Deloitte.

SJE Growth Agenda and Pricing Analysis Support

Phase 2 | Growth Agenda Review

CONFIDENTIAL

April 2020

Contents

Executive Summary

Executive Summary | Project Background and Objectives

The City of Saint John engaged Deloitte to perform an independent review of Saint John Energy's growth agenda that identifies a series of energy-related products, services, and innovation which could generate increasing value for the utility.

Project Background

The City of Saint John (the "City") engaged Deloitte LLP ("Deloitte" or "We") to conduct an independent review of Saint John Energy's ("SJE") growth agenda. Work was contracted under the engagement letter – **SJE Growth Agenda Review and Pricing Analysis Support** executed on November 18, 2019.

The scope of services to be provided under this engagement were grouped in the following three phases:

1. **Pricing Analysis**: Preparation of a pricing analysis of the current state forecast of SJE based on a market view.
2. **Growth Agenda Assessment**: An assessment of SJE's growth agenda and related plans.
3. **Updated Pricing Analysis**: Perform an update of the pricing analysis (completed in phase 1) to include the projected cash flows associated with SJE's growth plans.

The **purpose of this report** is to provide the City with the outputs related specifically to ***Phase two*** – *Growth Agenda Assessment*, including:

- Summary of SJE's growth agenda and related plans.
- Summary of SJE's growth agenda alignment to overall industry trends, opportunities, and initiatives conducted by other Canadian municipal utilities.
- Summary of the commentary provided by various economic development agencies and industry associations.
- Supporting appendices which consist of additional analysis and/or information to be retained by the City.

Phase 2 Overview

We have performed an assessment of SJE's growth agenda and related plans. The below list summarizes our approach and key activities which were undertaken to complete the assessment.

Key Activities

- Conduct a kick-off meeting with select stakeholders within SJE.
- Obtain and review SJE's growth agenda plans.
- Assess growth agenda assumptions, timing, and risks against a selected benchmark of industry peers.
- Conduct working session with select stakeholders within SJE to:
  - Review our understanding and share benchmarking results.
  - Discuss key elements of the growth plan from a quantitative perspective including: amount, timing risk, challenges, and opportunities.
- Coordinate with various economic development agencies and industry associations to obtain commentary in respect to the potential direct and indirect economic impacts associated with SJE's Growth Agenda.
- Summarize analysis and working session outputs into a report format.
- Review assessment with members of the City and SJE.

Executive Summary | Company Overview

SJE has been operating since 1922, serving more than 36K residential and commercial customers spanning over 316 square kilometers with an above industry average customer satisfaction ratings.

About Saint John Energy Today

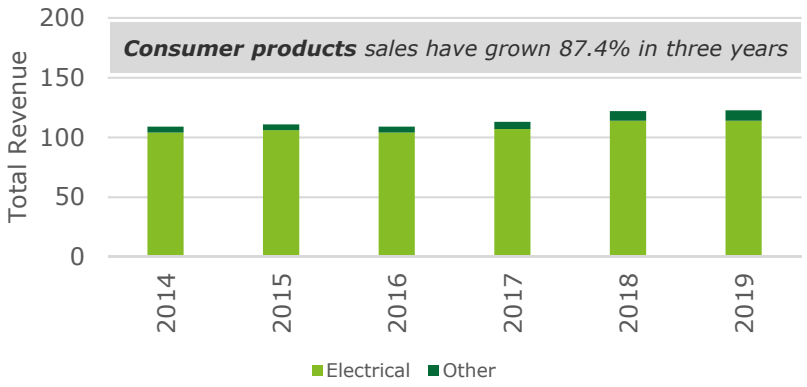
Saint John Energy is a municipal electrical distribution utility serving light industrial, commercial and residential customers within the city limits of Saint John, New Brunswick. Currently, SJE is 100% owned by the City of Saint John.

The below indicators provide a quantitative and qualitative snapshot of SJE's customer performance.

- **Over 36K** customers, residential and light industrial
- **Strong Customer Support** – National utilities surveys show SJE outperforming the national average in terms of customers willingness to recommend the utilities services.
- **Highly Reliable** – Significantly low outage frequency and duration compared to national average

As of 2019, revenues consisted of **$113.7M** of electrical sales and **$8.8M** of other revenues ($6M in products and rentals).

Historical Operating Performance ($ Millions)



Source: Saint John Energy Annual Reports (2015 – 2018)

About Saint John Energy's Plans for Tomorrow

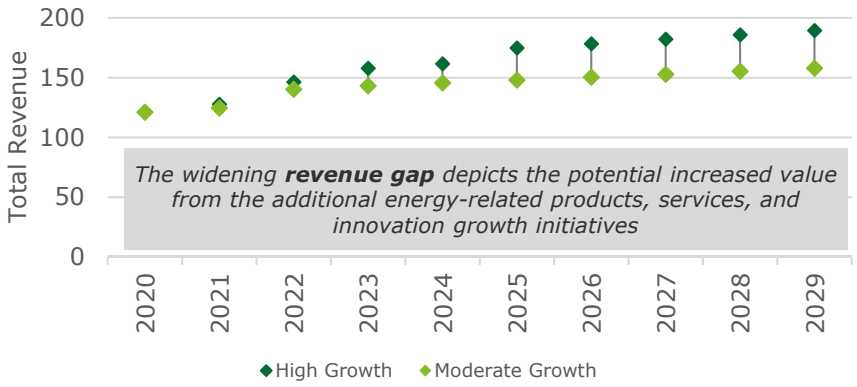
The speed of innovation and disruption within the Power and Utilities ("P&U") industry is increasing at an accelerated pace. SJE management recognize these trends and has bold aspirations for the future.

The overall objective of SJE's growth agenda is as follows:

- Continue to provide the benefits of low rates and service quality to customers.
- Strengthen the City of Saint John and surrounding regions through job creation and flow of surplus funds.
- Advance and further establish the regional energy sector through various innovation efforts and partnerships.

Due to various regulator/legislative constraints, SJE has developed two growth scenarios (*high and moderate growth*) as depicted in the graph below.

Forecasted Operating Performance ($ Millions)



Source: Saint John Energy Growth Strategy (2020 – 2029)

Executive Summary | Growth Agenda Overview

Saint John Energy's growth agenda is categorized into three pillars of growth across renewable generation and storage, smart energy services for consumers, and strategic partnership opportunities.

Planned Growth Initiatives

Over the next 10 years, SJE has a list of growth initiatives that are broadly categorized into the following three categories:

A. Renewable generation and storage
B. Smart energy services for consumers
C. Strategic partnership opportunities

SJE has identified various growth initiatives in which they have or are planning to undertake. The table below categorizes these initiatives across three growth pillars.

Growth Pillar	Summary of Initiatives
Renewable Generation and Storage	1. Wind farm development to bring new green energy (e.g. Burchill Wind Project). 2. Utility-scale energy storage to reduce peak energy costs (e.g. Tesla batteries). 3. Solar energy options for consumers (e.g. Community Solar Farm).
Smart Energy Services for Consumers	4. Developing a Smart Grid for the City of Saint John (e.g. Advancing the use of technology and innovation used on the grid and in customer's homes/buildings in attempt to smooth peak usage). 5. Advancing and offering smart/connected energy consumer products (e.g. Hot water heaters, heat pumps, advanced batteries and electric vehicle chargers). 6. Delivering new products and services beyond the City of Saint John (e.g. Managed solar, electric vehicle charging, and energy storage).
Strategic Partnership Opportunities	7. Research institutes, firms, and technology (e.g. UNB, Tesla, CaSa, etc.). 8. Launch SJE Centre for Innovation. 9. Expanding utility services (e.g. Field operations, engineering, asset management, control room operations and managed utility technology).

Executive Summary | Economic Impact Considerations

In reviewing the potential economic development opportunities related to Saint John Energy's growth agenda and related plans we reviewed the recent economic impact assessment report on their historical and future operations as well as held discussion with various stakeholders to obtain their perspective.

Approach Overview

As part of the growth agenda review we have collaborated with SJE and the City of Saint John to consider the potential economic development opportunities related to SJE's growth agenda. To develop an understanding of the potential opportunities related to SJE's growth agenda and related plans we:

- Reviewed and extrapolated the key insights from the economic impact assessment conducted by Jupia Consultants Inc. ("Jupia") in January 2020.
- Held information gathering sessions with various economic development agencies, government departments, and industry associations to obtain feedback/insights. Please refer to **page 30** and **31** for a summary of the feedback/insights obtained.

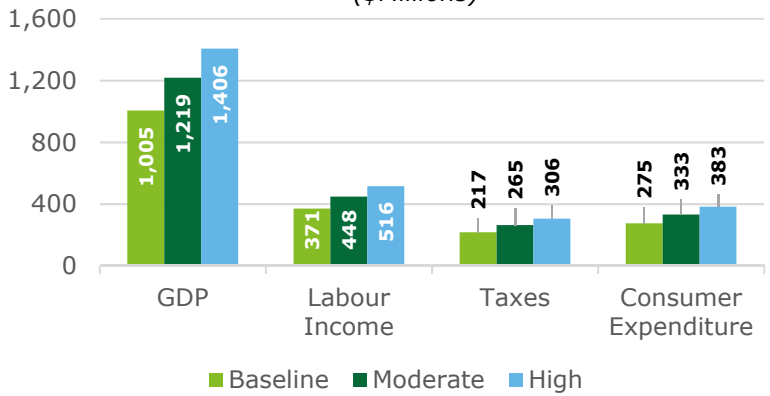
Forecasted Economic Impact Summary

SJE engaged Jupia to perform an economic impact assessment of their historical and future operations. The 10-year cumulative contribution to the provincial Gross Domestic Product ("GDP") for each scenarios was:

- **$457M** for the **historical** period 2015A-2018A
- **$1,005M** for the **baseline growth** scenario 2015A-2024F
- **$1,218M** for the **moderate growth** scenario 2020F-2029F
- **$1,406M** for the **high growth** scenario 2020F-2029F

The estimated economic impact scenarios illustrate the increased economic impact associated to SJE undertaking additional growth initiatives. The table below outlines the increase in economic impact across other growth scenarios.

Forecasted Outputs | 10-Year Total by Scenario
($Millions)



Source: Saint John Energy Economic Impact Assessment – Jupia Consultants Inc.

Forecasted Outputs Variance | By Scenario
($Millions)

Output Variance	Baseline to Moderate	Moderate to High	Baseline to High
GDP	213.2	187.8	400.9
Labour Income	77.4	67.4	144.8
Taxes	47.3	41.0	88.3
Consumer Expenditure	57.7	50.0	107.7

Executive Summary | Industry Observations

Government and utility companies have been responding to the changing Power and Utilities industry by making significant investments within the industry. Municipal utility companies have also expressed a strong interest to participate in the new energy economy.

Power and Utilities Overview

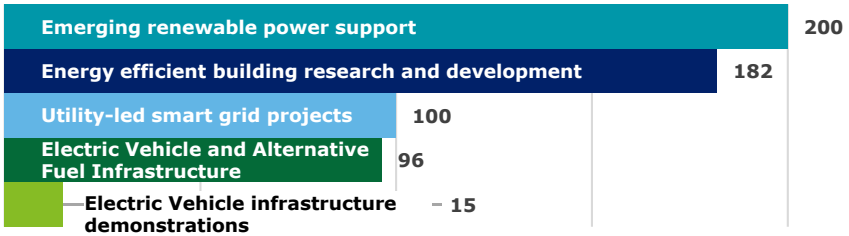
Based our research on the Power and Utilities ("P&U") industry we have observed the following key trends:

- Sustainability – Increased demand for clean energy sources.
- Portfolio Optimization – Industry-wide development of distributed energy resources ("DER") strategies.
- Business Model Transformation – External market factors are pushing companies to consider new business models.
- Core Growth – Leveraging core capabilities to further advance smart city initiatives.
- Strategic Planning – P&U companies are planning for consumer adoption of disruptive technologies.

Investment in Energy Innovation

The Canadian government has been pursuing grid modernization and decentralization. To demonstrate their commitment, the government has been actively supporting investment in clean technologies. The department of Natural Resources of Canada ("NRCAN") Green Infrastructure Phase 2 program illustrates some of the federal funding made available to accelerate next-generation clean infrastructure.

Green Infrastructure Phase 2 | Total Funding by Project ($M)



Source: https://www.nrcan.gc.ca/green-infrastructure-programs/19780

Canadian Energy Sector

Canada's energy mix is primarily produced from hydro, nuclear, and coal generating facilities. Increased grid modernization has resulted in utility companies assessing and deploying various smart grid technologies/initiatives, such as:

Advanced metering infrastructure ("AMI")	New rate options	Demand response
Distributed energy sources	Micro-grid	Self-healing grid

Municipal Utility Landscape

In 2016, the Electric Distributors Association ("EDA") conducted a survey of its local distribution company ("LDC") members. The objective of the survey was to gather opinions on the trends, drivers, challenges, and opportunities currently faced by the LDC's.

Overall, the survey results revealed that municipal utilities are aware of the increasing importance of evolving their business to meet consumers future needs. The table provides a brief summary of the key opportunities and challenges.

Key Opportunities	Key Challenges
• Small scale energy production/distribution • Expansion of services • Improved/advanced technology	• Regulatory/compliance • Meeting customer services/expectations • Government policies/political pressure

Executive Summary | Summary of Review

In reviewing Saint John Energy's growth agenda and related plans we have performed research on other Canadian municipal utilities, Power and Utilities industry, and Canadian energy sector. Overall, SJE's growth agenda and related plans are aligned to industry trends and investments across Canada.

Planned Growth Initiatives

Based on the research and analysis conducted we have made the following key observations. For additional details, please refer to the **Industry Benchmarking** section as well as **Appendix A** and **B**.

A. Power and Utility Industry

- Consistent and aligns with overall industry trends and opportunities.

B. Canadian Energy Sector

- Overall alignment to federal government agenda and key issues/opportunities identified by municipal utilities.

C. Municipal Utility Trends

- Consistent and aligns with industry peers past, present, and planned growth initiatives.

Growth Pillar and Initiatives	Power and Utility Industry	Canadian Energy Sector	Municipal Utility Trends
1. Renewable Generation and Storage			
Wind energy projects	High	High	Moderate
Utility-scale storage	High	High	High
Community solar	High	High	Moderate
2. Smart Energy Services for Consumers			
Smart grid investments	High	High	High
Smart consumer products	High	Moderate	High
Managed solar, Electric Vehicle charging and storage	High	Moderate	Moderate
3. Strategic Partnership Opportunities			
Partner with industry and academia	High	High	High
Centre for innovation	High	High	High
Expanded utility services	Moderate	Moderate	High

Legend
The adjacent rankings are provided for each of the areas of review.

- **High Alignment**: Strong similarities in activities when compared to SJE's growth agenda and related plans.
- **Moderate Alignment**: Some similarities in activities when compared to SJE's growth agenda and related plans.

Executive Summary | Concluding Remarks

A summary of our assessment of Saint John Energy's growth agenda and related plans is provided below. Additionally, through discussions with NBP and SJE a facilitated process was recommended in defining the Utility of the Future for New Brunswick and identifying collaboration opportunities to execute.

Overall Insights and Observations

The below items summarize our review of SJE's growth agenda, industry research, and discussion with various stakeholders.

- SJE's pillars of growth span across renewable generation, smart energy services, and strategic partnerships. A total of **9 strategic initiatives**, at various development stages, were identified and reviewed across the three pillars of growth.
- The forecasted economic impact assessment conducted by Jupia indicates the positive contribution of SJE's operations. The 10-year cumulative GDP ranging from **$1.0M** to **$1.4M** based on the various level of completion of SJE's growth agenda.
- Discussions with various stakeholders illustrated the support for SJE in pursuing these initiatives. In addition, stakeholders highlighted the following key barriers / challenges to operationalization:
  - Legislative constraints, political landscape, resourcing effort, consumer behavior and adoption, as well as technological and financial feasibility.
- In 2017-2018, the National Resources of Canada ("NRCAN") department reported over **$799M** was spent on energy research, development, and deployment.
- As of February 24, 2020, NRCAN reported funding **32** total **smart grid and energy storage projects** are either active or completed across Canada. These projects represent a total project investment of $314.9M
- Overall, the vast majority of the benchmarked companies are exploring and/or executing on smart energy services and forming strategic partnerships. Whereas, deployment of renewable generation and storage projects are still nascent / developing across the benchmarked companies.

Proposed Strategic Initiative

Based on our review of SJE's growth agenda, industry research, and discussion with various stakeholders we identified continued collaboration will be the key to success for SJE. In addition to the demonstrated next steps in SJE's growth agenda and related plans, we would propose that SJE and NBP undergo a facilitated process to define what the Utility of the future could be in New Brunswick ("NB") and identifying collaboration opportunities for each of the utilities to participate / execute on.

The diagram below provides a high level overview of this proposed process. Further details on the key activities, governance structure, and recommended parties involved are provided on page 11.

Objectives:

Define the Utility of the Future for New Brunswick as well as identify collaboration opportunities to execute.

Participants:

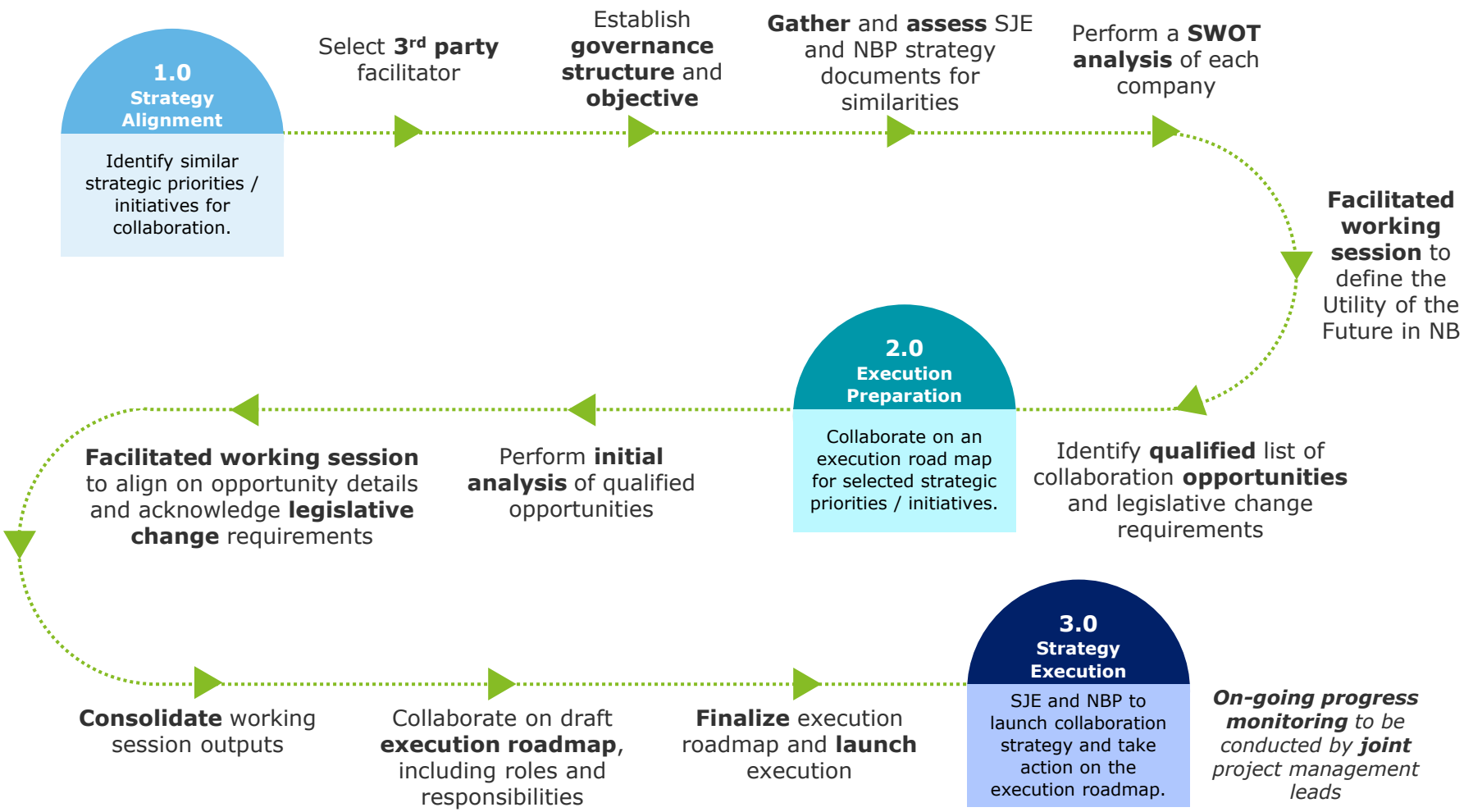
Select members of SJE and NBP management team. Approximately 2-3 representatives from each organization.

Key Outcomes:

1. Defined Utility of the Future in NB
2. List of qualified collaboration opportunities
3. Roadmap to execute on select opportunities

Executive Summary | Proposed Strategic Initiative

Overview of the proposed facilitated process for NBP and SJE to define the Utility of the Future in New Brunswick, identify strategic collaboration opportunities and develop a tactical execution plan to achieve results.



Executive Summary | Proposed Strategic Initiative

Details of the proposed facilitated process for NBP and SJE to define the Utility of the Future in New Brunswick, identify strategic collaboration opportunities and develop a tactical execution plan to achieve results.

Phase 1 – Strategy Alignment

Objective

- Participate in a facilitated process to define the Utility of the Future in NB and identify strategic collaboration opportunities to execute.

Activities

- Select a non-biased third party to conduct and facilitate working sessions / overall process (the "Consultant").
- Establish the governance structure for the process, including: Steering committee members, status reporting cadence, deliverables, and working session participants.
- Gather and review strategy documents of SJE and NBP.
- Identify strategic priorities and operational and/or growth plans and assess for similarities.
- Perform a SWOT analysis of each company.
- Facilitated working session with select members of SJE and NBP to define the Utility of the Future in NB as well as review strategic and initiative similarities to identify 'win-win-win' (NBP-SJE-Province) opportunities for collaboration as well as synergy opportunities.
- Consolidate working session outputs to identify qualified opportunities for further analysis.

Deliverables

- New Brunswick's Utility of the Future defined
- List of qualified collaboration opportunities to be further developed for execution.

Phase 2 – Execution Preparation

Objective

- Participate in a facilitated process to collaboratively develop an execution road map for the selected strategic priorities / initiatives.

Activities

- For each of the qualified opportunities, perform an initial level of analysis to identify estimated value potential, key activities and desired outcomes.
- *Facilitated working session with select members of SJE and NBP to review and update qualified opportunity details and align on:*
  - *Estimated value potential*
  - *Key activities / actions*
  - *Desired outcomes*
  - *Timing and interdependencies*
  - *Opportunity prioritization*
- *Consolidate working session outputs to develop an execution roadmap outlining*
- *Review and finalize execution roadmap with members of SJE, NBP, and the province.*

Deliverables

- Execution roadmap, including:
  - *Key activities / actions*
  - *Timing*
  - *Deliverables*

SJE Growth Agenda Overview

Growth Agenda Overview | SJE Growth Path

Since 2012, Saint John Energy has been strategically repositioning themselves in response to the changing utility industry. During this time, management has successfully executed on several initiatives including growth in consumer products, smart grid projects, and renewable energy generation projects.

Realized Growth Initiative Overview

Despite the current regulatory constraints, SJE has pursued various initiatives to expand from a traditional energy distributor. Select examples include the following:

- **Heat pump program** – In 2016, SJE introduced a heat pump rental program to customers to expand their consumer product offerings. The on-going success of this program illustrates SJE as a viable provider of consumer products.
- **Burchill Wind Farm** – Since 2017, SJE has been embarking on a large scale project to bring wind energy to Saint John. Natural forces were selected to develop, own and operate the wind farm, in which SJE will purchase the energy generated.
- **Photovoltaics ("PV") Pilot** – Since 2018, SJE has been conducting a solar demonstration project to collect data and assess the business case of offering as a viable option to consumers.
- **Smart Grid Projects** – SJE is conducting a pilot project worth over $13M on various smart grid advanced response projects. SJE management were awarded funding from NRCAN in support of their various smart grid projects.

SJE has gained industry recognition through several accolades:

- **ENERGYSTAR® "Most Efficient" Promoter of the Year** Awarded to SJE for their mini split ductless heat pump rental program.
- **Sustainable Electricity Company**

  Designated to SJE based on successful completion of the sustainability requirements as well as continuing to deliver electricity in a sustainable and socially responsible manner.

SJE's Record of Success

Over the years SJE management team have identified and successfully executed on several initiatives to maximize the value provided to their customers and stakeholders. The table below highlights specific examples.

Consumer Products
- SJE has operated a hot water tank program for over 20 years. To date, 60% of electricity customers also rent a hot water tank.
- The heat pump program has over 5,220 units with 10% of current SJE electricity customers renting.
- Approximately 32% of heat pumps are outside the city.
- This revenue stream has grown by 87.4% in the past three years and is worth $6.0M of revenue in 2019.

Renewable Energy Generation and Storage
- Since 2017, SJE has been actively exploring the use of renewable energy generation.
- SJE is in the process of installing a 1.25MW large-scale Tesla battery to an artificial intelligence control program to reduce peak demand. This will be the largest utility-scale battery in Atlantic Canada.

Customer Satisfaction
- Internal customer survey indicated strong customer satisfaction. In addition, a national survey also shows SJE outperforming the national average.
- Approximately 86% of customers are in favor of SJE pursuing renewable generation.

Growth Agenda Overview | SJE Current State Landscape

Saint John Energy is owned by the City of Saint John and is currently the primary energy distributor within the city's geographic jurisdiction.

About Saint John Energy

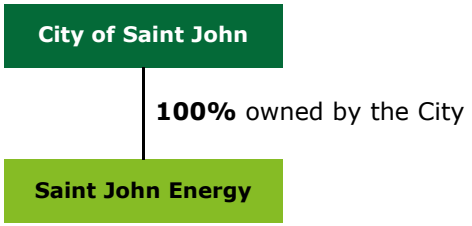
Saint John Energy is a municipal electrical distribution utility serving light industrial, commercial, and residential customers within the city limits of Saint John, New Brunswick. SJE is currently 100% owned by the City and is currently limited to undertaken certain operating activities due to regulatory and legislative challenges.

Since 2012, SJE's management have strategically repositioned the company beyond their traditional services. SJE's growth agenda is focused on innovation and executing on key initiatives across the following growth pillars:

1. Renewable energy generation and storage
2. Smart energy services for consumers
3. Strategic partnership opportunities

Operating Metrics (2018)	
Number of Customers	36.5K
Annual Gigawatt hours	950
Total Revenue	$121.7M
Net Income	$5.4M
Net Promoter Score: Customer's willingness to recommend Utilities products and services. *(Poor –100) (Good +100)*	
Saint John Energy	***+25***
Canadian Average	*-25*

Organizational Structure



Vision – 'To empower people and communities so they thrive.'

Mission – 'We provide affordable, reliable and innovative solutions to our customers, helping them make informed choices so they can take control of their energy needs.'

Offerings Overview

The current products and services offered by SJE include the following:

- **Electrical Sales**: Energy provider for residential and commercial customers
- **Consumer Products**: Water heater rental program and heat pump rental program
- **Lighting Services**: Area lighting
- **Other Miscellaneous**: Line cover-up and energy upgrade loans for energy efficient upgrades and heating systems

Source: Saint John Energy Annual Reports (2015 – 2018)

Growth Agenda Overview | Planned Growth Initiatives

Saint John Energy's growth agenda and related plans outlines initiatives management is undertaking or planning to undertake. These initiatives are broadly categorized within three growth pillars.

Overview

In response to the changing utility industry, SJE has identified various growth initiatives in which they have or are planning to undertake. These initiatives are categorized by growth pillars listed in the table below.

The overall objective of SJE's growth agenda is as follows:

- Continue to provide the benefits of low rates and service quality to customers.
- Strengthen the City of Saint John and surrounding regions through job creation and flow of surplus funds.
- Advances and further establishes the regional energy sector through various innovation efforts and partnerships.

Growth Pillars	Summary of Initiatives
1. Renewable Generation and Storage	1. Wind farm developments to bring new green energy *(e.g. Burchill Wind Project)* 2. Utility-scale energy storage to reduce peak energy costs *(e.g. Tesla batteries)* 3. Solar energy options for consumers *(e.g. Community Solar Farm)*
2. Smart Services for Consumers	4. Developing a Smart Grid for the City of Saint John *(e.g. Advancing the use of technology and innovation used on the grid and in customers homes/building)* 5. Advancing and offering smart/connected energy consumer products *(e.g. Hot water heaters, heat pumps, advanced batteries and electric vehicle chargers)* 6. Delivering new products and services beyond the City of Saint John
3. Strategic Partnership Opportunities	7. Partnering with research institutes, firms, and technology *(e.g. UNB, Tesla, CaSa, etc.)* 8. Launch SJE Centre for Innovation 9. Expanding utility services *(e.g. Field operations, engineering, asset management, control room operations, and managed utility technology)*

Growth Agenda Overview | Renewable Generation and Storage

A total of three growth initiatives are outlined and demonstrates Saint John Energy's pursuit to provide consumers with renewable energy while reducing peak energy demand.

1. Local Embedded Wind Farm	2. Utility-Scale Energy Storage	3. Community Solar
Context: • SJE is in the planning stages of various wind farm projects. • The first project is through a partnership with Natural Forces on the development of a $60M wind farm located in the City's Spruce Lake Industrial Park. The wind farm is planned to consist of up to 10 turbines and generate 20 to 40 megawatts. • Given the project stage, SJE has included this project into their financial forecast under both growth scenarios. • Additional wind farm projects are forecasted into SJE's financial forecast under the high growth scenario.	**Context**: • SJE is examining and has partnered with Tesla to install one of the largest utility scale batteries in the Atlantic region. This would allow the ability to capture and store electricity at low demand times and be reinjected when demand increases, reducing the peak-demand prices paid by SJE. • In January 2020, SJE installed the 1.25MW Tesla Megaback Battery as a pilot project. • This project is in the feasibility stages. As a result, SJE management have not included in their financial forecast for either growth scenario.	**Context**: • SJE is in the planning stages of a large scale ground-mounted solar array project. Through this project, customers would have the ability to rent solar panels in the array and have the energy generated credited to their monthly energy bill. • SJE is currently conducting a Photovoltaic (PV) pilot project to assess the feasibility of solar energy generation for the City. The project will only proceed once there is a strong business case. • SJE management has included this project in their high growth financial forecast.
Potential Benefits: • As a result of the wind farm, SJE is forecasting annual savings of $3M to $8M. • The development would absorb a large portion of underutilized/developed land owned by the City.	**Potential Benefits**: • Utility-scale storage would allow SJE to capture and utilize renewable energy more effectively. • Lower peak-demand energy. requirements would reduce NB Power's peak power generation.	**Potential Benefits**: • Customers would have the ability to lower their energy bill while also benefitting the environment. • The development would absorb a large portion of under utilized/developed land owned by the City.
Potential Barriers and Challenges: • Risk that structure is not optimized	**Potential Barriers and Challenges**: • Developing business case for further deployment. (e.g. Technical and financial feasibility)	**Potential Barriers and Challenges**: • Delay in developing strong business case for execution. • Difficulties in attaining strong consumer adoption and/or educating customers on mechanics / economics.

Growth Agenda Overview | Smart Energy Services for Consumers

A total of four growth initiatives are outlined which demonstrates Saint John Energy's pursuit to provide consumers with modern and efficient products and services.

4. Smart Energy Consumer Products	5. Managed Solar	6. Managed Electric Vehicle Charging	7. Managed Energy Storage
Context: • SJE currently offers consumer product programs such as hot water tanks and heat pumps. • SJE is assessing additional smart, energy efficient versions of these products to increase energy efficiency and customer control. • Given the project stage, SJE has included this project in their financial forecast under both growth scenarios.	**Context**: • SJE is assessing the development of a rental program for solar panels to be installed on consumers residential and/or commercial buildings. • The potential rental program is still in the conceptual stages. As a result, SJE management has not included in their financial forecast for either growth scenarios.	**Context**: • SJE is currently assessing electric vehicle charging options to meet the expected shift in demand. • This project is in the early conceptual stages. As a result, SJE management have not included in their financial forecast for either growth scenarios.	**Context**: • SJE is assessing battery storage options for future residential consumers adopting renewable energy generation (e.g. Residential-scale battery system). • The potential rental program is still in the conceptual stages. As a result, SJE management have not included in their financial forecast for either growth scenarios.
Potential Benefits: • Consumers have greater access to the latest energy efficient products at an affordable price. • Increased widespread efficiency would have a positive impact on the grid and peak-demand controlling.	**Potential Benefits**: • Consumers have greater access to renewable energy sources. • Rental program would offer consumers an affordable monthly rate rather than initial capital cost. • Complements SJE's current energy efficiency programs.	**Potential Benefits**: • Rental program would offer consumers an affordable monthly rate rather than an upfront investment. • Complements SJE's current energy efficiency programs. • Reduce and shift demand.	**Potential Benefits**: • Rental program would offer consumers affordable monthly rate rather than an upfront investment. • Complements SJE's current energy efficiency programs. • Energy stored may offset the peak demand loads.
Potential Barriers and Challenges: • Difficulties in attaining strong consumer adoption and/or ability to change consumer behavior.	**Potential Barriers and Challenges**: • Difficulties in attaining strong consumer adoption and/or ability to change consumer behaviour. • Delay in developing strong business case for execution. (Technical and financial feasibility) • Resourcing constraints due to competing priorities or lack of adequate resources to successfully develop and/or execute on growth initiatives.		

Growth Agenda Overview | Strategic Partnerships

A total of three growth initiatives are outlined which demonstrates Saint John Energy's pursuit to establish strategic partnerships with organizations to further innovate and grow.

8. Research Centres, Firms and Tech.	**9. SJE Centre for Innovation**	**10. Expand Utility Services**
Context: • SJE is planning to continue establishing strategic partnerships with various organizations and institutes to further innovate and develop growth opportunities around future solutions to energy needs and challenges. • In addition, collaboration with others will assist SJE in advancing their smart grid initiatives. • Due to unknown financial variables SJE management has not included in their financial forecast for either growth scenarios.	**Context**: • SJE is in the planning stages of their Centre for Innovation, which will foster the development of solutions and technology. • The objective of the Centre will be to increase the efficiency and effectiveness of utility companies by forging joint ventures with industry leaders. • This project is in the early planning/feasibility stages. As a result, SJE management has not included in their financial forecast for either growth scenarios.	**Context**: • SJE is assessing the potential to expand services offered in field operations, engineering, asset management, control room operations, and managed utility technology services. • This initiative is still in the early planning stages. However, given some of the known project assumptions SJE management has included some of these services their high growth financial forecast.
Potential Benefits: • Consumers will benefit from an array of smart devices and products. • Energy solutions which reduce and shift demand will have a positive impact on the grid and NB Power. • Grow local renewable expertise and smart grid eco-system. • Opportunities to partner with existing smart grid initiatives and provide innovation platform.	**Potential Benefits**: • New entrepreneurial ventures would be forged through SJE's accelerator for innovation. • Potential job creation by attracting companies to the region. • Advance the regional energy sector and the companies operating within it. • Grow local renewable expertise and smart grid eco-system. • Potential for revenue diversification through royalties.	**Potential Benefits**: • Consumers will benefit from additional service offerings. • Potential job creation opportunities from new utility services. • Potential synergy realizations by collaborating with partners in the Province on shared services.
Potential Barriers and Challenges: • Resourcing constraints due to competing priorities or lack of adequate resources to successfully develop and/or execute.		**Potential Barriers and Challenges**: • Resourcing constraints due to competing priorities or lack of adequate resources to successfully develop and/or execute on growth initiatives. • Delay in developing strong business case for execution.

Growth Agenda Overview | Considerations for Success

Select barriers and challenges to operationalization were identified based on our discussions with various stakeholders throughout the engagement.

Potential Barriers & Challenges

The table below provides a summary of the top barriers and challenges which will need to be mitigated/overcome before SJE can fully realize their vision for growth. However, there is an opportunity to expand collaboration with other stakeholders to mitigate these barriers and challenges which will assist SJE to realize their growth agenda and related plans.

Potential Barriers & Challenges	Description
Regulatory / Legislative	Due to the constraints and uncertainty in regards to the regulatory and legislative environment, SJE is currently limited in performing/pursuing certain activity (e.g. geographical limitations, electricity generation, dividend potential, etc.).
Political Landscape	SJE has spent significant time and resources in order to move forward on existing growth initiatives. Collaborating with key stakeholders will assist SJE in pursing their growth agenda and realize the potential economic value generated for the province/region.
Resourcing Effort	SJE has a significant amount of projects identified and are actively pursuing. Therefore, SJE management will need to manage resources accordingly to ensure successful execution.
Consumer Behavior and Adoption	Potential difficulties in attaining strong consumer adoption and changing usage patterns may negatively impact SJE's ability to fully realize the forecasted benefits of various growth initiatives.
Technological and Financial Feasibility	Considering certain growth initiatives are still in the conceptual/feasibility stages of development, SJE management will need to prove the technological and financial feasibility before SJE can fully realize the potential benefits. For conservatism, financial results related to those growth initiatives are not included.

Industry Benchmarking

Industry Benchmarking | Overview

In our review of SJE's growth agenda and related plans we performed a benchmarking exercise on the Power and Utilities industry, Canadian energy sector, and other municipal utilities operating across Canada.

Benchmarking Overview

A benchmarking exercise was conducted in order to assess the reasonability of SJE's growth agenda. The scope of the benchmarking exercise included performing research and analysis in the following areas:

1. **Power and utility** industry to understand:
   - Overall trends, challenges, and opportunities
2. **Canadian energy sector** industry to understand:
   - Key trends, challenges, and opportunities
   - Current market structures
   - Major innovation and investment areas
   - Key trends facing municipal utilities
3. **Comparable municipal utility analysis** to investigate:
   - Corporate structures
   - Sources of revenues
   - Similar products and/or services offered
   - Alignment to SJE's growth agenda and related plans

The following section provides the key highlights of the industry benchmarking exercise. Please refer to **Appendices A** and **B** for the supporting details regarding the comparable municipal utility company analysis and Canadian energy sector investments.

Comparable Municipal Utility Company Analysis

For the purposes of the benchmarking exercise, we have used the following municipal utilities.

EPCOR, OEC (Oakville Enterprises Corporation), ENMAX, ENWIN, Toronto Hydro, London Hydro, HydroOttawa, alectra utilities

The above municipal utilities were selected based on the below key variables / characteristics:

- **Business Mandate**: Municipal utility responsible for providing utility services to their respective municipalities.
- **Restructured corporate structure**: Holding company structure which is owned by their respective municipalities.
- **Size and diversity**: Varying degree of size of operations as well as service offerings.
- **Innovation**: Varying degree of adoption of innovation within their organizations.

Industry Benchmarking | Power and Utilities Industry

The P&U industry has been undergoing significant change as the traditional centralized electricity systems are becoming increasingly decentralized due to technological innovations. As a result, P&U companies are identifying and executing on opportunities to better position themselves in the changing environment.

Industry Overview

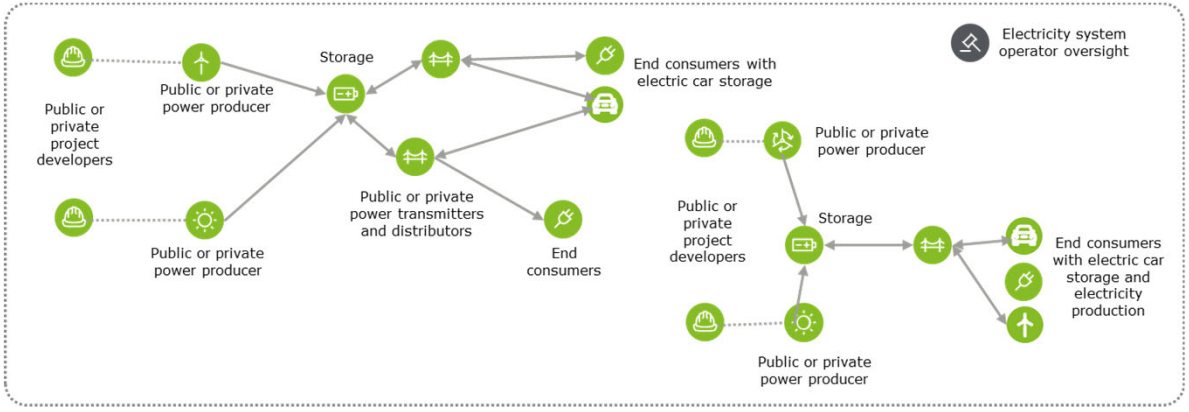
In recent years, power and utilities companies have been seeking growth by leading the clean energy transition. Most power companies see expanding opportunities to address growing customer interest in clean energy and find new ways to manage and control their energy use and costs. The following key trends and opportunities were identified in Deloitte's 2020 Power and Utilities industry outlook:

1. **Sustainability**: Power and utility companies are expected to continue raising the bar on climate change goals; largely due to technological improvements, demand clean energy sources, and commitment to keep customers bills low.
2. **Portfolio Optimization**: New opportunities to create value through distributed energy resources ("DER") strategies (e.g. own/operate, sell/rent, install/maintain).
3. **Business Model Transformation**: New technologies, evolving customer preferences, and the changing competitive landscape are leading many power companies to explore new business models (e.g. transactive energy models).
4. **Core Growth**: Utilities in many cities have already installed smart grid infrastructure. The logical next step is to use their expertise, experience, and technology investments to advance their community's smart city initiatives.
5. **Strategic Planning**: The industry sees significant potential in the transportation sector. Power and utility companies are expected to continue to invest in charging infrastructure and to accelerate plans to manage electric vehicle load.

Decentralized Electricity Systems

Traditional centralized electricity systems often mean a one-way provision of electricity from power producers to industrial and end consumers. Key areas of change include:

- New **types** and **sources** of electricity and the **decentralization** of the electricity grid.
- Improving **energy storage** capabilities.
- Focus on **demand-side** management and **load shifting**.



Industry Benchmarking | Canadian Energy Sector

Despite the differences across jurisdictions Canada's energy sector as a whole is undergoing a modernization process which has stimulated utility companies, including municipal utilities, to participate in the evolution through the development and adoption of clean/energy efficient technologies.

Overview

Data acquired through a recent report by MaRS Discovery District on behalf of NRCAN provided key insights in regards to the Canadian electricity market. Key observations include:

- National energy mix predominantly generated in the form of hydro, nuclear, and coal. However, the Canadian government has been actively pursuing grid modernization and decentralization.
- Across Canada there are two primary market structures within each province.
  1. Vertically integrated: Operated by publicly owned monopolies which own the electricity market in the province (e.g. NB Power).
  2. Restructured: Independent system operators ("ISO") manage the transmission system and set wholesale market prices. These systems are managed by utilities or local distribution companies ("LDC's").
- The industry is undergoing a modernization process as utility companies have looked to integrate smart grid technologies such as:
  - Advanced metering infrastructure
  - New rate options
  - Demand response
  - Distributed energy source
  - Self-healing grid
  - Micro grid

Source: Energy Market Information Report: Canada, MaRS Advanced Energy Centre

Key Issues Facing Municipal Utilities

In 2016, the Electricity Distributors Association ("EDA") conducted a survey of its LDC members in Ontario. The table below summarizes the feedback on the key issues/challenges.

Industry Trends Respondents expressed a strong desire by LDC's to expand their businesses such as: • Shared service models • Joint ventures • New lines of business within existing organization
Scope of Services Respondents expressed a strong interest in ownership of new and emerging technologies such as: • Renewable generation and storage • Smart grid initiatives and electric vehicle infrastructure • Micro grid initiatives
Key Challenges Respondents indicated the top challenges currently faced include: • Regulatory/compliance • Meeting customer services/expectations • Government policies/political pressure
Key Opportunities Respondents expressed the top growth areas to be: • Increased focus on small scale energy production/distribution (Community power initiatives, Micro grids, etc.) • Increase range of services • Improved/advanced technology

Industry Benchmarking | Investment in Energy Innovation

The Government of Canada has committed to investing in clean technologies and increasing energy efficiency. Across Canada, over 190 energy innovation projects have received government funding support.

Overview

In 2017-2018, National Resources Canada ("NRCAN") reported over $799M was spent on energy research, development, and deployment by various governments.

As of part of Canada's investment in energy innovation the Federal government has implemented various funding, grant and incentive programs. Current energy-related programs include:

- Energy Innovation Program
- Clean Growth in Natural Resource Sectors Program
- **Green Infrastructure Phase II**
- Program of Energy Research and Development
- Electric Vehicle Infrastructure Demonstrations

In particular, programs offered under the **Green Infrastructure Phase II** include:

- **EV Infrastructure Demonstrations**: Up to $15M for EV charging and hydrogen refueling infrastructure demonstration projects.
- **EV and Alternative Fuel Infrastructure Deployment Initiative**: $96.4M to support establishment of a coast-to-coast charging network.
- **Smart Grids**: Up to $100M to support utility-led projects
- **Energy Efficient Buildings R&D**: $182M to support increasing energy efficiency.
- **Emerging Renewable Power**: Up to $200M to support and expand commercially viable renewable energy sources.

Investment in Energy Innovation

As of December 16, 2019 NCRAN reported a **192** energy innovation projects across Canada. The table below provides a breakdown by province as well as the types of projects. Please refer to **Appendix B** for a list of all projects by province.

Province	Select Energy Innovation *Project Types*
British Columbia	EV infrastructure, business intelligence platform, integrated energy, energy storage, and demand response
Alberta	Tailings management, integrating distribution, and business intelligence platform
Saskatchewan	Wind generation and storage, and low temperature geothermal
Ontario	Tailings management, transactive grid, MicroGrid projects, business intelligence platform, utility scale storage, and wind/solar generation
Quebec	Microgrid projects, EV charging, managed energy storage, wind generation, and integrated technologies
New Brunswick	Integrated resource network, grid innovation, load control technology, and dynamic voltage control
Nova Scotia	Grid innovation, load control, and tidal energy projects
Prince Edward Island	Load control and virtual wind generation

Industry Benchmarking | Municipal Utility Companies

Across the selected municipal utility companies there is an overall alignment and consistency in regards to Saint John Energy's growth agenda and related plans.

Key Research Highlights

Based on our review of the publicly available information related to selected municipal utility companies we have made the following observations as it relates to SJE growth pillars.

1. Renewable Generation and Storage – All benchmarked companies have implemented and/or view renewable generation and storage as a high priority growth item.
2. Smart Energy Products and Services – Although the benchmarked companies are in various stages in their smart grid journey they all offer some level of smart energy products and/or services.
3. Strategic Partnerships – All benchmarked companies view strategic partnerships as enablers for growth and innovation. We have observed varying degrees of willingness to expand in utility services.

Legend
High Alignment: Strong similarities in activities when compared to SJE's growth agenda and related plans.
Moderate Alignment: Some similarities in activities when compared to SJE's growth agenda and related plans.

Growth Pillar and Initiatives	EPCOR	ENMAX	Toronto Hydro	Hydro Ottawa	Oakville Enterprise Corporation	ENWIN	London Hydro	Alectra Utilities
1. Renewable Generation and Storage								
Wind energy projects								
Utility-scale storage								
Community solar								
2. Smart Energy Services for Consumers								
Smart grid investments								
Smart consumer products								
Managed solar, EV charging and storage programs								
3. Strategic Partnership Opportunities								
Partner with industry and academia								
Centre for innovation								
Expanded utility services								

Please refer to **Appendix A** for details in regards to the comparable company information and key findings/observations.

Economic Development ("ED") Considerations

ED Considerations | Overview

We have reviewed the recent economic impact assessment report on their historical and future operations. In addition, we have held discussions with various economic development agencies/industry associations to gain their perspective on Saint John Energy's growth agenda and related plans.

Introduction

As part of the growth agenda review, we were requested to consider the potential economic development opportunities. To develop an understanding of the potential opportunities we performed the following activities:

- We worked with management to identify the key assumptions related to capital expenditures and labour requirements (full-time equivalents).
- We reviewed and extrapolated the key insights from the economic impact assessment conducted by Jupia in January 2020.
- We held information gathering sessions with various economic development agencies, government departments, and industry associations to obtain feedback/insights in regards to SJE's growth agenda.

The organizations below participated in the information gathering sessions.

Departments included:
- *Finance*
- *Energy*
- *Natural Resources and Energy Development*

SJE Board Member

Approach Overview

Collaborating with SJE and the City of Saint John to gather quantitative and qualitative economic development data in relation to SJE's growth agenda.

Overall, our approach included two primary steps as listed below.

1. **Economic Impact**: Reviewed the recent work completed by Jupia for SJE we selected key points in relation to the forecasted (2019 to 2029) economic impact of SJE within the City and the province of New Brunswick under the following growth scenarios:
   a) *Baseline Growth*
   b) *Moderate Growth*
   c) *High Growth*
2. **Feedback Gathering**: Conducted a series of information gathering sessions with the adjacent organizations/departments. Key questions and areas of discussion included:
   a) *Current relationship with SJE*
   b) *Potential workforce and economic benefit*
   c) *Barrier to success/operationalize*
   d) *Collaboration opportunities with other regional companies/organizations*

ED Considerations | Historical Economic Impact

Over the past four years (2015-2018), Saint John Energy's operations are estimated to have contributed $457.0M to the provincial GDP. Furthermore, the Saint John region has 2.8x as many individuals working in the electricity generation, transmission, and distribution industry compared to the Canadian average.

Historical Impact Summary

The estimated economic impact from SJE's historical operations over the past four years primarily consist revenue generated from existing streams (Electrical sales, consumer product rentals, lighting services, and other miscellaneous revenue) and capital expenditures.

Historical Economic Impact

According to Jupia, over the past four years (2015-2018) SJE's operations have had the following impact on the provincial economy:

- **$379.3M** in total gross domestic product ("GDP")
- **$139.9M** in total labour income
- **$82.1M** in total taxes
- **$103.9M** in consumer expenditures

Additional Economic Considerations

The overall Saint John electric utility sector acts as an important economic contributor. Statistics Canada reported that 1,100 people work directly in the Saint John electricity generation, transmission, and distribution industry; of which 10% are employed by SJE.

In addition, this workforce subset are highly skilled workers which are paid a premium relative to other industry's. For instance, Statistics Canada reported the industries which earn the highest wage premium to be:

- **111%** Data processing and related services
- **109%** Specialized financial services
- **77%** Paper manufacturing
- **74%** Electric power generation, transmission, and distribution

Historical Financial Inputs *($Millions)*

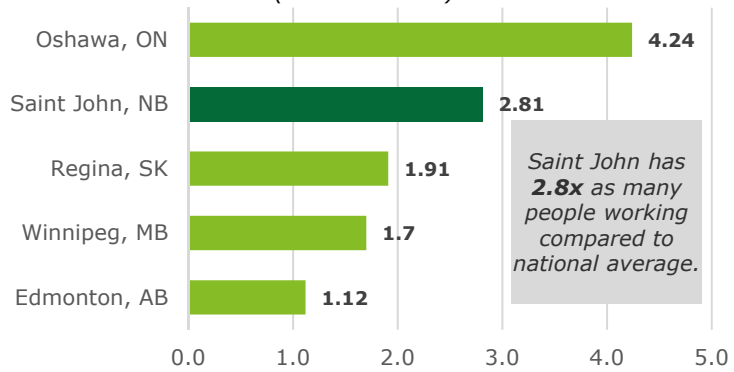
A:Actual	Total Revenues	Labour Costs	Capital Expenditures
2015A	111.2	11.0	5.0
2016A	110.0	12.6	3.6
2017A	114.1	13.8	11.3
2018A	121.7	14.8	10.0
TOTAL	**457.0**	**51.9**	**39.9**

Source: Saint John Energy Economic Impact Assessment – Jupia Consultants Inc.

Employment Index

Electricity generation, transmission, and distribution industry

(Canada = 1.00)



Source: Saint John Energy Economic Impact Assessment – Jupia Consultants Inc.

ED Considerations | Baseline Growth Economic Impact

Over the forecasted 10-year period, Saint John Energy's operations are estimated to contribute a cumulative total of $1.2B to the provincial GDP.

Baseline Growth Summary

The estimated economic impact from SJE's future operations under the baseline growth scenario is based off the following:

- Four years of actual performance (2015 – 2018)
- Six years of forecasted performance (2019 – 2024), which assumed a marginal growth of 2% annually.

Projected Economic Impact

According to Jupia, over the 10-year forecast (2015-2024) SJE's operations are projected to have the following impact to the provincial economy:

- **$1,005M** in total gross domestic product ("GDP")
- **$371M** in total labour income
- **$217M** in total taxes
- **$275M** in consumer expenditures

Forecasted Financial Inputs *($Millions)*

A:Actual **F:**Forecast	Total Revenues	Labour Costs	Capital Expenditures
2015A	111.2	11.0	5.0
2016A	110.0	12.6	13.6
2017A	114.1	13.5	11.3
2018A	121.7	14.8	10.0
2019F	119.3	13.5	11.7
2020F	120.8	14.0	9.3
2021F	123.8	14.5	11.7
2022F	126.9	15.1	11.6
2023F	129.1	15.7	8.4
2024F	131.1	16.3	7.4
TOTAL	**1,208**	**141.0**	**100.0**

Source: Saint John Energy Economic Impact Assessment – Jupia Consultants Inc.

ED Considerations | Moderate Growth Economic Impact

Over the forecasted 10-year period, Saint John Energy's operations are estimated to contribute a cumulative total of $1.2B to the provincial GDP. Aside from their core operations, the primary contributor to the economic value stems from the Burchill wind project.

Moderate Growth Summary

The estimated economic impact from SJE's future operations under the moderate growth scenario is based off the following:

- Continued growth in core operations (e.g. Distribution)
- Increase in consumer products revenue (e.g. rental programs)
- Smart grid investments (e.g. NRCAN projects)
- Wind energy generation (e.g. Burchill wind farm)

Projected Economic Impact

According to Jupia, over the 10-year forecast (2020-2029) SJE's operations are projected to have the following impact to the provincial economy:

- **$1,218.6M** in total gross domestic product ("GDP")
- **$448.2M** in total labour income
- **$264.7M** in total taxes
- **$333.0M** in consumer expenditures

Forecasted Financial Inputs *($Millions)*

F:Forecast	Total Revenues	Labour Costs	Capital Expenditures
2020F	121.1	12.3	23.2
2021F	124.5	13.6	23.1
2022F	140.2	14.3	28.1
2023F	143.1	14.9	11.1
2024F	145.5	15.5	9.2
2025F	147.9	16.1	9.0
2026F	150.3	16.6	11.0
2027F	152.8	17.3	9.0
2028F	155.3	18.0	10.6
2029F	157.9	18.4	10.6
TOTAL	**1,438.6**	**157.0**	**144.9**

Source: Saint John Energy Economic Impact Assessment – Jupia Consultants Inc.

ED Considerations | High Growth Economic Impact

Over the forecasted 10-year period, SJE's operations are estimated to contribute a cumulative total of $1.4B to the provincial GDP. Aside from core operations, the primary contributor to the economic value stems from various renewable energy projects (wind and solar).

High Growth Summary

The estimated economic impact from SJE's future operations under the high growth scenario is based on the following:

- All projects included in the moderate growth scenario
- Additional wind energy (inside and outside of Saint John)
- Community solar program
- Additional utility services

Projected Economic Impact

According to Jupia, over the 10-year forecast (2020-2029) SJE's operations are projected to have the following impact to the provincial economy:

- **$1,406.4M** in total gross domestic product ("GDP")
- **$515.6M** in total labour income
- **$305.7M** in total taxes
- **$383.0M** in consumer expenditures

Forecasted Financial Inputs *($Millions)*

F:Forecast	Total Revenues	Labour Costs	Capital Expenditures
2020F	121.1	12.3	23.2
2021F	127.7	13.6	31.9
2022F	146.2	14.3	45.3
2023F	157.8	14.9	28.7
2024F	161.5	15.5	25.4
2025F	174.8	16.1	14.0
2026F	178.3	16.6	14.0
2027F	182.1	17.3	12.2
2028F	185.7	18.0	13.0
2029F	189.5	18.4	12.6
TOTAL	**1,624.7**	**157.0**	**220.3**

Source: Saint John Energy Economic Impact Assessment – Jupia Consultants Inc.

ED Considerations | Overall Economic Impact

The forecasted economic impact assessment conducted by Jupia Consultant indicates the positive economic contribution of Saint John Energy's operations. Furthermore, additional economic value is observed when considering the differences between the baseline and high growth scenarios.

Overall Economic Impact

Further assessment of the difference between the **baseline** and **high growth** scenario in the 10-year total forecasted economic impact illustrate the positive impact from SJE's growth agenda and related plans.

- $400.9M or 39.9% total increase in GDP
- $144.8M or 39.0% total increase in total labour costs
- $88.3M or 30.1% total increase in total taxes

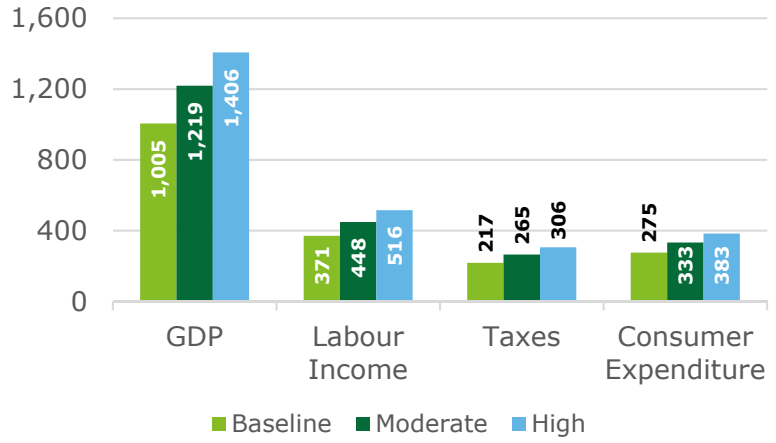
However, additional items should be considered when assessing SJE's total economic impact:

- **Lower rates** – Saint John customers save approximately $10M annually due to the lower rates provided by SJE.
- **Trusted Advisor** – SJE offers free energy advising services to customers to help them improve their home efficiency.
- **Charitable Giving** – SJE is forecasted to provide a total of $1.8M to charities over the next 10-year period.
- **Dividend Potential** – SJE management have indicated the potential of a dividend of $17M to $48M over the course of the 10-year period, pending legislative changes.

Regardless of the growth scenario, it is apparent that SJE provides a positive economic contribution to the City of Saint John as well as the province of New Brunswick.

Forecasted Outputs | 10-Year Total by Scenario

($Millions)



Forecasted Outputs Variance | By Scenario

($Millions)

Output Variance	Baseline to Moderate	Moderate to High	Baseline to High
GDP	213.2	187.8	400.9
Labour Income	77.4	67.4	144.8
Taxes	47.3	41.0	88.3
Consumer Expenditure	57.7	50.0	107.7

Source: Saint John Energy Economic Impact Assessment – Jupia Consultants Inc.

ED Considerations | Feedback Gathering

As part of the review of SJE's growth agenda and related plans we have interviewed 8 different organizations to gain their perspective on the potential economic development opportunities.

Introduction

As part of the SJE's growth agenda review, the City has requested as part of the review to consider the potential economic development opportunities to gain insights and perspectives from various economic development agencies, government departments, and industry associations in regards to SJE's growth plan/initiatives.

The purpose of these meetings were to obtain the relevant perspectives and points of view on SJE's growth plan around the following three growth pillars:

1. Renewable Generation and Storage
2. Smart Energy Services for Consumers
3. Strategic Partnership Opportunities

The key areas of discussion in relation to SJE's growth agenda and related plans included:

A. Current relationship with SJE – Current or past experience and/or initiatives

B. Potential economic benefit – Perspective and point of view on the potential economic value

C. Barriers to success/operationalization – The potential challenges and/or considerations

D. Collaboration opportunities – Perspective and point of view on any opportunities for SJE to partner/collaborate with other regional companies or organizations

The organizations below participated in the information sessions.

Atlantica Centre for Energy

Canadian Electricity Association | Association canadienne de l'électricité

Saint John Region The Chamber – Champions for Business

Economic Development Greater Saint John

New Brunswick Canada

Departments included:
- *Finance*
- *Energy*
- *Natural Resources and Energy Development*

ONB Opportunities | OpportunitésNB

Énergie NB Power

Saint John Energy

SJE Board Member

ED Considerations | Feedback Gathering

As part of the review of SJE's growth agenda and related plans we have interviewed 8 different organizations to gain their perspective on the potential economic development opportunities.

Information Gather Session Overview

A total of **8 organizations** took part of the feedback gathering sessions. The summary below captures the feedback obtained from these organizations.

Relationship with SJE

The majority of participating organizations indicated they had some experience in working with SJE on past initiatives.

Economic Value

The majority of participating organizations foresee some economic spin-off opportunities such as:

- *Attraction of businesses to the region*
- *Indirect benefits across the supporting supply chain*
- *Strengthening the regional energy industry*
- *Development of an innovation district for energy with speed to market*
- *Resulting economic spin-offs from new businesses, jobs and population growth*

Barriers to Growth

The majority of participating organizations reported the following barriers:

- *Regulatory/legislative challenges which reduce SJE's ability to execute on growth initiatives*
- *SJE has historically collaborated with various stakeholders. However, difficulties in collaborating with key stakeholders may impact timing of execution*
- *Benefit realization and overall provincial impact could be minimalized absent coordination across key stakeholder groups*
- *Misinformed consumers which could impact adoption rate*

Collaboration Opportunities

The majority of participating organizations indicated some collaboration opportunities:

- *Continued strategic partnerships with key companies (e.g. Tesla, CaSa, etc.)*
- *Leveraging Saint John's industrial base as a test hub for innovation*
- *Regional utility joint efforts (e.g. NB Power, NS Power, etc.) in areas such as joint ventures on projects, innovation acceleration, optimization of product/service delivery and synergy realization through shared service collaboration*

Appendices

Appendices

Table of Contents

Appendix A – Municipal Utility Benchmarking

Appendix A | EPCOR Utilities Inc.

Company Overview

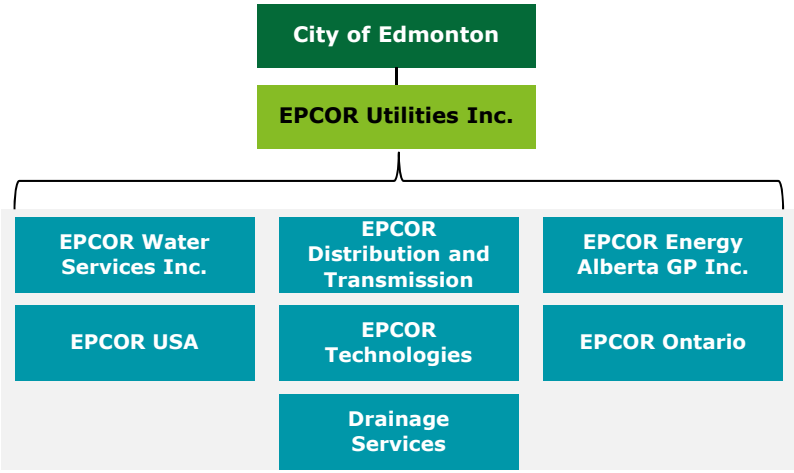
EPCOR builds, owns, and operates electrical, natural gas and water transmission and distribution networks, water and wastewater treatment facilities, sanitary and stormwater systems, and infrastructure in Canada and the United States.

EPCOR provides energy services to 600K customers, electricity distribution to 380K customers, and water and wastewater services to 360K customers.

The City of Edmonton owns 100% of EPCOR and receives a quarterly dividend based on percentage of net income that is reviewed annually by the City of Edmonton. This dividend has grown from $62.3M in 1996 to $171M in 2019.

Operating Metrics (2018)	
Number of Customers	+2M
Total Revenue	$1.8B
Net Income	$295M
Dividend	$166M

Organizational Structure



Offerings Overview

The current services offered by EPCOR include the following:

- Energy provider for residential and commercial customers
- Sales and distribution of natural gas to residential, and commercial customers
- Commercial and residential water services, which include services for water mains, fire hydrants, valves, manholes, leak detection and drainage
- Flood mitigation and prevention services
- Communication systems, lighting systems, signal systems, and power systems
- Engineering, construction, and maintenance services for infrastructure projects

Source: EPCOR's 2018 Audited Consolidated Financial Statements

Appendix A | EPCOR Utilities Inc.

Strategic Initiative Category	Relevant Comparators (if any)
Renewable Generation and Storage Alignment to SJE's initiatives x Wind energy projects ✓ Utility scale storage x Community solar Other relevant initiatives include: • Support services for micro-generation customers (e.g. Solar)	• Earlier this year, EPCOR received approval to construct and operate a solar farm including a battery energy storage system with the purpose of establishing a renewable energy source to help power their water treatment plant and distribution processes. The current design includes up to 45,000 solar panels which would generate enough energy to power over 2,800 homes. • Micro-generation (less than 5 MW) in Alberta allows consumers the right to generate their own electricity and supply it back to the electrical grid. Currently, EPCOR offers support services for consumers to ensure the energy produced is reliable and safe. • Over the next five years, EPCOR intends on investing in renewable energy (Solar and Bio gas facilities) generation within its geographical footprint. • EPCOR offers bundling services (ENCOR) which allows consumers the option to only receive energy produced from renewable sources.
Smart Energy Services for Consumers Alignment to SJE's initiatives ✓ Smart grid initiatives (e.g. network infrastructure) x Smart consumer products x Managed services Other relevant initiatives include: • Support services for consumers adopting smart energy products and emerging technologies.	• In 2015, EPCOR began replacing existing meters with new Advanced Metering Infrastructure (AMI) which aligns with smart grid plan to improve operational efficiency, resource planning and system reliability. • In Ontario, EPCOR has established a net metering program for consumers who generate their own energy. The program offers customers the ability to reduce their energy bill and receive green energy credits based on the amount of energy provided to the electricity grid as well as reduces the need to purchase energy storage systems. • EPCOR currently does not provide services in relation to electric vehicles (EV) (e.g. EV charging stations). However, the company actively monitors the adoption of in-house EV charging installations to observe the loading impact to local infrastructure.
Strategic Partnership Opportunities Alignment to SJE's initiatives ✓ Partnering with research institutes, firms, and technology x Centre for innovation ✓ Unregulated operating entity (EPCOR technologies) to innovate	• In 2015, EPCOR partnered with the University of Alberta to perform a study on the impacts of distributed energy resources in their distribution network. • EPCOR Technologies offers integrated engineering, construction, and maintenance services to municipal and provincial governments, utilities and private companies. This company acts as an unregulated operating subsidiary of EPCOR Utilities Inc.

Sources: Combination of Company website, Annual reports, Management Discussion & Analysis ("MD&A"), Annual Corporate Responsibility and Global Reporting Initiative's report

Appendix A | ENMAX Corporation

Company Overview

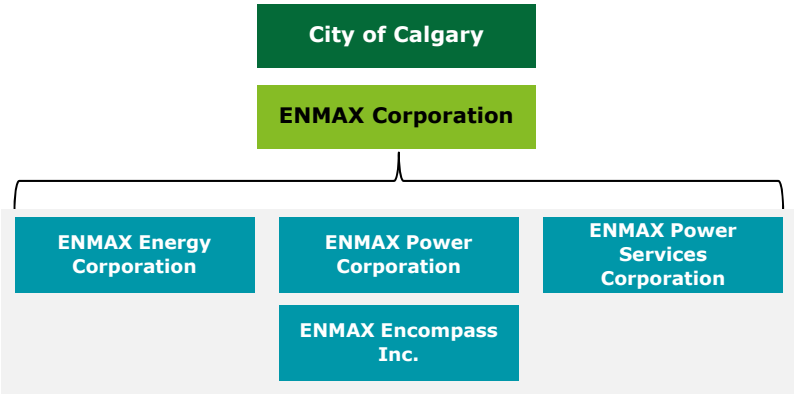
The ENMAX group of companies ("ENMAX") generates, transmits, distributes, and sells energy to select customers in Alberta. ENMAX is responsible for distributing electricity, natural gas, and renewable energy to more than 900,000 metered sites across Alberta.

At 2018, ENMAX employed 1,800 people and invested $3.8M in the community through cash, employee volunteer time, and donations.

From 1998 to 2018, over $1 billion in dividends have been contributed back to the City of Calgary, the sole shareholder. ENMAX's dividend policy is to pay out the greater of $30M or 30% of prior year's net earnings, dependent on factors such as liquidity requirements and financial performance.

Operating Metrics (2018)	
Number of Customers	668M
Total Revenue	$2.4B
Net Income	$149.2M
Dividend	$40M

Organizational Structure



Offerings Overview

The current services offered by ENMAX include the following:

- Electricity: Assists with providing energy options for home or business
- Renewable: Help power residential homes with green sources
- Meter: Meter reading, meter testing and repairs, meter install, and removals and upgrades
- Engineering and construction: Services for residential, commercial, and industrial projects
- Energy solutions: Providing energy and utility service solutions for energy plans, solar, telecommunications infrastructure, grid modernization, distributed energy and storage
- Municipal solutions: Assisting with municipal infrastructure, energy plans, alternative energy and customer support

Source: ENMAX Annual highlights and 2018 Audited Financial Statements

Appendix A | ENMAX Corporation

Strategic Initiative Category	Relevant Comparators (if any)
Renewable Generation and Storage Alignment to SJE's initiatives ✓ Wind energy projects ✓ Utility-scale energy storage ✓ Community solar Other relevant initiatives include: • Support services for micro-generating residential and commercial customers • Leading solar retailer (51% of Alberta's grid-connected solar)	• ENMAX is one of Alberta's largest investors in renewable energy through their co-ownership (50%) of the 75 MW McBride Lake wind farm, 100% ownership of the 80MW MW Taber, and 63 MW Kettles Hill wind farms. • Since 2009, ENMAX has provided consumers with the ability to purchase or lease solar generation system for their homes. However, the systems are not equipped with battery storage and instead connected to the grid. • Several solar installation projects have been conducted throughout various communities and municipalities. For instance, the Town of Raymond, Alberta leases solar panels from ENMAX generates the electricity needed to operate various municipal buildings and street lights. • ENMAX is in the process of performing a pilot project to demonstrate on-site solar generation (1MW) and a 2MWh lithium-ion battery storage at a gas plant. • ENMAX's Solar Program offers a way for communities to leverage solar as an alternative source to their energy needs. To date, over 1,000 solar systems have been installed.
Smart Energy Services for Consumers Alignment to SJE's initiatives ✓ Smart grid initiatives ✓ Consumer product programs ✓ Managed services Other relevant initiatives include: • EV pilot program to study EV charging station impacts	• In 2018, Natural Resources Canada ("NRC") provided $1.4M in funding to ENMAX for the development of a smart grid. The project is focused on integrating onsite distributed energy resources to the primary power grid. • In 2019, ENMAX Power launched the pilot program 'Charge Up' to study how consumers use EVs as well as their potential impact on the electricity system. As a part of the program, ENMAX will offset the cost of the equipment to the selected individuals and/or businesses. However, only approved vendors are allowed to install residential and commercial EV charging stations. • ENMAX Energy provides purchasing and leasing options of solar systems. ENMAX does include battery storage with the panels. ENMAX provides a 24-hour online platform to monitor the panel and provides installation, assistance with permits, equipment and commissioning of the system. To date, 600 solar systems have been installed which represents approximately 50% of the systems installed in Alberta.
Strategic Partnership Opportunities Alignment to SJE's initiatives ✓ Partnerships and joint venture on projects and studies x Centre for innovation ✓ Expanded utility services	• ENMAX entered into a joint venture with TransAlta Renewables, Inc. on the 74MW McBride Lake Wind Farm. • ENMAX partnered with the City of Calgary to establish a co-generation system for combined heat and power ("CHP") system. • In addition to traditional utility services, ENMAX currently provides the following services: Energy plans, solar installation programs, energy management services, infrastructure services, combined heat and power programs, and district energy.

Sources: Combination of Company website, Annual reports, Management Discussion & Analysis ("MD&A"), Annual Corporate Responsibility and Global Reporting Initiative's report

Appendix A | Toronto Hydro Corporation

Company Overview

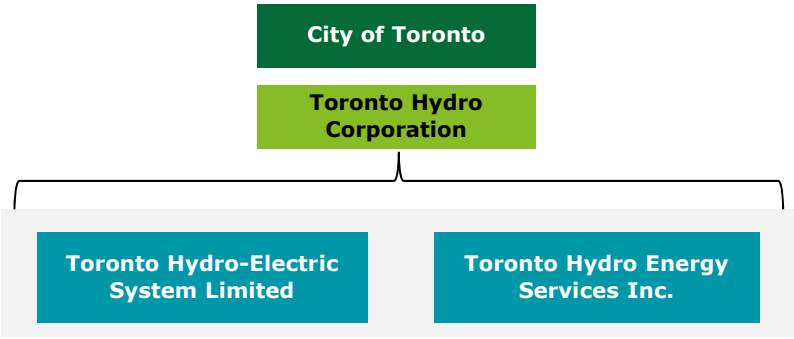
Toronto Hydro Corporation ("THC") owns and operates the electricity distribution system in Toronto that delivers electricity to approximately 18% of the electricity consumed within the province of Ontario.

Toronto Hydro Corporation wholly owns Toronto Hydro-Electric System Limited and Toronto Hydro Energy Services Inc.

THC is in the process of updating their grid. Since 2006, THC has invested $5B into distribution equipment.

THC's dividend policy is to payout 50% of the consolidated prior fiscal year's annual consolidated net income or a minimum of $25M per year paid in quarterly installments.

Organizational Structure



Operating Metrics (2018)	
Number of Customers	772K
Total Revenue	$3.5B
Net Income	$167M
Dividend	$93.9M

Offerings Overview:

The current services offered by THC include the following:

- Energy provider for residential, commercial, and industrial customers
- Pole and duct rentals
- Delivery of street lighting and express way services

Source: Toronto Hydro 2018 Audited Financial Statements & 2018 Toronto Hydro-Electric System Limited, electricity distributor scorecard

Appendix A | Toronto Hydro Corporation

Strategic Initiative Category	Relevant Comparators (if any)

Renewable Generation and Storage
Alignment to SJE's initiatives
✓ Wind energy projects
✓ Utility-scale energy storage
x Community solar
 	
Other relevant initiatives include:
• Examples of partnership with the municipality to pilot various initiatives.
	• Toronto Hydro supports renewable generation within Toronto through infrastructure and direct project investments.
	  ○ **Enabling infrastructure**: Streamlined process for pre-assessing and commissioning renewable generation projects (2,050 between 2009 and 2018) as well as net metering for solar installations.
	  ○ **Development projects:** Joint investments with the City of Toronto towards solar projects on city-owned facilities. Additional investments towards wind and solar investments of 1.2MW in 2018.
	• Partnering with the City of Toronto to pilot a combined solar and energy storage project.
	• THC is also in the process of completing a 2MW battery energy storage system project.

Smart Energy Services for Consumers Alignment to SJE's initiatives ✓ Smart grid initiatives ✓ Smart energy programs x Managed services Other relevant initiatives include: • Electric Vehicle pilot program to study the impacts from residential charging stations	• THC has increased the availability of EV charging stations throughout the City of Toronto. In addition, the company is collaborating with various industry and government agencies to develop adequate strategies and policies to enable the greater adoption of EV. • In 2016, THC started investing in their smart grid by installing pole-mounted energy storage devices. Other initiatives include connecting renewable generation facilities and metering related investments. • Ontario has changed the delivery of conservation energy programs and it is now managed by the Independent Electricity System Operator ("IESO") and will be managed by the IESO until December 2020. • The following are the previous programs that were available with THC before the change to IESO management: thermostat rebate program, residential new construction, heating and cooling program, pumpsaver, pool pump program, commercial refrigeration program, and other programs.
Strategic Partnership Opportunities Alignment to SJE's initiatives ✓ Partnerships and joint ventures on projects and studies ✓ Centre for innovation ✓ Expanded utility services	• THC launched a pilot project with Hydrostor Inc. for the world's first underwater compressed air distribution system. The pilot project is being evaluated for a period of two years to review the cost effectiveness of the technology. • THC has partnered with Sustainable Development Technology Canada, Ecamion, the University of Toronto, and Dow Kokam to develop and place large energy storage systems in Toronto communities. The units will be placed strategically in communities that require additional power. The units will also assist with the integration of renewables in Toronto by providing the ability to smooth out generation during varying environmental conditions. • Toronto Hydro is one of the principal sponsors of the Centre for Urban Energy ("CUE") at Ryerson University. The mandate of the centre is to bring relevant stakeholders to collaborate and study urban energy.

Sources: Combination of Company website, Annual reports, Management Discussion & Analysis ("MD&A"), Annual Corporate Responsibility and Global Reporting Initiative's report

Appendix A | Hydro Ottawa Holdings Inc.

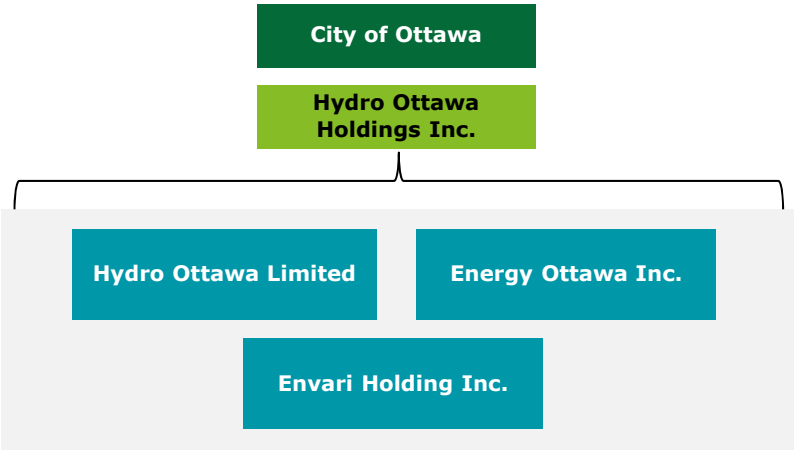
Company Overview

The core businesses of Hydro Ottawa are electrical distribution, renewable energy generation, and energy and utility services.

Hydro Ottawa Holdings Inc. is a holding company incorporated by the City. The holding company is wholly owned by the City of Ottawa. Hydro Ottawa Limited, Energy Ottawa Inc. and Envari Holding Inc. are wholly owned subsidiaries of Hydro Ottawa Holdings Inc.

The Company's dividend policy is to pay out the greater of $20M or 60% of its prior year net income.

Organizational Structure



Operating Metrics (2018)	
Number of Customers	332K
Total Revenue	$1.1B
Net Income	$42M
Dividend	$22.3M

Offerings Overview

The current products and services offered by Ottawa Hydro include the following:

- Electricity distribution: Energy provider for residential and commercial customers
- Renewable Generation: Green power generation through solar, hydro electric, and landfill gas generation
- Energy Services: Providing solutions to help consumers, businesses and communities with energy generation and storage, conservation, energy management, efficient street lighting, and district energy
- Utility Services: Providing utility solutions to residential and commercial customers

Source: Ottawa Hydro 2018 Annual Report

Appendix A | Hydro Ottawa Holdings Inc.

Strategic Initiative Category	Relevant Comparators (if any)
Renewable Generation and Storage Alignment to SJE's initiatives x Wind energy projects ✓ Utility-scale energy storage ✓ Community solar Other relevant initiatives include: • Examples of partnership with the municipality to pilot various initiatives.	• Hydro Ottawa recently introduced the 'MiGen' pilot project, a transactive grid project that is currently in its first phase and will run until the end of 2020. Phase 1 consisted of the installation of solar panels, battery storage and the ability to send power back to the grid. • Total renewable generating assets installed capacity of 128MW through Energy Ottawa (under an affiliate company Portage Power) that operate several facilities, including: o Three hydro electric dams that generate 115.5MW per year. o Eight solar installation with 8,861 panels that generate 2.3 MW per year. o Two landfill gas generating stations, Trail Road Landfill opened 2007 and Moose Creek in 2013, that produce 10.2MW a year.
Smart Energy Services for Consumers Alignment to SJE's initiatives ✓ Smart grid initiatives ✓ Smart energy programs and services ✓ Managed services Other relevant initiatives include: • Innovative MiGen pilot to create a transactive grid.	• Hydro Ottawa is investing in smart grid initiatives including smart distribution grid and power system control technologies. Furthermore, the company is part of a Smart Grid consumer engagement project to evaluate energy management solutions such as smart thermostats, mobile applications, dashboards, and portals. • Homes with smart meter technology qualify for time of use rate plans. These plans promote using energy during off peak hours by offering a lower energy rate. • Various innovation programs include: Electric vehicle charger program, smart audio devices, MiGen microgrid, and green bonds. • Hydro Ottawa residential customers can choose to participate in an electric vehicle charging program which provides a discount on the price and installation costs.
Strategic Partnership Opportunities Alignment to SJE's initiatives ✓ Partnerships and joint venture on projects and studies ✓ Centre for innovation ✓ Expanded utility services	• Hydro Ottawa is partnered with the Algonquin College powerline technician program to hire co-op students and alumni to go through the apprentice program and fill other positions. • Portage Power has partnered with Integrated Gas Recovery Services on two landfill generating facilities to simultaneously help reduce greenhouse gas emissions and generate electricity. • Partnership with Carleton University's Sustainable and Renewable Energy Engineering Department to establish a smart grid laboratory. • In 2017, Hydro Ottawa partnered with Tesla, for the installation of a super-changing stations at the Rideau Centre. • In 2014, a partnership between Hydro Ottawa and Pollution Probe was created to complete a study on the electric mobility adoption and prediction. • The MiGen project is being led by Hydro Ottawa but has over 20 partners including members of industry and universities.

Sources: Combination of Company website, Annual reports, Management Discussion & Analysis ("MD&A"), Annual Corporate Responsibility and Global Reporting Initiative's report

Appendix A | Oakville Enterprise Corporation

Company Overview

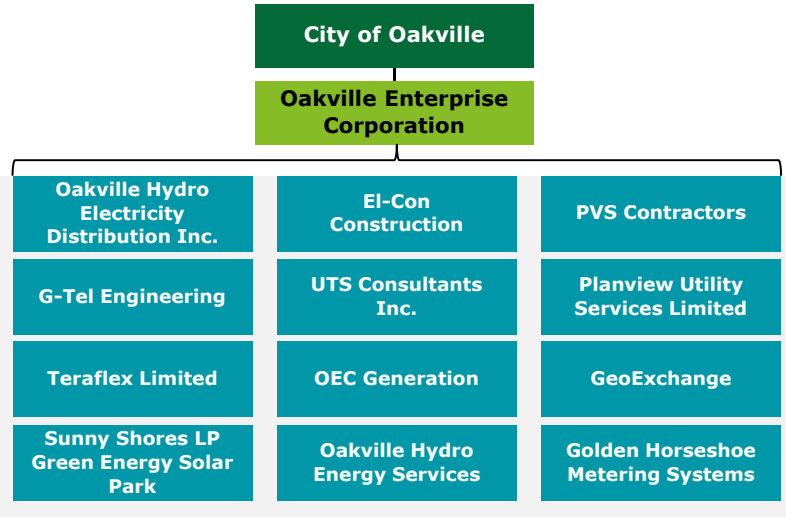
Oakville Enterprises Corporation ("OEC") group of energy and infrastructure companies which serves municipalities, telecommunications, electrical distribution, and energy infrastructure businesses throughout Canada.

The Company provides electrical distribution, infrastructure, generation and energy services.

OEC is wholly owned by the City of Oakville and the company has paid $10.2M back to the City of Oakville from 2016 to 2017.

Operating Metrics (2018)	
Number of Customers	70K (Hydro 2018)
Total Revenue	$239M
Comprehensive Income	$9.4M
Dividend	$5.9M

Organizational Structure



Offerings Overview

The current products and services offered by OEC include the following:

- Energy generator and provider for residential and commercial customers
- Other utility services include: asset management, damage prevention, and utility engineering solutions, utility location, underground and civil construction, and GIS mobile and aerial mapping for municipalities, electricity, water, gas telecommunication and engineering companies
- Financing, installation, and management systems for commercial and residential customers
- Metering solutions and services

Source: OEC's 2017 Audited Consolidated Financial Statements

Appendix A | Oakville Enterprise Corporation

Strategic Initiative Category	Relevant Comparators (if any)
Renewable Generation and Storage Alignment to SJE's initiatives x Wind energy projects ✓ Utility-scale energy storage x Community solar Other relevant initiatives include: • Geo-exchange turnkey solution for new homeowners.	• In 2015, OEC invested $50M in a 14MW ground mount solar park called Sunny Shores Green Energy Project. The grid has over 46,000 photovoltaic solar panels on 58 hectares of land. • OEC has installed rooftop solar panels on four town facilities which produce approximately 1 MW of energy. In addition, they operate a hydro electric dam that generates 3.5MW. • OEC is currently piloting the integration of EV charging and EV battery storage capacity on the grid. • In 2007, Oakville hydro energy services partnered with the Municipality of Halton to operate a landfill generation plant in Halton, Ontario. The plant produces 2.1MW which can supply energy for approximately 1,500 homes. • OCE is offering a comprehensive turnkey solution for new homes through their affiliated company Sandpiper Geo-exchange. These projects include installation of customized metering, geo-exchange heating unit, and solar panels for electricity.
Smart Energy Services for Consumers Alignment to SJE's initiatives ✓ Smart grid initiatives ✓ Smart energy programs and services ✓ Managed services Other relevant initiatives include: • EV leasing program.	• Oakville Hydro has been investing in grid automation such as: upgrading distribution system, pilot project using the IntelliTeam technology, and various communication equipment (terminal units, automated metering infrastructure, etc.). In 2017, Oakville Hydro received funding from Ontario's Smart Grid Fund to be used for two projects: ○ **Automating Oakville's Downtown Grid** – The automated system upgrade will allow for automatic reconfiguration of the grid and can rapidly restore service to reduce and or eliminate power outages in the city after a system fault. ○ **Unified Data Platform in the city** – The project is a digital platform that allows for informed decision making through the analysis of utility systems in a unified display. SmartMap technology helps uses metering and operational data to provide the analysis portion of the platform. • OEC Energy Services Group assist customers in managing their energy cost through promoting consumer products and innovative technologies. • Oakville Hydro has two EV charging stations at their office. In addition, the company offers a leasing program for customers who want to install EV charging equipment. • Homes with smart meter technology qualify for time-of-use rate plans. These plans promote using energy during off peak hours by offering a lower energy rate. • OEC operates a Geo-exchange of assets and systems which finances, installs and manages systems for its customers.
Strategic Partnership Opportunities Alignment to SJE's initiatives ✓ Partnerships and joint venture on projects and studies ✓ Centre for innovation ✓ Expanded utility services	• OEC's infrastructure group has six companies that deliver construction, asset management, engineering, mobile and aerial mapping as well as utility location and services. • OCE is a partner of the GridSmartCity consortium focused on productivity and efficiency improvements, advancing smart grids, piloting new technologies, and community energy planning. Other partners within the consortium include LDCs, smart grid innovators, government and academia. • Oakville Hydro is partnering with Essex Powerlines on the implementation of a digital platform as well as the SmartMap system.

Sources: Combination of Company website, Annual reports, Management Discussion & Analysis ("MD&A"), Annual Corporate Responsibility and Global Reporting Initiative's report

Appendix A | Windsor Canada Utilities Ltd.

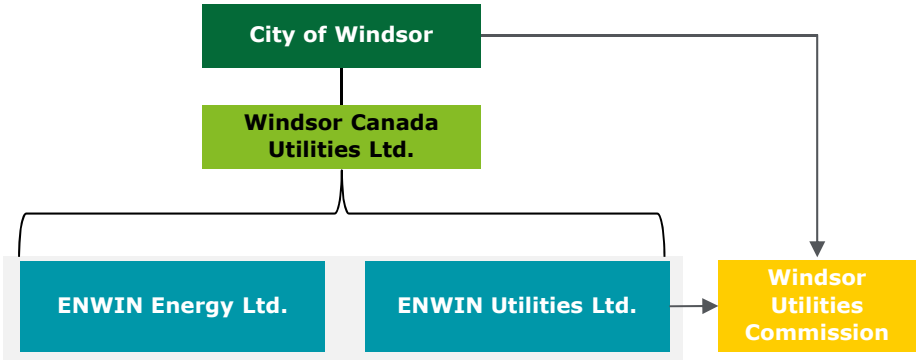
Company Overview

ENWIN Utilities Ltd. (ENWIN) is the electrical distributor for the City of Windsor. ENWIN is responsible for the local distribution of electricity and the service and maintenance of the local electricity distribution infrastructure.

ENWIN Energy Ltd provides streetlight maintenance services and engages in partnerships to offer energy related services.

The company's 2022 strategic plan consists of taking a more customer-centric, decentralized, environmentally sustainable and technologically advanced approach to reach its growth goals.

Organizational Structure



Note – ENWIN has a service contract with the Windsor Utilities commission to operate and sustain the water system.

Operating Metrics (2018)	
Number of Customers	89K
Total Revenue	$328M
Net Income	$8.4M
Dividend	$4M

Offerings Overview

The current services offered by ENWIN include the following:

- Energy provider for residential and commercial customers
- Service and maintenance of the local electricity distribution infrastructure
- Provide streetlight and sentinel light maintenance services as well as offering energy related services through strategic partnerships
- Manage Windsor Utilities Commission's administrative and operational functions as well as the supply of water to the respective jurisdictions

Source: ENWIN's 2018 Audited Consolidated Financial Statements
2 – 2018 EnWin Utilities Ltd., electricity distributor scorecard

Appendix A | Windsor Canada Utilities Ltd.

Strategic Initiative Category	Relevant Comparators (if any)
Renewable Generation and Storage Alignment to SJE's initiatives x Wind energy projects x Solar energy options for consumers x Utility-scale energy storage	• ENWIN is currently not involved in renewable generation and storage of electricity, however, they do support the installation of solar panels through the Province's Feed-In-Tariff programs. • In 2018, a total of 592 new load customers and 109 generation customers were connected by the company. • ENWIN is currently not involved in any utility-scale energy storage projects.
Smart Energy Services for Consumers Alignment to SJE's initiatives ✓ Smart grid initiatives ✓ Smart energy programs and services x Managed services	• ENWIN homes and businesses with smart meter technology qualify for time of use rate plans. These plans promote using energy during off peak hours by offering a lower energy rate. • ENWIN offers a net metering program for consumers who generate renewable energy. The program offers the option for customers with renewable generating capabilities to sell their excess power back to the grid and receive a credit on their power bill.
Strategic Partnership Opportunities Alignment to SJE's initiatives ✓ Partnerships and joint venture on projects and studies ✓ Centre for innovation ✓ Expanded utility services	• In 2018, ENWIN partnered with WEtech Alliance to participate in a program called ENnovation Catalysts. The program consisted of WEtech Alliance coaching and assisting a select number of frontline employees at ENWIN to present to ENWIN's executive team. Employees presented on issues and challenges faced at ENWIN and how they could test, create solutions, and develop business cases for their ideas. • In 2013, ENWIN partnered with St. Claire College to provide placements for technician students. • As a partner of the GridSmartCity group ENWIN has leveraged there membership to realize cost savings through a joint tendering for electrical distribution system equipment. • In 2018, ENWIN partnered with the Detroit Bridge Authority to complete an electrical infrastructure for the Canadian Plaza. The project was to connect local highways to the new Gordie Howe International bridge to from Windsor to Detroit. • In 2018, the Natural Sciences and Engineering Council of Canada gave ENWIN and the University of Windsor $5.5 million to further develop the product and prep it for retail. The product will be brought to market under the name of ONtech Rapid Coatings, a collaboration between the Tessonics and ENWIN. The new company will market product across North America to players in the utility, automotive, shipbuilding, aerospace, and pipeline industries.

Sources: Combination of Company website, Annual reports, Management Discussion & Analysis ("MD&A"), Annual Corporate Responsibility and Global Reporting Initiative's report

Appendix A | London Hydro

Company Overview

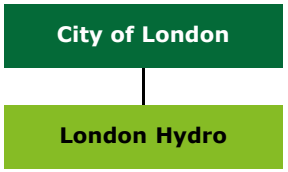
London Hydro Inc. is a municipally-owned hydro distribution company that is wholly owned by the City of London.

London Hydro's strategic plan is to focus on investments in smart technologies such as smart meters, time-of-use billing, renewable energy and smart grid initiatives.

In the last two years, London Hydro has declared dividends in the amount of $5M back to the City of London. London Hydro has consistently declared an annual dividend of $5M and in specific circumstances an additional special dividend can be declared.

Operating Metrics (2018)	
Number of Customers	159K
Total Revenue	$424M
Net Income	$12.9M
Dividend	$5M

Organizational Structure



Offerings Overview

The current services offered by London Hydro include the following:

- Energy provider for residential and commercial customers

Source: London Hydro's 2018 Audited Financial Statements

Appendix A | London Hydro

Strategic Initiative Category	Relevant Comparators (if any)
Renewable Generation and Storage Alignment to SJE's initiatives x Wind energy projects ✓ Utility-scale energy storage x Community solar	• In 2017, the company started developing 14 ground mounted solar photovoltaic projects in 4 different municipalities in Ontario. • To support provincial carbon reduction goals, London Hydro has facilitated renewable energy projects including 365 customer-owned solar generation (14.8MW), 1 biogas project (2.85MW), and 1 hydro project (0.68MW).

Smart Energy Services for Consumers
Alignment to SJE's initiatives
✓ Smart grid initiatives
✓ Smart energy programs and services
x Managed services
	• London Hydro has been actively pursuing Smart Grid initiatives projects including: advanced metering infrastructure metering, real-time scalable monitoring/analytics on smart meters, and flexible smart metering systems.
	• Through London Hydro's Innovation Centre the company has developed application to integrate with various appliances to measure their energy consumption.
	• The company is currently conducting various pilot projects such as:
	  ○ Approximately 1,400 customers, provide them with real-time electricity consumption and pricing information to help them make choices to reduce their usage.
	  ○ Approximately 600 customers homes using the internet of things (IoT) devices and appliances.
	• London Hydro created Interval Data Centre which allows customers to track, analyze, and make adjustments to their energy consumption.
	• In 2018, London Hydro introduced Trickl, an energy management application pilot project. The application allows the 2,000 participants to monitor and control their energy usage by viewing their usage in real-time, receiving personalized alerts, reviewing historical energy usage data and by controlling five devices or appliances in their homes using the application.

Strategic Partnership Opportunities Alignment to SJE's initiatives ✓ Partnerships and joint venture on projects and studies ✓ Centre for innovation x Expanded utility services	• The Company entered into a joint venture agreement with the London District of Renewable Energy Co-Operative Inc. to create London Renewable Energy Initiative. The new venture will focus on identifying, applying for and constructing solar projects that have been approved under the Feed-In Tariff government program. • London Hydro created an Innovation Centre to further research smart home systems and technologies. • In 2013, London Hydro partnered with Western University to launch the Watts Lab for Smart Grid and Innovative DG Control Studies lab.

Sources: Combination of Company website, Annual reports, Management Discussion & Analysis ("MD&A"), Annual Corporate Responsibility and Global Reporting Initiative's report

Appendix A | Alectra Inc.

Company Overview

Alectra Inc. is owned by seven cities located in Ontario. Alectra Inc. provides electricity distribution, solar photovoltaic generation, metering services and energy solutions through the use of innovative technologies. Alectra is the second largest municipality owned LDC in North America by customers.

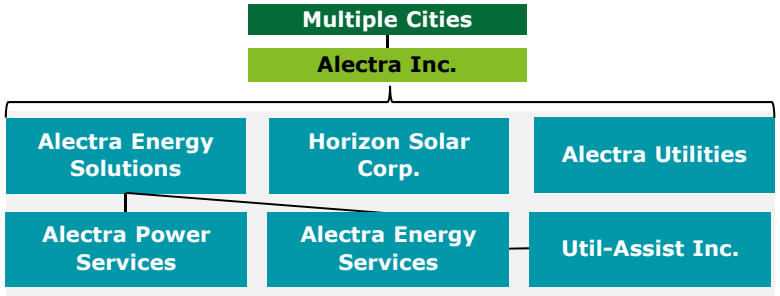
Alectra Corporation has two ongoing smart grid projects that will help create a smarter and greener city.

Alectra's dividend policy is to pay dividends based on 60% of MIFRS Net Income. MIFRS stands for modified IFRS and is modified for regulatory purposes and for greater consistency in measurement of rate impacts.
IFRS – International Financial Reporting Records
MIFRS – Modified IFRS

Operating Metrics
(2018)

Number of Customers	1M
Total Revenue	$3.5B
Comprehensive Income	$115M
Dividend	$69M

Organizational Structure



Multiple Cities consist of:

- 8.78% by Barrie Hydro Holdings Inc., which is wholly-owned by City of Barrie
- 31.00% by Enersource Corporation, which is owned 90% by the City of Mississauga and 10% by BPC Energy Corporation, which is a wholly owned subsidiary of the Ontario Municipal Employees Retirement System
- 18.15% by Hamilton Utilities Corporation, a wholly-owned subsidiary of the City of Hamilton
- 15.73% by Markham Enterprises Corporation, a wholly-owned subsidiary of the City of Markham
- 4.85% by St. Catharines Hydro Inc., a wholly-owned subsidiary of the City of St. Catharines
- 21.49% by the Vaughan Holdings Inc., a wholly-owned subsidiary of the City of Vaughan
- Horizon solar Corp (0.1%) and Alectra Utilities (99.9%) own Solar Sunbelt General Partnership

Offerings Overview

The services offered by Alectra's primary subsidiaries include the following:

- Electrical distribution
- Commercial rooftop solar generation business which develops, constructs, finances, and operates the solar equipment
- Wholesale metering and sub-metering services
- Consulting services related to alternative metering infrastructure integration, customer information systems implementation and other smart grid applications

Source: Alectra's 2018 Audited Consolidated Financial Statements

Appendix A | Alectra Inc.

Strategic Initiative Category	Relevant Comparators (if any)
Renewable Generation and Storage Alignment to SJE's initiatives ✓ Wind energy projects ✓ Utility-scale energy storage ✓ Community solar	• Alectra is currently not overly involved in generating renewable energy. Alectra's 2018 energy mix consisted of: 58.4% nuclear, 23.9% water, 6.2% natural gas, 10.3% solar and wind and 1.3% other. • However, in 2017, Alectra introduced a 20 person pilot program called Power.House which is residential solar panel/storage program that allows households to collect solar energy, send the energy to the battery backup or sell it back to the grid, and tracks it on an online software management system. In addition, Alectra is using blockchain technology to further understand the technologies potential. • Alectra Utilities has deployed a number of conservation projects in Mississauga including the installation of rooftop solar panels on various buildings.
Smart Energy Services for Consumers Alignment to SJE's initiatives ✓ Smart grid initiatives ✓ Smart energy programs and services ✓ Managed services	• Alectra Utilities launched a two year pilot program with the City of Markham to set up Electric Vehicle charging stations at workplaces. The goal of the program is to offer more charging stations and help increase EV in Ontario. • Smart thermostat incentive plan offers customers a $75 credit when they registered a Nest or Ecobee thermostat. • Small business lighting program which offers small business owners up to $2,000 in incentives towards upgrading to energy-efficient lighting. • Retrofit program offers incentives for businesses who make upgrades to lighting, lighting controls, building automation, water chiller, HVAC redesign, etc.
Strategic Partnership Opportunities Alignment to SJE's initiatives ✓ Partnerships and joint venture on projects and studies ✓ Centre for innovation ✓ Expanded utility services	• Alectra partnered with Greater Toronto Airports Authority, and the Toronto and Region Conservation Authority is aimed in helping Mississauga businesses become more environmentally friendly by improving operations in the Pearson Eco-Business Zone. Currently the focus has been implementing solar technology, specifically rooftop solar to produce clean energy. • Alectra has partnered with Sunverge and the University of Waterloo to use blockchain software technology to provide real-time tracking, transparency and management of Distributed Energy Resources in providing energy services. • In 2019, Alectra started a Green Energy and Technology (GREandT) centre aimed at identifying, evaluating, developing, and deploying emerging green technology and solutions to the cities the company operates in. Some of the activities will include pilot projects, community engagement activities, evaluation of accelerator options, and demonstrations to partnerships are some of the activities the GREandT centre plans on delivering.

Sources: Combination of Company website, Annual reports, Management Discussion & Analysis ("MD&A"), Annual Corporate Responsibility and Global Reporting Initiative's report

Appendix B – Natural Resources Canada ("NRCAN") Utility Investments

Appendix B | NRCAN Utility Investments

By Province (1/4)

Province	Smart Grid and Energy Storage	Clean Energy for Rural and Remote Communities	Renewables
British Columbia 34 Total NRCAN funded projects	• British Columbia Electric Vehicle (EV) smart infrastructure project • Powering Plug-In EV with renewables supply in British Columbia • Energy management business intelligence platform • Energy storage and demand response for near capacity substation • Canada's geothermal village, "Sustainaville" GeoPark	• Hybrid smart-grid solar Photovoltaic and battery demonstration project	• British Columbia remote community integrated energy BCRCIE project • Development of codes and standards for marine energy converters • Front end engineering for the Dent Island Tidal Power Generation project • West Coast Wave Initiative (WCWI) • Dent Island Tidal Power Generation Project • Canada's geothermal village, "Sustainaville" GeoPark
Alberta 53 Total NRCAN funded projects	• Tailings management through Nano technologies • Integrating distributed generation • Energy management business intelligence platform	• N/A	• Community-based geothermal demonstration • Demonstration of Waste-Heat recovery at compressor stations
Saskatchewan 6 Total NRCAN funded projects	• N/A	• N/A	• Front-end engineering design study: Williston Basic Low Temperature Geothermal • Wind and storage demonstration in a First Nations community

Source: NRCAN, Current Investments, https://www.nrcan.gc.ca/science-data/funding-partnerships/funding-opportunities/current-investments/21146

Appendix B | NRCAN Utility Investments

By Province (2/4)

Province	Smart Grid and Energy Storage	Clean Energy for Rural and Remote Communities	Renewables
Ontario 55 Total NRCAN funded projects	• Interoperability and non-wires alternative demonstration • Smart, proactive, enabled energy distribution; Intelligent, efficiently, responsive (SPEEDIER) project • Tailings management through Nano technologies • Power.House Hybrid: Minimizing greenhouse gas emissions and maximizing grid benefits • The Transactive Grid – Enabling end-to-end market services framework using blockchain • MiGen Transactive Grid • Secondary school carbon free embedded MicroGrid energy system demonstration • Development of utility grade controller for remote MicroGrids with high penetration renewable generation • Direct-current arc-free circuit breaker for utility-grid battery storage system • Integrated urban community energy project • Prolucid Technologies for distributed generation monitoring and control • Energy management business intelligence platform development and demonstration • Utility scale electricity storage demonstration using new and re-purposed lithium Ion automotive batteries • John Paul ll High School carbon free embedded energy system FEED study • Canadian Small Modular Reactor (SMR) roadmap	• Gull Bay First Nation diesel offset micro grid project	• High density solar photovoltaic module • Kortright energy yield test standard • Pan-Canadian wind integration study • Virtual blade wind power • Wasdell Falls hydro power project • John Paul ll High School carbon free embedded energy system • Canadian Small Modular Reactor (SMR)

Source: NRCAN, Current Investments, https://www.nrcan.gc.ca/science-data/funding-partnerships/funding-opportunities/current-investments/21146

Appendix B | NRCAN Utility Investments

By Province (3/4)

Province	Smart Grid and Energy Storage	Clean Energy for Rural and Remote Communities	Renewables
Quebec 27 Total NRCAN funded projects	• Lac Mégantic Microgrid • Commercial demonstration of a Management System for Electric Vehicle (EV) charging station networks • Managing energy storage capabilities in an electrical grid to reduce effects of renewable energy source variability • Interative smart zone demonstration in Quebec • Power simulator (SimP) experimentation and standardization infrastructure for smart grid technologies	• 3,300 Saint-Jacques NET ZERO+ • High efficiency commercial refigeration systems utilizing an ejector. • Integrating renewables and conservation measures in a net-zero energy low-rise residential subdivision • Intelligent net-zero energy buildings • Plug and Play building-integrated photovoltaic and thermal technologies	• Nunavik Minin: RAGLAN 2.0 Large scale renewable energy smart grid • Front end engineering and design study – Whapmagoostui – Wind hybrid power plan • FEED of Xstrata's raglan renewable electricity Micro-Grid and Smart-Grid pilot demonstration • Glencore RAGLAN Mine renewable electricity Smart-Grid pilot demonstration • Integration of deep geothermal energy in Canada's energy portfolio • Power simulator (SimP) – experimentation and standardization infrastructure for smart grid technologies
New Brunswick 5 Total NRCAN funded projects	• Integrated dispatchable resource network for local electric distribution utility (SJ Energy) • Collaborative grid innovation for Atlantic smart energy communities (NB Power and NS Power) • Electricity load control demonstration • Dynamic voltage control for the integration of renewables	• N/A	• Dynamic voltage control for the integration of renewables (NB Power)

Source: NRCAN, Current Investments, https://www.nrcan.gc.ca/science-data/funding-partnerships/funding-opportunities/current-investments/21146

Appendix B | NRCAN Utility Investments

By Province (4/4)

Province	Smart Grid and Energy Storage	Clean Energy for Rural and Remote Communities	Renewables
Nova Scotia 10 Total NRCAN funded projects	• Collaborative grid innovation for Atlantic smart energy communities (NB Power and NS Power) • Electricity load control demonstration • Environmental monitoring of tidal energy technology	• N/A	• Reducing the cost of in-stream tidal energy generation through comprehensive hydrodynamic site assessment • Tidal energy project in the Bay of Fundy • Environmental monitoring of Tidal Energy Technology
Prince Edward Island 3 Total NRCAN funded projects	• Electricity load control demonstration	• Virtual blade wind power • A 10 MW wind technology research and development	• N/A

Source: NRCAN, Current Investments, https://www.nrcan.gc.ca/science-data/funding-partnerships/funding-opportunities/current-investments/21146

Deloitte.