

CANADIAN VITALITY PATHWAY

SUBMISSION TO THE NATIONAL INFRASTRUCTURE ASSESSMENT

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1 INTRODUCTORY COMMENTS

As a federation, Canada, like the US struggles to devise and establish national infrastructure to support national goals and economic development. Constitutionally, the provinces' specific rights and responsibilities favour the development of local and regional infrastructure serving their respective needs and interests. This imbalance of power prevents cooperative dialogue and encourages rancor, which has overhung major projects in the national interest as far back as the 1950s. National and international obligations associated with climate change have once again highlighted the impediments and barriers Canada faces in successfully delivering on national priorities.

Australia realized in 1993, via an independent National Competition Policy Review (Hilmer, Rayner, & Taperell, 1993), that regional barriers to trade and efficiency were significant impediments to international competitiveness. By mutual agreement of the states, a Productivity Commission was struck to eliminate these domestic barriers. This led to such reforms as a National Electricity Market. Australia accomplished these objectives not through constitutional changes, but a national realization that they were competitively falling behind the rest of the world and a willingness to mutually work through these issues.

Canada has not yet reached a similar conclusion, perhaps due to our ability to extensively trade with the US, especially in terms of energy. However, this era has come to an end with the rapid regrowth of US energy independence, a more protectionist US policy stance, mutual goals of net zero by 2050, and the discussion of carbon border tariffs. Envisioning policy and infrastructure that will support low-cost, low-carbon trade, resilience, and interdependence is an essential national discussion that needs to happen now.

Canada's ability to succeed in this new world trading paradigm is dependent on our ability to produce products that are low carbon and can continue to compete within the global trading context. We must efficiently and cost effectively utilize our abundant resources, both fossil and renewable, to deliver zero emissions energy for domestic and export markets and fuel for our manufacturing sectors. Infrastructure to meet national needs, whether new or redeployed, is the critical link between aspirations and delivery. However, to build the "right" infrastructure requires collaboration on analysis to establish justifiable needs, national purpose, political goodwill, and a framework that can rapidly plan and carry out this retooling.

The CVP has spent the last two+ years in dialogue with prominent Canadians and international experts at the intersection of many infrastructure developments; these individuals are energy thought leaders, regulators, Indigenous leaders/organizations, ENGOs, politicians, government officials, energy suppliers, equipment manufacturers, customers, and financiers. This education has informed and shaped CVP's proposals, which seek to establish new infrastructure opportunities for Canada to remain economically and efficiently competitive in a decarbonized world.

Canada lacks mutually acceptable mechanisms by which to agree and deliver on national goals for infrastructure. The Canadian Vitality Pathway is a proposed platform through which Canadians (governments, suppliers, Indigenous peoples, ENGOs and consumers) can financially and socially own infrastructure opportunities, establish national infrastructure priorities, plan acceptable pathways, and build necessary current and future infrastructure.

In this package, we have focused heavily on linear energy infrastructure. This is largely driven by this most strategic and urgent need to meet climate imperatives economically and efficiently. Other infrastructure needs such as telecommunication and bulk transport are considerable and co-location with energy infrastructure and functional trade corridor alignment is essential to efficient infrastructure development.

2 NIA PRIORITIES

2.1 ASSESS CANADA'S INFRASTRUCTURE NEEDS AND ESTABLISH A LONG-TERM VISION

2.1.1 CANADA'S CURRENT INFRASTRUCTURE

Apart from the founding of the CPR, the TransCanada Pipeline and the TransCanada Highway, the focus of Canada's infrastructure has been regional improvements or export. Driven by the abundance of regional resources needed in the US, the development of hydro, petroleum and the auto sector have largely focused on north-south trade. While this has financially rewarded Canada's regions and robust transfer payments have ensured overall that Canadians benefit, significant national connecting infrastructure has not developed.

As our major trading partner (the United States) has gone from a high degree of energy import dependence to national surplus, Canada's revenue from energy has been impacted. This has ranged both from depressed prices for exports and displaced domestic consumption in eastern Canada from increased natural gas and petroleum imports. This has driven a frenzy of project proposals to build mainly export opportunities outside of North America, specifically North Gateway, TMX, and multiple LNG plants and transportation facilities. Failures of KXL, Energy East, Northern Gateway, and many LNG proposals both East and West point to disarray in Canada's infrastructure planning and approval processes. More importantly, this disarray illustrates Canada's inability to assess needs and establish a long-term vision for infrastructure outside of the narrow confines of what industry has deemed to be needs and desires. Such proposals have been the subject of ongoing controversy and failure when examined in the light of Indigenous rights and worldwide energy and carbon reduction trends.

2.1.2 THE ISSUES

2.1.2.1 *Canada's governments do not have shared priorities*

- Constitutional rights and responsibilities prevent a single government from creating shared priorities.
- Political regulatory/judicial interference and current rights in later stages of the regulatory process creates governance uncertainty.
- National interest is not backed by broad analytical reasoning or mutual agreement.

2.1.2.2 *Climate imperatives, costs, and commitments are not considered when establishing infrastructure need*

- Economic drivers continue to reward business as usual and do not foster next generation thinking.
- Signals and incentives for industry to evaluate climate and ESG issues are coming from investors.
- Alignment of industry with Canadian international commitments is only weakly tied to infrastructure plans.

2.1.2.3 *Canada lacks significant infrastructure to connect zero-emission resources to domestic markets*

- Canada's highest value renewable resources are located in the prairies with weak interconnection.
- Capacity value from hydro is limited to energy export opportunities vs intermittent firming and shaping.
- Curtailed nuclear and renewable energy is curtailed instead of stored in cost effective hydro facilities.

2.1.2.4 *Standalone Infrastructure Often Considered in Isolation Rather Than in Context of Overall Impacts*

- While standalone infrastructure is expeditious and can provide solutions, such solutions may be out of context of cost and overall strategic value within an energy or other infrastructure system.

2.1.2.5 *Petroleum Sector CCUS Initiatives are Being Shut Out of CCUS Tax Incentives*

- Petroleum converted to Hydrogen + CCUS provides the lowest-cost Scope 3 emissions reductions
- Hydrogen transportation from low-cost sources to distant markets has low priority vs green hydrogen
- Strength and capability within the petroleum energy sector is ignored for large scale Scope 3 reduction

2.1.3 LONG TERM VISION FOR CANADA'S INFRASTRUCTURE

Canada's infrastructure should see the development of our transportation and resources consistent with our national priorities and strategic trade opportunities of the future. Infrastructure needs to be established based on a more balanced approach to domestic resilience, reliability, need, export opportunities and environmental and overall cost impacts. However, before a vision for infrastructure can be created, Canada requires a robust national discussion to establish trade-offs between regional interests, rights, needs and national goals. Canada's infrastructure initiation process and governance model must be sound enough to ensure that projects gain social and economic sanction before regulatory application. The regulatory process should not be the place to argue global or national priorities; this should occur ahead of regulatory application. Regulatory bodies and hearings are to ensure that proponents adhere to the agreed upon sanction, good practice, principles, and laws.

Canada needs to respond quickly to climate imperatives. Yet, how Canada responds in terms of efficiency and cost will impact competitiveness for generations. Retooling Canadian energy systems to meet decarbonization is a vast and complex undertaking that needs all the expertise at the table and cannot be simplified into buckets like "electrification" or localized "green hydrogen" production. NRCan has done an excellent job of launching the framework with a Hydrogen Strategy for Canada. However, this is just the introduction to the analysis, collaboration, planning, negotiation, and compromises that are required to deliver on this objective. A strategy is a crucial step but delivering an efficient and economically sustainable new system will require coordinated national analysis and planning of electrical, hydrocarbon (+ CCUS), and hydrogen infrastructure.

Currently, Canada's system of infrastructure development is not capable of delivering on climate imperatives due to a lack of up-front in-depth priority analysis, planning and risk assessment. An overall energy systems approach involving existing and future energy participants, affected parties and governments, is necessary to work through the competing challenges and interests to establish priorities, vision, and efficient infrastructure deployment.

2.1.4 RECOMMENDATIONS

2.1.4.1 *Establish a Broad-Based Entity for Analysis, Commercial /Social Negotiations for Infrastructure Planning*

- Build an inclusive process with a coalition of governments, suppliers, Indigenous peoples, ENGOs, and consumers to analyze and negotiate visions and physical plans for Canada's infrastructure of the future.
- Fund this entity from participants, including all levels of government – ownership equals participation.
- Separately fund Indigenous capacity for early participation in visioning, route planning, and feasibility.

2.1.4.2 *Set Aside Rights-of-Way for Future Infrastructure with Predictable/Inclusive Social & Financial Governance*

- Use the Regional Assessment process of the IAAC to build environment and social baseline impacts.
- Establish physical lands and pathways early, to allow infrastructure development to be responsive and timely on agreed terms and with appropriate social licence.
- Pre-agreed terms within a defined ROW and lifetime governance of planned infrastructure improves oversight, as well as reduces planning lag and regulatory/political risk to future development.

2.1.4.3 *Ensure Regulatory Processes and Rulings have Strong Foundation to Ensure Governance*

- Establish a clear vision of infrastructure requirements and negotiated rights of way through an inclusive negotiation in advance of regulatory process.
- Regulatory rulings should be focused on specific project governance.
- Respect must be maintained for regulatory authorities' expertise and impartiality.

2.2 IMPROVE COORDINATION AMONG INFRASTRUCTURE OWNERS AND FUNDERS

Currently there are few “rules” or guidelines that apply to what are acceptable new infrastructure proposals or plans. Canada does not have a framework within which common national goals can be translated into logical signals for infrastructure proposals and development. By default, infrastructure developers use a commercial lens of past or future markets and regulatory/political risk to establish a suitable project. Multiple projects emerge, significant effort and money is spent with many ending in failure late in a regulatory process.

Currently only 11% of Canada’s primary energy needs are met with clean energy, despite over 82% of our electricity coming from clean sources. To meet the Federal Government’s aspirational goal of Net Zero by 2050, Canada will be facing a daunting number of individual project proposals conceived without context or framework. This will lead to ongoing project failures, wasted effort and few truly strategic advances in infrastructure to meet the net zero by 2050 goal.

As indicated in the NIA launch document, trillions of dollars may be required to deliver on Canada’s next stage of infrastructure development. This is unlikely to be funded by the domestic public purse; consequently private and foreign investment will be needed. However, a chaotic process, poor governance and unclear context can only increase the cost of capital for both public expenditures (which rely on international bond investment ratings) or private debt sources.

2.2.1 THE ISSUES

2.2.1.1 *Canada Lacks a Cohesive National Infrastructure Planning Approach*

- Canada’s regulatory structures are designed to permit or deny applicants commercial proposals but not to establish a vision for future infrastructure.
- The Federal Government lacks the constitutional rights to impose a vision.
- Provincial governments are focused on local and regional imperatives and do not share Federal goals.
- An infrastructure vision established by any one government is subject to political imperatives and an election cycle that is far too short for thoughtful infrastructure development.

2.2.1.2 *Lost Imperative for the Common Carrier*

- Most major linear infrastructure is a natural monopoly.
- No common carriers reduce overall economic benefit by increasing competitive tensions and monopoly power.
- No common carriers increase costs and cumulative impacts because of multiple routes vs. a single route.

2.2.1.3 *The magnitude of the Federal Government’s Net-Zero by 2050 goal is not well understood in most circles.*

- Electrification would require a massive increase in renewable, hydro, and nuclear electrical generation.
- Hydrogen from electrolysis requires even more electrical capacity and significant amounts of water.
- Connecting national/domestic infrastructure is needed to meet this goal efficiently and economically.
- Provinces see net-zero by 2050 as an opportunity to “repatriate” energy supply.
- Petroleum sector contributions to zero emissions fuel (H2+CCUS) by eliminating Scope 3 emissions isn’t incorporated into the net-zero vision of non-petroleum producing provinces.

2.2.2 RECOMMENDATIONS

2.2.2.1 *Regional Assessments for all Trade Corridors*

- Growth of trade along functional corridors should be expected and encouraged to understand and lower overall and cumulative impacts.
- Regional baselines will inform the infrastructure visioning and the infrastructure development process.
- The net benefit will be a reduction in repetitive work and an increase in the depth and quality of impact understanding over a longer window of time.

2.2.2.2 *Regulate/Legislate Common Carrier Requirements for New or Repurposed Linear Infrastructure*

- Linear Infrastructure is a Natural Monopoly
- Avoiding duplication of infrastructure is an important factor in minimizing social and environmental impacts.
- Clear rules and clear rewards, with a well-designed regulated rate of return and strong governance, will bring forward fixed income investors with the lowest cost of capital.

2.2.2.3 *Indigenous Contribution to Infrastructure Planning and Development through to Co-owners*

- Indigenous participation must start at the earliest phase of infrastructure planning
- Capacity funding is required for Indigenous participation in early-stage project development.
- Minimum set-asides of 25% for Indigenous ownership in projects utilizing traditional Indigenous territory.

2.3 DETERMINE THE BEST WAYS TO FUND AND FINANCE INFRASTRUCTURE

The uncertainty presented by Canada’s chaotic system of infrastructure planning, regulation, and development has made the cost of capital for project development excessive. Political, social, and environmental risk drives higher financing and regulatory costs for infrastructure whether public or private. Planning and a shared vision amongst stakeholders for future linear infrastructure is an essential first leg by building social and commercial license. Strong and robust governance, designed to reduce regulatory and political backtracking/risk is the second leg of the stool. Finally, addressing the issue of “missing money” (appropriate and sufficient long term revenue assurance) is the third leg to ensuring projects can move forward with lowest costs.

2.3.1 THE ISSUES

2.3.1.1 *Cost of Capital is Established by Levels of Uncertainty*

- Capital is not restricted to Canada and will seek the project with the lowest uncertainty and highest rate of return
- Higher costs of capital will also apply to government and crown-corp debt where publicly led projects have uncertainty, costs and risks that are not addressed up front (e.g. Great Whale, Site C and Keeyask).

2.3.1.2 *Common Carriers*

- Current infrastructure development is almost exclusively focused on specific commercial advantage for single parties or consortia of industry. Consequently, a plethora of projects have emerged and failed multiple times leaving approved routes and participating parties (including Indigenous Nations) stranded or in limbo.
- Multiple similar project proposals are inefficient, a net loss to Canada, and stress regulatory, political, and intervenor capacity.
- In the past, major infrastructure in the national interest was required to be a common carrier to most efficiently deliver economic opportunities from natural monopolies (e.g. TransCanada pipeline (Kilbourn, 1970)).

2.3.1.3 *Missing Money*

- Who pays? – a common impediment to development of many climate-focused infrastructure projects.
- No predictable financial income mechanism is available to drive low-emissions priorities for infrastructure.
- Commercial interests lineup against projects that reduce netbacks or are perceived as anti-competitive.

2.3.2 RECOMMENDATIONS

2.3.2.1 *Fund a Proportional Share of the required Broad-Based Infrastructure Planning Entity*

- See Recommendations in Section 2.1.4.1 above.

2.3.2.2 *Remove Uncertainty and Political Risk*

- See Recommendations in Section 2.1.4.3 above.

2.3.2.3 *Establish Multiple Source Long-term Revenue Streams*

- Consumers should pay a portion of the costs of improving efficiencies but should not bear the full burden.
- Producers need to be able to share in benefits from infrastructure development (e.g. improved trading).
- Emissions benefits must be monetizable to support the infrastructure (e.g. assignment of carbon revenues).

3 CLOSING COMMENTS

The CVP is an organization focused on delivering commercially focused pathways for new long-life transmission and transportation infrastructure to support a decarbonized Canada. Our proposed pathways are devised to be multiproduct common carriers for electrical power, low-carbon fuels and useful products of CO₂ (e.g. building materials). These pathways are intended to promote low and zero carbon development opportunities for existing industry, resources, and markets for the 21st century and centuries to come.

The CVP has created Indigenous engagement, governance, and financial return models as part of our multiyear work on developing linear infrastructure pathways for Canada. We have explored in detail commercial route segments for electricity, low-carbon fuels and hydrogen with proponents, Indigenous organizations and leaders, specific governments, and experts. A bold vision for what infrastructure will decarbonize Canada most efficiently could emerge within 2-3 years. Segments of the CVP, developed as envisioned, could enable rapid cost-effective decarbonization in Canada by 100-150 MT within 10 years and 250-500 MT within 20 years (Doltier & Rivers, 2018), (Layzell, Young, Lof, Leary, & Sit, 2020)(Internal Proprietary CVP calculations).

We propose that this kind of work can only be accomplished by an independent entity that is a collaboration and “owned” (invested financially or in-kind) by all levels of government, industry, Indigenous people, consumers and ENGOs. A profit motive and independence is essential for this proposed entity to create sustainable linear infrastructure pathways as this leads to:

- establishing routes that are “functional”, immediately usable, and commercially focused,
- creative tension, friction, and reward for the effort to work through the multiple conflicts, compromises, and negotiations necessary to deliver a vision for Canadian energy infrastructure,
- revenue independence, derived from pathway leasing and used to oversee, govern, and continue to create and envision new linear infrastructure opportunities,
- spanning multiple election cycles and political agendas across several jurisdictions with differing priorities, rights, and responsibilities, and
- a structure and framework specifically designed and supported by all parties to efficiently and cost effectively manage, execute, and deliver on the enormous infrastructure challenge facing Canada.

We look forward to working more directly with Infrastructure Canada and the National Infrastructure Assessment secretariat. We strongly believe that by working collaboratively on the NIA and other developments at Infrastructure Canada, we can reach many, if not all, of the objectives in this document.

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