Sectoral Profile

Utilities

Atlantic Region

2018

KEY HIGHLIGHTS

- Economic and employment growth in Atlantic Canada`s utilities sector has been relatively flat over the past decade due in part to stable population trends and industrial closures.
- The utilities sector comprises a small share of overall gross domestic product (GDP) in the region, ranging from 1.5% of GDP in Prince Edward Island to nearly 4% in New Brunswick.
- Employment in the sector has remained stable over the past decade.
- Overall employment in the region's utilities sector is expected to remain stable over the 2018-20 forecast period, however provincial outlooks vary somewhat: Growth of around 1% is expected in PEI and NL while a modest contraction is forecast for NS and NB.
- Within the sector, there continues to be an on-going shift to renewable sources of electricity generation, apparent in the significant increase in wind turbine electricity generating capacity.

INDUSTRY PROFILE

The utilities sector includes both public and private businesses that are primarily engaged in electric power generation, transmission and distribution; natural gas distribution; and water and sewage utilities. The total value of the utilities sector in Atlantic Canada amounted to $2.7 billion in direct GDP in 2017, or 2.6% of the region's total.[1]

Electric power generation, transmission and distribution accounted for the vast majority of economic activity in the sector (comprising 92.6% of regional GDP); this is followed by water, sewage and other systems (at 6% of GDP); and natural gas distribution (1.9%).[2] Compared to the rest of Canada, electricity generation, transmission and distribution makes up a larger share of the Atlantic economy, reflective of the region's status as a net exporter of electricity to the U.S. and Quebec. Natural gas distribution is very small in Atlantic Canada, owing to a lack of pipeline infrastructure, with most households having oil furnaces or electric heat.

The electricity, gas and water services produced by the utilities sector are largely consumed within the Atlantic region. All of the output of the natural gas distribution and water, sewage and other systems subsectors are consumed within the region, as well as the majority of electricity. About 90% of the value of electricity generated in Atlantic Canada is consumed by households and industry within the region, with the balance being sold in Quebec and the U.S.[3]

Overall electricity generation in Atlantic Canada is primarily hydroelectric. Hydroelectric production accounted for 69.3% of electric generation in 2017, most of which is produced at Newfoundland and Labrador's Churchill Falls Generating Station. Production by thermal electric (coal and oil combustion) accounted for a further 22.8% of electric generation in the region, located primarily in Nova Scotia and New Brunswick. The Point Lepreau Nuclear Generating Station in New Brunswick accounted for 7.8% of production while wind turbine production accounted for 4.6%.[4]

Utilities account for a smaller share of employment relative to GDP due to being a capital-intensive industry. The sector employed 10,100 workers in 2018, accounting for just 0.9% of the region's total employment. This was slightly more than the national average of 0.8%. Almost all of those workers are employed full-time and 87% are permanent employees. Within the sector, electric power generation, transmission and distribution is by far the largest employer, accounting for 87.6% of sectoral employment in the Atlantic region in 2016.[5]

The utility sector supports other industries within the region, particularly construction with major infrastructure projects, such as the Newfoundland-to-Nova Scotia and Prince Edward Island-to-New Brunswick transmission links; and wind turbine development.

Table One
Employed Labour Force - Utilities
Atlantic Canada and Canada

	Atlantic	Canada
Utilities	100%	100%
Electric power generation, transmission and distribution	87.6%	78.5%
Natural gas distribution	3.4%	11.7%
Water, sewage and other systems	8.9%	9.8%

Source: Statistics Canada, 2016 Census of Canada, Table 98-400-X2016290

Workers in the utilities sector are predominantly male – men account for 81.2% of the total. The majority of workers (71.7%) are in the core-aged cohort (25 to 54 years of age). Though this is higher than in the overall work force in the region (63.9%), the share has been declining since it peaked at 89.3% in 2006. As of 2018, 20.2% of the workers in the industry are 55 years of age or older, as compared to 23.2% in the overall workforce.[6]

RECENT HISTORY

Growth in the utilities sector has been slow over the past decade, with GDP increasing at an average annual rate of 0.3% from 2007 to 2017. This was just slightly below the average growth rate in the overall Atlantic economy of 0.4% annually.[7]

Growth in demand for electricity, gas and water has been limited by several factors. The region's population base, for example, has been relatively stable resulting in little change in consumer demand for utilities. Population has increased at an average annual rate of 0.3% over the past decade, compared to 1.1% nationally.[8] Furthermore, growth in demand for energy has been limited by the shift toward a service-based economy, which uses less energy than traditional manufacturing and natural resource industries.[9] The closure of a number of industrial customers in the region, including pulp and paper mills, mining operations and an oil refinery, has contributed to this. Since 2005, annual electricity generation in the region has fallen by 16.4%.[10]

The electricity sector is also in the midst of a transition to renewable generation sources. This is primarily reflected in the increase in wind turbine generation, which has increased from 125.5 gigawatt hours in 2005 to 2,817.4 gigawatt hours in 2017.[11] The Muskrat Falls generating station development in Labrador is also expected to add a significant amount of hydroelectric generating capacity in late-2019 and Nova Scotia has been developing the country's only tidal power generating stations on the Bay of Fundy. All four provinces have climate

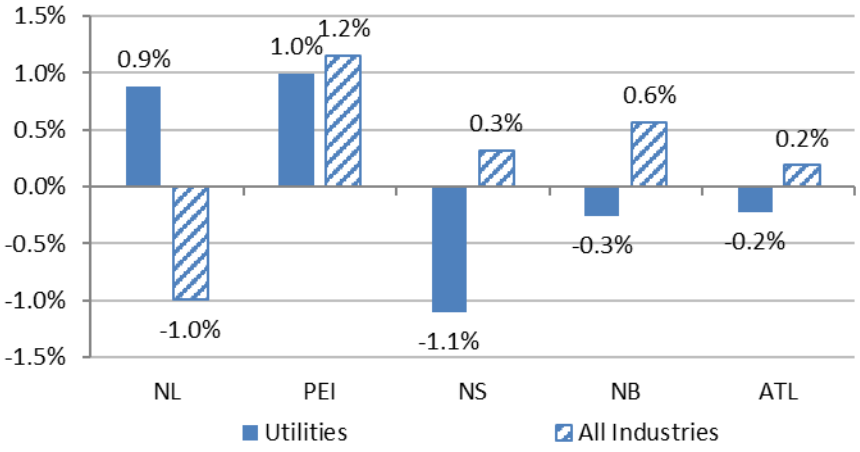
change strategies that will impact the electricity sector. These plans variously include actions like renewable energy targets, incentivizing community-driven renewable energy projects and energy efficiency in households and businesses, among others. Federal requirements for provincial carbon pricing initiatives and the planned phase-out of traditional coal-fired generation by 2030 will also have impacts on this sector moving forward.[12]

Consistent with flat economic activity in the Atlantic provinces utilities sector as well as with national trends, employment in the sector has been relatively stable over the past decade. From 2008 to 2018, sectoral employment in the region increased from 9,900 to 10,100.[13]

EXPECTED OUTLOOK

Employment levels in Atlantic Canada's utilities sector are expected to remain stable over the 2018-2020 forecast period. Several major investments in the energy sector have recently completed or are soon-to-be completed, including transmission links between Newfoundland and Nova Scotia and between New Brunswick and Prince Edward Island. On the positive side this new transmission capacity may require more maintenance workers. Low natural gas prices are expected to limit investment in distribution infrastructure. Federal infrastructure related to water and sewage is not expected to have an impact on operations in the short term.

Projected Average Annual Employment Growth Rate (%), Atlantic Provinces, 2018-2020



Source: Employment and Social Development Canada / Service Canada, Regional Occupational Outlooks in Canada, 2018-2020

The outlook for this industry varies at the provincial level. Average annual employment growth in Newfoundland and Labrador is expected to slow to 0.9% as construction of the Muskrat Falls development nears completion later in 2019. In Prince Edward Island, the planned continued expansion of wind generation capacity, coupled with population growth, is expected to support employment growth of about 1.0%. For Nova Scotia, slowing investment in wind farms and the completion of the Maritime Link is projected to see a reduction in direct employment in this sector, in the order of 1.1%. In New Brunswick, a modest employment decline is projected as NB Power looks to reduce its budget by $40 million over the next four years.[14]

SUB-REGIONAL DYNAMICS

Newfoundland and Labrador

- The utilities sector in Newfoundland and Labrador produced $632.4 million in direct economic activity in 2017, accounting for 2.0% of total GDP. The industry has averaged 1.3% growth in GDP over the past decade, driven primarily by the electricity subsector.[15]
- Employment in the industry has more than doubled since 2008, to 3,100 in 2018, which in part reflects direct employment growth generated by the development of the Muskrat Falls Generating Station, which is expected to soften after completion.[16]
- Newfoundland and Labrador is the largest electricity producing province in the Atlantic region, having produced 62.1% of all generation in 2017. This is mainly owing to the Upper Churchill Generating Station in Labrador. The province's generation capacity will further expand once the Muskrat Falls Generating Station is complete in late-2019.[17]
- 94.5% of the province's electricity is produced by hydroelectricity, with 5.1% produced by thermal generation and 0.5% by wind.[18]

Prince Edward Island

- Prince Edward Island's utilities sector is the smallest but also the fastest growing in the Atlantic provinces. The small size of the sector – $82.0 million, accounting for 1.5% of total GDP in 2017 – is due to the province importing just under two-thirds of all electricity consumed from New Brunswick.[19]
- Average annual growth in the utilities sector of 5.0% over the last decade has been supported by rapid expansion of the province's wind turbine generation capacity.[20] Since 2007, the Island's annual wind turbine generation has increased from 39.6 gigawatt hours to 598.3 gigawatt hours in 2017.[21]
- Employment in the sector has fluctuated but not grown steadily over the past decade, despite economic growth.[22] Only a small percentage of the jobs associated with wind energy are related to on-going operation and maintenance.[23]
- Wind power accounts for 99.1% of all electricity generation on the Island.[24]

Nova Scotia

- Nova Scotia's utilities sector produced $756.4 million in economic activity in 2017, accounting for 2.1% of total GDP. The sector has contracted over the past decade, by an average annual of 1.8% per year, as industrial closures have reduced demand for electricity and water.[25]
- Despite the contraction in economic activity, employment in the sector has remained relatively steady, with growth of 3,700 in 2018.[26]
- Thermal generation, almost entirely from coal, accounted for 78.6% of electricity generation in the province in 2017. That share has declined from over 90% a decade earlier, as the province has aggressively supported expansion of wind turbine generating capacity. Wind power accounted for 11.9% of total generation in 2017, followed by hydroelectricty at 9.3%.[27]
- Nova Scotia is continuing research into in-stream tidal energy at the Fundy Ocean Research Center for Energy on the Bay of Fundy, but only a very small amount of electricity has so far been produced as part of that research.[28] Halagonia Tidal Energy Ltd. Is planning to test a $117 million tidal power generation unit by 2020. The unit would produce enough electricity to power 2,500 homes.[29]

New Brunswick

- New Brunswick has the largest utilities sector in the region, with a GDP of $1.2 billion in 2017, accounting for 3.9% of the provincial total. Growth in the sector averaged 1.0% per year over the past decade.[30] Economic activity in the sector slowed in the late 2000s, as the Point Lepreau Nuclear Generating Station was closed for refurbishment until late-2012, during which time the balance of its electricity needs were imported from outside of the province.[31] From 2013 onward, activity in the sector returned to its former level.

- Outside of Ontario, Point Lepreau is the only operating nuclear generating station in Canada.
- The sector employed 3,100 persons in 2018.[32]
- New Brunswick has the most diverse electricity generation infrastructure of the Atlantic provinces. Its largest source of electricity in 2017 was nuclear, which accounted for 37.7%, followed by other thermal generation (34.7%), hydroelectricity (20.5%) and wind power (7.0%).[33]

APPENDIX

Table Two
Real GDP (2017) and Employment (2018) for Atlantic Canada

	Utilities			All Industries		
	Number	Share of Total	AAGR*	Number	Share of Total	AAGR*
Real GDP (M$)	$2,655.4	100.0%	0.3%	$103,262.4	100.0%	0.4%
Newfoundland and Labrador	$632.4	23.8%	1.3%	$31,585.2	30.6%	-0.3%
Prince Edward Island	$82.0	3.1%	5.0%	$5,540.0	5.4%	1.5%
Nova Scotia	$756.4	28.5%	-1.8%	$35,955.4	34.8%	0.8%
New Brunswick	$1,184.6	44.6%	1.0%	$30,181.8	29.2%	0.4%
Employment (000s)	10.1	100.0%	0.2%	1111.0	100.0%	0.1%
Male	8.1	80.2%	0.5%	562.8	50.7%	0.1%
Female	2.0	19.8%	-0.9%	548.2	49.3%	0.1%
15-24 years old	0.9	8.9%	n/a	143.3	12.9%	-1.4%
25-54 years old	7.2	71.3%	-1.2%	709.4	63.9%	-0.7%
55 years and older	2.0	19.8%	3.6%	258.3	23.2%	3.7%
Worked full-time	10.0	99.0%	0.4%	930.8	83.8%	0.1%
Worked part-time	n/a	n/a	n/a	180.2	16.2%	-0.2%
Self-employed	n/a	n/a	n/a	131.1	11.8%	-0.2%
Employees	10.1	100.0%	0.2%	979.9	88.2%	0.1%
Permanent job	8.8	87.1%	0.2%	804.9	72.4%	0.3%
Temporary job	1.3	12.9%	0.0%	175.0	15.8%	-0.5%
Less than high school	n/a	n/a	n/a	106.6	9.6%	-4.4%
High school graduate	1.1	10.9%	-5.3%	278.9	25.1%	-1.0%
Postsecondary cert. or diploma	5.5	54.5%	0.0%	435.8	39.2%	0.6%
University degree	3.2	31.7%	3.4%	289.6	26.1%	2.9%
Newfoundland and Labrador	3.1	30.7%	7.5%	225.3	20.3%	0.2%
Prince Edward Island	0.2	2.0%	-4.0%	76.0	6.8%	1.0%
Nova Scotia	3.7	36.6%	1.8%	455.9	41.0%	0.1%
New Brunswick	3.1	30.7%	-4.7%	353.8	31.8%	-0.2%

Source: Statistics Canada, Labour Force Survey - Custom Table; Table 36-10-0402-01

*Average annual growth rate for last ten years of available data (GDP 2008-17 and Employment 2009-18)

Note: *In preparing this document, the authors have taken care to provide clients with labour market information that is timely and accurate at the time of publication. Since labour market conditions are dynamic, some of the information presented here may have changed since this document was published. Users are encouraged to also refer to other sources for additional information on the local economy and labour market. Information contained in this document does not necessarily reflect official policies of Employment and Social Development Canada.*

Prepared by*: Labour Market Analysis Directorate, Service Canada, Atlantic Region*

For further information*, please contact us at: NC-LMI-IMT-GD@hrsdc-rhdcc.gc.ca*

[1] Statistics Canada. Table 36-10-0402-01.
[2] Statistics Canada. Table 36-10-0402-01.
[3] Statistics Canada. Table 36-10-0478-01.
[4] Statistics Canada. Table 25-10-0020-01.
[5] Statistics Canada. Table 14-10-0023-01.
[6] ibid.
[7] Statistics Canada. Table 36-10-0402-01.
[8] Statistics Canada. Table 17-10-0005-01.
[9] National Energy Board. https://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/snpsht/2018/11-01cndscnmctpt-eng.html
[10] Statistics Canada. Table 25-10-0020-01.
[11] Ibid.
[12] National Energy Board. https://www.neb-one.gc.ca/nrg/ntgrtd/ftr/2018/index-eng.html
[13] Statistics Canada. Table 14-10-0023-01.
[14] Global News. https://globalnews.ca/news/4845071/nb-power-energy-conservation-rate/
[15] Statistics Canada. Table 36-10-0402-01.
[16] Statistics Canada. Table 14-10-0023-01.
[17] Statistics Canada. Table 25-10-0021-01.
[18] Statistics Canada. Table 25-10-0020-01.
[19] Statistics Canada. Table 36-10-0402-01.
[20] ibid.
[21] Statistics Canada. Table 25-10-0020-01
[22] Statistics Canada. Table 14-10-0023-01
[23] BLS. https://www.bls.gov/green/wind_energy/
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[27] Statistics Canada. Table 25-10-0020-01
[28] http://fundyforce.ca/
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[30] Statistics Canada. Table 36-10-0402-01.
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[32] Statistics Canada. Table 14-10-0023-01
[33] Statistics Canada. Table 25-10-0020-01