

Seizing B.C.'s leadership opportunity on the clean economy and climate change

David Suzuki Foundation's advice
regarding discussion paper: Climate Leadership Plan 2015
released July 17, 2015, by the British Columbia government



INTRODUCTION

The David Suzuki Foundation is pleased to comment on the 2015 Climate Leadership Plan and to help build on the successful climate policies already established in British Columbia. Meeting the 2020 and 2050 legislated carbon-reduction goals will take considerable effort and cooperation across the province. The open comment period provided by the government is valuable in considering as many voices as possible as the province tackles the climate challenge. Here at the David Suzuki Foundation we collaborate with Canadians from all walks of life, including government and business, to conserve our environment and find solutions that will create a sustainable Canada through science-based research, education and policy work. Our mission is to protect the diversity of nature and our quality of life, now and for the future.

British Columbians are already feeling the impacts of climate change and they are costing us heavily. We will continue to see impacts, but we can avoid the worst-case scenario if we act now. The severity of climate impacts are not a matter of chance. Our future will be determined by the choices we make now, and prioritizing clean energy and phasing out fossil fuels can complement many, if not all, of the goals listed in this discussion paper. Climate change is no longer solely an environmental issue. It is an economic, food security and human security issue. B.C. has an opportunity to demonstrate global leadership once again and position itself at the head of a growing legion of jurisdictions advancing innovative and robust economies.

As with the climate policies introduced in the 2008 Climate Action Plan, we now have the opportunity to implement policies in a consolidated manner, once again improving their effectiveness. To ensure effective policies, B.C. should adopt targets for heat use, transportation and building efficiency, in addition to carbon emissions reduction goals. An effective suite of policies with dedicated targets can provide the impetus for the paradigm shift needed to grow a low-carbon economy in B.C. The David Suzuki Foundation is responding to the discussion paper in the format requested by the

B.C. government, but we have also included specific policy options that will support and enable the goals outlined in the paper. All B.C. emissions statistics quoted in this document are taken directly from the Climate Leadership Plan 2015 Discussion Paper. The Discussion Paper first asks respondents to consider several questions regarding the main goals of the proposed action.

QUESTIONS FROM DISCUSSION PAPER

1) *In the short term, which of the four goals needs the most immediate attention in order for B.C. to achieve its 2020 targets? Why?*

In the short term, the goals for “the way we travel” should be the most immediate priorities. Transportation contributes 37.2 per cent of B.C.’s total emissions and must be addressed to meet short- and long-term legislated goals. Government must support the shift to zero-emission vehicles and infrastructure (e.g., transit), and low-emission heavy vehicles to reach the 2020 target. Policies to support this shift are identified later in this document.

2) *In the long term, which of the four goals needs the most immediate attention in order for B.C. to achieve its 2050 targets? Why?*

In the long term, the province will be required to use all the tools at its disposal to meet the 2050 reduction goals. Nonetheless, the goals for “the way we work” and “what we value” will require the most immediate attention. If B.C. does not make binding commitments, climate action will suffer. The consideration of issues like liquefied natural gas expansion must also include the climate costs and risks, and not just the potential financial benefits.

1. THE WAY WE LIVE

Goal 1: Communities are thriving and resilient in the face of climate change.

Indicate your level of support for each of the following statements as they relate to achieving Goal 1 (distribute 10 points among 4 choices):

- Minimizing travel and energy use needs to be a priority for community planning (4 of 10).
- Regulations and incentives should require more energy-efficient buildings and greater uptake of clean energy technologies (3 of 10).
- Governments need to invest more in building resilience to extreme weather events and provide stronger direction regarding appropriate places to build (2 of 10).
- Local food supply and low-carbon businesses should be strongly supported by communities (1 of 10).

What is the most important statement of the four related to attaining Goal 1? Why?

Community planning to minimize travel and energy use should be the top priority. Minimizing travel and energy use has inherent health benefits and cost savings and brings communities together.

Municipalities are already leading climate action in B.C. They should be empowered to do even more to keep the momentum going. The B.C. government should focus on where it has jurisdiction to empower communities. Key priorities include:

1. Securing long-term dedicated revenue sources (for provincial and municipal contributions) to fund transit and active transportation infrastructure and services. The annual level of investment will likely need to meet or exceed the level of investment outlined in B.C.'s 12-year Transit Plan, first released in 2008 (approximately \$11 billion in new funding over a 12-year period, of which \$4.75 billion was outlined as the provincial commitment).
2. Community Charter and partnerships. All provincial transit investment agreements should be based on a cooperative approach where local communities align their planning targets (growth plans) with one another to support compact communities with targeted transit hubs and corridors.
3. Seek to increase the density of housing areas, thereby creating walkable and bikeable communities with amenities and services nearby.

2. THE WAY WE TRAVEL

Goal 2: People and goods move efficiently and reliably, using clean transportation.

Indicate your level of support for each of the following statements as they relate to achieving Goal 2 (distribute 10 points among 4 choices):

- Increasing use of clean, coordinated transportation such as public transit, carpooling, shared travel, bicycles and walking should be a government priority (4 of 10).
- People should be encouraged to drive less through incentives or increased costs (e.g. for using fossil fuels) (1 of 10).
- Regulations and incentives should be expanded to increase the use of cleaner vehicles and fuels (4 of 10).
- Public and private investments should be directed towards infrastructure designed to withstand extreme weather conditions (1 of 10).

What is the most important statement of the four related to attaining Goal 2? Why?

Efforts to increase the use of cleaner vehicles and fuels should be a top priority. Expanding public transportation networks and infrastructure (buses, light rail, etc.) and encouraging people to drive less are also critically important goals, but some people do not have the option to take public transit or drive less. The commercial transportation sector accounts for 23.9 per cent of B.C.'s emissions, and increasing public transit or having people drive less will reduce emissions in this sector by mitigating traffic. Cleaner vehicles and fuels will be essential in cutting carbon pollution from transportation in B.C.

3. THE WAY WE WORK

Goal 3: B.C.'s economy remains strong, and jobs continue to be created, while greenhouse gas emissions fall.

Indicate your level of support for each of the following statements as they relate to achieving Goal 3 (distribute 10 points among 5 choices):

- Governments, businesses, universities and colleges need to accelerate development of a workforce that excels in a low-carbon economy (2 of 10).
- Consumers should use their purchasing power to encourage organizations to reduce their emissions (1 of 10).
- Government should use regulations and incentives to drive organizations to innovate and cut their emissions while growing their business (2 of 10).
- New major sources of emissions in the province should be required to align with B.C.'s climate plan (3 of 10).
- Government and business should collaborate to expand technology exports and access to global carbon markets and investments (2 of 10).

What is the most important statement of the five related to attaining Goal 3? Why?

If B.C. is serious about meeting its long-term emissions-reduction goals, any new major emissions sources must align with B.C.'s climate plan. We can't have individuals, local governments, current business and others make efforts to reduce emissions just to have those efforts cancelled out by emissions from a new industry. New industries must be climate conscious or our 2050 goal will be unattainable.

4. WHAT WE VALUE

Goal 4: The cost of climate change for society is considered whenever British Columbians make important decisions.

Indicate your level of support for each of the following statements as they relate to achieving Goal 4 (distribute 10 points among 4 choices):

- Government should expand the use of carbon pricing to stimulate business and consumer decisions that reduce emissions (4 of 10).
- Government should improve the affordability of solutions that allow business and consumers to reduce emissions and prepare for climate change (2 of 10).
- Government should set targets for types of emissions (e.g. transportation, industry, buildings, etc.) to get reductions (2 of 10).

- Government should use regulations and incentives to drive organizations and people to consider costs of adapting to climate change in important decisions (2 of 10).

What is the most important statement of the five related to attaining Goal 4? Why?

Carbon emissions cause climate change. Applying a carbon tax acknowledges this and prices the problem, thereby reducing the “free dumping” of this pollution into our atmosphere. This tax makes cleaner options more economically viable as traditional pollution sources become more costly. A carbon tax is the strongest and most effective tool for mitigating climate change. B.C.’s carbon tax has been cited as a successful example of carbon pricing for the past seven years, but the current freeze should be lifted and tax level increased. The tax should also be broadened (e.g., applied to industrial process emissions) to meet our emissions-reduction goals.

SUMMARY OF CLIMATE CHANGE POLICY RECOMMENDATIONS FOR B.C.

TRANSPORTATION

Efficient transportation system improvements reduce emissions and congestion, expand transportation choices, improve public health and lower transportation costs for government and individuals. Powering our transportation system with clean electricity is key to effective climate policy in B.C. We recommend:

- **Develop a long-term financing plan for public transit infrastructure in B.C.** This plan should secure dedicated, long-term funding for public transit infrastructure in the province. As outlined in B.C.’s 2008 Transit Plan, the level of investment to achieve the 2020 emissions target will likely need to meet or exceed \$11 billion in new transit infrastructure, province-wide. Of the new funding, approximately \$4.75 billion will be the required provincial contribution. Cooperation and key partnerships with the federal and municipal governments will also be important. Working with local governments to secure revenue tools for the regional funding contributions will require focus and decisive leadership. Furthermore, all new funding agreements should ensure that local growth plan objectives focus on development to achieve livable, compact communities and dedicated transit hubs and corridors.
- Review the Renewable and Low Carbon Fuel requirements and set aggressive emission targets for 2050.
- Develop clean emission vehicle standards for 2030 and 2050 that could help inspire national standards.

CARBON TAX

B.C.'s carbon tax has been one of Canada's biggest economic and environmental success stories. While the carbon tax price signal was ramping up, fuel use dropped in the province as it increased in other parts of Canada, all while economic growth in B.C. outpaced the national average. It is time to remove the freeze on annual carbon tax increases and have its positive effects grow even further. Recommendations for the carbon tax include:

- Reinstitute the annual increases to the carbon tax beyond 2020.
- Expand the carbon tax to cover the remainder of B.C.'s economy (e.g., work to improve fairness and effectiveness by closing loopholes and apply the carbon tax incentive to industrial process emissions).
- Increase the transparency of tax cuts resulting from the carbon tax.

GREEN BUILDINGS

Buildings account for 12 per cent of B.C.'s emissions. Efforts to retrofit buildings as well as increase efficiency standards for new buildings will be required for substantial emissions reductions in this area. Buildings should be designed to reduce their overall impact on the natural environment and human health. Recommendations for creating more sustainable buildings include:

- Promote and invest in district energy systems, where possible.
- Develop a net-zero building standard and timeframe for implementation.
- Promote and provide incentives for the use of wood for construction.
- Develop a Property Assessed Clean Energy (PACE) financing system for homeowners.

B.C.'S CLEAN ECONOMY

Clean technology is Canada's fastest-growing sector and has quickly developed into one of the most promising elements of our country's economy.¹ B.C.'s clean-tech industry has grown to one of the most vibrant in North America, with 202 companies employing over 6,400 people and generating \$1.7 billion in revenues annually, primarily from exports.² Recommendations for supporting B.C.'s clean-tech economy include:

- Strengthen B.C.'s Innovative Clean Energy (ICE) fund.
- Expand the Carbon Neutral Capital Program funding.
- Have local governments become carbon-neutral by 2018.
- Bring natural capital assets into the same asset-management system as engineered infrastructure.³

EDUCATION AND OUTREACH

- Increase the awareness of B.C. residents around climate change and the possible policies to mitigate and adapt to its effects.
- Re-establish the seven regional Citizens' Conservation Councils (CCCs) on Climate Action to inform government on ways to develop a low-carbon economy and to educate and inform citizens about the challenges of climate change.
- Match the research expenditures from the endowment of the Pacific Institute for Climate Solutions (PICS) on an annual basis to speed the development of climate solutions in B.C.

COMPLETE SPECIFICS OF CLIMATE CHANGE POLICY RECOMMENDATIONS FOR B.C.

TRANSPORTATION

Transportation makes up the greatest source of greenhouse gas emissions in the province, accounting for over 37 per cent of provincial emissions. To meet B.C.'s targets for emissions reductions, transportation must be a major focus and the electrification of vehicle fleets made a priority.

Addressing greenhouse gas emissions from transportation offers tremendous co-benefits. By creating high-density neighbourhoods, communities can save up to 30 per cent in public infrastructure costs and 50 per cent on personal transportation costs.⁴ Households in Canada currently spend 28 per cent of income on housing and 20 per cent on transportation. These costs can be reduced considerably through effective transportation planning. We cannot continue to build automobile-oriented urban sprawl. Obesity and other health issues can be addressed by planning communities that enable walking or biking rather than driving. As obesity rates in Canada threaten to shorten lifespans, effective transportation planning is an environmentally conscious way to tackle this growing issue.

- Investment in public transit infrastructure will give people the option to leave their cars at home or avoid having one altogether, leading to reduced carbon footprints for individuals. By reducing reliance on private vehicles, building balanced transit networks cuts traffic congestion and leads to better public health by keeping pollutants linked to asthma and cardiovascular disease out of the air. Creating communities with biking and walking access, linked to public transportation, will encourage low-carbon healthy lifestyles. Our current transportation system cannot absorb the anticipated population growth in B.C., so in addition to the policies already mentioned, car-sharing and ride-sharing must also be employed. Car-sharing can reduce the total distance travelled by individuals, and for each car in a car share program 4 to 11 cars are removed from the road.⁵ Rideshare apps also allow people to avoid single-occupancy trips by adding passengers to their vehicle, increasing efficiency and lowering travel costs for all parties. The relationship between

the provincial government and municipalities must continue to be developed as well. The only path to effective transportation is through effective planning at all levels of government, working in concert with each other. Transit hubs and walkable communities must be a provincial priority.

- The province's Renewable and Low Carbon Fuel requirements should be reviewed and targets set for 2050 that complement the renewable fuel requirements for gasoline (five per cent reduction) and diesel (four per cent reduction) and the Low Carbon Fuel Standard (LCFS) reduction target of 10 per cent by 2020. To meet the 2020 targets, the LCFS should be modified to account for "high carbon intensity fuel". A system of credits and deficits could be developed like the system used in California to account for lifecycle differences in emissions between crude oils. By treating all crude as equal in terms of emissions, the current standard fails to establish disincentives for fuel suppliers that are sourcing high-carbon fuels.
- A Clean Emission Vehicle Standard should be developed with vehicle emissions per kilometre reduced over time toward a Zero Emissions Standard. Policies to spur the development of sustainable second-generation biofuels in B.C. should be pursued to help aid the transition from liquid fuels to electric vehicles. Electric vehicle support should be continued through programs like the "Scrap-It" program, "Clean Energy Vehicle Incentive Program" and "Plug in B.C." Electric vehicle incentives could also include free bridge tolls, free parking, discounted insurance and access to HOV lanes to further stimulate the move to electric and low-carbon vehicles.

CARBON TAX

B.C.'s carbon tax is a successful climate change policy. Fuel use and associated greenhouse gas emissions have been reduced by 16 per cent while the rest of Canada has increased fuel use by three per cent.⁶ Equally impressive, B.C.'s economy has outperformed the national average since the tax was implemented. The World Bank and OECD have called it an environmental and economic success story. Let's strengthen this world class climate change policy in B.C.

- Continue the iterative annual increases of the carbon tax at a minimum of \$10 per year, starting one year in advance of the proposed freeze of 2018. Therefore, July 1, 2017 = \$40/tonne CO₂e to July 1, 2020 = \$70/tonne CO₂e. To meet B.C.'s legislated reduction goals we suggest a carbon price closer to \$100/tonne may be needed by 2020. If the legislated goal of a 33 per cent reduction in carbon emissions from 2007 levels has not been achieved by 2020 then a commitment to much higher iterative annual increases between 2021 and 2025 will be required. This action will prioritize clean energy and innovation through the stronger economic signal of the carbon tax. Make this commitment now to enhance an already successful policy that many call a model for the world.
- To implement the many climate change policies needed in B.C., a significant source of funding will be required. If this funding is not already allocated from general revenues, the increase in carbon tax revenue should be used to fund targeted initiatives and critical green infrastructure. The carbon tax can remain fiscally responsible while delivering fair taxation and improving its

effectiveness. Seventy per cent of British Columbians oppose increasing the carbon tax if revenues are used to cut corporate taxes while over 60 per cent respond favourably to spending the tax revenues on clean energy and transit initiatives.⁷ The benefits of this increased directed funding will also include new investment and jobs, balanced transportation systems, less traffic, cleaner air, more green spaces, improved public health, energy savings and better quality of life.

- Expand the carbon tax and close the loophole for industrial non-combustion process emissions. If there are more emission sources that are feasible to measure and account for since the inception of the carbon tax, these should also come under the tax. Fugitive emissions in B.C. equate to nine per cent of total emissions and should be brought under the tax, especially recognizing the expected expansion of natural gas development in the province. Agricultural, waste and non-combustion industrial processes also contribute 14 per cent of B.C.'s total emissions and do not currently fall under the carbon tax.⁸ The original intention of the tax was to have "no exceptions", with all emissions possible taxed in order to see them decreased over time. Remove the 80 per cent tax credit received by the agricultural sector for carbon tax paid on natural gas and propane and charge the carbon tax on coloured diesel and gas over a three-year period. Research done at the Pacific Institute for Climate Solutions shows the agricultural sector was not negatively affected by the carbon tax. Therefore, this exception should be removed.
- Increase the transparency of tax cuts resulting from carbon tax revenue. B.C. Budgets shows that in 2008/09, 34 per cent of the tax cuts went to personal income tax, 32 per cent went to corporate tax cuts and 34 per cent went to low-income families. Significant changes have been made to the distribution of these tax cuts without a clear explanation. In 2012/13, we now see 67 per cent of the carbon tax revenue going toward corporate tax cuts, 15 per cent to personal income tax, 12 per cent for low-income families, and the new northern and rural tax benefit at six per cent. Why have these tax cuts shifted so dramatically from the "balanced" approach originally implemented? The success of the "revenue neutral" aspect of the tax may be at stake if the government continues to increase corporate tax cuts for industries like film and production (budgeted tax cuts from carbon tax of \$80 million and \$198 million respectively for 2014/15) over using the carbon tax revenue for public transit or clean-energy development. If the shift in tax cuts is justified, a more transparent system will aid in explaining this.

GREEN BUILDING

Buildings in B.C. account for 12 per cent of provincial emissions, and efforts to retrofit buildings and increase new-building standards are required for substantial emissions reductions. The mandate for LEED-certified new construction for all government operations is a step in the right direction, but more can be done.

- Promote District Energy Systems where possible. A district energy system, where homes and businesses share heating and cooling provided by a central facility, results in a more locally controlled energy system and offers a number of benefits. In addition to greenhouse gas reductions, a district energy system is very flexible, easily allowing for the addition of businesses or homes.

It is more efficient than smaller individual heating systems and increases reliability (through backup fuel integration), and in B.C. many systems currently use carbon-neutral biomass as a fuel source. Communities must be developed with the urban form needed to maximize the benefits of district energy systems. By promoting the multiplexing of single-family dwellings and encouraging infills, low-density neighbourhoods can be made viable for district energy systems.

- Develop a net-zero building standard and timeframe for implementation. Net-zero buildings are highly efficient structures that produce as much energy as they use. The development of zero-energy buildings has been made possible through progress in new energy and construction technologies and techniques and also by academic research, which collects precise energy performance data on buildings and provides performance results to be analyzed for efficacy. This building standard cannot be achieved in the short term, but by increasing building efficiencies through building codes over time and supporting renewable energy development, the policy could be achievable by 2020.
- Promote and provide incentives for use of sustainably sourced wood for construction. Building with wood instead of concrete offers considerable carbon benefits, and B.C. has a mature lumber industry to supply the materials needed.⁹ More research needs to be done on the cost difference between wood and concrete construction. Wood buildings are generally constructed faster (getting tenants in and paying leases quicker than with concrete buildings), and over time may be less costly than concrete as building standards improve and trades become accustomed to using wood. This affordability may be amplified if building codes enabled developers to monetize the carbon benefit from using wood over concrete. Early research from the Trottier Energy Futures Project indicates that four- to six-storey walk-up buildings are prime candidates for wood construction. B.C. must make certain that the annual allowable cut is sustainable to guarantee the benefits of using wood to store carbon in buildings.
- Develop a Property Assessed Clean Energy (PACE) financing system for homeowners. A PACE bond allows for financing of energy efficiency or renewable energy installations such as adding insulation or installing solar panels to a home. The loan is repaid over a number of years on the property taxes for the home, and the loan is attached to the house rather than the individual. For local governments PACE can be used to reduce local greenhouse gas emissions, promote energy efficiency, make the shift to renewables more affordable and reduce energy costs for citizens. The David Suzuki Foundation has identified that local governments may be the optimal facilitators of such a program, so once again coordination with the province would be essential. Municipalities have the capacity to encourage neighbourhood-scale initiatives, thereby making installations more cost-effective and efficient. As well, community-wide programs would result in more proximate energy efficiency comparables, which could enhance the properties' appraised value.¹⁰

B.C.'S CLEAN ECONOMY

With more than 200 companies, 6,400 employed and \$1.7 billion in annual revenue, British Columbia is a leading province in Canada's clean-tech industry and is home to many of the country's top innovators. This success story must be developed further. The global market for clean technology is growing rapidly and the B.C. economy can thrive by being a leader in this sector through providing the tools, technologies and services needed for the next energy revolution.

- Strengthen B.C.'s Innovative Clean Energy (ICE) Fund. The mandate of the ICE Fund is to support advancement of pre-commercial clean energy technologies in the electricity, alternative energy, transportation and oil and gas sectors by acting as a critical bridge to the financial barriers to commercialization. Since 2008, over \$77 million has been approved for 62 projects throughout B.C. These demonstration projects showcase a variety of clean energy technologies including solar, wind, tidal, geothermal, ocean wave and bioenergy. Many of the solutions to climate change have already been developed but commercialization has not been achieved. By increasing the ICE fund to \$25 million annually the government will be speeding the transition to a clean, low-carbon economy — one that will create high quality jobs within the clean-tech sector.
- Expand Carbon Neutral Capital Program funding, currently \$14 million annually, to match the original Public Sector Energy Conservation Agreement (PSECA) funding of \$25 million annually. This additional funding will enable carbon emission reductions within government operations and will reduce reliance on offsets to achieve carbon neutrality. As the low-hanging fruit of emission reductions projects are completed, reductions will become more costly. The government is therefore urged to increase the Carbon Neutral Capital Program Funding over time.
- Continue to encourage local governments to become carbon neutral by 2018. Most of B.C.'s local governments have signed on to the B.C. Climate Action Charter. The Charter's goals have changed over time, and becoming carbon neutral is now voluntary. Local governments in B.C. have been the driving force behind climate action and having each become carbon neutral by 2018 will contribute substantially to forming low-carbon communities. The Trottier Energy Futures Project, to be completed soon, will include scientific reviews of the full range of energy production and distribution opportunities available to local governments across Canada, taking into account economic, social and environmental concerns. The commitment of B.C.'s local governments to be carbon neutral by 2018 will be a boon for clean energy development and the transition toward renewables in B.C.
- Bring natural capital assets into the same asset-management system as engineered infrastructure. Natural capital assets, and the ecosystem services they provide, are a fundamental and integral part of local government's infrastructure. Natural capital can take the form of green spaces, aquifers, foreshore areas, creeks and urban forests — and can provide rainwater management, flood control, wind buffers and water purification, among other vital services. These natural capital assets provide clear advantages over engineered infrastructure. The town of Gibsons has developed an Eco-Asset Strategy and has listed the following advantages of its natural capital assets:

- o They are cheaper to operate and maintain, if not degraded.
- o They may provide “free” ecosystem services.
- o They do not depreciate if properly managed.
- o They are carbon-neutral or even carbon-positive.¹¹

In terms of policies, we support a fund to promote the baseline evaluation of natural assets in each community as well as the recognition of carbon storage and sequestration ability of natural assets in GHG accounting. Some regions, like Metro Vancouver, have committed to and started planning for regional green infrastructure networks. Where possible the province should assist regional districts in these efforts and in achieving inter-regional connectivity and coordination. In concert, these policies will assist the government’s climate change goals, complementing the GHG reduction strategy. We know that we must reduce greenhouse emissions, but we also need to protect our forests, farms and wetlands as precious resources that help to capture and store carbon dioxide and filter air pollutants.

FINAL THOUGHTS AND CLIMATE CHANGE POLICY OPTIONS TO CONSIDER

Climate change will have devastating consequences unless we immediately reduce greenhouse gas emissions. We are already seeing the impacts of climate change and the costs are becoming troublesome. We will continue to see impacts, but we can avoid the worst-case scenario if we act now to reduce emissions and adapt to the changes already occurring. The longer we delay in taking action, the greater the impacts and costs will be to society. Climate change is no longer just an environmental issue. The World Economic Forum, the World Bank, the International Energy Agency and countless other organizations agree that it is the most pressing issue of this generation and deserves our full attention. With this renewed effort in building climate policy, B.C. has the opportunity to lead by example once again and help mobilize a global shift to low-carbon societies.

Innovative strategies are being developed to address climate change, and these new policy tools must be reviewed for efficacy here in B.C. One such strategy is California's "50-50-50 by 2030: Transportation and the California Energy Challenge". The challenge calls for a 50 per cent reduction in petroleum use, 50 per cent of new electricity to be from renewable sources and a 50 per cent increase in building efficiency. This plan not only attempts to reduce petroleum fuel use, one of the greatest emissions sources in both California and British Columbia, it also recognizes that a concerted effort is required to truly address the challenges posed by climate change. One of the 50-50-50 sponsors, Kevin de Leon, said the negative effects of climate change could eventually pose more of a threat to the economy than any job losses brought on by stricter regulations, and that California doesn't need industries that depend on fossil fuels for its growth.¹² The David Suzuki Foundation agrees that the long-term costs associated with unchecked climate change will be devastating and encourages the government to adopt a 50-50-50 by 2030 plan here in B.C.

Climate change is not a distant phenomenon, it is happening now. Efforts to reduce greenhouse gas emissions can help us avoid the worst effects of climate change, but we must also adapt to the changes we have already triggered and will see in the future. The IPCC defines adaptation as the "adjustment in natural or human systems to a new or changing environment. Adaptation to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. Various types of adaptation can be distinguished, including anticipatory and reactive adaptation, private and public adaptation, and autonomous and planned adaptation." Adaptation planning cannot be done as an afterthought and should be considered in every policy and every climate action. Here in B.C. we suggest the following adaptation measures:

- Develop green spaces and wetlands in our cities. These spaces absorb water and shelter homes from flooding events and extreme weather.
- Promote green roofs and plant more trees and shrubs in neighbourhoods. This will help cool our homes and businesses in times of severe heat and save energy costs by retaining heat in the winter.
- Where possible, use absorptive or permeable surfaces instead of concrete and asphalt. This will reduce flooding during times of heavy rain and storms.
- Encourage all local governments in B.C. to develop a climate change adaptation strategy. Communities must plan for the changes in climate or face overwhelming costs later as they react to the impacts.

Considering the upcoming United Nations climate negotiations in Paris, future generations may very well look back on 2015 as the year that the world got its act together in the fight against climate change. We encourage the B.C. government to participate in this paradigm shift to an innovative, low-carbon global economy by building on the strong provincial climate policies already in place. To meet the legislated emissions-reduction goals in B.C., we need to use the full set of tools at our disposal and commit to adopting world-leading climate policies. Implementing the policies outlined in this paper would be an effective step toward dealing with climate change in B.C. and around the world.

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