

The Right Honourable Justin Trudeau
Office of the Prime Minister
80 Wellington Street Ottawa, ON
K1A 0A2, CANADA

Oct. 22, 2018

Dear Mr Trudeau:

We are doctors and health professionals from around the world urgently concerned about climate change and the health of the planet. We appreciate the leadership Canada showed in the 2015 landmark Paris Agreement on climate change and the strong position on the 1.5° C target for 2100. Today, we remind you of this pledge in the context of Canada's choice to build large new fossil fuel infrastructure that locks in carbon emissions for the next several decades.

Canada's National Energy Board (NEB) review process is flawed. Your government has acknowledged this fact in efforts to revamp federal review through Bill C-69 the Impact Assessment Act. The Federal Court of Appeal decision to revoke the construction approval given by your cabinet to the Trans Mountain pipeline expansion (TMX) in 2016 provides an opportunity to reconsider, among other things, the cumulative health impacts of the project with Canada's reformed impact assessment process. The narrow scope and optimistic spill scenarios used in the NEB assessment do not account for the most serious potential health impacts of the pipeline expansion proposal. Neither the NEB review process nor the subsequent Ministerial Panel on TMX considered downstream greenhouse gas emission impacts. Upstream emissions were considered with only zero-sum economics, i.e. if the product is not shipped easily through this pipeline it will get to market another way. In fact, with the carbon budget endorsed under the Paris accord we cannot afford to burn most of Alberta's oil sands reserves.

The health risk assessment used by the NEB is inadequate. By not considering the global (and local) climate impacts, Canada is being irresponsible. The World Health Organization now recognizes climate change as the greatest threat to global health in the 21st century, and the prestigious medical journal, the Lancet, states that "tackling climate change could be the greatest global health opportunity of the 21st century." Any risk assessment of a fossil energy project must consider the contribution to mortality and morbidity due to climate change of wildfires, heat events, air pollution, sea-level rise, flooding, water contamination, drought, food shortages, shifting infectious diseases, illness and injury from extreme weather

events, mental health impacts, forced migration and related conflict, as well as the risks that climate change poses to healthcare structures and health-related supply chains. It is your responsibility to protect public health and your moral obligation to ensure the health of the planet for future generations, and this cannot be done without including the health impacts of greenhouse gas emissions in the decision-making calculus of large fossil fuel projects.

Specific to TMX, diluted bitumen is dangerous and considerably more toxic than crude oil. It behaves unpredictably in aquatic environments, sometimes floating, sometimes sinking. The marine spill scenario in the NEB review was very optimistic. It was set far away from any population center despite the clear hazards of a seven-fold increase in tankers through Vancouver's busy harbour with three bridges and two dangerous narrows adjacent to downtown with over a million people, a population which includes Indigenous communities whose close connection to the land makes them particularly vulnerable to environmental contamination. We need to know the health impacts of a worst-case spill in the most populated area of the project, e.g. a large tanker spill, close to shore and under poor air quality and high temperature conditions prominent in the past several summers in British Columbia. We must additionally acknowledge that even best-case scenario clean-up of crude oil results in only 5-15% oil recovery, with spilled bitumen likely to have even lower levels of recovery.

Finally, the health impacts assessment did not adequately consider the extremely high risk from benzene, one of the most toxic components of the pipeline product diluted bitumen (dilbit). The increased risk of childhood leukemia was ignored by the review as was consideration of genetic and other special population vulnerabilities. Although these points were raised by Intervenor in the NEB process, none were addressed by the response or by the conditions imposed. In fact, all of the conditions by the NEB that related to health pertain to monitoring, an after-the-fact "count-the-bodies" approach that is unacceptable today. There were no subsequent revisions to the project's health risk assessment.

As health professionals we offer our vigorous support for a robust, health impact assessment that includes the health impacts of climate change and implore you and your government to rigorously re-evaluate this fossil energy project. Moreover, given that the Government of Canada is now the owner of the pipeline and has a clear and vested interest in protecting its multi-billion-dollar investment of public funds, any such assessment of the pipeline must be completely independent of the government and any of its agencies that report to or are subject to direction from the Government of Canada.

Our collective health as a global community—for this generation, and for all of those to come--depends upon the urgent reduction of greenhouse gas emissions. Decisions taken in Canada at this moment with the pipeline that result in large increases in carbon pollution will impact human health worldwide from this point forward. We urge you to do no harm.

Sincerely,

A handwritten signature in black ink, appearing to read "Tim K. Takaro". The signature is fluid and cursive, with the first name "Tim" and last name "Takaro" clearly distinguishable.

Dr Tim K. Takaro, MD, MPH, MS. Associate Dean for Research and Professor
Faculty of Health Sciences, Simon Fraser University.

Dr Courtney Howard, MD. Emergency Physician, Yellowknife and President,
Canadian Association of Physicians for the Environment.

Dr Trevor Hancock, MD, Hon FFPH. Retired Professor and Senior Scholar, School
of Public Health and Social Policy, University of Victoria.

Dr Jonathan Patz, MD, MPH. Professor and John P Holton Chair of Health and the
Environment, and Director, Global Health Institute, University of Wisconsin.

Kim Perrotta, MSc. Executive Director, Canadian Association of Physicians for the
Environment

Barbara Sattler, RN, DrPH, FAAN, Professor, University of San Francisco and
Board Member, Alliance of Nurses for Healthy Environments

Renee N. Salas, MD, MPH, MS, Emergency Medicine Physician, Massachusetts
General Hospital

Dr Iqbal Kabir, MBBS, MPH, PHD, Coordinator, Climate Change and Health
Promotion Unit, Ministry of Health & Family Welfare, Bangladesh

Robert M. Gould, MD Associate Adjunct Professor, Department of Obstetrics,
Gynecology and Reproductive Science, UCSF School of Medicine; Past-President,
Physicians for Social Responsibility (USA)

John R. Balmes, MD Professor, Department of Medicine, UCSF School of Medicine

AnnKurth, Yale University

Susan Wilburn, RN, MPH, International Sustainability Director, Health Care Without Harm

Kelly Lau, MD Family Medicine Resident

Tandi Wilkinson, MD

Melissa Herr, MD

Thomas L. Perry, MD, FRCPC

Emma Burns, MD

Jonathan Whelan, MD Student

George T. Kitching, BSc, MSc, Medical Student, Schulich School of Medicine and Dentistry, Western University

Annalee Yassi, MD, MSc, FRCPC, Professor and Canada Research Chair, School of Population and Public Health, Faculty of Medicine, University of British Columbia

Curtis Lavoie, MD

Naila Makhani, MD MPH Assistant Professor, Yale University School of Medicine

Ashley Roberts, MD, MEd, FRCPC, Clinical Assistant Professor, Pediatric Infectious Diseases, BC Children's Hospital, University of British Columbia

Dr. Ritika Goel, MD, MPH, CCFP, Family Physician, Inner City Health Associates, St. Michael's Hospital, Department of Family and Community Medicine, University of Toronto

Margot W. Parkes, MBChB, MAS, PhD; Canada Research Chair in Health, Ecosystems and Society, Associate Professor, University of Northern British Columbia

Donald Spady, M.D. Adjunct Associate Professor, Department of Pediatrics, University of Alberta

Melissa Lem, MD, CCFP, FCFP. Board member, Canadian Association of Physicians for the Environment

Dr. Shannon Waters, MD, MHSc, FRCPC Associate Clinical Professor, University of British Columbia

Larry Dobson, MD

Colin Soskolne, Professor emeritus, University of Alberta, Canada; Adjunct Professor, University of Canberra, Australia

Dr Sandra Allison, MD

Cathy Vakil, MD, CCFP, FCFP, Assistant Professor, Department of Family Medicine, Queen's University, Kingston ON, Canada

Dr. Chris Mackie, MD, MHSC, FRCPC

Dean Vrecko,, MD

Sonja Poole, Student

Sarah Giles, MD, CCFP(EM),voluntary Clinical Lecturer, University of Ottawa, Faculty of Medicine

Mark Polle, MD

Jesse McLaren, MD

Paul Gully, MD FRCPC

Maria Todor, MD MPH

Larry Barzelai, MD, Chair BC branch of Canadian Association of Physicians for the Environment; Assistant Professor University of British Columbia

Erin Killorn, MD

Daniel Rainham, PhD, Chair in Sustainability and Environmental Health, Healthy Populations Institute, Dalhousie University

Orianna Mak, MD Candidate

David-Martin Milot, MD CM, MSc, FRCPC

Yv Bonnier Viger, MD MSc MM FRCPC, Médecin spécialiste en santé publique et médecine préventive, Professeur agrégé au Département de médecine sociale et préventive de l'Université Laval, Directeur régional de santé publique de la Gaspésie et des Îles

Linda Pinsonneault, MD, MSc, FRCPC, Professor and Director of Community Health Sciences Department, Faculty of Medicine and Health Sciences, Université de Sherbrooke

John Calvert, PhD, Associate Professor, Faculty of Health Sciences, Simon Fraser University

Dr. Alan Ruddiman, MB.BCh., FRRMS, Dip. PEMP, Rural Generalist Physician (British Columbia)

Cheryl Young MD, Public Health and Preventive Medicine Resident

Chris Carlsten, Professor and Head of Respiratory Medicine, UBC. Canada Research Chair in Occupational and Environmental Lung Disease

Andrew Watterson, PhD CFIOSH, Professor, Centre for Public Health and Population Health Research, University of Stirling, Scotland

Samuel Goldman, MD, MPH; Associate Professor, Departments of Medicine & Neurology, UCSF School of Medicine

David Ozonoff, MD, MPH Professor Boston University School of Public Health

Kiffer G. Card, PhD, Lecturer, Faculty of Health Sciences, Simon Fraser University

Bruce Lanphear, Professor, Simon Fraser University

Kelley Lee, MPA, MA, DPhil, FFPH, FCAHS, Professor, Tier 1 Canada Research Chair in Global Health Governance, Faculty of Health Sciences, Simon Fraser University

Ruth M. Heifetz, MD, MPH, Faculty UCSD School of Medicine

Dr. Julia Smith, Research Associate, Simon Fraser University

Gilbert S. Omenn, MD, PhD, Professor, University of Michigan, Ann Arbor, MI, USA

James Brophy, PhD

Christina Mills, MD FRCPC

Elizabeth Robinson, MDCM, MSc, FRCPC, Public health and preventive medicine specialist, Montreal.

Joseph LaDou, MD

Linda Johansson, MD, MSc, CCFP, FCFP, Dip. Sport Med., DiMM, Associate Professor, UBC School of Medicine

Michael Rachlis, MD MSc FRCPC LLD (Hon)

Robert Carlin, MDCM, CCFP, FCFP, Assistant Professor in Department of Family Medicine at McGill University, Directeur régional de santé publique des Terres-Cries-de-la-Baie-James

Barry Castleman, ScD

Warren Bell, Past Founding President, Canadian Association of Physicians for the Environment, Rural Preceptor, UBC

Jane Lipscomb Professor, U Maryland (retired)

Sue Pollock, MD

Neil Arya, BSc MD CCFP FCFP D. Litt

David G. Kern, MD

David Galiano, MD

Jordan Rinker, MD, MPH Clinical Professor of Medicine, UC San Francisco Division of Occupational-Environmental Medicine

Philippe Robert, MD

Geetha Raghukumar, Public Health and Preventive Medicine Resident

Dr John O'Connor, MD

Kate Salters, PhD

Zeina Charif, Student

Dr. Pamela Kryskow, MD

Teresa Wood, MD, previous member Physician for Global Survival, Society of Rural Physicians of BC

Mark-Andrew Stefan, BSc, MD, MSc, FRCPC, Chargé d'enseignement pratique, Département de médecine sociale et préventive, École de santé publique de l'Université de Montréal

Windy Brown, MD, MA Neuroscience UC Berkeley

Melissa Haswell, Professor of Health, Safety and Environment at Queensland University of Technology, Australia

Leslie London, MD

Sue Atkinson, MB BChir FFPH

Sara Jeanne Pelletier, MD

Yun Jen, MD

Yassen Tcholakov, MD, CCFP, MIH, Public Health and Preventive Medicine resident at McGill University

Meghan Winters, PhD, Associate Professor, Faculty of Health Sciences

Claudel P-Desrosiers, MD, Past President of IFMSA-Québec

Tara D'Ignazio, MD

Mary Koziol, MD

Audrey Ah-Sing, MD Student University of Montreal

Elizabeth Robinson, MDCM, MSc, FRCPC, Public health and preventive medicine specialist, Montreal.

Elizabeth Deng, Student

Teresa Wood, MD, previous member Physician for Global Survival, Society of Rural Physicians of BC

Barbara H. Warren, MD, MPH

Erica Frank, MD, MPH, FACP, Professor and Canada Research Chair in Preventive Medicine and Population Health, UBC

Charles-Antoine Barbeau-Meunier, Medical student

Jack Tuber, D.O., FACOI

Laura Lefebvre, Student

Linda Karl, MD

Eve Shapiro, MD,MPH

Noémie Pothier, Student

Harry M. McDermott, M.D., M.P.H.

Maude Lantagne-Hurtubise, Medical student

Peter D Pare, MD

Craig Slatin, Sc.D., MPH, Professor Emeritus, University of Massachusetts Lowell

Amy Hagopian, PhD, University of Washington faculty

Gary Bota, MD FRCP Section Chair Emergency Medicine NOSM

Joshua Freeman, MD

Juan C Gallardo, PhD

Cindy L Parker, MD, MPH

Peter Benoit, MD

Aline D Khatchikian, MD

Kate Tairyan, MD, MPH, Senior Lecturer, Faculty of Health Sciences, Simon Fraser University, Director of Public Health NextGenU.org

Krupa Patel, MD

Gregory A. Wellenius, Associate Professor of Epidemiology, Brown University School of Public Health

Martha G. Ortiz, Health Administrator

Marlene Bluestein, MD

Scott Tebbutt, Professor of Medicine, University of British Columbia

Stephanie Sersli, PhD Candidate, Faculty of Health Sciences, SFU

Rhys Jones, MBChB, MPH, Senior Lecturer, University of Auckland, New Zealand

David R. Boyd, J.D., PhD, Professor, University of British Columbia

Robert Bernstein, MD

Christina Schweitzer, MD Student

Christian Cayon, MD Student

Albert Julien Accad, MD Student

Julien Michaud-Tétreault, MD

Susan Racine, MD

T. Stephen Jones, MD, MPH, Centers for Disease Control and Prevention (Retired)

Rabia Bana, MD, MPH, DTMH

Mary Ann Graffagnino, MD

Xochitl Hanson Pastran, MD, Public Health and Preventative Medicine resident

Elizabeth Rocco, MD

Bonnie Hughes, RN

Iskra Pirija, MD

Theodora Tsongas, PhD, MS

Ewan Affleck, CM. BSc. MDCM. CCFP.

Melissa Bota. MD

Shengzhi Sun, Postdoctoral Research Associate, Brown University School of Public Health

Jean Zigby, MD, Palliative Care Physician

Kristopher Kang, MD, Clinical Instructor, BC Children's Hospital, University of British Columbia

Laurie Laybourn-Langton, Director, UK Health Alliance on Climate Change

Benedetto Terracini, University of Torino, Italy (retired)

Payam Dadvand, MD, PhD. Assistant Research Professor (ISGlobal)

David Kaiser, MD MSc, Clinical Assistant Professor, Department of Epidemiology, Biostatistics and Occupational Health, McGill University

Isabelle Bruneau, MD

AnneMarie Pegg, MD; Clinical Lead Epidemic Response and Vaccination MSF France

Sasha Letourneau, Student

Benoît Lévesque, MD, M.Sc., FRCPC/ Professeur agrégé de clinique, Département de médecine sociale et préventive, Faculté de médecine, Université Laval

Dr. Stephanie von Dehn, MD, member Canadian Association of Physicians for the Environment

Mary Rice, MD MPH, Assistant Professor of Medicine, Harvard Medical School

Marie Vincent-Tremblay, MD student

Joan E. Lionetti, Retired E.D. Environmental non profit

Mark S. Lechner, Senior Lecturer, Simon Fraser University

Manolis Kogevinas, Professor, MD, PhD, Barcelona Institute for Global Health (ISGlobal), Barcelona, Spain

Matilda van den Bosch, MD, PhD, Assistant professor, University of British Columbia

Hugh W Davies, PhD, CIH, Associate Professor, UBC School of Population and Public Health

Suzanne De Blois, MD, MSc, FRCPC, Public health and preventive medicine specialist, Montreal

Mona Sarfaty, MD MPH

Dr. Kendra Daniel, Family physician

Benoit Nemery, MD, PhD, Professor of Medicine (Toxicology and Occupational Medicine), KU Leuven, Belgium

Melinda Zeron Mullins, MD, Ph D

Gabrielle Bureau, MD, MSc, FRCPC

Nadine Provençal, Assistant Professor, Simon Fraser University

Angela Rivers, MD

Andrew Gray, MD, MSc, FRCPC

James Hudson, MD

Louise Lajoie, M.D., M.Sc., Environmental Health, Monterege Public Health
Department, Quebec

Sidonie Pénicaud, MD

Kenneth Rosenman, MD

Harvey Fernbach MD MPH, Physicians for Social Responsibility

Mark Vossler, MD, Co-Chair Climate and Health Task Force Washington
Physicians for Social Responsibility

Sergio Rimola, MD

Barbara Warren, MD, MPH

David Masuda, MD, MS

Richard E. Rust, MD, FAAFP

Shira Goldenberg, PhD, Assistant Professor, Faculty of Health Sciences, Simon
Fraser University; Research Scientist, Centre for Gender and Sexual Health
Equity (CGSHE)

Elaine Fuertes, Research Associate, Imperial College London

Ryan Allen, PhD, Associate Professor, Simon Fraser University

Ashika Brinkley, Professor

Katie Hayes, PhD

Rocelyn de Leon-Minch, MSc, MPP, Environmental Health Specialist

Marie-Jo Ouimet, MD, MSc, FRCPC, Public Health Physician

Chris Covert-Bowlds, MD

Chia Thao, MPH

Benjamin Ashraf, MPH, CHES

Daniel Harris, MPH, PhD Student

Beth Rosenberg, ScD, MPH

Timothy Fagan, MD

Veronika Arkhipova, Graduate MPH Student

Anita Peñuelas, MD, MPH

Rejean Idzerda, PhD

Will Offley, RN

Breanna Curley, RN

Pouné Saberi, MD MPH, Physicians for Social Responsibility, President Board of Directors

Joe Minifie, RN

Catherine Thomasson, MD

Penny Oyama, Retired Nurse

Robert Laumbach, MD, MPH

Maureen McCue, MD PHD Global Health Studies UI, Coordinator Iowa Physicians for Social Responsibility

Alisa Meggitt, Global Studies Instructor

Lyla Smith, RN

Jeff Miguez, RN Bsc ACCN

Stephanie Adkins, RN

Andrew Dannenberg, MD, MPH, Affiliate Professor, University of Washington School of Public Health

Taiebeh Moussavi, RN

Michelle Gin, MPH

Anna Reid, MD

Stewart Reid, MD, FRCP(C), MPH, Associate Professor of Medicine, University of Alabama at Birmingham, Centre for Infectious Disease Research in Zambia

Paola Ardiles, MHSc MBA, Lecturer, Faculty of Health Sciences

Jane Prince, RN, BScN

Cheri Reid, BSN, MPH

Teresa Wall, BSN, MPH

Heidi Dorval, Student

Chelsea Schafer, BS, CHES

Stephanie Osborn, MPH, Adjunct Professor at Wayne State University

Monica Hanson, PhD, RN, Retired

Sara Whitehead, MD, MPH, FRCPC

Ulrike Luderer, MD, PhD. Professor and Director, Center for Occupational and Environmental Health, University of California Irvine

Rakel Kling, MD, MSc, MPH, FRCPC

Cristina O'Callaghan-Gordo, PhD, Assistant Professor. ISGlobal

Jennifer Miller, PHD; Executive Director, Global Climate and Health Alliance

Mehdi ALoosh, Public Health and Preventive Medicine resident physician at McMaster University

CC:

The Honourable Catherine McKenna, Minister of Environment and Climate Change

The Honourable Ginette Petitpas Taylor, Minister of Health

The Honourable Kirsty Duncan, Minister of Science