
INVENTORIES, TARGETS, AND ACTIONS: IMPLEMENTING GHG AND ENERGY REDUCTION MEASURES FOR BILL 27 AND MORE

(CONTENT MATERIALS FROM WORKSHOPS HELD IN MAY/JUNE 2009)



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CONTENT OVERVIEW

This content, which was originally designed to be delivered as a workshop, is divided into five modules, structured around the three questions that would be typical of a planning process.

- Module 1: Context
- Module 2: Where are we now?
(Taking Stock and Inventory)
- Module 3: Where do we want to be?
(Targets)
- Module 4: How do we get there?
(Action Planning)
- Module 5: Sharing Experiences

MODULE 1: CONTEXT

WHAT ARE THE RELEVANT GHG INITIATIVES IN BC FOR LOCAL GOVERNMENTS?

- Bill 44 (2007), Greenhouse Gas Reduction Targets Act: Sets a province-wide 33% reduction target from 2007 levels by 2020. Also requires Public Sector Organizations (PSO) to become Carbon Neutral by 2010, using offsets from the Pacific Carbon Trust. The requirements in Bill 44 for Public Section Organizations to be carbon neutral by 2010 does not include local government.
- Bill 27 (2008), Local Government (Green Communities) Statutes Amendment Act: Reduction targets required for OCPs and Regional Growth Strategies (this workshop !!)
- Community Action on Energy and Emissions (CAEE): grant funds for planning activities
- Community Energy and Emissions Inventories (CEEI): community-wide inventories provided by the Ministry of Environment
- Climate Action Charter: Carbon neutral local government operations, reporting of GHG emissions, and development of compact communities.

WHAT ARE THE NEW GHG EMISSION REDUCTION TARGETS REQUIREMENTS CONTAINED IN BILL 27?

- Bill 27, 2008, the (Local Government (Green Communities) Statutes Amendment Act
- The Local Government Act (LGA) has been amended to include the following:
 - LGA section 877 (3)

An official community plan must include targets for the reduction of greenhouse gas emissions in the area covered by the plan, and policies and actions of the local government proposed with respect to achieving those targets (by May 31, 2010)

- LGA section 850 Content of a Regional Growth Strategy states:

(2)(d) to the extent that these are regional matters, targets for the reduction of greenhouse gas emissions in the regional district, and policies and actions of the local government proposed for the regional district with respect to achieving those targets (by May 31, 2011)

- Notes:
Ministry of Community and Rural Development – Targets, Policies and Actions Workshop Series
– Content Materials

HOW DO THE NEW REQUIREMENTS FIT WITHIN THE BROADER PROVINCIAL CLIMATE ACTION PLAN?

- In 2007 the Province, UBCM and local governments of British Columbia agreed that climate change is real and that taking action on reducing green house gases is essential. (As of March 2009, 174 local governments have signed onto the Climate Action Charter that confirms this understanding.)
- The Province is committed to reducing greenhouse gas emissions by 33 per cent below 2007 levels by 2020 and by 80% by 2050, and through the Climate Action Plan the Province has implemented a range of initiatives related to climate change and environmental management, including the Green Communities Initiative.
- The planning and regulatory decisions of local governments (municipalities and regional districts) can impact wider provincial interests. Through their authority over land use and zoning, public transportation, infrastructure, building regulation and solid and liquid waste management, local governments make long-lasting decisions that impact the environment, energy consumption and greenhouse gas emissions. Therefore, local governments play an important role in managing urban growth and helping reduce greenhouse gas emissions.
- The requirement for local governments to include targets, policies and actions to reduce GHG emissions requirements in their OCPs supports the development of more sustainable communities, where the management of land and related decisions within the community are made with energy conservation and the reduction of GHGs top-of-mind.
- Notes:

WHAT DO I HAVE TO DO TO MEET THE BILL 27 REQUIREMENTS?

- **Establish Targets for your OCP** (more on that shortly).
- Define the policies and actions used to achieve those targets.
- Many targets may be defined. **At least one target should be defined as an emissions reduction target.** This is typically expressed as either a percentage reduction, or a number of tonnes reduction.
- Other targets may be included -these could be related to land use, transportation types, or other planning activities that have an effect on energy use in the community. These are the “how” rather than the “what” targets. (See more detail in targets section.)
- **Communities are unique** and each will tailor its approach to setting one or more GHG emission reduction target and taking action on climate change. Some communities have a significant commitment to sustainability; some communities have growth pressures and competing land uses; some communities are experiencing no growth. Along with population and organizational capacity, these factors combine to define how communities can appropriately take action. Not all will engage in complex modeling. Not all will measure a full range of climate variables.
- Many **local governments are already taking action** to reduce GHG emissions, both directly in support of that goal, and indirectly through efforts to sustain other environmental and quality of life values. These efforts support the spirit and intent of the legislation.
- Notes:

DOES BILL 27 MEAN I HAVE TO DO AN ENERGY PLAN OR AN INTEGRATED COMMUNITY SUSTAINABILITY PLAN (ICSP) & HOW DO THESE RELATE?

- NO, a community energy plan, or a community sustainability plan is not required, but.....some communities may find that a plan, and the process to create the plan ensures that the actions are integrated with other planning processes.
- Communities that have existing Energy Plans and Integrated Community Sustainability Plans (ICSP) are encouraged to explore the degree to which these support the development and/ or measurement and monitoring of targets, policies and actions to reduce GHG emissions. These may be directly referred to in your OCPs or RGSs as part of your GHG reduction planning process.
- Notes:

HOW WILL THE SETTING OF GHG REDUCTION TARGETS SUPPORT GREEN COMMUNITIES?

- Developing targets moves communities from discussing WHETHER to take climate action to considering HOW to take climate action.
- At its broadest level, the intent of the GHG target-setting provisions of Bill 27 is to achieve a fundamental shift in planning across the province. It is meant to ensure that local government apply a climate action and energy planning lens when planning, decision making and managing land use within their communities, and consider how their official community plan will contribute to, or reduce, their greenhouse gas emissions.
- Each community will contribute in the ways that are most suitable to their own unique circumstances.
- Notes:

WHERE DOES THE CLIMATE ACTION CHARTER FIT IN?

- The **Climate Action Charter** reflects shared understanding between the Province and local governments that climate change is a real concern and that there is a need for both parties to act together to address climate change. By signing the Charter, both parties have made a public commitment to doing their part.
- Over 170 local governments in BC have signed on to the *BC Climate Action Charter* indicating their commitment to being carbon neutral by 2012, participating in measuring GHGs in their communities, and supporting the development of complete, compact communities.
- Comparing Climate Action Charter commitments and Bill 27 requirements:

	<i>Targets, Policies and Actions (Bill 27)</i>	<i>Climate Action Charter</i>
Purpose	To encourage communities to establish targets and develop policies and actions contributing to GHG reductions	To identify the shared commitment that local governments have to addressing climate change
In Legislation	Yes	No
Voluntary	No	Yes
GHG emission reductions targeted	Reduce community-wide emissions through planning	Reduce emissions from corporate and community-wide operations
Activities	Set targets in OCPs, and define actions	Monitor and report corporate operations emissions. Be carbon neutral in 2012. Develop compact communities.
Dates to meet	OCPs May 31, 2010 RGSs May 31, 2011	2012
Funding attached	No	Signatories receive Carbon Tax rebate (CARIP grants).

- Notes:

WHAT IS THE PROVINCE DOING TO SUPPORT LOCAL GOVERNMENTS IN MEETING THEIR CLIMATE ACTION CHARTER COMMITMENTS AND BILL 27 REQUIREMENTS?

- Under the Climate Action Charter a joint **Provincial – UBCM Green Communities Committee (GCC)** was created. The GCC is mandated to ensure the effective implementation of Charter commitments and to go further to ensure that local governments have the tools and supports necessary to address climate change.

- A key deliverable of the GCC has been the **BC Climate Action Toolkit** Website (www.toolkit.bc.ca), which is a comprehensive web-based resource to assist local governments in taking climate change action.
- To assist local governments to achieve carbon neutrality by 2012, the GCC established the **Carbon Neutral Local Government** working group, comprised of members of local government practitioners, UBCM, Ministry of Community Development and the Climate Action Secretariat. The working group is currently developing guidance materials which will clarify the definition of carbon neutral operations and data collection processes to be finalized in the coming months.
- Better information can lead to better decisions. With regard to measuring community emissions, MCD is working closely with the Ministry of Environment on the **Community Energy and Emissions Inventory (CEEI)**. The CEEI tells you how much electricity, natural gas and other fuels are used in your community and what GHGs and other emissions are being generated. All local governments within BC have received the annual data set, based on 2007 data, that will be very valuable both for preparing plans but also as a feedback loop to tell you how you're doing as you make progress. More information on CEEI is contained in this binder.
- MCD has also developed a number of resources that provide local governments with guidance on GHG reduction and energy efficiency related actions. These include: The Guide to Green Choices, the Integrated Resource Recovery Guide, Planting Our Future and the Community Gardens Toolkit.
- Partnership is key to supporting local governments in moving forward to meet Climate Action Charter commitments and Bill 27 requirements. The Smart Planning for Communities Initiative is designed to build the capacity of local governments and First Nations to engage in innovative community sustainability planning and use integrated decision-making. Six sustainability facilitators located in different regions of the province will guide communities towards smart planning objectives (which include climate action and energy planning) by providing process advice, strategic support, education and training and access to technical expertise. It is a partnership of MCD, BC Hydro; Ministry of Agriculture and Lands, Ministry of Environment, First Nations Mountain Pine Beetle Initiative, Indian & Northern Affairs Canada, and the Real Estate Foundation of BC.
- Notes:

EXERCISE #1: UNDERSTANDING YOUR COMMUNITY OR REGION

This is the first of four exercises. They can be done alone or with a group. The purpose is to get you thinking about how to move forward with developing targets, policies and actions for GHG reductions.

Identify one or more opportunities and challenges to reducing emissions and improving energy efficiency under a few (or all) of the categories. .

Area	Opportunity for Reducing Emissions	Challenge to Reducing Emissions
Geography or Natural Resources		
Land-Use		
Transportation systems		
Population and growth Patterns		
Buildings (Residential and Other)		
Industry and Economy		

MODULE 2: WHERE ARE WE NOW? INVENTORY

WHAT IS AN ENERGY AND GHG INVENTORY?

- An inventory is a listing of all the energy consumption and all the GHG emissions for a community, a corporation, or other entity.
- Typical energy and GHG inventories include:

	Energy Type	GHG Source
Energy Related Emissions	Natural Gas, Propane	Buildings, vehicles
	Petroleum (gas, diesel, heating oil)	Buildings, vehicles
	Electricity	Emissions occur where power is generated – not at the point of consumption.
	Wood / biomass	Generally none, or very low. Biomass is carbon neutral.
Non-Energy Related Emissions	--	Solid Waste
	--	Agriculture, forestation/deforestation, land use changes.

- The data required to develop an energy and emissions inventory is: electricity and buildings fossil fuel use (natural gas, heating oil, propane) and other fuels (some smaller communities may have a portion from wood); transportation data which may include vehicle kilometers traveled, fleet composition, and fuel(s) consumed, quantity and (sometimes) composition of waste and disposal methods.

What's a GJ?

A gigajoule (GJ - one billion joules) is a measure of energy. We buy natural gas in GJ but other energy as kilowatt-hours (electricity) or litres of fuel. One GJ is about the same energy as:

- natural gas for 3-4 days of household heating, or
- 26 - 27 litres of diesel or gasoline, or
- Two 20 lb propane tanks, or
- The electricity used by a typical house in ten days.

THE PARTNERS FOR CLIMATE PROTECTION (PCP) PROGRAM

- Beginning in the 1990s, the Federation of Canadian Municipalities (FCM) has advanced an initiative called the **Partners for Climate Protection (PCP) Program**. This initiative uses a five milestone framework to help communities work through the development of an action plan. These are:

Partners for Climate Protection:
www.sustainablecommunities.fcm.ca/Partners-for-Climate-Protection/

- Compile an Inventory and Forecast
 - Set a Target
 - Develop a Plan
 - Implement the Plan
 - Monitor and Report on Progress

- Currently, over 184 communities have joined the PCP program. For more information see: http://www.sustainablecommunities.fcm.ca/Partners-for-Climate-Protection/Milestone_one.asp

- Notes:

DO I HAVE TO PUT MY INVENTORY INTO MY OCP/RGS?

- **No, Bill 27** does not require an inventory to be included within the OCP. It is possible to identify actions in an OCP without having an inventory and some communities might choose to just identify a few quick actions.
- The inventory is a monitoring tool to assist in tracking progress to the desired result.
- Ultimately an inventory will be required for monitoring and measuring any targets expressed as energy consumption and GHG emissions. At the planning stages an inventory can help focus efforts in structuring targets, actions, and policies. There are many approaches based on good, solid planning which are expected to have the net impact of reducing GHG emissions and increasing energy efficiency (or at least curtailing their increase).
- Many BC communities have already undertaken a Community Energy Plan (CEP) or an Integrated Community Sustainability Plan (ICSP) and have developed an inventory as part of that process, so there is no need to duplicate it again.
- For those communities that would like to incorporate the results of an inventory in their OCP/RGS, it may be possible to include the energy inventory/forecast as one of the typical background/context studies required when undertaking such a planning initiative, such as those typically done with population and employment projections.
- The Province is developing an Inventory tracking system (see later on the CEEI).
- Notes:

WHAT IS THE DIFFERENCE BETWEEN A COMMUNITY VS. CORPORATE INVENTORY?

- Local governments typically consider inventories at the community-scale and the corporate (i.e. municipal operations) scale.
- **Corporate** (local government operations): includes activities that the local government implements and - those that the local government creates through its activities (and which it has control over) such as municipal building operations, recreation centres, vehicle fleets, and utility services).
 - If your community has signed on to the Climate Action Charter, you will be required to compile a corporate inventory.
 - This inventory may be useful for applying for the Climate Action Revenue Incentive Program (CARIP) formerly called the Carbon Tax Rebate.

The Climate Action Revenue Incentive Program offers a new conditional grant equal to what local governments pay in the carbon tax to municipalities if they commit to becoming carbon neutral by 2012.
www2.news.gov.bc.ca/news_releases_2005-2009/2008OTP0235-001451.htm

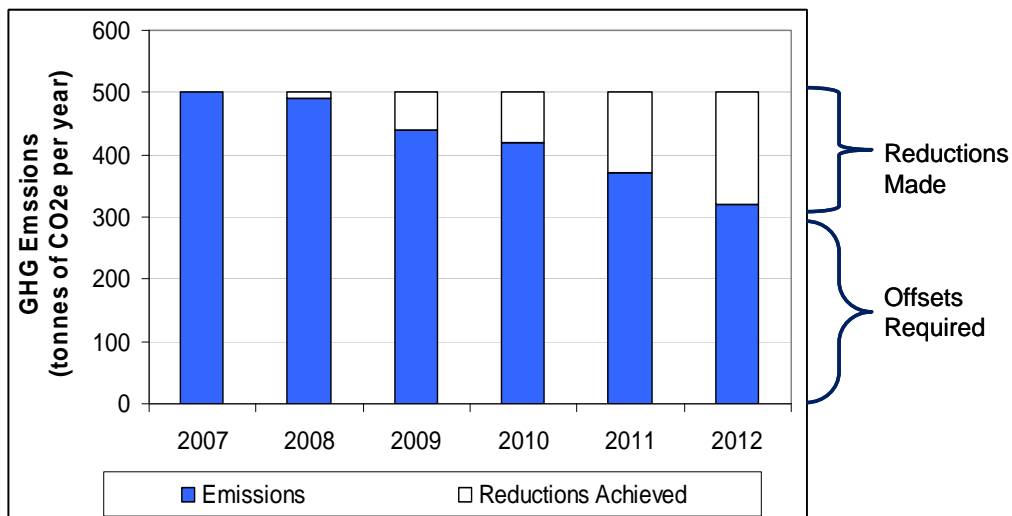
- **Community** emissions are those occurring by the residents and businesses in the community which the municipality cannot directly control, but may be able to influence through planning and program activities.
- Bill 27 requires communities to set reduction targets for their community-wide emissions.

Community	Corporate (LG operations)
Bill 27 <i>requires</i> targets and reduction strategies in OCPs.	As a Climate Action Charter signatory, communities commit to being carbon neutral by 2012.
Controlled by the community, but the LG can influence through: <ul style="list-style-type: none"> - Land use planning - Incentives - Outreach and communication 	Emissions are mostly under the ownership or operation of the local /regional government.
Sectors may change in importance – small industry in some places, larger in others.	Large consumers / emitters are recreational facilities and fleets.
Past inventories may not include all sectors for all communities.	Currently defined to be “traditional services”.

- Notes:

WHAT IS CARBON NEUTRALITY?

- Charter signatories have committed to become carbon neutral by 2012.
- Requires that you measure your carbon footprint in order to know what level of offsets will be required. After direct measures have been taken to reduce emissions, for example, reducing business travel, offsets offer an indirect way of cutting remaining emissions, for example, forestation of land not previously forested.



- Your Notes:

LOCAL GOVERNMENT'S INVENTORY FOCUS

- Historically community energy and emissions inventories have focused on buildings and transportation - areas where they have some influence. This has meant that action plans for local governments have been focused on:
 - Energy use and solid waste emissions: Specifically action plans usually include the residential building sector. This may focus on both new buildings - how to make the most efficient new homes, as well as how to encourage improvements to the existing building stock.
 - Sometimes industrial activities are included though there is often limited interaction between the municipality and the industrial sector.
 - Community transportation: Planning and development of transportation systems is a key area of activity for a municipal energy plan. Local governments (municipalities more than regional districts) have the ability to encourage alternative transportation through provision of amenities, urban design and planning.

- Emerging issues that some local governments are working to link to their energy plans include:
 - Linking to air quality planning - Whistler, Prince George, and Chilliwack have, or are evaluating the opportunities to link energy, GHG and AQ action plans.
 - Other inventory components are sometimes considered but are not generally included in inventories, because they are beyond the realm of 'traditional' local government influence (e.g. they might be regulated by provincial or federal agencies). Some examples include agriculture, air / rail / marine transportation, etc.

- The efforts by the BC government, to take action on Climate Change, are aligned with the Federation of Canadian Municipalities' Partners for Climate Protection (PCP) objectives. However, some of the actions that the BC government is pursuing are more ambitious than the PCP objectives. For example, in 2006/7 the Province initiated the Community Energy and Emissions Inventory or CEEI initiative.

- Notes:

WHAT IS THE COMMUNITY ENERGY AND EMISSIONS INVENTORY (CEEI)?

- The province has initiated a project to compile **community scale inventories** for all the local governments in BC. The CEEI initiative is led by the Ministry of Environment with partnership and cooperation from other ministries.

Community Energy and Emissions Inventory (CEEI):
www.env.gov.bc.ca/epd/climate/ceei/index.htm

- Each community in BC has an inventory produced through CEEI and can download their inventory report at: <http://www.env.gov.bc.ca/epd/climate/ceei/reports.htm>
- This is an unprecedented initiative – no other province/state is providing this assistance to communities.
- CEEI data is meant to be a helpful starting point because it provides a sense of the most significant sources of GHG emissions. It can also give a general sense of how the community compares to other similar communities.
- Currently includes utility energy consumption for buildings (electricity and natural gas) and estimates of transportation emissions based on vehicle registrations. It also includes estimates of emissions from waste. For regional districts the inventory includes an estimate of deforestation as a result of land use changes.
- The Community Energy and Emissions Inventory (CEEI) Reports measure and report on the community-wide energy and greenhouse gas (GHG) emissions profile for individual BC communities. They are not local government operations reports or Carbon Neutral Reports (e.g. civic buildings and fleets).
- Current Precision – The CEEI inventories should be considered as indicative as there are some data uncertainties with the release of some of the data - locations, and the privacy of some consumption. These do not discount the value of using the inventory, but users are cautioned against ‘splitting hairs’ over some of the values. However, the data collection is evolving and there will be ongoing updates and improvements. In the future, the CEEI may also be able to include more data on other energy and GHG emissions sources.
- The CEEI User Guide provides an overview of the information included in each sector of the draft 2007 CEEI Reports. Each section describes the information included for each sector, the methodology and calculations used, data constraints, and data sources. Existing data constraints in some of the province-wide data and analysis tools will be the focus of improvement in future CEEI reporting years. A short section on how a community may choose to use 2007 CEEI Reports concludes the document. Link: <http://www.env.gov.bc.ca/epd/climate/ceei/pdf/ceei-user-guide.pdf>

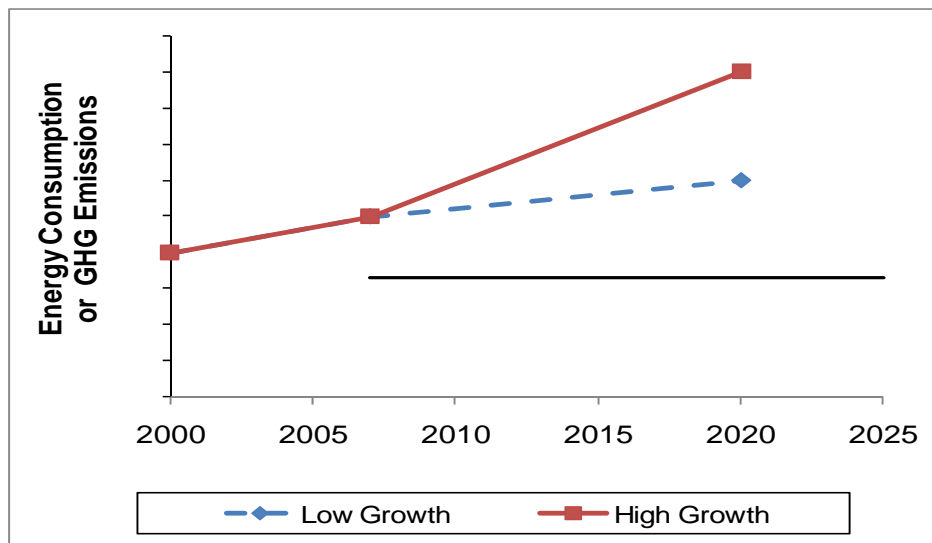
- There will also be a **2007 Technical Methods and Guidance** document available shortly that will provide more detail on the data sources and methodologies used to develop the CEEI Reports.
- Notes:

WHAT CAN THE CEEI INVENTORY TELL ME?

- The CEEI inventory can tell you:
 - Where energy is used in your community
 - How you compare to other communities
 - Your community's estimated per capita emissions
 - A baseline for future comparisons over time and to assist in monitoring progress towards achieving set targets.
- The CEEI inventory is not yet precise enough to:
 - Detect small one year changes
 - Evaluate the effectiveness of specific policy measures
- The system is evolving, and in coming years it will likely become more accurate as a performance metric.
- For some communities, it might be useful to supplement the CEEI with more detailed inventories or studies to understand some unique features of your community. Examples include:
 - Detailed transportation analysis. The transportation inventory is based on the registered vehicles in the community. For some communities (e.g. a resort community), the actual consumption might be higher as many people drive into the community for recreation. If the community would like to take action on visitor travel, then understanding how big this consumption is, could be useful information. Or for "bedroom" communities, understanding the A to B trips of the residents can help inform the action planning (for example when trying to answer "Which would be better - an in-city bus, or a bus to downtown?")
 - Industrial networking opportunities: For some communities the inventory includes industrial consumption. While presented as a summary, a large amount of industrial energy consumption might indicate that there are opportunities for capturing waste energy that might deserve a dedicated evaluation.
 - Other unique community features of your community.

WHAT WILL A FORECAST DO?

- While you can go ahead and set targets and implement policies and actions without a forecast. A forecast will help you:
 - understand the magnitude of the challenge facing your community. For example, in high growth communities, population and economic growth continually increases consumption. Thus efforts to make real reductions must reduce from the base level, plus make additional reductions to offset expected growth.
 - communicate why action is required now. Changes do not happen swiftly in local government emissions and the forecast can graphically demonstrate the trajectory your community is on and how it will take many years to affect change.



- While the inventory answers the question “Where are we now?”, a forecast helps answer the question “Where are we heading?” A forecast can help identify the scale of the challenge and the aggressiveness required for action. For example, reduction in total emissions will be harder in a community where the population is growing and adding new energy consumers every year.
- The current CEEI limitations might make it hard to generate a reliable forecast and forecasting can require further investment in modeling and studies, making it difficult for many communities to do a forecast. For those communities that are part of the FCM PCP program, having a CEEI complemented by a forecast will enable you to reach milestone 1.

- An energy and emissions forecast varies in its calculations: for example, it correlates well with population growth for calculating emissions from residential buildings: i.e. if population grows by 8%, then emissions from residential buildings would likely grow at 8% or a little less - depending on the age of existing buildings and how eagerly developers build more energy efficient units.
- Not all energy consumption in a community will scale with the population. For example, commercial and industrial consumption may be related to a range of factors and should not be scaled with population growth. There are no easy forecasting methods or protocols. Sometimes a forecast can be generated by scaling commercial and industrial consumption to something less than the full population growth.¹ Modeling, such as transportation models, might also be necessary to fully understand and project patterns.
- Population projections are available from BC Stats: data can be purchased at a sub-regional scale online at <http://www.bcstats.gov.bc.ca/DATA/POP/pop/popproj.asp> Population projections are available for Regional Districts and Census Metropolitan Areas such as Vancouver, Victoria, Kelowna and Abbotsford. More generalized projections for smaller municipalities can be extrapolated from the regional district projections, or it may be possible to pay BC Stats for a localized projection that takes into account number of births, deaths, natural increase and net migration.
- P.E.O.P.L.E. (BC Stats population projection methodology): <http://www.bcstats.gov.bc.ca/DATA/pop/pop/methpeop.pdf>
- Notes:

¹ Some communities may have developed forecasts of commercial space and could use (for example) forecasted square footage as a scaling measure for commercial energy consumption.
Ministry of Community and Rural Development – Targets, Policies and Actions Workshop Series
– Content Materials

EXERCISE #2: WHERE ARE WE NOW?

- Looking at your CEEI Inventory, estimate the **residential, commercial, and transportation** emissions **per person** in your community.
- Your community's CEEI inventory can be found at <http://www.env.gov.bc.ca/epd/climate/ceei/reports.htm> .

Compare this to the CEEI averages for BC. How do your values compare? Why might they be different?

Total Residential and commercial emissions per person per year.	= 1.8 tonnes per per capita
Average on-road transportation emissions per year.	= 2.9 tonnes per capita per year.
Total emissions captured by the CEEI inventory per year.	= 6.3 tonnes per capita per year.
BC total Emissions from all sources (National Inventory) per year	= 16 tonnes per capita per year

MODULE 3: WHERE DO WE WANT TO BE? (TARGET SETTING)

WHAT IS A TARGET?

- The idea of setting targets is not new to the province or local governments. Target setting has been an important part of successfully reaching desired outcomes. Through the Protected Areas Strategy, in 1992, the Province established a target of 12% protection of the provincial land base, by 2000. Today, over 14% is protected. In 1989 BC committed to a target of 50% solid waste diversion from disposal by 2000 that helped to catalyze recycling and diversion programs across the province.
- **Targets are a stimulus for action** and not intended to paralyze efforts to move forward with climate action. Local governments are encouraged to set targets that are ambitious but achievable.
- Targets establish a **desired level of performance**. Their role is to serve as a guide or as motivators, not as a regulatory standard. They are intended to be challenging. If they are easily reached, then they may not be challenging enough.
- **At least one target should be defined as a measurable emissions reduction target.** This is typically expressed as either a percentage reduction, or a number of tonnes reduction. Such a target can be considered an overarching “**aspirational target**” as an expression of community ambition and to serve as an inspiration. Other targets may be included that address the “how” more than the “what”.
- An emissions target can have several forms: e.g.:
 - a percentage reduction in GHGs.
 - a number of tonnes reduction
 - a ‘destination level’ (e.g. emissions levels in a certain year).

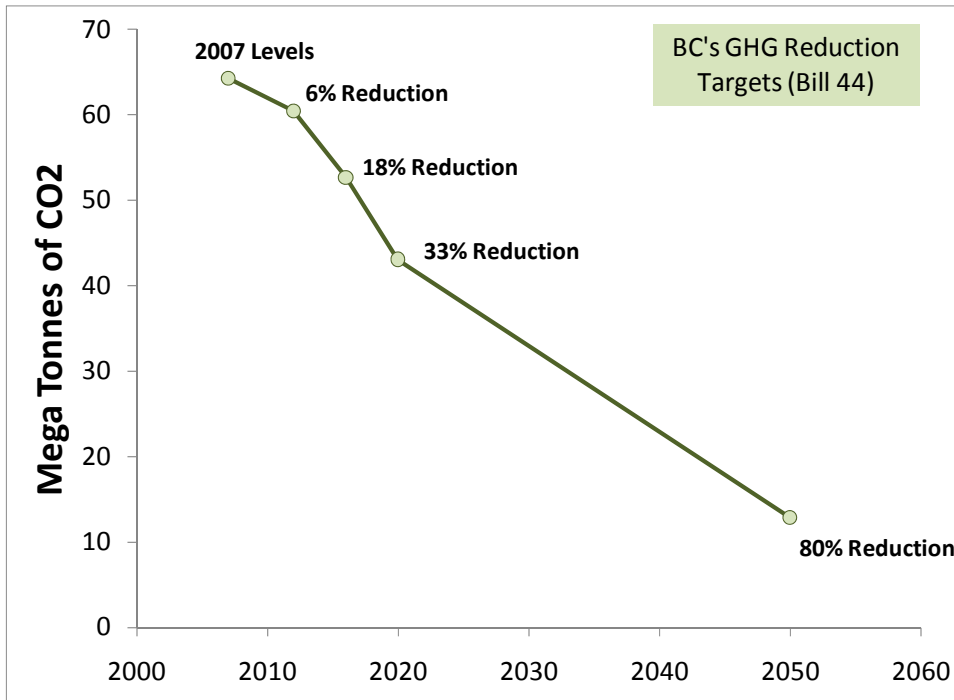
***Emissions targets** describe the desired outcome. It can be expressed in terms of direct performance on reducing GHG emissions. Examples might include:*

“By 2012, reduce GHG emissions by 33% compared with 2007 levels.”

“Reduce emissions by 10,000 tonnes by the year 20xx.”

“Achieve per capita emissions of 1 tonne per person by 2020”

- Some communities have matched or endorsed the Province's Bill 44, 2007 greenhouse gas reduction target that sets an emissions target of 33% reduction below 2007 levels by 2020 and 80% by 2050 (see graphic).



- Considerations when setting an emissions target include:
 - Is it inspirational - does it show what your community aspires to be?
 - Is it within the realm of the possible and yet still challenging?
 - Is short term enough to keep action going, but long term enough to get something done?....maybe you need sort and long term targets.
 - Does it roll easily off the tongue - can your mayor, a reporter, or the public remember it? - You will be citing your target for many years.
 - Is it something you (the local government) can take action on?
- Emissions reduction targets can also be assigned to sector emissions. For example maybe you wish to reduce vehicle emissions by X percent.

POLICY & PROCESS TARGETS

- GHG emissions are a result of decisions and actions related to buildings, land use, transportation, waste, etc. It is therefore appropriate to also consider targets in these specific areas that might help to advance the overall GHG performance of the community. These targets can be expressed as “policy” targets or even more specific “process” targets.

***Policy targets** are linked to indicators and activity related outcomes - rather than the GHG emissions themselves. Policy targets provide an objective that is more directly related to things that planners and governments do. Examples might be:*

“No net loss of farmland over the next five years”

“80% of all new housing units to be located within a specific growth node”

“Convert 10% of all public parking spaces to accommodate only smart cars or electric vehicles”

***Process targets** are concerned with the inclusion of policies in plans, or the completion of studies directly needed to inform the development of new plan policies (e.g. study identifying opportunities for future infill in a community), which could ultimately play a key role in enabling the community to reduce its GHG emissions. Examples of process targets could include:*

“By the year 2011, complete a study of infill opportunities within a 1km radius of the town centre as a means of increasing opportunities for residents to make sustainable transportation choices and to reduce pressures on deforestation”

“By 2012 complete an agriculture plan to promote more opportunities for locally-grown food”.

“By 2010 develop an anti-idling bylaw”.

- To meet the requirements of Bill 27, you should have at least one emissions reduction target.
- If you have **not** chosen to identify a measurable overarching emissions target you should establish a system of measurement for the reduction of GHGs connected to the other indicators you may have selected (eg. 80% of all new housing units to be located within the city core is intended to contribute to a reduction in overall community GHG emissions of x% by XXXX).
- The legislation does not specify what type of target is needed or how many targets are needed, so it is up to the community to decide what might be most useful, given their starting point. It is important to identify a target (or targets) that fit the community and to balance that with the underlying intent of the targets i.e. to *create a challenge and to motivate action*. It is not necessary to show a corporate target, but if you have signed on to the Charter you might want add your commitment to a carbon neutral future as one of the targets in the OCP/RGS.
- Ultimately the point is not to create more work for accountants, auditors, or lawyers. The point is to focus attention on *doing* the right thing to reduce greenhouse gas emissions. It's about *actions to achieve the right results*.
- Notes:

HOW DO I SET TARGETS?

- Before setting a target, you have to establish what it is you are interested in measuring i.e. identify the indicators. As described above, GHG emissions are not the only indicator / measure, but there might be a wide range of indicators and targets depending on the community's particular situation that could be used. Some examples of other indicators that impact GHG emissions are provided in this binder (see Indicator Examples in the Reference section).
- When identifying the indicators for which you will set targets, consider:
 - Is the indicator a meaningful measure that relates to the GHG challenges and opportunities in your community?
 - Is the indicator data available?
 - Is the indicator easily and affordably measured?
 - Is the indicator understood by a broad range of decision-makers, readers and audiences?

"VISIONARY" VS. "PRAGMATIC" APPROACHES

Generally, there are two approaches when setting a target – a visionary approach and a pragmatic approach.

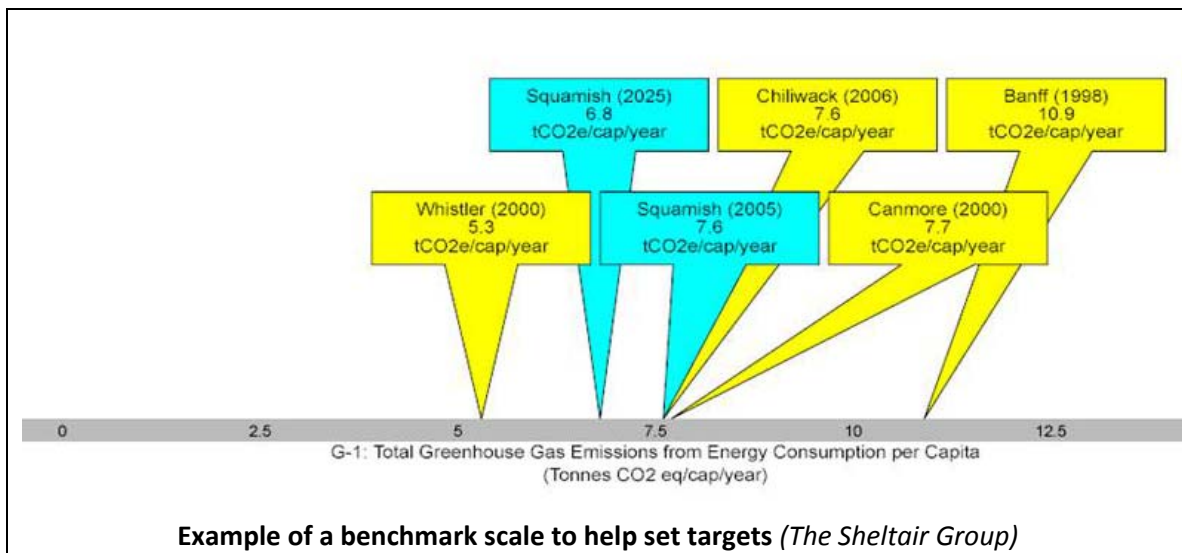
- A **visionary approach** is based on a general acceptance of the task required, or the opportunities available. For example - the "atmosphere" is telling us that globally we will need to make substantial reductions and so a target of 80% by 2050, is driven by preserving the atmosphere. As well, knowledge of "what's possible" can drive a target. For example we waste substantial amounts of energy in our daily lives so establishing a target of "20% by 2020 is justified by knowing that there is easily this much "excess".
- A **pragmatic approach** is based on a more quantifiable approach. It might involve detailed analysis of each sector of the economy, and the impact of developing programs, incentives, etc. are evaluated and tallied up. A pragmatic derivation can range from a simple estimate (e.g "What are the savings if 10% of residences retrofit their homes?") to a detailed exploration of the pricing and incentive signals (e.g. the BC Government did economic modeling and determined that 73% of the GHG

reduction target could be achieved through the defined programs and the carbon tax).

- While pragmatic summations are a valid approach the results may not be a perfect prediction of the final outcome that will be achieved. Target setting is therefore not an exact science.

COMPARISONS AND BENCHMARKS

- To set a target (determine “where you want to be”) it can be useful to know “where you compare to others” currently. It is also useful to conduct some research on benchmarks i.e. comparable numbers from other similar communities to help assess your performance against.



- Notes:

EXERCISE #3: WHERE DO WE WANT TO BE?

Propose a **TARGET** for one or more of the sectors in your inventory.

MODULE 4: HOW DO WE GET THERE? (ACTION IDENTIFICATION)

WHAT IS THE RANGE OF DIFFERENT ACTIONS I CAN IDENTIFY?

- It takes actions of various types to generate change. One way of distinguishing between different types of actions is: regulatory, incentives, direct, outreach and research
- **Regulatory actions** utilize the regulatory tools available to local governments, such as OCPs, Zoning Bylaws, Anti-idling Bylaws, etc. to set out new policies that will shape the actions of others, by setting parameters which support community objectives. For example: a policy that supports increasing density in the downtown or a green building policy.
- **Incentive-based actions** encourage a desired activity by remuneration (financial) or by promising some other desired reward. For example: waiving or lowering Development Cost Charges for projects which meet a set of “green” criteria, expediting “green” development applications, or development of a recognition or certification program for residential, commercial, industrial participants who take climate action.
- **Direct actions** begin when a local government declares through tools such as OCPs and Capital Plans, the intent to take specific steps in support of a goal, often involving the investment of its own financial and/or staff resources. Examples include: commitments to build a community centre in a major growth node served by transit; or upgrading roads designated in a specific map to provide safe cycling paths.
- **Outreach actions** are those associated with education and awareness building, in order to foster an environment where a behavior change is possible. For example: an awareness campaign that distributes brochures or offering seminars on safe cycling.
- **Research actions** facilitate a better understanding of a problem through further study and exploration, in order to identify appropriate actions.

Examples of different GHG actions:

Regulatory: Update the Zoning Bylaw to allow secondary suites in residential areas and densification (infill) in the downtown area.

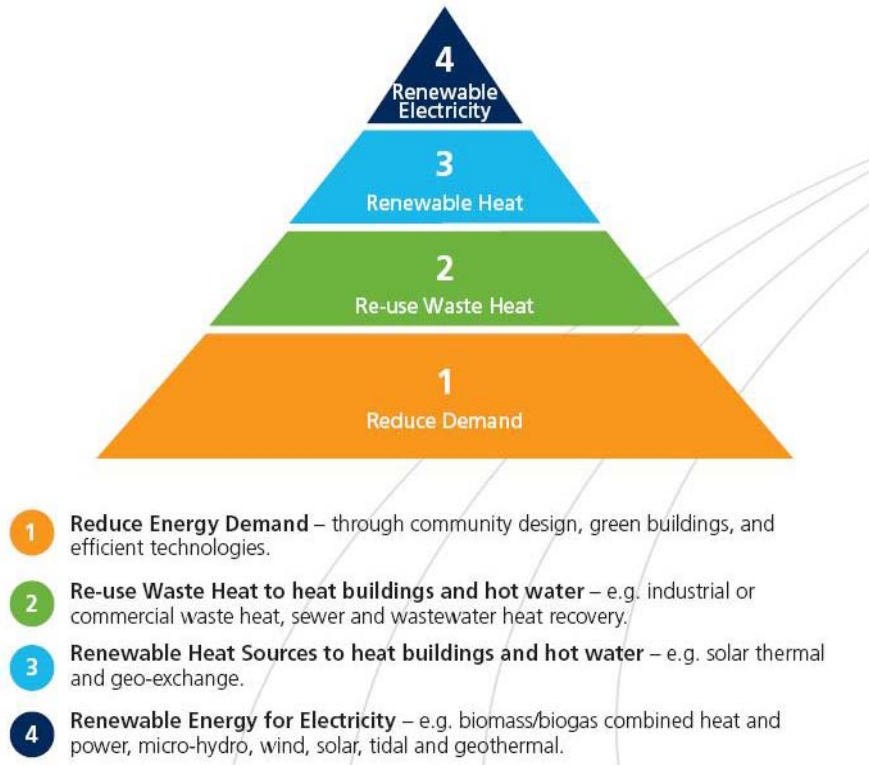
Incentive-based: Fast-track applications that demonstrate a certain level of energy/GHG performance (through checklist or a performance standard)

Direct: Build a new LEED certified recreation facility in the town centre.

Outreach: Partner with BC Hydro and provide educational material about PowerSmart programs.

Research: Conduct a feasibility study for a district heating system in the new XYZ subdivision.

- Actions can be **short-, medium-, and long-term**. They can be simple stepping stones to success or they can be ambitious endeavors.
- Local Governments are encouraged to take a comprehensive approach and consider the 4 Rs of sustainable community energy planning. As identified in the pyramid below, different actions have different degrees of impact. Thinking about actions from this perspective may help you to prioritize your efforts.
- Notes:



The BC Hydro Renewable Energy Pyramid

DO ALL THE ACTIONS HAVE TO BE INCORPORATED IN MY OCP/RGS TO MEET BILL 27 REQUIREMENTS?

- The intent is not to prescribe a specific level of detail for the OCP/RGS. Some communities will choose to have detailed plans that incorporate the range of actions in one place, such as an energy plan or a departmental action plan. Other communities will have their actions distributed in various places such as the OCP, Energy Plan, a Transportation Plan, Zoning Bylaws, Infrastructure Plan, DCC Bylaws, etc.
- The intent of Bill 27 is to get local governments to think about reducing GHGs as part of the OCP/RGS process and to incorporate actions *that are suitable to the scope of these documents*. One would typically not include short-term actions in an OCP, seeing that it is meant to be a longer-term document. The OCP is also just one of multiple policy documents and some actions might be better suited to other plans and documents.

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- Some questions to consider when identifying actions:
 - Is this action already documented in another plan?
 - Will this action be valid over the long-term or will it be completed in the short term?
 - Does this action fit the scope of this OCP/RGS or is it better to incorporate in another policy document or action plan?
 - Does this action conflict with other existing policy documents?
 - Would the action require tradeoffs in the capital planning process?

- Notes:

WHAT TOOLS DO I HAVE AVAILABLE TO MANAGE GHGS?

- There are a number of tools available to local governments to help advance the climate action agenda in their communities. These often work in combination to achieve effective results.
- Visit the Climate Action Toolkit:
www.toolkit.bc.ca
- **Zoning:** Stipulations on where various types of development will be allowed, building heights, setbacks etc. are controlled within the Zoning Bylaw. Zoning shapes the built environment that ultimately achieves the climate action objectives and policies established in the OCP or RGS.
 - **Density Bonuses:** Density Bonuses allow developments to surpass the allowable Floor Area Ratio (FAR) set within a particular zoning category in exchange for amenities (such as park space and heritage preservation), affordable housing, or for greener development and high performance “green” buildings. The impacts of increased density on services and the neighbourhood should be carefully considered. Density bonuses must be established in zoning bylaws that set out the specific conditions needed in order to receive the increased FAR. Alternative approaches can involve, for example, a combination of flexible comprehensive development zoning and OCP policies which set out criteria for achieving increased densities.

- **Development Cost Charges (DCCs):** Development Cost Charges are one time charges that local governments can levy on all new subdivision and building at the time of approval. DCCs shift financial responsibility for providing capital costs for off-site infrastructure from the general tax base to the developers of new growth requiring the infrastructure. DCCs enable local governments to encourage climate-friendly development. A good DCC schedule provides financial incentives for development with lower infrastructure capital costs (such as higher density, infill or centrally located development). Bill 27 enables local governments to waive or reduce DCCs for low environmental impact development patterns and small lot subdivisions meant to reduce GHG emissions.
- **Development Permit Areas (DPA):** A DPA is a set of development regulations pertaining to a specific area defined by the Official Community Plan. Any proposed building and subdivision within a DPA requires a development permit. Bill 27 provides the opportunity for the designation of new development permit areas for the reduction of GHG emissions and the promotion of energy conservation. It is important to recognize the limitations of these powers. It does not give power to local governments to stipulate energy efficiency fixtures and other changes to the INSIDE of the building. It will be important for each local government to identify the area to which the guidelines will apply. The intent is to capture developments that offer a substantial impact on GHG emissions – a single family lot undergoing additions and renovations, might be fairly limited in what GHG savings it can achieve vs. a multifamily apartment complex or a larger subdivision. The Province is working on resource materials to provide additional guidance on how local governments might consider using this tool.
- **Off-street parking:** Bill 27, 2008 provided local governments increased authority with respect to varying off-street parking requirements. Local governments may now exempt or reduce the amount of off-street parking required based on activities or circumstances related to the transportation needs associated with the land or building. For example, co-operative car share arrangements, buildings situated close to public transit, or the provision of additional bicycle parking are all alternative transportation features which could result in a reduced need for off-street parking. Local governments can now accept cash in-lieu of those parking spaces and put it into an alternative transportation infrastructure reserve fund.
- **Alternative transportation infrastructure reserve fund:** At the same time as the authority to vary off-street parking was introduced a new reserve fund category was also established. Funds deposited into an alternative transportation infrastructure reserve fund can be used to provide transportation infrastructure that supports walking, bicycling, public transit or other alternative forms of transportation. Viable projects may include, but are not limited to, bus “bump outs”, bus shelters, bicycle paths, and pedestrian walkways. There is also a transitional provision which allows local governments to transfer all or part of the money in their existing off-street parking reserve fund to an alternative transportation infrastructure reserve fund. This helps local governments begin to support alternative transportation infrastructure right away using existing monies.

- **Alternative Design Standards:** OCP policy should state the community’s objectives with regard to infrastructure development and identify some of the regulatory vehicles that will support the infrastructure. Municipalities are granted the authority to regulate subdivision servicing requirements, and to establish location and construction standards regarding stormwater collection/disposal, sewage collection/disposal and water distribution. Instead of traditional subdivision standards, municipalities can use alternative development standards to encourage low impact development approaches that shifts conventional “pipe it away” approaches to ones that instead

- **Urban Containment Boundaries (UCB):** Each local government can define a containment boundary to help direct and focus development. Policies to establish, implement, and review an Urban Containment Boundary must be set out in a Regional Growth Strategy and Official Community Plan. Local governments can create restrictions such as minimum lot sizes to retain rural character outside the UCB and infill policies within the UCB to encourage compact development. This can contribute to less sprawl, agricultural land preservation and transportation GHGs among other benefits.

Several Regions and Municipalities have created Urban Containment Boundaries as a part of their growth management strategies: Saanich, Kelowna, and Nanaimo are three examples.

- **Local Improvement Charges:** These charges offer a financing mechanism that allows municipalities to pay the upfront cost for improvements and recover the cost over time through property taxes of the owners that benefit. The advantage is that the cost is associated with the property rather than the current building owner. It also helps to create more certainty for developers on where infrastructure investment will occur.

- **Revitalization Tax Exemption:** The Community Charter allows that a revitalization tax exemption may be offered for purposes of energy and water conservation. Municipalities must clearly define the revitalization program in a bylaw. For example, a property tax exemption might be structured as X % for 5 years, for new homes that meet a standard of EnerGuide 80 (for detached dwellings) or LEED (rating to be defined) for commercial and multi-family buildings. The objective of this action is to create financial value for building green that stays with the property. This value can be used by builders as a marketing tool for the extra features of the energy efficient home and provides a clearly definable ‘value’ to offset any incremental cost to the homebuyer.

The Ministry of Community Services has provided an interpretation document for property tax exemptions available at:
www.cserv.gov.bc.ca/LGD/gov_structure/library/community_charter_revital_tax_exemptions.pdf

- **Expediting Applications:** Local governments are encouraged to establish administrative policies that prioritize development applications for projects that achieve lower emissions. This can include expedited applications for rezoning, development permits, building permits and subdivision applications that meet certain criteria. Such criteria might be expressed in the form of a sustainability checklist.

The City of Port Coquitlam uses a Sustainability Checklist as part of the development application process and applications that score well on this checklist are expedited through the approval process:

www.portcoquitlam.ca/__shared/assets/Sustainability_Checklist2040.pdf

- Notes:

EXERCISE #4: HOW DO WE GET THERE?

Select one of the **TARGETS** you proposed in exercise #3.

Compile a list of **ACTIONS** that can help you achieve that target.

