



A ROAD Map of Climate Action for Powell River

Reduce Offset Adapt Drawdown

Climate Action Powell River
British Columbia

Position Paper

January 2018

Reduce

Offset

Adapt

Drawdown

Map

A “Road Map” of Climate Action
For Powell River, British Columbia, Canada

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A “Road Map” of Climate Action for Powell River, British Columbia, Canada

A Report detailing Our Mission and Plan of Action

Co-authored by the Climate Action Powell River (CAPR) Team, December 2017

Jack Anderson
Cynthia Barnes
Don Fodor
Michael Gelber
Fred Guerin
Bill Lytle-McGhee
Mary Morgan
Yvon Ricard

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Mr. Frederik Vroom
Mr. Guy Dauncey
Sara Muir-Owen
Chris Granger
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Janet Southcott

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*“I decided I would never do anything in my working life
that doesn’t at least try to make the world safe for bog
lilies, and hooting owls, and laughing children.”*

~ Kathleen Dean Moore



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Introduction

Climate Action Powell River Society (CAPR) is a non-profit society committed to helping the residents and businesses of Powell River to reduce their greenhouse gas (GHG) emissions and also to support the vision and goals of the Paris Agreement and the Powell River Integrated Community Sustainability Plan (ICSP). We have chosen Powell River Regional District as the natural boundary for this plan, because it includes the total population of the community that identifies with the name Powell River, including the people of Texada, Savary and Lasqueti islands as well as the city.

Our Plan of Action

In the broadest sense CAPR's goal is to provide the residents of Powell River Regional District with a practical and strategic plan. We have developed this "ROAD Map" to help our community reduce its carbon footprint and contribute to making it a model of environmental health and sustainability.

CAPR's ROAD Map is first of all a "road" or "course" that has a starting point and a destination. Second, it is a map that helps us navigate and reach our goals of reduced total GHG emissions, environmental health and sustainability.

CAPR has identified four distinct strategies that will facilitate our emission reduction and environmental health and sustainability: Reduction, Offsetting, Adaptation, and Drawdown. They are conveniently abbreviated in the acronym "ROAD" and can be understood as follows:

R=Reduction: Reducing our carbon footprint by tracking our present energy use and then offering ways and means to realize alternative "greener" forms of energy.

O=Offsetting: The act of reducing or avoiding GHG emissions in one place in order to "offset" GHG emissions occurring somewhere else.

A=Adaptation: Helping citizens, government and businesses adapt to new energy practices and initiatives that reduce reliance on carbon-based forms of energy and lead us to the low carbon future.

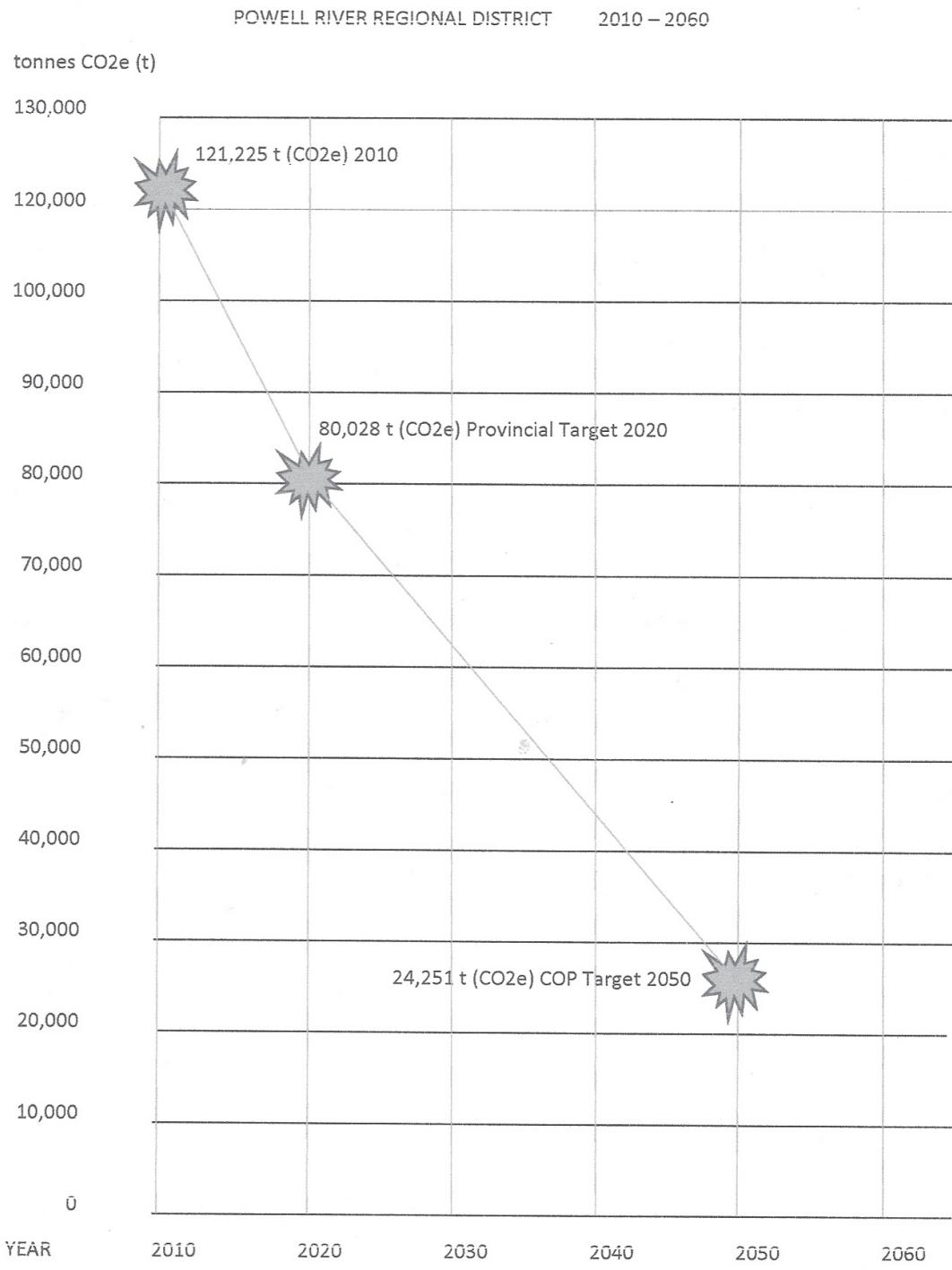
D=Drawdown: Scientifically proven methods and technologies for removing or avoiding GHG emissions in our atmosphere, thereby directly counteracting the causes of global warming.

Who is CAPR?

The ROAD to Carbon Reduction



Climate Action Powell River



Section 1: Background

We are fortunate that the provincial government has a program to monitor emission levels in every region of the province. It is called the “Community Energy and Emissions Inventory”, CEEI for short. The last one was published in 2010, and even though it is almost eight years old it does give us a reasonable place to start. It is a short and clear appraisal of our GHG emissions and their sources. This seven-page document is in the Appendices at the end of this paper. We urge you to look it over and become familiar with our emissions landscape. Below is one of the tables from the CEEI. It illustrates the main sources of greenhouse gas (GHG) emissions in our community. Note the total emissions figure in the bottom right: 121,255 tonnes CO₂e annually.

Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 19,791)			2010 (Population: 20,455)		
	Consumption	Energy (GJ)	CO ₂ e (t)	Consumption	Energy (GJ)	CO ₂ e (t)
Hybrid	0 L	530	37	44,272 L	1,808	115
Gasoline	28,538,405 L	1,000,391	68,438	29,454,413 L	1,032,313	66,861
Diesel Fuel	6,285,992 L	240,757	16,954	5,861,182 L	224,485	15,333
Other Fuel	151,727 L	4,272	261	115,598 L	3,371	205
Wood	259,774 GJ	259,774	5,263	251,471 GJ	251,471	5,095
Heating Oil	66,816 GJ	66,816	4,710	64,681 GJ	64,681	4,424
Propane	140,985 GJ	140,985	8,601	136,479 GJ	136,479	8,327
Natural Gas	335,549 GJ	335,549	16,830	302,183 GJ	302,183	15,158
Electricity	182,322,109 k/wh	656,359	4,559	175,284,388 kWh	631,023	4,382
Solid Waste	4,453 t	0	944	4,601 t	0	1,355
Grand Totals		2,705,433	126,597		2,647,814	121,255

A “Community Energy and Emissions Plan” (CEEP) has been done for both the City of Powell River and the Regional District. These two plans cover emissions that are the result of municipal and regional administrative activities but not those produced on the community level.

This is the gap that this plan intends to fill.

The “ROAD Map” is a phased in plan to reduce our emissions over time in order to reach the goals set in the Paris Agreement. The simple graph on the previous page shows the trajectory of the emission descent that has been identified as necessary to prevent catastrophic climate change. Our goal is to reduce our total emissions 33% by 2020 and 80% by 2050. When you read the Paris Agreement you find that these reduction targets are only estimated to give us a 60% chance of stabilizing the global temperature rise at 2 degrees Celsius.

We have to do this. So let's get started!

Emissions Landscape in Powell River



Emission Targets

Targets have been continuously bandied about by governments at almost every level for years now. The Province of BC set the goal of a 33% reduction by 2020 over a decade ago. The Union of BC Municipalities invited every jurisdiction in the province to sign onto that commitment in 2010. It hasn't moved very far since then. Powell River signed that document but has not made a serious attempt at reaching that goal.

We have been "nibbling around the edges", and to date there has been no attempt to come up with a workable plan to reach the goals or to show real leadership in the fight to save the planet or be a model of ecological responsibility. It is not an easy sell. Voters have other priorities and as long as GHG is invisible and business as usual is the accepted practice, there isn't the will to even raise the issue, except at conferences or maybe behind chamber doors. Yet almost every day another case of extreme weather hits the front page and isn't that far from our door. The fires this past summer in the interior of British Columbia should be a wake-up call to everyone.

In the case of Tree Canada, you can pay for the planting of trees in dedicated tree plantations across Canada. You can select the province and select the type of tree from a menu of appropriate and available trees in each particular plantation. Five trees might cost \$30 dollars and be enough to offset your carbon footprint for that year.

Climate Action Powell River has taken these targets seriously and has been giving a lot of time and thought to how our community can reach the immediate goal of a 33% reduction and carbon neutrality by 2020. We began with our Cool Homes project (now called Carbon-Wise). To date, we have slightly over 100 households enrolled. The main idea is to provide a method for tracking emission reductions and gradually approach carbon neutrality at the household level. This method has been utilized in other communities and is an effective way to reduce emissions and raise awareness about our individual carbon footprints and explore the ways and means to reduce them.

CAPR has researched best practices in this relatively new field of social action. There are many models available online. When we first made contact with Cool Davis in California we were very impressed with their success. In ten years they have managed to enrol a quarter of the homes in their municipal area and have a goal of 75% emission reduction by 2020. These households use the calculator on the Cool Davis website once a year and track their emission reductions. Meanwhile, other educational and supportive activities are provided to encourage actions to help householders further reduce their carbon footprints. The City of Davis does its part to improve local infrastructure and plays an important role in moving its community toward the low-carbon future.

Last year, which was the first year of CarbonWise in Powell River, we asked our members to use the Tree Canada calculator to estimate their carbon footprints. It takes perhaps half an hour to collect the



data requested for the calculator and estimate travel distances, driving, and home heating costs. Entering the data on the calculator is easy and at the end the calculator provides an estimate of your total emissions for the past year and the subtotals for each emission category. The science behind these calculations gets more accurate every year and more sophisticated, but it also has become more user-friendly over time as well. One feature of many of these calculators is the option for purchasing verified emission reductions in order to offset what remains of your carbon footprint.

The spectre of climate change is very frightening and the inadequate response from governments is frustrating. It is important to realize and understand there are many potential solutions and the only thing missing is the will on the part of all of us to take serious action. The switch to renewable energy could happen with the technologies that exist today. In fact, global warming could even be reversed by implementing practices that would draw down the emission level in our atmosphere. It is currently well over 400 parts per million (ppm) and it would need to get down to at least 350 ppm in order to stabilize the global temperature. People like to argue the numbers but the important thing is to take action and soon.

The choice of actions to begin with in each individual community, and in each household for that matter, is predicated on circumstance, initiative, cost and usually several other factors. Do I replace my oil furnace or buy a more efficient car? Which has the most impact? How can I afford to eventually do both? If this sounds ominous, consider that each of these changes will eventually save you money. Payback analysis is one important step in the design of a comprehensive plan.

A group of top scientists from around the world began a project in 2016 to catalogue the best solutions to climate change and published their findings in a book called *Drawdown*. It ranks the top eighty practices and technologies by their emission reduction potential and cost benefit. These results surprised and inspired all of us at CAPR. Our committee has been evaluating various actions that we could pursue and recommend for our community. We have studied what other communities have done and we have given a lot of consideration to what the City and Powell River Regional District have each proposed to lower their "corporate emissions". We studied our own and other communities' official community plans and energy and emission plans. We recognize the social, environmental and economic complexities involved in the way forward. The *Drawdown* report gave us a more global perspective, which is one very important context. On the next page is a table of the top 15 solutions on the *Drawdown* list. The rest are in the Appendices and the entire report is available online at www.drawdown.org. When we think about a better future for generations to come, we have to look at the situation from a global perspective as well as our local position.

Potential Solutions

When we think about a better future for generations to come, we have to look at the situation from a global perspective as well as from our local position.



Top 15 Solutions on the *Drawdown* List

Solution	Sector	Total Atmospheric CO2-EQ Reduction (GT)	Net Cost (Billions US \$)	Lifetime Savings (Billions US \$)
1 Refrigerant Management	Materials	89.74	N/A	-\$902.77
2 Wind Turbines (onshore)	Energy	84.60	\$1,225.37	\$7,425.00
3 Reduced Food Waste	Food	70.53	N/A	N/A
4 Plant-Rich Diet	Food	66.11	N/A	N/A
5 Tropical Forests	Land Use	61.23	N/A	N/A
6 Educating Girls	Women and Girls	59.60	N/A	N/A
7 Family Planning	Women and Girls	59.60	N/A	N/A
8 Solar Farms	Energy	36.90	-\$80.60	\$5,023.84
9 Silvopasture	Food	31.19	\$41.59	\$699.37
10 Rooftop Solar	Energy	24.60	\$453.14	\$3,457.63
11 Regenerative Agriculture	Food	23.15	\$57.22	\$1,928.10
12 Temperate Forests	Land Use	22.61	N/A	N/A
13 Peatlands	Land Use	21.57	N/A	N/A
14 Tropical Staple Trees	Food	20.19	\$120.07	\$626.97
15 Afforestation	Land Use	18.06	\$29.44	\$392.33

International Partnership

We need to do what we can where we can do it, while we implement changes in our own lifestyles and our region's infrastructure.

In Section 2 you will find the Climate Action Powell River "ROAD Map" which proposes both broad and specific measures that we can adopt to succeed in our goal of reaching safe levels of carbon emission, as well as suggested action to adapt to the changes that are coming. There has to be balance in all of this, but at the same time our approach must meet the targets for 2020 and 2050. So while we may want to plant trees locally in a registered and approved program of carbon sequestration, the same "result" may be achieved in another region of the world more immediately and more efficiently than we can do it here. This principle of gradual transition is essential to our plan. We need to do what we can where we can do it, while we implement changes in our own lifestyles and our region's infrastructure. This is less expensive and sets us on the right path. It also connects us to the global community in a positive way and shows other countries that we are serious about global warming and care about its impacts on the most vulnerable communities.

It is important also to understand the concept of eco justice. One game changer in the history of international climate action happened at the COP convention in Bali. At that



meeting the so-called less developed countries stated clearly that their priority was lifting their citizens out of abject poverty and so if the rich countries did not supply the resources for renewable energy and new technology, they would use the same method that brought prosperity to the wealthy countries, namely fossil fuels. And because it was the rich countries that caused the problem, they should take responsibility for its solution. This idea is brilliantly conveyed in the *Greenhouse Development Rights Framework*, which can be found online.

But more reading is not necessary. The idea is clear. Do we take responsibility for our contribution to this global crisis or not? Powell River has shown solidarity with our global neighbours many times. In the 1980s we sent tools to Nicaragua. We host an international choral festival. We had a sister city in Haiti for fourteen years. The “Go-gos” have supported the Stephen Lewis Foundation in its program to help grandmothers who are caring for the children of their deceased children, all victims of HIV. The Rotary Club in Powell River does an international assistance project every year. The list goes on and Powell River is richer for this spirit of cooperation and solidarity. We are poised to achieve the highest realization of that spirit within the mutual context of saving the planet.

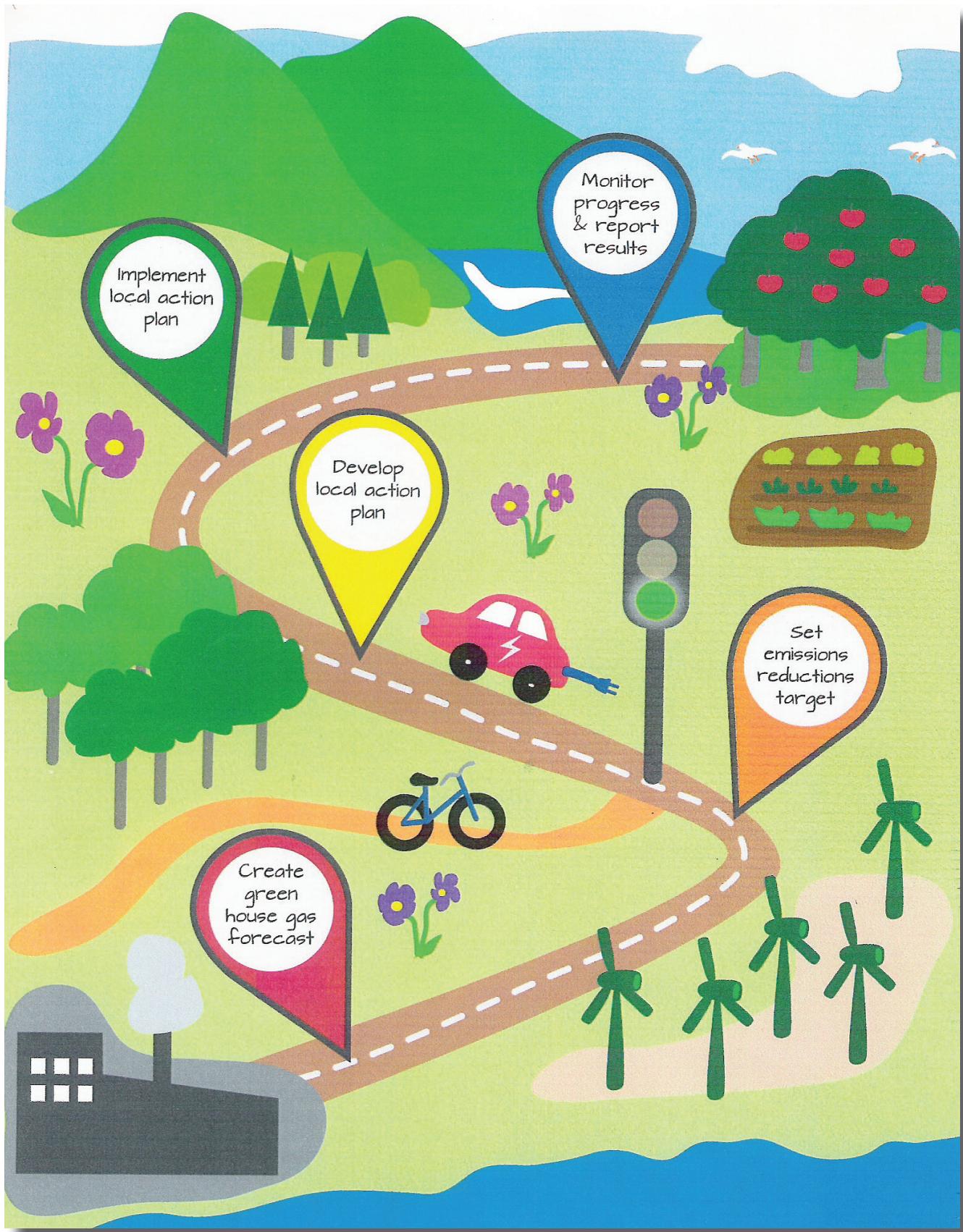
With offsetting we can reduce our carbon footprints while assisting vital transformation in a less developed, threatened and impoverished community somewhere else. These projects need to be verifiable in terms of their greenhouse gas reductions, but there is an abundance of projects underway or just beginning that we can plug into, or we can initiate our own. The CAPR ROAD Map aims for immediate results and long-term sustainability.

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Section 2: The ROAD Map



Action Timeline

We are using the word “ROAD” as an acronym for Reduce, Offset, Adapt and Drawdown, which are four distinct categories of climate action that we believe will lead us to our goals.

The following timeline goes until January 2020, when we hope that Powell River will be carbon neutral. It is designed to support as much direct emission reduction as possible, but many of these actions are still in the planning stage. Following the timeline pages will be descriptions of each intended action and its relationship to the overall strategy.

2017 What we have done so far

Forming our organization

- Became a Society
- Research into every aspect of climate action
- Strategic planning
- Joined the Municipal Sustainability Committee

Community outreach

- Guest speakers and public events
 - Guy Dauncey, author and climate activist
 - Frederik Vroom, Tree Canada
- High school presentations
- Social media presence and outreach
- Earth Day committee

Cool Homes Powell River (CarbonWise) “100” members

Exploring and developing potential actions

- Community-based social marketing (CBSM)
- Transportation projects
 - Car Stop
 - Ride sharing
 - EV infrastructure expansion
 - EV incentives and promotion
 - Voluntary road sharing initiatives
- Forestry partnerships
- Food security partnerships and initiatives
- Imported product replacement strategies
- Renewable energy options
- Buildings: energy, efficiency, construction, etc.

Offsetting

- CAPR joined “Carbon Neutral Now”, (United Nations organization)
- Studied options for offsetting
 - Carbon accounting procedures and protocols
 - Local, provincial, and international options

ROAD Map development



2018
Where we are going now

Strengthening our organization

- Raise community awareness
- Continue research for effective climate action
- Build capacity
- Engage new partners

Community outreach

- Build CAPR website and calculator
- Host more events and speakers
- Participate in local events
- Engage local environmental organizations
- Increase social media presence

CarbonWise Powell River “200” members

Actions to be taken

- Completing and rolling out Community-based social marketing (CBSM) plan
- Further action and planning on transportation
 - Car Stop project
 - Ride share development
 - EV infrastructure expansion
 - Voluntary road sharing pilot project
- Forestry partnerships and actions
- Food security partnerships and initiatives
- Imported product replacement promotion
- Renewable energy working group
- Buildings working group

Offsetting

- Provide offsetting options to the community
- Promote the concept and importance

ROAD Map promotion and actualization



2019
Where we want to be

Reaching our Full Stride

- Broad community engagement
- Support of local governments
- Strong partnerships
- Achieving 2020 targets

Continuing community outreach

- Reaching the business community
- Multi-sector participation
- Education initiatives
- Larger media activity

CarbonWise Powell River “500” members

Continue with the CBSM plan

Focused actions on transportation

- Car Stop program expansion
- Ride share improvements
- EV infrastructure and incentive expansion
- Voluntary road sharing initiatives

Continued and expanded forestry activities

- Tree planting and urban forest programs

Food security partnerships and initiatives

Renewable energy initiatives

Buildings initiatives

Offsetting

- Reaching Carbon Neutral
- Building global solidarity and eco justice

ROAD Map review and future planning



The descriptions presented on each part of the ROAD Map plan will not be exhaustive. They are only meant to explain the basic principles of each action and some of the detail, so that you understand their intent and purpose. Each action could be described in much more detail and will be elaborated upon in subsequent project proposals from CAPR with timelines, budgets, etc.

Description of each Action

What is being presented here is an overview of distinct climate actions that have been proven to reduce or avoid GHG emissions. In each description, we hope to capture the logic of its inclusion in our overall approach to making significant gains on the road to sustainability and the low carbon future in Powell River. The order of the climate actions roughly follows the acronym "ROAD" and you will notice that it is not a perfect comparison, because there is so much overlap in these actions. For instance, reducing emissions by importing less food will definitely reduce GHG emissions, while it is also a strong component under the theme of "Adaptation".

REDUCTION of Community GHG Emissions

Burning fossil fuels such as natural gas, coal, oil and gasoline raises the concentration of carbon dioxide and other GHGs in our atmosphere and these gases are the major contributors to global warming. Reducing fossil fuel usage is the primary goal of climate action. CAPR proposes the following activities to reduce GHG emissions in our community.

CarbonWise

We have called this our flagship project, partly because it is the first concrete project that CAPR started, but mostly because it is so central to our climate action strategy. It is modelled after several existing programs that we studied and took from. You probably recall the One-tonne Challenge that was begun by the Liberal Party in the late 1990s and immediately shut down by the Harper government. What a total shame that is, simply because it had such tremendous potential to lift citizen engagement and understanding of the mechanics of climate change and its solutions. A great deal of insight and planning went into the creation of that program so that it would be easy and palatable for average Canadians. It was not the first of its kind in Canada, but it was the most widely promoted and professionally presented. The list of similar programs throughout the world has to number in the hundreds if not the thousands and still hold the same great relevance that they did in the beginning. All such programs are meant to make us aware and take responsibility for our individual carbon footprints.

The heart of most of these programs is a carbon calculator. This technology has almost risen to the status of an art form. The City of Calgary has the most visually appealing and fun version that we have found. The first calculators were relatively simple compared to the ones we find today. The technology has continued to evolve and allow deeper analysis of our



Climate Action Powell River

environmental sources and impacts and they measure much more than our GHG emissions. They typically now ask us to record our household spending habits and dietary patterns. For some this may initially seem too invasive or personal, but once you think about it, the importance is unavoidable. For too long we have been conditioned to think that our everyday consumer choices are somehow neutral and our own personal business. Clearly they aren't.

You will see on the ROAD Map timeline that CAPR is designing a customized calculator for Powell River. Last year when we started Cool Homes (Carbonwise) we recommended that our participants use the calculator on the Tree Canada website, where they can get a "reading" on the standard emission sources in their life for each category (heating, transportation, travel, etc.) and a total for that year. One of our goals is to record this data confidentially and be able to track domestic and other emission reductions. Our new calculator should have that ability. Postal codes look like they will be the common identifier, so as to be completely respectful of people's privacy, while still giving us adequate tracking capability.

On the timeline we wrote our Carbonwise membership targets for the next couple of years: 100 households in 2017, 200 in 2018, 500 in 2019. To seriously address climate change and take concrete action, whether it is political, social, or technological, it is incumbent on us to measure and reduce our individual and household emissions. Our individual totals are likely to go up and down year to year. Having a record of personal emissions is much like a bank balance or personal budget. In fact, it is suggested a sustainable carbon budget for everyone on our planet might be as high as one tonne of CO₂e per year. That is difficult to attain in North America, but it is good to know the limits and our individual responsibility. Carbonwise will collect data and be able to analyze where emissions are occurring and how to support further reductions.

Community Engagement and Outreach

It is universally accepted that words are not enough. Clearly we are talking about behavioural change when it comes to climate solutions. There is no silver bullet. There is no substitute for a social conversion to a less consuming society, and communities less dependent on fossil fuels. Some have noticed the connection between Truth and Reconciliation with First Nations and the reconciliation that has to happen around our environmental abuse and destructive behaviours. This, however, is delicate territory. Our lives are entangled in corporate structures and dependency. It won't change overnight, but we need to advance as quickly as possible.

The majority of emissions produced in Powell River come from driving vehicles with internal combustion engines. To change that is essential. We have to drive less now, while we move quickly toward converting every fleet to zero emission vehicles. While we may only move as fast as we can, a calculator helps us track our progress and see where further change is needed. Things like eating less meat and fixing appliances instead of buying new ones are two gradual changes that can make a huge difference and transition us to the low carbon future. Education is essential, because most people have never thought in terms of carbon reduction. CAPR will work steadily to promote and bring new opportunities to light and support our community in progressing toward a more sustainable and less carbon intensive future.

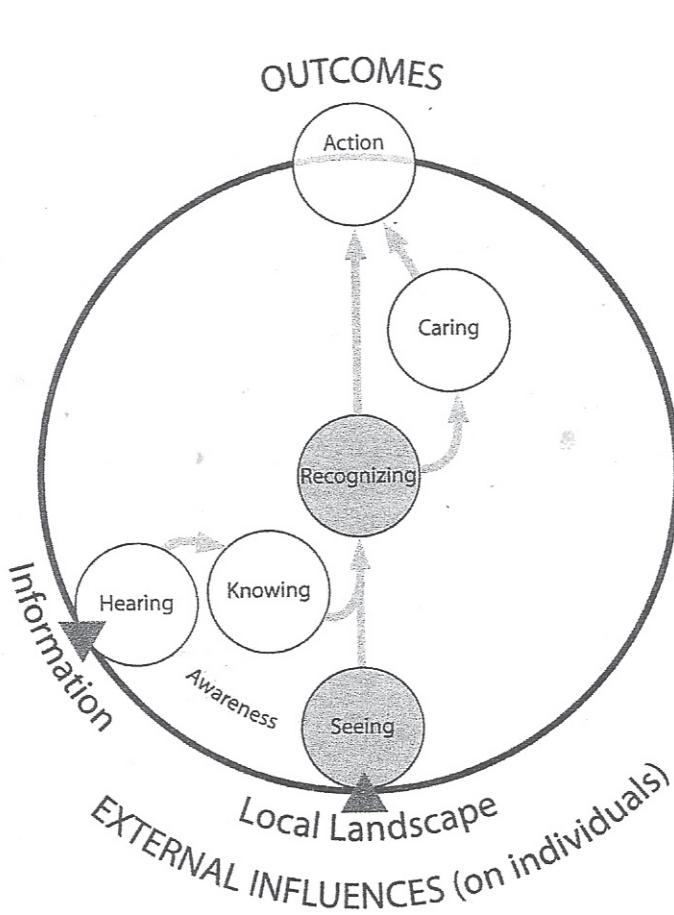
The diagram on the following page is a conceptualization of the process or steps to social change. It comes from a book called Visualizing Climate Change and it reflects the new science of social change called Community Based Social Marketing. The CAPR team has spent a good



deal of time studying and discussing this new science, which is the result of extensive research and field testing. We know that what we are proposing and stand for is extremely challenging. We want to use the best practices we can find. To that end we will be looking for funding to hire professionals to at least guide our campaign. Does this sound "pushy"? Please remember that we are truly fighting against time here and for the survival of the world as we know it.

Community Based Social Marketing

Community Based Social Marketing (CBSM) is a methodology that has been developed to guide campaigns that aim at social change. The various authors on this subject have gleaned the best practices from a wide range of programs and organized them into books, workshops, videos and other media so as to make this experience useful for groups leading campaigns as diverse as nutritional education and driver education. Their basic tenet is that change does not come from words alone. We can easily see that in the climate movement. After so many years of eloquent speeches and convincing evidence, not much has changed. The diagram below is one illustration of the flow from unawareness to action. CAPR knows that we need professional guidance in forming a strategy for our community. We have taken steps in that direction and as you can see on the timeline, 2018 is the year we will put together a comprehensive and realistic strategy in order to promote the changes in understanding and motivation that will help to lead our community to the next level of sustainable living.



The Community Awareness to Action Framework, represented as a simple flow diagram of perceptual stages leading to action on climate change. External influences shown here include both conventional climate change information and messages from the community landscape



Building Partnerships

The strengths of our community are many, so creating partnerships is a natural direction and fundamental aspect of effective climate action. Appropriate change must eventually occur in every sector of our community. CAPR doesn't expect or even want to participate directly in every individual project or activity, but does want to lend support and perspective in a way that assists the various noble efforts we see taking place around us.

*Forestry,
tree planting
and wildfire
protection
are already
huge inter-
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community
and have
great poten-
tial as agents
of climate
mitigation
and adapta-
tion.*

A good example of this approach is with the active agricultural sector here in Powell River. The general focus of most of this activity is food security for all and less reliance on outside food systems. CAPR may be able to find financial support for some of these important actions from the growing number of government programs and grants, as well as contacts we will be making with government leaders. There is no doubt that money is needed to promote and support the changes that need to happen in our food system.

Increasing local food production and the infrastructure to distribute it is one thing, while the demand side of the equation requires equal attention and careful handling. Wherever old jobs are impacted we must ensure there are new ones to take their place. We always have to look out for the most vulnerable and the hidden consequences. This is where numerous perspectives can be of great value.

Forestry, tree planting and wildfire protection are already huge interests in our community and have great potential as agents of climate mitigation and adaptation. We need knowledgeable and dedicated individuals to lead this sector and provide the integration of new practices and systems to get the most benefit from this living partnership with nature. There are no foresters on the CAPR team at this time, but we hope to change that soon or at least find effective ways to engage the industry, the community and the biome itself.

Building new infrastructure for sustainable and efficient transportation is where local governments can shine. This has been well documented in the Integrated Community Sustainability Plan (ICSP) and has already become a major focus of both the Powell River Regional District and the city council. Active transportation, ie. walking and cycling infrastructure has already received a lot of attention and made a significant impact in reducing vehicle kilometres travelled. Local politicians continue to refine and adapt public transportation systems and address future zoning where it can optimize more efficient travel and less pollution. CAPR is playing a role in these conversations that are moving this progress forward.

Housing and architecture are another important sector in the overall progress to the low carbon future. New construction and renovation practices need to be constantly updated and incorporated into general practices. The Passive House movement is growing in Canada and around the world. We want to spread the knowledge gained so far in the building



industry and see Powell River be a shining example of ecological building. This would include the greater use of local timber and the creation of employment, which have been at the centre of our economy and culture for a long time.

CAPR would like to help form a committee of construction-related people to look at ways to support more energy-efficient homes and buildings and incentive programs that offer financing for renovation and innovation. Part of this program would be assisting homeowners in assessing their energy and insulation priorities. Infrared cameras are standard equipment in the assessment toolbox and something that CAPR would like to have and share with contractors, builders and homeowners.

Renewable energy is considered by some as the most fundamental element of the low carbon future and it is hard to deny that this is the direction we need to go. The list of exciting new prospects to reduce and eventually eliminate our dependence on fossil fuels is very exciting and we have the human and physical resources to develop and implement them. Wind, solar, tidal, geothermal, renewable biomass, just to name a few are there for us to utilize, remembering to always look at the full picture, the embedded energy in each technology and their other environmental consequences.

OFFSETTING

Reducing or avoiding GHG emissions in one place in order to compensate for emissions occurring somewhere else

This is easily the most controversial and misunderstood climate action of the last three decades. It was first made known to the public at the Kyoto Conference in 1997. It struggled through its infancy and adolescence to become the mature instrument it is today, yet it still receives a lot of sharp criticism, most notably by respected indigenous leaders. So that is to admit that we are aware of these criticisms, but still feel that offsetting is an essential component of an effective climate action plan on the local and the international scale.

The central principle underpinning offsetting is that carbon emissions produced, avoided or removed anywhere on the planet have the same consequence for the global situation. Parts per million (ppm) of CO₂ equivalents is a global measurement that goes up or down because of activities all over the world. Carbon pollution in Bangladesh has the same effect on ppm as the same amount emitted in Powell River. Inversely, when emissions are saved or avoided in the UK it has the same impact as saving the same amount in any other country. This is scientific fact.

Powell River is on a pathway to lower emissions and the stated goal of becoming carbon neutral by 2020, barely two years from now. The City of Vancouver, in its recent report on its climate goals and progress, had to admit that it would fall short of its 2020 target, but could possibly

The central principle underpinning offsetting is that carbon emissions produced, avoided or removed anywhere on the planet have the same consequence for the global situation.



Offsetting is a bridging mechanism for that time period while we reduce localized emissions.

get there by 2022. There is no jurisdiction we are aware of in North America that has accomplished the 33% reduction which is BC's stated goal. We can, however, be carbon neutral by combining essential strategies: reduction, drawdown and offsetting. This does not "let us off the hook". We are still morally bound to reduce emissions in our own backyard. This is a recognition that it is going to take more time and concerted effort to reach the "drop dead" target of an 80% reduction in emissions by 2050, the minimal reduction the Paris agreement says will give us a 60% chance of holding global warming to a two degree increase. By becoming carbon neutral now, we will have brought the world closer to this critical target.

So what might carbon offsetting look like in Powell River? The first step is always finding the current sources of our emissions and measuring their quantities. That is what the carbon calculator is for. Then we reduce emissions as much as we can. The CEEI, which was mentioned before, gives us a very good picture of our carbon footprint. Passenger vehicles are the biggest contributor to the total, followed by other internal combustion transportation, commercial, etc. This is going to require a gradual but steady transition to low or zero emission vehicles. Offsetting is a bridging mechanism for that time period while we reduce localized emissions. It should start as a high percentage of our reduction in global GHG and taper back as our regional footprint gets smaller. Climate Action Powell River, along with regional and provincial government, will help chart a course, a road map to this goal.

Global Warming Mitigation Factoids

~ from Clean Air-Cool Planet

A Ton of CO₂e is Emitted When You:

- Travel 2,000 miles in an airplane
- Drive 1,350 miles in a large sport utility vehicle
- Drive 1,900 miles in a mid-sized car
- Drive 6,000 miles in a hybrid gasoline-electric car
- Run an average household for 60 days
- Have your computer on for 10,600 hours
- Graze one dairy cow for eight months

To Offset 1,000 Tons of CO₂e You Could:

- Move 145 drivers from large SUVs to hybrids for one year
- Run one 600 kW wind turbine for an average year
- Replace 500 100-watt light bulbs with 18-watt compact fluorescent lights (10-year life)
- Replace 2,000 refrigerators with the highest efficiency model (10-year life)
- Install 125 home solar panels (20-year life)
- Plant an acre of Douglas fir trees (50 years of growth)
- Protect four acres of tropical rainforest from deforestation



ADAPTATION

to changing conditions created by global warming

Adaptation is an acknowledgement that our environment is changing significantly and that our community needs to take action in order to prepare for the changes coming. Sea level rise is perhaps the first thing that comes to mind. Long dry summers bring the spectre of catastrophic forest fires. Increased precipitation is a likely outcome of warming oceans and changing currents. Fish and wildlife will change their patterns and be threatened by lost or degraded habitat. The extent of these changes depends on the global response to the threat of climate change, clear and simple. The incidence of extreme weather events is only the tip of the iceberg. The only solution is to reduce carbon emissions drastically, at least 80% in the next thirty years and rapid drawdown as talked about below. It is not useful to minimize these threats, but appropriate adaptation is an essential and intelligent response.

For Powell River to talk about sustainability, it all has to be in the context of climate change. Today we only produce 3% of the food we consume. A one metre rise in global sea level will drown as much as 25% of the planet's best agricultural land or make it too saline to support agriculture. The Powell River Food Security Assessment (PRFSA) suggests that we have the potential to feed the current population and even more people, but we need to take action soon in order to be prepared. The good news is better nutrition and increased employment. Not to mention reduced emissions from the transportation of imported food.

Foresters are very concerned about the impacts of a warming climate on our forests. The trees are not only vulnerable to the warmer, drier weather but also insect invasions that usually follow close behind. The demand for timber is most likely to rise, while the rates of regrowth are uncertain at best. Planning things like the annual allowable cut will be very difficult. There is also the heavy use of fossil fuels now required in the industry.

Climate Action Powell River is in the stage of talking about partnerships and dialogue to address issues of Adaptation. We see opportunities for progress on these various fronts, particularly in the research on Drawdown and the new approaches to environmental stewardship and human rights. I mentioned the list of the 80 best solutions in the *Drawdown* book. Educating girls is number six on the list and family planning is number seven. I had to mention those two important actions, because human rights is central to climate justice and our very survival. It is not all about windmills and adapted plant species. We must find the means to protect the best of our worldwide cultural diversity.

*The Powell River
Food
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prepared.*



DRAWDOWN

ways to recapture GHG emissions from the atmosphere

*Powell River,
because of our
larger land mass
and other
advantageous
conditions, has
several
opportunities to
implement
Drawdown.*

The final category in this ROAD Map is a term that only appeared a couple of years ago and is a response to the growing threat of inaction on climate change and the worsening of the prognosis. For years before that the scientists talked about “sequestration” as one potential solution to rising levels of CO₂e in the atmosphere. They went to work to study and develop the means of measuring the reductions produced by planting trees and the potential of sequestering carbon in soils, root systems and marine and aquatic ecosystems. It is fair to say that they are amazed by the potential.

Then, as the COP conferences, the International Panel on Climate Change, and scientists around the world were reporting little substantive improvement in emission levels, they increased their collective efforts. A group of them decided in early 2016 to put their finding together in one report, *Drawdown*. The book, as mentioned earlier, lists climate actions in order of effectiveness in lowering atmospheric GHG levels. They showed that with the knowledge and technology that already exists today we have the ability to lower GHG concentrations to pre crisis levels and in fact we must do that. Mitigation (reducing emissions) alone is not enough. That list is in the appendices at the end of this document.

Powell River, because of our larger land mass and other advantageous conditions, has several opportunities to implement Drawdown. In fact, our regional board is now considering a project on Texada Island to restore a wetlands area and thereby suck up a large quantity of carbon. Climate Action Powell River wants to explore urban forestry and agriculture. By altering grazing practices even a small amount, it has been shown that better production, healthier soil and increased carbon sequestration can be achieved.



Conclusion

This plan of action is, to our knowledge, the first attempt to comprehensively address climate change at the community level in Powell River and strive to meet the emission reduction targets set forth in Paris and by our provincial government in Victoria. We intend this to be a living and growing document with people and organizations coming on board and making a concerted effort to bring on the low-carbon future. That means continuous learning, inclusiveness, understanding and respect, living within our means, reducing our collective carbon footprint wherever possible and thinking long term...all aspects of the Sustainability Charter for the Powell River Region (see next page).

We must all prepare for the changes ahead. Our current cultural practices are clearly not sustainable. Nor can we wait for our governments to solve all the problems or for science and technology to find the silver bullet. Our actions and approaches to working and living have tipped the scale toward climate change and it is up to us to turn the tide and bring back balance. It is time now to support each other and walk together into a better future for ourselves, our children and grandchildren. The technology and know-how to do this already exists. What is missing is our concerted and united will to make change.

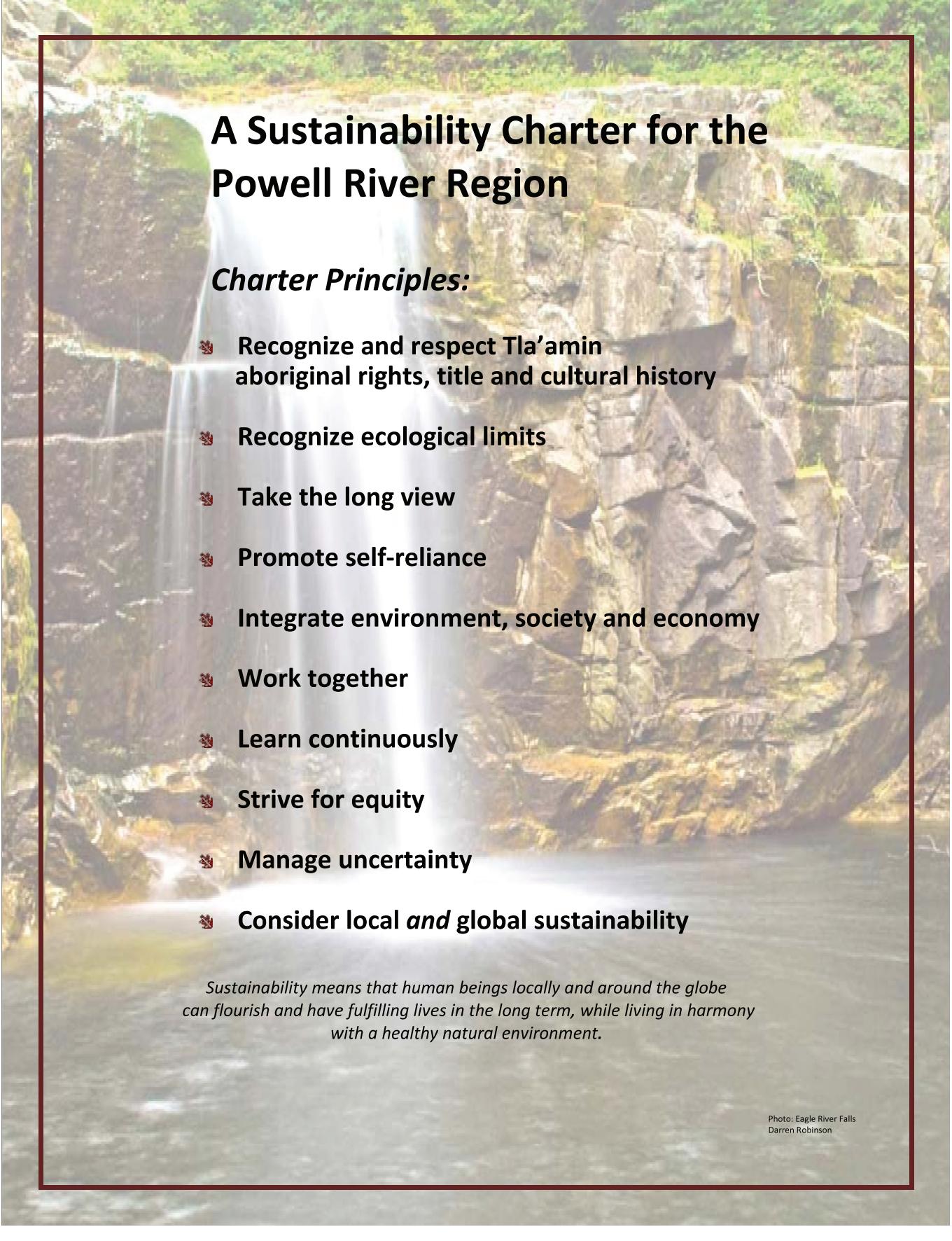
Where do we start? Actually, right where the One-Tonne challenge did back in the late 1990s with our individual and household carbon emissions. This is walking the talk. Go to www.capr.org and try out the new calculator. Create a new file for yourself on the website. Your data will be held confidentially and only you will be able to access it. Then each year as you make changes in your energy usage and lifestyle you can watch your footprint shrink and the whole community move toward carbon neutrality.

You can also learn about the climate actions that are going on around the world and in our community. Check out the Climate Action Powell River Facebook page, where we are constantly posting links and articles. And, our website has documents and information. Join CAPR! There is such a vast array of opportunities to get involved with and your skills and talents are much in demand.

If this sounds like a pep talk...it is! Thank you for reading our ROAD Map of Climate Action and its four components.

Each year as you make changes in your energy usage and lifestyle you can watch your footprint shrink and the whole community move toward carbon neutrality.





A Sustainability Charter for the Powell River Region

Charter Principles:

- Recognize and respect Tla'amin aboriginal rights, title and cultural history
- Recognize ecological limits
- Take the long view
- Promote self-reliance
- Integrate environment, society and economy
- Work together
- Learn continuously
- Strive for equity
- Manage uncertainty
- Consider local *and* global sustainability

Sustainability means that human beings locally and around the globe can flourish and have fulfilling lives in the long term, while living in harmony with a healthy natural environment.

Photo: Eagle River Falls
Darren Robinson



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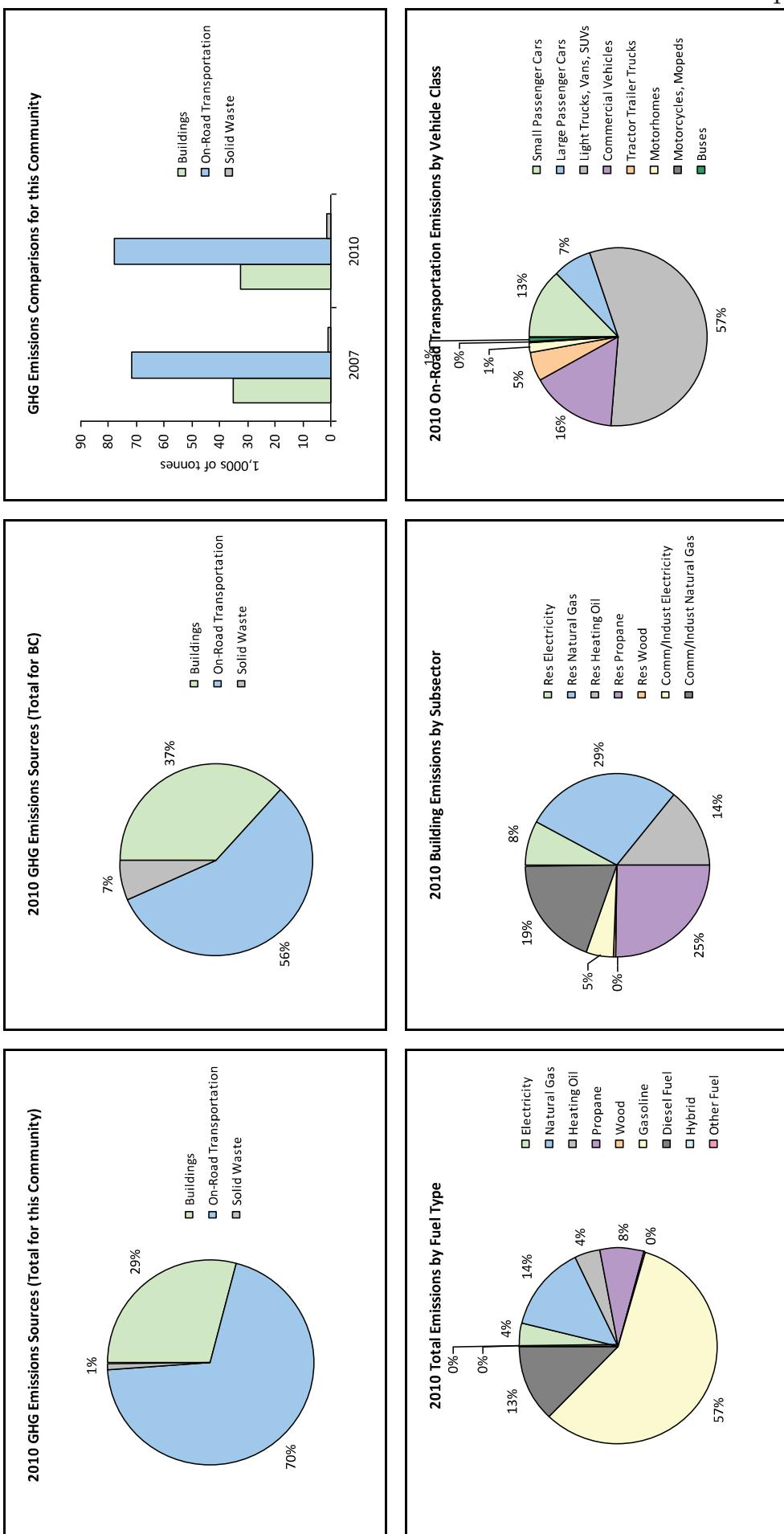


Appendices

1. Community Energy and Emissions Inventory for the Powell River Regional District
2. *Drawdown* Summary of 80 Solutions
3. Paris Agreement (first two pages)



Powell River Regional District
Draft 2010 Community Energy and Emissions Inventory
Monitoring and reporting on progress towards greenhouse gas emissions reduction targets



Powell River Regional District
Draft 2010 Community Energy and Emissions Inventory
Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Core Items

On-Road Transportation	2007			2010			CO ₂ e (t)		
	Connections	Consumption	Avg VKT (km)	Energy (GJ)	Connections	Avg VKT (km)	Energy (GJ)		
Small Passenger Cars									
Hybrid	<10	1,615 L	16,200	6	12	7,556 L	18,400	26	
Gasoline	3,542	3,814,660 L	14,100	133,513	9,104	4,057,529 L	14,100	142,014	
Diesel Fuel	105	114,542 L	19,600	4,387	313	106	108,810 L	19,100	4,167
Large Passenger Cars									
Hybrid	<10	6,609 L	19,500	23	15	25,212 L	23,900	88	
Gasoline	1,962	2,534,692 L	13,400	88,714	6,053	1,888	2,364,412 L	13,100	82,754
Diesel Fuel	30	27,893 L	12,100	1,068	76	39	31,290 L	10,900	1,198
Other Fuel	<10	2,623 L	9,800	100	4				
Light Trucks, Vans, SUVs									
Hybrid	<10	6,063 L	19,400	21	14	10	15,427 L	22,400	54
Gasoline	7,256	15,002,672 L	17,400	546,094	37,470	8,115	17,720,488 L	17,500	620,217
Diesel Fuel	506	800,916 L	12,200	30,675	2,179	329	560,743 L	13,200	21,476
Other Fuel	36	58,444 L	12,800	2,238	90	25	42,142 L	12,300	1,614
Commercial Vehicles									
Gasoline	638	1,681,884 L	18,000	58,866	3,950	761	2,027,696 L	18,000	70,969
Diesel Fuel	636	1,958,564 L	20,000	75,013	5,270	775	2,690,587 L	21,900	103,049
Other Fuel	34	66,540 L	13,200	2,548	102	29	55,285 L	12,400	2,117
Tractor-Trailer Trucks									
Gasoline	<10	41,808 L	24,100	1,463	97	<10	40,225 L	20,500	1,408
Diesel Fuel	167	2,000,324 L	31,400	76,612	5,383	162	1,504,404 L	24,500	57,619
Motorhomes									
Gasoline	155	246,048 L	19,400	8,612	574	179	299,543 L	19,400	10,484
Diesel Fuel	91	169,595 L	17,800	6,496	456	84	140,209 L	17,800	5,370
Other Fuel	<10	9,102 L	19,400	349	14	<10	10,884 L	19,400	417
Motorcycles, Mopeds									
Gasoline	313	121,342 L	21,500	4,247	284	370	158,364 L	21,500	5,543
Buses									
Gasoline	28	69,181 L	17,700	2,421	163	35	82,474 L	16,400	2,887
Diesel Fuel	25	109,538 L	18,800	4,195	295	38	151,698 L	42,000	5,810
Other Fuel	<10	0 L	12,100	0	0	<10	0 L	10,700	0
Totals	15,524	29,444,655 L	16,346	1,047,661	71,910	16,675	32,094,978 L	16,514	1,139,281
									77,853

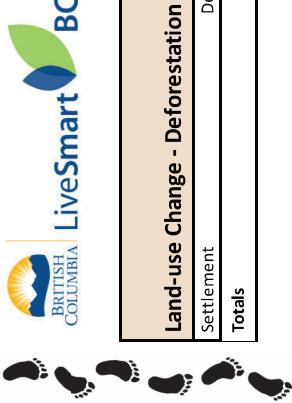


Powell River Regional District
Draft 2010 Community Energy and Emissions Inventory
Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

Buildings	2007			2010		
	Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption
Residential						
Wood	N/A	259,774 GJ	259,774	96	N/A	251,471 GJ
Heating Oil	N/A	66,816 GJ	66,816	4,710	N/A	64,681 GJ
Propane	N/A	140,385 GJ	140,985	8,601	N/A	136,479 GJ
Natural Gas	3,071	200,544 GJ	200,544	10,228	3,123	178,280 GJ
Electricity	8,991	110,143,125 kWh	396,516	2,717	9,226	108,157,894 kWh
Commercial/Small-Medium Industrial						
Natural Gas	305	135,005 GJ	135,005	6,885	278	123,903 GJ
Electricity	1,277	72,178,584 kWh	259,843	1,780	1,320	67,126,494 kWh
Totals	13,644	1,459,483	35,017	13,947		1,395,837
Solid Waste						
Community Solid Waste	Solid Waste	0	4,453 t	N/A	879	0
Totals		0			879	0

Memo Items

Buildings	2007			2010		
	Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption
Large Industrial						
Natural Gas	1	0	0	0	0	0
Electricity	1	1	0	0	1	0
Totals	2	1	0	0	1	0
Agriculture						
Enteric Fermentation	Methane	916	25 t	0	525	0
Totals	916	25	0	525	0	0

**Powell River Regional District****Draft 2010 Community Energy and Emissions Inventory***Monitoring and reporting on progress towards greenhouse gas emissions reduction targets*

Land-use Change - Deforestation	2007			2010		
	Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption
Settlement	32	0 ha	0	28,541	0	0
Totals	32			28,541	0	

Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 19,791)			2010 (Population: 20,455)		
	Consumption	Energy (GJ)	CO2e (t)	Consumption	Energy (GJ)	CO2e (t)
Hybrid	14,287 L	50	33	48,195 L	168	112
Gasoline	24,112,287 L	843,930	57,695	26,750,731 L	936,276	63,592
Diesel Fuel	5,181,372 L	198,446	13,972	5,187,741 L	198,689	13,982
Other Fuel	136,709 L	5,235	210	108,311 L	4,148	167
Wood	259,774 GJ	259,774	96	251,471 GJ	251,471	93
Heating Oil	66,816 GJ	66,816	4,710	64,681 GJ	64,681	4,559
Propane	140,985 GJ	140,985	8,601	136,479 GJ	136,479	8,327
Natural Gas	335,549 GJ	335,549	17,113	302,183 GJ	302,183	15,412
Electricity	182,322,109 kWh	656,359	4,497	175,284,388 kWh	631,023	4,324
Solid Waste	4,453 t	0	879	4,601 t	0	1,307
Grand Totals	2,507,144	107,806		2,525,118	111,955	



Powell River Regional District Draft 2010 Community Energy and Emissions Inventory *Monitoring and reporting on progress towards greenhouse gas emissions reduction targets*

Supporting Indicators

No new supporting indicator data have been provided in the 2010 reports. Work is currently underway to produce a complete second round of data for the indicators below in the 2012 reports (available in 2014). In the interim, we are including the same supporting indicator data that was provided in the 2007 reports. Feedback is requested on all supporting indicators; please contact us directly at CEEIRPT@gov.bc.ca.

Housing Type - Private dwellings by structural type

Housing type is important for reducing building-related GHG emissions and energy consumption. A trend toward fewer single family dwellings indicates an increase in residential density, which is known to reduce transportation-related GHG emissions.

	1996		2001		2006	
	Units	%	Units	%	Units	%
Single Detached House	6,840	46	6,680	79	7,025	80
Semi-Detached House	140	1	180	2	220	3
Row House	100	1	75	1	100	1
Apartment, Duplex	170	1	250	3	255	3
Apartment, 5 storeys or higher	0	0	0	0	20	0
Apartment, under 5 storeys	685	5	700	8	820	9
Other Single Attached House	20	0	40	0	20	0
Movable Dwelling	210	1	555	7	310	4

Commute to Work - Employed labour force - by mode of commute

An increase in the number of people choosing to walk, cycle and use transit reduces GHG emissions. More compact, complete, connected communities should see an increase in the use of these transportation modes.

	1996		2001		2006	
	Units	%	Units	%	Units	%
Car, Truck, Van as Driver	6,230	80	6,175	81	6,005	78
Car, Truck, Van as Passenger	525	7	445	6	585	8
Public Transit	70	1	80	1	125	2
Walked	590	8	635	8	515	7
Bicycle	255	3	175	2	230	3
Motorcycle	25	0	30	0	40	1
Taxicab	0	0	0	0	10	0
Other Method	115	1	125	2	175	2

Residential Density

Increasing residential densities is known to reduce vehicle use resulting in fewer transportation-related GHG emissions. There are many additional benefits from more compact development.

	2009		Total Land Area Residential Density (people per net ha) Population Net Land Area (ha) *
	Units	%	
			..

Parks and Protected Greenspace

Parks and protected greenspaces are important for the protection and enhancement of community carbon sinks.

	2009		Total Land Area Residential Density (people per net ha) Population Net Land Area (ha) *
	Units	%	
National Parks	0	0	
Provincial Parks / Protected Area	12,733	2	
Local Parks	85	0	
Agricultural Land Reserve	9,687	2	
Other Land use	504,590	96	
Total Parks and Protected Area	12,818	2	
Total Land Area	527,095	100	

* Total is net of Indian Reserves
* Quantity of parkland may be underestimated
* ..



SUMMARY OF SOLUTIONS BY OVERALL RANKING

Solution	Sector	TOTAL ATMOSPHERIC CO2-EQ REDUCTION (GT)	NET COST (BILLIONS US \$)	LIFETIME SAVINGS (BILLIONS US \$)
1 Refrigerant Management	Materials	89.74	N/A	-\$902.77
2 Wind Turbines (Onshore)	Energy	84.60	\$1,225.37	\$7,425.00
3 Reduced Food Waste	Food	70.53	N/A	N/A
4 Plant-Rich Diet	Food	66.11	N/A	N/A
5 Tropical Forests	Land Use	61.23	N/A	N/A
6 Educating Girls	Women and Girls	59.60	N/A	N/A
7 Family Planning	Women and Girls	59.60	N/A	N/A
8 Solar Farms	Energy	36.90	-\$80.60	\$5,023.84
9 Silvopasture	Food	31.19	\$41.59	\$699.37
10 Rooftop Solar	Energy	24.60	\$453.14	\$3,457.63
11 Regenerative Agriculture	Food	23.15	\$57.22	\$1,928.10
12 Temperate Forests	Land Use	22.61	N/A	N/A
13 Peatlands	Land Use	21.57	N/A	N/A
14 Tropical Staple Trees	Food	20.19	\$120.07	\$626.97
15 Afforestation	Land Use	18.06	\$29.44	\$392.33
16 Conservation Agriculture	Food	17.35	\$37.53	\$2,119.07
17 Tree Intercropping	Food	17.20	\$146.99	\$22.10
18 Geothermal	Energy	16.60	-\$155.48	\$1,024.34
19 Managed Grazing	Food	16.34	\$50.48	\$735.27
20 Nuclear	Energy	16.09	\$0.88	\$1,713.40
21 Clean Cookstoves	Food	15.81	\$72.16	\$166.28
22 Wind Turbines (Offshore)	Energy	14.10	\$572.40	\$274.57
23 Farmland Restoration	Food	14.08	\$72.24	\$1,342.47
24 Improved Rice Cultivation	Food	11.34	N/A	\$519.06
25 Concentrated Solar	Energy	10.90	\$1,319.70	\$413.85
26 Electric Vehicles	Transport	10.80	\$14,148.03	\$9,726.40
27 District Heating	Buildings and Cities	9.38	\$457.07	\$3,543.50
28 Multistrata Agroforestry	Food	9.28	\$26.76	\$709.75
29 Wave and Tidal	Energy	9.20	\$411.84	-\$1,004.70
30 Methane Digesters (Large)	Energy	8.40	\$201.41	\$148.83
31 Insulation	Buildings and Cities	8.27	\$3,655.92	\$2,513.33
32 Ships	Transport	7.87	\$915.93	\$424.38
33 LED Lighting - Household	Buildings and Cities	7.81	\$323.52	\$1,729.54
34 Biomass	Energy	7.50	\$402.31	\$519.35
35 Bamboo	Land Use	7.22	\$23.79	\$264.80
36 Alternative Cement	Materials	6.69	-\$273.90	N/A
37 Mass Transit	Transport	6.57	N/A	\$2,379.73
38 Forest Protection	Land Use	6.20	N/A	N/A
39 Indigenous Peoples' Land Management	Land Use	6.19	N/A	N/A
40 Trucks	Transport	6.18	\$543.54	\$2,781.63
41 Solar Water	Energy	6.08	\$2.99	\$773.65
42 Heat Pumps	Buildings and Cities	5.20	\$118.71	\$1,546.66



Solution	Sector	TOTAL ATMOSPHERIC CO2-EQ REDUCTION (GT)	NET COST (BILLIONS US \$)	LIFETIME SAVINGS (BILLIONS US \$)
43 Airplanes	Transport	5.05	\$662.42	\$3,187.80
44 LED Lighting - Commercial	Buildings and Cities	5.04	-\$205.05	\$1,089.63
45 Building Automation	Buildings and Cities	4.62	\$68.12	\$880.55
46 Water Saving - Home	Materials	4.61	\$72.44	\$1,800.12
47 Bioplastic	Materials	4.30	\$19.15	N/A
48 In-Stream Hydro	Energy	4.00	\$202.53	\$568.36
49 Cars	Transport	4.00	-\$598.69	\$1,761.72
50 Cogeneration	Energy	3.97	\$279.25	\$566.93
51 Perennial Biomass	Land Use	3.33	\$77.94	\$541.89
52 Coastal Wetlands	Land Use	3.19	N/A	N/A
53 System of Rice Intensification	Food	3.13	N/A	\$677.83
54 Walkable Cities	Buildings and Cities	2.92	N/A	\$3,278.24
55 Household Recycling	Materials	2.77	\$366.92	\$71.13
56 Industrial Recycling	Materials	2.77	\$366.92	\$71.13
57 Smart Thermostats	Buildings and Cities	2.62	-\$74.16	\$640.10
58 Landfill Methane	Buildings and Cities	2.50	-\$1.82	\$67.57
59 Bike Infrastructure	Buildings and Cities	2.31	-\$2,026.97	\$400.47
60 Composting	Food	2.28	-\$63.72	-\$60.82
61 Smart Glass	Buildings and Cities	2.19	\$932.30	\$325.10
62 Women Smallholders	Women and Girls	2.06	N/A	\$87.60
63 Telepresence	Transport	1.99	\$127.72	\$1,310.59
64 Methane Digesters (Small)	Energy	1.90	\$15.50	\$13.90
65 Nutrient Management	Food	1.81	N/A	\$102.32
66 High-Speed Rail	Transport	1.52	-\$1,038.42	\$368.13
67 Farmland Irrigation	Food	1.33	\$216.16	\$429.67
68 Waste-to-Energy	Energy	1.10	\$36.00	\$19.82
69 Electric Bikes	Transport	0.96	\$106.75	\$226.07
70 Recycled Paper	Materials	0.90	\$573.48	N/A
71 Water Distribution	Buildings and Cities	0.87	\$137.37	\$903.11
72 Biochar	Food	0.81	N/A	N/A
73 Green Roofs	Buildings and Cities	0.77	\$1,393.29	\$988.46
74 Trains	Transport	0.52	\$808.64	\$313.86
75 Ridesharing	Transport	0.32	N/A	\$185.56
76 Micro Wind	Energy	0.20	\$36.12	\$19.90
77 Energy Storage (Distributed)	Energy	N/A	N/A	N/A
77 Energy Storage (Utilities)	Energy	N/A	N/A	N/A
77 Grid Flexibility	Energy	N/A	N/A	N/A
78 Microgrids	Energy	N/A	N/A	N/A
79 Net Zero Buildings	Buildings and Cities	N/A	N/A	N/A
80 Retrofitting	Buildings and Cities	N/A	N/A	N/A
Totals		1,051.01	\$27,405.68	\$73,874.52





United Nations

FCCC/CP/2015/L.9



Framework Convention on
Climate Change

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Twenty-first session

Paris, 30 November to 11 December 2015

Agenda item 4(b)

Durban Platform for Enhanced Action (decision 1/CP.17)

Adoption of a protocol, another legal instrument, or an
agreed outcome with legal force under the Convention
applicable to all Parties

ADOPTION OF THE PARIS AGREEMENT

Proposal by the President

Draft decision -/CP.21

The Conference of the Parties,

*Recalling decision 1/CP.17 on the establishment of the Ad Hoc Working Group on
the Durban Platform for Enhanced Action,*

Also recalling Articles 2, 3 and 4 of the Convention,

*Further recalling relevant decisions of the Conference of the Parties, including
decisions 1/CP.16, 2/CP.18, 1/CP.19 and 1/CP.20,*

*Welcoming the adoption of United Nations General Assembly resolution
A/RES/70/1, "Transforming our world: the 2030 Agenda for Sustainable Development", in
particular its goal 13, and the adoption of the Addis Ababa Action Agenda of the third
International Conference on Financing for Development and the adoption of the Sendai
Framework for Disaster Risk Reduction,*

*Recognizing that climate change represents an urgent and potentially irreversible
threat to human societies and the planet and thus requires the widest possible cooperation
by all countries, and their participation in an effective and appropriate international
response, with a view to accelerating the reduction of global greenhouse gas emissions,*

*Also recognizing that deep reductions in global emissions will be required in order
to achieve the ultimate objective of the Convention and emphasizing the need for urgency
in addressing climate change,*

*Acknowledging that climate change is a common concern of humankind, Parties
should, when taking action to address climate change, respect, promote and consider their
respective obligations on human rights, the right to health, the rights of indigenous peoples,*

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local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity,

Also acknowledging the specific needs and concerns of developing country Parties arising from the impact of the implementation of response measures and, in this regard, decisions 5/CP.7, 1/CP.10, 1/CP.16 and 8/CP.17,

Emphasizing with serious concern the urgent need to address the significant gap between the aggregate effect of Parties' mitigation pledges in terms of global annual emissions of greenhouse gases by 2020 and aggregate emission pathways consistent with holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C,

Also emphasizing that enhanced pre-2020 ambition can lay a solid foundation for enhanced post-2020 ambition,

Stressing the urgency of accelerating the implementation of the Convention and its Kyoto Protocol in order to enhance pre-2020 ambition,

Recognizing the urgent need to enhance the provision of finance, technology and capacity-building support by developed country Parties, in a predictable manner, to enable enhanced pre-2020 action by developing country Parties,

Emphasizing the enduring benefits of ambitious and early action, including major reductions in the cost of future mitigation and adaptation efforts,

Acknowledging the need to promote universal access to sustainable energy in developing countries, in particular in Africa, through the enhanced deployment of renewable energy,

Agreeing to uphold and promote regional and international cooperation in order to mobilize stronger and more ambitious climate action by all Parties and non-Party stakeholders, including civil society, the private sector, financial institutions, cities and other subnational authorities, local communities and indigenous peoples,

I. ADOPTION

1. *Decides* to adopt the Paris Agreement under the United Nations Framework Convention on Climate Change (hereinafter referred to as "the Agreement") as contained in the annex;
2. *Requests* the Secretary-General of the United Nations to be the Depositary of the Agreement and to have it open for signature in New York, United States of America, from 22 April 2016 to 21 April 2017;
3. *Invites* the Secretary-General to convene a high-level signature ceremony for the Agreement on 22 April 2016;
4. *Also invites* all Parties to the Convention to sign the Agreement at the ceremony to be convened by the Secretary-General, or at their earliest opportunity, and to deposit their respective instruments of ratification, acceptance, approval or accession, where appropriate, as soon as possible;
5. *Recognizes* that Parties to the Convention may provisionally apply all of the provisions of the Agreement pending its entry into force, and *requests* Parties to provide notification of any such provisional application to the Depositary;
6. *Notes* that the work of the Ad Hoc Working Group on the Durban Platform for Enhanced Action, in accordance with decision 1/CP.17, paragraph 4, has been completed;





Climate Action Powell River
6942 Coburn Street, Powell River
604 483 2419
coolhomes.pr@gmail.com
www.capr.org