to the following code:

   Poor 1 - 3 points
   Fair 4 - 6 points
   Good 7 - 8 points
   Excellent 9 - 10 points

   Multiply the individual weights in Column A by the individual scores in Column B and enter the products in Column C. Add these products in Column C and enter the total at the bottom.

3. Compare the total scores on each form. The highest total score should indicate the proposal which potentially will provide the best value to the community government.

43. Proponent Response and Proposal Format

a) The following format, sequence and instructions should be followed in order to provide consistency in Proponent response and ensure each proposal receives full consideration. Proposal will be written in Times New Roman 12-point font,
b) Proposal cover letter that clearly identifies the Project Title, Request for Proposal Number and legal name of Proponent,
c) Table of Contents including page numbers;
d) An executive summary (one page) of the proposal;
e) The body (maximum 10 pages) of the proposal
f) Appendices: References (maximum of 3); Resume (maximum 5 pages); Portfolio of similar projects (maximum of 5).
g) A breakdown of the proposed fee including disbursements of the incremental phases of development as presented in the Requirements section of this RFP.
    - Professional fees and/or;
    - Daily "billable" work rate and hourly "billable" work rate and/or;
    - Other expenses and charges incurred

44. Estimated Timeframes

Please complete Appendix A – *Receipt Confirmation Form* of your intention to submit a proposal by _____, 20__, Noon MST by email or fax (_____) and provide your contact information for receiving proposal updates.

- Questions will be answered until _____, 20__, Noon MST.
- Proposals are due _____, _____, 20__ at Noon MST.
- Those Proponents short-listed will be notified by _____, 20__ to arrange a telephone interview. The successful Proponent will be notified by _____, 20__, 4:00 p.m. MST

(Note: estimated timeframes are subject to change.)

45. Procedure for Asking Questions

All questions must be submitted in writing via email only to _____@_____. Questions and answers will be circulated to all registered Proponents (see Appendix A – *Receipt Confirmation Form*).

46. Appendix A: Receipt Confirmation Form

Design and Construction Services for the Municipal ___(new building)___

Closing date: _____, 20__

Request for Proposal No. _____

_____(municipal_name)_____

To receive further information about this Request for Proposal

please return this form to:

Attention: _____

(position title)

(Municipality name)

(address)

Email:

Fax:

Company: _____

Street address: _____

City/Province: _____**Postal Code:** _____

Mailing address if different: _____

Phone number: _____ **Facsimile number:** _____

Contact person: _____**Title:** _____

e-mail: _____

Further correspondence about this Request for Proposal should be sent by:

☐ **Fax**

☐ **E-mail**

(Note: If neither box above is ticked, no correspondence will be sent.)

[i] **See GNWT Business Incentive Policy website**:
http://www.iti.gov.nt.ca/businesseconomicdevelopment/businessincentivepolicy.shtml

GETTING EMPLOYEE BUY-IN

ENERGY SMART MANAGEMENT PRACTICES

Energy Planning & Communities Program

Communities are on the frontlines of the Climate Change Challenge.

The success of your energy initiatives is greatly influenced by the municipal staff.

There are many things that you can do to get the support and buy-in of your employees.

Can we help you with your climate change challenge?

Northwest Territories Association of Communities

Phone: (867) 873-8359 x 7
Fax: (867) 873-3042
E-mail: sara@nwtac.com
www.nwtac.com

NWT Association of Communities
Connecting Community Governments Since 1973

Your community government can set an example for businesses and residents on how to engage in Energy reduction.

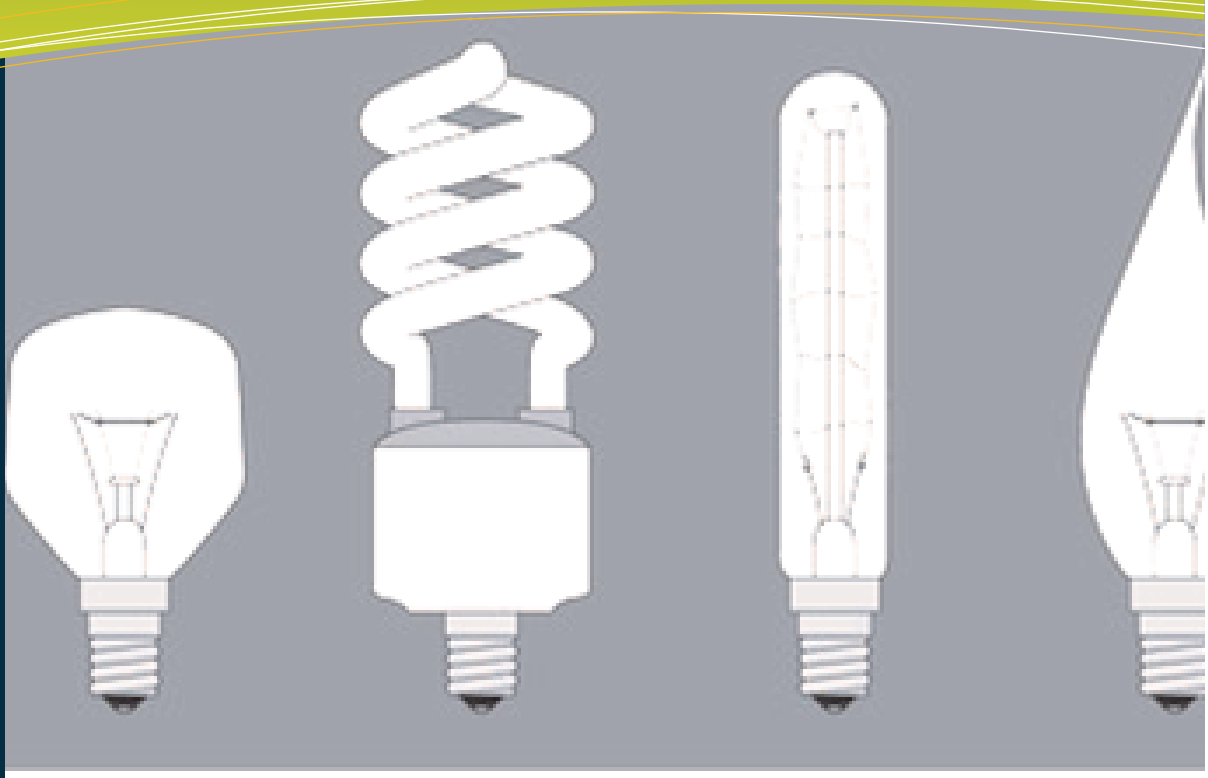
Some of the ways that you can help your employees be ENERGY CHAMPIONS are:

- Develop a communications plan. See NWTAC communication products on www.nwtac.com such as posters and fact sheets
- Involve the media to recognize what you and your employees are doing
- Do a Employee survey and quiz. See how they do at the beginning of your campaign vs. the end
- Have a LUNCH AND LEARN or COFFEE AND LEARN to either educate or to solicit ideas through brainstorming
- Do a weekly "DID YOU KNOW" e-mail out to staff
- Develop a recognition program to reward employees who are making an effort to reduce energy use.
- Develop an ENERGY SUGGESTION BOX not only for visitors and residents but also for staff
- Recognize/Reward staff whose suggestions are implemented
- Have a "TURN IT OFF DAY"
- Issue a corporate challenge to other offices in your community to LEAVE YOUR CAR AT WORK WEEK
- Review the cost savings of more efficient computers. If the payback is short enough consider replacement. Everyone likes having a new computer!
- Be sure and consult with the affected employees before implementing any energy policies
-

Your Employees have the potential to be your community's best ENERGY CHAMPIONS!

LIGHTING POLICIES

ENERGY SMART MANAGEMENT PRACTICES



Energy planning & Communities Program

Communities are on the frontlines of the Climate Change Challenge.

We are pleased to highlight a Smart Management Practice used by the Town of Inuvik. By setting lighting levels by policy the Town of Inuvik avoids the appearance of arbitrariness.

Can we help you with your climate change challenge?

Northwest Territories Association of Communities

Phone: (867) 873-8359 x 7
Fax: (867) 873-3042
E-mail: sara@nwtac.com
www.nwtac.com

nwtac
NWT Association of Communities
Connecting Community Governments Since 1973

SMP-Energy-03

Below is a sample of the type of items that should be included in your lighting policy. Be sure and do the following to ensure the successful implementation of your policy:

- Consult with user groups to minimize later conflicts
- Develop with the facility maintainers
- Provide an opportunity to purchase different levels if available
- Ensure it is ratified by Council so it can't be disputed

TOWN of INUVIK

Midnight Sun Complex
Roy "Sugloo" Ipana Arena
Lighting Policy for User Groups

Group	Lighting to be Used
Public Skating, SAMS School	One Bank Lights
Casual Hockey, Figure Skating Speed Skating, Minor Hockey	Two Banks of Lights (Banks 2 and 3)
Old Timers, Rec Hockey, Mixed Rec Hockey, Intermediate Hockey	Three Banks of Lights (Banks 1, 2 and 3)

When Rink lights are turned on, bleacher lights should be turned OFF.

Any user group wanting additional lighting can purchase it at the rate of $XX per bank per hour.

Please contact the Recreation Department for further details or to make arrangements to purchase additional lighting.

User groups and individuals are reminded that this policy is part of the Town of Inuvik Energy Conservation Policy.

The Town of Inuvik wishes to thank you for your cooperation and understanding in this matter

Check out www.nwtac.com for sample Lighting Policies.