



## **Carbon Neutral Conversations**

**Exploring the potentials and possibilities**

June 14<sup>th</sup>, 2022

### **Participants**

**Professor Ann Dale**, Moderator and Principle Investigator, Royal Roads University

**Professor Leslie King**, Panelist and Co-Investigator, Royal Roads University

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**Dr. Tamara Krawchenko**, Panelist and Co-Investigator, University of Victoria

**Dr. Katya Rhodes**, Panelist and Collaborator, University of Victoria

The Carbon Neutral Conversations series is a research collaboration between Royal Roads University and the University of Victoria.

# Dialogue

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## **Leslie King**

Good morning Ann and all! Very excited to have this conversation and trot our project out into the open!

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## **Katya Rhodes**

Hello everyone, thank you for having me. Look forward to the discussion.

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## **Evert Lindquist**

Hi, Ann and Leslie. Looking forward to our dialogue today and to see how this interactive approach works!

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## **Tamara Krawchenko**

Hello All! Looking forward to the conversation!

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## **Ann Dale**

Welcome, everyone. I would like to gratefully acknowledge that Royal Roads University faculty and staff are privileged to learn and work on the traditional unceded lands of the Xwsepsum (Esquimalt) and Lkwungen (Songhees) ancestors and families. These lands have been a gathering place for thousands of years where Indigenous peoples have shared stories, food, medicines, teachings and knowledge. As a university, we deeply respect and recognize this ancient lineage and seek to uphold and sustain these lands as a gathering place for reconciliation.

Today, we will be e-talking about our new research project, Realizing a carbon neutral economy: new institutional arrangements. A critical and yet complicated subject, how to transform government in Canada. Our website can be found at [carbonneutralitycanada.ca](http://carbonneutralitycanada.ca). We are building upon our 7-year climate change adaptation and mitigation research project which can be accessed at [mc-3.ca](http://mc-3.ca).

This is a four-year research partnership between Royal Roads and the School of Public Administration at the University of Victoria. It is funded by the Social Science and Humanities Research Council (SSHRC). Our goal is to explore what new multi-level governance arrangements must be instituted in Canada to move to a carbon neutral society by 2030, 2040 and 2050. Our research question is: *What are the governance and complimentary institutional arrangements that need to be put in place in Canada to realize a carbon neutral economy by*

*2050, recognizing that achieving this goal will involve working across levels of government and with the for-profit- non-profit and community sectors.*

We are committed to timely knowledge transfer of our research and thus will be leading a series of these virtual conversations throughout the project, even as we are still thinking and asking questions ourselves.

Before we begin, I would like to ask the core members of the team to introduce themselves. Let's start with our UVic colleagues, Evert, Tamara and Katya, followed by Leslie and Emily.

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### **Evert Lindquist**

Hi, my name is Evert Lindquist, and I am a Professor of Public Administration at the University of Victoria's School of Public Administration and served as Director from 1998-2015. I teach courses to graduate students on Government and Governance, The Public Policy Process, Ethical Public Management, and Reforming Government. I have also served as Editor of Canadian Public Administration, our country's scholarly journal in this area for ten years.

I am not a specialist in sustainability and climate-change policy and governance (unlike several of my UVic colleagues, Katya Rhodes, Tamara Krawchenko, Astrid Brousselle), but I do have eclectic interests and published on diverse topics relating to public administration, decision-making, public sector reform, policy advising, and comprehensive policymaking to address difficult challenges (e.g. the Green Plan, NEP, National AIDS strategy).

A recent project will soon come to fruition: Policy Success in Canada: Cases, Lessons, Challenges (eds. E. Lindquist, M. Howlett, G. Skogstad, G. Tellier, and P. 'Hart) will be published with Oxford University Press in late June 2022), which showcases 22 case studies. This has lessons about the lead-times and conditions required for new policy ideas and regimes to become successes.

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### **Leslie King**

Delighted to be working with you all!! Greetings! I am Leslie King, professor of Environment and Sustainability at Royal Roads University. I am also Director of the Canadian Centre for Environmental Education and Program Head of the Masters in Environmental Practice at RRU. I have recently introduced a graduate program in Science and Policy of Climate Change, and a Certificate in Indigenous Environmental Leadership. I am co-investigator for Ann Dale's SSHRC funded project, Realizing a Carbon Neutral Economy in Canada, the subject of this e-dialogue. Other current research is NORSEACC, Northern Knowledge for Resilience, Sustainable Environments and Adaptation in Coastal Communities and ARCPATH, Arctic Climate Predictions: Pathways to Sustainable Arctic Societies. I look forward to the conversation!!

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## **Katya Rhodes**

Hello all. I am an Assistant Professor in the School of Public Administration and member of the Institute for Integrated Energy Systems at the University of Victoria. I investigate the topics of low-carbon economy transitions and climate policy design using survey tools, energy-economy models, media and content analysis. Prior to joining the academia, I worked in the British Columbia Climate Action Secretariat where I led greenhouse gas emissions modelling and economic analyses for the provincial CleanBC plan. My current research focuses on the design of effective and politically acceptable climate policies as well as governance mechanisms that can help sustain effective policy in the future.

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## **Tamara Krawchenko**

Hello everyone! My name is Tamara Krawchenko – I’m an Assistant Professor at the University of Victoria’s School of Public Administration and member of UVic’s Institute for Integrated Energy Systems. My expertise is in comparative public policy and regional development. My research examines the unique needs of places and how public policies and institutions of governance shape lived realities and outcomes. What is the right scale of governance; how do we understand territorial inequalities and what can we do to tackle them; how do we design public policies that work for different kinds of places and; what is the capacity of different places to meet some of the greatest challenges of our time such as climate change adaptation and mitigation and transitioning to post carbon economies? These are some of the issues I tackle in my work. Right now, I am focused on how to decarbonise economies and transition industries in a way that is fair and just. Many of our most polluting industries are regionally concentrated and shifting these industries has major repercussions for local employment and economic and social development in specific communities. My research examines how different places are managing these processes including mechanisms for multi-level governance, accountability, regional development and public engagement.

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## **Emily Jerome**

Hello everyone,

My name is Emily Jerome. I am the Research Project Manager for “Realizing a Carbon Neutral Economy: A new governance framework.” Before joining Royal Roads University, I was the Communications & Outreach Specialist with the National Environmental Treasure, a charitable organization founded by Dr. Ann Dale. My background also consists of teaching and developing environmental education programs for schools and the public with the City of Calgary. I look forward to this conversation and learning from the panelist.

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## **Ann Dale**

I am privileged to work with such a talented team and the project also has a number of associates and colleagues attached. You can see the entire team [here](#). Now, for our first question.

What is the difference between government and governance? And why do you think governance is important for moving to a carbon neutral society?

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## **Leslie King**

Thanks Ann! There are many different interpretations of the difference between Government and Governance – perhaps the simplest is structure vs. process - Government structures vs the processes of Governance. For our purposes, perhaps the most appropriate difference is that Governance is broader than government and includes both Government and the public sector, actions, decisions and mechanisms as well as the actions of non-state actors, civil society, private sector actors and other stakeholders. That is generally at the local to national level. In the international arena, you could have what is known as governance without government, in the absence of world government, the importance of other actors., regimes and institutions. So, for instance in the COP Process, at COP 21, it was international NGOs who led the movement to replace the goal of 2.0 with the drive to 1.5. and also, at COP 21 -- 26 active involvement of global corporations -- especially leading funding, investment initiatives (Race to Zero, High Ambition Coalition). This has both advantages and disadvantages – advantages such as more inclusive action, bottom up as well as top down, environmental activism and justice and disadvantages—taking decision-making out of democratic processes.

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## **Tamara Krawchenko**

Transitions are also not monolithic. There are multiple transitions involving different types of innovations. Processes of creative destruction can be messy and there may be multiple pathways to success. The scale of the change to decarbonise our economies requires government intervention, particularly in industries like oil and gas with massive capital and fixed assets and human and environmental impacts, but picking winners can be equally problematic. There is a balancing act to be strategic with investments and support nascent markets while not artificially delaying necessary transformations or betting on the wrong ‘winners’. Transitions are also place-based and the prospects and potential to shift to new industries is in part determined by natural endowments, human capital, accessibility etc.

Why I start with this point is to show how complex this process is and how no one actor can ‘row’. Governments may have a hand in ‘steering’ transitions in some cases, but coalitions and networks of actors are important. Hence, governance as opposed to government. My definition of governance is informed by the work of George Frederickson and includes inter-jurisdictional relations and third-party policy implementation alongside the power of non-state and non-jurisdictional public collectives. Decision making is often a brokered process.

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## **Evert Lindquist**

I agree, Leslie and Tamara. Yes, Ann asked us to reflect on the difference between government and governance, and why the latter is really important. The larger the challenge, the more likely the tools will be in the hands of more than one department and agency, and very likely, different levels of government (federal, provincial, municipal, regional, Indigenous, and not necessarily in that order!). The challenge of grappling with climate change and reducing our carbon footprints necessarily involves sector after sector after sector – it is a comprehensive challenge. This is especially so in a federation, so governance is about working across the levels of government to coordinate and lever the tools, capabilities and resources we have.

But, it is more than that, of course: government must work with the for-profit and non-profit sectors in all of the sectors mentioned above (e.g. transportation, agriculture, building, trade, energy, alternative energy, etc.). Finally, to the extent this is about changing behaviour, culture and politics, it is about engaging citizens and communities, leveraging their concerns and appetite for change, encouraging new ways of living and consuming, improving communications, learning from other jurisdictions and each other, and building momentum. All of this is embraced by what we call “governance”.

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## **Katya Rhodes**

Effective governance can ensure long-term implementation of effective climate policy and the integration of climate policy objectives in all/most government decisions. Examples include the creation of the Climate Change Act in the UK that’s replicated in many countries, including the development of independent expert advisory boards, carbon budgets, and accountability reporting. This is being replicated in Canada too, at the provincial level in BC and currently at the federal level. Such governance mechanisms can help prevent climate insincere governments from scrapping existing effective climate policy and gives businesses certainty for planning their investments.

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## **Evert Lindquist**

One of the topics we might touch on later is the sheer number and diversity of advisory groups and actors involved in tackling this huge challenge. One needs to have air-traffic control-type capabilities to track and monitor all of it!

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## **Ann Dale**

It seems to me that governance is going to demand unprecedented levels of collaboration and cooperation, let's hope we are all capable of this new kind of relationship. What tools and instruments do governments have at their disposal to make the necessary changes? One I can think of immediately is their convening power.

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**Leslie King**

I agree, Ann. We have tools such as economic incentives like the Carbon Tax but more important are the steering mechanisms for coordinating actions in multi-level governance, ensuring positive interplay both horizontal and vertical, forecasting mechanisms, ensuring the fit between governance institutions and solutions and social-ecological systems in which we are intervening!

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**Ann Dale**

Can you explain more about 'fit', Leslie? We explored the importance of adopting a social-ecological systems approach in our previous research, how the hell do you get governments to adopt this approach?

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**Leslie King**

Yes, for instance in coastal and marine social-ecological systems, government has carved it up into economic uses such as fishing, tourism etc. with rules about each - often inconsistent - but no way to address the system as a whole and generate measures that take that into account, producing better fit between ecosystems and institutions rather than the "misfits" we have today.

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**Evert Lindquist**

Indeed, but here is the challenge: we can turn to twenty other sectors (e.g. several transportation sectors, agriculture, land-use planning, oceans, energy and alt energy sources, etc. -- you name them) and make similar observations, and each has a different mix of instruments and 'instrument owners'. So, how do we keep track of all the good advice and interesting ideas coming in, the current state of affairs and progress being made with innovations, and have a coherent overall picture? It almost defies comprehension, but it will be important as we go forward.

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**Tamara Krawchenko**

I think the convening power is indeed so important -- particularly from a regional development approach. The creation of new federal-provincial-territorial collaborative Regional Energy and Resource Tables in Canada to support low carbon energy and industry transitions puts regional development front and center in transitions management and importantly, includes Indigenous leadership. The first tables are being set up in British Columbia, Newfoundland and Labrador, and Manitoba - more will be rolled out. All will have accompanying action plans. This is a potentially huge opportunity for strategic industrial and innovation policy but it will be critical that it focuses on net-zero objectives. Social dialogues will also be important for this process.

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## **Ann Dale**

Tamara, I think social dialogues are critical for stimulating cohesive constituencies for change. As one of the civil servant architects behind the creation of the National Round Table on the Environment and the Economy, how do ensure you have key actors at the table -- are there deliberative processes that need to be used?

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## **Tamara Krawchenko**

Indeed, that is always an issue and there is a risk that established industries can dominate such processes and limit the potential for transformative change. A number of countries have opened social dialogue on climate action focusing on defining a 'just transition'. The Taranaki region of New Zealand's Taranaki Framework 2050 process offers a place based and inclusive example on how to do this and build in accountability mechanisms.

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## **Katya Rhodes**

Government can and are implementing stringent compulsory climate policy to enable the transition to a zero-emissions economy. These include carbon taxation, regulations (prescriptive and with market flexibility features), and other supportive tools like subsidies and government procurement.

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## **Evert Lindquist**

There is huge literature on this! There is no shortage of taxation, regulation, expenditure, authority-based, engagement and information/communication instruments. We could fill a single PowerPoint slide with different categories of tools and tools within those categories. The real challenge is dealing with how broad and comprehensive the climate-change challenge is, understanding the broad picture while locating the role and performance of more specific or sector-based initiatives, and of course, ensuring that these tools are coordinated and aligned as much as possible, and avoiding negative spillover effects. This leads me to point to what one might term a 'comprehension' challenge given all of these tools and actors, critical for planning, decision-making, monitoring progress, and mobilizing support.

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## **Ann Dale**

Good point, comprehension challenge. Does this lead to shared decision-making at all and what about power?

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## **Evert Lindquist**

Yes, it does lead to shared decision-making, but many of the actors have autonomy and power, especially in federations and across countries. So, 'yes' to shared decision-making but the real challenge is how to communicate progress and an overall picture when the challenge defies comprehension. For example, can anyone really succinctly explain how Canada is doing with its commitments, how each province is doing, and do so on a sector by sector basis?

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## **Ann Dale**

Katya, doesn't this touch on your work?

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## **Katya Rhodes**

There have been multiple efforts to overcome the comprehension challenge, and in fact, we don't really need everyone to understand climate change or climate policy. My past research has confirmed that effective climate policy can and has been implemented when it's not very well-known among citizens and key stakeholders. The key is to watch out for 'salient' policies with explicit and highly visible costs--these are the policies that are likely to trigger strong opposition. For this reason, no government is implementing a \$1000 carbon tax as a single policy approach; instead, governments implement policy mixes that can address sector emissions in less salient ways (i.e., mostly regulations).

Attachment: [Rhodes, K., Axen, J. & Jaccard, M. \(2014\). Does effective climate policy require well-informed citizen support? \*Global Environmental Change\*, 29, p. 92-104](#)

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## **Evert Lindquist**

Having pointed out the challenge, I agree with Katya: not everyone has to be fully informed. But do you think we are as far along as we ought to be with respect to, say, the Government of Canada providing an overall view of progress?

I should add that there is really interesting literature on 'policy mixes' of instruments, whether they are coordinated by design or emerge over time, and might be inconsistent or counter-productive with each other. Different tools are held by different actors, with different priorities and balances to strike, and different time horizons. Katya and Tamara may have some views on this.

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## **Leslie King**

That's really interesting Evert and how do we know when to discard instruments that are no longer effective-- this might be where transformation is important -- moving to measures we have never used and cannot dream of!

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## **Evert Lindquist**

Yes, we can discard policies and instruments that support undesirable industries, energy sources, and land-use planning, etc. But first, we have to recognize them. On the other hand, many of those same instruments can be applied in new directions to encourage desirable approaches. It is an evolving broad mix of instruments.

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## **Katya Rhodes**

My student and I just wrote a paper on climate policy mixes in Canada, where we assess both horizontal and vertical policy interactions. See attached. From the paper key highlights are:

- Climate policy mixes have expanded and diversified over the period 2000-2020
- Sub-national jurisdictions have often acted as policy 'pilots' for national level policy
- Vertical policy interactions can undermine efforts by sub-national jurisdictions
- Alternative compliance pathways can lead to double counting of abatement effort
- Comparability of climate policy mix stringency remains a challenge

Attachment: [Multi-level climate governance: Examining impacts and interactions between national and sub-national climate policy mixes in Canada](#)

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## **Ann Dale**

Katya, that sounds like quite an interesting paper, thanks so much for sharing. Again, our MC3 research showed the earlier success of BC climate policy through a coordinated suite of strong legislation, policy innovation, financial incentives and capacity building in local governments by quasi-institutional intermediaries to name a few.

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## **Leslie King**

Evert, can you explain the way in which vertical policy interactions undermine efforts by sub-national jurisdictions—I would call that negative interplay.

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## **Evert Lindquist**

Perhaps the best way to approach this, and picking up on Tamara's post on the case studies we plan on developing (see below), is to recognize that each province and region in Canada has a different set of energy sources, climate risks, and potential for alternative decarbonized energy trajectories. Hitherto, the provinces -- often with a lot of federal government support -- have provided incentives not only for certain traditional energy production but also patterns in urban and land-use development, which work against the goals we are now pursuing to address climate change. The key here is for higher orders of government to withdraw support for what some theorists call 'negative feedback loops' and incent/nudge/push citizens, communities and sectors in new directions (+ feedback loops, if you will). But what is 'negative' and 'positive' will be the eyes of beholders, which gets us back to the power dimension Ann flagged earlier.

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## **Ann Dale**

Let's now move to our second question, dear colleagues. Each of us is leading different aspects of our research project. Can you briefly describe what methods you are going to use to try and answer our research question that keeps me awake at night hoping that our research outcomes will be feasible and doable?

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## **Tamara Krawchenko**

Together with Dr. Lindquist, we will lead case studies of the following jurisdictions/initiatives. Each of these have potentially useful policy lessons and practices for Canada. Below you can find some info about each of these cases and why we chose them.

### 1. Denmark

Denmark—Europe's largest oil producer—has committed to a managed decline of the sector. It will stop issuing new licenses for oil and gas exploration and has committed to phasing out the production of fossil fuels by 2050. Denmark has decoupled GHG emissions from economic growth—in a few decades they have reduced their GHG emissions by half while doubling the size of the economy over the same period. This case is of interest due to scale of Denmark's commitment and the importance of the sector; the use of EC instruments including just transition mechanism and regional development policies; and its ability to decouple emissions from growth.

### 2. Scotland, UK

Scotland has announced a goal of reaching net-zero emissions by 2045, five years ahead of the UK's legally binding 2050 target and has announced £500m 'Just Transition' energy strategy to support the move to a net-zero economy. Scotland has already experienced significant layoffs in its oil and gas sector in recent years and is committed to accelerating this shift. At the same time, Scotland is managing a shift from European Commission

policies and developing new frameworks for regional and rural development. The Scottish Government has adopted a National Just Transition Planning Framework, based on recommendations of its Just Transitions Commission. This case is of interest due to Scotland's recent experience managing employment declines in the oil and gas sector; its creation of energy transition zones to help the transition from oil and gas jobs to green energy and; the governance mechanisms that it is using to achieve these goals.

### 3. New Zealand

New Zealand has committed to a low carbon economy: the Climate Change Response (Zero-Carbon) Amendment Act 2019 is now law and in 2018, it was announced that no further offshore oil and gas exploration permits would be issued. This transition impacts certain regions more than others—e.g., the energy sector in the Taranaki region represents 28% of the regional economic output. New Zealand's Just Transition Unit housed in the Ministry of Business Innovation and Employment leads partnership efforts with governmental and local and regional partners. They have co-developed the Taranaki 2050 Roadmap which sets out a strategy for economic diversification. This case is of interest due to the country's commitment to transition and the manner in which it is being regionally managed through multi-level governance partnerships.

### 4. EU Just Transition Mechanism

In January 2020, the European Commission unveiled a Just Transition Mechanism that aims to mobilise EUR 150 billion (100 billion direct EC contribution, remaining matching funds) through three main mechanisms: i) a new Just Transition Fund that provides funding that should be matched by member states through the European Regional Development Fund (ERDF) and the European Social Fund Plus (ESF+); ii) an InvestEU scheme that will provide financing according to just transition objectives in targeted territories; iii) a new loan facility leveraged by the European Investment Bank (EIB) that will primarily entail grants to public sector entities with resources to implement measures to facilitate the transition to climate neutrality. EU countries will produce Territorial Just Transition Plans to 2030 that describe the nature of the social, economic and environmental challenges stemming from fossil fuel-related phase-outs and/or GHG decarbonizing initiatives. These outline the transition process to 2030, including development, reskilling and environmental rehabilitation. The plans detail timelines, operations and governance mechanisms to meet prescribed targets. Thus, this is a quickly changing area of government planning in Europe. As part of these efforts, the EC has launched a Just Transition Platform that will offer technical and advisory support. The JTM is of interest as a method of mobilising and coordinating strategic actions to decarbonise economies through a multi-pronged approach – multiple sectoral targets and policy levers.

### 5. UNFCCC

The United Nations Framework Convention on Climate Change (UNFCCC) established an international environmental treaty to combat "dangerous human interference with the climate system". It was signed by 154 states at the United Nations Conference on Environment and Development (UNCED) in 1992. The treaty called for ongoing scientific research and regular

meetings, negotiations, and future policy agreements designed to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner. The Kyoto Protocol (1997-2020) was the first implementation of measures under the UNFCCC and has been superseded by the Paris Agreement, which entered into force in 2016. With 197 states parties, members meet annually at the Conference of the Parties (COP). The treaty established different responsibilities for three categories of signatory states. The purpose of this case is to ascertain the extent to which research conclusions and recommended targets and strategies arising from its work have been taken by member states/governments.

## 6. IPBES

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is an independent intergovernmental body established by States to strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development. It was established in 2012 by 94 Governments. At the request of the IPBES Plenary and with the authorization of the UNEP Governing Council in 2013, the United Nations Environment Programme (UNEP) provides secretariat services to IPBES. The purpose of this case is to explore how collaborative applied scientific research might translate into policy research for action. The goal would be to ascertain the extent to which innovative research findings arising in the scientific network have been diffused into decarbonization strategies of member states/governments.

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## Leslie King

Lessons from the past: Canadian cases from which we can learn lessons – both positive and negative. Ann and I will be doing case studies on Canadian examples from which we can draw lessons. For example:

1. COVID-19 (detailed case study)
2. Carbon tax (detailed case study)
3. Long range air pollution (international agreement, comparing Canada's response with other countries, lessons learned, failures and successes, what can we learn)
  - Acid rain
  - Montreal Protocol
4. UNFCCC, IPCC and IPBES (detailed case study) (why one so adopted and why was the other ignored, silos, siloes and stovepipes, under estimated biodiversity)

Also, local government climate actions from the findings of our Meeting the Climate Change Challenge (MC3) projects.

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## **Evert Lindquist**

In selecting these case studies (see also Tamara's extensive post above), we had the following criteria in mind:

1. Concerns a social-ecological challenge within the last 10 years
  2. Multi-scalar, collective action challenge
  3. Beyond any one level of government, sector, discipline to solve
  4. Involve large collaboration, coordination and cooperation efforts
  5. Institutional boundary spanning
  6. Independent and/or interdependent policy solutions
  7. Dispersed decision-making between government levels
  8. Overlapping and interconnected spheres of authority
  9. Diversity of decision-making centers involved at multiple scales and in multiple sectors
  10. Mix of multiple geographic scales (local, regional, provincial, national and international)
  11. Mix of top-down and bottom-up initiatives
  12. Coalition-building; strategic partnerships; regime formation
  13. Quasi-institutional intermediaries
  14. Diversity of actors and institutions and policy instruments
  15. A priori network formation
  16. Nature of institutions—vertical, horizontal, boundary spanning
  17. Policy coherence and alignment between government levels
  18. Institutional innovation in which agency, choice and contingency figure prominently
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## **Leslie King**

Many thanks Evert -- indeed the selection criteria are important since it is in those areas we'll be seeking lessons!

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## **Katya Rhodes**

I use energy-economy modelling and survey analysis methods. To assess impacts of climate policy on GHG emissions and economic costs, I use quantitative energy-economy simulation models, representing realistic consumer preferences and up-to-date technology characteristics. I work to improve current modelling methodologies by conducting comparative model review studies, and incorporating new behavioural preferences into models through survey data. This year my group is starting to develop novel energy-economy models that integrate elements of technological models with spatially and temporally disaggregated electricity capacity models and macroeconomic models. Such models will help answer a multitude of climate policy-making questions ranging from the impacts of different policy tools on emissions, to electricity capacity constraints, infrastructure needs, and impacts on jobs and GDP.

I also use surveys to study public support for climate policy, providing insights into the likely political feasibility and endurance of different policy designs. Surveys also used to improve the

representation of behavioral preferences for low carbon technology in models. I am currently studying public and stakeholder support for policy pathways to meet Canada's net-zero target. Specifically, I'm asking citizens what they think about our modelled pathways to achieve net-zero and see how many support/oppose specific policy. Then I'll compare levels of opposition to different policy designs and GHG emissions reductions under those policies to estimate 'political costs' of stringent climate policy implementation.

I also use case study approaches to identify best practices for decoupling emissions from economic growth. With my collaborators in Sweden and Canada, I am currently finishing a paper on best practices for climate policy governance based on UK's Climate Change Act.

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### **Ann Dale**

In a previous post, Evert posed a very critical question, "how do we keep track of all the good advice and interesting ideas coming in, the current state of affairs and progress being made with innovations, and have a coherent overall picture?" But do you think we are as far along as we ought to be with respect to, say, the Government of Canada providing an overall view of progress?

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### **Katya Rhodes**

There are annual emissions reports provided by the Government of Canada. I also believe the new accountability framework requires more policy-specific reporting. The new net-zero advisory board will be monitoring the progress similar to BC's climate solutions council. I believe there are many positive changes happening right now. The challenge is to show 'true' progress given a two-year lag in emissions data, lack of disaggregated short-interval modelling tools, and the fact that many policies are planned to have a greater effect in the future (e.g., ZEV sales under the ZEV mandate will be significantly higher in 2030 than now).

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### **Tamara Krawchenko**

This is a fast-changing area of government policy. Canada's new *Net-Zero Emissions Accountability Act* and the *2030 Emissions Reduction Plan* set emissions reductions targets and I'm hopeful that these frameworks will strengthen accountability so that we might once, for the first time, actually meet our targets.

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### **Evert Lindquist**

Yes, and it is important to realize that we are in the early days of transition: it is experimental, it is social-movement driven moving into leaders of different sectors and government, we are trying to wrap our heads around the changes that will need to be made, and more citizens, governments and sector leaders are factoring criteria and reporting into their planning ahead. A

related question is, how far before we have collectively internalized these new goals and objectives, and believe we are generally rowing in the right direction? A good test is whether new governments embrace the platforms established by the previous government, whether markets internalize and manage to these goals, and even less responsive political parties are forced to accommodate these new directions.

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### **Ann Dale**

Tamara, do we need an integrated annual report to all Canadians to answer Evert's question, how well are we doing?

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### **Tamara Krawchenko**

It's a great question and there is a lot of work being done to more effectively measure different types of emissions across the 3 scopes. But as Katya points out -- there are always time lags. Better reporting is important but we need to focus on implementing change first and foremost in my opinion.

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### **Evert Lindquist**

This is a big challenge, which gets us into the challenge of obtaining 'real-time' data (which may be highly imperfect) vs. more definitive information. It would require different levels of reporting and for different areas of the economy. It would have to be designed with different audiences in mind, with different needs and levels of attention, as Katya pointed out. It would also likely require a quasi-independent entity to run the site and filter the information, not controlled by any one level of government. It would need state of the art information visualization and web platforms. It would require a lot of talent to work properly. Interestingly, the very architecture of the reporting (visual and its real hierarchy) would likely be as important as the data itself.

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### **Ann Dale**

Let me be provocative here. What progress, when we are still subsidizing oil and gas? When we don't have transitional strategies for stranded asset management? When our GHG emissions are not decreasing rapidly enough? When we don't have a great sense of urgency in the general population?

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### **Katya Rhodes**

Under stringency climate policy, oil and gas subsidies don't matter for emissions because combustion of fossil fuels is strongly disincentivized. Subsidies should be removed, but shouldn't



be the main bad policy to focus all our efforts on. We shouldn't forget about all other good policy that is unfolding and needs help from academics like ourselves. Some of this announced policy requires urgent implementation (e.g., Canada's clean electricity standard) -- this is where changes to governance and fast policy implementation are needed. These policies have and will have an effect on emissions if supporting mechanisms are in place to ensure the next government doesn't scrap such important efforts. Re: urgency in population, it truly isn't needed for all population. People have to filter information through their systems of values of worldviews. Our job and the job of government is to implement the most effective policy for GHG reductions without strong opposition from the public. Research confirms stringent regulations (renewable portfolio standards, ZEV sales mandates) receive high public support even though people don't know what these policies do (though information is available online) vs. high carbon taxes as demonstrated through higher fuel prices are truly not liked by the general population (though they are much cheaper than regulations).

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### **Ann Dale**

Katya, what about the 'vested interests' that fight against policy innovations and regulations?

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### **Katya Rhodes**

They'll always exist -- that's part of the democratic policy-making process. To 'override' such vested interests, we need to elect climate-sincere governments that promise and in fact implement compulsory and stringent climate policy to meet climate targets. Accountability frameworks are important to hold government accountable for inaction. Civil activism also has its place when governments are insincere/fail to follow up on their promises.

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### **Ann Dale**

One of the e-audience asked, "Do any of the panelists know of examples of governments (local or national) that have embraced transformative change? Either in Canada or internationally?" Please bring up any examples you know about when also answering our last question.

Do you think governments in Canada, or maybe anywhere are capable of transformative change among themselves and why? I think of the American example of gun violence?

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### **Leslie King**

We are asking the same question! I have been working in Orkney which has a number of governance innovation to address climate change including new alliances and networks for example with Nordic countries eschewing the current alliances with Britain. This is accompanied by or perhaps caused by public perception and identity.

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## **Tamara Krawchenko**

This is a great question and I'm always looking for the leading practices and trying to understand what has spurred climate action. Denmark is a leading case because they are the only country in the world with an oil economy that has set a clear end date for oil extraction and production. They also have a multi-party coalition that has made clear climate commitments that will transcend political cycles.

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## **Evert Lindquist**

Yes, good question: see Tamara's detailed post above of the case studies we will be delving into.

I would add this: we often see in many different areas, the ability of smaller jurisdictions, like Denmark or New Zealand, to mobilize because there is less distance between citizens and their governments, less levels of government to align, and back to the matter of communication, it is easier to develop a shared view and get a sense of the progress being made. The question is, how can that be done in Canada, with several Denmarks and New Zealands?

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## **Katya Rhodes**

I think it's important to define "transformative." Effective in emission reductions? Or also social equitable, politically acceptable, administratively feasible, and inclusive? Governments have to make trade-off decisions all the time. No single policy tool is perfect. I'm an optimist. I think we are all capable of change when there is no other option. COVID-19 was a good example of possible behavioural change forced by external circumstances. As people and governments observe the increasing severity of climate disasters, the need to change policy and governance becomes more salient. Preferences and beliefs are changing in a way that more (younger) citizens are supporting pro-climate action politicians. Younger generations are demanding action as they are stuck with the side effects of our fossil fuel-based economic development.

As for the examples of governments, see attached a graph of decoupled countries in the world. I am currently studying best practices from their climate policy developments and governance to share with our governments. But yes, many Scandinavian countries and even more locally California and BC have been implementing

[Attachment: Graph and map of decoupled countries](#)

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## **Ann Dale**

What one person considers transformative change, another will think it is only incremental? How do we get societal understanding about the urgency to act now on climate change, as many argue

we only have a decade to act or face dire consequences? It is all about political will and bold, decisive leadership to act now and creating a cohesive constituency for change now.

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**Leslie King**

This is related to your question of whether governments only react to crisis but I'm not sure we even react in a crisis – we are in the midst of at least 2 or 3 of the greatest crises we have ever faced and we are not reacting appropriately or effectively – in some cases not even recognizing the crisis. We have witnessed societal transformation in our lifetimes— the question is, were they led by government? What actions did government take and were they timely? Were they reacting to pressure from citizens and civil society? Private sector? So, do we need different ways of identifying, forecasting emerging crises, different tools to recognize and deal with them?

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**Ann Dale**

A last question before we wrap up. Can one achieve transformative change within the current system or do we have to move to an entirely new system to realize a carbon neutral society? And Evert's last question, “how can that be done in Canada, with several Denmarks and New Zealands?” is critical for answering our research question.

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**Evert Lindquist**

Is Canada capable of transformative change? Yes, just look at war efforts, which required incredible mobilization, planning across all sectors, and rapid learning. Just think of Seth Klein's A Good War: Mobilizing Canada for the Climate Emergency, which draws on such metaphors. Likewise, we can draw on how quickly we mobilized for dealing with the COVID-19 pandemic, as messy as that has been. Concerted action can proceed with imperfect information, ongoing adjustment, and requires developing a comprehensive picture of the overall landscape, but this also requires sophisticated communication to draw the picture, provide real-time updates on progress, and link what is happening in sectors and other levels of government to the big picture – it requires a considerable command-center capacity, which might worry a lot of people in various sectors and jurisdictions, but it would not have to be top-down, autocratic capability.

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**Tamara Krawchenko**

Yes, I think that transformative change is possible. Where I have seen successes is where there is a strong social sector pushing for change alongside multi party political commitments to decarbonisation that can endure past elections cycles. As for an entirely new system... I've witnessed three revolutions first hand. They are risky.

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**Ann Dale**

Excellent point, Tamara.

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## **Evert Lindquist**

To this I would add, that we have been through numerous technological revolutions, which have dramatically changed how we function as societies and what our governments and markets focus on. It is amazing how humans can adapt (for better or worse). My optimism springs from the combination of the digital revolution and scientific advances, which are creating all sorts of new possibilities; as Katya suggests, we have to concertedly and persistently put our minds as citizens, communities, sectors, and government to pressing forward.

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## **Leslie King**

I'm not sure we need a new system. As Tamara said there are good signs out there. But what we do need is new transparency, accountability, new ways of recognizing crises -- we still have not really recognized biodiversity as a crisis and ways of opening the system to new less reactive ways of dealing with crisis. I believe we have many of the tools we need but we need leaders who can lead and ways to coordinate awareness and action at all levels of social organization.

And we need to listen to the young!

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## **Katya Rhodes**

I think our systems, with incremental changes to accountability measures, can be sufficient to dramatically reduce emissions. If it takes longer to change the system than to implement effective policy, we should focus on policy then. As we are running out of time, I can't foresee the reinvention of the entire government system in Canada. Some changes would be fruitful (e.g., more authority for local government to implement carbon taxation and other stringent policy) but staying realistic and focused on the primary objective of rapid emissions reductions is critical. I recommend this book for anyone looking to find more answers on the topics raised today: [The Citizen's Guide to Climate Success](#).

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## **Ann Dale**

Lots and lots of provocative questions -- questions about shared decision-making, social-ecological systems, negative feedback loops, incent/nudge/push citizens, accountability frameworks, how well are we really doing, and of course, power. Maybe we should be talking about power sharing?

Do you have any last comments, observations to make before we wrap up? What a rich, first dialogue we have had and it is the first time we have been on-line together. I thank you for your trust and commitment to our research and look forward to our next virtual conversation as we move through our project.

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**Evert Lindquist**

Thank you, Ann, for setting this up, with Emily's assistance. It was very interesting experience!

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**Tamara Krawchenko**

Thank you, Ann! A pleasure to chat with you all!

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**Katya Rhodes**

Thank you, Ann! It'd be great to have such discussions on Zoom or in-person where we could talk a lot more within the same timeframe. Lots of good resources out there. Look forward to hearing more about the project and upcoming case studies.

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**Leslie King**

Thanks all, I learned so much and perhaps am a little more optimistic -- for our project and our world -- than when we began.

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**Emily Jerome**

Thank you to our moderator, Ann Dale, and the panelists, Leslie King, Evert Lindquist, Tamara Krawchenko and Katya Rhodes for sharing all your insights throughout this conversation. This e-Dialogue will be developed into a PDF and shared on the Changing the Conversation website. Thank you to everyone for attending this event.