

23 June 2016

The Honourable Catherine McKenna,  
Minister of Environment and Climate Change

Re: 2016–2019 Federal Sustainable Development Strategy

Dear Minister,

We congratulate you and the Government of Canada in preparing the 2016–2019 Federal Sustainable Development Strategy. It is encouraging to have a government with serious intent to address environmental issues in a comprehensive strategy. We appreciate the opportunity to participate in creating a truly sustainable strategy and have attached a copy of the strategy with some additional comments for your consideration.

Our principle concern is that the strategy must be based on a clear and science-based definition of sustainability. Simply using sustainability in a general way or as feel-good term, has led to significant problems with certain assumptions made in the early pages of the document. These have an impact on the targets and aspirations of the strategy. Also, some critical points are missing that should be included. We encourage the Minister to carefully consider the following:

1. Be clear that the only sustainable target is for Canada to live within the country's biophysical limits. Recent studies show that we're approaching and, in a number of cases, have exceeded, biophysical limits that enable civilization as we know it to exist<sup>1,2,3,4,5</sup>. This danger is caused by a rapidly increasing global population and by its attendant over consumption, especially in developed countries such as Canada. The public has a right to know and needs to understand that we are currently in a severely unsustainable situation and this should be given greater emphasis in the strategy. This situation must be addressed if we are to expect human well-being to continue this century. To do otherwise is a dereliction.
2. Define the word "sustainability" in the strategy. What do the authors mean by "sustainability?" The word is regularly used by government leaders, economists, and the media in a manner that far exceeds its actual meaning. For example,

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1 Rockström, J. et al. 2009. A safe operating space for humanity. *Nature* 461, 472–475.

2 Steffan, W. et al. 2015. Planetary boundaries: Guiding human development on a changing planet. *Science* 347

3 Butchart, S.H.M., et al. 2010. Global Biodiversity: Indicators of Recent Declines. *Science* 328:1164–1168.

4 WWF. 2014. *Living Planet Report: Species and spaces, people and places.*  
[http://www.panda.org/about\\_our\\_earth/all\\_publications/living\\_planet\\_report/](http://www.panda.org/about_our_earth/all_publications/living_planet_report/)

5 Running, S.W. 2012. A Measurable Planetary Boundary for the Biosphere. *Science* 337:1458–1459.

“sustained economic growth” is an oxymoron; an impossible physical occurrence on a planet with finite resources. This fact was recognized in the most-often used definition of sustainable development—that in the Bruntland Commission report,<sup>6</sup> which reads:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

It contains within it two key concepts:

the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and

***the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.*** [our emphasis]”

Sadly, the critical part of this definition—the phrase we've highlighted—has been ignored by most levels of government. We must move quickly to acknowledge that “the environment's ability to meet present and future needs” is threatened because we have ignored the fact that it is bounded by physical limits. It's time we took serious, conscious steps to live within those limits.

3. Correct the false claim that we can have continuous economic growth and still achieve sustainability. This is not scientifically possible. The ONLY sustainable economy is a steady state economy<sup>7</sup>: one that lies within the regenerative and assimilative capacity of the biosphere. We should be working towards such an economy. We appreciate that this claim will likely be the most difficult for the Minister to accept, as economic growth is mentioned in the 2016 Federal Budget 19 times, promising to “expand the middle class, reduce inequality among Canadians and position Canada for sustained economic growth in the years to come.”<sup>8</sup> While economic growth may improve the lives of Canadians in the short term, it does so perniciously and unsustainably, at the expense of the very source of that improvement—the global ecosystems and their life-support services. The Minister and the government must deal in reality if there is to be any hope of sustainability this century. As physicist, John Schellnhuber notes: “Political reality must be grounded in physical reality or it's completely useless.”

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6 World Commission on Environment and Development. 1987. *Our common future*. Oxford: Oxford University Press.

7 Daly, H.E. 2005. Economics in a full world; *Scientific American*, September 2005:100–107.

8 Morneau, W.F. 2016. Expanding the middle class.  
<http://www.budget.gc.ca/2016/docs/plan/budget2016-en.pdf>

The reason this is not possible is that economic growth is a continuous *increase* in the production and consumption of goods and services in the aggregate, i.e., a continuous *increase* in the flow of raw resources through the economy and back to the environment as wastes<sup>9</sup>. It is fueled by population growth, growth in per capita consumption, and our human nature.

Each year our growth economy demands more and more resources from the structure of ecosystems, depleting non-renewable resources, displacing ecosystems entirely or removing their structural elements, and degrading the remaining—even protected—ecosystems with waste<sup>10</sup>. The most recent assessment of the world's ecosystems, found that 60% of the 24 ecosystems examined that are critical for human survival are being “degraded or used unsustainably.”<sup>11</sup> This impacts the species living there, reducing their populations and causing extinctions. Yet it is all these wild species, simply living out their daily lives within healthy ecosystems that facilitate ecosystem functioning and the provision of the life-support services of the planet<sup>12</sup>. Thus, there is a fundamental conflict between economic growth and biodiversity conservation<sup>13</sup>. By constantly championing economic growth, the government is complicit in the loss of myriads of other species that form humanity’s life-support systems. This is a moral failing.

Continued economic growth means we will use more resources and produce more emissions that cannot be sufficiently reduced through proposed efficiency measures<sup>14</sup>. Recent studies show that most of the increase (~ 65%) in greenhouse gas emissions can be attributed to increasing global economic activity<sup>15</sup>. Attempts to decouple resource use from economic growth have not been successful<sup>16</sup>. Also, the much needed government infrastructure plan is inevitably going to cause greater emissions that cannot be offset, particularly under current levels of

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- 9 Daly, H.E. and J. Farley. 2004. *Ecological economics: principles and applications*. Island Press, Washington.
  - 10 Sustainable Europe Research Institute. 2009. *Overconsumption? Our use of the world's natural resources*. <https://www.foe.co.uk/sites/default/files/downloads/overconsumption.pdf>
  - 11 Millennium Ecosystem Assessment, 2005. *Ecosystems and Human Well-being: Synthesis*. Island Press, Washington, DC.
  - 12 Hooper, et al. 2005. Effects of biodiversity on ecosystem functioning: A consensus of current knowledge. *Ecological Monographs* 75:3–35
  - 13 Czech, B. 2000. Economic growth as the limiting factor for wildlife conservation. *Wildlife Society Bulletin* 28:4–14.
  - 14 Peters, G.P. et al. 2012. Rapid growth in CO<sub>2</sub> emissions after the 2008–2009 global financial crisis. *Nature Climate Change* 2:2–4
  - 15 Canadell, J.G. et al. 2007. Contributions to accelerating atmospheric CO<sub>2</sub> growth from economic activity, carbon intensity, and efficiency of natural sinks
  - 16 Wiedman, T.O. 2012. The material footprint of nations. *Proceedings of the National Academy of Sciences* 112:6271–6276.
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technology. Virtually everything associated with economic growth is not sustainable and this growth paradigm has to change.

4. Green growth is not sustainable and this needs to be made clear. Green growth, once established, may help emissions reduction; however, growth, green or otherwise, is still growth, ensuring that environmental destruction will continue to occur. The fallacy of green growth has been impugned by a number of studies<sup>17,18</sup>.
5. Identify the urgency in transitioning to renewable energy. This transition is taking place, but it is a long, slow process that we should have begun decades ago<sup>19</sup>. The urgency of our predicament demands a 'Manhattan Project' approach decoupled from the promise of economic growth. The public needs to understand transition is essential and haste is required.

A large portion of the public is only dimly aware of the environmental challenges before us. Some don't even believe there is a problem. This is contrary to what we already see happening to the climate<sup>20</sup> and the ecosystems of the Earth. One might think that the Millennium Ecosystem Assessment's conclusion that "Human activity is putting such strain on the natural functions of Earth that *the ability of the planet's ecosystems to sustain future generations can no longer be taken for granted*"<sup>21</sup> [our emphasis] would generate significant concern from global governments at all levels. But the seemingly fixed preoccupation with continuous economic growth drowned the MEA's conclusion and barely rippled the waters of concern.

The Sustainable Development Strategy must be based on the best science available. We know that society and its social constructs, such as the economy, are subsets of the environment. We know that the environment is the source of all our global wealth. However, we have been treating the environment solely as an inexhaustible source of resources for input to an economy that never stops growing or as a sink for wastes that never end. We must change this or Nature will make the change for us.

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17 Smith, R. 2015. Green capitalism: the god that failed. World Economics Association.  
<http://www.worldeconomicsassociation.org/>

18 Santarius, T. *Green Growth Unravelling: How rebound effects baffle sustainability targets when the economy keeps growing*. Heinrich Boell Foundation and Wuppertal Institute for Climate, Environment and Energy, Berlin.

19 Smil, V. 2014. The long slow rise of solar and wind. *Scientific American*, January.

20 Hansen, J. et al. 2016. Ice melt, sea level rise and superstorms: evidence from paleoclimate data, climate modeling, and modern observations that 2°C global warming could be dangerous. *Atmospheric Chemistry and Physics* 16:3761–3812.

21 Millennium Ecosystem Assessment, 2005. *Ecosystems and Human Well-being: Synthesis*. Island Press, Washington, DC.

Finally, there is evidence from a number of independent studies<sup>22</sup> that demonstrates we're closely aligned with the 1972, *Limits to Growth*, standard run—the 'business as usual' scenario<sup>23</sup> that assumes “no major change in the physical, economic, or social relationships that have historically governed the development of the world system.” In other words, continued economic growth. The scenario results in collapse of the global economy and environment sometime this century. However, it doesn't necessarily have to be that way, assuming we change our “malignant social constructs” and our behaviour so we live within the limits of the biosphere<sup>24,25</sup>.

It seems fairly obvious that ecologists and ecological—not environmental—economists have had little input to this document. We encourage the Minister to include scientists from these disciplines as advisors to the Federal Sustainable Development Strategy. To achieve success, the government will also need strong public support because there will be resistance when people learn that some major changes will affect their lives. This will need to be addressed and built into the strategy if the government is serious about maximizing Canadians' well-being in a sustainable manner.

As William D. Ruckelshaus, first head of the US Environmental Protection Agency, wondered in 1989: “Can we move nations and people in the direction of sustainability? Such a move would be a modification of society comparable in scale to only two other changes: the Agricultural Revolution of the late Neolithic and the Industrial Revolution of the past two centuries. Those revolutions were gradual, spontaneous and largely unconscious. This one will have to be a fully conscious operation, guided by the best foresight that science can provide.”

The question for the Minister then, is this: do you have the courage and foresight to move Canadians in the direction of sustainability?

Yours sincerely,



Neil K Dawe,  
President

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22 Turner, 2014. Is global collapse imminent?;

[http://sustainable.unimelb.edu.au/sites/default/files/docs/MSSI-ResearchPaper-4\\_Turner\\_2014.pdf](http://sustainable.unimelb.edu.au/sites/default/files/docs/MSSI-ResearchPaper-4_Turner_2014.pdf)

23 Meadows, D.H. et al. 1972. *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind*. New York: Universe Books.

24 Rees, W.E. 2014. *Avoiding Collapse: An agenda for sustainable degrowth and relocalizing the economy*. Canadian Centre for Policy Alternatives, Vancouver.

25 Ehrlich P.R. and A.H. Ehrlich. 2013 Can a collapse of global civilization be avoided? *Proceedings of the Royal Society B* 280:20122845