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Thematic Research

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Pipelines, Utilities & Energy Infrastructure

ESG Scorecards: Power & Utilities - leading the charge towards a low carbon future

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INDUSTRY RATINGS

Energy Equipment/Services; Oil/Gas/Consumable Fuels: Overweight

Chemicals: Market Weight

Utilities: Underweight

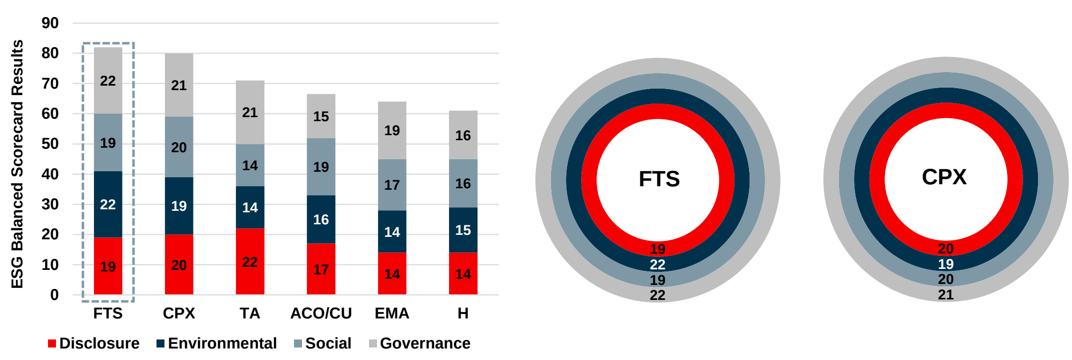
NBF Economics & Strategy Group

As the rapid evolution of environmentally minded and socially conscious investing takes form, we provide our first humble effort at distilling the available Environmental, Social, and Governance (ESG) information into most relevant and comparable format, while unveiling our inaugural relative ESG rankings. Moving forward, we commit to undertaking an annual review of our ESG Scorecards, providing investors with an objective summary of each company's status and progress towards certain Sustainability targets. Not only do we believe that ESG performance is emerging as a warranted valuation attribute – akin to per share growth, balance sheet strength and cash flow quality - we also highlight the correlation between those companies who actively consider and implement sustainability targets and financial and shareholder returns. Therefore, in our view, ESG performance and valuation go hand in hand.

Our ESG Scorecards allocate an equal 25% towards four categories: (1) Disclosure; (2) Environmental; (3) Social; and (4) Governance. Within Environmental, progress towards reducing GHG (greenhouse gas) emissions is combined with biodiversity, land reclamation, and water and waste management. On the Social side, we track employee safety and retention, cybersecurity, impact on communities as well as engagement with Indigenous groups. Finally, Governance rankings are based on diversity and independence of the board, alongside Audit and Compensation.

Overall, FTS and CPX stand out as leaders within the Power & Utilities space with respect to ESG reporting standards and performance, displaying top scores across all four categories: Disclosure; Environmental; Social; and Governance. Not surprisingly, these companies are also the outright leaders when it comes to total shareholder return performance over the past three years, with CPX and FTS at 77% and 35% (peers: 26%, TSX: 10%). Again, with capital allocation decisions becoming more and more influenced by the ESG compass, we naturally expect to see the economic benefits of best-in-class Sustainability practices flow into financial results while buoying valuation multiples. Overall, we commend all the companies on our Power & Utilities coverage list for actively engaging and focusing on sustainable business practices, while we implore all companies to continue to become industry leaders with respect to ESG disclosure. Putting it altogether, we recommend investors add Capital Power and Fortis to their environmentally minded and socially conscious portfolios.

Exhibit 1: ESG Balanced Scorecard Results by Company



(1) ACI became a publicly traded company in October 2018 and will be included in our 2020 ESG Scorecards publication.
Source: Company Documents, NBF Estimates

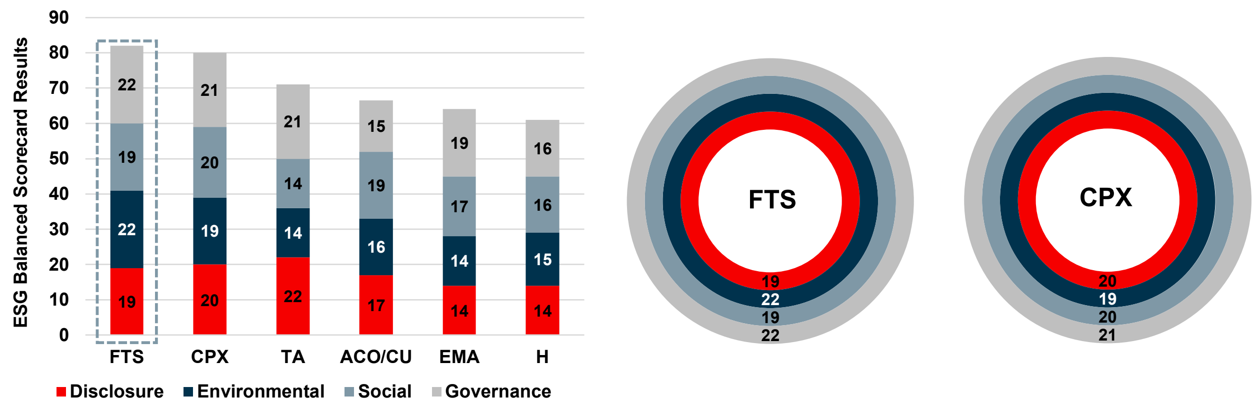
For required disclosures, please refer to the end of the document.

ESG Scorecards: Power & Utilities

As the rapid evolution of environmentally minded and socially conscious investing takes form, we provide our first humble effort at distilling the available Environmental, Social, and Governance (ESG) information into most relevant and comparable format, while unveiling our inaugural relative ESG rankings. Our one caveat: given the fluid nature of ESG disclosure, our rankings could prove to be stale upon release of 2018 Sustainability Reports through the back half of 2019. That said, we commit to undertake an annual review of our ESG Scorecards once a year, providing investors with an objective summary of each company's status and progress towards ESG targets.

Our ESG Scorecards allocate an equal 25% towards four categories: (1) Disclosure; (2) Environmental; (3) Social; and (4) Governance. Within Environmental, progress towards reducing GHG (greenhouse gas) emissions is combined with biodiversity, land reclamation, and water and waste management. On the Social side, we track employee safety and retention, cybersecurity, impact on communities as well as engagement with Indigenous groups. Finally, Governance rankings are based on diversity and independence of the board, alongside Audit and Compensation.

Exhibit 2: ESG Balanced Scorecard Results by Company



(1) ACI became a publicly traded company in October 2018 and will be included in our 2020 ESG Scorecards publication.
Source: Company Documents, NBF Estimates

Exhibit 3: ESG Balanced Scorecard

Disclosure		ATCO / CU	CPX	EMA	FTS	H	TA
ESG Reporting Standards	5	4	4	3	4	2	3
Annual Sustianability Report	5	5	5	5	5	5	5
Metrics Easily Displayed	5	4	4	2	4	3	5
Targets Easily Displayed	5	2	4	2	3	2	4
Targets Reported if Achieved or Not Achieved	5	2	3	2	3	2	5
Disclosure Total	**25**	**17**	**20**	**14**	**19**	**14**	**22**
Environmental		**ATCO / CU**	**CPX**	**EMA**	**FTS**	**H**	**TA**
GHG Emissions Relative to Peers	5	2	3	1	4	5	0
GHG Emissions Intensity Reduction Progress	5	2	2	4	5	1	1
GHG Emissions Reduction Plan Outlined	5	5	5	4	5	2	5
Water & Waste Management	5	3	4	1	4	3	3
Biodiversity Management	5	4	5	4	4	4	5
Environmental Total	**25**	**16**	**19**	**14**	**22**	**15**	**14**
Social		**ATCO / CU**	**CPX**	**EMA**	**FTS**	**H**	**TA**
Employee Voluntary Turnover	5	3	4	2	1	1	1
Employee Diversity	5	4	4	4	5	4	4
Safety & Cybersecurity	5	3	4	3	4	3	4
Community Investment	5	4	3	4	4	3	3
Indingenous Engagement	5	5	5	4	5	5	2
Social Total	**25**	**19**	**20**	**17**	**19**	**16**	**14**
Governance		**ATCO / CU**	**CPX**	**EMA**	**FTS**	**H**	**TA**
Female Representation on the Board	5	5	5	4	5	5	5
Independent Representation on the Board	5	2	3	4	3	5	4
Tenure on the Board	5	2	5	5	5	1	5
Compensation tied to Stock Performance & ESG	5	4	5	4	4	3	4
Auditors	5	2	3	2	5	2	3
Governance Total	**25**	**15**	**21**	**19**	**22**	**16**	**21**
Total Score	**100**	**67**	**80**	**64**	**82**	**61**	**71**

Source: NBF Estimates

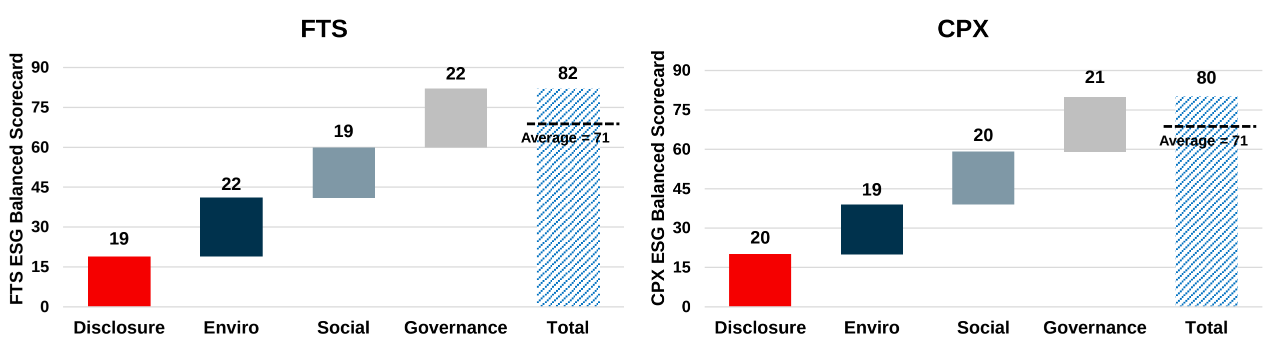
Overall, FTS and CPX stand out as leaders within the Power & Utilities space with respect to ESG reporting and standards. On the disclosure front, CPX produces a Sustainability report each year, while FTS reports its sustainability key performance indicators annually, alongside producing a biennial Sustainability report. Both companies provide quantitative data based on the Global Reporting Initiative (GRI)[1] neatly outlined in the back of the report, while also considering other reporting standards like the Task Force on Climate-related Financial Disclosures (TCFD)[2], Sustainability Accounting Standards Board (SASB)[3], and Greenhouse Gas Protocol Corporate Accounting and Reporting Standard[4], with the intention of evolving their disclosure practices in the coming years.

Regarding the Environmental aspect of ESG reporting, Hydro One is the front runner in our view due to the company having the lowest GHG emissions on a total basis, primarily reflecting the pure utility asset base (no power generation). We also highlight Fortis as the second lowest on overall GHG emissions as a result of having only a small portion of generation (~8%) within its asset mix. However, on a GHG intensity basis Fortis also stands out given that it has reduced its carbon dioxide equivalent per megawatt hour (CO_2e/MWh) by 62% since 2015. Capital Power has also done a commendable job of reducing its GHG intensity from 0.83 tonnes of CO_2e/MWh in 2015 to 0.79 tonnes of CO_2e/MWh in 2017, while also setting specific targets of 0.63 in 2018 and 0.37 by 2030.

When assessing the Social aspect of ESG, there were many factors to consider, including safety, voluntary turnover, diversity, community involvement, and indigenous engagement. Capital Power had the best safety track records across its peers in 2017, while also posting significantly lower turnover rates (7.7% in 2017). Meanwhile, both Fortis and Hydro One display a solid example of diversity in the workplace with greater than 30% females in management at the company. As well, when looking specifically at the Utilities we considered electricity grid reliability as a primary metric, with FTS being the clear leader at 2.16 hours of interruption per customer served in 2018, compared to its peers averaging ~6.5-7.5 hours in 2017 and 2018. As well, we note that both Fortis and Hydro One provide an exemplary display of indigenous engagement, through a full range of practices, programs and strategies.

Finally, looking at the Governance section of ESG, we note that both Fortis and Capital Power had the best scores as a result of having significant female representation on the Board (~30% or greater), a strong majority of independent Directors (~85% or greater), and an average Director tenure of between 5-7 years. However, what really set these two companies apart, was looking into compensation relative to shareholder total return. Considering the total three-year shareholder return to date, CPX was the highest at 77% and FTS took second place at 35% (peers: 26%, TSX: 10%). We also note that Capital Power has nearly the lowest CEO and Director compensation out of the group, yet had the highest total return.

Exhibit 4: ESG Balanced Scorecard Results for FTS (LHS) and CPX (RHS)



Source: Company Documents, NBF Estimates

Putting it altogether, we recommend investors add Capital Power and Fortis to their environmentally minded and socially conscious portfolios. Both Capital Power and Fortis scored extremely well across every aspect of the ESG scorecard, while producing strong financials results / total shareholder returns, and we expect all companies will improve and enhance their ESG disclosure in their next Sustainability reports through the back half of 2019 and into 2020.

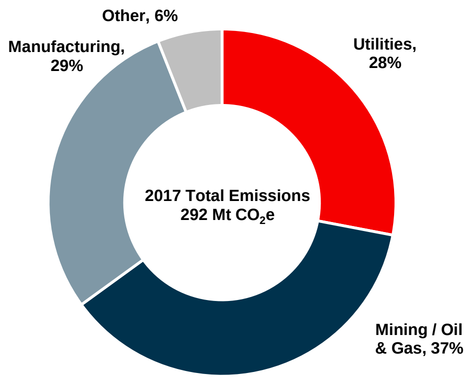
[1] ***Global Reporting Initiative (GRI)*** is an international independent standards organization for sustainability reporting, which helps businesses report non-financial information on a range of economic, environmental, and social impacts.
[2] ***Task Force on Climate-related Disclosure (TFCD)*** was established by the Financial Stability Board in December 2015 to develop a set of voluntary, consistent disclosure recommendations for use by companies in providing information to investors, lenders and insurance writers regarding specific climate-related financial disclosure.
[3] ***Sustainability Accounting Standards Board (SASB)*** is the first complete set of industry specific sustainability accounting standards covering financially material issues in order to identify and communicate significant opportunities for sustaining long-term value creation.
[4] ***Greenhouse Gas Protocol Corporate Accounting and Reporting Standard*** provides requirements and guidance for companies when preparing corporate-level GHG emission inventor, which includes specific guidance on the seven greenhouse gases and the difference in Scope 1 and 2 emissions.

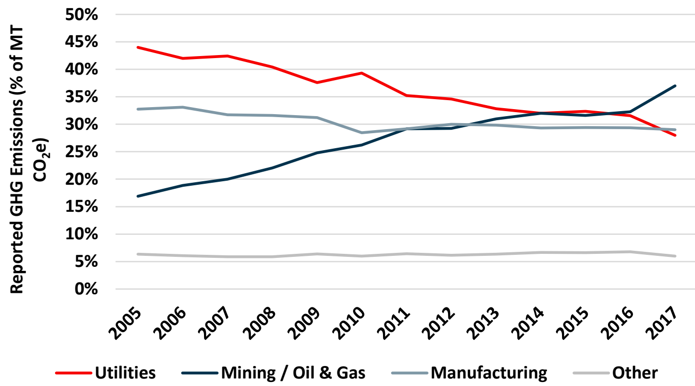
Environmental > leading the charge towards a low-carbon future

GHG Emissions

Looking at GHG emissions in Canada by industry, Utilities' contribution has declined steadily since 2005 from ~45% to <30%, largely attributable to the closure of coal-fired plants in Ontario and to lower fuel consumption due to energy efficiency improvements. Looking ahead, we anticipate further reductions in GHG Emissions for the Utilities sector as a result of Alberta's mandate to retire coal-fired generation plants or convert from coal-to-gas (CTG). Recall, Alberta has a mandate of zero coal-fired generation by 2030, with a majority of the companies who own coal facilities looking to complete the CTG transition much sooner.

Exhibit 5: Reported 2017 GHG emissions by industry

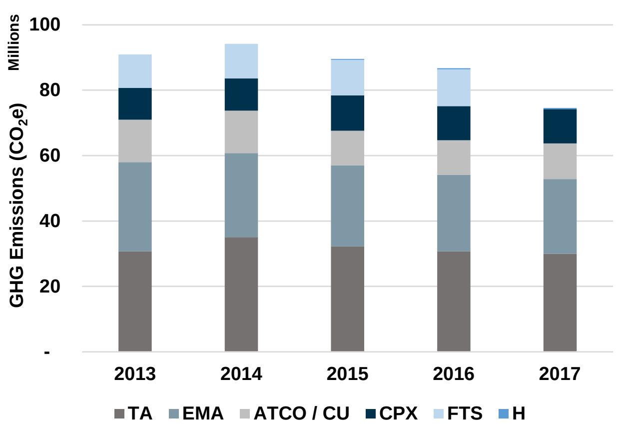


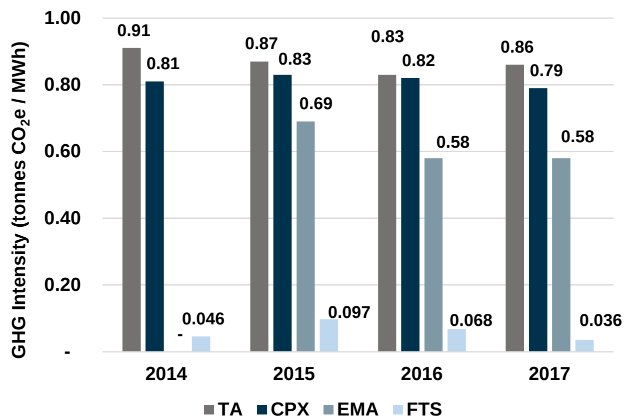


Source: Government of Canada, NBF

Delving into the specific Power & Utility companies on our coverage list, we highlight a downward trend for the group as a whole. Since 2014, total GHG emissions are down ~10% from ~95 million tonnes to ~85 million tonnes – despite the combined Enterprise Value having increased ~125% to $162 bln from $72 bln. On a GHG emissions intensity basis, which considers a company's overall GHG emissions relative to its total power production, we note that Fortis has significantly reduced its GHG emissions intensity by 62%.

Exhibit 6: Total GHG Emissions (LHS) and GHG Emissions Intensity (RHS) by Company

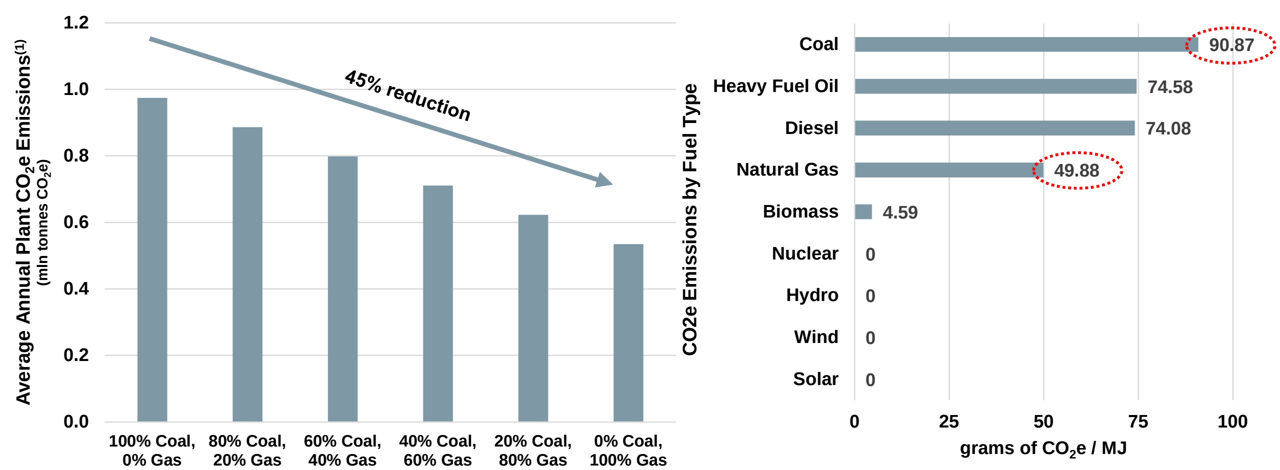




Note: TA, CPX, ATCO/CU and FTS all report GHG emissions based on the total production from facilities the companies operate (as opposed to net interest in the facility).
Source: Company Documents, NBF, Bloomberg

Clear path towards a lower carbon future with Coal-to-Gas Conversion: Despite the impressive strides made over the previous five years, the Power & Utilities group has only just embarked down the path of decarbonization, as most of the companies on our coverage list undertake co-firing or dual-fuel initiatives with natural gas as well as full coal-to-gas (CTG) conversions over the coming years. As shown below, transitioning off coal to gas will reduce CO_2e emissions by a meaningful ~45%. Overall, from a generation mix perspective, our Power & Utilities coverage universe (excluding Hydro One) is on pace to reduce coal exposure by ~55% from 2013 through to 2023e, while increasing natural gas by ~45% and renewables by ~10%. In the section below, we outline each of the company's GHG reduction initiatives.

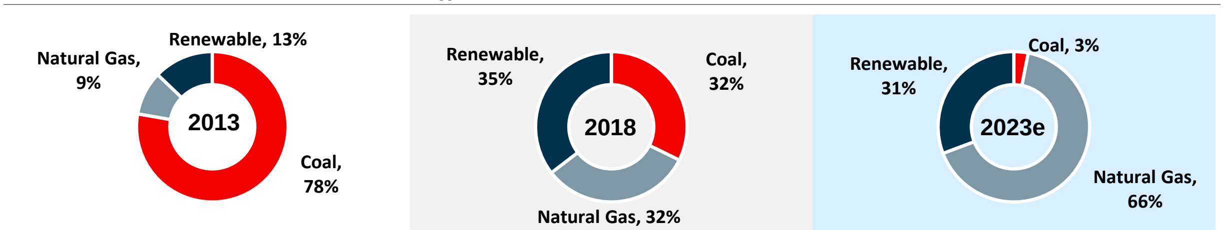
Exhibit 7: CO_2e Emissions per Fuel Type (LHS) and Average



(1) Based on an average plant capacity of 400 MW, operating at 85% utilization
Source: Bloomberg, NBF

Capital Power: CPX is on pace to reduce its coal exposure from ~80% of EBITDA in 2013 to <5% by 2023e, while expanding its renewable portfolio to >30%. As such, natural gas will become the new dominant fuel source with co-firing and dual-fuel capabilities at its Genesee coal facility by 2021e. We note this figure could prove to be conservative should Capital Power complete dual-fuel conversion of its Genesee 3 coal plant by 2023e (see note here).

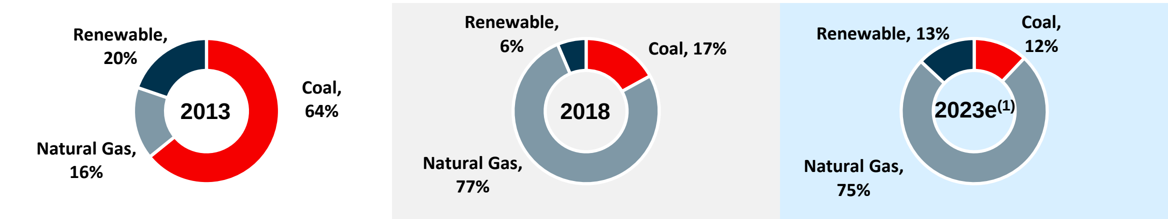
Exhibit 8: CPX Generation Mix - Clean Energy Transition



Note: Generation mix based on EBITDA contributions.
Source: Company Reports, NBF Estimates

Emera: In Florida, EMA is undertaking two major clean energy projects at its ~1,700 MW dual-fired Big Bend location, including the US$850 mln modernization, adding 1,090 MW of combined cycle generation by 2023 while retiring ~700 MW of coal-fired capacity (we estimate it reducing CO_2e emissions by ~3 million tonnes per annum); as well as the approved 600 MW solar project for ~US$850 mln (online 2021). As a result, we anticipate Tampa Electric's generation portfolio will shift towards ~87% natural gas / renewables by 2025 from 68% in 2017. Meanwhile, Emera is pursuing a solar Phase II expansion, which would add another 600 MW of solar to Tampa Electric's generation portfolio next decade. Meanwhile in Nova Scotia, the company recently completed the $1.6 bln Maritime Link project, designed to import up to 500 MW of hydroelectric power from the Muskrat Falls site in Labrador. Overall, Nova Scotia has tripled its use of renewable power over the past decade to ~30%, reducing GHG emissions by >1/3rd, and we expect coal-fired generation will be reduced to 12% of total consumption by 2023 from ~17% today.

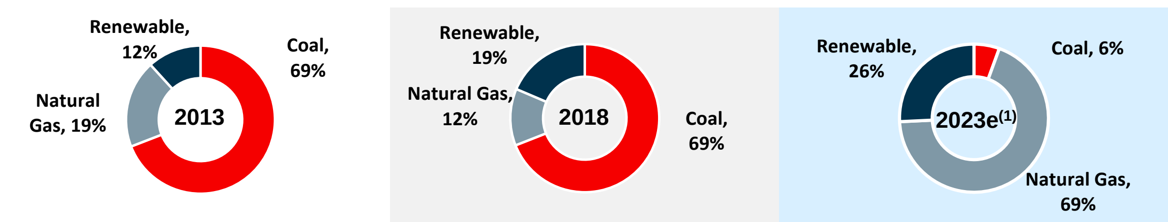
Exhibit 9: **EMA Generation Mix - Clean Energy Transition**



(1) Based on Big Bend estimated generation mix
Source: Company Reports, NBF Estimates

TransAlta: With a corporate mandate to be 100% "clean energy" by 2025, and following the Strategic Investment deal with Brookfield, the company has now outlined an accelerated timeframe of 2022 to complete all five of its subcritical CTG conversions. As well, the company continues on the path of adding renewable projects to its portfolio with the 207 MW Alberta Windrise wind project being selected by the AESO as a successful bidder in the third round of the Renewable Electricity Program. The company also recently announced the acquisition of a 49% stake in Skookumchuck wind facility in Washington (note here). Overall, the company expects to have reduced its GHG emissions by 19.7 million tonnes (~60%) by 2030 relative to 2015 levels.

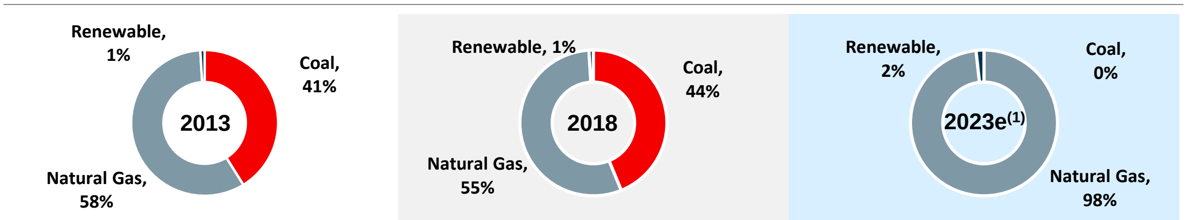
Exhibit 10: **TA Generation Mix - Clean Energy Transition**



(1) 2023e based on capacity
Source: Company Reports, NBF Estimates

Canadian Utilities (majority owned by ATCO): CU has outlined a detailed plan to transition off coal, starting with the recent CTG conversion for 50% of its Battle River 4 facility. The company will look to complete the full CTG conversion of Battle River 5 by the end of 2019, with its Sheerness facilities off coal by 2022 and the company evaluating CTG conversions for Battle River 3 and the remaining 50% for Battle River 4. Meanwhile, Canadian Utilities recently entered into an agreement to sell its Canadian power division (closing Q4/19), which would accelerate the company's carbon footprint reduction profile as the company's generation assets account for ~95% of GHG emissions (note here).

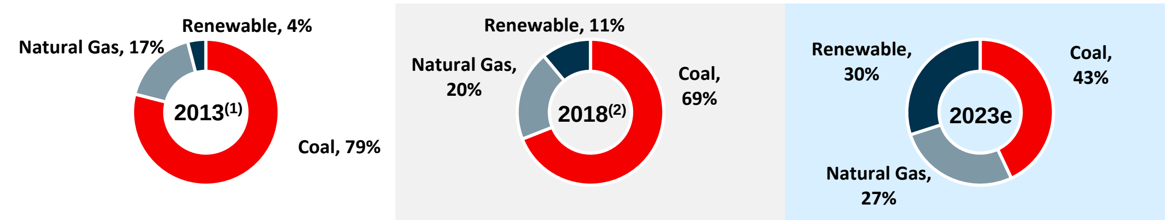
Exhibit 11: **CU Generation Mix - Clean Energy Transition**



(1) Assumes the sale of CU Cdn generation business
Source: Company Reports, NBF Estimates

Fortis: With 93% of its assets related to transmission and distribution, Fortis' carbon footprint primarily comes from its minimal amount of generation (~7% of assets). In Arizona, TEP is currently looking at the feasibility of using forest waste feedstocks as a renewable resource in order to transition away from coal, allowing the company to use heat produced from the combustion of biological materials such as forest and crop residues to generate electricity. Elsewhere, Fortis has noted that TEP's generation mix will become cleaner as a result of coal-fired plants being retired (i.e. the 168 MW Navjo Coal Fired Generation Station at the end of 2019, and 170 MW San Juan Coal Fired Unit 1 in 2022). In addition, FortisBC continues to support cleaner energy solutions by encouraging the use of Liquified Natural Gas (LNG) and Compressed Natural Gas (CNG) for transportation, given that CO_2e emissions from these sources are 15-25% less than traditional diesel fuel sources. FortisBC is also looking to be the first utility in North America to offer Renewable Natural Gas (RNG) as an option to environmentally-conscious end-users.

Exhibit 12: FTS Generation Mix - Clean Energy Transition



(1) Represents 2014, with natural gas including market purchases and distributed generation
(2) Represents 2017
Source: Company Reports, NBF Estimates

Hydro One: Given that Hydro One is the only company that is a pure utility, with no generation in its portfolio, the company reports only a modest amount of GHG emissions at around ~340,000 tonnes of CO_2e per year, which represents approximately ~2% of the 2017 peer average GHG emissions of 14.2 million tonnes of CO_2e. Although Hydro One only emits a small portion GHG emissions, predominantly through sulfur hexafluoride (SF_6) emissions[5], the company has made it apparent that it is still committed to climate change mitigation and adaptation and will continue to look to strengthen its methodologies of measuring, reporting, and decreasing GHG emissions.

Innovative & Leading-edge Technologies

Although we pay significant attention to the near-term reduction of GHG emissions given the tangible and quantitative nature of disclosure, we note that solving the global climate issue extends to finding longer-term, innovative solutions that are driven by technology. Therefore, we emphasize the creative technological initiatives each company in our coverage universe is making towards reducing the carbon footprint while also growing the renewable landscape.

Capital Power: The company is pursuing novel and innovative alternative solutions to combat the carbon footprint though carbon capture, utilization and storage (CCUS). Specifically, CPX has established the Shepard Energy Centre as the test site for innovation technology developers regarding carbon capture and usage. CPX previously acquired a 5% stake, with the option to increase to increase its stake up to 20%, in C2CNT, a company that has developed and is now looking to apply at scale an innovative technology to capture and transform carbon dioxide emissions into carbon nanotubes – a high value conductive carbon-fibre product that is stronger than steel and lighter than aluminum (currently worth ~$250k per tonne). C2CNT is among five finalists competing in the natural gas track of the NRG COSIA Carbon XPRIZE competition (winners announced in 2020).

Emera: In 2017, the company established Emera Technologies – a small, nimble organization focused on finding ways to deliver energy to customers in ways that are safer and more reliable. Corporate wide, as of 2017, approximately 13% of the company's electricity customers were set up with smart meters. By 2022, the company is targeting to have smart meters installed to 90% of its customers – giving customers more information about their energy, tracking usage and enabling pre-set alerts. Of note, Nova Scotia Power received regulatory approval in June 2018 for a smart meter roll-out to all customers, expected to begin in 2019. Meanwhile, Tampa Electric expects to have all customers converted by 2022. Lastly, Emera is implementing battery storage solutions in numerous locations, including integrating Powerpack-2 batteries into the grid at the St. Lucy solar facility at Barbados Light & Power, and Tesla Powerwalls in Nova Scotia to test home and grid-scale battery storage technology paired with wind power.

TransAlta: The company is currently exploring the viability of utilizing battery storage at its various wind farms in order to capture and store the wind for short-term and allowing to provide short-term predictable power. Specifically, TA is working on employing battery technology at a project near Pincher Creek, AB, known as WindCharger Battery Storage, which will be located adjacent to TransAlta's Summerview Wind Farm and utilize TESLA lithium-ion battery technology for total storage capacity of 20MWh. The WindCharger Battery Storage project is located on previously disturbed land eliminating any further environmental impacts of the project.

[5] SF_6 emissions is a gas that is used as an insulating medium in high-voltage circuit breakers and gas-insulated switchgear. SF_6 is one of the six major GHG emissions which contribute to global warming and represents 22,800x the amount of Global Warming Potential (GWPs) value that Carbon Dioxide has, but only represents less than 0.50% of Canada's total GHG emissions. See Appendix A.

Meanwhile, in addition to the CTG conversions, the company recently announced plans to pursue the economic viability of converting existing coal units to Hybrid Combined Cycle units – further improving the efficiency of the plants and reducing GHG emissions intensity on top of the ~45% improvement from CTG conversion.

Canadian Utilities (majority owned by ATCO): ATCO is developing commercial-scale Edge-of-Grid Technology with its Clean Energy Innovation Hub, integrating its modular structures, hydrogen production, natural gas electricity generation, solar photovoltaic, and battery storage technologies. Meanwhile, ATCO has developed the first three-station electric vehicle (EV) fast-charging corridor between Edmonton, Red Deer and Calgary, and has partnered up with the City of Edmonton to pilot curbside EV charging services for the public. Looking forward, the company recently received funding to install and own an additional 20 EV charging stations (all powered 100% by renewable energy) through the Peaks to Prairies Project within Southern Alberta. ATCO is also installing LED street lights in several communities, reducing energy consumption (and associated GHG emissions) by up to 80%. Finally, with an extensive natural gas transmission and distribution network, ATCO is looking at the potential of reducing GHG emission by up to 85% through blending renewable natural gas (biomethane) from forest residue or other biomass with conventional natural gas.

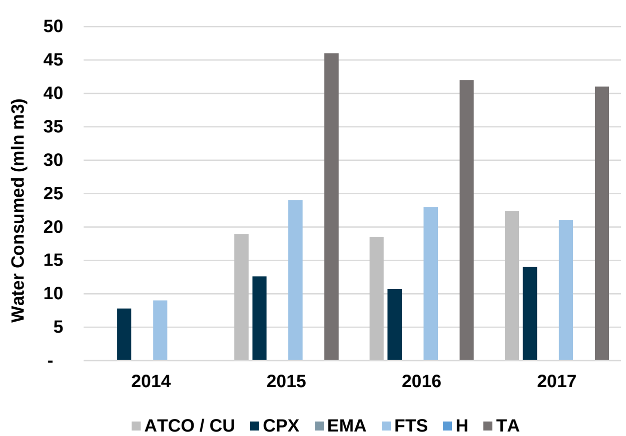
Fortis: The company is investing in innovative technology through its partnership in the Energy Impact Partners (EIP) utility coalition, which is a collaborative strategic private equity fund that invests in emerging technologies, products and services across the electricity supply chain. Specifically, EIP looks to invest in services and products that drive smart use and enhance customer service with the goal of providing a clean, digital and transformed future for the energy industry with technological innovation in cybersecurity, energy storage, micro grids, electric vehicles and community solar energy.

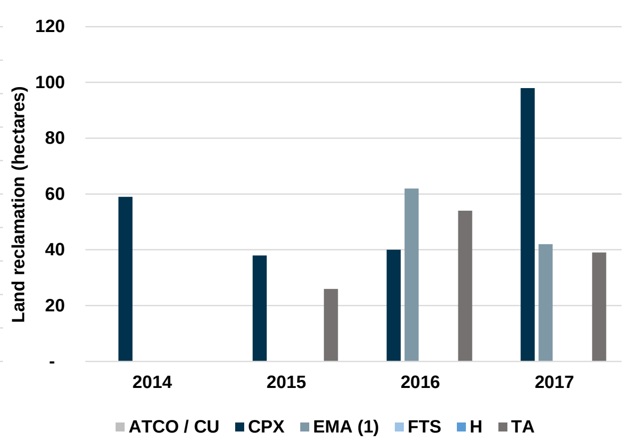
Other Air Emissions & Land and Water Management

While we have spent the bulk of our analysis uncovering the GHG emissions progress each of the companies have made, as well as emphasising the continued journey that each of the companies are on towards lowering their carbon footprint, we note that there are other air emissions that need to be considered. Other air emissions which are reported by companies such as TA, CPX, FTS and ATCO/CU include: (1) Sulfur Dioxide; (2) Nitrous Oxide; (3) Mercury; and, (4) Particulate Matter. These other air emissions, which are outlined in Appendix A also contribute to global warming, therefore we believe it is necessary to report on these emissions as well as establish clear goals towards reducing them. As companies transition off coal-fired power generation, there will be a significant reduction in mercury emissions as well as sulphur dioxide and nitrogen dioxide emissions.

Elsewhere, we note that environmental sustainability also encompasses how each company treats both land and the water. Specifically, there is an increasing emphasis being placed on water consumption, hazardous waste, hydrocarbon spills, land reclamation and biodiversity initiatives. As a result of the numerical disclosure on these five topics being spotty at best, we only highlight both the water consumption and land reclamation in graphical form below while outlining specific biodiversity initiatives in the section to follow. Furthermore, we note that in the years to come we anticipate a growing emphasis being placed on waste management.

Exhibit 13: **Water Consumption (LHS) and Land Reclamation (RHS)**





(1) EMA represents the amount of hectares that were planted with pollinator friendly plants
Source: NBF, Bloomberg

Upon growing awareness towards biodiversity, land reclamation, water management and waste management, we narrow in on these four categories and emphasize the companies seeking to minimize their impacts on the environment. We note the companies in our space who have started the process of creating technology research and development partnerships with governments and universities while also monitoring and implementing recovery, maintenance, and preservation strategies for wildlife and endangered species. As well, we note the companies taking initiatives to reduce both waste and water consumption.

Biodiversity: Given the number of birds that have been displaced as a result of both wind and coal generation, there are active measures being sought out by companies to reintegrate these species into their natural habitat. Fortis is a leading company when it comes to biodiversity programs, through initiatives at a number of its utilities to protect birds, bats, fish and their habitats, while FortisAlberta has helped the Canadian Electricity Association to develop a Bird Beneficial Management Practice Guide for Utilities, in order to represent a proactive approach to practices that meet the requirements set out in the Migratory Birds Convention Act and Canada's international commitments. Elsewhere, other companies are implementing avian protection programs such as Emera monitoring and protecting the Ospreys in Aroostook County as well as within NSPI, and Capital Power helping establish the peregrine falcon species back in Alberta near its Genesee site. Meanwhile, Hydro One and ATCO/CU is actively involved in a multifaceted approach to biodiversity management, with a clear focus on protecting the pollinator species such as bees and/or butterflies.

Land reclamation: Given the amount of surface coal mining that is required for coal-fired power generation, there has been an increasing emphasis placed on companies and their land use. Specifically, companies are implementing land reclamation plans, which include contouring disturbed areas, re-establishing drainage, replacing topsoil and subsoil, re-vegetation and land management. As shown in the chart above, both TransAlta and Capital Power are two companies who actually disclose numerically the amount of hectares per year that they reclaim. We highlight that TransAlta has specific targets in place, which are publicly disclosed, for the amount of land reclamation achieved in a year (target of ~30 hectares), while noting that Capital Power has began working with the Olds, Alberta college to better align its reclamation and reforestation practices.

Water management: Most of the water usage within our coverage universe is geared towards generation facilities, as a result of two main purposes: cooling and steam production. Given that water withdrawn and consumed via coal generation is significantly larger than natural gas, we anticipate seeing a declining trend in water usage across the companies we cover due to the CTG conversions being completed over the next few years. Specifically, FTS has noted that it anticipates water consumption to decrease in the next two years by ~3.2 million cubic meters as a result of one of its coal-fired generating units being retired in 2019. Elsewhere, we note Emera's participation in Canada's Ocean SuperCluster, being one of the founding partners to establish the $950 mln innovative initiative, which has a shared goal with industry participants, the Government of Canada and universities and researchers towards accelerating the safe and sustainable development of ocean resources.

Waste management: We highlight both Capital Power and Fortis for their innovative methods of salvaging operational waste for environmentally supportive initiatives. At Capital Power's Genesee facility, fly ash is recycled for use in cement, reducing carbon dioxide emissions by approximately one tonne for every one tonne of fly ash utilized as an alternative to Portland Cement in concrete manufacturing. In 2017, CPX recycled 53% of fly ash produced at Genesee 1 & 2, up 9% from 2016. Meanwhile, for the past 14 years, Fortis has recycled waste clippings surrounding its power lines in a partnership with a local nursery. Utilizing the green waste compost provided by Fortis, the local nursery is able to help cultivate trees, shrubs and perennials, ultimately eliminating ~23,000 cubic meters of branches and other waste from landfills annually.

Social > Power to the People

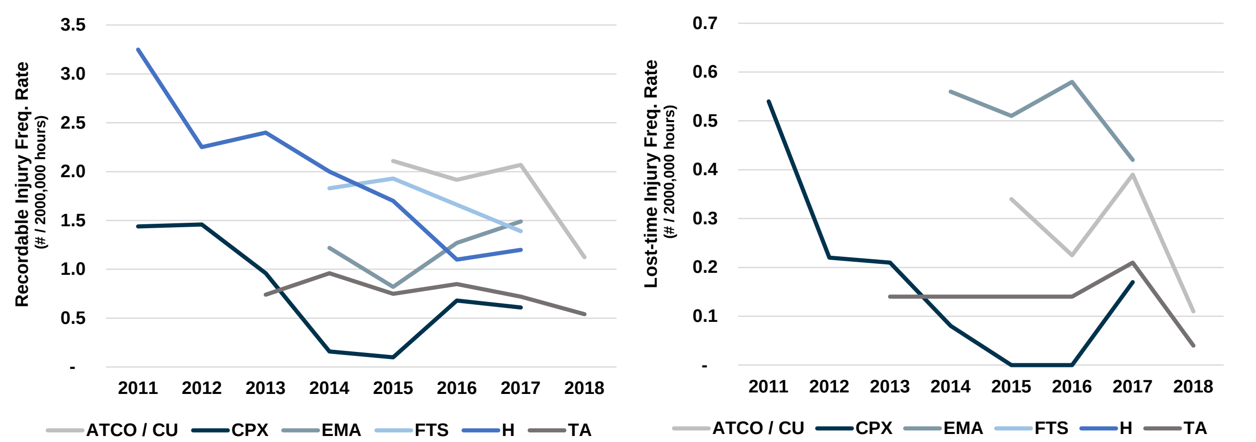
Assessing a company's ESG performance based on the Social component involves three major areas of importance: (1) the employees; (2) the community; and (3) Indigenous relationships. We believe the Social aspect of ESG is one of the most vital sections of the Sustainability report, despite offering the least amount of quantitative characteristics.

Employees.

Safety & Health: The analysis of a company's Social performance begins with the company's most valuable asset - its employees. As pseudo construction companies, extreme emphasis is placed first and foremost on physical safety – a directive overseen by the Health, Safety, and Environment Board Committee. As shown below, recordable injury frequency (TRIF) rates have generally declined over the past decade, with Hydro One standing out as not only "most improved", but also having the best qualitative disclosures when it comes to health and safety. Hydro One has a taken numerous steps towards improving the health and safety culture, including launching a continuous program known as Journey to Zero in 2010 and has reduced its total recordable injuries by 77%. Hydro One has displayed a vigorous approach to health and safety with 36 formal Joint Health & Safety committees at the company. We also highlight Fortis for creating and promoting a culture of safety first and an emphasis placed on improvement in health and safety performance over the past couple years. Specifically, UNS has introduced Human Performance Principles into safety processes and training, while FortisAlberta has developed and implemented an Injury Prevention Plan (IPP) app-based tool, in order to reduce the number of injuries and improve emergency response. Furthermore, we note that Newfoundland Power received a Vice President's Award of Excellence from the Canadian Electricity Association (CEA), while both FortisBC and Fortis Alberta are certified in the Certificate of Recognition (COR) Audit Program which recognizes companies whose Safety Management System exceeds regulatory requirements.

Overall, we are starting to see company's in our space expand the scope of safety to include employees, contractors, third-party consultants, and the community, with a number of the company's now reporting TRIF and TLIF rates separately for both employees and contractors.

Exhibit 14: Recordable Injury Frequency Rate (LHS) and Lost-time Injury Frequency Rate (RHS)

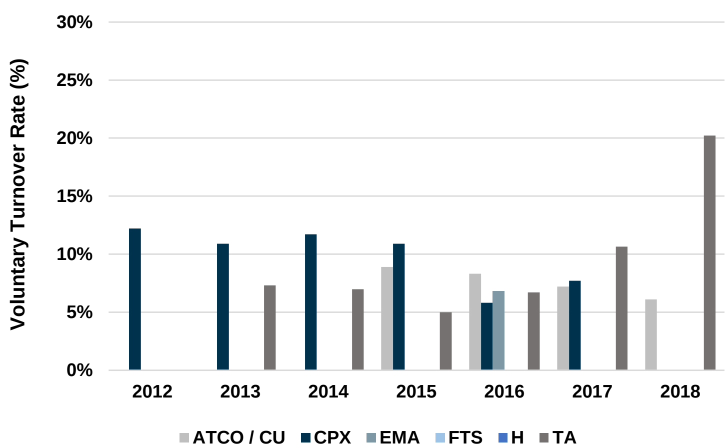


Note: TRIF and TLIF include employees and contractors for ACO/CU, CPX, FTS and H
Source: Company Documents, NBF

Mental Health: In addition to a strong emphasis placed on physical health with standard benefit programs in place (medical, dental, vision, etc.), we are witnessing a growing awareness of mental health, with companies creating new employee wellness programs. Specifically, we highlight Capital Power, ATCO/CU, and Emera which have adopted mental health strategies including the "Not Myself Today" program – an engagement campaign aimed at reducing the stigma surrounding mental health. Hydro One has taken the approach to mental health one step further, through its Mental Health First Aid Course, which is a 12-hour course that not only raises awareness, but provides colleagues, managers and supervisors the tools to recognize systems, and provide "first" aid during a mental health problem or crisis. Other company's have implemented online programs in order to provide a safe and confidential outlet for help during a crisis.

Turnover: Assessing a company's ability to develop employees and offer opportunities to learn and enjoy time spent at work, we highlight the voluntary turnover rate of each company. As shown in the chart below, Capital Power has significantly dropped its voluntary turnover rate since 2012 and has implemented a 96% retention target. On the other side, we view TransAlta's rising turnover rate as a significant challenge, noting that the company previously provided an annual turnover rate target at below 8%, but as of the company's 2018 annual report, the turnover rate was removed as a goal. We do note that the primary reason for the increasing turnover rate has been the company's coal-to-gas transition, due to the phasing out of coal and subsequently a large reduction in workforce as the plants will no longer need the coal mine and therefore workers have been voluntarily seeking other employment opportunities. Overall, numerous companies have implemented programs for employees to participate in additional training, via courses in the classroom and online or apprenticeship programs. As well, some of the companies we cover have started reporting the quantitative amount of spending they invest on employee training in per year. For instance, Fortis collectively invested $3.4 mln in employee training in 2017, while Capital Power noted that it spent $86,000 for employee after-hours training costs.

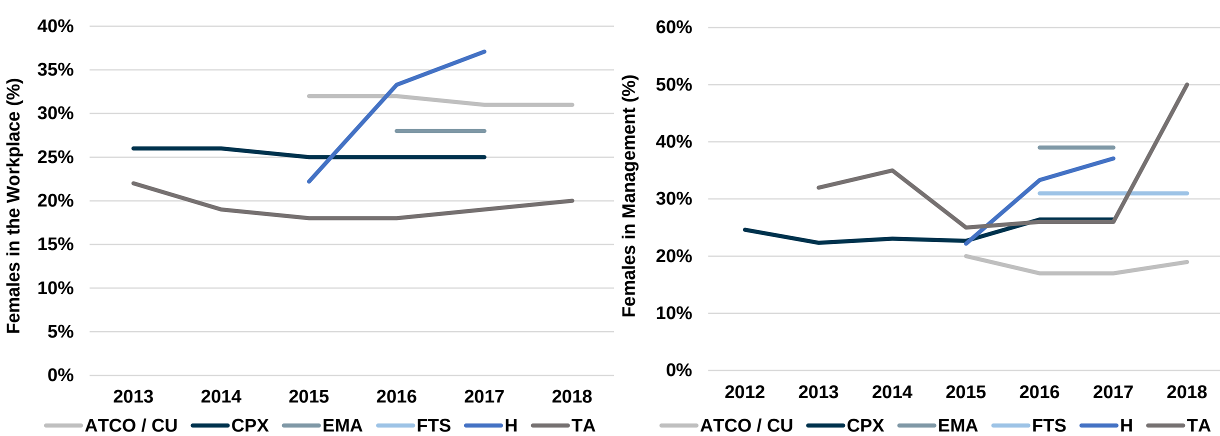
Exhibit 15: Voluntary Turnover Rate



Source: Company Documents, NBF

Diversity: Although it's one thing for a company to provide employee programs for growth, it's another to provide equal opportunity for such growth. As such, a number of the companies have started reporting the number of females in both the workplace and in management. Furthermore, Capital Power has taken it one step further with its philosophy of equal pay for equal work, thereby disclosing the ratio of compensation by gender at each level of management across the entire organization.

Exhibit 16: Females in the Workplace (LHS) and in Management (RHS)

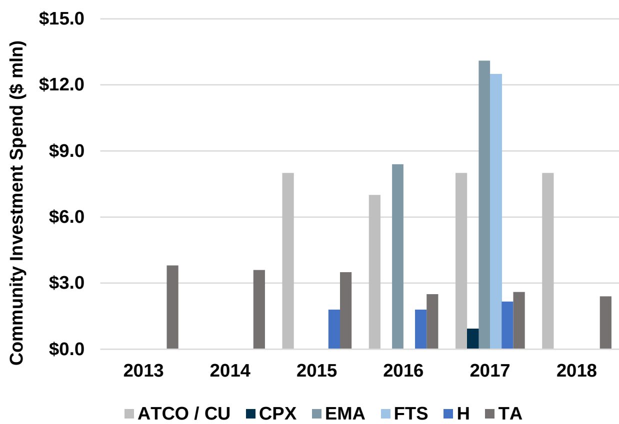


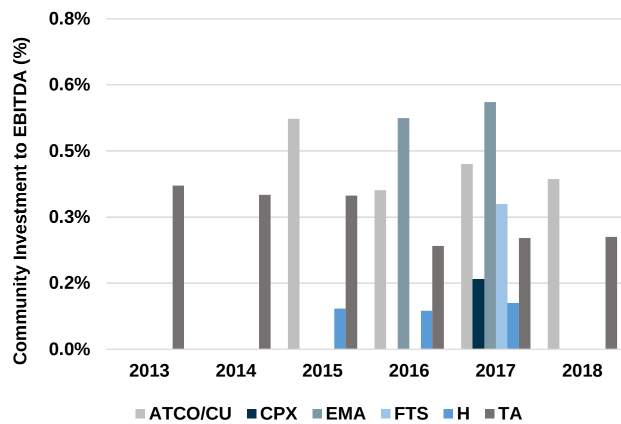
Source: Company Documents, NBF

Communities.

As an integral part of sustainability, we look at how companies build relationships with community groups and organizations, while focusing programs in areas that promote and strengthen the quality of life for community members. Overall, the Power & Utilities companies all have numerous projects aimed at empowering communities and creating healthy and sustainable communities, therefore it would be hard to make comparisons based on different community programs. However, most of the companies have now started reporting community investment spending, which is a tangible way to compare across our space. Although a dollar amount is not necessarily representative of the impact a company has on the community, we view community spending as a percentage of consolidated EBITDA as a useful quantitative method in comparing and contrasting each company. Overall, we note Emera has the highest community investment on a total dollar amount and on a ratio basis, while we noticed the decreasing investment on a dollar and ratio basis from TransAlta.

Exhibit 17: Community Investment Spend Amount (LHS) and relative to EBITDA (RHS)



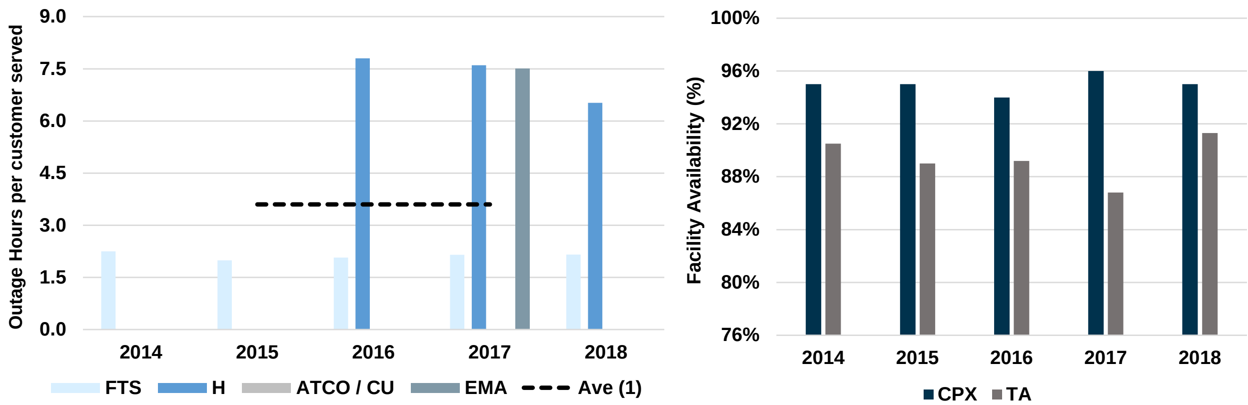


Source: NBF, Bloomberg

System Reliability: For the Utility companies (FTS, EMA, ATCO/CU, H), there are two key metrics when it comes to electricity grid reliability: (1) System Average Interruption Duration Index (SAIDI) and (2) System Interruption Frequency Index (SAIFI). SAIDI has been the metric historically stated for distribution, and it essentially represents the customer hours of interruption per customer served. Companies like Hydro One have started to report these numbers during two different situations, which include the hours of interruption under both normal operations and during major events. We outline the SAIDI metrics in the chart below, showing that Fortis is significantly ahead of its peers when it comes to average interruption and is well below the Canadian electricity and U.S. Energy Information Association Average (2015-2017). Improving system reliability requires investment in forecasting tools, grid technology and upgrading infrastructure and processes. A number of companies are committed to implementing smart grid technology which not only allows companies to better forecast outages, but allows companies to monitor customer usage.

On the generation front, we highlight average fleet availability since 2014, with Capital Power setting the bar at 95% availability in 2018 and a target of 95% or greater availability for 2019.

Exhibit 18: **System Average Interruption Duration Index (LHS) and Facility Availability (RHS)**



(1) Ave represents CAD electricity & U.S. Energy Information Association Average from 2015-2017.
Note: Numbers are based on Normal circumstances
Source: Company Documents, U.S. Energy Information Association, NBF

Indigenous Involvement - Industry Leaders

Although the Power & Utilities sector has been developing relationships with Indigenous communities for decades, there is clearly a renewed focus on supporting employment, education, engagement and economic participation. After establishing relationships built on a foundation of trust and respect, companies take a collaborative approach to including Indigenous communities, with a large emphasis being placed on understanding the culture, heritage and traditions. When assessing each company's performance with respect to Indigenous involvement, we consider a spectrum of criteria, including: (1) culture awareness programs; (2) training and growth opportunities; (3) indigenous community improvements; (4) business relationships; and (5) supporting entrepreneurship and independence. Although less quantitative and more qualitative in nature, we have selected a few highlights for each company, corroborating our view that the Power & Utilities sector as a whole are industry leaders with respect to Indigenous Involvement.

Fortis: One of the leading projects when it comes to indigenous involvement is Fortis' Waytaynikaneyap Power project, which is a 1,800 km electricity transmission project and a partnership between Fortis (49%) and First Nations communities (51%). The $1.6 bln project is expected to connect 17 First Nation communities in NW Ontario to the grid, who currently rely on expensive, environmentally-unfriendly diesel generators for power (ISD in late 2020 and 2023). The project not only provides 17 First Nations communities with access to clean, reliable energy, but it will also provide local First Nations with employment opportunities. Fortis has held discussions with community members, while also implementing a Community Liaison project and a comprehensive First Nation training Readiness Plan to prepare community members for employment. Furthermore, Fortis has begun planning a "Business Readiness" program to help communities identify, prioritize and capture business and economic opportunities related to the Project. We believe the extensive approach that Fortis has demonstrated, has set a strong bar for other companies to follow.

Hydro One: The company has also set a solid example for how to respectfully engage and interact with indigenous peoples and communities. The company has a top down approach, which begins with the board and then trickles down into every aspect of the company's operations. In 2017, Hydro One developed its first 5-year Indigenous Relations Strategy Framework Implementation Plan, which included new programs like the First Nations Conservation Program, which provides free energy audits, appliance upgrades and home weatherization to First Nations communities. Elsewhere, the company has rolled out a mandatory Indigenous Cultural Awareness online training for all manager levels while Hydro One has also developed a Human Resources Indigenous Recruitment Integration Plan, setting specific hiring targets for Indigenous People. Finally, Hydro One is exploring opportunities to partner with Indspire to increase awards for Indigenous students from $75,000 to $200,000.

ATCO/CU. Following the positive FID for LNG Canada in early October 2018, ATCO announced a number of partnerships with indigenous groups related to the project. For instance, ATCO announced a partnership agreement worth ~$40 mln with the Haisla Nation in December 2018, in order to provide workforce housing and operational support services for three camps in relation to the construction of the Coastal GasLink Pipeline. Elsewhere, ATCO's Frontec division has partnered with the Kaska First Nations and secured a three-year contract to provide camp support services to Coeur Mining, Inc.'s Silvertip mine in northern British Columbia. As well, ATCO/CU are actively pursuing partnerships with Indigenous groups on business opportunities, such as the solar project initiatives with Three Nations Energy in Fort Chipewyan and Old Crow, Yukon.

Emera: In 2014, Emera signed a Socio-Economic Agreement with the Qalipu Mi'kmaq First Nations Band in Newfoundland and the Assembly of Nova Scotia Mi'kmaq Chiefs for the Maritime Link Project. The commitments made between Emera and the First Nations groups, promote training, employment and business opportunities for members of indigenous communities. Recall, the Maritime Link project is part of a larger strategy within the Maritimes to address the growing demand for more renewable energy, by allowing Nova Scotia to import hydro electricity from the Muskrat Falls generation station in Labrador, thereby decreasing its dependency on coal-fired generation. Meanwhile, Emera's NS Power has made other community agreements with the Mi'kmaq, which include opportunities for training and capacity building in archaeology, construction and vegetation management. Elsewhere, Emera's New Mexico Gas Company's Energy Efficiency team is working with the tribal housing authority at San Felipe Peublo to help low income homeowners to make energy efficiency improvements, while the team is also partnering with Jicarilla Apache Nation to acquire a natural gas pipeline and develop Liquified Natural Gas storage systems to service communities in north-central New Mexico.

TransAlta: firmly believes in helping enhance and expand indigenous education by each year providing seven $3,000 bursaries for Indigenous post-secondary education programs and three $1,000 bursaries for Aboriginal students going into the trades. Furthermore, in 2018, TransAlta paired up with the Southern Alberta Institute of Technology (SAIT) to create the Indigenous Gap program, which is a program that will provide support to Indigenous students who need high school upgrading in order to enter a trade program. Additionally, the company achieved the Canadian Council for Aboriginal Business silver-level Progressive Aboriginal Relations (PAR) certification in 2017.

Cybersecurity

With critical infrastructure relying on information technology systems to transmit, store, monitor and operate assets, cybersecurity programs are essential to the sustainability of any Power/Utility company.

Fortis: All of the utilities of Fortis were assessed using the Cybersecurity Capability Maturity Model (C2M2), a partnership program which was developed by the U.S. Department of Homeland Security to help companies with the implementation and management of practices associated with the operation and use of information technology. In addition, Fortis is refining a Cybersecurity Risk Management Program, expected to be fully implemented in 2019.

Capital Power: Back in 2017, the company partnered with the federal government's Communications Security Establishment (CSE) organization to share threat intelligence and provide increased protection of computer systems in the event of an attack. Capital Power was the first power generator in Canada to sign this partnership. In addition, the company has a Crisis Management Plan which includes a cyber incident response.

TransAlta: The company's cybersecurity program aligns with the industry best practices, while using specific security controls to secure its data and business operation, including access control measures, intrusion detection and prevention, monitoring networks land implementing cybersecurity policies and procedures.

Emera: The programs and strategies regarding Emera's cybersecurity standards, are all derived in part from the National Institute of Standards and Technology's Cyber Security Framework. Regarding specific assets, Emera is required to comply with rules set out by the North American Electric Reliability Corporation and Northeast Power Coordinating Counsel. Overall, Emera actively manages cybersecurity risk, while reporting key elements of its cybersecurity program to the Audit Committee on a quarterly basis.

Hydro One: With the company's increasing reliance on information systems, Hydro One continues to improve and upgrade its IT systems and security in order to combat cybersecurity risk. The company adheres with various cyber-security requirements under the OEB's Ontario Cyber Security Framework and also with the NERC Critical Infrastructure (Cyber Security) standards. Meanwhile, Hydro One conducts regular emergency response drills when its comes to technical failures and cybersecurity.

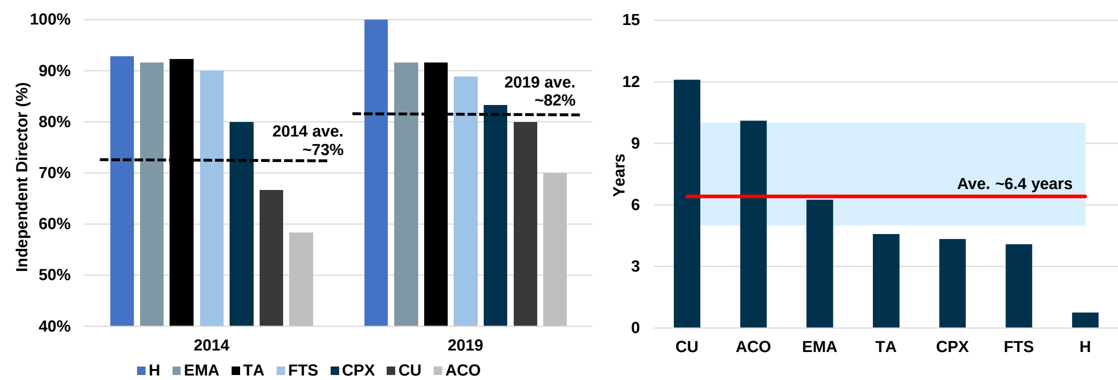
ATCO/CU: The company has an enterprise wide cybersecurity program, which includes employee awareness, layered access controls, network threat detection, and coordinating incident responses. ATCO/CU cybersecurity program covers all technology assets and is consolidated under a common, centralized organization structure.

Governance > Tone from the Top

Sustainability begins and ends with leadership. Strategies may vary between companies when it comes to implementing sustainability programs, however, execution and accountability is what sets apart the quality of the Board of Directors and Management. We believe the most important factors in assessing governance includes board independence and experience, diversity and compensation policies.

Board independence and expertise: Independent directors essentially act as guides through an impartial and objective lens. As well, independent directors can offer different perspectives given their diversified skillset, experience and involvement in companies outside of the industry in which they reside on as a Board member. Essentially their role is to identify risks that perhaps management does not see, while improving corporate credibility and governance standards. As shown in the chart below (LHS), there has been a marked 9% increase in the average number of independent directors across our Power & Utilities coverage universe – with the exception of Fortis, which added two non-independent members following the ITC acquisition. Additionally, we outline the average tenure of the Board, given the importance of fresh perspectives being incorporated in the strategic direction and overall decision-making process. We believe investors consider independent directors who have been on the board over 10 years as non-independents. For example, ATCO and CU have the longest Director tenure, averaging 10.1 and 12.1 years, respectively, exacerbating the already low percentage of independent directors on the board.

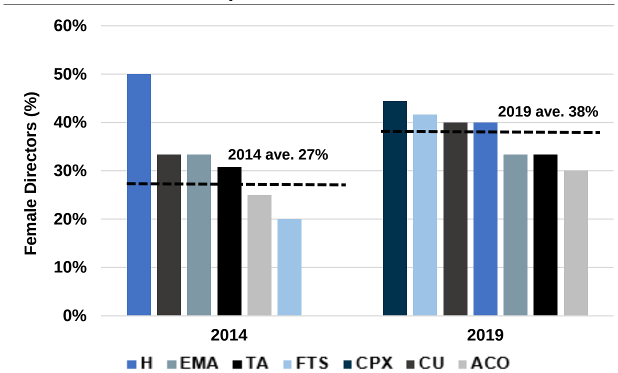
Exhibit 19: Independent Directors (LHS) and Director Tenure (RHS)



Source: Company Documents, NBF

Board diversity: The new expectation across industry and investors is to see a Board comprised of at least 30% women. This progressive mandate not only addresses gender parity in the boardroom, but also ethical leadership via diversity, productivity and profitability. Stats Canada released data in May 2019 showing that less than 20% of Board directorships in Canada are held by women. However, we applaud the Power & Utilities group for being ahead of the curve when it comes to female representation, with an average of 27% in 2014 rising to 38% as of 2019 - i.e., significantly ahead of Canada's average.

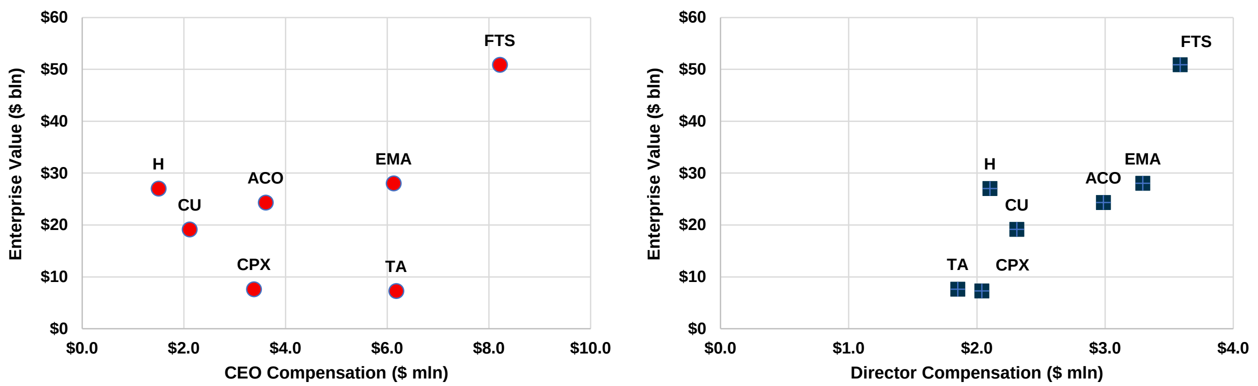
Exhibit 20: Female Representation on the Board



Source: Company Documents, NBF

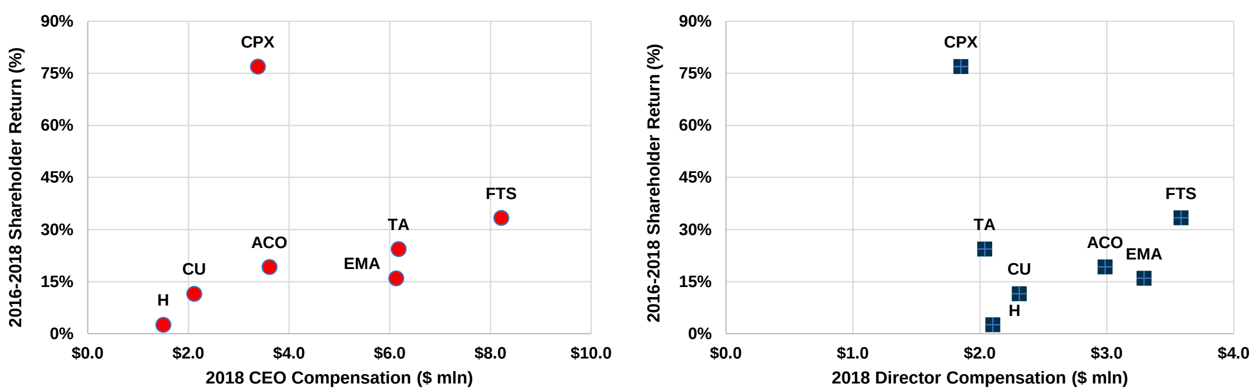
Board and executive compensation: Compensation policies and plans that are competitive, equitable and transparent are important for incentivizing performance, aligning with the sustainable growth and long-term value creation objectives of stakeholders. Compensation committees responsible for reviewing and determining executive compensation typically rely on a comparator group made up of similarly sized companies. However, this approach presents a moral hazard for stakeholders in our view as management could be incentivized to grow the business for the sake of growth, as opposed to creating stakeholder value on a per share basis. As such, we compare CEO compensation to each company's 3-year average total return relative to the TSX Composite Index. As shown in the charts below, the best bang for your buck goes to CPX.

Exhibit 21: Enterprise Value versus CEO & Director Compensation



Source: Company Documents, NBF

Exhibit 22: Shareholder Return (2016-2018) versus CEO & Director Compensation



Source: Company Documents, NBF

Auditors: Third-party reputable auditors are crucial to helping ensure the integrity of financial information and the capital markets. Meanwhile, we are also starting to see a trend towards auditors also verifying a company's total GHG emissions, so that investors can accurately assess and compare data across various companies and industries. However, there is a growing focus from the investment community on how often a company rotates its auditor, with at least once every ten years becoming the golden standard, in our view. From a Governance perspective it is increasingly important to implore mandatory audit rotation in order to avoid a conflict of interest related to long relationships (and growing fees) between the auditor and the client. Considering the companies in our coverage universe, all report annual financial results audited by reputable accounting firms (ie. KPMG, Deloitte, PricewaterhouseCoopers (PwC), Ernst & Young (EY) etc.), while only Capital Power and TransAlta report that their GHG emissions are also audited. Looking at auditor rotation, every company we cover has had the same auditor in place since they became public, except for Fortis, which switched last year from EY to Deloitte. Therefore, we recommend from a Governance standpoint that every company consider implementing a mandatory audit rotation program.

ESG Assessment by Company

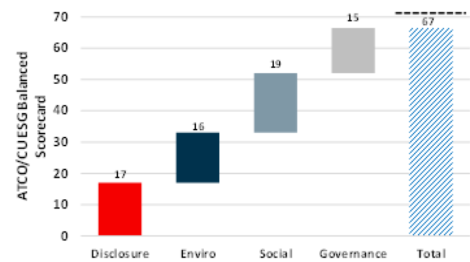
ATCO / CU ($49 / $40 target; SP / SP): Out with the Coal, In with the Renewables…

ESG Balanced Score Card results:

- Disclosure, Environmental, Social, Governance: **67 / 100**

Overview: As a result of ATCO/CU reporting its ESG measures on a combined basis, we have elected to look at the two companies together as a whole. ATCO/CU produced its first Sustainability report in 2017 and recently published an updated 2018 report. At this time ATCO/CU scored in the middle of its peer group, with a strong showing in the Social category offset by a lower score in the Governance section.

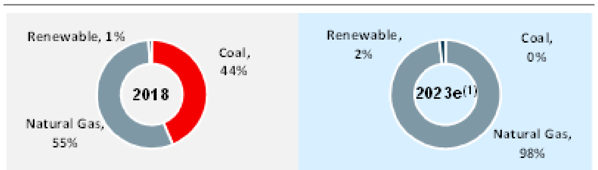
Exhibit 23: ATCO/CU Balanced Score Card



Source: Company Documents, NBF

E ATCO/CU has produced relatively consistent emissions over the past three years, within the range of 10.5-11 mln tonnes of CO_2e per annum. However, the transition off coal is well underway, with the recent coal-to-gas (CTG) conversion for 50% of its Battle River 4 facility, and plans to complete full CTG conversions of both the Battle River and Sheerness coal plants by 2020. Meanwhile, pro forma the announced sale of the Canadian power division, the company's carbon footprint would significantly be reduced. Elsewhere, ATCO/CU places strong importance on preventing hydrocarbon spills, while having strategies to remediate the areas if incidents occur. Overall ATCO/CU scored 16/25 on Environmental.

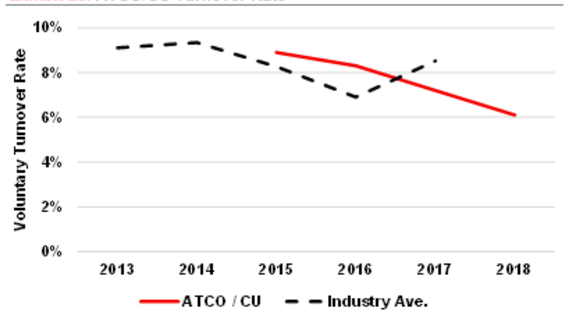
Exhibit 24: ATCO/CU Generation Mix



(1) Assumes the sale of CU Cdn generation business
Source: Company Documents, NBF

S ATCO/CU scored 19/25 within the Social category, reflecting limited disclosure in terms of employee retention rates and employee training initiatives. Partially offset by one of the highest community investment spends relative to its annual EBITDA amongst its peers. ATCO/CU also scored well on the Indigenous Engagement, due to its four pillar approach: (1) access to jobs, education and training for Indigenous People; (2) internal and external education; (3) meaningful engagement and (4) economic participation.

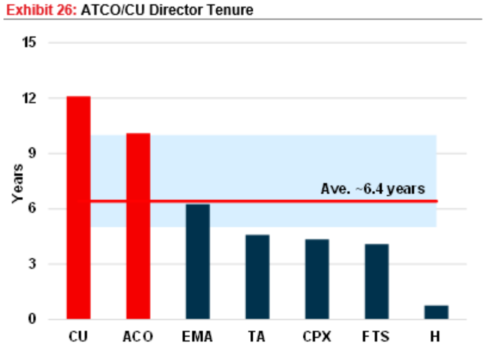
Exhibit 25: ATCO/CU Turnover Rate



Source: Company Documents, NBF

G On Governance, ATCO/CU scored 15/25, below the peer group average predominantly as a result of having the lowest number of independent board members (ATCO: 70%, CU: 80%) and the highest average tenure of all the companies (ATCO: 10 yrs, CU: 12 yrs). However, we do give the company credit on the diversity front for maintaining 30% female Board representation.

Exhibit 26: ATCO/CU Director Tenure



Source: Company Documents, NBF

Valuation: Our target price for ATCO is $49, which is based on a risk-adjusted dividend yield of 3.5% applied to our 2020e dividend of $1.74/sh, a 14.0x multiple of our 2020e Free-EBITDA and our DCF/sh valuation of $48.50. We maintain our Sector Perform rating.

Our target price for CU is $40 target, which is based on a risk-adjusted dividend yield of 4.0% applied to our 2020e dividend of $1.69, a 15.75x multiple of our 2020e Free-EBITDA and our DCF/sh valuation of $39.00. We maintain our Sector Perform rating.

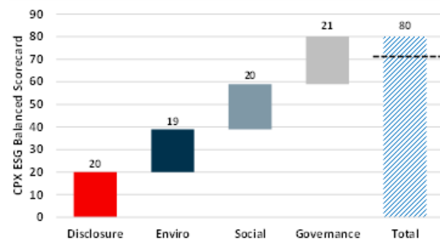
Capital Power ($39 target; OP): An ESG industry leader…

ESG Balanced Score Card results:

- Disclosure, Environmental, Social, Governance: **80/ 100**

Overview: Capital Power is an ESG industry leader when it comes to both disclosure and practice. CPX produced its first Sustainability report in 2017, based on GRI reporting, while the company now expects to issue an annual Sustainability report moving forward. Given CPX's recent momentum in ESG quantitative metrics, combined with a clear path towards portfolio decarbonization, we recommend CPX as a core holding within environmentally-conscious portfolios.

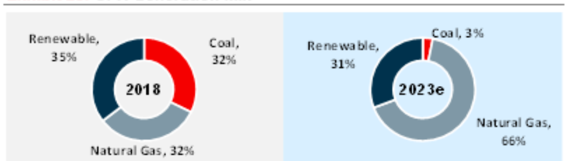
Exhibit 27: CPX Balanced Score Card



Source: Company Documents, NBF

E CPX scored second highest on the Environmental section with 19/25, displaying a steady decline in GHG emissions intensity over the past few years (2017: 0.79 tonnes of CO_2e / MWh), having added nine renewable and natural gas facilities (~3,000 MW). The company continues to accelerate its shift towards clean energy with ~1,725 MW of wind generation under construction, and the recently purchased 875 MW Goreway combined cycle gas-fired plant in Ontario. Overall, CPX has the goal of reducing its GHG emissions intensity to 0.37 tonnes of CO_2e/MWh by 2030 through growing its renewable energy portfolio while also reducing its coal exposure through CTG conversions. By 2023e, we anticipate a reduction in coal-fired capacity to <5% of total EBITDA, while renewables moves up to >30%, which can be further accelerated assuming the early full conversion of all coal plants prior to 2030. Combined with a focus on innovative alternative solutions to capture carbon emissions and utilize in commercial applications such carbon nanotubes (C2CNT), we consider Capital Power a leader in Environmental stewardship.

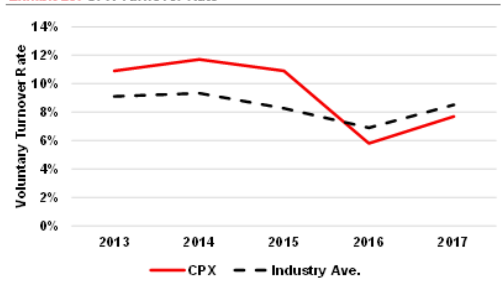
Exhibit 28: CPX Generation Mix



Source: Company Documents, NBF

S On the social aspect, CPX scored the highest at 20/25 given the company's strong employee retention rate, as well as its focus on employee diversity and safety, with the lowest employee injury frequency rates in our coverage universe (CPX: 0.61 vs peer average: 1.20). As well, CPX was one of two companies to outline its community investment spend. Room for improvement includes Indigenous engagement disclosure, culture awareness programs and joint ventures.

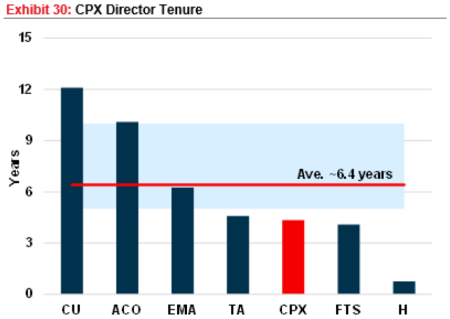
Exhibit 29: CPX Turnover Rate



Source: Company Documents, NBF

G With 89% independent board membership, 44% female representation and an average tenure of ~4.5 years, Capital Power ranked the highest in the Governance section with 21/25. Meanwhile, over the past three years, CPX has provided the highest total three year return in our coverage universe at 77% relative to the TSX at 10%, while the company's CEO and Director compensation is amongst the lowest in the group. Overall, we peg CPX has best-in-class with respect to governance practices.

Exhibit 30: CPX Director Tenure



Source: Company Documents, NBF

Valuation: Our target price for Capital Power is $39, which is based on a risk-adjusted dividend yield of 5.25% applied to our 2020e dividend of $1.98/sh, an 11.0x multiple of our 2020e Free-EBITDA and our DCF/sh valuation of $40.00. Combined with a 12-month total return opportunity of 34% (group: 9%), we maintain our Outperform rating.

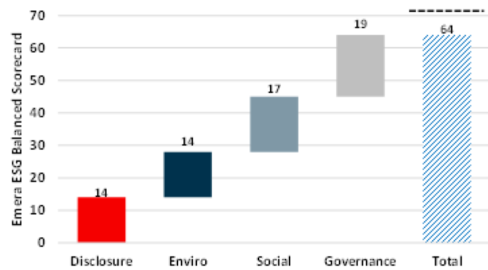
Emera ($52 target; SP): ESG Disclosure is Expected to Evolve

ESG Balanced Score Card results:

- Disclosure, Environmental, Social, Governance: **64 / 100**

Overview: As a vertically integrated utility, Emera owns a significant amount of generation capacity and is in the process of evolving its ESG reporting. As such, we anticipate significant improvements in disclosure with its next Sustainability report, which will help improve the company's overall score card.

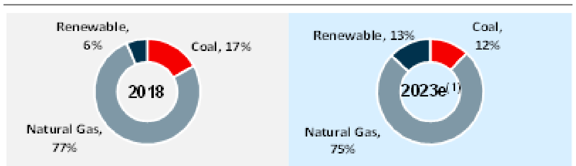
Exhibit 31: EMA Balanced Score Card



Source: Company Documents, NBF

E In 2017, Emera had the second highest total GHG emissions at 22.9 mln tonnes of CO_2e, however, the company has made significant progress since 2013, when its GHG emissions were 27.3 mln tonnes, representing a 15% decrease. Meanwhile, EMA is undergoing one of the largest generation mix transformations across our space, with US$1.7 bln being spent on CTG conversions and solar projects. Emera is in the process of modernizing its ~1,700 MW dual-fired Big Bend location, adding 1,090 MW of combined cycle generation by 2023 while retiring ~700 MW of coal-fired capacity; as well as the approved 600 MW solar project online 2021. In addition to significant amount of projects in place regarding biodiversity, we anticipate additional colour related to other air emissions, water usage and waste management. Overall, Emera scored a 14/25 in the Environmental section.

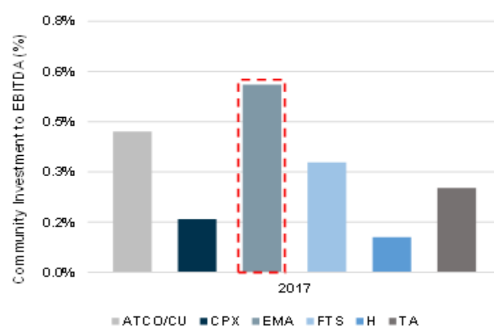
Exhibit 32: EMA Generation Mix



(1) Based on Big Bend estimated generation mix
Source: Company Documents, NBF

S Emera scored 17/25 on the Social category. Emera was the only company not to report employee injury frequency rate, while the company also did not disclose the female representation in both the workforce as well as in senior management. However, we advocate that Emera does a strong job with its Indigenous engagement, specifically illustrating the Socio-Economic Agreement the company has with the Qalipu Mi'kmaq First Nations Band in Newfoundland and the Assembly of Nova Scotia Mi'kmaq Chiefs related to the Maritime Link Project.

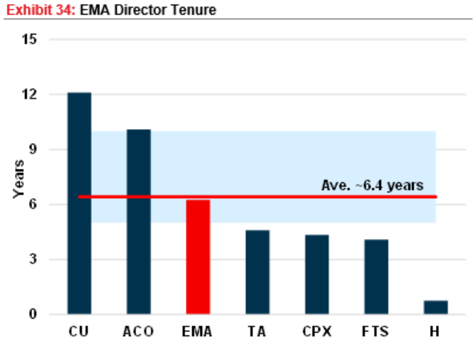
Exhibit 33: EMA Investment Spend



Source: Company Documents, NBF

G Governance is the strongest section for Emera, in our view, scoring 19/25, as the company has one of the best Director tenures in the group, with an average of 7.29 years. Meanwhile, Emera has 31% female representation and 92% independent director representation. Additionally, the company's CEO and Director compensation remains in the middle of the pack, lining up with its relative enterprise value and three-year shareholder total return.

Exhibit 34: EMA Director Tenure



Source: Company Documents, NBF

Valuation: Our target price for Emera is $52, which is based on a risk-adjusted dividend yield of 5.0% applied to our 2020e dividend of $2.47, a 15.5x multiple of our 2020e Free-EBITDA and our DCF/sh valuation of $53.00. We maintain our Sector Perform rating.

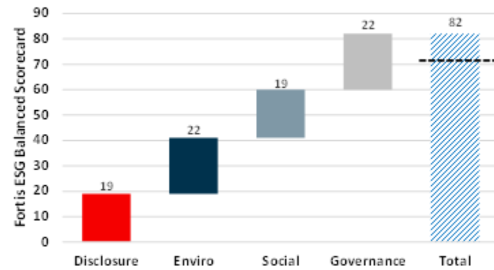
FTS ($52 target; SP): Top of the ESG Class…

ESG Balanced Score Card results:

- Disclosure, Environmental, Social, Governance: **82 / 100**

Overview: In our view, Fortis has the best overall disclosure and practices when it comes to ESG and sustainability reporting. FTS produces a biennial Sustainability report, while also disclosing Sustainability Key Performance Indicators on an annual basis, with a significant amount of quantitative data. Overall, FTS scored the highest when it comes to ESG, however it continues to model continuous improvement by looking to incorporate additional information in the next Sustainability report.

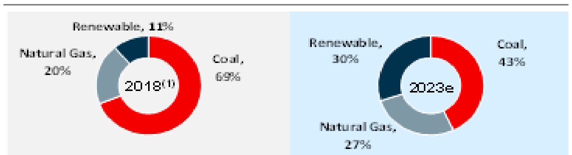
Exhibit 35: FTS Balanced Score Card



Source: Company Documents, NBF

E Fortis scored the highest within the Environmental category with 22/25, predominatly a result of the company's excellent disclosure on its annual GHG emissions, which has been rangebound between ~10-11 mln tonnes of CO2e per year for the past five years, while posting the largest reduction in GHG emissions intensity, decreasing by 63% since 2015. Although only ~8% of the company's EBITDA comes fom power generation, given that the company is predominantly a "poles and wires" utility, the company remains focused on finding ways to reduce emissions. Fortis is currently looking at the feasibility at Tuscon Electric Power (TEP) of using forest waste feedstocks as a renewable fuel source, while the company has outlined that TEP's generation mix will become cleaner as a result of coal-fired plants being retired (ie. Navjo end of 2019 and San Juan in 2022). Elsewhere, FortisBC is encouraging the use of Renewable Natural Gas (RNG) by being the first utility in North America to offer RNG as an option to environmentally-conscious end-users.

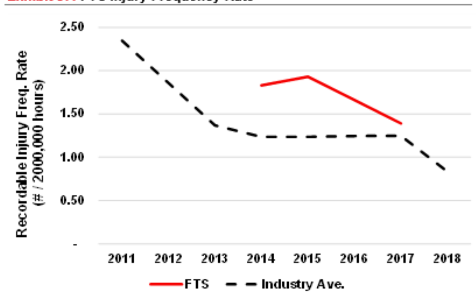
Exhibit 36: FTS Generation Mix



Note: Market purchases included in natural gas
(1) For the year 2017
Source: Company Documents, NBF

S On the Social aspect, Fortis scored 19/25 as a result of reporting employee growth and training programs ($3.4 mln in 2017), while having over 30% of females in senior management roles. Elsewhere, Fortis invested $12.5 mln in 2017 towards its communities and produced the strongest electricity grid reliability results by a landslide, reporting System Average Interruption Duration Index at 2.15 in 2017, compared to its peers at ~7.5. Overall, we expect the company to round out its top of the class Social reporting with employee voluntary turnover data moving forward.

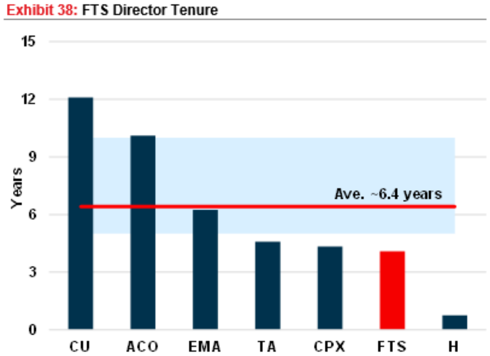
Exhibit 37: FTS Injury Frequency Rate



Source: Company Documents, NBF

G Fortis scored 22/25 on Governance with the highest level of gender diversity on its Board (42% female), while 83% of its Directors are independents averaging ~6.9 years for tenure. Looking at CEO and Director compensation, Fortis paid the highest amongst its peers, albeit partially justified by the company's enterprise value and relative total shareholder total return (ranking 2nd amongst the group over the past three years). Finally, we note that FTS is the only company to change its auditors in the past 10 years, which we believe is of growing importance from a governance perspective.

Exhibit 38: FTS Director Tenure



Source: Company Documents, NBF

Valuation: Our target price for Fortis is $52, which is based on a risk-adjusted dividend yield of 3.5% applied to our 2020e dividend of $1.94/sh, a 15.5x multiple of our 2020e Free-EBITDA and our DCF/sh valuation of $53.00. Combined with a 12-month total return opportunity of 4% (group: 9%), we reiterate our Sector Perform rating.

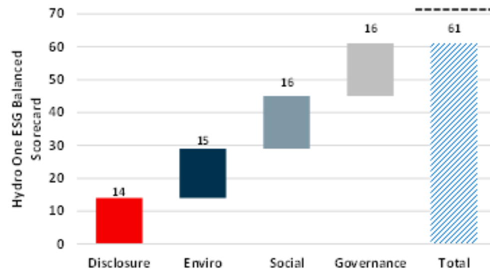
Hydro One ($20 target; UP): Exemplary Indigenous Engagement Practices

ESG Balanced Score Card results:

- Disclosure, Environmental, Social, Governance: **61 / 100**

Overview: Although we believe the company implements solid ESG and sustainability practices, when it comes to reporting and disclosure we think there is definitely room for improvement. Overall, Hydro One's total ESG score was the lowest in its peer group, however, we anticipate Hydro One providing enhanced financial disclosure in its next Sustainability report.

Exhibit 39: H Balanced Score Card

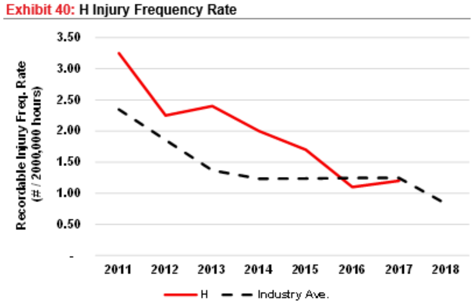


Source: Company Documents, NBF

E As the only pure Transmission & Distribution utility in the group, Hydro One naturally has the lowest GHG emissions with only 0.34 mln tonnes of CO_2e per year (peer average: 14.2 mln tonnes of CO_2e per year). That said, the company employs a climate change mitigation and adaptation strategy, and is focusing its efforts to work with communities and customers to reduce energy consumption, while investing in research and innovation. As a result, Hydro One's environmental stewardship section consisted primarily of resource management, contaminated sites, and biodiversity initiatives. The company has developed an intensive biodiversity management plan and created specific targets for 2018 as part of its long-term planning and goal setting efforts. Overall, Hydro One scored 15/25 on the Environmental category, and continually looks to minimize its impact on the ecosystems and habitiats.

S Hydro One scored 16/25 within the Social category with one of the best Indigenous engagement programs amongst its peers, in our view. In 2017, Hydro One developed its first 5-year Indigenous Relations Strategy Framework Implementation Plan, while the company also rolled out a mandatory Indigenous Cultural Awareness online training for all manager levels and is setting specific hiring targets for Indigenous people. Elsewhere, Hydro One has the highest percentage of women in senior management at 37%. The company has shown a significant reduction in Injury Frequency Rate, reducing its total number of incidents per 200,000 hours by ~63% since 2011. However, we do anticipate future disclosure regarding voluntary turnover rates within its ESG reporting as a prime indicator of employee satisfaction, growth, enjoyment and overall retention.

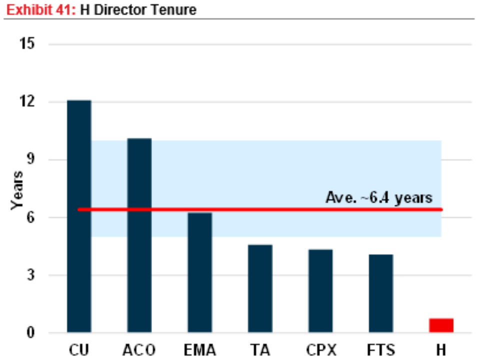
Exhibit 40: H Injury Frequency Rate



Source: Company Documents, NBF

G With respect to Governance, Hydro One scored 16/25, reflecting the highest percent of independents on the Board at 100%, while also reporting 40% female Directors on the Board. However, as a result of the company having its entire board replaced in July, the company scored significantly lower on Board tenure – i.e., well below the sweet spot of 5-10 years. As well, given the recent approval from the Province of Ontario regarding executive and Board compensation, the company is on the lower end of the peer group spectrum – albeit justified by Hydro One's relative total shareholder return (-8%).

Exhibit 41: H Director Tenure



Source: Company Documents, NBF

Valuation: Our $20 target price for Hydro One is based on a risk-adjusted dividend yield of 4.75% applied to our 2020e dividend of $1.01/sh, a group high 18x multiple of our 2020e Free-EBITDA, and our DCF/sh valuation of $21.00. Based on a 12-month total return opportunity of -8% (group: 9%), we maintain our Underperform and recommend investors remain on the sidelines pending further clarity surrounding management continuity and overall strategic direction with the new CEO's plan expected to be finalized over the next 2-3 months.

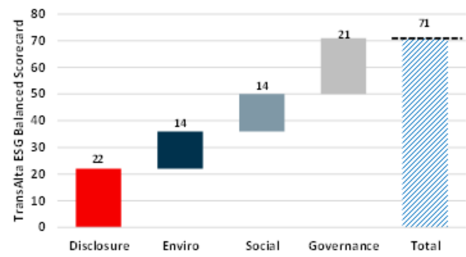
TransAlta ($11 target; SP): Disclosure is Best of the Bunch

ESG Balanced Score Card results:

- Disclosure, Environmental, Social, Governance: **71 / 100**

Overview: When it comes to ESG reporting, TransAlta has the best quantitative disclosures amongst its peers, in our view. The company does an excellent job of providing consistent year-over-year data within its Integrated Annual Report, that is detailed and measurable. TransAlta is also exemplary in reporting specific targets, and stating if the goal was achieved or not. Overall, TA posted the highest score when it came to ESG disclosure and we expect other companies will look to TA's reporting methods as a leading example.

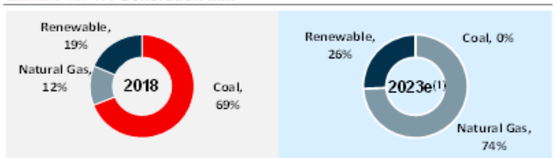
Exhibit 42: TA Balanced Score Card



Source: Company Documents, NBF

E TransAlta scored 14/25 within the Environmental section, coming in near the middle of its peers. Not surprising however, given TransAlta produced the largest amount of CO_2e emissions out of its peer group, with 2017 CO_2e emissions at ~30 mln tonnes (peer average: ~14 mln tonnes). However, as we have emphasized throughout the report, ESG reporting and Sustainability is about diligence of the process and showing progress over time, therefore we highlight that TA reported CO2e emissions of ~20.8 mln in 2018, representing a ~30% reduction year-over-year, and a ~40% reduction since 2014. Meanwhile, TA has made the decision to completely transition off subcritical coal within the 2020-2022 timeframe, via CTG conversions or retirements of its plants. As well, TA continues to add incremental renewable projects (Alberta Windrise and 49% stake in Skookumchuck wind facility).

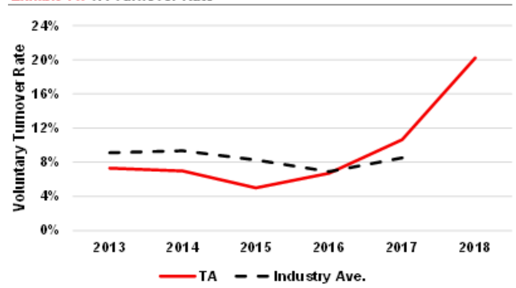
Exhibit 43: TA Generation Mix



(1) 2023e based on capacity
Source: Company Documents, NBF

S On the Social aspect, TA scored 14/25. The company has done an excellent job of reducing its Injury Frequency rate over the years, from a high of 0.96 per 200,000 hours in 2013 to 0.54 in 2018, representing a 43% decrease. However, we view TransAlta's increasing turnover rate as a challenge, noting that the company previously provided an annual turnover rate target at below 8%. We do highlight that primary reason for the increasing turnover rate has been the company's accelerated coal-to-gas transition, increasing turnover at the coal mine. Elsewhere, we expect TA will consider initiatives to further its community investment spend and look at ways of fostering its Indigenous engagement.

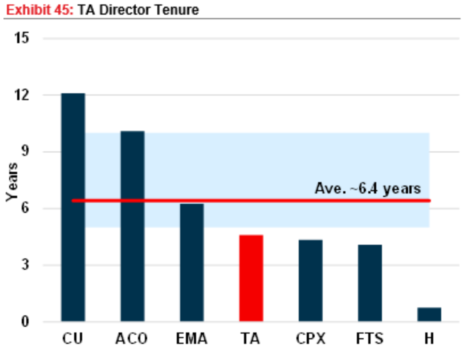
Exhibit 44: TA Turnover Rate



Source: Company Documents, NBF

G TransAlta scored 21/25 in the Governance section as a result of 90% Board independents and 40% female representation. Meanwhile, the company had an average Director tenure of ~4.5 years, well within the band of 5-10 years which we consider sufficient. However, we do note the outstanding legal action in the Ontario Superior Court of Justice against TransAlta, its Directors and Brookfield BRP Holdings, regarding the alleged misrepresentation and lack of clarity surrounding the details of the proposed $750 mln Brookfield transaction. Therefore, we remain cautious regarding governance until the dust settles with the court case. Elsewhere, we do note that TA was near the high end of executive compensation, which appears out of step with its relative five-year shareholder total return of -21% (peers: 32%) and total enterprise value growth of -15% (peers 89%).

Exhibit 45: TA Director Tenure

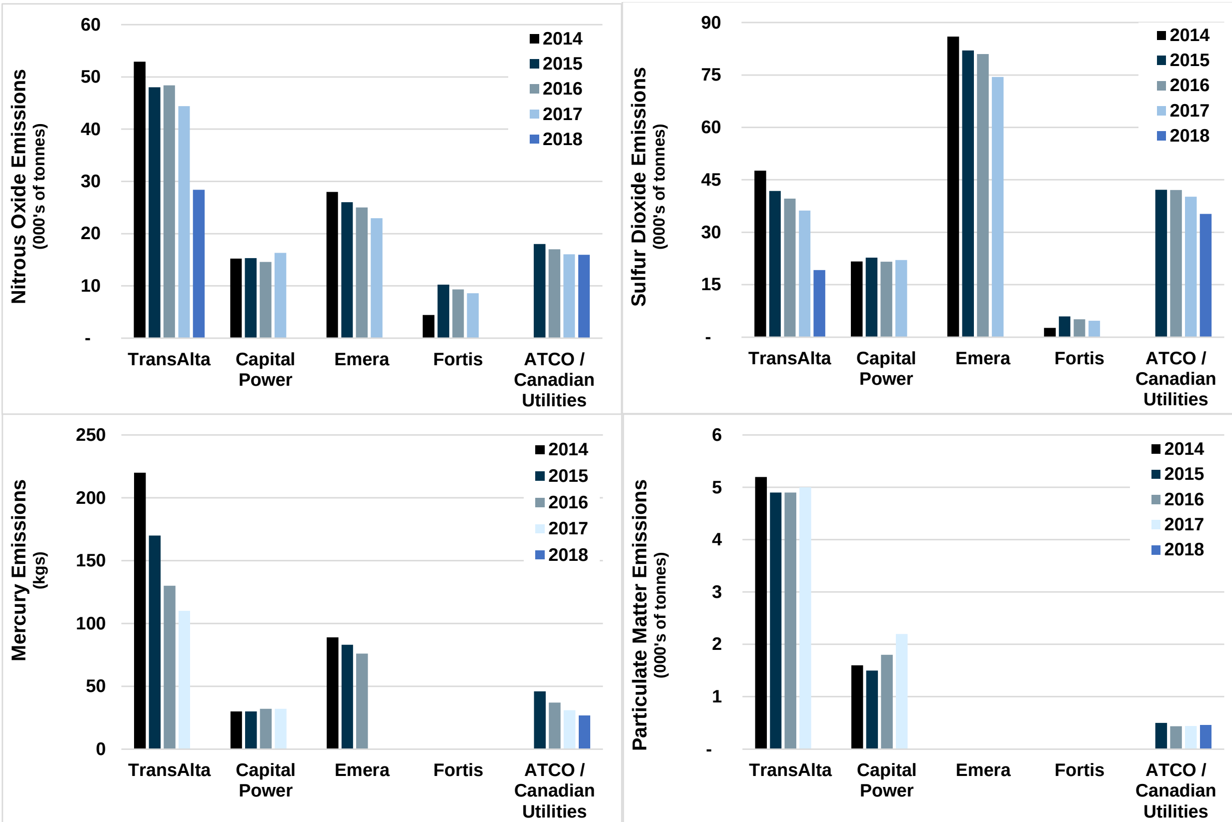


Source: Company Documents, NBF

Valuation: Our target price for TransAlta is $11, which is based on a risk-adjusted dividend yield of 1.75% applied to our 2020e dividend of $0.16/sh, a 9.5x multiple of our 2020e Free-EBITDA and our DCF/sh valuation of $12.00. We reiterate our Sector Perform rating.

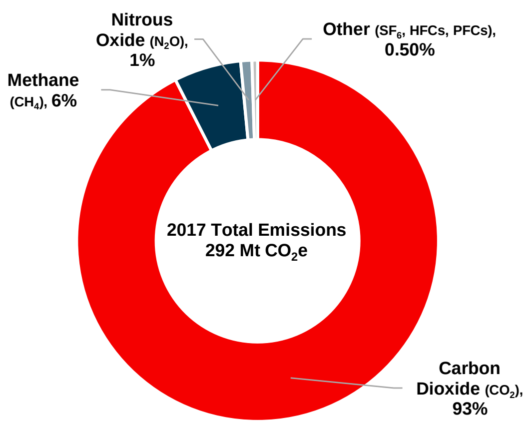
Appendix A

Exhibit 46: Other Air Emissions



Source: Company Documents, NBF

Exhibit 47: Reported 2017 GHG emissions by gas type (LHS) and by industry (RHS)



Global Warming Potential Values for the Main Greenhouse Gases

Greenhouse GaS	100-year GWPs(1)
Carbon Dioxide (CO2)	1
Methane (CH4)	25
Nitrous Oxide (N2O)	298
Sulphur hexafluoride (SF6)	22,800
Hydrofluorocarbons (HFCs), 13 species	92 - 14,800
Perfluorcarbons (PFCs), 7 species	7,390 - 12, 200

(1) GWPs are global warming potential values for each gas, which is multiplied by the amount of gas to obtain the carbon dioxide equivalent (CO_2e)
Source: Government of Canada, NBF

Appendix B

Exhibit 48: CEO Compensation by Company

Company	Incumbent	Title	Base Salary ($ 000s)	Annual Incentive as a % of Base (%)	Amount ($ 000s)	Total Annual Comp ($ 000s)
ATCO	Nancy Southern	Chair & CEO	$1,000	261%	$2,609	$3,609
Canadian Utilities	Siegfried W. Kiefer	Pres. & CSO (1)	$733	188%	$1,381	$2,114
Capital Power	Brian Vaasjo	Pres. & CEO	$725	366%	$2,652	$3,377
Emera	Scott Balfour	Pres. & CEO	$987	521%	$5,138	$6,125
Fortis	Barry Perry	Pres. & CEO	$1,300	532%	$6,913	$8,213
Hydro One	Paul Dobson (2)	Pres. & CEO	$500	200%	$1,000	$1,500
TransAlta	Dawn Farrell	Pres. & CEO	$1,000	518%	$5,176	$6,176
Average						**$4,445**

(1) CSO = Chief Strategy Officer
(2) Mark Poweska was elected President and CEO on March 28, 2019; his total compensation is capped at $2.775 mln (including incentives)
Source: Company Documents, NBF

Exhibit 49: Board of Directors Compensation by Company

Company	Annual Cash Retainer ($)						Annual Equity Retainer ($)		Total Director Comp ($)
	Chairman	Director	Lead Director	Audit Chair	Other Chair	Committee Member	Chairman	Director	
ATCO	nil	$195,000	$50,000	$25,000	$25,000	$7,500	nil	nil	$2,986,777
Canadian Utilities	nil	$195,000	$75,000	$25,000	$8,500	$7,500	nil	nil	$2,311,062
Capital Power	$165,000	$80,000	nil	$20,000	$15,000 - $20,000	$4,000 -$6,000	$165,000	$80,000	$1,850,473
Emera	$200,000	$65,000	nil	$20,000	$10,000 - $15,000	$3,000 - $5,000	$200,000	$125,000	$3,292,943
Fortis	$220,000	$75,000	nil	$20,000	$15,000	$7,500 - $10,000	$185,000	$120,000	$3,584,352
Hydro One (1)	$130,000	$80,000	nil	$20,000	$20,000	nil	$130,000	$80,000	$2,101,679
TransAlta	$165,000	$80,000	nil	$25,000	$15,000 - $25,000	nil	$165,000	$80,000	$2,037,629
Average	**$176,000**	**$111,250**		**$21,875**			**$147,192**	**$87,192**	**$2,536,415**

(1) Hydro One's 2019 director compensation is significantly reduced from 2018 levels, resulting from the Ontario Government passing the Hydro One Accountability Act, 2018
Source: Company Documents, NBF

Appendix C

Exhibit 50: **NBF Pipelines, Utilities & Infrastructure Comparables**

Company Name	TSX Ticker	Price 02-Jul-19	Market Cap ($mln) Current	EV ($mln) (1) 2019e	D / EV %	Net Debt/ EBITDA (2) 2020e	Cash Yield %	AFFO Payout 2020e	P/E 2020e	P/CF 2020e	P/AFFO 2020e	EV/ EBITDA 2020e	EV/Free-EBITDA 2020e	12 mo. Target	Total Return %	Ratings
High Payout																
AltaGas	ALA	$19.71	5,493	14,264	61%	6.1x	4.9%	45%	na	9.2x	9.2x	11.1x	14.3x	$19.00	1.3%	SP
Gibson Energy	GEI	$22.98	3,379	4,694	28%	3.4x	6.0%	76%	na	12.7x	12.7x	11.6x	13.5x	$28.00	27.9%	OP
Inter Pipeline	IPL	$20.67	9,050	15,914	43%	5.5x	8.7%	77%	na	8.9x	8.9x	11.9x	12.8x	$26.00	34.5%	OP
Keyera	KEY	$33.54	7,296	9,876	26%	2.6x	5.8%	60%	na	10.3x	10.3x	10.8x	12.1x	$44.00	37.0%	OP
Kinder Morgan Limited	KML	$11.53	1,341	1,912	30%	1.3x	5.6%	66%	na	11.8x	11.8x	9.8x	11.0x	$14.00	27.1%	OP
Pembina Pipeline	PPL	$48.57	24,674	37,640	34%	3.8x	5.1%	55%	na	10.7x	10.7x	12.2x	12.3x	$61.00	30.7%	OP
Superior Plus	SPB	$13.32	2,071	3,845	46%	3.3x	5.4%	45%	na	8.3x	8.3x	10.1x	12.5x	$14.50	14.3%	OP
Tidewater Midstream	TWM	$1.38	454	894	49%	2.7x	3.0%	14%	na	4.7x	4.7x	6.2x	6.8x	$2.10	55.2%	OP
Valener	VNR	$25.79							Restricted							
High Payout Average					**40%**	**3.6x**	**5.6%**	**55%**		**9.6x**	**9.6x**	**10.4x**	**11.9x**		**28.5%**	
Low Payout																
Altagas Canada Inc.	ACI	$24.15	725	1,399	48%	5.8x	4.1%	47%	15.3x	11.5x	11.5x	12.0x	15.2x	$20.00	-13.1%	SP
ATCO Ltd.	ACO	$44.21	5,069	24,334	79%	4.7x	3.9%	56%	14.5x	14.3x	14.3x	12.6x	16.9x	$49.00	14.8%	SP
Canadian Utilities	CU	$36.69	10,019	19,177	48%	4.9x	4.6%	66%	20.9x	14.3x	14.3x	11.1x	15.5x	$40.00	13.6%	SP
Capital Power	CPX	$30.52	3,240	7,622	57%	3.6x	6.5%	41%	14.8x	6.3x	6.3x	7.5x	8.2x	$39.00	34.3%	OP
Emera	EMA	$54.05	12,891	28,039	54%	6.1x	4.6%	74%	19.4x	16.4x	16.4x	12.1x	16.9x	$52.00	0.8%	SP
Enbridge	ENB	$47.11	94,802	166,050	43%	5.3x	6.6%	70%	19.0x	10.6x	10.6x	12.5x	13.7x	$59.00	31.8%	OP
Fortis	FTS	$52.00	22,700	50,878	55%	6.5x	3.7%	49%	18.9x	13.2x	13.2x	12.7x	17.1x	$52.00	3.7%	SP
Hydro One	H	$22.91	13,676	27,023	49%	5.6x	4.4%	63%	15.3x	14.2x	14.2x	11.4x	17.9x	$20.00	-8.3%	UP
TransAlta	TA	$8.26	2,351	7,280	68%	3.1x	1.9%	13%	na	6.6x	6.6x	7.4x	9.1x	$11.00	35.1%	SP
TC Energy Corp.	TRP	$64.61	60,439	116,688	48%	5.5x	5.1%	66%	16.8x	12.9x	12.9x	12.3x	14.5x	$65.00	5.7%	SP
Low Payout Average					**55%**	**5.1x**	**4.6%**	**54%**	**17.2x**	**12.0x**	**12.0x**	**11.2x**	**14.5x**		**11.8%**	

Note: UP = Underperform, SP = Sector Perform, OP = Outperform, NR = Not Rated
(1) Includes 100% of Preferred Equity
(2) Includes 50% of Preferred Equity
Source: Company Reports, NBF Estimates Thomson Reuter

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