Comité de DÉVELOPPEMENT DE LA MAIN-D'ŒUVRE communautaire

Community WORKFORCE DEVELOPMENT Committee

Port of Belledune: Canada's Green Energy Hub

Revitalizing Northeastern New Brunswick's economy

Prepared for
Community Workforce Development Committee / Port of Belledune

Prepared by
Jupia Consultants Inc.

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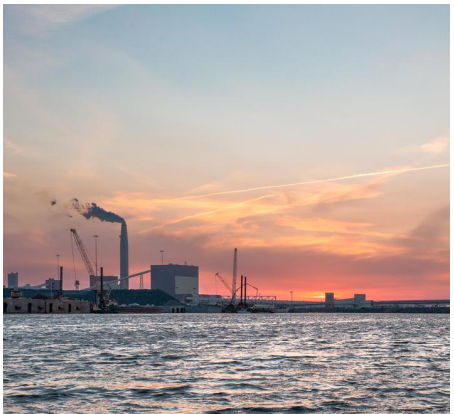

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EXECUTIVE SUMMARY

This report models the economic impacts of two large scale green hydrogen projects along with the related clean energy investments. It also looks at the impacts of producing torrefied wood pellets as a green energy source for the Belledune electricity generation station as well as one large data centre.

These projects are phased over a 13-year timeframe starting in 2025 through 2027. The economic impact report looks at the capital investment and ongoing operational impacts in two timeframes: 2025 to 2031 and 2032 to 2037.

The Bathurst-Campbellton region needs an economic boost.
After building a thriving industrial economy in the 1950s-1990s, in the past 25 years, the region has witnessed an ongoing economic decline with a steep decline in private sector investment.

Over the 20+ year timeframe, the mining sector has lost nearly 80 percent of its jobs. The manufacturing sector has shed 65 percent and transportation sector employment has dropped by 33 percent.

However, the public sector has been expanding in the past two decades. Health care employment is up 33 percent and public administration by 39 percent.

In 2011, primary metal manufacturing and mining accounted for nearly $900 million in output and were the top economic drivers in the Bathurst-Campbellton region. Now the top three industries are hospitals, provincial public administration and federal government public administration. Based on industry spending, the public sector is now considerably larger than the private sector.

The Bathurst-Campbellton region is undergoing a profound demographic shift.
The region is now one of the oldest in the country as measured by median age and by the share of the population aged 65 and older. There are far more people leaving the workforce each year than young people joining the workforce.

The Port of Belledune is once again positioned to be a catalyst for economic renewal.
The port played a crucial role in the region's economic development since its founding in 1967 to support the mining, smelting, forest products and other thriving sectors in northeastern New Brunswick. It is well positioned to lead a new generation of economic development in the region.

EXECUTIVE SUMMARY (CONT.)

The capital investment level will be unprecedented.
The Port of Belledune Green Energy Hub projects modelled in this report represent $26 billion in capital investment (Phase 1 and 2 combined).

In the first phase, the 2025-2031 timeframe, each year will see an average of $1.6 billion invested into the Green Energy Hub. This is equivalent to increasing annual private sector capital investment *across the entire province by 50 percent*[1].

The significant capital investment will require, on average, nearly 1,600 jobs per year related to building manufacturing facilities (green hydrogen, wood pellets, etc.), deploying wind turbines, installing electricity transmission infrastructure and building new related port infrastructure. There will be another 300+ jobs created elsewhere in the economy in grocery stores, restaurants, retail establishments, etc.

The jobs created during the capital expenditure (construction), or CAPEX phase, will be at wages *double the average* for all workers in the Bathurst-Campbellton region (over $100,000/year).

Just from the CAPEX phase, governments are projected to receive nearly $1.4 billion in tax revenue or an average of $106 million per year.

CAPEX-related economic impacts are summarized in the table:

Potential Green Energy Hub CAPEX-related economic impacts (Phase 1 & 2)

	Total CAPEX (2025-2037)	Avg. annual impacts (over 13 years)
CAPEX ($Million, $2024)	$26,053	$2,004
GDP contribution ($M)	$6,541	$503
Employment income ($M)	$2,727	$210
Person years (FTE) employment (direct/indirect)	20,671	1,590
Person years (FTE) employment (total)	24,579	1,891
Household spending ($M)	$2,051	$158
Taxes – municipal ($M)	$113.2	$9
Taxes – provincial ($M)	$743.3	$57
Taxes – federal ($M)	$515.9	$40
Total taxes ($M)	$1,372.5	$106

Shown in $2024. In-province jobs only. Includes direct, indirect and induced effects except where noted.

[1] Compared to the previous five years of annual private sector investment across New Brunswick.

EXECUTIVE SUMMARY (CONT.)

The ongoing, annual impacts will be substantial.
After the billions of dollars in capital is invested in infrastructure in Belledune and the surrounding area, the new industries will support hundreds of high paying jobs in the region as well as hundreds more in the wider economy. The ongoing impacts are expected to last at least 30 years.

The Green Energy Hub will become the largest private sector engine in northeastern New Brunswick. By 2037, the companies in the hub will be contributing over $700 million each year to provincial GDP, a $260 million payroll supporting over 1,800 jobs directly at the port and surrounding area and nearly 3,300 jobs per year across New Brunswick.

Local businesses in the Bathurst-Campbellton region and across New Brunswick will benefit from nearly $200 million in new household spending on goods and services ranging from groceries to personal care.

By 2037, governments will benefit from an ongoing revenue stream of nearly $132 million per year. It is important to point out this does not include any Crown land lease revenue, water taxes or other government revenue streams.

The annual OPEX-related economic impacts are summarized in the table:

Annual impacts once operational: Green Energy Hub projects ($2024)
Combined annual OPEX at the end of Phase 1 and 2

	End of Phase 1 (2031)	End of Phase 2 (2037)
Annual GDP contribution ($M)	$329.8	$704.6
Employment income ($M)	$138.5	$260.0
Employment (direct)	1,175	1,815
Employment (total)	1,986	3,287
Household spending ($M)	$104.2	$195.5
Taxes – municipal ($M)	$5.7	$10.9
Taxes – provincial ($M)	$37.3	$71.4
Taxes – federal ($M)	$26.1	$49.3
Total taxes ($M)	$69.1	$131.6

*Full-time equivalent employment. In-province jobs only.
Includes direct, indirect and induced effects except where noted.

EXECUTIVE SUMMARY (CONT.)

If these projects go ahead, the Green Energy Hub will become the largest driver of regional GDP in the Bathurst-Campbellton corridor.

The provincial government tax revenue induced by the Green Energy Hub would pay for the entire annual wage bill for the education sector in the Bathurst-Campbellton corridor[2] or the salaries of all the nurses in the region, with millions left over.

Finding and developing the workforce for the Green Energy Hub will be a big challenge. Over half of all construction trades workers are over the age of 55 and heading towards retirement.

The port, municipal government, First Nations, provincial government and the federal government need to develop the value proposition for the Green Energy Hub to ensure the opportunity can be leveraged to benefit the people of northeastern New Brunswick.

[2] Based on information taken from the N.B. Department of Finance Main Estimates for 2023-2024.

1. INTRODUCTION

1.1 The purpose of this report

Jupia Consultants Inc. was retained by the Port of Belledune to complete an economic impact assessment associated with the potential of the Green Energy Hub. It considers a number of individual investment projects in the clean energy sector as well as other related activities.

1.2 The region needs an economic boost

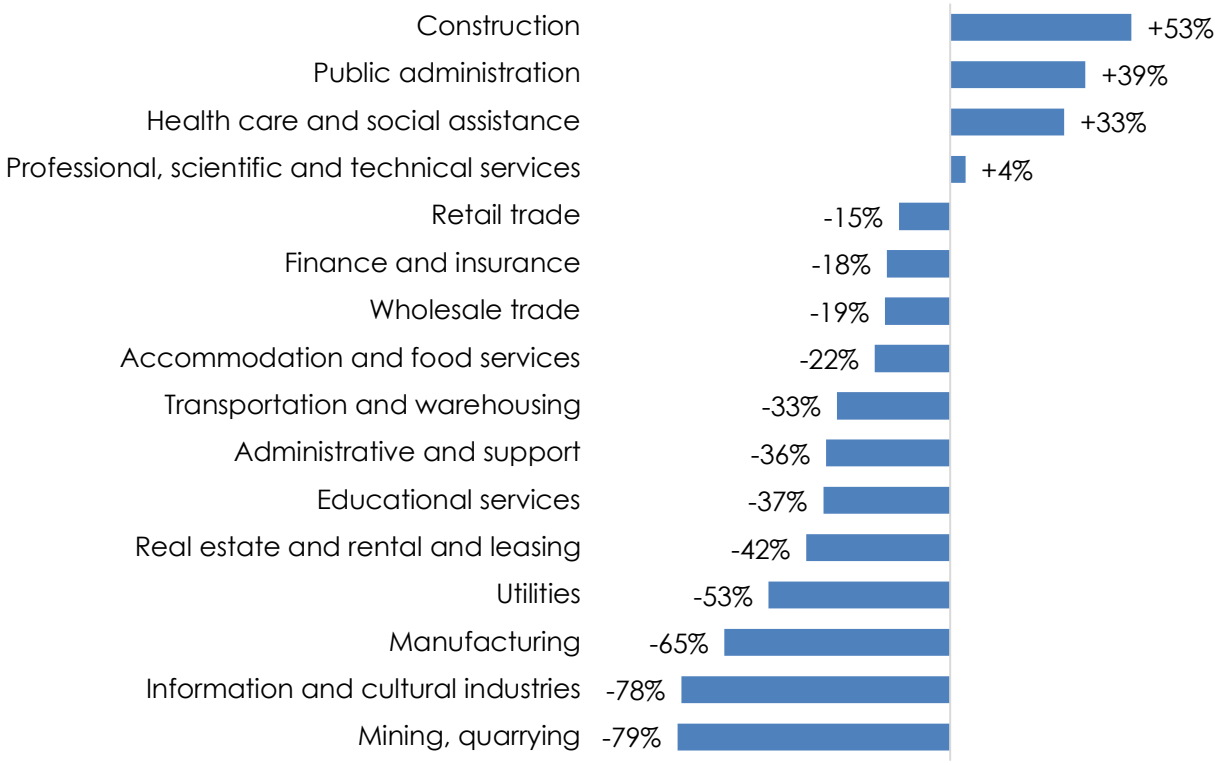
From the 1950s through the 1990s, the Bathurst-Campbellton region was an important and growing economic engine for New Brunswick[3]. The mining, manufacturing, energy, forestry and fishing industries were expanding leading to good paying careers in the region. In the 1980s, the population was considerably younger than the country overall. At the turn of the 21st century, the region was still younger than the rest of the province (as measured by median age) and had a vibrant export-focused economy. Since then, in the past 25 years, the region has witnessed an ongoing economic decline with a steep drop in private sector investment.

Figure 1 shows the change in employment by industry in the region between 2001 and 2023. There has been a large drop in mining and quarrying employment. Over the 20+ year timeframe, the sector has lost nearly 80 percent of its jobs. The manufacturing sector has shed 65 percent and the transportation sector has dropped by 33 percent. Reflecting the significant shift in demographics, there are now 37 percent less workers in the education sector.

However, the rest of the public sector has been expanding in the past two decades. Health care employment is up 33 percent and public administration by 39 percent.

[3] For the purposes of this report the Bathurst-Campbellton region includes all municipalities from Charlo to Bathurst.

Figure 1: Change in employment, selected industries 2001-2023, Bathurst-Campbellton region



Source: Lightcast.

One of the top illustrations of just how significant the economy is changing in the Bathurst-Campbellton region can be found by looking at the top industries by output and comparing it to the recent past.

Table 1 shows the top 10 industries by output in 2011 compared to 2021, the most recent year data is available. In 2011, primary metal manufacturing and mining accounted for nearly $900 million in output. The next three industries by output were in the public sector and federal government administration was also in the top 10. Just 10 years later, hospitals, provincial government administration and federal government administration are the top three industries by output.

Based on industry spending, the public sector is now considerably larger than the private sector in the region. Further, there is considerably less export revenue from the region compared to 20 years ago.

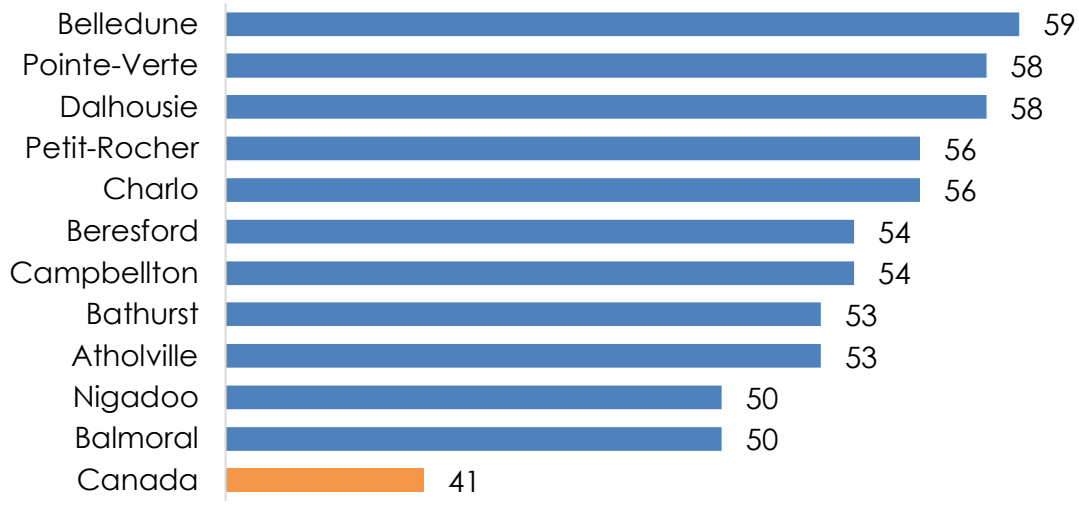
Table 1: Top ten industries by output and timeframe, Bathurst-Campbellton region

Back in 2011	$Million	10 years later in 2021	$Million
1. Primary metal manufacturing	$482.5	1. Hospitals	$378.9
2. Mining and quarrying	$413.2	2. Provincial public administration	$343.6
3. Hospitals	$240.1	3. Federal government public admin	$173.8
4. Provincial public administration	$216.5	4. Primary metal manufacturing	$164.1
5. Educational services	$161.2	5. Paper manufacturing	$160.6
6. Credit intermediation and related activities	$144.6	6. Mining and quarrying*	$140.0
7. Specialty trade contractors	$142.6	7. Farms	$134.6
8. Paper manufacturing	$134.8	8. Educational services	$129.5
9. Federal gov. public admin	$133.2	9. Banking services	$127.2
10. Utilities	$108.0	10. Wood product manufacturing	$119.9

*output has dropped further since 2021.
Source: Lightcast.

Combined with the shifting structure of the regional economy, the Bathurst-Campbellton region is undergoing a profound demographic shift. The region is now one of the oldest in the country as measured by median age and the share of the population under the age of 15. Belledune, Point-Verte and Dalhousie have median ages closing in on 60.

Figure 2: Median age of the population, 2021



Source: Statistics Canada 2021 Census.

1.3 The role of the Port of Belledune

The Port of Belledune played a crucial role in the region's economic development since its founding in 1967 to support the mining, smelting, forest products and other thriving sectors in northeastern New Brunswick. It was chosen as the site for a major electricity generation station in the late 1980s and continued to be a key catalyst for regional economic development well into the 2000s.

With the Green Energy Hub, the port is looking to again play a catalytic role in regional economic development. It has ample available land, underutilized infrastructure and a leadership/board focused on not only growing port revenue but also on leveraging the port as a driver of new business investment into the region.

2. MODELLING POTENTIAL ECONOMIC IMPACT

This section considers the potential economic impact in the province from the development of the Green Energy Hub at the Port of Belledune. There are 10 distinct investment projects included in the model including two green hydrogen projects (spread over two separate phases), two large scale wind energy projects (again, spread over two separate phases), one SMR project, a biomass project to develop the wood pellets needed to fuel the Belledune electricity generation station and a large-scale data centre.

2.1 The potential investment projects: Summary

Project:	Overview:
Cross River Infrastructure Partners (4 separate projects)	CRIP is proposing a large-scale green hydrogen development project with two phases. The first phase is scheduled to come online in 2028 and the second in 2037. It will require over 2 GW of clean energy which is also modelled in this report in two phases.
ABO Energy (4 separate projects)	ABO Energy is also considering a large-scale green hydrogen development project with two phases. It will be powered by a 4 GW wind energy project rolled out in two phases over a 10-year timeframe.
Biomass development	The Belledune Electricity Generating Station is planning to transition from coal to a renewable fuel source by 2030. The preferred option is conversion from coal to torrefied wood pellets. The station would require minimum of 700,000 tonnes of pellets per year and this would likely require the construction of two new pellet production plants in the region. After the conversion, there is not expected to be any change to the direct employment profile at the facility.
Data centre	A company has approached the Port of Belledune about the potential of a large-scale data centre being located in the Green Energy Hub.

2.2 Economic data used in the model

Detailed economic parameters associated with some of these projects have not been released to the public. These include the detailed capital spending and the ongoing operational costs.

The report's author has access to detailed economic modelling for similar projects in other provinces as well as the Newfoundland and Labrador government's reference case for green hydrogen development. These were helpful in the development of this report.

The objective of this report is not to provide a firm assessment of the economic impacts of the 10 projects but to indicate the potential impacts that could accrue to the region if the projects go ahead.

2.3 The economic impact model

The economic impact model used to estimate how the Green Energy Hub at the Port of Belledune could boost the New Brunswick economy is based on Statistics Canada's Input-Output (I-O) tables which provide a detailed profile of how expenditures in specific sectors flow through the provincial and national economy as well as through international trade.

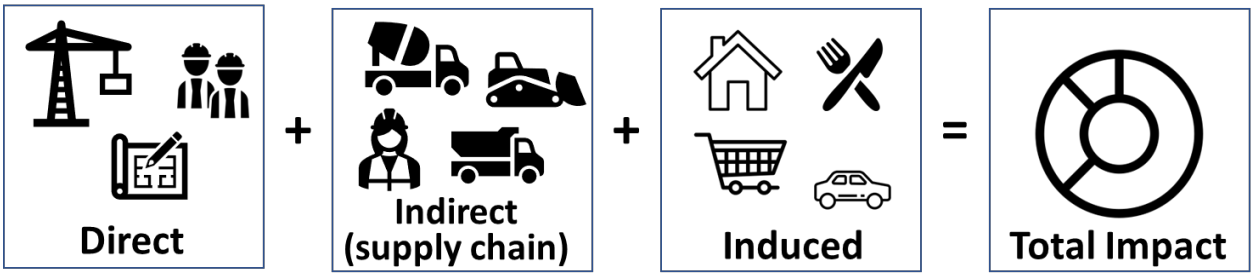
The economic impact model evaluates the direct, indirect and induced economic impact, using the following parameters:

- *Direct impact* measures the value-added to the economy attributed directly from the wages earned, and the revenues generated from the workforce spending in New Brunswick.
- *Indirect impact* measures the value-added generated within the regional economy through firm and organizational demand for intermediate inputs or other support services (e.g., the supply chain).
- *Induced impacts* are derived when workers in the aforementioned industries spend their earnings. These purchases lead to more employment, higher wages and increased income and tax revenues and can be felt across a wide range of industries.

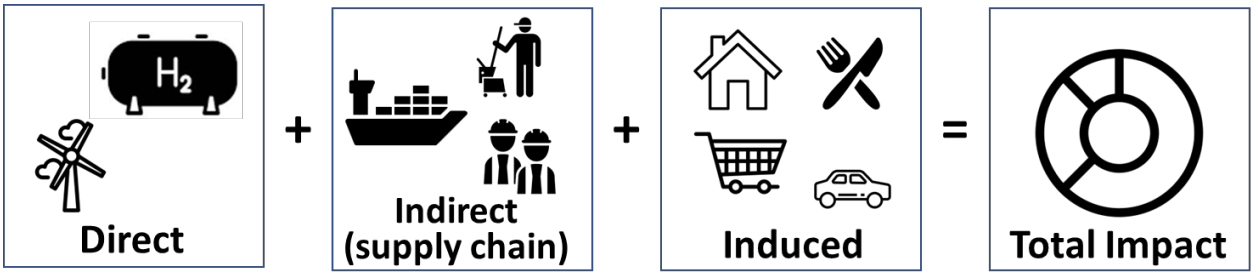
Taxes are induced in all three phases of impact.

Figure 3: Economic multipliers associated with the Port of Belledune Green Energy Hub

CAPEX Phase:



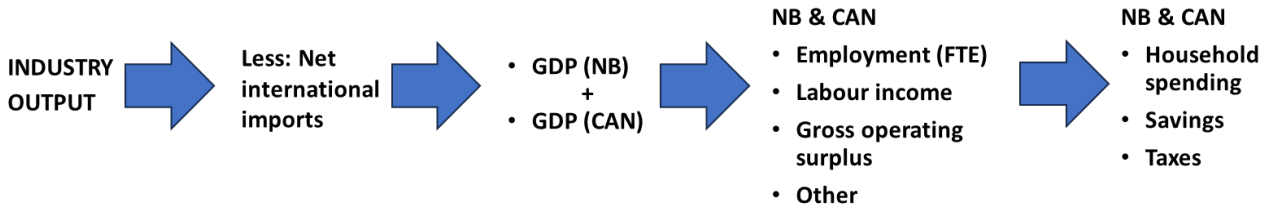
OPEX Phase:



The I-O tables trace the impact of economic activity (output shock) on the provincial and national economies (including imports and exports). In addition to the GDP and employment impacts, the economic impact model estimates the amount of tax revenue induced by the capital spending and operational impacts.

The proponent companies provided data on expected corporate income tax, water royalty and other taxes and fees associated with the projects.

Figure 4: Economic impacts by geography



The industries used in the model included (industry classification in brackets):

- Electric power engineering construction [BS23C300] – used for CAPEX*.
- Non-residential building construction [BS23B000] – used for CAPEX.
- Electric power engineering construction [BS23C300].
- Electric power generation, transmission and distribution [BS221100] – used for operational impacts associated with the energy generation and transmission.
- Basic chemical manufacturing [BS325100] – used for operational impacts associated with the hydrogen and ammonia facilities.

**The expenditure profile for wind turbine construction is different than other forms of electric power engineering construction such as hydroelectricity or natural gas-fired production. The same applies to the capital spending related to the hydrogen and ammonia facilities. Jupia Consultants worked with the Industry Accounts Division at Statistics Canada to reprofile the multipliers to reflect these differences. Specifically, any economic impact associated with the manufacture of the wind turbines, electrolyzers and related systems was removed from the model. Similarly, the model assumes a substantial imports profile for the production of the first small modular nuclear reactor (SMR). Subsequent SMRs should result in greater provincial economic impacts as the supply chain is developed further.*

International imports

The model assumes the wind turbines, electrical equipment and components, electric wire and cable, some fabricated metal products, hydrogen electrolyzers and the ammonia plant will all be imported from outside the country. There is very little GDP and other economic impacts in Canada associated with the purchase of these imports. Any wholesale margins as well as the cost of transportation and installation is included in the model.

2.4 Modelling CAPEX economic impacts

2.4.1 GDP, employment and spending impacts

Based on the methodology described in Section 2.3, the economic impacts from the capital investment spending (CAPEX) associated with the Port of Belledune Green Energy Hub are shown below. A large share of the $26 billion in capital investment associated with the projects summarized in this report goes towards the purchase of equipment manufactured elsewhere in the world. This includes wind turbines, electrolyzers, and other equipment and technology. Based on historical spending patterns, a small share of the equipment and technology will be supplied by companies elsewhere in Canada.

The remaining CAPEX spending occurs in New Brunswick and provides a significant boost to the province's gross domestic product (GDP).

Potential impacts 2025-2031 (Phase 1)

Table 2 shows the potential economic impact from capital expenditures expected to be made between 2025-2031. The wind energy, green hydrogen, biomass production and data centre investments in this period are expected to total $9.7 billion (in $2024).

To put this into perspective, the average annual investment of $1.6 billion into the Port of Belledune Green Energy Hub would boost total capital investment in New Brunswick by an average of 36% per year. If public sector spending is removed, the $1.6 billion investment into the Port of Belledune Green Energy Hub in an average year would boost annual province-wide private sector capital investment by 50% between 2025 and 2031.

The in-province CAPEX spending includes, among other expenditures, the construction of roads and other transportation-related infrastructure, site preparation, wind turbine foundations, electricity-transmission related infrastructure and the building of facilities for hydrogen/ammonia production and storage. It also includes the construction of a large-scale wood pellet production facility and a large-scale data centre.

As of the writing of this report, the specific geographic areas associated with the wind farms have not been formally identified. The wind energy projects will require a substantial number of wind turbines.

The combined five projects are expected to boost gross domestic product (GDP) in New Brunswick by an estimated $2.2 billion over the seven-year time frame or an average of $319 million per year (in $2024).

The investment projects will generate a considerable amount of employment income. The economic impact model estimates the clean energy, green hydrogen, biomass and data centre projects will generate $1.17 billion worth of employment

income over the seven-year timeframe (in $2024). This will support over 9,900 person years of full-time equivalent employment or an average of 1,416 per year over the seven-year period.
Section 3 looks at the workforce implications associated with these projects and provides recommendations to ensure as much of employment income as possible accrues in New Brunswick.

The $1.17 billion employment income will mostly stay in New Brunswick as household spending on goods and services. Based on Statistics Canada's annual survey of household spending, about 75 percent of household spending goes to annual consumption. The capital investment into Port of Belledune Green Energy Hub is expected to boost annual household spending by $879 million over the seven-year period. Much of this spending will occur in the Bathurst to Campbellton corridor. Section 2.4.3 provides a deeper look at how this spending will impact the local and provincial economies.

Finally, the capital investment during the 2025-2031 period will boost government tax coffers by a substantial amount. The economic impact model estimates the projects will induce over $553 million in tax revenue or an average of $79 million per year. Municipal governments will receive just under $45 million, the provincial government $295 million and the federal government just under $214 million over the seven years. These taxes arise from personal income tax payments, HST, property taxes and other indirect taxes.

Table 2: Potential Green Energy Hub CAPEX-related economic impacts (2025-2031)

	Green hydrogen projects	Clean energy projects	Biomass production	Data centre	Total CAPEX impacts (2025-2031)
CAPEX ($Million, $2024)	$3,490	$5,890	$300.0	$50.0	$9,730
GDP contribution ($M)	$836.8	$1,237.3	$110.0	$47.0	$2,231.1
Employment income ($M)	$337.7	$721.3	$76.8	$32.8	$1,168.6
Person years (FTE) employment (direct/indirect)	2,780	4,727	640	273	8,420
Person years (FTE) employment (total)	3,364	5,483	749	319	9,915
Household spending ($M)	$254.0	$542.4	$57.7	$24.7	$878.8
Taxes – municipal ($M)	$16.5	$24.1	$2.9	$1.2	$44.7
Taxes – provincial ($M)	$107.2	$160.3	$19.2	$8.2	$294.9
Taxes – federal ($M)	$68.6	$125.2	$14.0	$6.0	$213.8
Total taxes ($M)	$192.3	$309.6	$36.1	$15.4	$553.4

Shown in $2024. In-province jobs only. Includes direct, indirect and induced effects except where noted.
Source: Estimates by Jupia Consultants Inc.

How long will construction last?

The projects have differing and overlapping timeframes. The wind energy projects can take 3-4 years from sod turning to completion. The facilities associated with green hydrogen production can take 2-3 years. The biomass production facility should be completed in 18-24 months and a large-scale data centre can be erected within 12-18 months. On average if these projects are all greenlit, over 1,400 workers will be needed directly and in the supply chain per year in the Port of Belledune Green Energy Hub.

Potential impacts 2032-2037 (Phase 2)

Table 3 shows the potential economic impact from capital expenditures expected to be made between 2032-2037. These projects include Phase 2 investments in green hydrogen and clean energy, as well as a small modular nuclear reactor (SMR). The total investment between 2032 and 2037 is expected to exceed $16 billion (in $2024). Note that most of the clean energy infrastructure developed in this period is linked to the production of green hydrogen and ammonia.

The combined 2032-2037 projects are expected to boost gross domestic product (GDP) in New Brunswick by an estimated $4.3 billion over the six-year time frame or an average of $718 million per year (in $2024).

The investment projects will boost employment income by a large amount. The economic impact model estimates the clean energy and green hydrogen projects will generate $1.56 billion worth of employment income over the six-year timeframe (in $2024). This will support over 14,600 person years of full-time equivalent employment or an average of 2,440 per year over the six-year period.

The $1.56 billion employment income will mostly stay in New Brunswick as household spending on goods and services. Again, based on Statistics Canada's annual survey of household spending, the capital investment into Port of Belledune Green Energy Hub between 2032-2037 is expected to boost annual household spending by $1.17 billion over the six-year period. Much of this spending will occur in the Bathurst to Campbellton corridor.

Finally, the capital investment during the 2032-2037 period will provide a large boost government tax coffers. The economic impact model estimates the projects will induce over $819 million in tax revenue or an average of $137 million per year (in $2024). Municipal governments will receive $68.5 million, the provincial government $448 million and the federal government over $302 million over the six years.

Table 3: Potential Green Energy Hub CAPEX-related economic impacts (2032-2037)

	Green hydrogen projects	Clean energy projects	Total CAPEX (2032-2037)
CAPEX ($Million, $2024)	$6,324.3	$10,000.0	$16,324.3
GDP contribution ($M)	$1,517.8	$2,792.0	$4,309.8
Employment income ($M)	$612.6	$946.2	$1,558.8
Person years (FTE) employment (direct/indirect)	$5,042.4	$7,209.2	$12,251.6
Person years (FTE) employment (total)	$6,101.3	$8,562.7	$14,664.0
Household spending ($M)	$460.7	$711.5	$1,172.2
Taxes – municipal ($M)	$29.9	$38.6	$68.5
Taxes – provincial ($M)	$194.5	$253.9	$448.4
Taxes – federal ($M)	$124.4	$177.8	$302.2
Total taxes ($M)	$348.8	$470.3	$819.1

Shown in $2024. In-province jobs only. Includes direct, indirect and induced effects except where noted.
Source: Estimates by Jupia Consultants Inc.

Combined potential impacts 2025-2037

Finally, the combined impacts over the 13-year period 2025-2037 are shown in Table 4. If these projects go ahead, it will truly be a game changer for the economy in northeastern New Brunswick. The $26 billion worth of capital investment will boost provincial GDP by $6.5 billion, employment income by $2.7 billion and household spending by over $2 billion. It will also support an average of nearly 1,900 full time equivalent jobs over the 13-year timeframe. Governments are expected to generate nearly $1.4 billion in tax revenue just from the capital spending.

The economic impacts from annual operations are developed in Section 2.5.

Table 4: Potential Green Energy Hub CAPEX-related economic impacts (combined 2025-2037)

	Total CAPEX (2025-2037)	Average annual impacts (over 13 years)
CAPEX ($Million, $2024)	$26,052.7	$2,004
GDP contribution ($M)	$6,540.9	$503
Employment income ($M)	$2,727.4	$210
Person years (FTE) employment (direct/indirect)	$20,671.4	1,590
Person years (FTE) employment (total)	$24,579.1	1,891
Household spending ($M)	$2,051.0	$158
Taxes – municipal ($M)	$113.2	$9
Taxes – provincial ($M)	$743.3	$57
Taxes – federal ($M)	$515.9	$40
Total taxes ($M)	$1,372.5	$106

Shown in $2024. In-province jobs only. Includes direct, indirect and induced effects except where noted.
Source: Estimates by Jupia Consultants Inc.

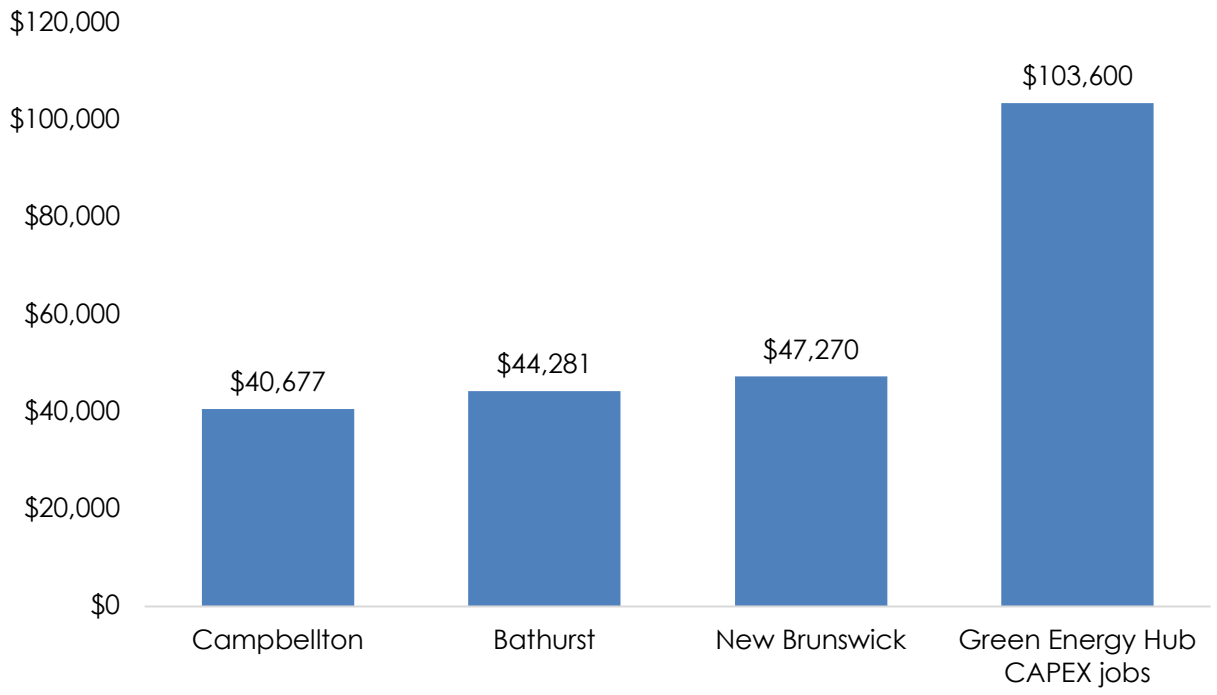
Will all the jobs and employment income stay in New Brunswick?

The economic impact model estimates that approximately 25 percent of the employment income created by these projects (direct and supply chain) will occur outside of New Brunswick, elsewhere in the country. If the project proponents are required to import a significant amount of non-New Brunswick-based workers, it could reduce the in-province jobs and income impacts. It is important to reiterate that while the average annual direct and supply chain employment in the 2025-2031 timeframe is 1,200 workers, because of project overlap, demand could be considerably higher in specific years.

2.4.2 Deeper dive: High wage employment

Most of the jobs associated with the capital investment phase of the Belledune Green Energy Hub involve technical trades or professional workers. The economic impact model estimates the average annual total employment income per worker will exceed $103,000 (in $2024). This is well over double the average employment income among workers in the Bathurst-Campbellton corridor.

Figure 5: Average employment income comparison



Source: Average employment income for Campbellton and Bathurst cover the Census Agglomeration areas. Data taken from Statistics Canada Table 11-10-0007-01. The average employment income for the Green Energy Hub CAPEX jobs developed by Jupia Consultants Inc. See Appendix A.

2.4.3 Deeper dive: Household spending impacts

Beyond supply chain spending, the CAPEX associated with the Port of Belledune Green Energy Hub is expected to boost household spending on current consumption by over $2 billion between 2025 and 2037. Table 5 shows a detailed breakdown of spending by category associated with the $2 billion ($2024). It assumes spending will occur consistent with the average household expenditure figures from Statistics Canada in the province.

Virtually all industries get a boost from the CAPEX associated with the Green Energy Hub. The restaurant sector in the province can look forward to $74 million in revenue just from the capital expenditure phase. This will be followed by millions more in spending annually from the operations associated with the project over the next 30 years. Grocery stores receive a $279 million boost. Car dealers can expect $177 million in sales and tens of millions more in other vehicle-related expenditures.

Veterinarians and pet suppliers will boost revenue by over $22 million. Companies in the household furnishings and equipment business are expected to see $128 million in revenue. Insurance companies in the province will generate nearly $164 million in revenue over the 13-year period.

Table 5: CAPEX-related induced household spending by selected category ($Millions)

	2025-2031 projects	2032-2037 projects	Total from CAPEX (2025-2037)
Total employment income	$1,168.6	$1,558.8	$2,727.4
Induced household expenditures	$878.7	$1,172.1	$2,050.9
Food expenditures	$151.7	$202.4	$354.1
Food purchased from stores	$119.7	$159.6	$279.3
Food purchased from restaurants	$31.6	$42.2	$73.9
Shelter	$224.1	$298.9	$523.0
Mortgage payments and rent	$92.3	$123.1	$215.5
Water/fuel/electricity-principal accommodation	$48.7	$65.0	$113.7
Household operations	$79.8	$106.5	$186.3
Communications	$44.2	$59.0	$103.2
Pet expenses	$9.6	$12.7	$22.3
Household furnishings and equipment	$54.8	$73.0	$127.8
Clothing and accessories	$30.8	$41.1	$71.8
Transportation	$146.9	$195.9	$342.8
Purchase/lease of private vehicles	$76.0	$101.3	$177.3
Gas and other fuels	$31.9	$42.5	$74.4
Health and personal care	$58.4	$77.9	$136.4
Recreation	$62.3	$83.1	$145.3
Gifts of money, support payments and charitable contributions	$19.0	$25.3	$44.3
Insurance (property, auto, life and disability)	$70.1	$93.5	$163.6

Shown in $2024.
Source: Estimates by Jupia Consultants Inc.

2.5 Modelling ongoing OPEX economic impacts

2.5.1 Defining annual Green Energy Hub OPEX

The projects modelled in this report are highly capital-intensive meaning that much of the investment into the industry goes towards infrastructure, equipment and technology costs. These costs are amortized over the life of the project – in most cases, around 30 years.

However, there are substantial ongoing operating costs associated with the projects including the workers required to maintain the electricity generation infrastructure, the workers needed in the hydrogen and ammonia production facilities and in the biomass manufacturing operations and a host of other support workers from truck drivers to port workers. The green hydrogen annual operating expenditures (OPEX) also include a variety of suppliers in the local community and across the province such as professional services, finance and insurance and administrative services, among others. The biomass project has particularly significant supply chain impacts because it includes the harvesting and processing of the wood. Further, the employment income associated with the OPEX translates into induced household spending raising output in a wide variety of industries in the local community and across the province.

Finally, the Port of Belledune Green Energy Hub is expected to provide a solid boost to government revenues on an annual basis through a variety of taxes and levies.

The economic impacts associated with ongoing annual operating expenditures and taxes is developed in this section. Even though the report's authors were provided with some information on decommissioning, the impacts were not modelled in this report. Decommissioning for many of these projects could occur sometime in the late 2050s and 2060s. It could also be the proponents will re-invest and extend the projects well beyond the 2050-2060 timeframe.

It is important to reiterate that all dollar values shown in this section are expressed in 2024 dollars. This was done because the nominal values, over such a long period, tend to overstate the economic impacts of such projects.

2.5.2 Estimated annual Green Energy Hub OPEX economic impacts

To determine the annual operating costs associated with the projects, a mix of direct project information was used along with data on similar project cost structures in other jurisdictions. Again, in order not to publish commercially protected information, in certain cases, the annual operating costs associated with the various projects were blended into a single category. Where limited project information was available, Statistics Canada multipliers were used to estimate the direct, indirect and induced effects.

Table 6 shows the potential economic impacts associated with the Port of Belledune Green Energy Hub projects in the 2025 to 2031 timeframe.

The 2025-2031 projects will become operational at various times during the seven-year period. When they are all operational, combined they will boost provincial GDP by nearly $330 million per year ($2024). There will be 1,175 direct jobs supported by the clean energy, green hydrogen, biomass production and data centre projects. With indirect and induced impacts included, total annual full time equivalent employment rises to nearly 1,990.

These will be good paying jobs. On average, a direct job created by this industry is expected to pay on average over $82,000 per year (direct, indirect and induced) (in $2024). Adding in indirect and induced jobs, the average employment income will be $69,700/year ($2024), 47 percent higher than the average employment income for all workers in the province.

Good paying jobs result in a higher tax multiplier. The economic impact model estimates that, once operational, the 2025-2031 projects will boost taxes for all three levels of government by over $69 million per year ($2024). This does not include any revenue from water charges, Crown land leases, etc.

Most of this employment income will end up being spent on household consumption. Over 75 percent of employment income goes towards the purchase of goods and services in the local community and across the province. The economic impact model estimates Port of Belledune Green Energy Hub projects in the 2025 to 2031 timeframe will boost household spending from operations by $104 million per year. Again, much of the spending will be in the local communities in which these projects are located. A more detailed breakdown of household spending is developed in Section 2.5.5.

Table 6: Annual impacts once operational: 2025-3031 Green Energy Hub projects

	Green hydrogen projects	Clean energy projects	Biomass production	Data centre	Combined annual OPEX impacts (as of 2031)
Annual GDP contribution ($M)	$153.8	$77.5	$79.8	$18.7	$329.8
Employment income ($M)	$44.6	$28.0	$55.0	$10.9	$138.5
Employment (direct)	230	150	720	75	1,175
Employment (total)	443	318	1,100	125	1,986
Household spending ($M)	$33.5	$21.0	$41.4	$8.2	$104.2
Taxes – municipal ($M)	$2.0	$1.2	$2.1	$0.4	$5.7
Taxes – provincial ($M)	$12.9	$7.6	$14.1	$2.6	$37.3
Taxes – federal ($M)	$8.7	$5.3	$10.1	$2.0	$26.1
Total taxes ($M)	$23.6	$14.1	$26.4	$5.0	$69.1

Shown in $2024.
*Full time equivalent of employment.
In-province jobs only. Includes direct, indirect and induced effects except where noted.
Source: Estimates by Jupia Consultants Inc.

Adding in the second phase green hydrogen and clean energy projects results in a substantial boost to economic impact. As shown in Table 7, by 2037 the annual GDP contribution from project operations will rise to $705 million per year ($2024). To put this into perspective, the Port of Belledune Green Energy Hub GDP impact, should the projects go ahead, will be larger than any other industry in the region by a wide margin (Figure 6). In fact, the Green Energy Hub would generate five times as much GDP as the next closest private sector industry (banking services).

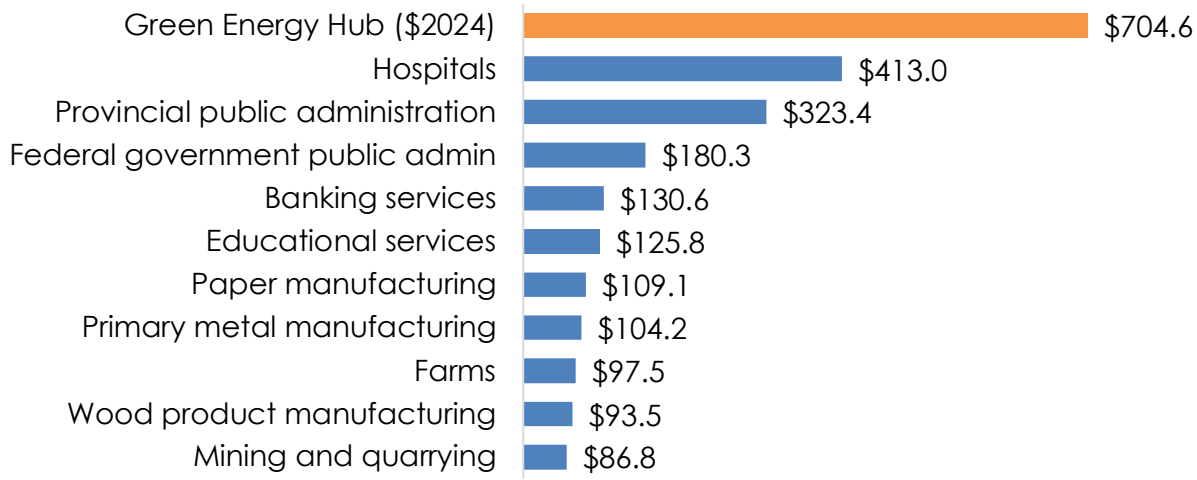
The Port of Belledune Green Energy Hub would more than replace the lost GDP from the mining and smelting sectors. In addition to the significant GDP impact, by 2037, the combined projects would boost annual employment income in the province by $260 million, 1,815 direct jobs and 3,287 total full time equivalent jobs. To show the impact in context, the direct jobs alone would boost private sector employment in the region by nearly 15 percent.

Table 7: Annual impacts once operational: 2032-2037 Green Energy Hub projects

	Green hydrogen projects	Clean energy projects	Combined annual OPEX from all projects (as of 2037)
Annual GDP contribution ($M)	$193.9	$180.9	$704.6
Employment income ($M)	$56.2	$65.3	$260.0
Employment (direct)	290	350	1,815
Employment (total)	559	742	3,287
Household spending ($M)	$42.3	$49.1	$195.5
Taxes – municipal ($M)	$2.5	$2.7	$10.9
Taxes – provincial ($M)	$16.3	$17.8	$71.4
Taxes – federal ($M)	$10.9	$12.3	$49.3
Total taxes ($M)	$29.7	$32.8	$131.6

Shown in $2024.
*Full-time equivalent employment.
In-province jobs only. Includes direct, indirect and induced effects except where noted.
Source: Estimates by Jupia Consultants Inc.

Figure 6: Top 10 industries by GDP contribution in the Bathurst-Campbellton corridor compared to the potential of the new Green Energy Hub*



Source: Includes direct, indirect and induced GDP. All sectors except the Green Energy Hub based on Lightcast (annual output) and Statistics Canada GDP multipliers[4].

[4] Source: Statistics Canada Table: 36-10-0595-01.

2.5.3 Other potential sources of government revenue

The economic impact model above only includes income tax, sales tax, property tax and indirect taxes. It does not include other taxes and fees that are levied on these kinds of projects including Crown Land leases and water charges. The Government of Newfoundland and Labrador has developed a royalty regime associated with the green hydrogen projects in that province that is calculated above and beyond other fees and taxes.

2.5.4 How much is $71 million in provincial government revenue?

The Port of Belledune Green Energy Hub has the potential to be a substantial source of new tax revenue for governments. As shown in Table 7, the projects modelled in this report are expected to boost provincial government taxes by $71.4 million per year (in $2024) by 2037. How much is $71 million? What could it be used to fund in the province?

- $71 million would cover the entire annual wage bill for the education sector in the Bathurst-Campbellton corridor*.
- This amount would pay the salaries of all the nurses in the region with millions left over**.
- It would cover more than the annual road maintenance and construction spending in the Bathurst-Campbellton corridor***.

*Based on Lightcast's estimate of wages paid in the educational services sector in the region.
**Based on the total employment income reported in the 2021 Census.
***Assumes per capita annual spending by the New Brunswick Department of Transportation and Infrastructure.

2.5.5 Deeper dive: Annual household spending impacts

The OPEX spending associated with the Green Energy Hub is expected to boost average annual household spending on current consumption by $139 million per year by 2031 and $260 million by 2037. Table 8 shows a detailed breakdown of spending by category associated with this boost in household spending. It assumes spending will occur consistent with the average household expenditure figures from Statistics Canada in the province.

Table 8: Annual OPEX-related induced household spending by selected category ($Millions)

	Annual impacts as of 2031	Annual impacts as of 2037
Total employment income	$138.5	$260.0
Induced household expenditures	$104.2	$195.5
Food expenditures	$18.0	$33.8
Food purchased from stores	$14.2	$26.6
Food purchased from restaurants	$3.8	$7.0
Shelter	$26.6	$49.9
Mortgage payments and rent	$10.9	$20.5
Water/fuel/electricity-principal accommodation	$5.8	$10.8
Household operations	$9.5	$17.8
Communications	$5.2	$9.8
Pet expenses	$1.1	$2.1
Household furnishings and equipment	$6.5	$12.2
Clothing and accessories	$3.6	$6.8
Transportation	$17.4	$32.7
Purchase/lease of private vehicles	$9.0	$16.9
Gas and other fuels	$3.8	$7.1
Health and personal care	$6.9	$13.0
Recreation	$7.4	$13.9
Gifts of money, support payments and charitable contributions	$2.3	$4.2
Insurance (property, auto, life and disability)	$8.3	$15.6

Shown in $2024.
Source: Estimates by Jupia Consultants Inc.

3. BUILDING THE WORKFORCE: OPPORTUNITIES AND CHALLENGES

3.1 Example workforce profile: Wind energy/green hydrogen project

The economic impact model estimates the two wind energy/green hydrogen projects modelled in this report will directly and in the supply chain require hundreds of skilled tradespersons and professional workers during a 3-4 year construction period, along with general labourers. This section looks at the types of labour that will be required during the construction period.

3.1.1 Wind turbine infrastructure deployment

As outlined in Section 2 above, there are three categories of labour impacted by a major new development such as a wind energy/green hydrogen project. The first category is the direct labour required on-site, the second is the indirect labour (or supply chain) that is required to ensure all goods and services needed to support the project are delivered on time and the third is the induced workforce that will be needed to meet the demand for increased household spending in the region and across the province.

Table 9 shows an example workforce requirement for a 1 GW wind energy project during a three-year construction phase. The project would require skilled labourers, wind turbine technicians, mechanics, drillers, blasters, heavy equipment operators, truck drivers, electricians and other support workers including professional services, supervision and management.

The table estimates the average monthly demand for workers during the three-years associated with the project. There will be peak demand for certain jobs that would push the amount needed well above the average monthly demand.

Every project is different but in the case of this workforce profile, based on the average of several projects, over 600 workers will be needed on-site for a sustained period of time.

Again, this is based on a 1 GW wind farm deployment. The economic impact model above is based on 3 GW of wind energy developed over a six-year period. While there would be overlap between the projects, the demand for workers would be considerably higher than the level outlined in Table 9.

Table 9: Example workforce requirement for a typical 1 GW wind energy project, construction phase

Activity	Duration	Average monthly demand
Engineering and other professional services	36 months	30
Mechanics	36 months	20
Labourers (skilled and semi-skilled)	36 months	60
Wind turbine technicians	24 months	75
Drillers and blasters	24 months	15
Heavy equipment operators	30 months	75
Truck drivers	36 months	100
Electricians	36 months	10
Survey personnel	24 months	10
Supervision	36 months	20
Management	36 months	25

Source: Developed by Jupia Consultants Inc.

3.1.2 Construction of the hydrogen plant and related infrastructure

The work includes the construction of the hydrogen plant, ammonia storage facilities and the infrastructure to pipe water, hydrogen/ammonia around the facilities and to the port for shipment. Table 10 shows an example of the workforce profile related to the development of this infrastructure.

There will be a substantial need for specialized pipefitters as the whole area will require a lot of piping infrastructure. Electricians, heavy equipment operators and general labourers will also be in high demand.

Table 10: Example workforce requirement for a typical green hydrogen and related facilities construction project

Activity	Duration	Average monthly demand
Engineering and other professional services	36 months	20
Pipefitters	18 months	150
Electricians	24 months	75
Site preparation	6-8 months	120
Heavy equipment operator	30 months	75
Industrial instrument technicians and mechanics	24 months	40
Painters/insulators	18 months	40
Other construction trades	24 months	50
General labourers	24 months	250
Supervision	36 months	15
Management	36 months	15

Source: Developed by Jupia Consultants Inc.

3.1.3 Ongoing operations

The wind energy projects and the green hydrogen production facilities and related infrastructure are expected to employ at least 100 directly each year and another 110+ in the supply chain. These jobs will require a variety of occupations including wind turbine technicians, maintenance roles, security, operations/management, engineers/technicians, plant operators and transportation workers.

Activity:	FTE profile:	Occupational groups:
Wind energy generation and transmission activities	50-70 direct 50-60 indirect*	Wind turbine technicians Maintenance trades Security Operations/management
Hydrogen plant and related activities	50-60 direct 60-70 indirect*	Engineers/technicians Plant operators Security Office/administration/management Transportation Maintenance

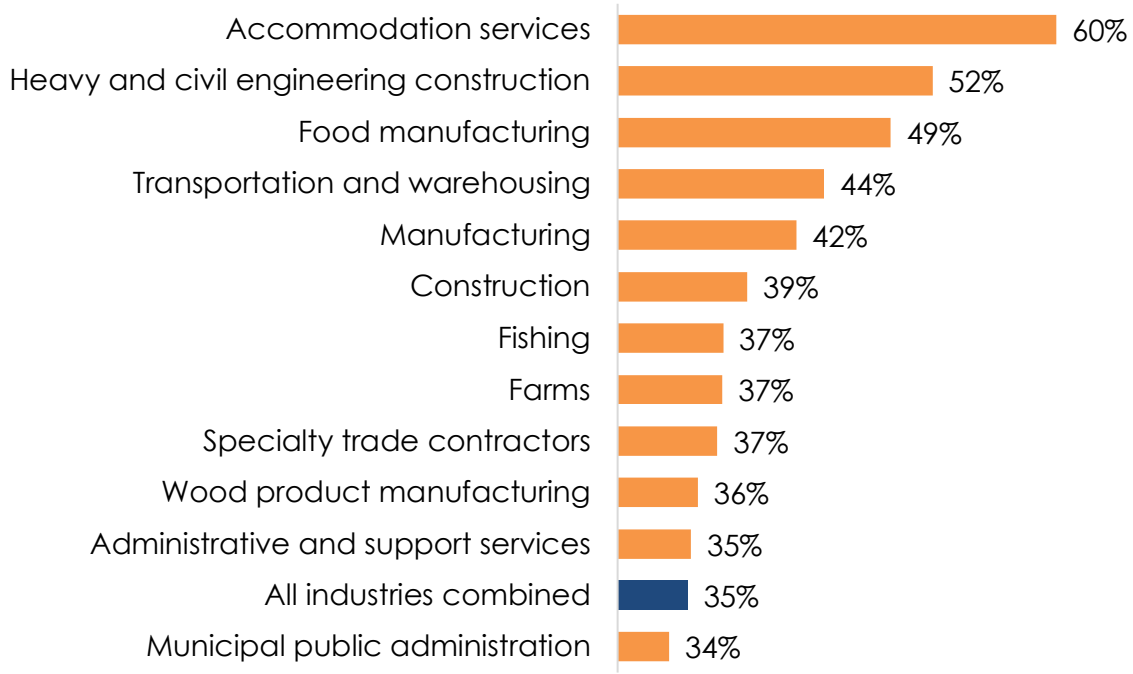
*Depending on whether the company employs the workers directly or hires suppliers to provide the services.

3.2 Boosting the local talent pipeline

One of the largest challenges associated with a large infrastructure development opportunity such as the Port of Belledune Green Energy Hub is finding the workforce to develop and build the associated infrastructure. Without an available workforce, projects could be delayed or even diverted to other jurisdictions where there is available workers and other favourable conditions.

The demographic challenge facing the region was discussed in Section 1 above. It is having a profound impact on the workforce. According to Statistics Canada, as of he 2021 Census, 35 percent of all workers across Gloucester and Restigouche counties were over the age of 55 and likely to retire in the next decade or so. Figure 7 shows the 55+ workforce share by industry in the region as of 2021. Of particular importance to the Green Energy Hub, over half of the heavy and civil engineering workforce is heading towards retirement. Four in 10 workers in the construction industry overall are 55 or older. Specialty trade contractors also have a large share in the 55+ age group.

Figure 7: Share of the workforce aged 55 and over, Gloucester and Restigouche counties combined (2021)



Source: Statistics Canada 2021 Census.

The 2021 Census also reported on the age of the workforce with apprenticeship certificates. Across Restigouche County, 58 percent of those with apprenticeship certificates were 55 and older and 54 percent in Gloucester County (Figure 8).

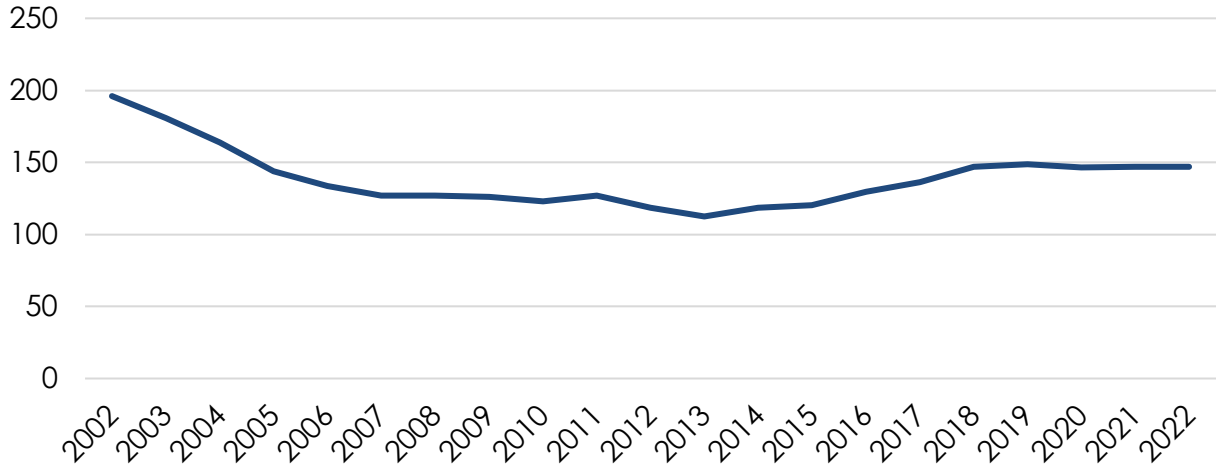
This compares to only 44 percent across the country. Interestingly, national construction trades groups have sounded the alarm warning about the large share of trades workers about to retire. In Northeastern New Brunswick the challenge is much worse.

Figure 8: Share of the workforce with apprenticeship certificates aged 55 and over

Source: Statistics Canada 2021 Census.

The good news is the share of apprenticeship registrations in the province has been increasing in recent years. There are now more carpenters, electricians, plumbers, heavy equipment operators in the province compared to a decade ago. However, given the large share retiring in the near future, it may not be enough. Figure 9 shows New Brunswick's share of the country's apprenticeship registrations between 2002 and 2022. As of 2022, New Brunswick's share had dropped by over 25 percent compared to back in 2002.

Figure 9: New Brunswick's share of Canada's apprenticeship registrations (per 10,000 across the country)



Source: Statistics Canada Table: 37-10-0219-01

4. A PLATFORM FOR FUTURE ECONOMIC DEVELOPMENT

4.1 Creating the value proposition for investment

It will take more than just an aggressive promotional effort to build the Port of Belledune Green Energy Hub. As developed above, most of the projects require billions of dollars worth of investment and therefore the overall value proposition for investment is key.

The changes made to the Electricity Act are an important step to attract investment into clean energy projects. The availability of land both at the Port and beyond will also be important to ensure the region can benefit fully from the opportunity. The use of Crown Land for the development of wind energy is another important input into developing this opportunity.

The region will need a broad-based workforce development strategy focused on the engineering and construction workforce as well as on the hundreds and hundreds of jobs that will be created and potentially sustained for decades.

Getting broad-based public support will also be critical to the success of the Green Energy Hub.

4.2 Building the supply chain

An important opportunity arising from the growth of the Green Energy Hub in the Bathurst-Campbellton corridor involves the development of a supply chain in the province. As an example, the forestry sector in the province has developed a long supply chain with dozens of firms specializing in specific areas. The potential for supply chain opportunities related to clean energy and related sectors may not initially be as large as the forestry sector, but many industries will benefit, from the construction and engineering sectors through to service industries such as finance and insurance.

4.3 Future use cases for the green energy

The business case for the development of the Port of Belledune Green Energy Hub is focused on the green hydrogen export opportunity, particularly to Europe and North America. There is growing demand for hydrogen to support decarbonization in the transportation sector and energy intensive industries such as steel and chemical production. Another short-term use involves the blending of hydrogen with natural gas and renewable natural gas, which will help lower emissions.

In the medium to longer term, the billions of dollars' worth of energy infrastructure being developed could be used to drive a new generation of economic development in the province. Low-cost renewable electricity and green hydrogen could be used to attract a wide variety of new industries.

The potential use cases include:

- Green steel production
- Aluminum and other energy intensive manufacturing
- Chemical production
- Data centres and other energy intensive tech-based activities

Low cost, green energy could also be used to support traditional industries in the province such as forest products and mining.

5. CONCLUSION

This report illustrates the economic potential of the Port of Belledune Green Energy Hub. The projects being considered represent a game-changer for Northeastern New Brunswick economy and population.

After a multi-year capital investment phase creating thousands of jobs, these projects bring 30+ years of economic benefits to the region and province. If all the projects modelled in this report go ahead, it will sustain nearly 2,000 jobs per year – most in good paying industries.

The case is strong for the development of this industry. Northeastern New Brunswick has an excellent wind regime and other benefits that make the province uniquely attractive. The provincial government is looking to use Crown land to support the development of this opportunity. The federal government's tax incentive program helps create a competitive investment environment for green energy projects. As a result of this positive environment, there are five proponents investing millions of dollars pursuing green hydrogen projects around the province.

The global market for green hydrogen is expected to be vast. Over the next few decades demand for hydrogen is expected to grow six-fold. As of 2023, almost all hydrogen was produced using carbon emitting energy sources. Growing and greening global hydrogen production represents an unprecedented opportunity and New Brunswick stands to benefit through the Port of Belledune Green Energy Hub.

In addition to green hydrogen, there are many other use cases for clean energy that could power the regional economy for decades to come.

APPENDIX A: THE ECONOMIC IMPACT MODEL AND SOURCES

The data sources used in the preparation of this report include:

Statistic:	Source/Description:
Indirect and induced GDP, employment and income estimates	Uses Statistics Canada Input-Output multiplier and impact estimates at the M industry level. Provincial Input-Output Multipliers, 2019. Catalogue 15F0046XDB. Industry Accounts Division. Statistics Canada. Includes multipliers for: output, gross domestic product (GDP) at market prices, taxes on products, labour income, wages and salaries, employers' social contributions, labour income of unincorporated sector, taxes on production and employment. The specific NAICS industries used are described in Section 2 above.
Tax multipliers from operational spending	Using a model developed by Jupia Consultants Inc. based on a variety of sources including: • Induced HST revenue: Based on the ratio of HST collected to total provincial personal income in 2022 (Source: provincial budget documents and Statistic Canada). • Induced personal income taxes paid: Derived using several sources including Statistics Canada personal tax-related tables and its Survey of Household Spending (SHS) for 2021. • Property taxes paid (from employment income): Derived using Statistics Canada's Survey of Household Spending (SHS) for 2021. • Indirect taxes: Derived using Statistics Canada multipliers for the various sectors used in the model as described in Section 2. These indirect taxes are levied on the business activity and include such tax areas as: business property taxes, fuel taxes, vehicle license fees, land transfer taxes, and any sales taxes arising out of the corporate activity.
Other taxes and royalties	The other taxes and royalties including corporate income taxes, wind and water royalties, land taxes, etc. were provided to the author by three of the five proponents.
Household spending impacts	Derived using Statistics Canada's Survey of Household Spending (SHS) for 2021.

Industry GDP statistics	Gross domestic product (GDP) at basic prices, by industry. Source: Statistics Canada Table: 36-10-0402-01.
Various labour market characteristics	Statistics Canada 2021 Census and annual wage reports.
Municipal and provincial total own-source revenue as well as spending by category	Government of New Brunswick sources.
Export data	Source: Trade Data Online.
Occupational wage data	Statistics Canada 2021 Census.
Average household spending	Source: Statistics Canada Table: 11-10-0222-01.
Capital investment by sector	Capital and repair expenditures, non-residential tangible assets, by industry and geography. Source: Statistics Canada Table: 34-10-0035-01.
Employment by sector	Source: Statistics Canada 2021 Census and the annual Labour Force Survey.

APPENDIX B: ABOUT THE COMMUNITY WORKFORCE DEVELOPMENT COMMITTEE

Background and Goals

In 2020, the Belledune Port Authority ("BPA") embarked on a Master Development Planning process to diversify its core business and seek opportunities for a more sustainable business future for the Port.

Completed in the fall of 2022 with input from experts, industry, community members and First Nations, the Master Development Plan 2022-2023 (MDP) provided a 30-year roadmap for the future. The BPA is now focused on implementing the plan through strategic planning for key initiatives, including a Green Energy Hub development on Port lands, business planning, marketing and operational change.

As agreements are signed with private sector partners focused on building clean energy projects, the Port is poised to change dramatically. Bringing this change to life will require significant planning, investments and community involvement. Working together, First Nations, business, government and education partners can ensure a smooth transition, a ready workforce and the realization of shared opportunities and benefits for New Brunswick.

The Community Workforce Development Committee was established in late 2023 to review the implementation goals of the MDP, provide a forum for information sharing and feedback, and enable parties to work together collaboratively to pursue opportunities for community education, workforce development, training and recruitment, and enable broader stakeholder engagement on goals and opportunities at the Port. Focusing on projects and development opportunities identified by the BPA, this committee is tasked with identifying economic impacts and opportunities for the region, and planning for jobs, training and community outreach.

Goals include:

- Working collaboratively to ensure open and transparent communication among members, regional stakeholder groups and agencies
- Educating all participants and their networks about the opportunities, challenges and requirements of projects related to the Master Development Plan
- Identifying opportunities to grow the economic impact of the BPA by involving the local and regional workforce with training and recruiting strategies

- Ensuring barriers to and opportunities for economic growth are well understood by members to ensure recommendations are based on evidence and fact.

For more information visit https://www.portbelledune.ca/community/community-workforce-development-committee

APPENDIX C: ABOUT JUPIA CONSULTANTS INC.

New Brunswick, Canada-based Jupia Consultants Inc. is a full-service research and planning support consultancy specializing in the area of economic development. For over two decades, the firm has been working with companies, communities, industry associations, economic development agencies and government departments across Canada.

This report was prepared by David Campbell. David is the President of Jupia Consultants Inc. and has more than 25 years' experience as a consultant working with industry, not-for-profit organizations and governments across Canada. His focus areas include economic development strategy, economic impact analysis, population growth, cluster development and investment attraction. David was formerly Chief Economist with the Government of New Brunswick. In that role, he led the development of economic policy and economic development strategy for the provincial government.

David is a columnist with Brunswick News, a published author, and writes weekly for the It's the Economy, Stupid blog as well as co-presents the weekly podcast Insights with Don Mills and David Campbell. In recent years, he has had the opportunity to collaborate with multiple think tanks and policy research organizations including the Conference Board of Canada, Public Policy Forum and the Donald J. Savoie Institute at the Université de Moncton.

For more information visit www.jupia.ca.