DISTRICT OF VANDERHOOF

COMMUNITY ENERGY PLAN

June 20, 2007

Vanderhoof Community Energy Plan

Message from the Mayor and Council

The District of Vanderhoof Council supports the BC Energy Plan and is one of 30 municipalities participating in the Province's Community Action on Energy Efficiency initiative.

Council has chosen to lead the community in efforts to become more energy efficient, as we are concerned about the rising costs of energy and the impacts of increased energy demands on the environment.

The Community Energy Plan sets out a strategy in which all residents can participate and help our community reach the goals of energy conservation, energy efficiency and a reduction in greenhouse gas emissions. If we all do our part, we can look forward to a 'cleaner' energy future and a commitment to support a strong community in terms of energy conservation and efficiency now and for future generations.

Mayor Len Fox

Vanderhoof Community Energy Plan

Acknowledgements

The District of Vanderhoof would like to thank the BC Ministry of Energy, Mines and Petroleum Resources (MEMPR), Ministry of Environment (MOE), Ministry of Community Services, the Fraser Basin Council, Natural Resources Canada and the Community Energy Association for the funding for this project.

This report was prepared with the cooperation and support of the following organizations and individuals:

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Vanderhoof Community Energy Plan

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1. Introduction

1.1 Purpose

The District of Vanderhoof is participating in the Community Action on Energy Efficiency Pilot Program, a provincial initiative out of the Ministry of Energy Mines and Petroleum Resources. This initiative supports the Province's plan to advance energy efficiency for private and public sector buildings. The program encourages municipalities to endorse provincial energy efficiency building targets as outlined in "Energy Efficient Buildings: A Plan for BC" in both new and existing buildings through local government policy instruments.

The District agreed to undertake the development of a program promoting energy efficient buildings and an integrated community energy/greenhouse gas plan. The CEP provides a profile of the current energy situation, a baseline that can be used to measure how the community is doing in terms of saving energy in the future.

The District of Vanderhoof is committed to be a part of a "cleaner" energy future and to promote energy efficiency in the community.

1.2 Report Structure

This plan provides a look at the current energy consumption in the community, an outline of how the community was engaged in the process and identifies a number of actions. This plan has the following components:

One – Introduction – a brief explanation of the purpose, the report structure, the data and abbreviations used in the report
Two – Background – a description of the community of Vanderhoof as well as the reason for concern about energy efficiency and greenhouse gases.
Three – Community Involvement – explains the involvement of community stakeholders on an energy planning committee to assist with the establishment of the CEP.
Four – Community Energy Baseline – outline of the current energy consumption and greenhouse gas emissions for the municipality.
Five – Action Plan – discussion of potential actions and action table
Six – Summary – conclusion and first steps

1.3 Data

Community energy and GHG emissions inventory 2005

The data used to develop the baseline energy consumption and GHG emissions displayed in Figures 1 – 6 was provided by the Community Energy Association to

assist with community energy planning. This data inventory was produced by Hyla Environmental Services Ltd. (HES) based on information from:

- BC Hydro Ltd. – electricity
- Pacific Northern Gas Ltd. – natural gas
- Insurance Corporation of BC in partnership with the BC Ministry of Transportation – transportation
- BC Ministry of Environment and the Recycling Council of BC – solid waste

The energy baseline includes sources from electricity, natural gas, gasoline, diesel used in the commercial, industrial, residential and transportation sectors.

The energy data collected is used to determine greenhouse gas emissions for each source and sector.

Data deficiencies

Transportation data is not collected based on actual fuel consumed but is based on vehicles registered in Vanderhoof. National averages of fuel consumption are then applied to the vehicle types to determine fuel consumption figures. Also, transportation figures do not include heavy duty trucks in excess of 6,000 kg.

Additional energy consumption figures

In addition to those figures provided by the Community Energy Association, figures for a five period were obtained from BCHydro and Pacific Northern Gas for industrial, commercial and residential sectors. The BCHydro electricity figures for large industry are not included at this time.

1.4 Abbreviations/Definitions

CEP Community Energy Plan

CO_2e Carbon dioxide equivalents – a standard measurement of Greenhouse Gas

GHG Greenhouse Gas

GJ GigaJoules – a metric measure of energy

kWh kiloWatt hours – a metric measure of electrical energy – 278 kWh = 1 GJ

2. Background

2.1 Community

The District of Vanderhoof is situated on valley bottom lands and slopes bordering the Nechako River. Vanderhoof combines the attractions of a rural setting with the amenities and services of an established, moderate-sized community of over 4500 residents. The Nechako River, Highway 16 and the Canadian National rail line, has largely influenced the existing pattern of development. The District Municipality encompasses 5763 ha of land and consists of the following elements:

- a relatively compact downtown core containing commercial and public/institutional uses;
- a highway commercial and light industrial corridor to the south of the downtown adjoining Highway 16;
- several suburban residential neighbourhoods surrounding the downtown core and highway corridor;
- extensive industrial areas located west along the CNR line and Highway 16; and
- an outlying fringe area of agricultural lands intermixed with pockets of rural residential development, open space and parks, scattered industrial sites and the Vanderhoof Municipal Airport.

Taking advantage of its setting, Vanderhoof offers a range of housing types, locations and the attendant choices in residential lifestyles. The 2001 Census reports the mix of housing types as 82 % single family (detached houses and mobile homes) and 18 % duplex, rowhouses or apartments. The average household size has decreased from 2.8 persons per household in 1996 to 2.7 in 2001. It is anticipated that single family housing will continue to comprise more than 70 % of the households for the foreseeable future.

Vanderhoof's industrial base, dependent primarily on the forestry sector, is well developed. Over the next ten years, it is anticipated that there will be an increase in both production and jobs in the forestry sector, largely as a result of the mountain pine beetle. This boost is not expected to continue over the long term and the District of Vanderhoof is committed to maintaining a positive business climate that would assist in the diversification of the local economy.

2.2 Why are we concerned about energy consumption

Greenhouse Gas emissions

The emission of human-produced greenhouse gases – including carbon dioxide, methane and nitrous oxide – alters the composition of the global atmosphere and leads to accelerated global climate change.

Canada's greenhouse gas emissions are increasing. Energy consumption grew about 18 per cent between 1992 and 2002, while emissions rose at a rate of 1.9

per cent annually, or 27 per cent since 1990. Canadians currently produce about 700 megatonnes of greenhouse gases per year, much of it from energy use. This is about two per cent of total global emissions, coming from a country with about half of one per cent of the world's population. In other words, the average Canadian produces four times the global average level of emissions.

On a sectoral basis, the energy industry and the transportation sector contribute the greatest share of emissions. For individual Canadians, transportation accounts for almost half of greenhouse gas emissions, primarily due to automobile use. Energy use in the home accounts for the other half.

While there is significant debate within the House of Commons around greenhouse gas emissions and meeting climate commitments, ultimate success in reducing greenhouse gases will be shaped by local government. According to the Federation of Canadian Municipalities, up to half of Canada's GHG emissions are under control or influence of municipal governments. Greenhouse gases are produced by agricultural and industrial processes, solid waste and energy consumption. This plan looks at greenhouse gas emissions produced through energy consumption.

3. Community Involvement

3.1 Energy Planning Committee

One of the first steps in the energy planning process was the formation of a community-based committee to assist the planning consultant and council. A committee was struck consisting of three council members, the District of Vanderhoof Public Works Superintendent and three members of the public-at-large. The intent was to have a cross-section of the various business/economic sectors that are most likely to be key stakeholders and that have a mutual interest in energy planning for the future. Public-at-large members included a local custom home builder, a heating contractor, and a Ministry of Forests district manager.

The committee met several times with the planning consultant, assisting with the determination of the primary focus of the CEP (the Mission) and with accompanying goals and actions. Many issues were discussed and numerous ideas put forward for ways to reduce energy consumption in the community. It was a learning process for all involved.

3.2 Trade Fair

The District of Vanderhoof booth at the Trade Fair held May 11 – 13th, 2007 included information about the energy plan. A four page handout on the draft Energy Plan was available (see Appendix A) as well as brochures provided by BCHydro Power Smart for Business and an anti-idling brochure produced by the Office for Energy Efficiency, Natural Resources Canada.

Persons attending the fair were asked to complete a questionnaire identifying a variety of possible actions being considered in the energy plan. They were asked to identify actions that they supported, which were supported the most and which the least. (Questionnaire results are in Appendix B)

People were also invited to take the Ecological Footprint Quiz, raising awareness of the impact that each of us have on the planet. The Fair was well attended with over a hundred local residents stopping at the District booth and discuss local issues.

4. Community Energy Baseline

This section provides a baseline inventory of current energy consumption and greenhouse gas emissions within the District in 2005. In addition, electrical and gas consumption community figures for five year periods were provided by BC Hydro and Pacific Northern Gas Ltd. for commercial, industrial and residential sectors. While GHG emissions result from a variety of sources, this baseline includes only electricity, natural gas, gasoline and diesel fuel. GHGs from landfills will be included in future data collection. Wood waste is not considered here due to the lack of available information.

4.1 Energy and Greenhouse Gas Emissions Inventory 2005

The Community Energy Association provided energy/GHG baseline inventories to assist with community energy planning. Electricity and natural gas consumption figures are actual figures obtained from BC Hydro and Pacific Natural Gas Ltd., while transportation fuel consumption is estimated from the number of vehicles registered in Vanderhoof (obtained from ICBC) and applying national averages of fuel consumption for each vehicle type. Heavy duty trucks over 6,000 kg were not included in the calculations.

By source

Figure 1 below shows the amount of energy consumed within the community in 2005 by source. Sources included within this graph are electricity, natural gas, gasoline and diesel. Figure 2 displays the amount of greenhouse gas emissions by source. It is evident that GHGs emitted from natural gas far exceed those emitted through the use of electricity. Electricity produces only 7% of the emissions but uses 34% of the energy. Natural gas has a higher GHG intensity than hydro-electricity.

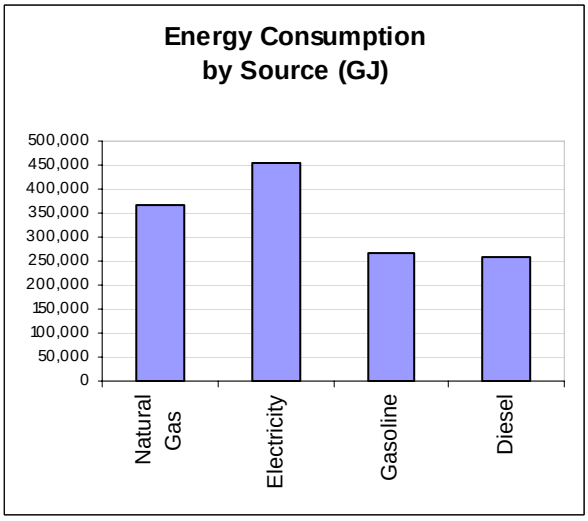

Figure 1: Energy consumption by source

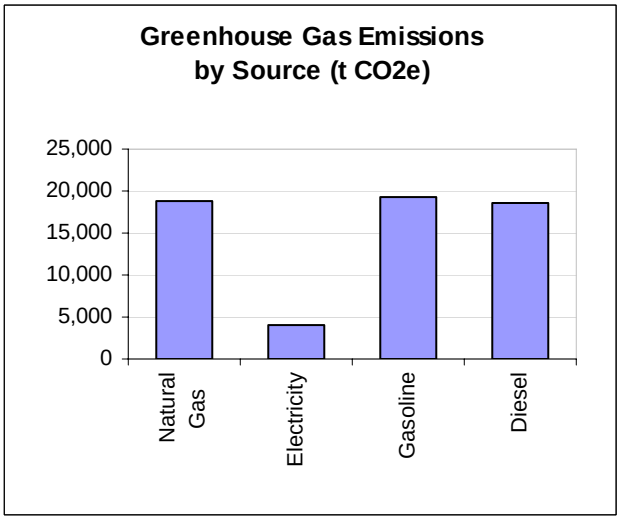

Figure 2: GHG emissions by source

Gasoline and diesel fuel have similar GHG intensities to each other but emit more GHGs per GJ of energy used than natural gas.

By sector

Figure 3 displays the energy consumed by electricity and natural gas within the residential, commercial and industrial sectors. The figure also displays the energy used in the transportation sector through gas and diesel fuel. The transportation sector uses about 40 % of the energy consumed in the community with the remaining 60 % consumed by buildings and equipment for heat, light, municipal services etc.

The residential and commercial sectors rely on natural gas for more than half their energy needs. The industrial sector utilizes electricity for about 2/3 of its energy needs. Also industry uses a greater amount of energy than the residential and commercial sectors combined.

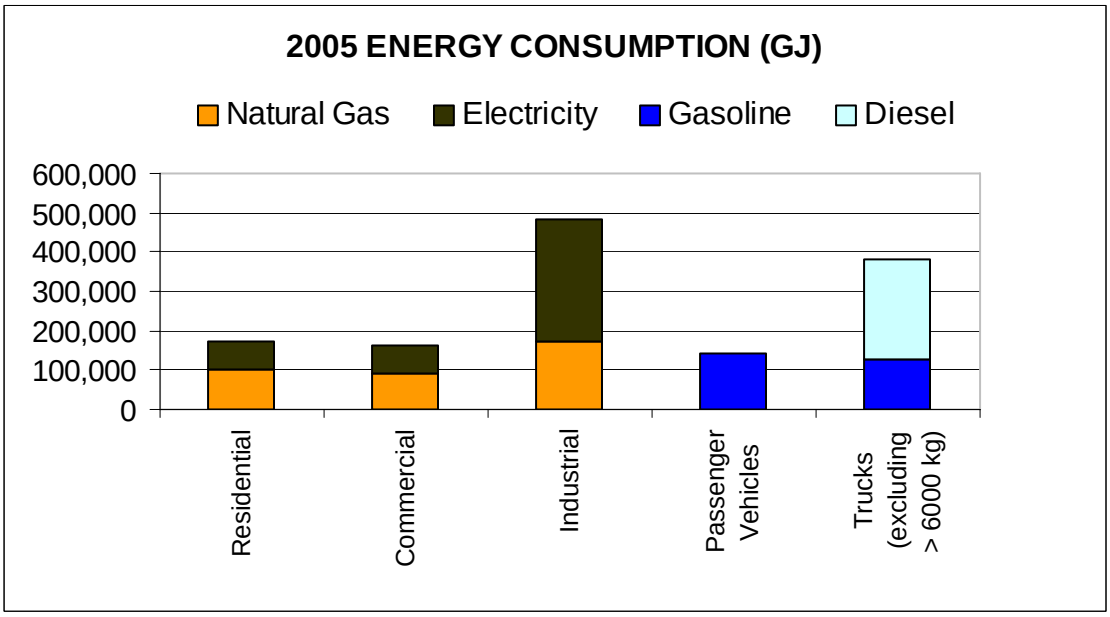

Figure 3: Energy consumption by sector

Figure 4 displays the GHG emissions for each sector and separates the emissions produced by natural gas, electricity, gasoline and diesel.

Natural gas produces more tonnes CO_2e than electricity for each GJ of energy consumed. In turn, gasoline and diesel also produce more GHGs, 37,760 t CO_2e, while electricity and natural gas combined for all sectors produce only 14,083 t.

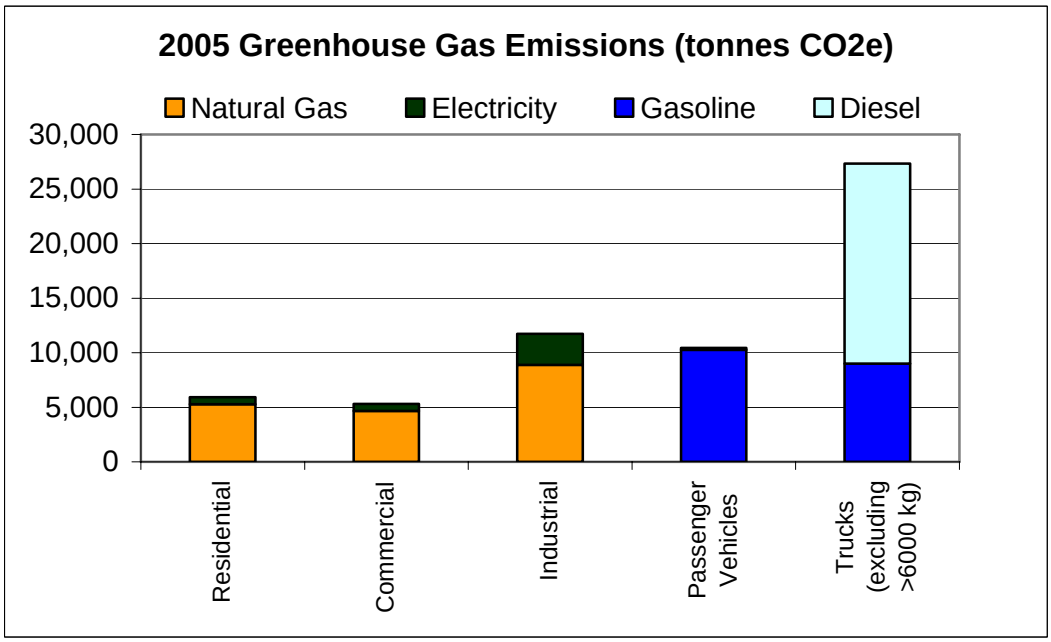

Figure 4: GHG emissions by sector

The charts below show percent of energy consumed and percent of GHG emissions produced by sector. This provides a much clearer visual of the impact of transportation sector. Transportation accounts for 62 % of GHGs while consuming only 39 % of the energy. Industry produces 19 % of the emissions, the same amount as the commercial and residential sectors combined.

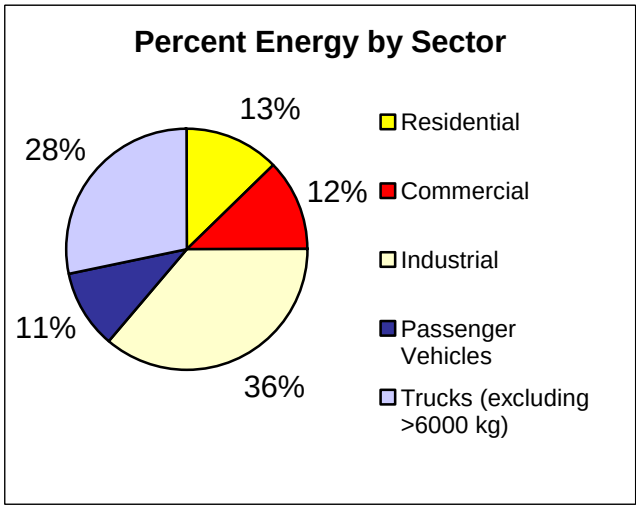

Figure 5: Percent energy by sector

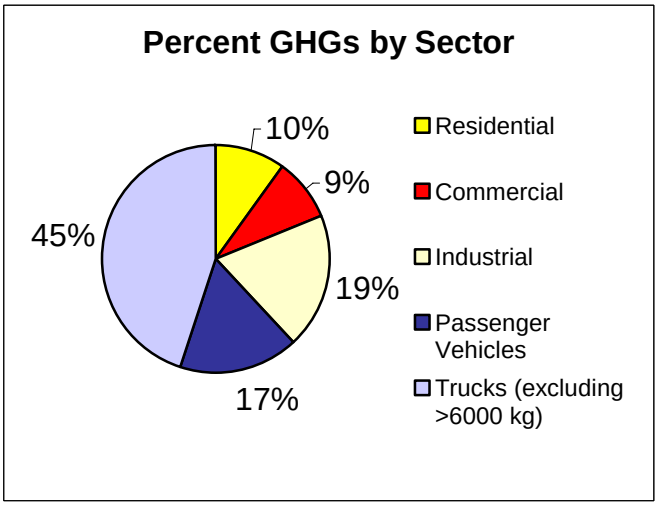

Figure 6: Percent GHGs by sector

4.2 Community Five Year Energy Consumption

Community figures for electrical and natural gas consumption over a five year period were collected from BCHydro and Pacific Northern Gas Ltd. These are shown below in Figures 5 and 6. It is important to note that the BCHydro data does not include large industrial accounts. Also each company may not use the same criteria to distinguish between commercial and industrial uses and therefore a direct comparison cannot be made.

The natural gas consumption has dropped over a five year period while there is a slight increase in electricity consumption for a similar five year period. Some research should be done to determine the reason for the drop in natural gas consumption. Possible reasons include the reduction in accounts, alternate source for industrial accounts, energy saving changes that resulted in consumption reductions.

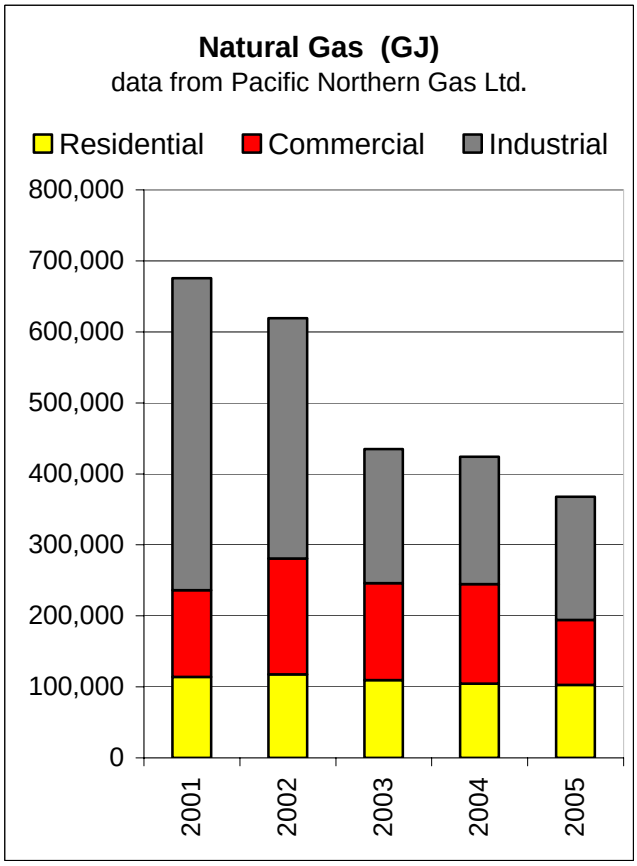

Figure 7: Natural Gas 2001 - 2005

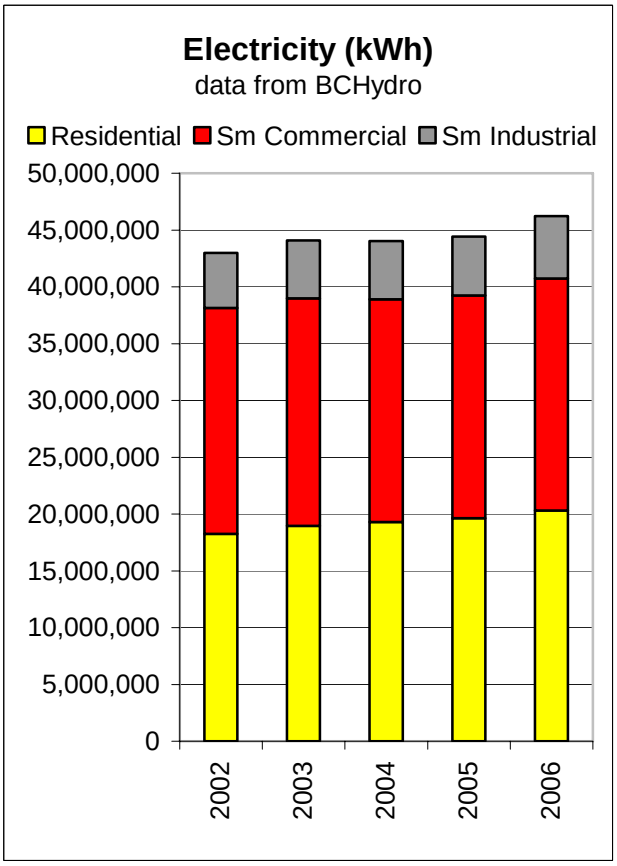

Figure 8: Electricity 2002 - 2006

4.3 Municipal Facilities Energy Consumption

The District of Vanderhoof has created a data base of all municipal owned facilities and structures and compiled a 12 month listing of electricity and natural gas energy consumption and cost. This data provides an excellent baseline for the municipality and should continue to be tracked and analyzed to see where savings can be achieved.

4.4 Municipal Energy Saving Initiatives

As part of the inventory of energy consumption in the community, it became apparent that a number of energy saving initiatives have already been undertaken by the District. The committee felt strongly that this information should be brought forward to the public to demonstrate the commitment by the municipality to reduce energy costs.

District of Vanderhoof Energy Saving Initiatives	
Project	**Energy savings comments**
Traffic signal light LED upgrade	1430 kWh down to 234 kWh monthly (80% savings)
New library upgrade lighting to energy efficient fluorescent bulbs and ballasts	20% to 30% savings
Chamber of Commerce - replace furnace	70% efficient up to 90%
New Sewage treatment plant power factor	New equipment at 96% efficient (BCHydro)
Arena dressing rooms - new furnace - on demand water heaters	60% to 90% efficient 80% efficient for traditional up to 98% on demand (plus save more as not paying to heat water while not in use)
Arena viewing stands replace heaters	Added timers, only run when needed
Airport - upgrade sewer lift station	Replace 40+ year old technology and rebuild with better insulation etc
Public Works shop replace overhead door	Better insulated and tighter fit

5. Action Plan

5.1 Energy Plan Mission and Goals

Mission "Encourage energy efficiency in all sectors throughout the community. Incorporate energy and greenhouse gas considerations into all aspects of municipal decision making."

Goal One - Provide information and enhance community knowledge about energy consumption and efficiency.
Goal Two - The District will lead by example demonstrating a commitment towards an energy efficient community.

The energy planning committee determined that there were essentially two areas that the Energy Plan should address. A community wide energy efficiency education and awareness program and specific actions the municipality can undertake both for the community and within its own operations.

5.2 Possible Actions

The committee generated a number of ideas to reduce greenhouse gas emissions and increase energy efficiency. There was a lot of discussion and debate about the feasibility of different actions and which would be accepted in the community. The greatest agreement was around raising awareness and increasing information available to the public.

Existing Buildings
To achieve maximum GHG reductions, energy efficiency measures should be pursued for existing buildings: residential, commercial and industrial. Operating buildings in a more climate responsive, resource and energy efficient manner is the lowest cost way to achieve results in the built community. There are many operational initiatives that can be presented to the community where energy efficiencies can made. In addition information regarding energy efficient upgrades and retrofits should be readily available to the community. Awareness and education is the first goal of this energy plan.

New Buildings
Better building practices for new construction could reduce GHG emissions and reduce energy costs. There is increased investment upfront, but the investment would pay for itself in 6 to 8 years for residential buildings. The

District supports the province's intention to develop a new unified BC green building code (2007 Throne Speech) and its intention to implement new energy efficiency standards for all new construction in British Columbia by 2010 (2007 BC Energy Plan). Also the District has joined with other CAEE participating municipalities requesting that the Union of BC Municipalities pass a resolution "that the Province establish a procedure that would allow interested local governments to implement and require the energy efficiency standards for new buildings called for in the Province's Energy Efficient Buildings: A Plan for BC, namely: Energuide 80 for residential buildings and 25% better than the standards in the Model National Energy Code for commercial buildings."

Committee members noted that building energy efficient residences to the Energuide 80 standard is still a tough sell and that the provincial government needs to change the Building Code to enforce green building standards.

Transportation

Residents of Vanderhoof are very dependent on vehicles. The community is spread out with a wide range of property sizes and lifestyles. There is no transit service available. Also, the types of vehicles driven in the Vanderhoof area are generally sport utility vehicles or trucks that consume twice as much fuel as compact cars or four times as much as a high efficiency car. According to preliminary figures provided GHGs from transportation account for 62 % of the total emissions. While convincing a northerner that they do not need a truck would be virtually impossible, there are opportunities for transportation savings through a variety of actions such as promoting greater use of fuel efficient vehicles, education around unnecessary idling of vehicles, encouraging efficent use of vehicles (ie coordinating activities to reduce trips), encouraging car pooling and more walking and cycling.

Institutions and business can play a significant role in transportation related GHGs through 'green' vehicle operating policies, converting to biodiesel and changing fleet vehicles to those that are more fuel efficient.

Solid Waste

Solid waste from the community is disposed at a transfer station and then taken to a Regional Distirct landfill. While total waste figures can be calculated using a provincial disposal rate, there would be value in gathering more accurate figures from the Regional District of Bulkley-Nechako. In addition, determining the amount of waste that is due to paper and cardboard is important. It is believed that there is opportunity to reduce the amount of paper and cardboard waste going to the landfill. Some businesses have cardboard recycling bins but this could be increased through awareness programs.

Water and Wastewater
Water distribution, storage and waste treatment/discharge are among the largest single users of energy for most municipalities. Water pumping is energy intensive, with much occurring during peak electricity periods. Energy use for wastewater is increasing because of regulatory requirements for discharge and reclamation. The District has installed new power equipment that is 96% efficient at the sewage treatment plant.

More can be done in terms of increasing knowledge in the community about water usage and ways to reduce water consumption. Without water meters, many do not think about the amount of water that is wasted.

Local Government Role
The District of Vanderhoof has committed to playing a strategic role in encouraging energy efficiency in the community and in making energy efficiency and greenhouse gas a consideration in all decision-making. Several steps can be taken to demonstrate this commitment.

- Policy amendments can be made to the Official Community Plan to encourage energy efficient land use development
- The municipality can work with other government agencies and businesses in the community to pursue community wide actions
- A purchasing policy requiring consideration of energy efficient choices and cost for all municipal purchases
- An energy review of all municipal buildings to determine cost effective energy efficient upgrades and retrofits
- A green vehicle policy requiring the purchase of fuel efficient vehicles
- Ensure energy savings product information and incentives are available.

Alternative Energy Supply
The District is open to opportunities for alternative energy projects and Council has had discussions with companies interested in developing a biomass energy plant within the community. This could incorporate some form of a district heating system as well as producing electricity.

Air Quality
Air Quality is of concern to the District of Vanderhoof. On several days of the year there are unhealthy levels of fine particulate matter in the air. The District is working with the Ministry of Environment to monitor the emissions and to identify sources. Vehicle exhaust, road dust, industrial processes and emissions from wood burning appliances are possible sources. Many northern homes are heated with wood burning appliances and there may be a desire to convert from natural gas to wood for home heating as natural gas costs increase. Increasing the use of wood heat may reduce GHG emissions but care should be taken that this does not result in increased particulate matter. This matter needs to be further studied to determine appropriate actions.

5.3 Action Plan

GOAL 1. ***Provide information and enhance community knowledge about energy consumption and efficiency.***		
Objectives/Actions	**Participants**	**Time frame**
Objective 1.1 Evaluate existing energy consumption in community		
Action 1.1.1 Collect current electricity and gas consumption figures by sector (commercial, residential, industrial)	District staff Energy Committee Planning consultant	by November 2007
Action 1.1.2 Establish data monitoring method	District staff Energy Planning Committee	by November 2007
Action 1.1.3 Collect complete transportation data for community	District staff Consultant	by November 2007
Action 1.1.4 Identify current volume of solid waste and determine amount of paper and cardboard waste	District staff Consultant Regional District	by November 2007
Action 1.1.5 Identify existing and potential opportunities for recycling	District staff Consultant	by May 2008
Objective 1.2 Set targets for reduced energy consumption in community		
Action 1.2.1 Set target to reduce the energy consumption in 20% of existing industrial, commercial and institutional buildings by an average of 14% by 2010.	District Council District staff Energy Planning Committee	March 27 2007
Action 1.2.2 Set target for community wide GHG emissions – suggest on a per capita basis	District Council District staff Energy Planning Committee	by November 2007
Objective 1.3 Enhance community knowledge about energy efficiency		
Action 1.3.1 Develop education and awareness campaign about energy efficiency and GHG. (home and office tips, transportation, anti-idling, water conservation, recycling)	District staff Energy Planning Committee Consultant	by January 2008
Action 1.3.2 Develop or acquire fromexisting sources promotional/education materials for developers and the public	District staff Consultant	by January 2008
Action 1.3.3 Develop method to “recognize” development that incorporates energy efficient technology – ie green awards	District staff Council Consultant	by May 2008

GOAL 2 ***The District will lead by example, demonstrating a commitment towards an energy efficient community.***

Objectives/Actions	Participants	Time frame
Objective 2.1 Reduce municipal energy consumption		
Action 2.1.1 Create database of existing energy use in all municipal buildings and structures	District staff	by June 2007
Action 2.1.2 Identify largest users of energy & potential for savings	District staff	by November 2007
Action 2.1.3 Develop a strategy and seek funding to perform energy audit in municipal buildings and structures	District Council District staff Consultant	by January 2008
Action 2.1.4 Identify where savings in existing structures can be made	District staff Utility	by May 2008
Action 2.1.5 Adopt green municipal purchasing policy	District staff District Council	by January 2008
Action 2.1.6 Adopt energy efficient vehicle operating and purchasing policy	District staff District Council	by November 2007
Objective 2.2 Develop local action partnerships with other government agencies and industry		
Action 2.2.1 Establish means for ongoing community energy and sustainability planning (continue with energy planning committee)	District Council Energy planning committe	by June 2007
Action 2.2.2 Identify areas where institutions and businesses can take co-operative action to reduce energy consumption	Energy planning committe	by November 2007
Action 2.2.3 Identify opportunities for reducing solid waste (ie increase in paper and cardboard recycling)	Energy planning committee District staff Consultant	by May 2008 2008
Objective 2.3 Incorporate energy efficient policies		
Action 2.3.1 Adopt checklist for new development	District staff Consultant Building Inspector	by November 2007
Action 2.3.2 Adopt amendment to Official Community Plan (OCP) - to include Community Energy objectives outlining council commitment to energy efficiency - to incorporate the two goals of this plan - to incoporate energy efficiency target for commercial, industrial and residential buildings - policy direction for development checklist	District Council District staff Planner	by November 2007

Action 2.3.3 Consider further amendment to Official Community Plan (OCP) - energy efficient building and GHG targets - policy direction to require new commercial and industrial development to identify proposed GHG emissions - land use policies that incorporate more mixed use development - provision for climate protection principles - policy direction to develop more walking and cycling paths - consider reduced or flexible development standards that support sustainable community principles	District Council District staff Planner	by March 2008
Action 2.3.4 Review zoning and land development regulations to encourage energy efficient infill and redevelopment of empty buildings	District Council District staff Planner	by March 2008

6. Conclusion

6.1 Summary

The District of Vanderhoof has undertaken this Community Energy Plan as part of the provincial initiative to see communities develop integrated community energy/Greenhouse gas plans and to promote energy efficient buildings. There is strong council commitment for a more energy efficient sustainable future. This is evident with the commitment to develop the CEP and with three councilors volunteering to sit on the energy planning committee.

This report provides a look at the current energy 'situation' in the community, a baseline for energy consumption and greenhouse gas emission. The District has set a Community Energy mission and goals and an action plan has been developed.

The plan is not official, but is to be used as a guideline to inform the District of Vanderhoof in all policy areas and as a complementary tool with the Official Community Plan. The Zoning and Subdivision and Development Servicing bylaws can adopt regulations assisting with the implementation of the CEP. This is not intended to be the 'final' energy plan - this energy plan is a first step and should be revisited within two or three years to develop further goals and actions.

6.2 Next Steps

With climate change in the forefront of world news and with the increasing cost of energy, the Community Energy Plan has a good chance of being a useful document and not a plan that 'sits on the shelf'. The following are the first steps to be taken:

1. Continue the energy planning committee – seek commitment of members in continuing through with implementation.
2. Communicate the Community Energy Plan to the community.
3. Adopt commitment to energy planning through OCP amendment.
4. Ensure the energy consumption data tracking continues within the District.
5. Identify funding sources and mechanisms for energy plan implementation.
6. Arrange for energy audits of municipal buildings.
7. Contact other large employers in the District to determine if there are areas for common strategies or programs.

APPENDICES

APPENDIX A. Draft Energy Plan Handout presented at the Trade Show

APPENDIX B. Energy Plan Questionnaire results

APPENDIX C. Official Community Plan amendments

APPENDIX D. Energy Plan Development Checklist

District of Vanderhoof
COMMUNITY ENERGY PLAN

"Encourage energy efficiency in all sectors throughout the community. Incorporate energy and greenhouse gas considerations into all aspects of municipal decision making."

The District of Vanderhoof is committed to being part of a "cleaner" energy future and to promote energy efficiency in the community. Vanderhoof is participating in the Community Action on Energy Efficiency (CAEE) program, a provincial initiative. The District has agreed to undertake the development of a Community Energy Plan and has adopted the BC Energy Efficiency target to reduce the energy consumption in 20% of existing commercial, industrial and institutional buildings by an average of 14% by 2010.

Why are we concerned about energy efficiency and greenhouse gas emissions?

Canada's greenhouse gas emissions are increasing. Energy consumption grew about 18 per cent between 1992 and 2002, while emissions rose at a rate of 1.9 per cent annually, 27 per cent since 1990. On a sectoral basis, the energy industry and the transportation sector contribute the greatest share of emissions. For individual Canadians, transportation accounts for almost half of greenhouse gas emissions, primarily due to automobile use. Energy use in the home accounts for the other half.

In reviewing preliminary figures for Vanderhoof, transportation accounts for more than half the greenhouse gas emissions. (see graph on back page)

Canadians currently produce about 700 megatonnes of greenhouse gases per year, much of it from wasteful energy use. This is about two per cent of total global emissions, coming from a country with about half of one per cent of the world's population. In other words, the average Canadian produces four times the global average level of emissions.

Simple changes in our everyday lives can help protect our earth for future generations.

Some of the initiatives the District has already taken to reduce costs and save energy	
Project	**Energy savings comments**
Traffic signal light LED upgrade	1430 kWh down to 234 kWh monthly (80% savings)
New library upgrade lighting to energy efficient fluorescent bulbs and ballasts	20% to 30% savings
Chamber of Commerce - replace furnace	70% efficient up to 90%
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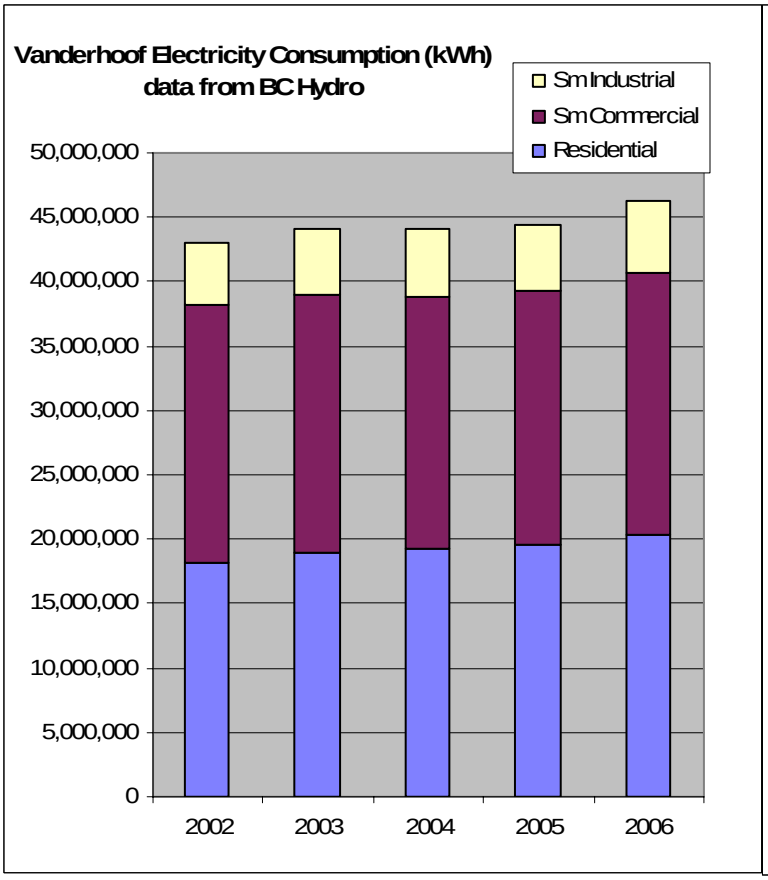
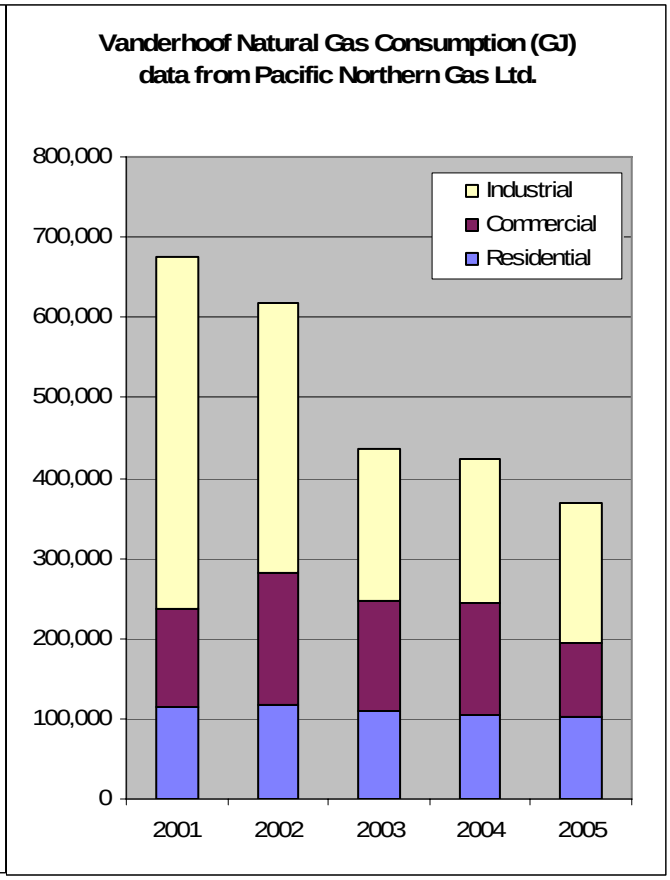
Arena dressing rooms - new furnace - on demand water heaters	60% to 90% efficient 80% efficient for traditional up to 98% on demand (plus save more as not paying to heat water while not in use)
Arena viewing stands replace heaters	Added timers, only run when needed
Airport - upgrade sewer lift station	Replace 40+ year old technology and rebuild with better insulation etc
Public Works shop replace overhead door	Better insulated and tighter fit





Build a community you can be proud of – Leave a positive legacy for future generations.
"We didn't inherit the earth from our parents. We're borrowing from our children."
Chief Seattle 1788-1866

District of Vanderhoof
Draft Community Energy Plan

"Encourage energy efficiency in all sectors throughout the community. Incorporate energy and greenhouse gas considerations into all aspects of municipal decision making."

1. *Provide information and enhance community knowledge about energy consumption and efficiency.*

1.1 Community energy consumption of existing buildings
- collect current electricity and gas consumption figures by groups of building type (commercial, residential)
- establish monitoring mechanism
- set realistic targets

1.2 Community transportation use
- identify transportation in use in community
- identify where energy savings can be made

1.3 Community solid waste
- identify volume of solid waste collected
- determine opportunity for reduction through recycling

1.4 Promote energy efficiency
- develop education and awareness campaign
- recognize new development that incorporates energy
- efficient technology

2. *The District will lead by example demonstrating a commitment towards an energy efficient community.*

2.1 Assess municipal energy consumption
- track existing consumption in all areas
- identify largest users of energy
- use energy efficient technology and products, and consider long term cost savings when retrofitting or upgrading municipal infrastructure
- consider fuel efficiency and pollution, when purchasing new vehicles or equipment,

2.2 Develop local action partnerships with other government agencies / industry
- explore means for ongoing community energy and sustainability planning

2.3 Adopt policy to address commitment to energy efficiency
- amend Official Community Plan
- require environmental impact assessment for new large industrial, commercial and institutional development

2.4 Seek alternate energy supply opportunities
- identify opportunities for alternative local supply options (biomass, geothermal)
- consider a district heating system

The District of Vanderhoof is interested in your thoughts on Energy Planning. Some information is included in this handout and a questionnaire is provided at the Trade Show. Please take the time to tell us what you think. You may contact the District office at 567-4711 or Kerry Pateman by email at kpateman@shaw.ca or by phone 250 564-7136.

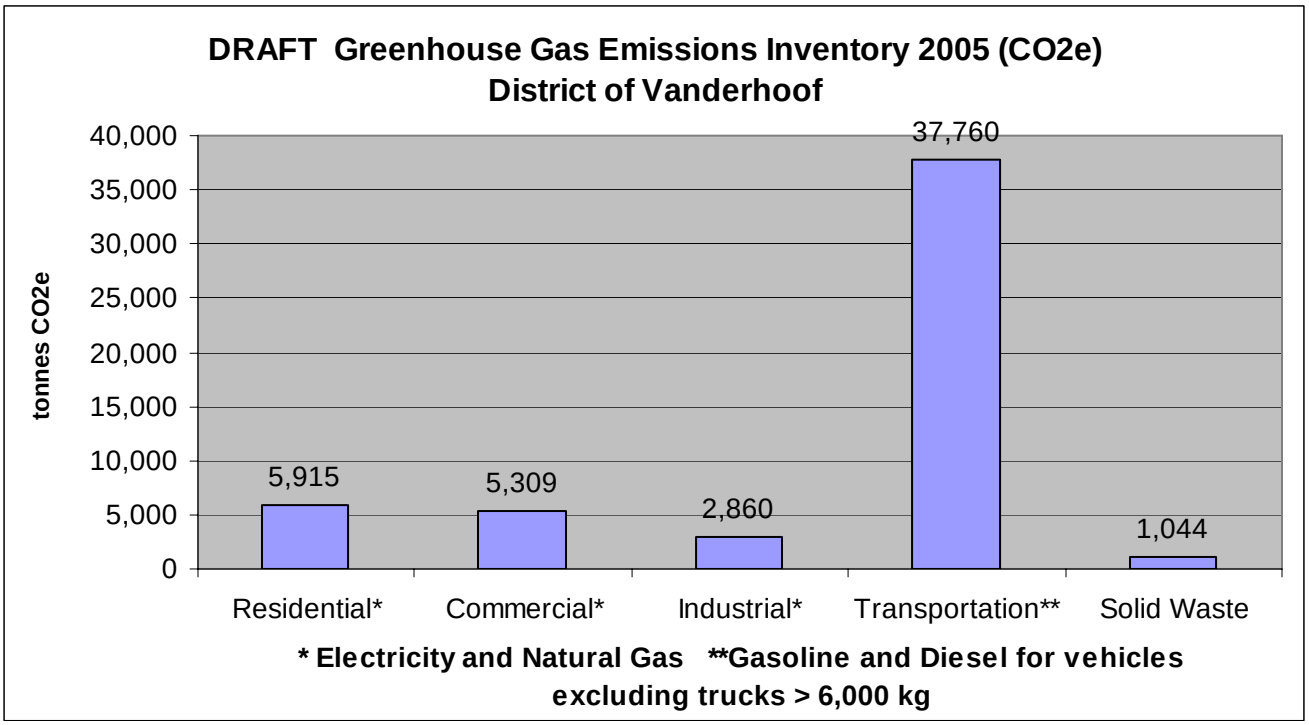
THANK YOU

DID YOU KNOW?

- **Standard (Incandescent) light bulbs** give off 90%of their energy as heat. New compact fluorescent "spiral" bulbs are 75 per cent more efficient and fit in standard sockets. Australia has banned standard light bulbs and Canada will phase them out by 2012.
- If you combined all the **"heat leaks"** in an average Canadian home, you would have a hole the size of a basketball! Proper weather stripping and caulking of doors and windows can reduce heating bills by 25 per cent.
- **Refrigerators** are an energy-hogging home appliance. Replacing a 10-year-old refrigerator with a new EnergyStar-approved model would save enough energy to light your home for more than three months!
- Energy savings from trees planted near homes and buildings range from 10 to 50% for cooling and from 4 to 22% for heating
- Transportation accounts for between 25% and 50% of the energy consumed in a community (preliminary figures show this is higher in Vanderhoof)
- Even when your electrical equipment (computers, chargers, games) are 'off' they are consuming electricity. Consider unplugging.

What can you do?

- Consider buying locally produced food when possible
- Walk, ride or bike to at least one destination a week
- Turn lights off when not needed
- Reduce warm-up idling of your vehicle
- Choose paper, not plastic - better yet bring your own bag
- Turn the thermostat down
- Consider a more energy efficient vehicle



Carbon dioxide equivalents (CO2e) are a standard unit of measurement in Greenhouse Gas inventories. CO2e takes into account the effective GHG contributions of carbon dioxide, methane and nitrous oxide.

RESULTS

Which of the following do you think should be included in Vanderhoof's *Community Energy Plan*?

Possibilities for Action	Check all that you support	Most support	Least support
Public education about Greenhouse Gas (GHG) emissions	6	8	
Energy efficiency tips for home and office	7	7	1
Encourage recycling	9	8	
Encourage water conservation	7	9	
Information on product incentives & rebates	5	9	1
Pursue alternative energy sources	6	6	
District heating system	3	7	
Building code changes to require energy efficient construction	5	8	1
Encourage higher density residential near downtown (live near the workplace)	3	5	3
Initiate planning with local business to increase energy efficiency and reduce GHG emissions	6	7	
Require new commercial / industrial projects to identify anticipated GHG emissions	5	8	1
Recognize energy efficient building	8	8	
Assess and reduce energy consumption by municipal gov't operations	6	7	2
Anti idling information and bylaw	7	5	5
Encourage use of fuel efficient vehicles	8	5	3
More bicycle and pedestrian paths	7	8	2
OTHER: Sidewalks on more residential streets such as Hamilton Ave			
solar			
geo			

Any further suggestions or comments? (use back if required)

Would like to see more improvement in residential areas other than the business core. I do not like the parking now available.

Recommended OCP bylaw amendments for immediate consideration in support of the Community Energy Plan.

Amend Official Community Plan Bylaw No 993, 2006 to add a new section titled Community Energy Objectives to the Community Objectives section of the OCP.

3.6 Community Energy Objectives

The District of Vanderhoof has completed a Community Energy Plan to develop a strategy for energy efficiency and reduced greenhouse gases. The following are Council's objectives to reduce the energy consumption in the community and to demonstrate a commitment to be a part of a "cleaner" energy future:

- ***Objective 3.5.1***: To enourage energy efficiency in all sectors throughout the community.
- ***Objective 3.5.2:*** To incorporate energy and greenhouse gas considerations into all aspects of municipal decision making.
- ***Objective 3.5.3:*** To reduce energy consumption in 20% of existing commercial, industrial and institutional buildings by an average of 14% by 2010.
- ***Objective 3.5.4:*** To develop an energy efficiency checklist for new development
- ***Objective 3.5.5:*** To encourage the use of alternative, renewable and sustainable energy producing and recovery technologies.

District of Vanderhoof
COMMUNITY ENERGY
Development Checklist

Draft - May 25, 2007

The District of Vanderhoof, through its Community Energy Plan, is committed to be a part of a "cleaner" energy future and to promote energy efficiency throughout the community.

PURPOSE

The District of Vanderhoof Development Checklist is a tool to encourage applicants for development to consider how their project can contribute to a more energy efficient community.

Through this process, it is hoped that applicants will think about the impact the development will have on the environment, during construction and through the life of the structure. Questions are designed to focus on buildings and structures with some attention to the land and site development.

INSTRUCTIONS

All applicants for building permits are required to complete this Checklist.

1. Review and complete
2. Submit completed checklist with application

This is not intended to be used to approve or reject an application. This information will be considered in the review of applications. The use of this checklist is primarily to provide applicants with a list of energy efficient measures.

The Province has released a plan that calls for new houses to meet Energuide 80 and all new commercial buildings to be 25% better than the standards in the Model National Energy Code. Meeting these targets would reduce average energy consumption for houses by 32% and that of commercial buildings by 20%.

Vanderhoof Community Energy Plan Mission
"Encourage energy efficiency in all sectors throughout the community. Incorporate energy and greenhouse gas considerations into all aspects of municipal decision making."

Checklist for Development

Draft - May 25, 2007

Energy Efficiency of Proposed Building

check those which apply:

Building is designed for

- ☐ 25% improvement over the Model National Energy Code for Commercial buildings or
- ☐ Energuide 80 for residential buildings

- ☐ Appliances and fixtures installed are Energy Star compliant
- ☐ Appliance size is appropriate for the need
- ☐ Flourescent lamp fixtures are the T8 standards
- ☐ Water fixtures are efficient to conserve water and use less energy
- ☐ Windows are double panes, low E glass
- ☐ Chlorofluorobarbons (CFC) reduction in heating, ventilating and air conditioning (HVAC) equipment, Power Smart technology
- ☐ Use of low emitting materials, including adhesives, flooring, paint
- ☐ Enhanced durability of construction materials (eg wall systems, roof materials)
- ☐ Outdoor lighting is supplied with motion detectors
- ☐ Building is oriented and designed to maximize exposure to natural light.
- ☐ The project provides on-site recycling and/or composting

	Circle Yes or No
Does the layout encourage walking and cycling?	Yes / No
Does the design protect important environmental features?	Yes / No
Is there on-site stormwater management, on-site drainage	Yes / No
Does the layout allow for buildings to take advantage of passive solar heating?	Yes / No

Construction Activity

Will there be attempts to minimize air emissions and dust during construction? Yes / No

Are there provisions for the management of construction waste, reuse of existing buildings or building materials during construction and/or demolition?

Yes / No

Please submit checklist or direct questions to:

District of Vanderhoof
160 Connaught Street
Vanderhoof BC, V0J 3A0

Phone: (250) 567-4711
Fax: (250) 567-9169
www.vanderhoof.ca