

# CAMPBELL RIVER AND THE GREEN REVOLUTION:

## HOW LOCAL COMPANIES ARE SETTING THE STANDARDS FOR GREEN ENERGY SOLUTIONS

Campbell River has always been a resource-based region. We began as a destination for companies to harvest timber, mine coal and fish for salmon. As a community, we still rely on those industries to drive our local economy and provide jobs. At the same time, Campbell River is starting to explore other avenues to produce power, build our economy and support our families.

This transition is currently taking place on two fronts - one, in the business sector, led by local providers that are creating change in the established fields of construction and electricity. The other front is being led by Campbell River's municipal government, which has adopted an ambitious set of targets and incentives to transition all buildings in Campbell River to green or renewable energy sources.

The following three businesses are by no means the only companies in Campbell River working in the green-energy sector. They do, however, provide a compelling snapshot of how quickly that sector is growing in our city, and give us a glimpse at what the very near future might bring to our doorsteps.

# SMALL PLANET ENERGY - JAREK KUBACKI

## A Lightbulb Moment

When it comes to the current 'green energy' industry, one type of energy system is gaining more and more popularity - solar PV (photovoltaic). Small Planet Energy in Campbell River is one company taking advantage of this rising popularity, and it all started with a feeling that Jarek Kubacki, the company's founder, had over ten years ago.

"I was not feeling completely fulfilled by my work as an electrician anymore and I knew I had to make a change." Jarek had been working steadily as a journeyman electrician for over a decade at this point. His job consisted mostly of installing more lights, more receptacles, larger equipment, resulting in more power being consumed and increasing the consumption of natural resources. "With a new family on the way, I felt compelled to shift my focus and use my knowledge of electrical systems to do something more beneficial for society, the environment and my children's future."

So Jarek asked himself, "How can I use my electrical knowledge to do this?" The answer soon became clear - solar energy.

## The Journeyman's Journey

Jarek enrolled in an Electrical Code course that he would need in order to be able to start a company. While in that course, he met an electrical engineer who was also interested in setting up a solar energy company. "I believe that you meet people for a reason," says Jarek. "If you have a goal and a vision and focus your energy on that, things seem to fall into place to make it happen."

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Together, these two electrical experts founded Small Planet Energy in 2009, one of the first solar and renewable energy companies on the North Island. In their first year, they only had one project, but Jarek persevered, running the company while continuing to work as a journeyman electrician. Now, over the last 3 to 4 years, Small Planet Energy has experienced tremendous growth. Jarek now employs one part-time employee, and takes on projects all over Vancouver Island, the Lower Mainland, the Gulf Islands and the Discovery Islands. They design and install solar PV systems, micro-hydro systems and wind turbines, both off-grid and grid-tie.

Looking ahead, Jarek sees more growth and a widening employee list, saying, “On a weekly basis, I am receiving resumes from engineers, apprentices and electricians that would love to come and work for us. They want to get into the renewable energy industry, and I see this as a massive sign of growth coming in the very near future.” And that's exactly how current employee Garryt Brown joined the team, according to Jarek; he sent a resume looking for a position just as Jarek was starting to consider hiring another pair of hands. “It’s another one of those things that just fell into place! I needed someone, Garryt reached out and the rest is solar history. He is a highly trained and experienced solar installer. We are lucky to have him.”

“Micro-hydro systems need a running creek or stream to work, and there are other conditions that have to be met such as elevation change and water flow. Wind, again, uses turbines, which make noise, so it’s harder to put them in suburban areas. Wind itself is also a fickle thing, and in a lot of places, not very reliable. These two options often form part of an energy system that uses a combination of wind, solar and hydro to supply power.”

Solar panels are by far the most accessible renewable energy option for homeowners, and qualifying a good site is fairly simple, according to Jarek: “If you have a spot on your property that has very little shade, you qualify,” he laughs. Panels can be placed on a home’s roof or raised off the ground.

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## The Right Conditions

Jarek says that it’s about a fifty-fifty split between customers that are completely off-grid, relying on renewable energy entirely, and grid-tie customers, wishing to offset or eliminate their energy bills. “A lot of my grid-tie customers are on a fixed income and want to lower their hydro bill,” he explains. Most of their business comes from solar PV projects, but Small Planet Energy Inc is an electrical contractor that also installs wind and water energy systems. However, these are more finicky in terms of finding an adequate site.

A typical situation will see Small Planet Energy perform an initial consultation, discussing the goals of the project with the customer and determining whether the site can reach those energy goals. Estimates and budgets are agreed upon, and then materials are ordered. Installation of an average sized system takes 2 to 4 days and Small Planet Energy takes care of all necessary permits and applications. Finally, the system is turned on and power starts to generate.

"The whole process usually takes 1 or 2 weeks from site visit to energizing the system," says Jarek. "It's fairly quick and we make the transition as smooth as possible for our clients. We want the whole thing to be a positive experience."

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## Looking Forward

When asked what he would like to see in the green energy industry over the coming years, Jarek points out that British Columbia and the federal government need to continue support for renewable energy industries.

It's the global trend going forward - look at countries like Denmark and Portugal, which have days where the entire countries' energy is produced from renewable sources. And in Portugal's case, this year, the country ran on renewable energy sources for the entire month of March. Or, there are examples of larger countries, like China and India, which are installing millions of solar panels. In fact, India is running an entire airport from solar energy."

As for Small Planet Energy, while they continue to do work throughout the region, Jarek says that the industry is growing all over Vancouver Island, including here in Campbell River. "This enables me to stay closer to home more of the time, and that's important to me. It all has to be sustainable, right?"

# APPLE ELECTRIC - STEVE KUEHNEL

## Humble Beginnings

For over 30 years, Steve Kuehnel has been working as an electrician in Campbell River and surrounding areas. He mostly worked for other companies as a journeyman electrician. But in 1989, a shortage of work forced Steve to get creative with his job prospects. He ended up founding his own company, Apple Electric, and started his career as a businessman by going door-to-door, offering free estimates to whoever answered.

"I gave a lot of free estimates," he laughs, looking back on those years when he was trying to get his company off the ground. Apple Electric did mostly residential work, and ended up moving to Coquitlam for a few years to work on a large-scale condominium project.

Then in 1994, Steve moved the company back to Campbell River. "I loved Campbell River and I was starting a family. This is where I wanted to raise my kids." Apple Electric also landed a job working on a building at Painter's Lodge, which launched them into doing commercial work. Today, the company works primarily on commercial, institutional and industrial jobs.

Steve, who is also the General Manager and Head Estimator at Apple Electric, is approaching his 30th anniversary of starting the company, and he says that they couldn't be busier.

## Busy As Bees Around An Apple Tree

"Well, where do I start?" Steve laughs when asked where Apple Electric is currently working. "Right now we are sort of all over the place. In BC, in Alberta, up in the Territories and even a job out in Ontario." He explains that since Apple Electric is fairly specialized in water and gas projects, they are in demand across the country.

"We work a lot with companies that are retrofitting their buildings and vehicle fleets to use natural gas heat and fuel," he says. "Apple helps build and install these systems; actually, one of our biggest chunks of work is moving companies from relying on diesel to using natural gas."

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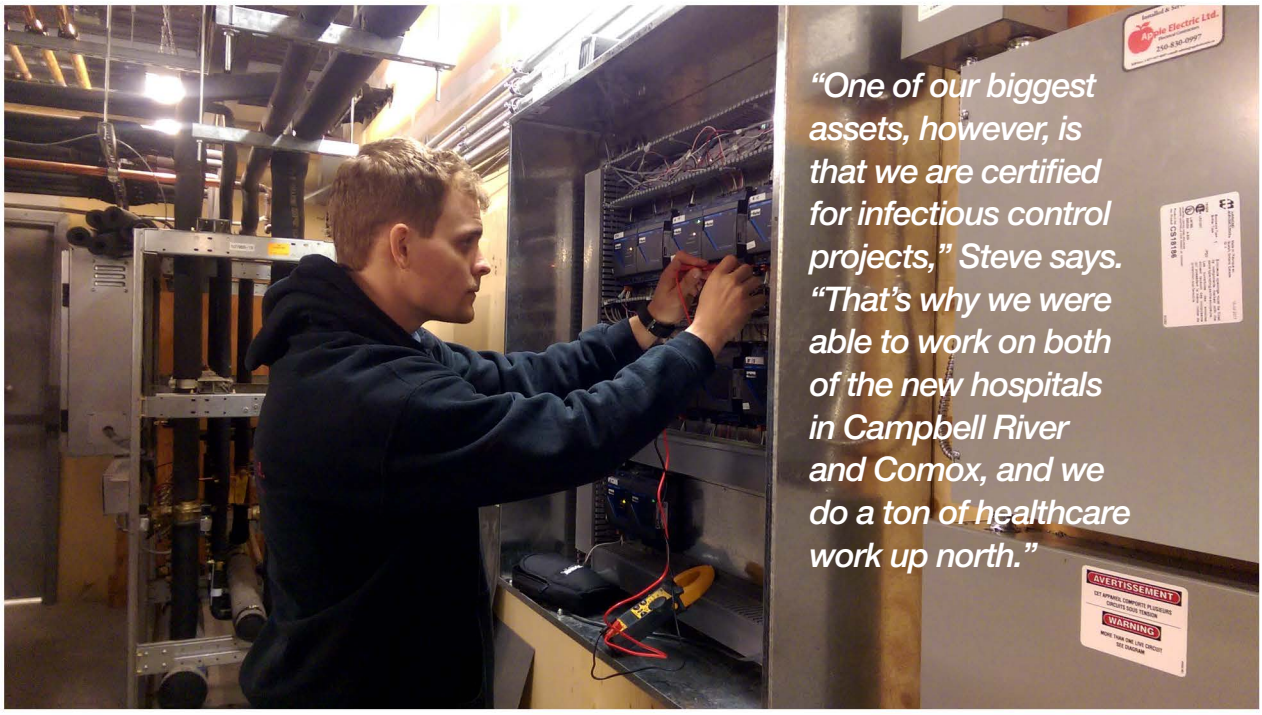
The company does a lot of Vancouver Island work with the retail industry. For example, they were part of the recent project to renovate Superstore in Discovery Harbour. They've also worked on the new Canadian Tire in Saanich and the Walmart in Duncan. CFB Comox often hires Apple Electric for jobs on the military base, and Steve mentions that they've recently done over 200 dock and harbour upgrades for the Department of Fisheries and Oceans.

"One of our biggest assets, however, is that we are certified for infectious control projects," Steve says. "That's why we were able to work on both of the new hospitals in Campbell River and Comox, and we do a ton of healthcare work up north. Places like Quesnel, Terrace, Haida Gwaii – we are specialized for these remote worksites so we are definitely in demand there."




All told, Apple Electric is a year-round, all-weather company that does work across Canada. They employ approximately 50 people, although the workforce expands according to the number and location of projects. But, regardless of where they go and who they work for, Steve says that Apple Electric is always a Campbell River company.

"Most of our guys are local. I'm local! We all choose to live and work here at the end of the day."

## A Greener Industry

Steve says that the building and electrical industry has significantly shifted to a 'green' mentality since he began working, particularly in the past several years. "Most new projects are implementing green initiatives at the planning stage, making energy efficiency and sustainability a major factor that affects the entire building process," he explains. "For example, waste disposal - every fixture we install comes in a cardboard box, so how do we plan our projects to recycle and manage all of these little details? It all has to be worked into the process from day one."

Apple Electric is also affiliated with the BC Hydro PowerSmart energy efficiency initiative, and has also seen a huge jump in renewable energy jobs recently. They are currently working on installing a wind turbine for the Coast Guard in a remote location, and Steve says the number of solar installs they do has risen steadily over the past number of years. Combine that with the work they do moving companies from diesel to natural gas fueling systems - which Steve points out is a move that's heavily-subsidized by the government - and Apple Electric is up to their neck in the green industry shift. Again and again, however, he goes back to the crucial little details.

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"Ten years ago, we were going into buildings and changing lights into energy-efficient fluorescents. Now, we find ourselves going into the same buildings and replacing those fluorescents with high-efficiency LED's. There's so much work to be done even there, in that small corner of the industry."

## The Electricians of Tomorrow

Looking to the future, Steve is confident that, while the construction and electrical industries will evolve, there will always be work available for qualified electricians. He points out that certain shifts are already apparent, such as less construction of big-box retail store as well as increased LED lighting.

"I also think we are soon going to see much more use of solar panels, especially as they get more efficient and less expensive. And when you pair solar panels with LED lights, which are so energy-efficient, it's going to make it so much easier to use solar panels to run everything." From there, Steve says that large battery systems will have to be built in order to store solar energy, which means a huge amount of work for future electricians.

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An interest among homeowners and businesses in energy self-sufficiency, including producing energy on site and diversifying the types of energy used to power and heat buildings, has also become a driver towards 'green' electricity options. In addition, energy self-sufficiency contributes to peace of mind in case of a natural disaster - having solar panels means having power when there's a massive storm or earthquake. Steve says this is hugely attractive to both homeowners and businesses, and he sees a lot of work in the near future for electricians wanting to help retrofit homes and office buildings.

To that point, Apple Electric owns a residential electric company called Mr. Electric, and they are in talks with Tesla to become an official affiliate and begin performing residential retrofits across the Island. This would consist of installing solar panels that are tied to the existing BC Hydro grid.

"What this means is that when you produce more power via solar panels than your home needs, you sell it back to the grid," explain Steve. "Instead of paying BC Hydro, they will send you a cheque! The technology is all here right now, it just needs the right incentives and a lot of manpower." Still, Steve is quick to point out that some industries will still rely on enormous amounts of power, for example water and sewage treatment systems. But, the residential sector will transition swiftly and will have a massive impact on our industry."

# TRF WOODCRAFTS - TODD AND ANNE FARREN

## Perfectionism & Projects: A Love Story

Todd Farren could be described as a 'workaholic.' Since starting his company, TRF Woodcrafts Ltd., almost 20 years ago, he has had a number of titles to his name. "I am a custom cabinetry-maker, I have renovated and flipped houses and I spent years working in the logging industry," he recalls. "I guess you could say I've been busy!"

Todd was logging and making custom cabinetry out of a home-based shop on Erickson Road, installing them into both the houses he was flipping and contracted projects from other customers. Over time, he began to feel frustrated by the quality of the homes he was making cabinetry for. "Honestly, I just came home one day and told Anne that I was sick and tired of installing cabinets into homes that weren't square," he chuckles. "I just thought that the houses I was working in weren't as well-built as I would have liked."

TRF woodcrafts Ltd.

Certified BUILT GREEN™ Builder

***"Honestly, I just came home one day and told Anne that I was sick and tired of installing cabinets into homes that weren't square."***

This was the impetus Todd needed to strike out on his own and start building new homes, together with his wife Anne. They wanted to have control over the entire process of building a home, from planning to construction to handing over the keys. Todd says that, as a cabinet maker, he was "considerably more fussy." TRF completed their first new build in 1998, and haven't looked back. To date, they have completed just over 50 custom and spec homes in the Campbell River area.

## Quality over Quantity

For Todd and Anne, their company's mission statement, "Building Homes You'll Be Proud to Own" means quality is the number one concern when it comes to their projects. Right from the beginning of their company, they knew they wanted to build using efficient construction practices. This means properly sealed doors and windows, above-code insulation choices and installing energy-efficient appliances and heating systems. Not long after starting to build new homes, Todd stumbled upon the Built Green program, a Federal program that trains construction companies in sustainable building practices, and offers incentives to follow program guidelines.

"It really piqued my interest, and seemed like a way to get in front of the coming changes to the building

code," Todd explains. "I'm also a firm believer in working towards environmentally-friendly building practices. If I can make a house that's more sustainable, and drop energy consumption by 40-50% over the course of a year, then that house is going to stand for 80 to 100 years if it's well-built. That's $150,000 to $180,000 in energy savings over the lifespan of that house!"

Even before Todd was certified as a Built Green Builder, TRF Woodcrafts began working with an Energy Advisor almost straight away, which helped immensely in establishing building protocols and has allowed them to achieve the ratings and labelling system for the homes that they build. Every project is now labelled and rated according to the Built Green scale. "We shoot for a Platinum EnerGuide rating on every single house," explains Todd, "We set that benchmark pretty high, but once the processes are up and running it's quite easy to reach."

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***"We want to offer the best possible options without making the final product unattainable," is his simple explanation. "Our houses might be $20,000 or $25,000 more than competitors', but our homeowners recoup those costs within 3 or 4 years. It's a very short timeline."***

Those processes are really just small, detailed decisions at every step of the building process that, when put together, make a big impact. Choices in home orientation, heating products, insulation values and foundation construction are just a few of the decisions that Todd and Anne make when building their custom and spec homes. They've also helped pass this knowledge on to their sub-trade contractors--such as framers, drywallers and siding installers--to meet Platinum standards, creating a community of sustainably-minded building professionals within the local industry. Todd says that their ultimate goal is to keep upfront costs down for the consumer while raising their long-term savings potential.

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## Net-zero? No Problem!

When asked what his work looks like ten years from now, Todd laughs, saying, "Hopefully ten years from now I'm retired!" But until then, he will continue iterating and improving the houses he builds with better construction practices and as many green-energy solutions as he can. For now, all TRF Woodcrafts Ltd. homes are solar-ready, and roughed-in to allow easy access for electric vehicles, giving them the ability to grow into future innovations.

Todd hopes that innovations in renewable energy systems will rapidly decrease in price, making them more attainable for new construction. He points to LED lighting as a similar example, noting that current prices mean that he can incorporate LED light throughout the entire home, saving homeowners thousands of dollars. "Lighting equals about 33% of

your home's energy consumption," he explains. "By switching to LED, you drop that consumption down to around 7%. It's a massive savings and most people don't even realize that lighting is such a huge consumer of energy on their hydro bill."

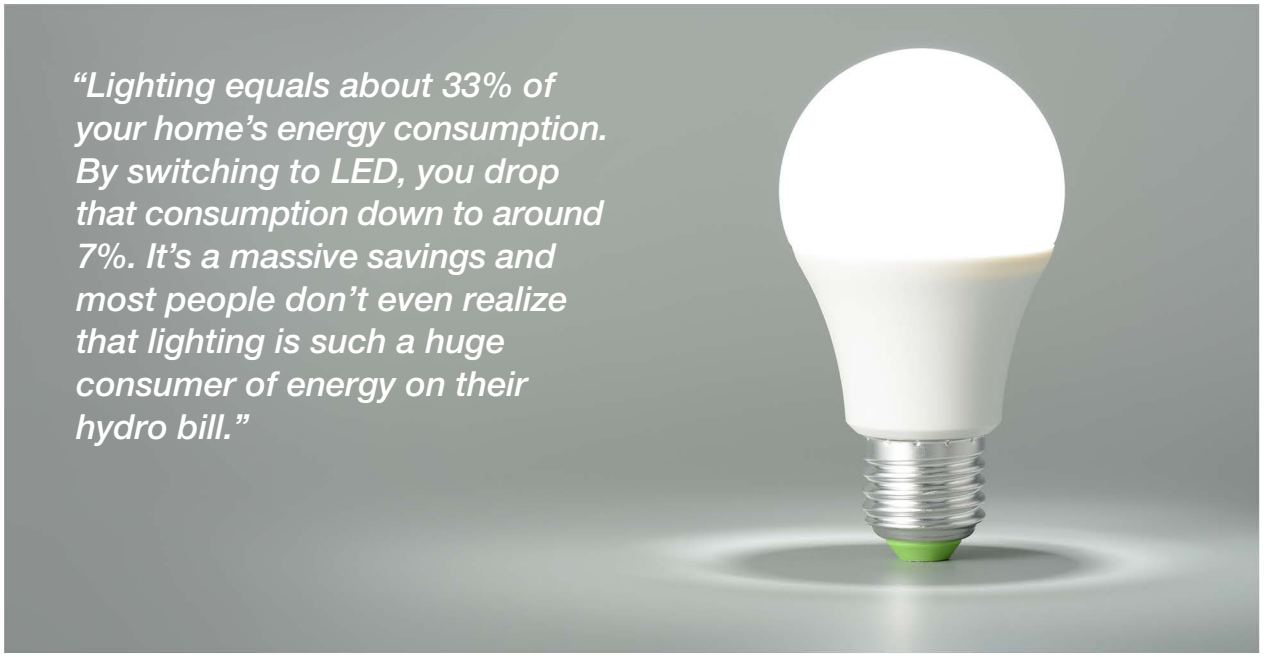
Ultimately, Todd says that he wants to see 'net-zero' homes in the near future, meaning homes that are producing as much energy or more than they require. The Province's recent introduction of the BC Energy Step Code sets forth a five-step framework to help guide the construction industry toward the goal of having all new buildings net-zero ready by 2032. TRF Woodcrafts Ltd. is already leading the pack by constructing new, energy-efficient homes that meet the higher levels of the Energy Step Code.

"I think the Step Code is positive and is the direction the building industry should be going. Everyone should be building to a minimum of Step 3 (20% above the BC Building Code)," Anne Farren added. "The Step Code is very attainable for our industry and region."

Innovative energy systems such as solar hot water and geothermal generation are quickly moving toward an affordable price-point, and Todd would eventually like to see these incorporated into new builds "as a foregone conclusion, no questions asked."

Todd does have one piece of advice for the building industry: start promoting thermally-broken wall systems. "A thermal bridge is any building material in the exterior wall of a house that conducts heat," he explains. "Things like concrete, metal studs, et cetera. If these components are conducting heat out of your house, they are significantly lowering the capacity of the insulation to do its job." Breaking those thermal bridges has not been institutionalized into Canadian building codes, and Todd sees this as an area for improvement, stating that the industry is not known for bold technological advances.

Anne and Todd are looking forward to building their retirement home, which will feature all of the innovations that they believe in so passionately when it comes to homebuilding. "When we build that house, you'll be able to heat it with a candle if need be," he says confidently. "I intend to use recaptured rainwater for 90% of our water consumption. I'll have double-wall systems, probably some solar panels and, with any luck, maybe even a wind turbine!" That final TRF Woodcrafts Ltd. house might just stand out as a leading model for future homebuilders, as the green energy revolution continues to take hold in the industry.



# ECONOMIC DEVELOPMENT UPDATE:

## Green Initiatives & Incentives from the City

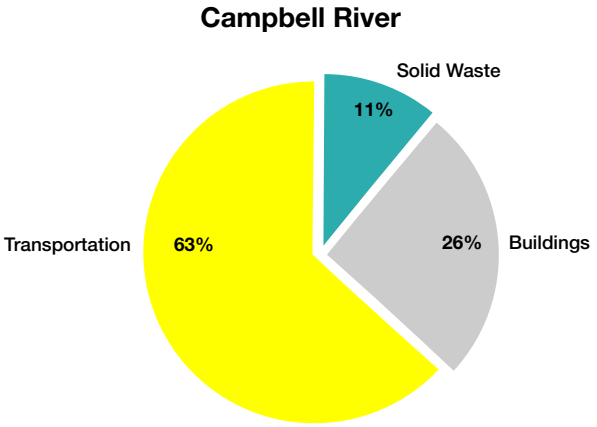
The City of Campbell River is proud to be supporting the energy efficiency work completed by local businesses like Small Planet Energy, Apple Electric and TRF Woodcrafts Ltd. by offering financial incentives for home retrofits and new homes that go beyond the BC Building Code in energy efficiency. These initiatives are aimed at reducing our community's environmental footprint while driving our local economy. The incentives are part of efforts to implement the City's Community Energy and Emissions Plan and Sustainable Official Community Plan, which focus on promoting energy efficiency and green buildings and aim to help make Campbell River a leader in the green-city movement across North America.

## Community Energy and Emissions Plan (CEEP)

In 2011, the City of Campbell River adopted its first CEEP, which included 45 action items to reduce the community's climate impacts, energy use and associated greenhouse gas emissions. Approximately $110 million is spent annually on energy in Campbell River to heat and power homes and businesses. The CEEP provides a strategy to move Campbell River toward reduced energy consumption and increased energy efficiency, helping reduce risk associated with fluctuating energy prices.

The CEEP sets ambitious yet achievable targets for Campbell River to reduce its greenhouse gas (GHG) emissions down 35% by 2040 and 40% by 2060, based on 2007 emissions levels. Most of Campbell River's GHG emissions come from the transportation sector – which accounts for 63% of community-wide emissions. The plan contains a range of actions to encourage using electric vehicles, car share programs and multi-modal transportation such as busing, walking, and cycling.

The next largest contributor to emissions is the energy used to heat and power buildings in Campbell River.




In 2016, the CEEP was updated to reflect current trends and opportunities for the City to continue to demonstrate leadership in tackling climate change, promote energy efficiency and green building, and drive the green economy. Some of the building specific actions include:

- Offering an energy incentive program for both new energy efficient buildings and home energy retrofits
- Creating a financial incentive program to encourage residential homes using oil heat to transition to systems with a smaller carbon footprint (e.g. heat pumps)
- Providing education and outreach to maximize building sector impact (e.g. education sessions for builders, developers, realtors, and the general public on building energy efficiency and the BC Energy Step Code)
- Promoting building energy efficiency, building scale renewable heat and encourage solar passive design

The CEEP has a target of 1-2% of all buildings being built beyond the BC Building Code by 2020, and initiatives such as those described by TRF, Small Planet Energy and Apple Electric, will help the community work toward this target.

As electric vehicles, multi-modal transportation, energy efficiency and renewable energy become more common-place, these sectors can be reimagined in our community, creating new economic development opportunities and enabling Campbell River to meet the targets set out in the CEEP.


## Sustainable Official Community Plan (SOCP)

Campbell River has been growing steadily for well over a decade and that means new houses are being built every year. Growth is good, but it typically leads to an increase in energy use and greenhouse gas emissions.

The Sustainable Official Community Plan sets the long-term vision for how Campbell River will grow and develop, and includes sustainability priorities pertaining to environmental, economic, social and cultural well-being. The SOCP includes a range of community goals for energy efficiency in buildings. To implement these goals, the City is developing incentives, programs and partnerships to encourage energy-efficiency retrofits to older homes, institutions and commercial buildings in Campbell River, and for energy efficient new construction. The City is working with local partners to develop community-based retrofit pilot projects and is offering training programs to educate builders and developers on energy efficient construction and green building techniques.

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The City is designing these programs to fit in with BC Hydro's 'Sustainable Energy-Use Hierarchy,' which provides a comprehensive framework to inform energy efficient buildings. This framework includes:

- Reducing energy demand in Campbell River through community design, green-buildings, efficient technology and education
- Re-using waste heat from industrial and commercial buildings such as sewer and wastewater to heat buildings and hot water
- Using renewable heat sources to heat buildings and hot water
- Creating renewable energy including biomass, biogas, combined heat and power, micro-hydro, winds, solar, tidal and geothermal

By 2020, the new SOCP incentives will be in full swing, helping to transition existing buildings to more sustainable energy sources. All new single family dwellings are currently being built solar-ready, and retrofit projects will be ongoing for existing homes. By 2060, we aim for all new buildings in Campbell River to be net-zero, meaning they are extremely energy efficient and incorporate renewable energy generation on site, and all existing buildings will

have completed significant renovations to become highly energy-efficient. Energy conservation and renewable energy education will have resulted in meaningful behavioral changes by our residents, further reducing our GHG emissions.

These are bold and ambitious goals, set to make Campbell River a leading community in the green-energy sector. Companies such as Apple Electric, TRF Woodcrafts Ltd, and Small Planet Energy are already leading the charge when it comes to revolutionizing the way Campbell River builds homes and powers and heats buildings. Together, the SOCP and the CEEP initiatives will bring new jobs to Campbell River, drive lasting economic growth and help protect the beautiful place that we call home for decades to come.

## INTERESTED IN THE GREEN-ENERGY INCENTIVES AVAILABLE IN CAMPBELL RIVER? CHECK OUT THESE OPTIONS:

**$250 Home Energy Evaluation Rebate:** You could qualify for a $250 rebate when you get an Energy Advisor to conduct a home energy evaluation to help you determine retrofits you could undertake to improve your home's energy efficiency. Click here for more information.

**Oil to Heat Pump Incentive Program:** The Province of BC offers up to $1700 to homeowners that remove their old oil heating systems and upgrade to an energy-efficient heat pump. On top of that, the City of Campbell River offers an additional $1000, giving home owners

$2700 in rebates when you transition. Visit the Oil to Heat Pump website for more information and to submit applications.

**BC Energy Step Code:** New in April 2018, the City of Campbell River provides financial incentives to builders that meet the energy efficiency targets outlined in the BC Energy Step Code. Incentives are currently available for Part 9 (residential buildings) and range from $500 per home to offset the cost of working with an Energy Advisor to a 100% building permit fee rebate for meeting the most energy efficient construction in the Energy Step Code. The BC Energy Step Code aims to encourage builders to build beyond the BC Building Code, increasing the energy-efficiency of their buildings and meeting benchmarks in green building practices. The City is also offering a series of workshops for builders on building to the energy efficiency requirements of the Energy Step Code. Visit the BC Energy Step Code website for more information, or click here for City incentives.

## CONTACT US

**ROSE KLUKAS**
Economic Development Officer

City of Campbell River
Tel: 250.286.5738
Cell: 250.895.0667
rose.klukas@campbellriver.ca
www.campbellriver.ca

City of Campbell River