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Dear Mr. Minister of the Environment and Climate Change:
via email ec.ministre-minister.ec@canada.ca

Re: Impact Assessment Act s. 9(1)

Please consider this email which is my second and formal request under the IAA to you to designate the two proposals of my Petition 437 under the Auditor General Act, being the first request, to preparing an Impact Assessment subject a Life Cycle Assessment, in accordance to ISO Standard 14000, so as to document the non compliance with the principles of 'value for money' of the Auditor General Act, the Impact Assessment Act s. 22(1) and the Federal Sustainable Development Act.

The Proponent of theses two projects is South Coast British Columbia Transportation Authority, also known as Translink, and has a monopoly on public transit in the Metro Vancouver Regional District.
Translink
400 - 287 Nelson's Court
New Westminster, BC V3L 0E7

These Projects, together or separately, do not involve new technology rather the Linear Induction Motors technology that powers these projects requires significant more electrical energy to move its train sets and passengers along a grade separated right of way; the right of way requires significantly more Portland cement in the tunnel walls, elevated tracks, and station boxes. This embeds significant GHGs in the construction of the physical infrastructure of the project, adds to the costs of construction and hence violates the Federal Sustainability Development Act, that is the 'Federal Sustainable Development Strategy,' and the Auditor General Act's concept of 'value for money.'

The Broadway Subway has an alternative technology and route that can deliver the same quantity of passengers to Broadway and Arbutus Street. The at grade alternative was dismissed by Translink, in a letter to the City of Vancouver, asserting Translink's monopoly on public transit in Metro Vancouver. The most recent cost estimate for an at grade route to Arbutus and Broadway is $0.5 billion (2019) with cars and depot included, the cost estimate for the Subway is $2.83 billion (2018) no cars and no depot. I will explain the no cars and depot below. There are

several other studies of light rail transit/ street car projects in Vancouver dating back to 1994. The Surrey Extension of Skytrain alternative is the former BC Electric Railway Line from Scott Road and 112 Avenue in Surrey to Chilliwack a route of about 99 kilometres, about seven kilometres is owned by the CPR while the rest is owned by BC Hydro. The adjoining lands through Surrey are the backbone of urbanization in Surrey and are zoned residential, commercial and industrial, which are ideal for tram/train technology and densification. I note that your Ministry has a policy document that defines the context of "Need for", "Purpose of", "Alternative to", and "Alternative means" which expands on the must have sections 22(1)(d), (e), and (f) of the Impact Assessment Act, which in the conclusion of the Policy Statement are "key deliverables"of the Act. It is important to note that the Federal and Provincial Governments are victims as financial sponsors, 40% each, for about $1.2 billion each in current dollars which is the estimated funds needed to build the project. We could build both alternatives and have funds left over for housing, or healthcare if we build at grade and use only senior Government funds.

The first purpose of the Impact Assessment Act (IAA) is s. 6(1)(a) 'to foster sustainability'. The recent academic paper published by Environmental Research Letters in 2019 and written by Lubanjo Olugbera, et al, "Embodied Emissions in Rail Infrastructure: A Critical literature Review;" all are Professors of Engineering at the University of Toronto. Its conclusion states:

> The statistical model finds that overall 941± 168 tCO2e are embodied per kilometre of rail at-grade, while tunneling has 27±5 times more embodied GHG per kilometre than at-grade construction.

In plain English, not engineer speak, building the Broadway Subway will increase the GHGs by 2,200% to 3,200% over the at grade alternative: the result of the significant use of cement to reinforce the tunnel walls and stations. This paper lists the various LRT projects around the world that used LCA to calculate their GHGs emission and allows them to be considered side by side with other studies. How can any project that creates so much extra GHGs then be considered as respecting Canada's international obligations under the Paris Accord on the Environment and 'Canada's 2030 emissions targets and forecasts?' I note that the OECD's International Transportation Forum uses this study to document their Decarbonizing of Urban Mobility with Land Use and Transportation Policies.

Translink always purchased its vehicles from one supplier which owns the patents on its Linear Induction Motors. The supplier has an European production facility that in 2004 reported that production time and cost would be lowered if the company did not have to customize every order. The highly competitive industry in the European Community was in the process of standardization of all aspects of the rail transportation across the 25 members of the Community, this included the interoperability of equipment. It also included the purchase contract for new vehicles which included standardized penalties for late delivery. At the time of the producing the Business Case (2018) for the Broadway Subway proposal the costs for new vehicles estimate would include the costs to take out of one production line, install the LIM production line, produce a limited number of cars, take out the LIM production line and install the original production line. In the automobile industry a production line is expected to produce one million vehicles before it is replaced. Just to prepare the cost estimate would cost Bombardier Transportation at a time when it was in an illiquidity crisis, hence no estimate was given for cars and depot. BT has entered into a Purchase and Sale Agreement of all its assets and liabilities to

Alstom Group, the Agreement is subject to Regulator approval in Europe. If the Agreement is not approved then BT will have to apply for bankruptcy which will mean loss of jobs in Canada and Europe. It should be noted that Alstom purchased a small company which had proprietor patents and Alstom refused to support the old equipment. None of the Translink's reports mention the risk of having only one supplier for equipment that is not interoperable with the industry standards. By the way Alstom is very proud of their ISO 14001 certification for being sustainable and Alstom also help finance the OECD/ITF studies.

Thanking you in advance for your prompt review of the matter.

Yours Truly

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Vancouver, BC

cc: ceaa.information.acee@canada.ca.

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