Canadian Renewable Energy Association

WIND. SOLAR. STORAGE.

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WATTS AT STAKE:

Canada's $200-Billion Clean Energy Investment Opportunity

What it will take and what could stop it

Executive summary

Canada is well positioned to capture up to $200 billion in clean energy investment over the next decade, but realizing that opportunity will require improvements to the systems that move projects from approval to construction.

The country has strong wind and solar resources, a stable policy environment, deep capital markets and a growing slate of projects already in development. Global capital is actively seeking jurisdictions that can demonstrate reliable project delivery. Canada has the fundamentals to compete for that capital, but the work required to do so is substantial and time-sensitive.

Every major element of the federal government's nation-building agenda, from manufacturing and critical minerals development to housing, electrified transportation and data infrastructure, depends on electricity being available at the right price and the right time. Whether that happens will be determined in large part by how well Canada's project development framework, approval systems and supply chains perform over the next several years.

Canada already has approximately 25 gigawatts (GW) of wind, solar and energy storage operating across the country, with roughly the same volume currently in development or moving through procurement processes, representing tens of billions of dollars in committed or near-committed investment. Developers are actively pricing and structuring the next generation of projects based on existing market signals, reflecting sustained confidence in the sector's fundamentals.

To keep pace with electricity demand driven by electrification, population growth, industrial expansion and digital infrastructure, Canada needs to add 54 to 88 GW of new renewable generation and storage by the mid-2030s, including projects already in procurement or development. That means more than tripling the existing base in less than 10 years.[1] Independent market analysis conducted on behalf of CanREA indicates that build rate is achievable and cost-competitive, provided projects can move through approvals on reasonably predictable timelines. For a growing number of projects, however, those timelines have been lengthening, raising carrying costs and prompting investors to reassess whether the schedule risk justifies their commitments.

What is slowing the system is not a shortage of capital or technology, but the time it takes to move a project through approvals, permitting and interconnection queues and into construction. That trend has become more consequential as electricity demand accelerates, narrowing the margin between when new supply is needed and when the system can realistically deliver it.

Global capital in the renewable energy sector is mobile. Investors comparing jurisdictions look beyond resource quality and policy support to how long it actually takes to go from a

signed contract to an operating asset. Canada has historically done well on those terms, but extended permitting, interconnection delays and transmission constraints are beginning to register in how investors price and prioritize Canadian projects relative to markets with clearer delivery timelines.

Wind, solar and energy storage are the fastest electricity technologies to deploy, and by far the most affordable. Renewable energy delivery is directly tied to Canada's broader economic priorities. Housing construction, advanced manufacturing, critical minerals development, electrified transportation and data infrastructure all operate on assumptions about electricity availability and cost that need to be met for those sectors to perform as projected. Delays in energy supply propagate outward, raising costs and compressing timelines across the broader project inventory the nation-building agenda depends on. Renewable energy has shifted from a climate policy instrument to core economic infrastructure, and its delivery conditions now affect outcomes well beyond the power system itself.

Canada has the resources, the investor interest and the policy foundation to capture this opportunity. The degree to which it does will be shaped by how quickly and reliably the country can move projects through approvals, interconnection and construction and convert committed investment into operating infrastructure. There is real work to do, but the fundamentals to get it done are already in place.

Quantifying the investment opportunity

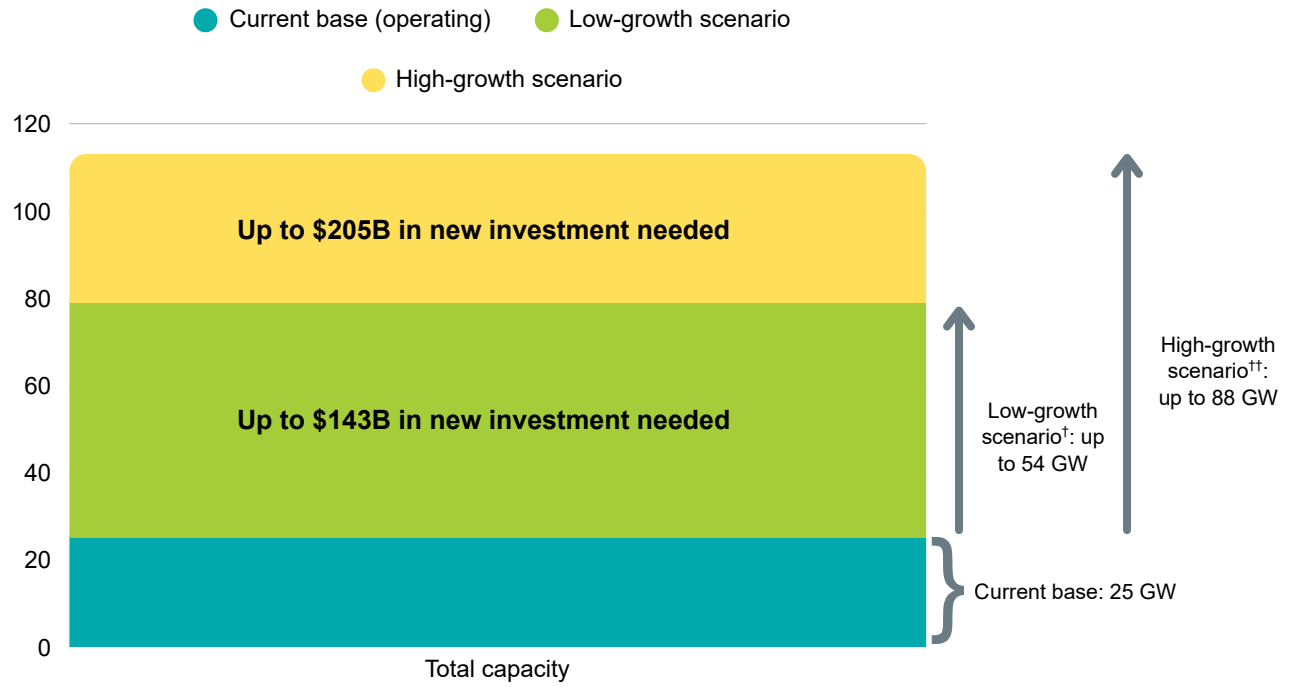
Closing the gap between Canada’s current base of approximately 25 GW and the growth opportunity outlined above will require adding 54–88 GW of new wind, solar and storage to the system by the mid-2030s. Sustaining that build rate will require annual investment of $14 to $20 billion ($143 to $205 billion over the decade), grounded in observed Canadian capital costs and provincial procurement schedules.[1]

The decisions being made right now about where to build factories, data centres, housing and resource projects all rest on assumptions about electricity availability that require this investment materializing on time. Investment proceeds as planned when those assumptions are correct. When they prove wrong, schedules slip, costs rise and projects get deferred, downsized or relocated.

Energy system issues typically emerge gradually rather than through a single visible failure. They accumulate through incremental delays in permitting, growing interconnection queues and unplanned transmission bottlenecks. The costs are spread across the economy in ways that are difficult to trace to any single cause but are material when viewed in aggregate.

Addressing delivery constraints while demand is still growing is considerably easier and less costly than trying to correct them after the gap between supply and demand has fully opened. The wider that gap becomes, the harder and more expensive it is to close.

Figure 1. Canada’s renewable energy capacity: current base and investment opportunity by 2035 (GW).



† *Based on the Reference scenario in* Canada’s Renewable Energy Market Outlook 2025.
†† *Based on the Accelerated scenario in* Canada’s Renewable Energy Market Outlook 2025.

Canada's current base of approximately 25 GW of wind, solar and storage (in operation) shown against the 54 GW of new capacity projected under a low-growth reference scenario and the 88 GW of new capacity projected under an accelerated high-growth scenario. Fully realizing the low-growth scenario of 54 GW of new capacity will require an investment of up to $143 billion. Achieving the high-growth scenario of 88 GW of new capacity represents a total investment opportunity of up to $205 billion.

Financial context

Flow of clean energy capital is accelerating

Global clean energy investment flows have shifted noticeably since 2025 due to changes in U.S. policy. Executive actions and legislative changes under the current administration have pulled back support for large-scale wind, solar and energy storage while pushing permitting for oil and gas infrastructure. For investors with multi-year project horizons, those signals have substantially changed the risk profile of U.S. renewable project inventories.

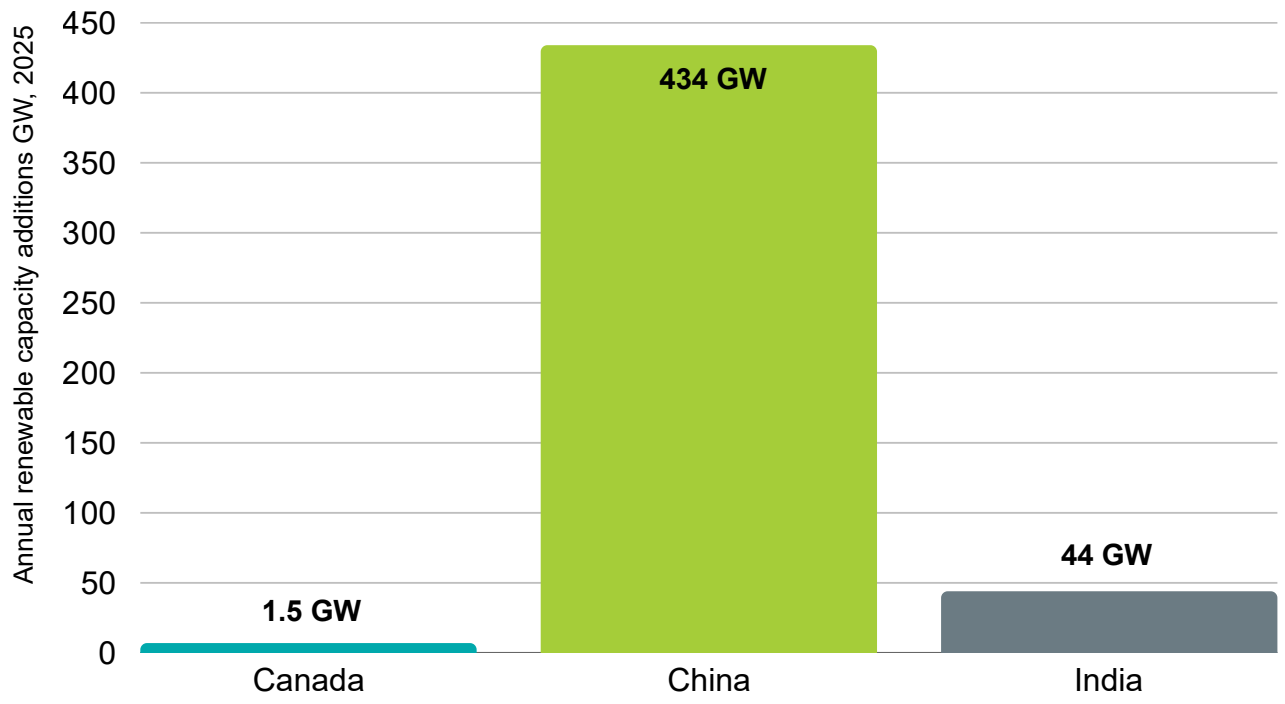
The effect on investment flows has been measurable. Global renewable energy investment reached record levels in 2025, but BloombergNEF data shows U.S. renewable investment dropped sharply over the same period, with capital redistributing toward jurisdictions where the permitting and revenue picture is more favourable. Capital has not left the sector; it has changed its geographic preferences in response to execution risk.[3]

For investors with diversified global portfolios, delivery timelines have become a primary screening criterion alongside project economics and resource quality. Extended permitting

processes, interconnection delays and transmission constraints now feature explicitly in capital allocation models, and IEA analysis confirms that clean energy investment is gravitating toward countries that can reliably convert projects under development into operating assets within a reasonable and predictable time frame, rather than those that simply offer strong resources or headline policy support.[4]

China offers the most striking example of what happens when delivery systems, supply chains and grid expansion are coordinated rather than sequential. In 2025, the country added approximately 315 GW of solar and 119 GW of wind, for a total of more than 430 GW of new renewable capacity in a single year, accounting for more than half of global additions, backed by annual clean energy investment exceeding US$600 billion and a parallel build-out of transmission and storage infrastructure.[5]

Figure 2. Annual renewable capacity additions: Canada and selected peer markets.



Sources: CanREA data; China National Energy Administration; JMK Research / Ministry of New and Renewable Energy (India). Order-of-magnitude illustration.

India has followed a different path to a similar outcome. Competitive auctions, standardized contracts and predictable procurement schedules have enabled consistent annual capacity additions, and in 2025 the country added approximately 38 GW of solar and 6 GW of wind, pushing its total non-fossil electricity capacity above 260 GW, nearly double the capacity additions achieved in 2024. Sustained investor engagement through multiple procurement cycles reflects confidence in the reliability of the Indian system as much as the quality of its resources.[6]

Canada's strong clean energy position

Canada's competitive position in renewable energy is not based on scale; it is based on the reliability of returns and the quality of the institutional and regulatory environment. Strong wind and solar resources, stable institutions and deep capital markets have established Canada as a desirable destination for large renewable investments, but that ability to attract investment is contingent on projects actually being built on the timelines that were presented when investors made their commitments.

Globally, energy investment now exceeds US$3 trillion per year, with clean energy drawing more than twice what fossil fuels attract. Meeting Canada's projected requirement of $14 to $20 billion in new renewable investment annually—$143 to $205 billion over the decade—will depend on Canada remaining a competitive destination for that capital. For investors weighing options across multiple countries, approval timelines and interconnection certainty have become factors that weigh as heavily as resource quality or electricity prices.[4]

Canada's underlying investment fundamentals are strong. High-quality wind and solar resources, large land areas, a stable legal and financial environment, federal Clean Technology and Clean Electricity Investment Tax Credits, competitive provincial procurement programs and established Indigenous partnership structures provide a durable foundation for long-term investment. A substantial hydroelectric base adds a further advantage, providing the flexibility and system stability that variable generation requires—an asset most competing markets lack. Those fundamentals do not automatically translate into built capacity. They depend on permitting, interconnection and transmission systems that can process the volume of projects the sector is now producing.

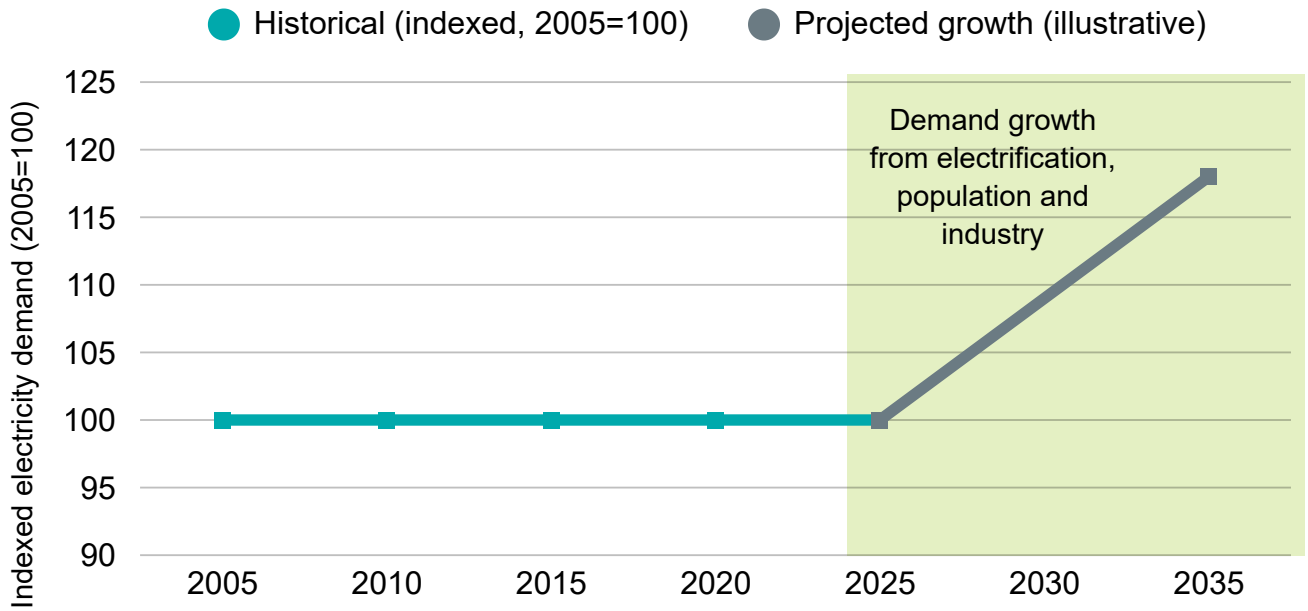
Market evolution and capacity requirements

Electricity demand has shifted to sustained growth

For most of the past two decades, electricity demand growth in Canada was modest and often flat. The planning, procurement and regulatory systems that govern the sector were built around that reality and designed for incremental, predictable change. Now transportation and industrial electrification, population growth, energy-intensive manufacturing and the expansion of data infrastructure are collectively pushing electricity demand higher at a pace Canada has not experienced in generations.

Approval timelines, interconnection processes, transmission planning and workforce capacity were all sized for the slower-growth environment that preceded this shift. As demand accelerates, delays that were once manageable begin to compound across the system. The result is not a shortage of capital or political will, but growing pressure on project delivery timelines at precisely the moment when the build rate needs to increase.[4]

Figure 3. Canada's electricity demand: historical conditions and projected growth.



Source: Canada Energy Regulator; International Energy Agency. Indexed and illustrative.

Renewable energy has moved from a supplementary layer added on top of a conventional grid to the primary source of new supply being built to meet growing demand. The IEA projects that renewables will account for more than 90 per cent of all new electricity demand growth globally between 2025 and 2030, a share that reflects how completely the role of these technologies has shifted in a decade.[7] At that scale, their delivery conditions affect outcomes across the broader economy in ways that were not true when they represented a smaller share of the system.

What up to 113 gigawatts represents

The requirement to reach up to 113 GW of installed renewable generation and storage by the mid-2030s reflects structural changes in how electricity is used across the economy, rather than a single policy target. Transportation electrification is driving up demand across the country, while industrial electrification is reshaping energy consumption across manufacturing, mining and processing sectors.

Data centres are emerging as a major source of continuous, high-volume electricity demand. Population growth and housing construction are adding steady load across most egions.Critical minerals projects, which sit at the centre of Canada's industrial strategy, require reliable, large-volume power supply to operate at the scale and cost levels needed to compete internationally.

Once these investments are in place, their electricity requirements persist for decades. A supply gap does not make that demand disappear; it changes how the costs are applied. Mobile investment like data centres and manufacturing facilities will choose better-supplied

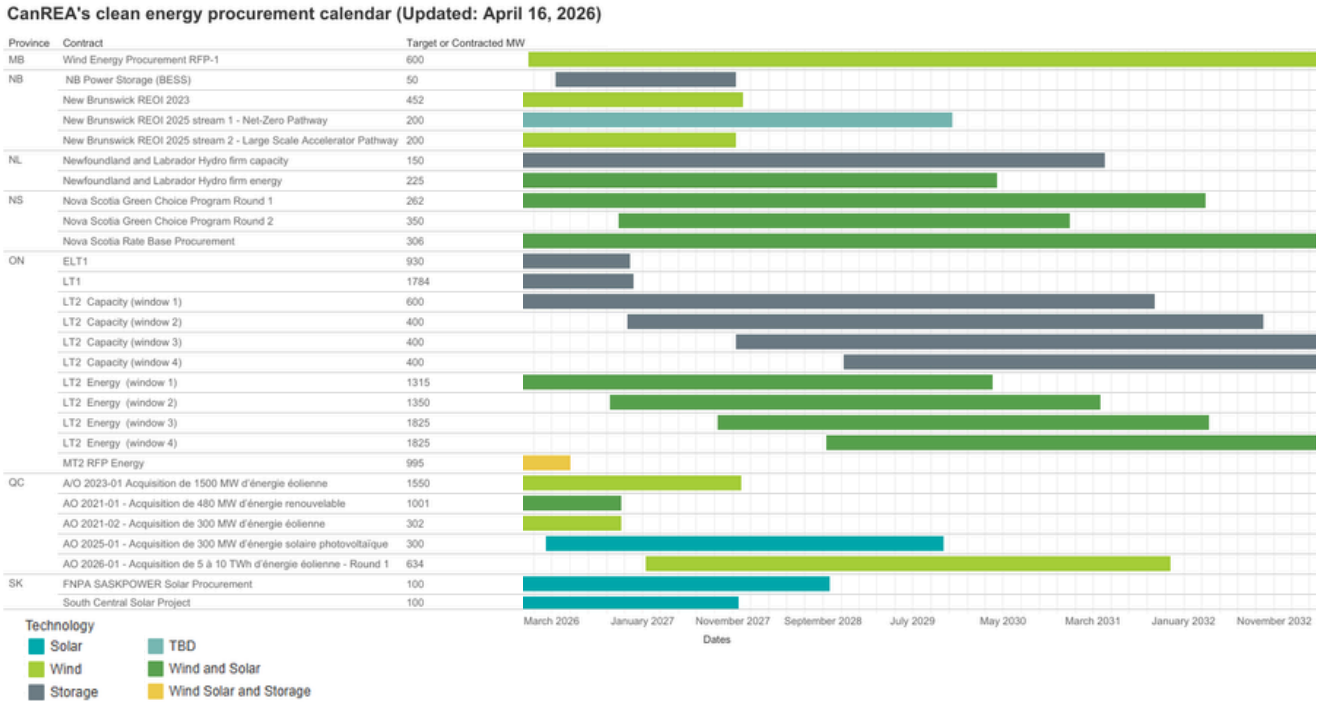
jurisdictions when power is inadequate or unreliable. Fixed investments like mines and housing absorb the consequences differently, through higher operating expenses, reduced output or not reaching a final investment decision because the electricity supply picture does not support the economics.

Inventory and procurement activity

CanREA's Clean Energy Procurement Calendar tracks active renewable development across the country. Approximately 24 gigawatts of capacity is currently moving through procurement processes or already in development, representing tens of billions of dollars in active or near-active investment decisions that reflect genuine developer and investor confidence in current market signals.[8]

Recent rounds in British Columbia, Ontario and Alberta have drawn strong participation and competitive pricing. But differences across those jurisdictions in how permitting works, how interconnection queues are managed and how quickly contracted capacity gets built have become as consequential as the procurement design itself. When procurement success is followed by prolonged delay, risk premiums creep up, development timelines get padded and investor confidence erodes gradually rather than all at once.

Ontario's recent Long-Term 2 Energy Window 1 procurement demonstrates that large-scale, transparent and competitive procurement processes can work well for renewable energy projects in Canada. Through a technology-agnostic procurement process, the provincial government selected 14 wind and solar projects, representing 1,315 megawatts of new capacity. Ontario's ability to convert these projects to operating assets on schedule will depend on the continued development of its regulatory framework and interconnection and transmission systems.



Note: *The procurement calendar tracks procurements. Projects that are being sole-sourced or built through PPAs are not included. View our full online resource for a complete list of procurements.*

Nation-building projects and the federal major projects approach

The federal government has framed its economic agenda around a nation-building strategy centred on major projects of national significance. The creation of the Major Projects Office and measures under the Building Canada Act are intended to speed up planning, coordination and approval of infrastructure tied to industrial competitiveness, critical minerals, trade corridors and energy security.

Within that agenda, clean electricity is treated as enabling infrastructure rather than a standalone climate initiative. Federal electricity strategy documents and budget materials consistently describe wind, solar, hydroelectric generation and interprovincial transmission as foundational inputs to advanced manufacturing, data-driven economic activity and critical minerals processing—inputs that other priorities depend on rather than goals pursued alongside them.

Investment tax credits for clean electricity and federal transmission funding are designed to lower the cost of capital and accelerate the build-out where provincial systems are positioned to deliver. The practical implication is that federal ambition and provincial execution have to move together. Where clean electricity and transmission capacity arrive on schedule, major projects proceed as planned. Where energy supply lags, delays in one part of the economy propagate into others, including the nation-building projects the federal strategy depends on.

Delivery constraints and investment risk

The constraints on project delivery are not limited to any single stage of development. Fragmented regulatory and permitting processes, inadequate transmission infrastructure, workforce and supply chain pressures, and community engagement timelines all contribute to the gap between committed investment and operating capacity. These constraints interact and compound: a project that clears its environmental approvals can still sit idle waiting for grid connection, and transmission built without reference to where generation is being approved solves neither problem.

Provincial regulatory processes represent the most pressing area for improvement and are the focus of the actions described in this report, but investors and developers encounter these challenges across all stages of development. Approval processes for Canadian projects now routinely involve multiple agencies and levels of government, interconnection queues have grown as project volumes have increased, and transmission expansion has continued to lag behind both new generation coming online and the load growth that procurement programs were designed to serve.

These delays shift risk to the earliest stages of development, when carrying costs are highest and revenue is furthest away. Projects may remain economically viable in aggregate, but reduced timeline predictability makes capital deployment less efficient and, over time, shapes where investors direct future commitments.

Delivery risks and sources of delay

Policy uncertainty at the provincial level is among the more persistent sources of delay. Projects that depend on stable long-term signals, such as investment tax credits, carbon pricing frameworks or capacity market rules, face added risk when those policies are time-limited or subject to redesign, or when pricing structures and the rules governing them are not known far enough in advance for developers to underwrite their projects with confidence. Uncertainty during review or renewal periods has the practical effect of slowing final investment decisions and pushing back construction starts, even in cases where the eventual policy outcome is supportive. The risks include:

Fragmented permitting and regulatory sequencing

A single renewable energy project typically requires approvals from several different authorities covering land use, environmental assessment, electricity regulation and grid connection. When the sequencing between those processes is unclear, or when agency responsibilities overlap, developers can end up cycling through extended reviews and duplicative consultations. The delays compound further when generation approvals proceed without coordination with transmission planning, producing projects that receive regulatory approval but cannot connect to the grid on the schedule that was assumed when the project was priced and financed.

Timing and consequences of community engagement

When and how a project engages with Indigenous partners, municipalities, landowners and local communities is one of the strongest[JB1] predictors of whether it gets built on time. Governments at all levels have a role in creating the conditions for projects to succeed, including building broad public understanding of why new energy infrastructure is needed and ensuring that local approval processes are grounded in accurate information and consistent with national and provincial energy objectives.

Projects that treat community engagement as a late-stage obligation are more likely to encounter resistance, face redesign requirements or end up in legal disputes that add years to the development timeline. Projects that build those relationships from the outset, and structure equity and benefit-sharing arrangements as part of the project design rather than additions to it, tend to move through approvals more smoothly and with fewer late-stage complications.

Workforce and supply chain constraints at scale

As the pace of construction accelerates, supply chain availability and skilled labour have

emerged as genuine schedule risks. Equipment lead times have lengthened, transportation capacity is strained in some regions, and skilled trade shortages are extending construction timelines on projects. These constraints do not appear in procurement program design, but they do show up in commissioning dates, and their effect on the overall delivery rate is growing as more projects reach the construction phase simultaneously.

Transmission infrastructure gaps

Inadequate transmission capacity is a significant and growing constraint on project delivery that operates independently of the permitting and approval process. Projects can receive all required regulatory approvals and still wait years for a viable grid connection, either because interconnection queues are long or because the transmission infrastructure needed to carry their output to load centres does not exist. Transmission planning in most provinces has not kept pace with the volume of generation being approved, and the result is a growing inventory of permitted projects that cannot be built on the schedule assumed when they were financed.

Reducing delivery risk to get projects built

The delivery constraints described in this report are real but there are practical, near-term actions available to governments, regulators and system operators that can shorten timelines, increase predictability and strengthen confidence among investors, communities and system planners. Most of them involve improving coordination within existing systems. These actions include:

Jurisdictional project execution

Federal policy direction on clean electricity has been reasonably consistent in recent years, but the factors that most directly shape individual project timelines sit at the provincial, territorial and municipal levels, where electricity planning, permitting, land-use decisions and interconnection processes are actually administered. A supportive federal framework sets the conditions; what determines whether a specific project in a specific province gets its approvals on time is what happens within that province's own systems.

Provincial policy signals

Reducing delay depends more on consistent provincial execution than on new federal direction. Predictable procurement schedules, revenue structures that hold up over the life of a contract, and regulatory processes with defined timelines allow developers to commit capital earlier and shorten the transition from contract award to construction start. Instability in any of those elements, even when the eventual outcome is supportive, tends to pause investment decisions while developers wait for certainty.

Alignment between permitting and system planning

Better coordination between provincial ministries, regulators and system operators, particularly on the relationship between generation approvals and transmission planning,

can meaningfully shorten the development cycle without weakening environmental review or community consultation requirements. The two processes have historically proceeded on separate tracks; aligning them so that transmission capacity is available when approved projects need it is among the more straightforward improvements available to provincial systems.

The approach to transmission investment also matters. Blanket grid expansion is expensive and places costs on ratepayers regardless of whether generation follows, a lesson some provinces have learned through experience. A more targeted model concentrates transmission investment in corridors connecting areas of high renewable resource concentration to major load centres. Texas applied this approach through its Competitive Renewable Energy Zone process, identifying renewable resource hubs, building dedicated transmission to connect them to demand, and enabling rapid private investment to follow the infrastructure. The result was a sharp reduction in renewable energy costs and a significant acceleration in deployment. Canadian provinces with strong wind or solar resources in specific regions stand to benefit from a similar approach: targeted transmission corridors to renewable hubs, planned in coordination with procurement, rather than reactive grid expansion after the fact.

Early and structured local partnership

Projects that engage Indigenous partners, municipalities, landowners and communities from the earliest development stages, and that build equity and benefit arrangements into the project structure from the outset rather than adding them later, have a substantially better track record of moving through approvals without costly redesign or legal dispute. The evidence across multiple jurisdictions and project types is consistent on this point.

Workforce and supply chain readiness planning

Workforce development, apprenticeship pathways and supply chain coordination are most effective when treated as components of electricity system planning rather than separate workforce policy objectives. An expanding pipeline of approved projects that cannot be built on schedule because of labour or equipment shortages represents a failure of system planning as much as a failure of workforce policy, and the two need to be addressed together.

Conclusion

Housing, manufacturing, mining, data infrastructure and electrified transportation all depend on affordable electricity being available when and where it is needed. That dependency has moved from a planning assumption to a constraint on economic development, and the renewable energy sector is now a critical mechanism to address this challenge.

Canada's renewable energy opportunity is real. Procurement activity is strong, investment capital is committed across the project queue, and the development inventory is deep

enough to support the scale of build the economy requires. CanREA's Clean Power Finance Canada summit brings developers, investors, Indigenous partners, utilities and policymakerstogether specifically to work through the financing structures and delivery conditions that determine whether capital moves from commitment to construction.

Canada is well positioned to leverage this $200-billion investment opportunity, but it has work to do. It will require action across all levels of government. Delivery timelines, interconnection capacity, regulatory streamlining and coordination across planning systems will shape whether committed investment translates into operating infrastructure at the pace the economy requires.

The actions described in this report are not large in scope. Clearer provincial policy frameworks, better coordination between permitting and transmission planning, earlier community and Indigenous partnerships, and workforce readiness integrated into system planning are, individually, modest adjustments. Together, they are the practical conditions under which a $200-billion investment opportunity gets fully realized rather than partially captured. The decisions made over the next few years about how projects move from proposal to operation will determine whether Canada's energy system can keep pace with everything the country is trying to build.

Sources

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