Investor Presentation

January 2021

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Capital Power

RESPONSIBLE ENERGY FOR TOMORROW

Growth-oriented North American power producer

- Highly-contracted, young and diversified portfolio
- Targeting 10-12% total shareholder return
- Targeting net carbon neutral before 2050

Operational facilities

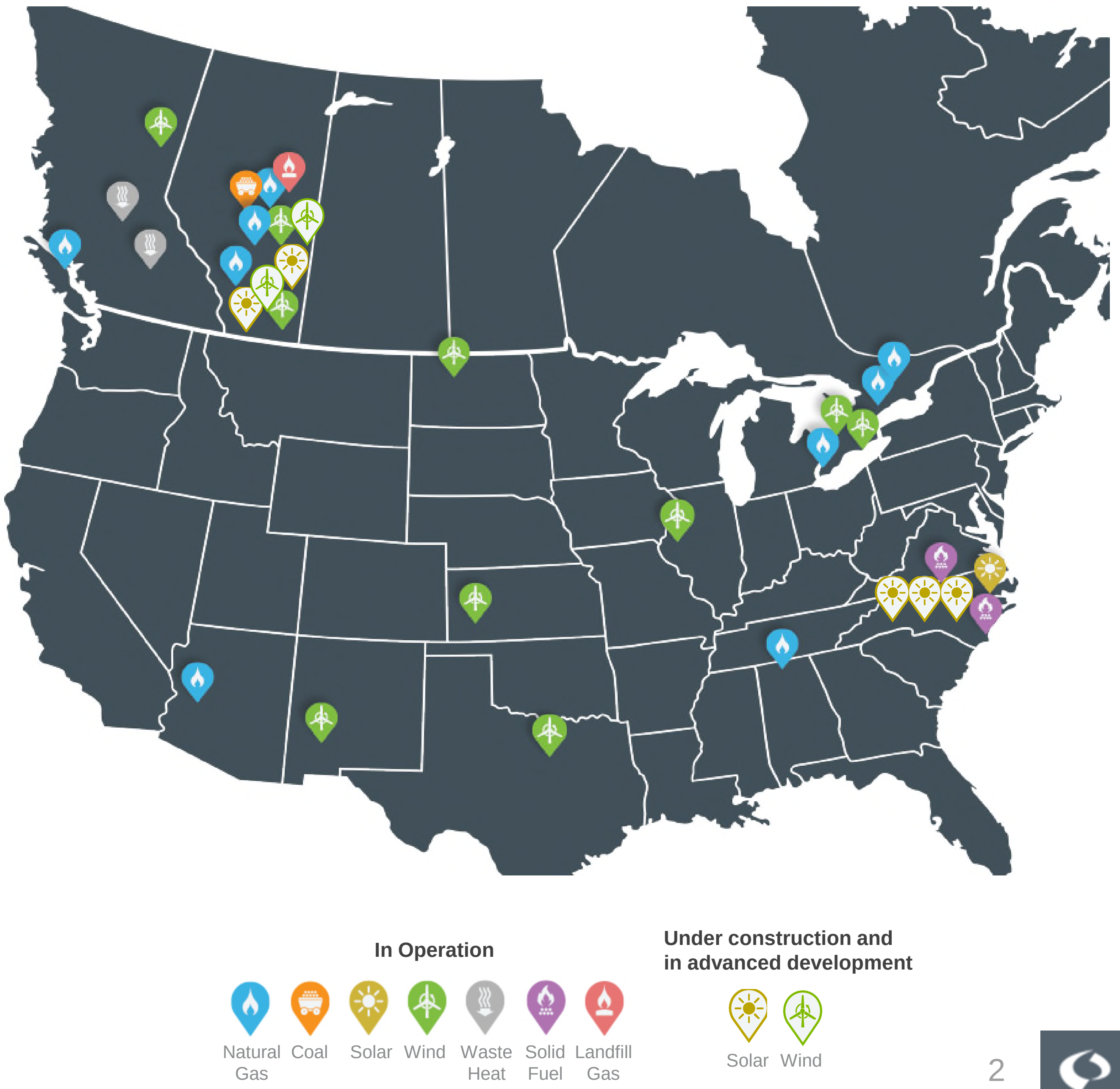
6,490 MW

28 facilities

Projects under development

985 MW

7 renewable projects and Genesee 1&2 repowering



Resiliency and innovation through COVID-19

Priority to keep our employees and families healthy

Operations

- Comprehensive health and safety protocols at plants successful
- Managed 7 major planned outages successfully in 2020

Corporate

- Ongoing remote work arrangements
- No change in efficiency or effectiveness

Post COVID-19

- Learnings will significantly enhance and transform the future of how we work

Growing our business to net carbon neutral

Strategy	Today	2024 and beyond
Investing in emissions free renewables	Building and acquiring wind and solar in Canada and the U.S.	Integration of storage technologies
Investing in critical natural gas generation	Acquiring key facilities in Canada and the U.S.	Reduce emissions profile through carbon utilization and be hydrogen ready
Transitioning heritage coal generation to natural gas	Repower and move to 100% natural gas capability	

Strategic path to a low-carbon future

Off-coal in 2023

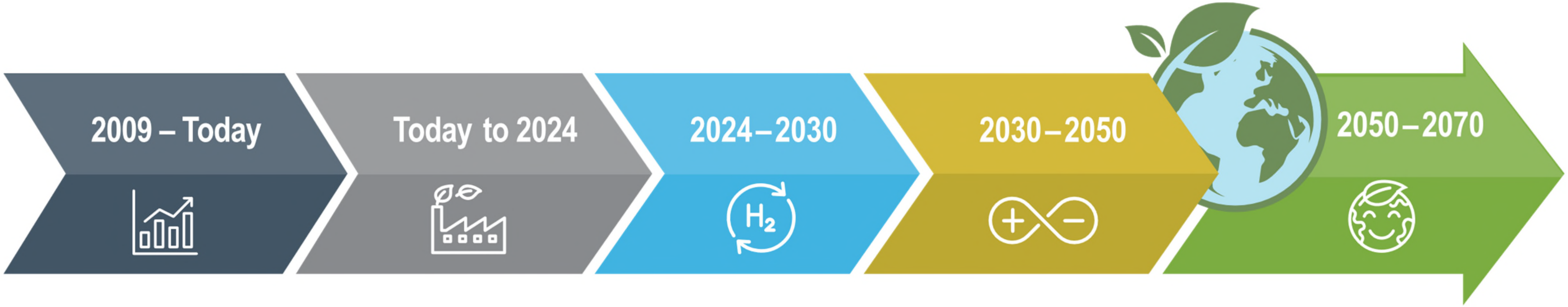
- Retirement of Roxboro and Southport power plants in 2021
- Genesee site 100% natural gas in 2023

Accelerated growth in renewables

- 7 development projects totaling 425 MW; 100 MW Buckthorn Wind acquisition

Natural gas critical to net carbon neutral transition

- Reliable, affordable, flexible power
- Carbon conversion and hydrogen technology enhance natural gas resiliency



Canadian Federal Government GHG Plan

Plan includes a proposed increase in carbon pricing to $170/tonne by 2030, among range of measures and programs for Canada to exceed 2030 GHG commitments

- Plan is expected to increase demand through electrification
- Plan supports Capital Power's carbon mitigation strategies, including carbon conversion and hydrogen
- Increases renewable growth opportunities
- Our natural gas assets are well-positioned to support reliable, affordable and sustainable electricity in Alberta, BC and Ontario

Initial Assessment

Alberta
- Near/medium term: positive
- Long-term: continue to assess implications

Ontario
- Short-term: protected by contracts
- Long-term: continue to assess impacts; remain optimistic for re-contracting

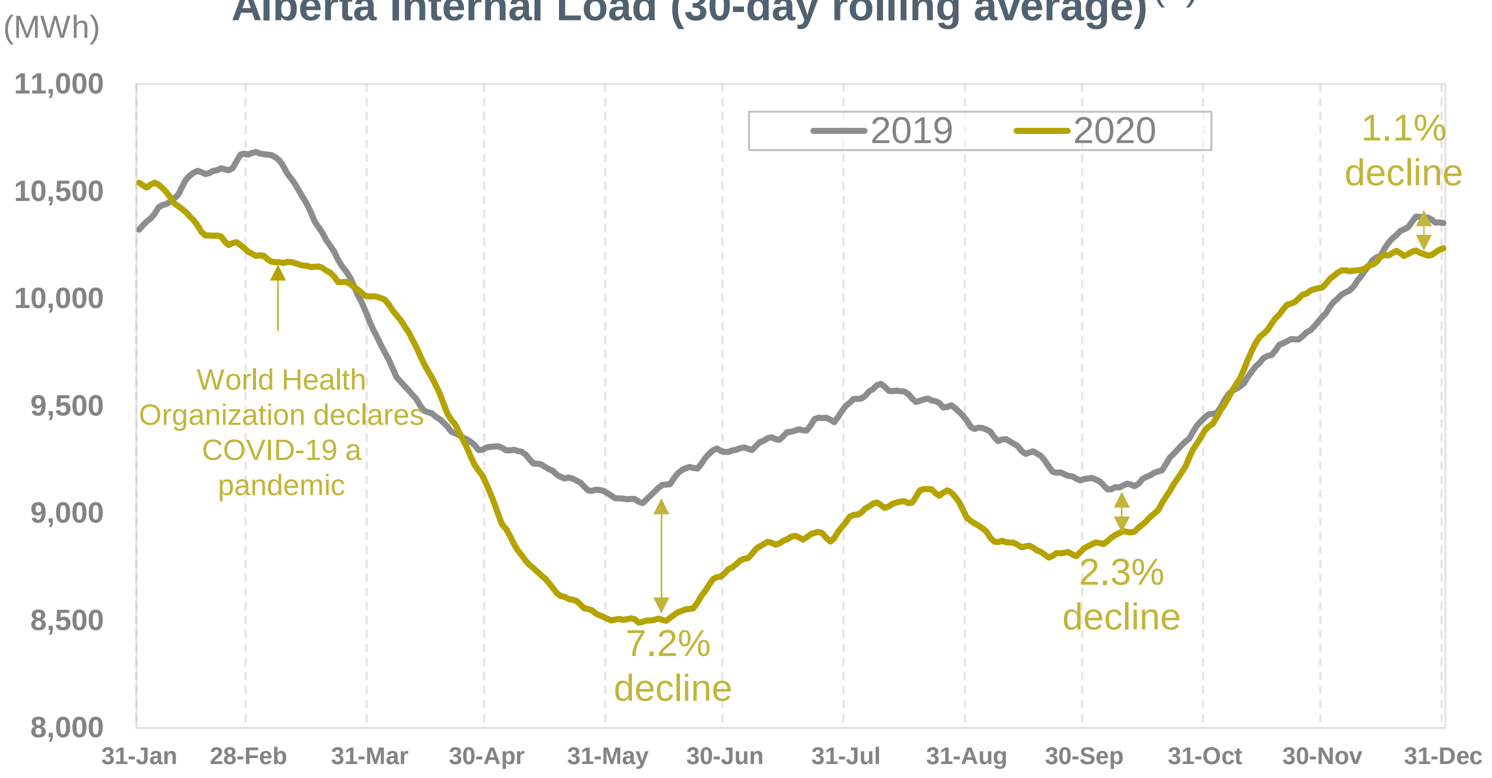
Alberta power market

- Market showing strong recovery from impacts of COVID-19 and low oil prices
- Supply has responded to lower demand with other market participants announcing the retirement of Sundance 3 and delays on some cogen and renewable projects
- Starting in 2021, all output controlled by commercial market participants

Alberta power market

COVID-19 and crude oil impact

Alberta Internal Load (30-day rolling average) (1)



- Based on actual 30-day rolling averages, largest year-over-year (yoy) decline in power demand was ~7.2% due to COVID-19 pandemic and low crude oil prices
- In 2020, demand started to recover in June as the economy re-opened closing the gap to ~2% yoy decline in October
- Yoy demand decrease of 1.1% at end of 2020

1) Source: AESO, Capital Power

Portfolio optimization

AB commercial portfolio positions

(Hedge position as of Nov 27/20)	2021	2022	2023
% sold forward[1]	21%	25%	17%
Contracted prices[2] ($/MWh)	High-$50	Mid-$50	Low-$50

	Balance of 2021	2022	2023
Current forward prices ($/MWh) (as of Jan 13/21)	$66	$62	$53

Strong track record of value creation and managing merchant risk exposure from portfolio optimization

1) Based on the Alberta baseload plants plus a portion of Joffre and the uncontracted portion of Shepard.
2) Forecasted average contracted prices may differ significantly from future average realized prices as future realized prices are driven by a combination of previously contracted prices and settled prices.
3) Includes both baseload and non baseload positions.

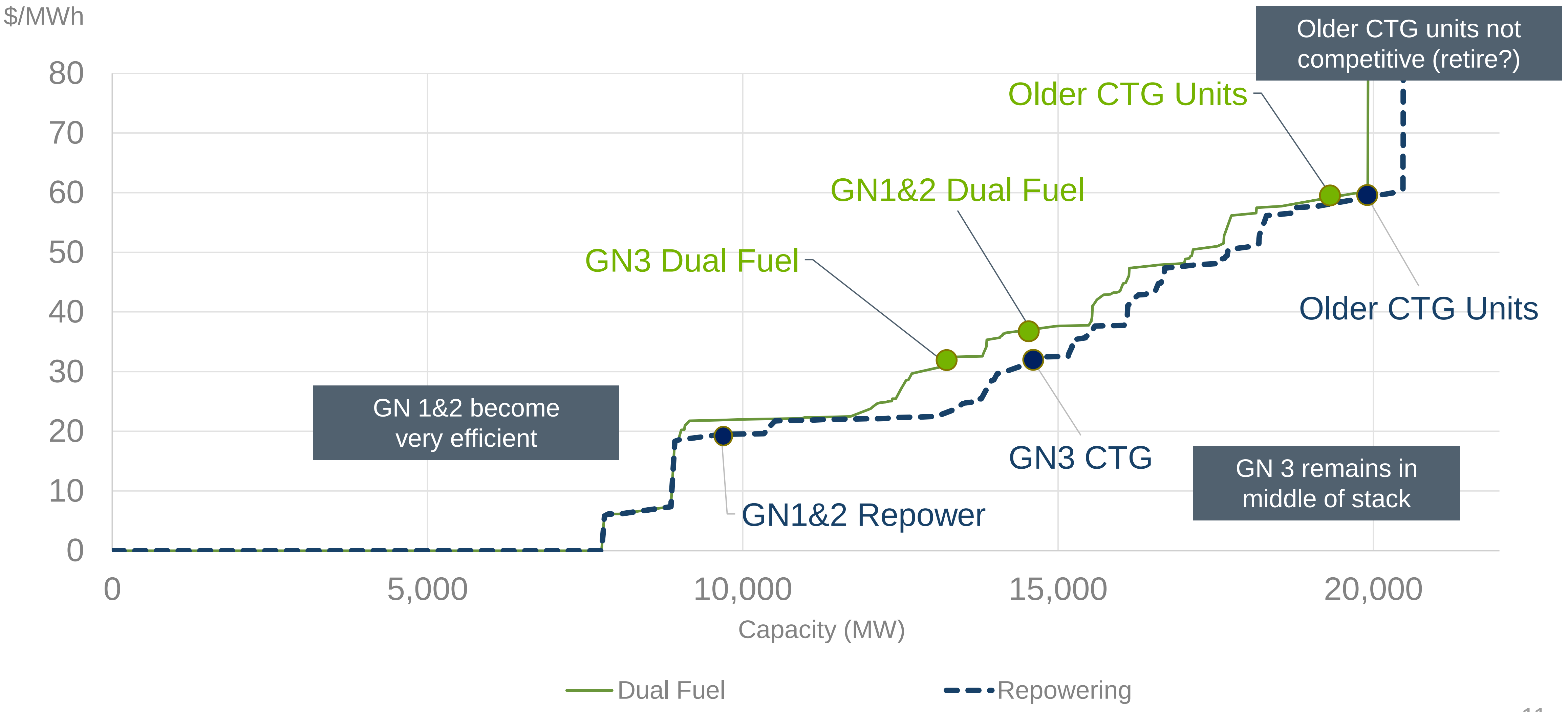
Repowering Genesee 1&2 delivers long term value

Lower operating costs, useful asset life extension, long-term cash flow growth

- Favourable economics – $997M capital cost, 20%+ levered returns, ~$0.70 average accretion to AFFO/share
- 560 MW net capacity increase (total 1,360 MW)
- Best-in-class NGCC technology with heat rate (6.6-6.7 GJ/MWh) advantage over all current and announced natural gas facilities
- Significant environmental benefits – intensity of 0.35t/MWh; below Alberta's TIER regulation benchmark of 0.37t/MWh
- Carbon conversion ready and hydrogen capable (30% to start and upgradable to 95%)

Genesee more competitive after repowering

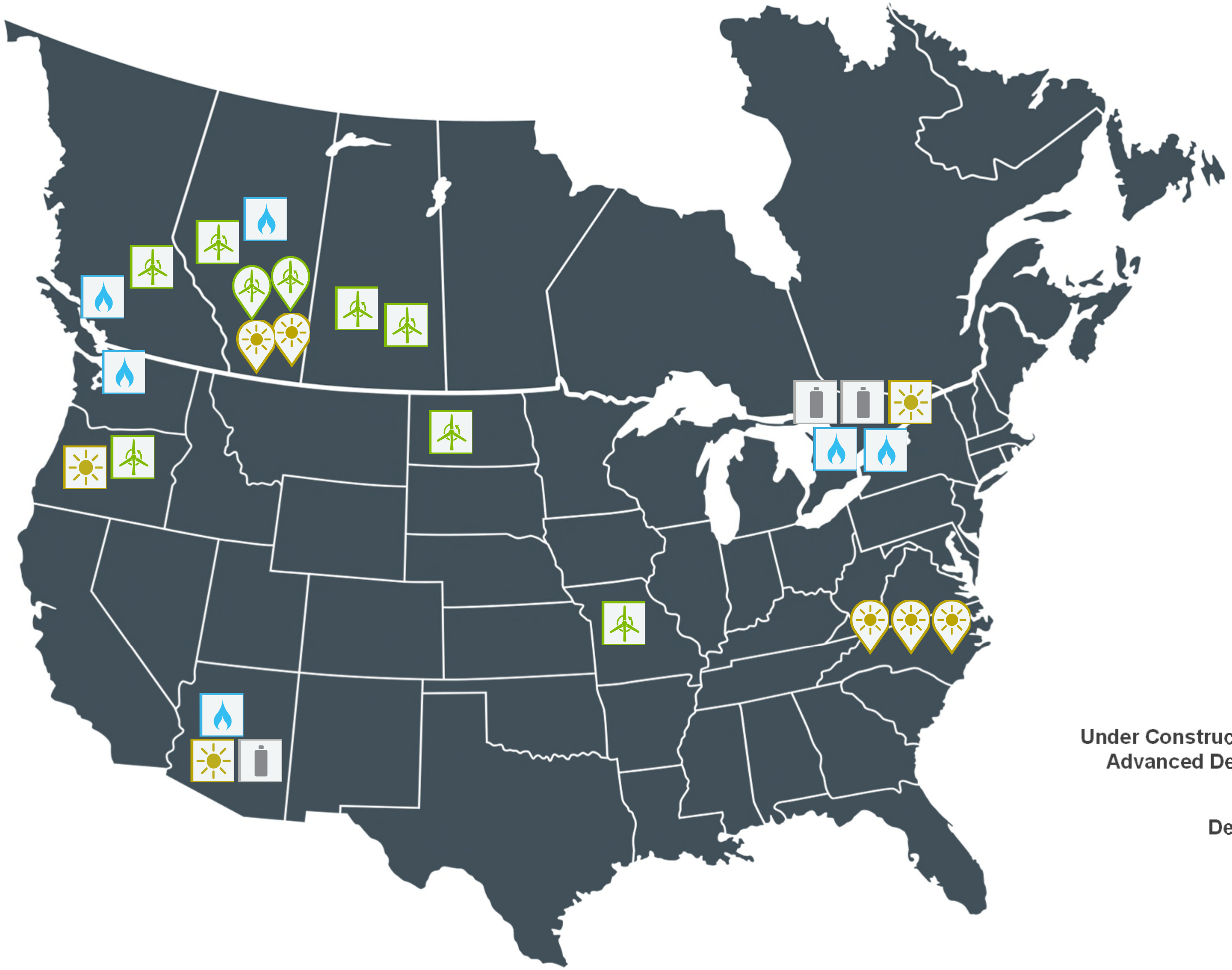
Estimated variable cost merit order in 2025

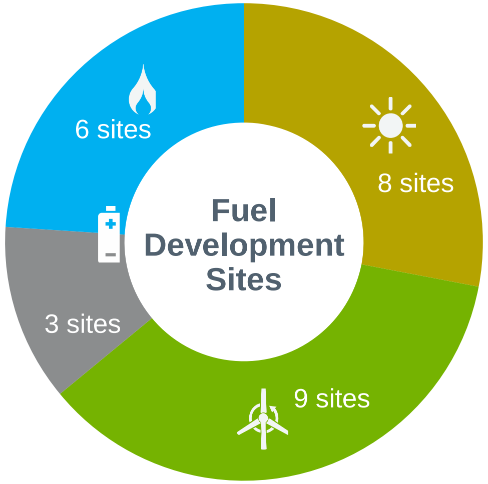


Growth strategy

- Growth strategy aligns with our sustainability goals
- Target markets support $500M annual capital investment
- Strong renewable growth pipeline in Alberta and the U.S.
- Potential acquisition of mid-life natural gas assets
- Targeting 10-12% total shareholder return over the long term

Dynamic pipeline supports resilient & responsible growth





2021 Growth Target:
Invest $500M

Solar
8 sites
Potential: 360 MW
Committed: 276 MW
Total: 636 MW

Wind
9 sites
Potential: 1,129 MW
Committed: 151 MW
Total: 1,280 MW

Storage
3 sites
Potential: TBD

Gas
6 sites
Potential: 1,700 MW

Under Construction and in Advanced Development

Future Development

Natural Gas Solar Wind Storage

Securing long term PPAs delivers stable cash flows

Strathmore Solar

- Long Term 25-year PPA
- 40.5 MW, 100% output
- Bundled energy and environmental attributes
- Investment grade counterparty
- Shows that we maintain our competitive advantage in Alberta

3 North Carolina solar projects

- Long Term 20-year PPA
- 160 MW, 100% output
- Bundled energy and environmental attributes
- Investment grade counterparty
- Shows that we are competitive in the U.S.

ESG priorities drive growing corporate demand for renewables

Gas generation vital for reliability and flexibility

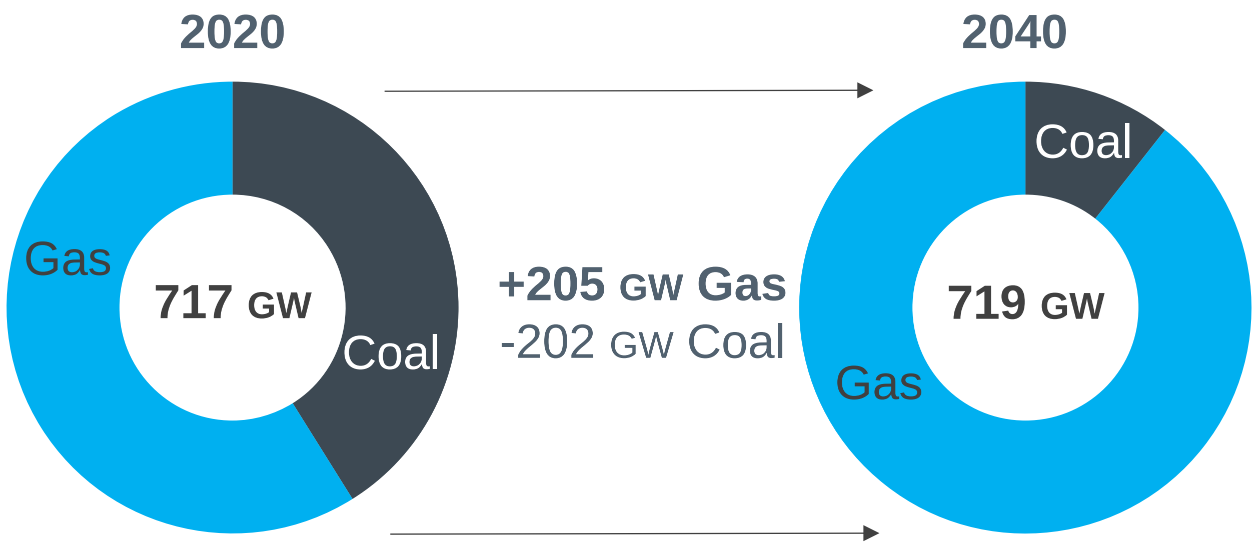
Growth drivers

- Coal & nuclear retirements
- Renewables proliferation
- Low gas prices

Value of incumbent assets

- High barrier to entry
- Strategic placement
- Optimization potential

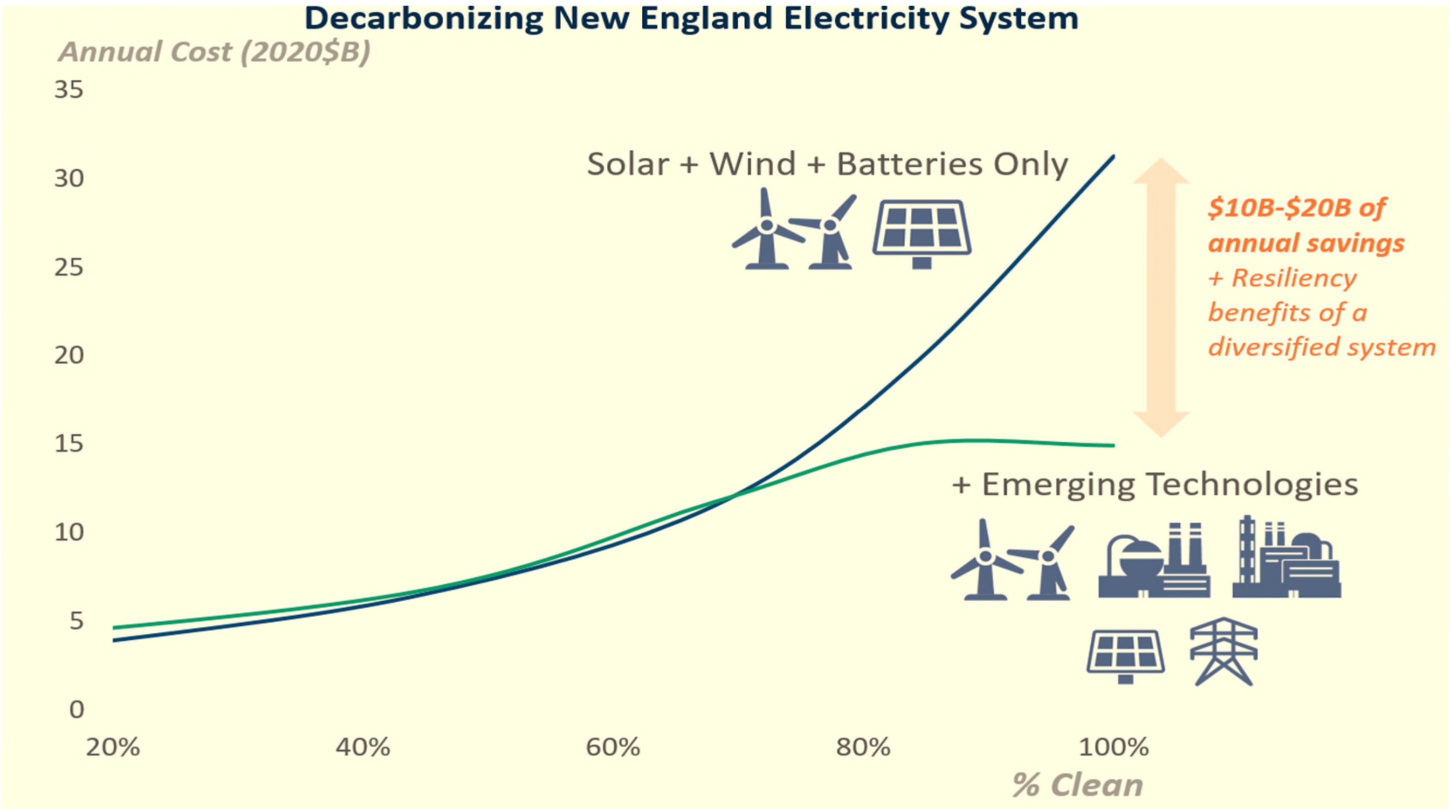
Forecasted natural gas generation in the US(1)



1) Source: Bloomberg New Energy Finance, New Energy Outlook 2020

Natural Gas: necessary long-term role in power

- **Sustainable** – enables the penetration of more renewables
- **Flexible** – dispatchable when you need it (availability >90%); offline when you don't
- **Power Dense** – can provide 80 MW/acre
- **Decarbonizable** – with carbon conversion and hydrogen
- **Affordable** – keeping costs of decarbonization lower for consumers

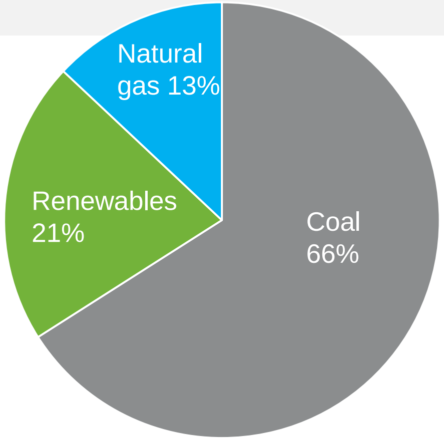


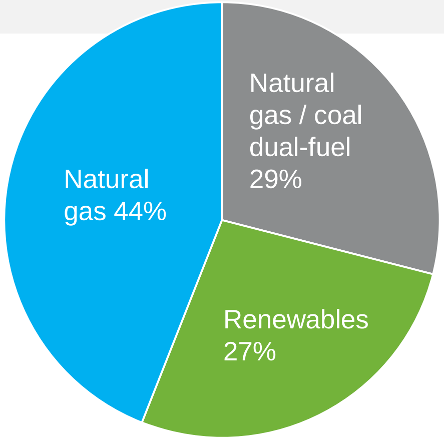
Source: Brattle Group,
"The Emerging Value of CCUS For Utilities", August 2020

Diversification, Resiliency and Sustainability

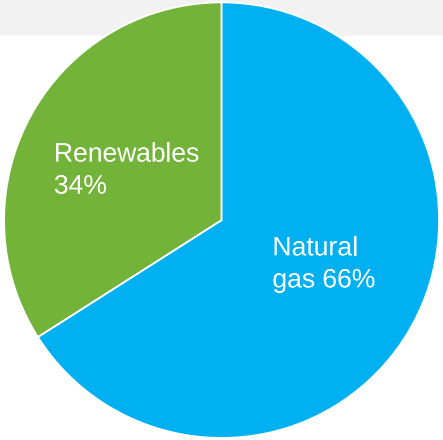
2014 | 2020F | 2023F | 2025F

EBITDA by fuel type
Focusing on renewables and hydrogen/CCUS-ready natural gas

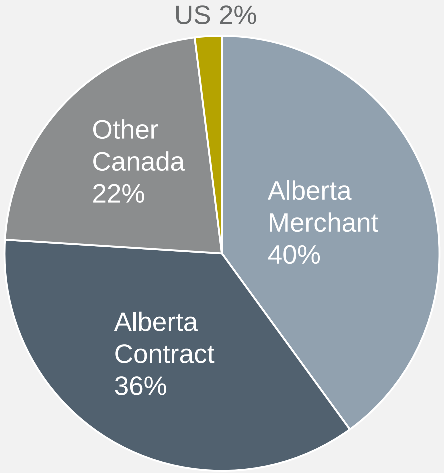


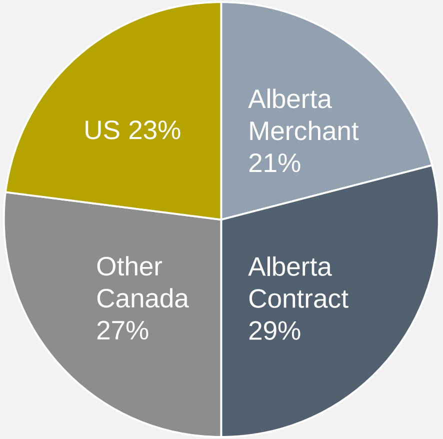


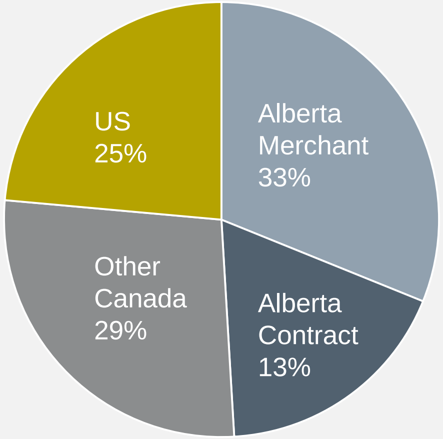
Off-coal



EBITDA by geography
Diversifying growth outside of Alberta and reducing merchant exposure







Financial strategy

- Deploying capital for the repowering of Genesee 1&2 and growing renewables portfolio
- Disciplined growth with focus on contracted cash flows and sustainability goals
- Dividend growth of 7% in 2021 and 5% in 2022
- Maintain investment grade credit rating

Overview of financial strategy

Fund growth towards low carbon future	• Fund growth in a cost-effective manner • Access various sources of capital and seek innovative ways to fund growth
Maintain investment grade credit rating	• Maintain competitive cost of capital • Ensure access to capital markets through business cycles • Provides stability to the dividend
Deliver annual dividend growth	• Provide dividend stability through contracted cash flow profile • Annual dividend growth within long term AFFO payout ratio target of 45% to 55%
Manage financing risk	• Properly laddered debt maturities • Effective management of interest rate, foreign exchange and counterparty risk

Capital allocation balance

Dividend growth

Growth opportunities

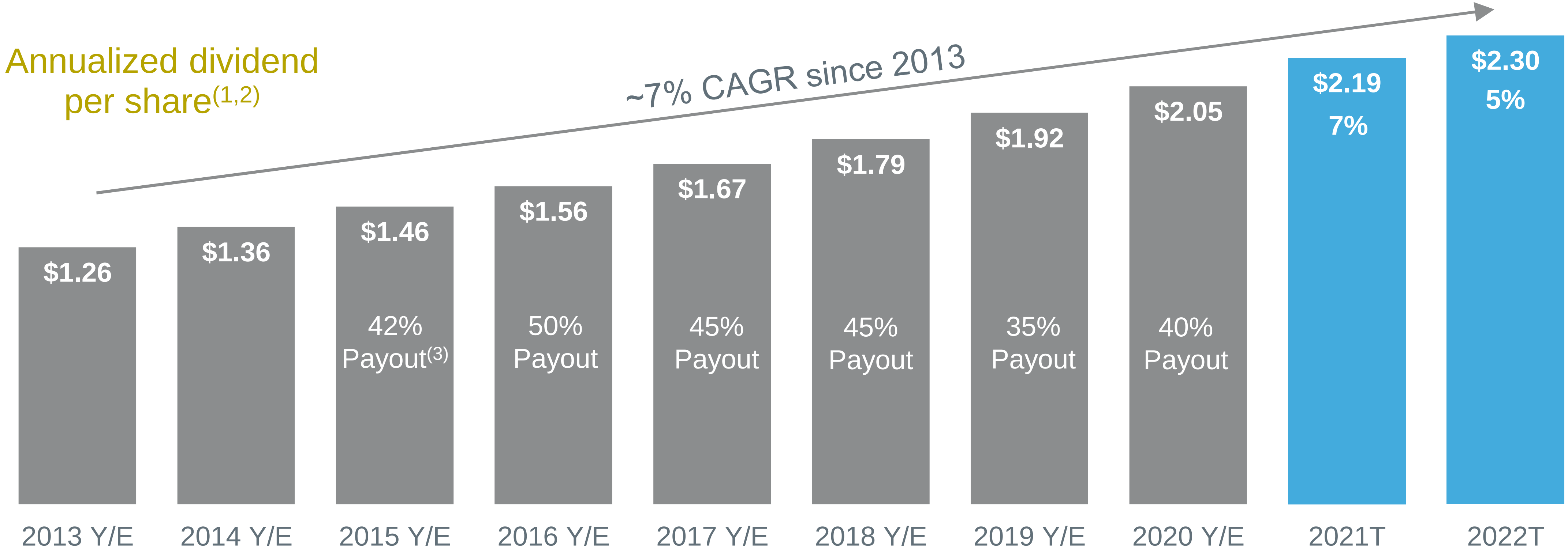
- Existing asset improvements
- Development projects
- Acquisitions

Share buyback & debt repayment

- Balanced focus between dividend growth and growth opportunities
- Growth focused on a lower-carbon fleet
- Allocating capital strategically to develop, commercialize and implement technologies to support sustainability targets
- Share buybacks and debt repayment are considered during periods of limited growth opportunities

Efficient capital allocation creating shareholder value

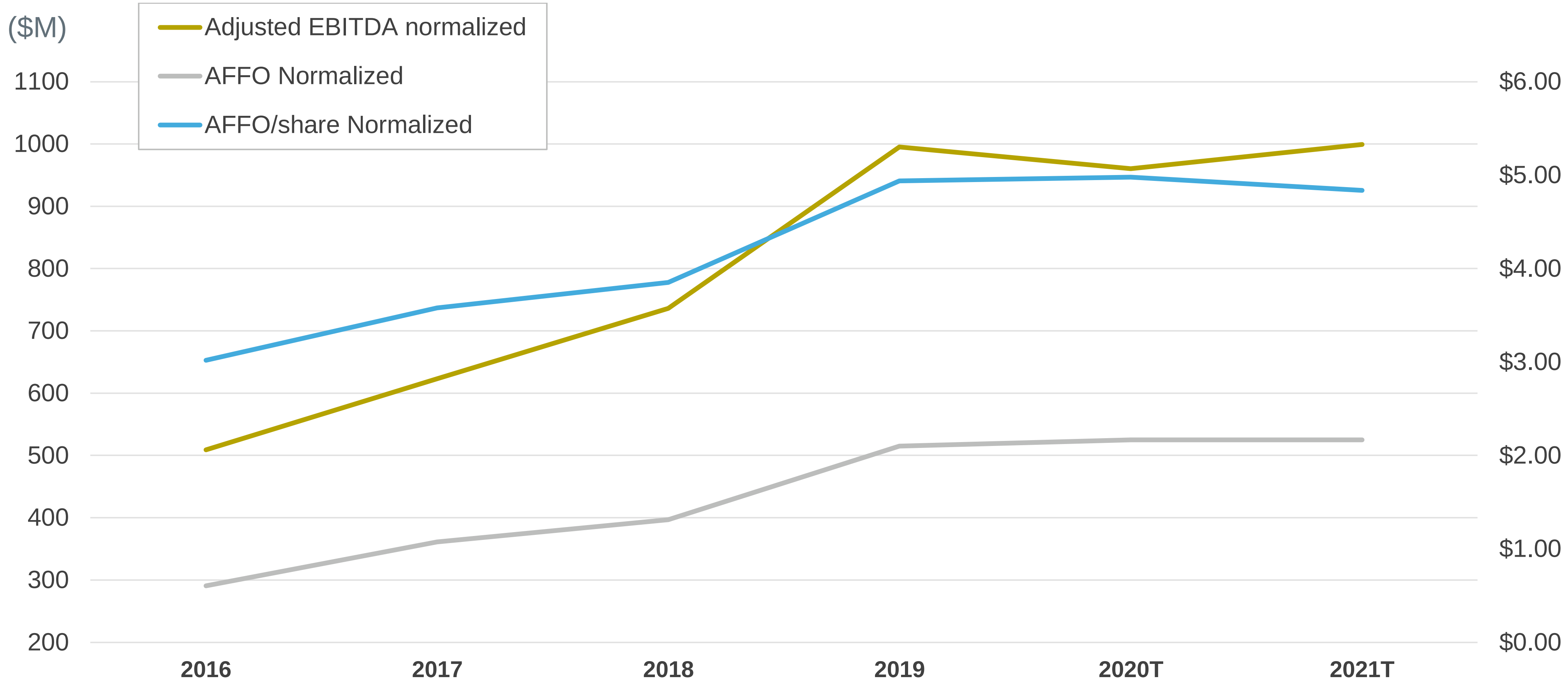
History of stable dividend growth



Long-term AFFO payout ratio target of 45-55%

1) Subject to market conditions, economic outlook, cash flow forecast, and Board approval at the time.
2) 2013 to 2020 annualized dividend based on year-end quarterly common shares dividend declared.
3) Dividend payout ratio based on dividends declared per year as a percentage of AFFO per share.

5-year growth in key financial metrics



5-year growth supported by average growth capex of $750M(3) per annum

1) Normalized for Milner line loss accrual and non-recurring 2019 Arlington toll payment.
2) Normalized for non-recurring 2019 Arlington toll and payment of Milner line loss.
3) Includes gross capex on Tax Equity Investor projects.

Cash flow and financing outlook

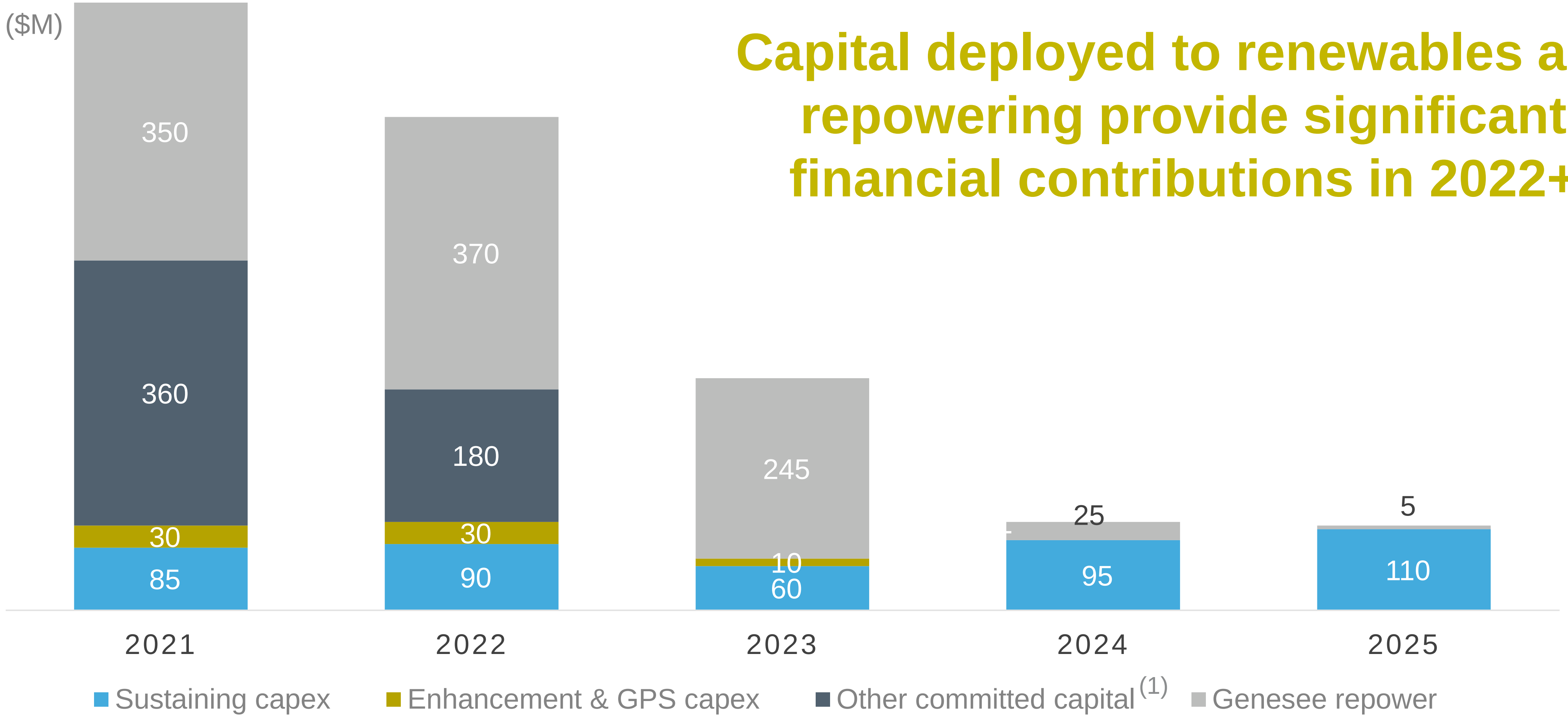
Positive cash position and credit facilities to fund growth projects in 2021

Sources	($M)
FFO[(1)] + off-coal compensation	$650
Capital markets/debt refinancing/ asset recycling	$510
DRIP reinvestment	$70
	$1,230

Uses	
Committed growth/enhancement capex	$740
Dividends[(3)]	$300
Debt repayments[(2)]	$430
Sustaining & maintenance capex	$85
	$1,555
Change in cash position	**($325)**

1) Funds from operations (FFO) is a non-GAAP financial measure.
2) Includes principal payments on finance lease payables but excludes debt repayments to tax equity investor and equity accounted investment.
3) Includes preferred and common dividends and preferred dividend tax.

Capital program

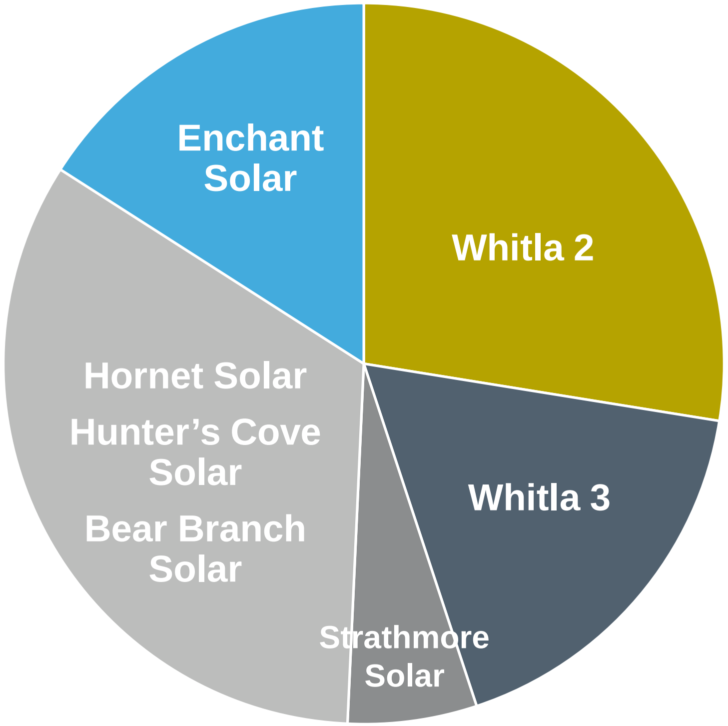


Capital deployed to renewables and repowering provide significant financial contributions in 2022+

1) Includes net capex after Tax Equity Investor contributions.

EBITDA growth from 7 renewable projects

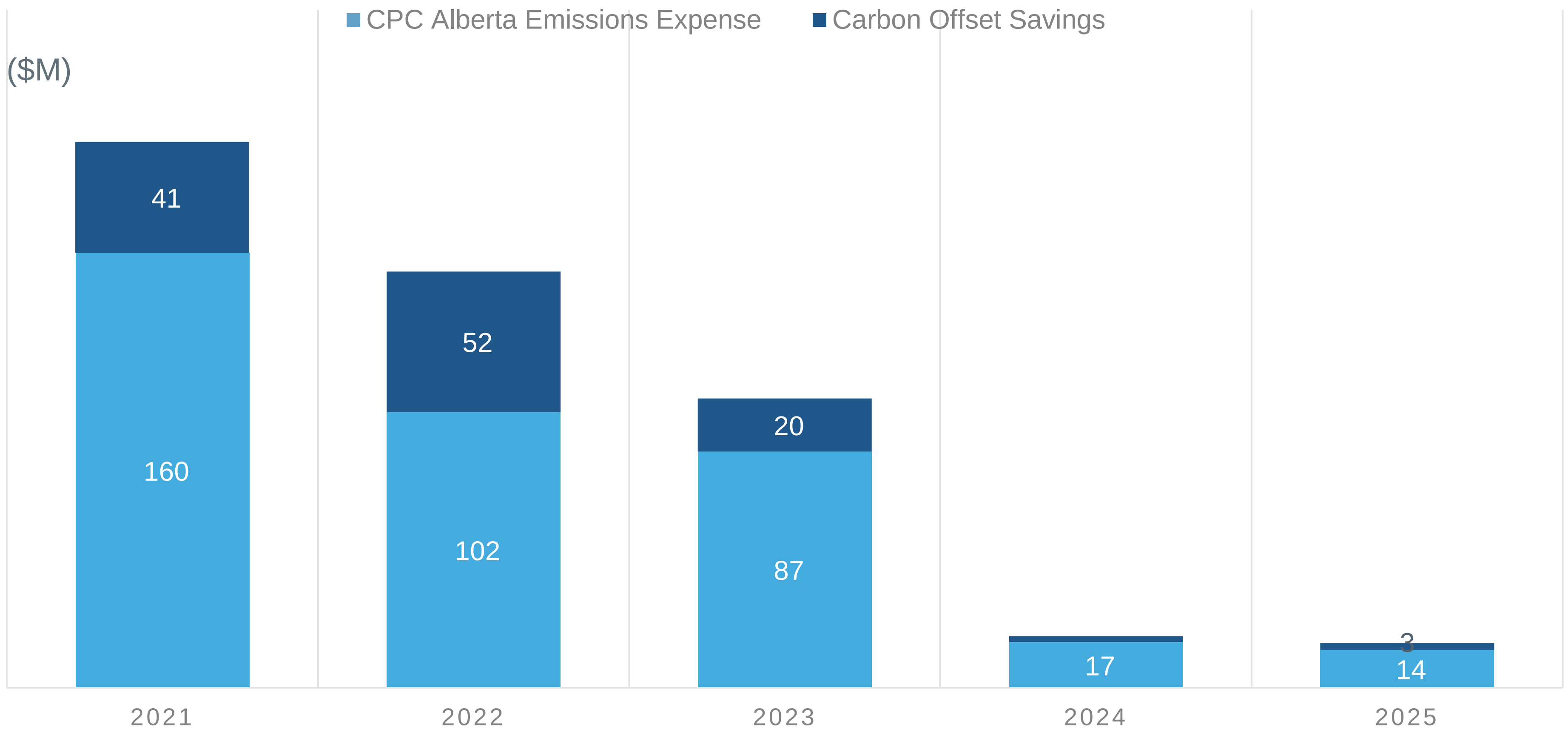
Annualized EBITDA of ~$70M



Average annualized EBITDA ~$70M and AFFO of ~$55M
after completion in late 2021 and 2022

Full-year financial contributions starting in 2023 from growth capex in 2021-22

Managing Alberta carbon exposure



Low-cost offsets and transition to gas protect and enhance asset value

1) Based on current Alberta TIER regulation and assumes carbon prices increase to $40/tonne in 2021 and $50/tonne in 2022. Does not reflect Federal Government policy.

Sustainability / investment opportunity

- Advancing a low carbon future with a clear path to net carbon neutral before 2050
- Natural gas generation has a necessary long-term role in power
- Accelerating ESG initiatives

Capital Power’s (R)Evolution

2009 to Today

- Genesee efficiency program - 12%↓GHG by 2021
- Over $3B invested in/committed to renewables
- C2CNT interest increased to 40%
- Over $40M invested in carbon capture research
- Completed two CCUS FEED studies (2007/2011)

Today to 2024

- Complete repowering and off coal
- Invest in Renewables, Strategic NG
- Carbon Conversion: C2CNT and Beyond
- Technology Research/Collaboration
- Pilot/demo renewables + storage project

2024 – 2030

- Expand CCU
- Pilot/Demo Hydrogen project

2030 – 2050

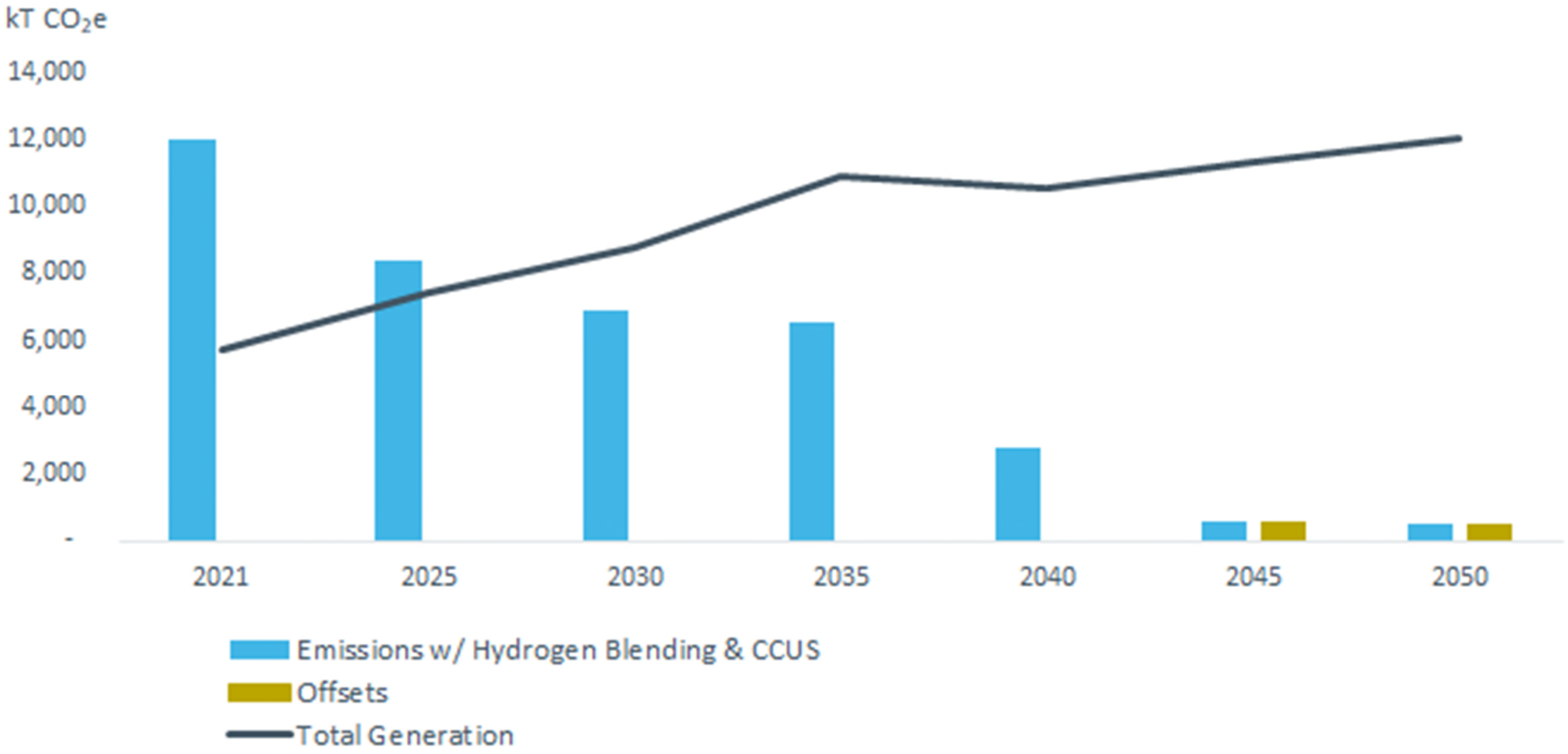
- Carbon Neutrality via physical solutions on NG assets and portfolio “offsets”
- Physical solutions on NG assets and portfolio “offsets”
- Renewables + Storage as Baseload

2050 – 2070

- Physical Decarbonization

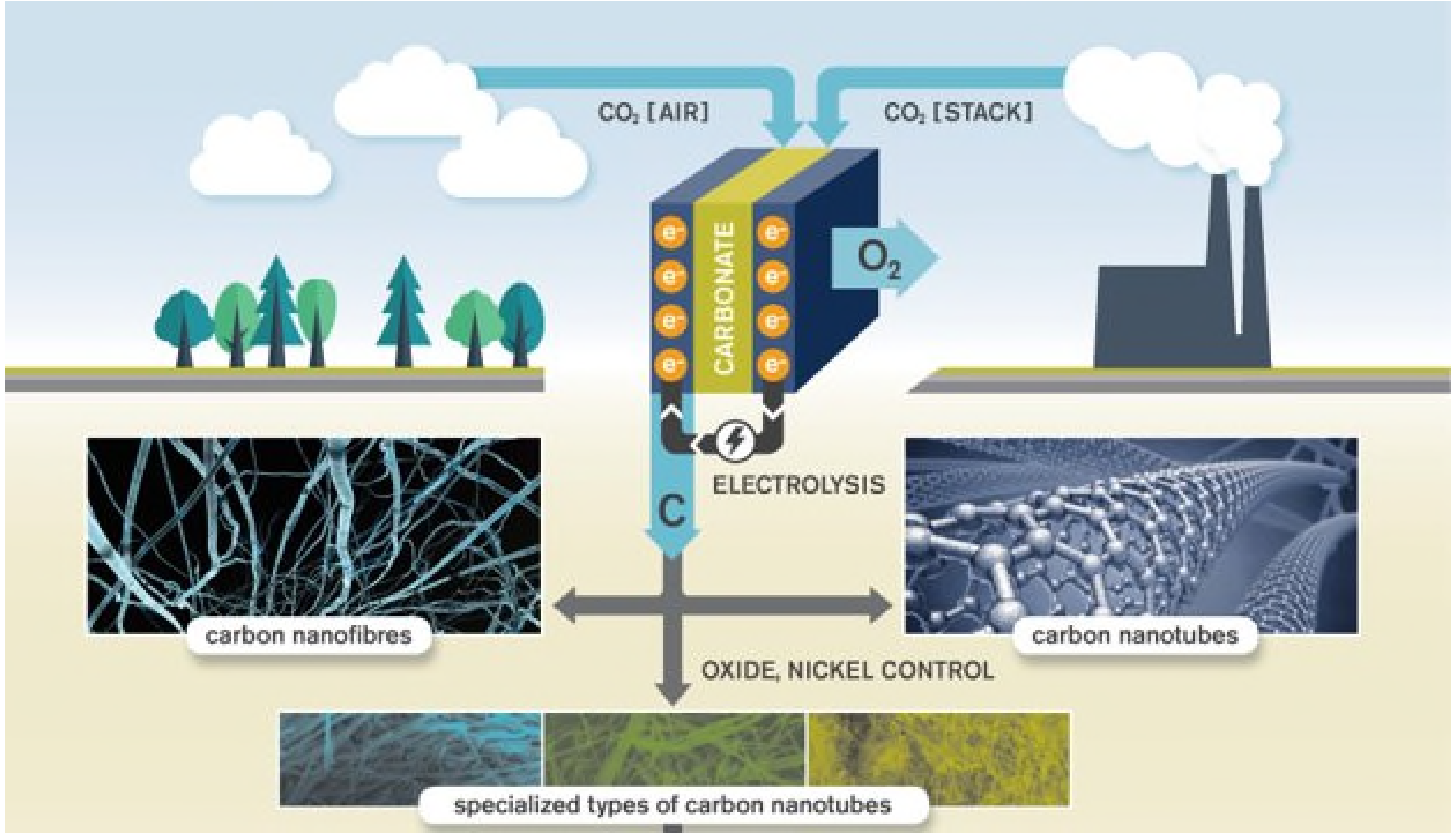
Pathway to net carbon neutral

- Renewables with storage
- Deploying carbon conversion and hydrogen blending at thermal facilities
- Limited offsets used



Genesee Carbon Conversion Centre

World's largest carbon nanotube production facility



Stronger cement

Enhanced battery products

More durable tires

Tougher anti-corrosion products

Accelerating ESG initiatives

Environmental

- Net carbon neutral before 2050
- Genesee repowering
- Renewables development
- Natural gas with carbon conversion and/or hydrogen
- A- CDP climate change score

✓ Sustainable sourcing roadmap on track to roll out in 2021

✓ Water strategy on track to roll out in 2021

Social

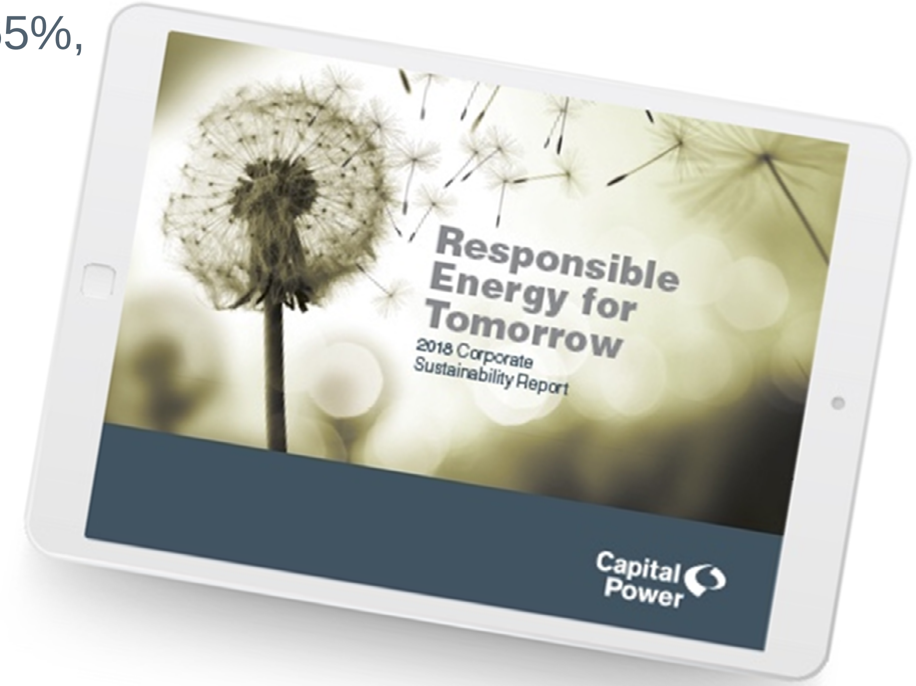
- Optimal workplace of the future to reflect key learnings and benefits from COVID-19
- Increased community investment funding in 2021; building off robust and generous response to COVID-19 relief efforts
- Indigenous training, employment and economic opportunities at Canadian wind facilities through new Vestas agreement
- Transitional support for employees at Roxboro, Southport, Genesee
- Committed to Equal by 30 – supporting gender equity in our industry

Governance

- 25% of Executive short-term incentive pay linked to meeting ESG targets
- 44% of Board and 43% of Executive female versus 30% target
- Executive short-term incentive linked to presentation of diverse candidates for corporate and plant positions
- 2021 review to identify and minimize institutional bias in policies, procedures and results
- World's Most Ethical Companies award 2 years running - only utility and 1 of 3 Canadian companies

On track to meet our sustainability targets

- Achieve net carbon neutral by 2050
- Construct all new natural gas generation units to be carbon capture and/or hydrogen-ready
- ✓ Reduce CO_2 emissions at Genesee by 50% by 2030 from 2005 levels
- Reduce CO_2 emissions by 10% and our emission intensity by 65%, in 2030 from 2005 levels
- ✓ Invest in carbon capture and utilization technology to help us achieve net carbon neutrality before 2050 and eventually physically decarbonize our natural gas fleet (ongoing)
- Complete the Genesee Carbon Conversion Centre by Q4 2021
- Enhanced sustainable sourcing plan (2021)
- Enhanced water management plan (2021)



Attractive investment opportunity

Resilient strategy drives growth and accelerates net carbon neutral before 2050

Success in renewables from innovation and optimization

- Recent success in solar more than doubles our growth opportunities
- Long-term contracts for North Carolina solar and Strathmore Solar projects affirm competitiveness

Genesee repowering capitalizes on strong Alberta market and in-house innovation

- Most efficient NGCC in Canada
- Significantly reduced carbon footprint and risk
- Carbon conversion ready and hydrogen achievable

Operational excellence and innovation remain fundamental

- $50 million EBITDA from Ops 2030 program
- Genesee Carbon Conversion Centre
- Storage and hydrogen investigation

We create value through resiliency, optimization and innovation

Appendices

- Ops 2030 program
- Alberta portfolio optimization
- Credit rating metrics
- Debt maturity schedule

Ops 2030 generates $50M in annual EBITDA by 2030

Creating the sustainable plant of the future through technology and innovation

Continuous Improvement

- Wind turbine upgrades
- Start-up optimization software
- Fleetwide DCS upgrades
- Energy storage

Data Analytics

- Deployment of Historian with enhanced capabilities
- Advanced Pattern Recognition
- Implement machine learning technology to enhance system security
- Optimizing plant performance

Automation

- Mobility in operator rounds
- Worker protection system automation
- Power BI for reporting

Digital Tools

- 3D printing and scanning
- Acoustic leak detection
- Expanded use of drones and development of internal program and expertise
- Continuous monitoring of generator health
- Remote borescope capability deployment

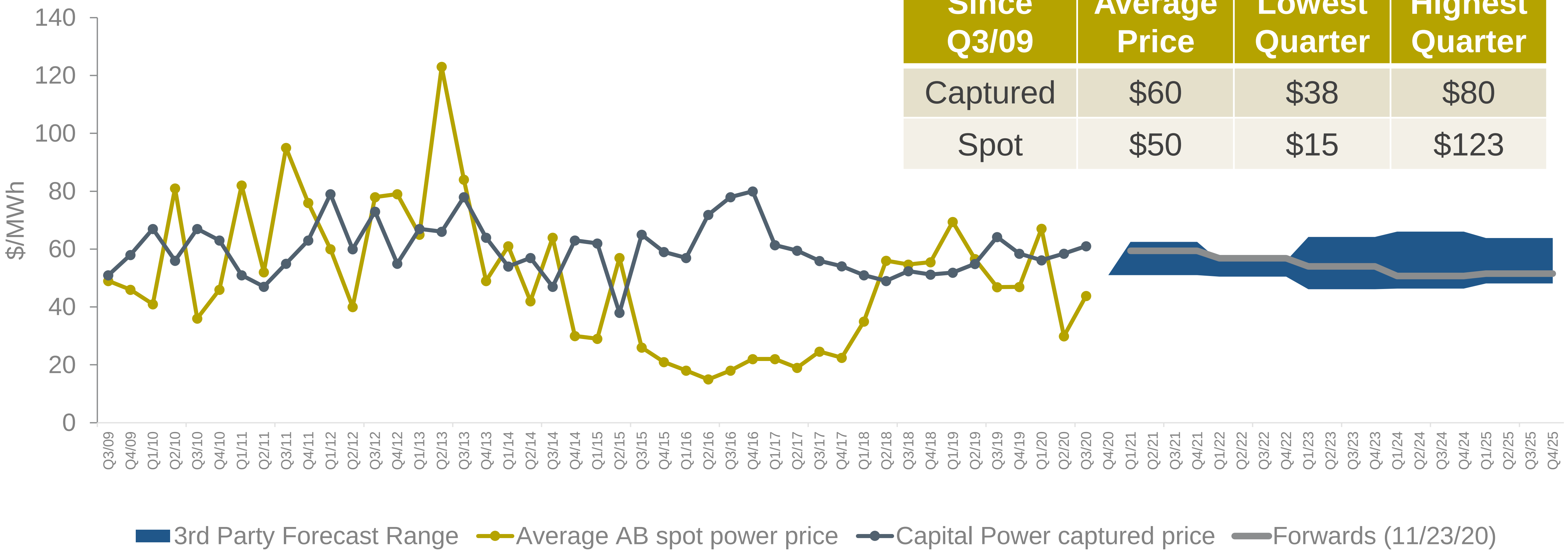
Flexible and Remote Operation

- Simple cycle remote capability
- Renewables Monitoring and Diagnostics Centre
- Remote digital worker

Portfolio optimization

Actual and forecasted Alberta power prices

Since Q3/09	Average Price	Lowest Quarter	Highest Quarter
Captured	$60	$38	$80
Spot	$50	$15	$123



- Higher captured prices
- Reduced volatility
- Upside from here

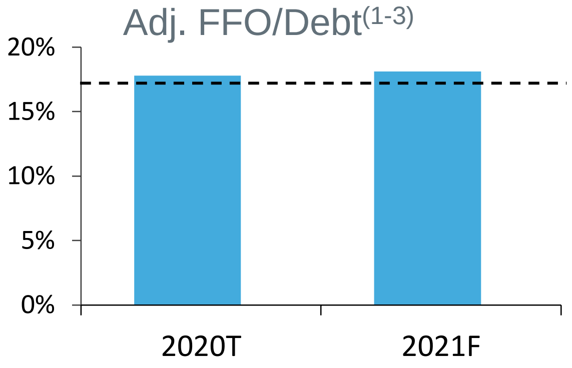
Financial stability and strength

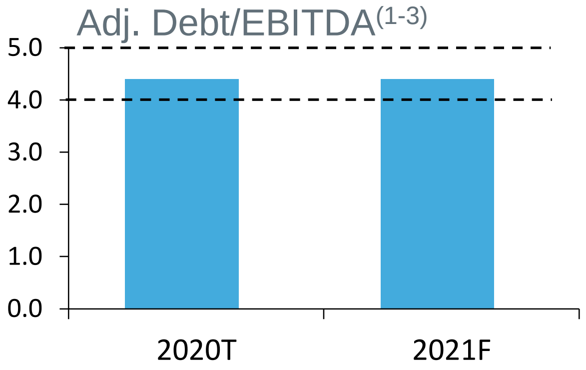
Strong balance sheet and commitment to investment grade credit ratings

Agency	Ratings	Outlook
S&P	BBB- / P-3	Stable
DBRS	BBB(low) / Pfd-3 (low)	Stable

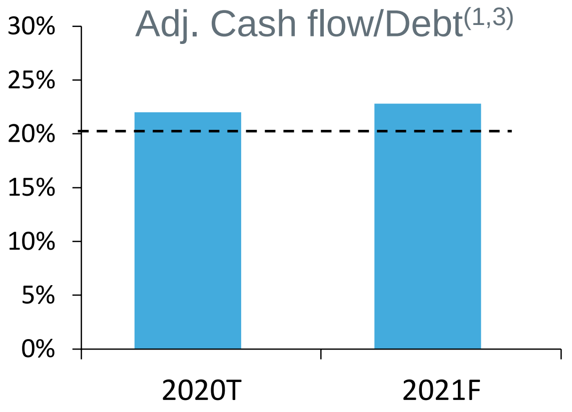
- Both credit rating agencies affirmed our investment grade credit ratings and stable outlook
- Strong liquidity from cash flow from operations and $1B of committed credit facilities to 2024
- Forecast metrics are within rating agency expectations for the current ratings with stable outlook

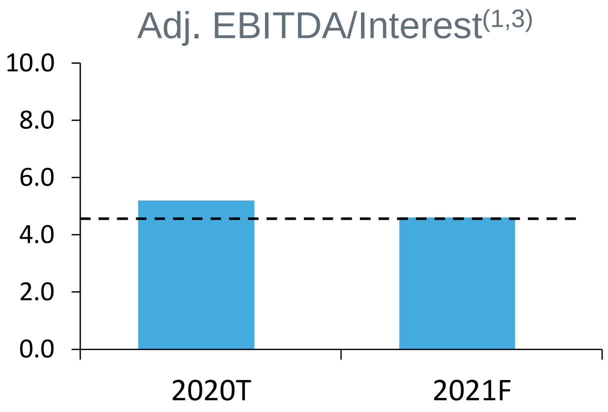
S&P financial metrics





DBRS financial metrics



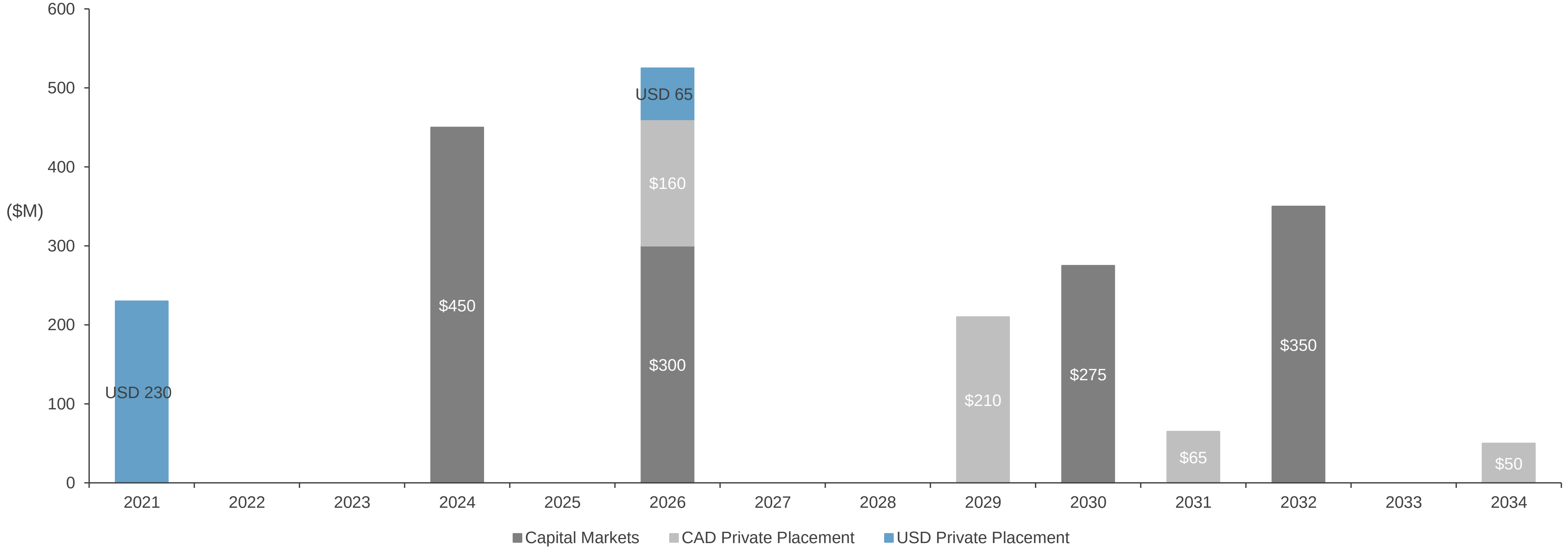


1) Cash flow and adjusted EBITDA amounts include off-coal compensation.
2) Based on S&P's weighted average ratings methodology.
3) 2020T means 2020 target. 2021F means 2021 forecast.

Debt maturity profile[1]

Well spread-out debt maturities supported by long asset lives

- Longer term debt reflects increased confidence in Capital Power's business profile
- Strong liquidity from cash flow from operations and ~$800M[1] available capacity on $1.0B of committed credit facilities that mature in 2024



1) Debt amounts as of December 31, 2020. Schedule excludes non-recourse debt, credit facility debt, and tax-equity financing.

Non-GAAP financial measures

The Company uses (i) earnings before net finance expense, income tax expense, depreciation and amortization, impairments, foreign exchange gains or losses, finance expense and depreciation expense from joint venture interests, gains or losses on disposals and unrealized changes in fair value of commodity derivatives and emission credits (adjusted EBITDA), (ii) adjusted funds from operations (AFFO), and (iii) adjusted funds from operations per share as financial performance measures.

These terms are not defined financial measures according to GAAP and do not have standardized meanings prescribed by GAAP and, therefore, are unlikely to be comparable to similar measures used by other enterprises. These measures should not be considered alternatives to net income, net cash flows from operating activities or other measures of financial performance calculated in accordance with GAAP. Rather, these measures are provided to complement GAAP measures in the analysis of the Company's results of operations from management's perspective.

Additional disclosure around the Company's non-GAAP financial measures, including reconciliations of these non-GAAP financial measures to their nearest GAAP financial measures are disclosed in the Company's Management's Discussion and Analysis prepared each quarter, most recently prepared as of October 30, 2020 for the third quarter of 2020, which is available under the Company's profile on SEDAR at SEDAR.com and on the Company's website at capitalpower.com.

Forward-looking information

Forward-looking information or statements included in the presentation are provided to inform the Company’s shareholders and potential investors about management’s assessment of Capital Power’s future plans and operations. This information may not be appropriate for other purposes. The forward-looking information is generally identified by words such as will, anticipate, believe, plan, intend, target, and expect or similar words that suggest future outcomes.

Material forward-looking information includes disclosures regarding: (i) timing, expected capital costs, project returns (including expected AFFO per share), and environmental benefits (including the expected reduction in emission levels) of the Genesee repowering project, (ii) timing of completion of Strathmore Solar, (iii) timing, expected capital costs, and financial performance (including expected AFFO and adjusted EBITDA impacts) of Enchant Solar, (iv) expected completion date of the Genesee Carbon Conversion Centre, and (v) targets for 2021 including operational, growth and financial targets.

These statements are based on certain assumptions and analyses made by the Company in light of its experience and perception of historical trends, current conditions, expected future developments and other factors it believes are appropriate including its review of purchased businesses and assets. The material factors and assumptions used to develop these forward-looking statements relate to: (i) electricity, other energy and carbon prices, (ii) operating and asset development performance, (iii) business prospects (including potential re-contracting opportunities) and opportunities including expected growth and capital projects, (iv) status of and impact of policy, legislation and regulations, (v) effective tax rates and (vi) foreign exchange rates.

Whether actual results, performance or achievements will conform to the Company’s expectations and predictions is subject to a number of known and unknown risks and uncertainties which could cause actual results and experience to differ materially from the Company’s expectations. Such material risks and uncertainties are: (i) changes in electricity prices in markets in which the Company operates, (ii) changes in energy commodity market prices and use of derivatives, (iii) regulatory and political environments including changes to environmental, financial reporting, market structure and tax legislation, (iv) generation facility availability, wind capacity factor and performance including maintenance expenditures, (v) ability to fund current and future capital and working capital needs, (vi) timing and costs of regulatory approvals and construction in relation to development projects, (vii) changes in market prices and availability of fuel, and (viii) changes in general economic and competitive conditions. See Risks and Risk Management in the Company’s Management’s Discussion and Analysis for both the nine months ended September 30, 2020, prepared as of October 30, 2020 and for the year ended December 31, 2019, prepared as of February 21, 2020, for further discussion of these and other risks.

Readers are cautioned not to place undue reliance on any such forward-looking statements, which speak only as of the specified approval date. The Company does not undertake or accept any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements to reflect any change in the Company’s expectations or any change in events, conditions or circumstances on which any such statement is based, except as required by law.

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