



Pillars of the CVP – Details and Definitions

January 17, 2022

The Canadian Vitality Pathway approach is guided by five principles, established through multiparty discussions ...

PILLARS OF CVP APPROACH



CANADA'S LOW CARBON CORRIDOR

3

Decarbonization

Integrated Energy Supranet

Integration of low-carbon energy from multiple sources provides the diversity to manage low-cost intermittent (wind and solar) or inflexible resources (nuclear) and maximize the benefits of high capacity infrastructure (eg pondage hydro). Interconnection across jurisdictions is at the heart of efficient and low-cost electrical decarbonization through matching the lowest-cost energy with lowest-cost capacity and storage. The ability to interchange between low-carbon energy carriers, electricity and hydrogen, adds to this flexibility on a local and regional level.

The CVP envisions a Supranet of interconnection for wholesale trading between jurisdictions that have differing regulations and organizational structures. This bulk trading capability will allow jurisdictions to take advantage of their respective abilities to trade excess energy and capacity to minimize waste, more readily decarbonize and maximize cost-effective renewable resource deployment. At the same time a Supranet interconnection is designed to not interfere with any specific jurisdiction's mandate, or management and form of governance. Australia, once a series of autonomous electrical grids, voted to create a National Grid and energy marketplace to reduce energy costs and create more internationally competitive industries. EU countries and China are moving forward with closer cooperation and large-scale network interconnections.

Clear examples of latent financial and decarbonization value exist between provinces endowed with abundant pondage hydro with storage opportunities and adjacent provinces with low-cost (prairie wind and solar) and curtailed (nuclear) energy. It is estimated that Ontario for instance curtails \$1billion of clean electrical energy each year.

The future of hydrogen will be written by how efficiently and cost effectively this energy carrier can be generated and delivered either from electrical or hydrocarbon resources. Creating an integrated Supranet for bulk electrical and hydrogen energy trading will allow optimization of these zero-carbon energy carriers to meet local, regional and national clean energy demands.

Zero-emissions Energy Carriers

Electricity and Hydrogen are both zero-emissions energy carriers that will allow the decarbonization and elimination of millions of exhaust tailpipes for transportation, heating, industrial processes and chemical production. Building transmission systems that favour zero-emissions carriers allows for greater integration of renewable resources and the concentration of CO₂ for most efficient elimination by CCUS (Carbon Capture Storage and Utilization). The CVP is focused on ensuring interconnection of zero-emissions carriers and low-emissions opportunities that be converted to zero-emissions or can demonstrably leverage decarbonization globally.

Rapid CCUS Deployment

Carbon Capture Storage and Utilization is a well proven and established technology for the elimination of CO₂ emissions. Canada is in the unique position of having developed CCUS technology and possesses the geological conditions within which to store massive volumes of CO₂. Canada can deploy CCUS on a large-scale within our existing industries to meet or exceed our emissions targets with the lowest economic and social disruption. Canadian CCUS expenditures and incentives should focus on deployment of our unique capacity to deliver massive CO₂ reductions throughout the value chain (Scope 1, 2 & 3).

Deployment is cost effective today in the Western Canada Sedimentary Basin, provided we act quickly. To do so, Canada needs additional paths for CO₂ to flow from concentrated sources to existing depleted or storage reservoirs. Currently much of the infrastructure to accomplish this cost effectively exists within the petroleum sector but will expire as oil and gas fields are abandoned. Reviving this opportunity following abandonment would involve the cost of re-drilling and re-establishing these reservoirs.

Low-carbon Value Chain for Products

Eliminating CO₂ content of Canadian products from energy to manufactured goods will become a competitive advantage in a world that becomes focused on low-carbon trading. Eliminating Scope 1, 2 and 3 emissions (upstream and downstream) can be accomplished if a low-carbon value chain exists. An efficient and well connected network of zero-emissions energy carriers is an essential opportunity for the development of a low-carbon value chain.

Respect for Land and People

Early and Direct Indigenous Participation

Upfront direct involvement of Indigenous people and knowledge in planning and selecting routes are essential to the future development of any linear infrastructure that potentially impinges on Indigenous rights. Participation in project equity begins to create a sharing of prosperity and a climate of reconciliation. The CVP is designed to incorporate Indigenous interests and equity at the outset as part of the planning, financial and governance of pathways.

ENGO Engagement

Environmental Non-Governmental Organizations are pivotal players in establishing any new linear infrastructure. Corridor development and management is a natural ally of environmental concerns by concentrating infrastructure, monitoring the corridor more closely and reducing cumulative

effects. The CVP looks to working with ENGOs to minimize cumulative effects of development and maximize decarbonization benefits.

Strategic & Regional Assessment

As part of the most recent Canadian regulatory changes to linear infrastructure development, the Impact Assessment Agency of Canada (IAAC) was created. Corridor development in partnership with Indigenous Nations and the opportunity to ensure adequate planning and monitoring of cumulative effects against a baseline are consistent with the objectives of IAAC. The CVP processes of establishing National Needs through a collaborative enterprise, concentrating infrastructure and minimizing cumulative impacts against a baseline align well with the IAAC processes for Strategic and Regional Assessment.

Minimize Impact & Reduce Duplication

Corridors as proposed by the CVP are designed to promote two-way and multi-product movement of goods and trade. Additionally, the CVP has chosen to ensure enabling decarbonization is the focus of proposed routes. Current regulation does not seek to create a common carrier approach and as a consequence has encouraged multiple proprietary applications for duplicate infrastructure (eg LNG developments and pipeline access to the West Coast). The role of a corridor should be to optimize and improve existing infrastructure, remove bottlenecks, concentrate or align new with existing infrastructure and ensure an open access.

Building Social License

Establishing National Need

National need has a broader definition than achieving economic value from exports of raw materials. National need encompasses the National aspirations of all citizens and should include the political imperatives of decarbonization, and the role of future developments. The CVP process is designed to bring governments, Indigenous Nations, ENGOs and industry into a common enterprise to surface interests, establish mutual benefits and to negotiate national need ahead of regulatory application for infrastructure.

Alignment with National Priorities

To be built today, infrastructure must be in alignment with National Priorities. Infrastructure that is out of step with the Nation's goals must be closely scrutinized for future viability. The CVP process, together with the IAAC processes of Strategic and Regional Assessment seeks to create alignment with identified National Priorities. The CVP through a Charter of Operations and Governance will provide stability to ensure a favorable long-term investment climate and a structure through which pathway use can maintain alignment with National Priorities.

Bi-Directional Trade & Mutual Benefits

Current infrastructure development in Canada tends to have a singular and often proprietary objective with unidirectional benefits. Regulatory processes have encouraged proponents to make application within a highly adversarial environment. The CVP approach is to create pathways that provide bi-directional trade opportunities, serving as a conduit to multiple products, infrastructure forms and common carrier form (open source). This approach seeks to bring multiple supporting parties to the eventual applications to regulatory bodies.

Broad Ownership Structure

The ownership of the CVP enterprise is designed to bring often opposing parties together to surface interests, find common ground and negotiate for support prior to regulatory impositions. While not a substitute for the "Duty to Consult" the CVP approach seeks to establish modes and opportunities that are more productive with longer term value to Indigenous Nations and other stakeholders.

Economics and Efficiency

Functional Corridors New & Existing

Corridor development cannot be contemplated in isolation from commercial and trading realities. Trade routes exist because they have established/proven value and benefits over time. Hence a functional vs notional approach is necessary to developing corridors that will be useful or viable. The most successful corridors are those that seek to improve or relieve strained capacity on existing infrastructure or unlock clearly latent value propositions. New and improved functional corridors will offset their cost manyfold and create economic growth and prosperity into the future.

Commercially Driven Pathways

Corridors must be driven by commercial need not political or interest group dynamics.

Cost Efficient Decarbonization

Establishing functional commercial corridors for existing goods and services can open opportunities for many other goods and services provided a multi-product open common carrier approach is established. Decarbonization is not yet a commercial driver of new or repurposing existing infrastructure. However, pathways that support opportunities for decarbonization will incent the most efficient suppliers of decarbonized energy and products. The CVP envisions significant latent value to emerge from prairie and coastal wind and solar resources. Concurrently, several hydro-electric facilities have been developed in BC, MB and NL without sufficient market need. The most valuable decarbonization and economic value creation opportunities exist in linking these resources across traditionally siloed jurisdictions.

Optimization of Systems Not Silos

Each jurisdiction addressing its own energy, transportation and decarbonization goals and demands is inherently inefficient. Large basis differentials exist between jurisdictions that are immediately adjacent to one another. Being able to optimize between hydrogen and electricity is another system where economic value will be released. The CVP seeks to create opportunities for this optimization through route selection and helping to make optimization obvious.

Governance

Common Carrier for Mutual Benefits

Linear infrastructure is a natural monopoly which has always needed both regulation and a common carrier requirement to ensure access and reduce competitive barriers. The CVP structure requires a common carrier or open source approach to both the infrastructure that will be developed within the pathway segments and within the specific product conveyance infrastructure.

Financially Sustainable

Crucial to the viability of corridors is their ability to continue to manage new business development and ongoing work required to ensure a stable platform for current and future infrastructure. The CVP will lease opportunities to infrastructure builders within approved routes and pathways to raise long-term operating revenue for monitoring, maintenance, governance, Indigenous equity carry, investor returns, business development to drive use and future path development.

Indigenous Ownership Stake

Indigenous ownership is essential to ensure near and long-term guidance and monitoring. Trust is only built through direct involvement. Oversight involvement at board and executive levels by Indigenous representatives is a requirement in each pathway segment and within the corporate structure of the CVP following the development of the CVP Charter of Governance and Operations.

In the current environment Indigenous equity is in short supply and often highly sought after. The CVP as part of its Charter will be required to “carry” a minimum 20% equity interest for Indigenous Nation partnerships within each segment of pathway development.

Long-Run Oversight and Stewardship

Representatives of the investment community have clearly enunciated that Canada’s current regulatory approach has stopped investment in Canadian infrastructure. Billions have been spent on proposals and applications that have been ultimately rejected. The governance challenge for the CVP and for Canada is to establish an enterprise that can both ensure long-term stability plus investment quality and be preconscious plus adaptive to Canada’s National Priorities and Needs.