



**CHEMTRADE**



**RESPONSIBLE CARE®**  
OUR COMMITMENT TO  
SUSTAINABILITY

**2023**

**Investor Presentation | May 2023**

# CAUTION REGARDING FORWARD- LOOKING STATEMENTS

Certain statements contained in this presentation constitute forward-looking statements within the meaning of certain securities laws, including the Securities Act (Ontario). Forward-looking statements can be generally identified by the use of words such as “anticipate”, “continue”, “estimate”, “expect”, “expected”, “intend”, “may”, “will”, “project”, “plan”, “should”, “believe” and similar expressions. Forward-looking statements in this presentation describe the expectations of Chemtrade Logistics Income Fund (“Chemtrade”) and its subsidiaries as of the date hereof. These statements involve known and unknown risks, uncertainties and other factors that may cause actual results or events to differ materially from those anticipated in such forward-looking statements for a variety of reasons, including without limitation the risks and uncertainties detailed under the “RISK FACTORS” section of Chemtrade’s latest Annual Information Form and the “RISKS AND UNCERTAINTIES” section of Chemtrade’s most recent Management’s Discussion & Analysis. Although Chemtrade believes the expectations reflected in these forward-looking statements and the assumptions upon which they are based are reasonable, no assurance can be given that actual results will be consistent with such forward-looking statements, and they should not be unduly relied upon. Except as required by law, Chemtrade does not undertake to update or revise any forward-looking statements, whether as a result of new information, future events or for any other reason. The forward-looking statements contained herein are expressly qualified in their entirety by this cautionary statement. Further information can be found in the disclosure documents filed by Chemtrade with the securities regulatory authorities, available on [www.sedar.com](http://www.sedar.com).

One of the measures referred to in this presentation is Adjusted EBITDA, which is EBITDA modified to exclude only non-cash items such as unrealized foreign exchange gains and losses. Non-IFRS and other financial measure are fully defined in our MD&A.

# Business Overview



Business Overview

SWC Segment

EC Segment

Organic  
Growth

Operational  
Excellence

Financial  
Prudence

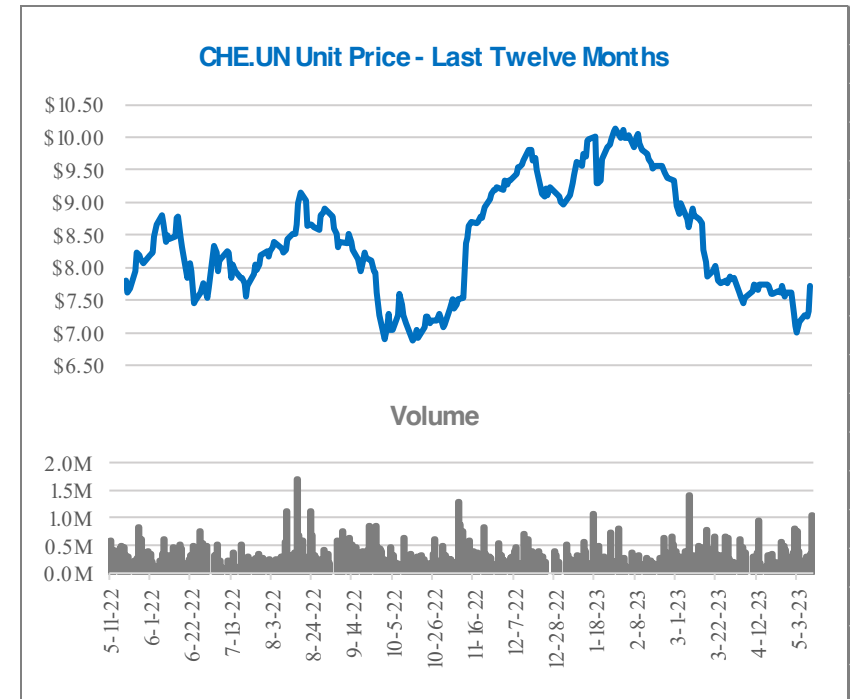
Investment  
Highlights

Appendix

- Chemtrade operates a diversified business providing industrial chemicals and services to customers in North America and around the world
- Significant regional market share across products
- Defensive product portfolio and business model, focused on size, scale and diversity of earnings
- Diverse end-markets served including Water Treatment, Semiconductor Manufacturing, Energy, Pulp & Paper and other industrial and consumer end-markets
- Approximately 1,400 employees across 55+ locations
- Listed on the TSX since 2001



<b>Unit Price <sup>(1)</sup></b>	<b>\$7.71</b>
<b>Market Capitalization <sup>(1)</sup></b>	<b>\$893.2 million</b>
<b>Enterprise Value <sup>(1)</sup></b>	<b>\$1.9 billion</b>
<b>Net debt to Adjusted EBITDA <sup>(2)</sup></b>	<b>2.2x</b>
<b>Distribution / Yield (Annualized) <sup>(1)</sup></b>	<b>\$0.60 per share / 7.8%</b>
<b>LTM Payout Ratio <sup>(2)</sup></b>	<b>28%</b>



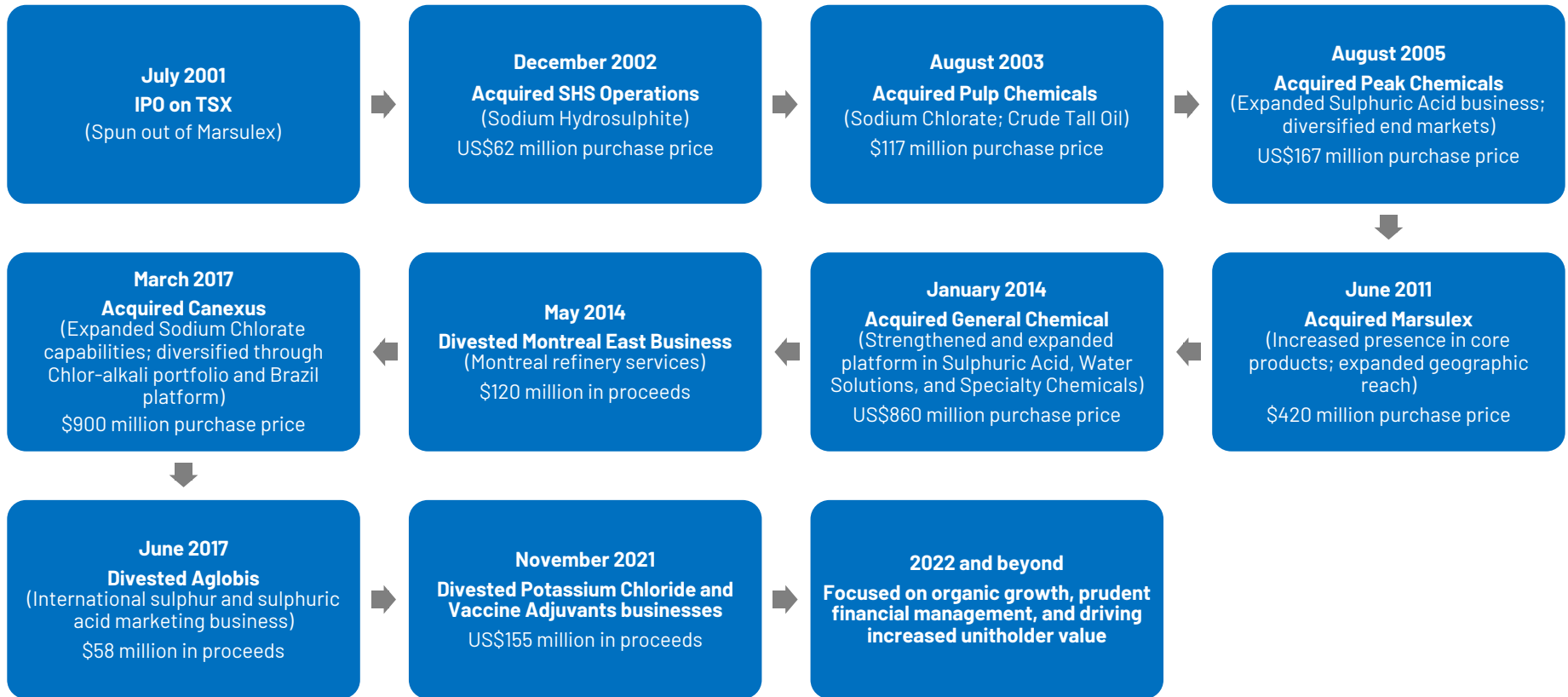
(1) As of May 11, 2023

(2) Payout ratio is a Non-IFRS ratio and Net debt to Adjusted EBITDA is a Capital management measure that includes Net debt, which is a Non-IFRS financial measure and are shown as of the end of Q1 2023. See Appendix for more information.

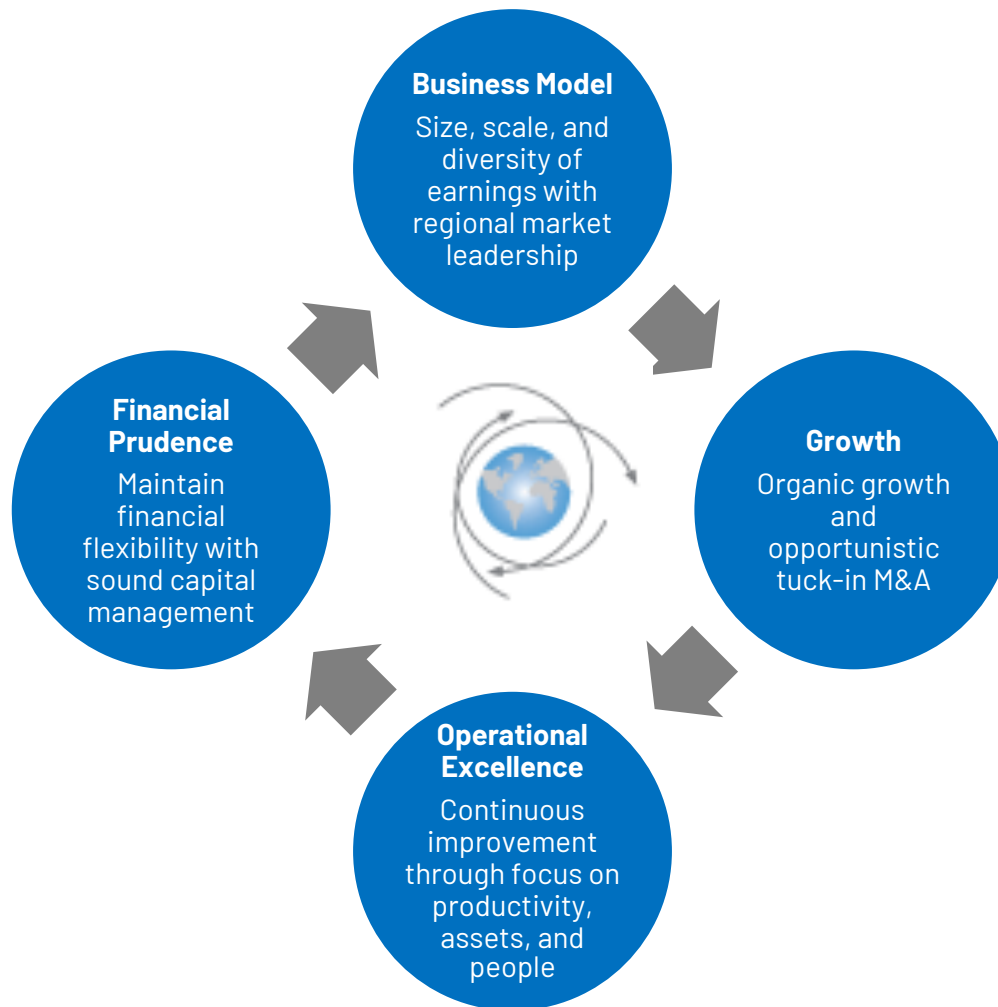
<b>Market Leadership</b>	<ul style="list-style-type: none"> <li>▪ <b>Diversified</b> exposure to industrial and consumer end-markets, given extensive product portfolio</li> <li>▪ <b>Significant regional market share</b> across products including sulphuric acid, Ultrapure sulphuric acid, sodium chlorate, water chemicals, and caustic soda</li> <li>▪ <b>Advantaged competitive position in electrochemicals</b> for next several years owing to global supply dislocations and elevated overseas energy costs</li> </ul>
<b>Strong Execution</b>	<ul style="list-style-type: none"> <li>▪ <b>Anticipating another record year in 2023</b>, based on updated guidance, reflecting continued strength across most of the businesses</li> <li>▪ <b>Operational and efficiency improvements</b> being realized across footprint</li> </ul>
<b>Compelling Growth</b>	<ul style="list-style-type: none"> <li>▪ <b>\$45 million of Adjusted EBITDA from organic growth projects targeted over the next 3 yrs. and \$75 million of Adjusted EBITDA from organic growth projects targeted over the next 5 yrs.</b></li> <li>▪ <b>Compelling organic growth opportunities across the business</b> (Ultrapure acid; Green Hydrogen; Water Chemicals; Productivity and Reliability initiatives)</li> </ul>
<b>Strengthened Balance Sheet</b>	<ul style="list-style-type: none"> <li>▪ <b>Strong balance sheet</b> (2.2x Net debt to Adjusted EBITDA <sup>(2)</sup>) offers improved financial flexibility</li> <li>▪ <b>Prudent capital allocation and generating shareholder value</b> a core focus</li> </ul>
<b>Defensive Attributes</b>	<ul style="list-style-type: none"> <li>▪ <b>Many key products are expected to see limited impact in a typical economic recession</b></li> <li>▪ <b>Natural inflation hedge</b> through exposure to higher commodity pricing</li> </ul>
<b>Attractive and Sustainable Distribution</b>	<ul style="list-style-type: none"> <li>▪ <b>~8% distribution yield</b> (annualized)<sup>(1)</sup>; Long track-record of paying distributions</li> <li>▪ <b>LTM Payout ratio of 28%</b>; Implied 2023 Payout ratio of ~32% or lower based on updated guidance<sup>(2)</sup></li> </ul>
<b>ESG</b>	<ul style="list-style-type: none"> <li>▪ <b>Chemtrade aiming to be an industry-leader on ESG</b>, based on 2025 ESG targets</li> </ul>

(1) As of May 10, 2023.

(2) Payout ratio and Net debt to Adjusted EBITDA are non-IFRS ratios and are shown as of Q1 2023. See Appendix for more information.



# Chemtrade Strategic Blueprint for Success





## Electrochemicals (EC) Segment



### Electrochemicals

**Chloralkali** - #1 producer in Canada

**Sodium Chlorate** - Top 3 supplier<sup>(1)</sup>

## Sulphur and Water Chemicals (SWC) Segment



### Acids & Non-Acid

**UP Acid** - #1 supplier to Semi-conductors<sup>(1)</sup>

**Regen Acid** - #2 supplier to Refineries<sup>(1)</sup>

**Merchant Acid** - Top 3 supplier<sup>(1)</sup>



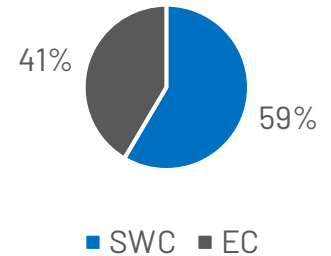
### Water

**Alum** - #1 supplier to drinking water plants<sup>(1)</sup>

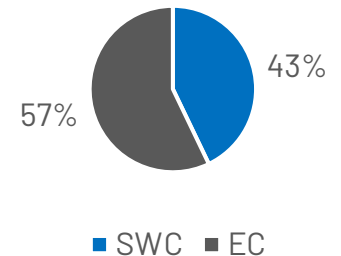
**Poultry Litter** - #2 in Treatment<sup>(1)</sup>

**PACI/ACH** - #2 in water coagulants<sup>(1)</sup>

### LTM Revenue



### LTM Adjusted EBITDA\*



\*Excludes corporate costs

Customers prefer our “high quality products with reliable service”

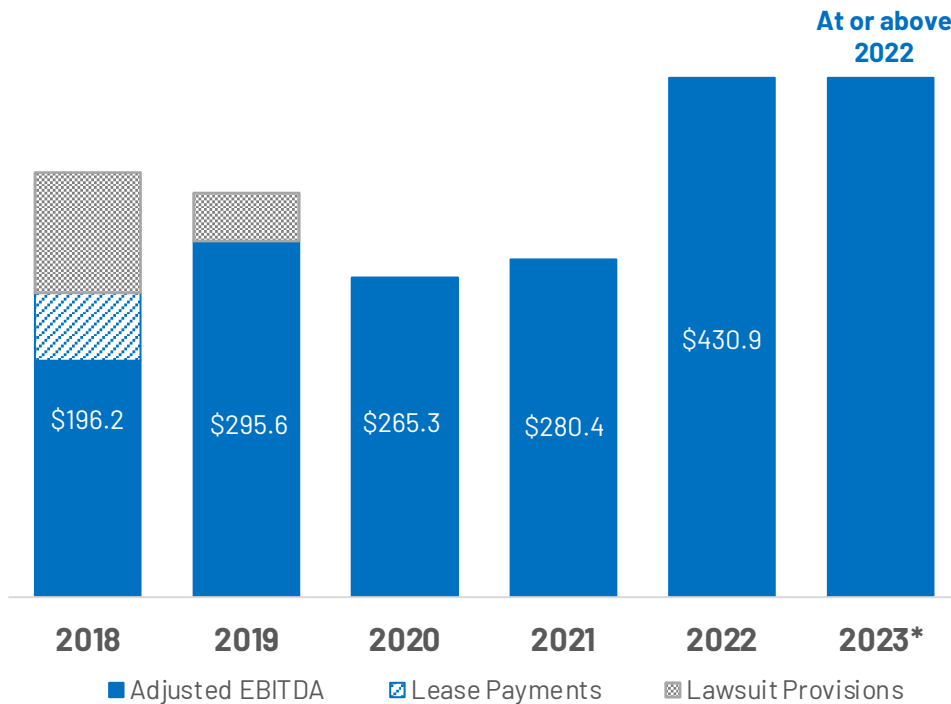
55+ sites • 1,400 employees • \$1.9B in sales<sup>(2)</sup> • >3,000 customers

(1) Based on internal estimates of North American Markets

(2) Based on Revenue for the last twelve months



## Adjusted EBITDA (C\$ millions)



**Record results generated in 2022.**

**Expect 2023 Adjusted EBITDA will be at or above 2022.**

**This strength reflects:**

- Improved and robust end-market demand across most key products
- Higher realized pricing for most key products
- Productivity & Reliability improvements and Commercial Excellence initiatives
- Strong operational execution

\* 2023 Adjusted EBITDA Guidance

# Sulphur and Water Chemicals (SWC) Segment



Key Products	Primary End-Uses	Competitive Advantages	Key Competitors
<b>Regen sulphuric acid</b>	Gasoline production	<ul style="list-style-type: none"> <li>Largest facilities are closely connected to customers (connected via pipeline at most facilities)</li> </ul>	Ecovyst; Veolia North America; PVS Chemical Solutions Inc.
<b>Ultrapure sulphuric acid</b>	Semiconductor manufacturing	<ul style="list-style-type: none"> <li>North America's leading producer of ultrapure acid</li> <li>Rigorous qualification process for customers</li> </ul>	PVS Chemical Solutions Inc; Imports from overseas
<b>Merchant sulphuric acid</b>	Wood pulp; industrial chemicals; automobile batteries; steel production; water treatment; mining	<ul style="list-style-type: none"> <li>One of North America's top three marketers of sulphuric acid</li> <li>Half of sulphuric acid manufactured internally</li> <li>Risk-sharing agreements with by-product suppliers</li> </ul>	Glencore; International Raw Materials; Veolia North America; Ecovyst; Southern States Chemical Company; Rio Tinto Kennecott; Cornerstone Chemical Company; Nouryon Chemicals
<b>Water solutions (Alum; ACH; PACl; Ferric)</b>	Municipal and industrial water treatment	<ul style="list-style-type: none"> <li>One of North America's largest suppliers of inorganic coagulants for water treatment</li> <li>Sulphuric acid is a key raw material; able to source from own facilities</li> <li>35+ facilities are located in close proximity to customers</li> </ul>	USALCO; Southern Ionics Incorporated; Affinity Chemical LLC; C&S Chemicals, Inc.; Kemira Water Solutions Inc.; Thatcher Company; Brenntag Southwest, Inc.; Chameleon Specialty Chemicals; Holland Company, Inc.; Ecovyst; GAC Chemical Corporation; Border Chemicals Company Ltd.; PVS Chemicals, Inc.; Summit Chemicals, Inc.; Harcros Chemicals Inc.; Pencco, Inc.

## Sulphuric acid

- Demand and pricing for Regen acid, which is used in gasoline alkylate production, remains solid. Chemtrade continues to be optimistic about the near-term outlook, particularly given refinery utilization rates generally remain high in a typical recession. Elevated refinery turnaround activity largely isolated to Q1 2023 period.
- Ultrapure acid demand outlook remains very strong over the medium- and long-term, supported by semiconductor industry production capacity expansion in North America.
- Merchant acid demand and pricing remain stable supported by solid demand from the Fertilizer and Mining Industry.
- Chemtrade will be increasing spending at sulphuric acid plants in 2023 for reliability improvements, which is included in the 2023 Guidance.

## Water Chemicals

- Strong demand supported by increasing regulations and population growth – alum demand relatively stable; PACI/ACH demand growing at least 5% per year.
- Additional production capacity of PACI and ACH was installed in 2022 and will contribute more meaningfully as 2023 progresses.
- More favourable input costs contributing to margin expansion. Any weakness in raw materials costs caused by an economic downturn could further bolster margins.
- Demand has historically exhibited seasonality, with stronger demand during summer months.

# Electrochemicals (EC) Segment



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SWC Segment

**EC Segment**

Organic  
Growth

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Highlights

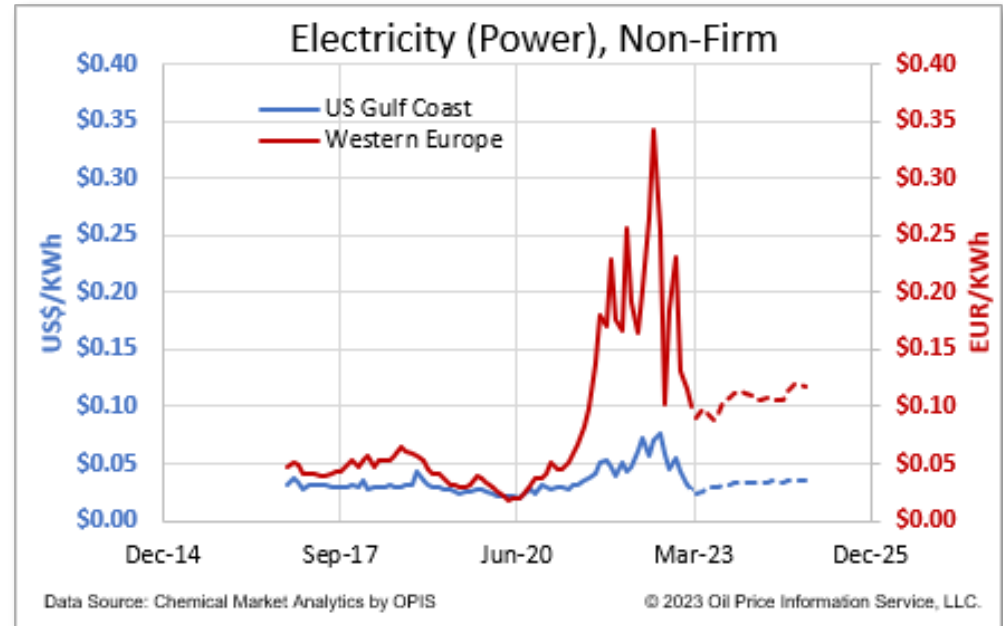
Appendix

Key Products	Primary End-Uses	Competitive Advantages	Key Competitors
<b>Caustic soda</b>	Pulp & paper; soaps and detergents; aluminum; oil & gas exploration and refining; lithium-ion battery production; chemical processes	<ul style="list-style-type: none"> <li>North America: Access to low-cost hydroelectric power</li> <li>Brazil production of caustic soda mostly sold to Suzano under a long-term contract</li> <li>Both facilities use membrane cell technology, which is newer and more efficient than legacy technologies</li> </ul>	<ul style="list-style-type: none"> <li>North America: Univar; ERCO Worldwide; Westlake Chemical Corporation; Olin Corporation; US Magnesium LLC; K2 Pure Solutions; Occidental Chemical Corporation; Shintech Inc.; Formosa Plastics Corporation</li> <li>Brazil: Unipar Carbocloro; Katrium; Chlorum Solutions</li> </ul>
<b>Chlorine</b>	Construction (PVC); water treatment; chlorine derivatives		
<b>Hydrochloric Acid</b>	Oil & gas drilling; steel manufacturing		
<b>Sodium Chlorate</b>	Pulp & paper bleaching	<ul style="list-style-type: none"> <li>North America: Access to low-cost hydroelectric power</li> <li>Brazil production mostly sold to Suzano under a long-term contract; delivered by pipeline</li> </ul>	<ul style="list-style-type: none"> <li>North America: ERCO Worldwide; Nouryon Chemicals (Eka); Kemira Water Solutions Inc.</li> <li>Brazil: Nouryon Chemicals</li> </ul>



## Sodium Chlorate

- Brandon, Manitoba plant is the largest and one of the lowest cost sodium chlorate plants globally\*.
- Chemtrade's sodium chlorate plants operate in energy regulated markets supplied by renewable hydroelectric energy.
- With utility costs representing ~75% of the variable production cost of sodium chlorate, elevated electricity costs overseas are resulting in increasing interest in export volumes from North America to Europe and Asia.
- Chemtrade's plants could remain advantaged relative to overseas competitors for several years.
- Expect demand and pricing to remain strong for the balance of 2023.



\*Management estimate

## Chlorine and HCl

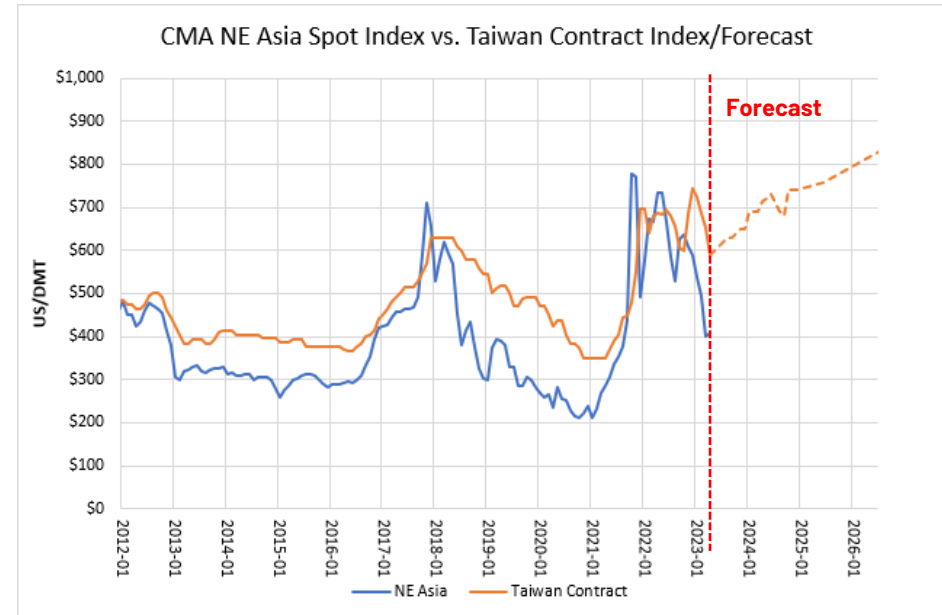
- Merchant chlorine prices remain strong due to tight industry supply and robust end-market demand in North America
- North American rig counts remain significantly higher year-over-year, signaling good near-term demand for HCl.
- Elevated natural gas prices in Europe are supporting increased exports of natural gas from North America to Europe and contributing to HCl demand. This could help offset the impact of an economic downturn on North American HCl demand.
- Expecting total 2023 MECU sales volumes to be similar to 2022, as demand for chlorine and HCl remain strong.

Long Term Market Demand		
2020:	Oil WTI:	\$39/bbl
	US & Can Rigs:	522
2021:	Oil WTI:	\$68/bbl
	US & Can Rigs:	606
2022:	Oil WTI:	\$68/bbl
	US & Can Rigs:	897
Apr. 2023:	Oil WTI:	\$75/bbl
	US & Can Rigs:	858

Source: Baker Hughes

## Caustic Soda

- Historically high pricing in 2022, supported by strong demand, supply dislocations stemming from geopolitical conflicts, increased utility costs in Europe and Asia, and increased global freight costs.
- NE Asia spot index pricing declined steadily in 2023 until early April, before beginning to trend higher.
- Taiwan contract pricing suggests price stabilization / improvement over the balance of 2023, followed by improved pricing in 2024 and 2025.
- Chemtrade's access to low-cost hydroelectricity expected to remain a competitive advantage relative to overseas competitors for several years.
- Q1 2023 NE Asia average index of US\$478/DMT.
- 2023 guidance assumes an average NE Asia average index of US\$465/DMT for the full year, which implies US\$390/DMT for H2 2023.



Source: CMA (Chemical Market Analytics by OPIS, a Dow Jones Company, formerly IHS Markit Base Chemical)

# Organic Growth Projects



- **Chemtrade's long-term objective is to deliver sustained earnings growth and generate value for our investors**
- This will be accomplished by two primary factors:
  - 1) Organic Growth
  - 2) Operating Efficiencies – Productivity & Reliability
- This should result in unitholder gains alongside ongoing balance sheet strength
- Chemtrade may consider bolt-on acquisitions in 2-3 years, but only if leverage ratios are below our target
- Chemtrade also strives to be a leading example for Corporate ESG Responsibility

**Chemtrade continues to target an incremental \$45 million in Adjusted EBITDA growth by year-end 2025 and \$75 million in Adjusted EBITDA growth by year-end 2027, as announced at its 2022 Investor Day.**

- Chemtrade plans to allocate \$110 million - \$140 million for Growth capital expenditures to support its organic growth projects in 2023.
- To be updated in 2023.

## Ultrapure Acid Capacity Expansions

- Both the Cairo, Ohio and Casa Grande, Arizona projects continue to progress.

### Cairo, Ohio

- Project is progressing well, on schedule and on budget.
- Construction completion in Q1 2024 with start-up in 2024.

### Casa Grande, Arizona

- Front-End Engineering Design (“FEED”) completed in Q1 2023.
- Now expect the aggregate capital costs to be significantly higher than the top end of the previous estimated range (US\$175-\$200 million) reflecting macro-level inflationary pressure on capital equipment and commercial construction in the U.S.
- Expect to provide an update on the project towards the middle of 2023.

# Organic Growth Projects

## Ultrapure Acid

- CHIPS Act in the US will continue to fuel Semiconductor growth of 2-3x over the next 5 years
- 8-10 new semiconductor fabrication plants currently under construction in the US
- Chemtrade has announced two organic growth projects – Greenfield plant in Casa Grande, Arizona and plant expansion in Cairo, Ohio

Global Semiconductor Market



Source: International Business Strategies

**Chemtrade is the largest supplier of UPA in North America**

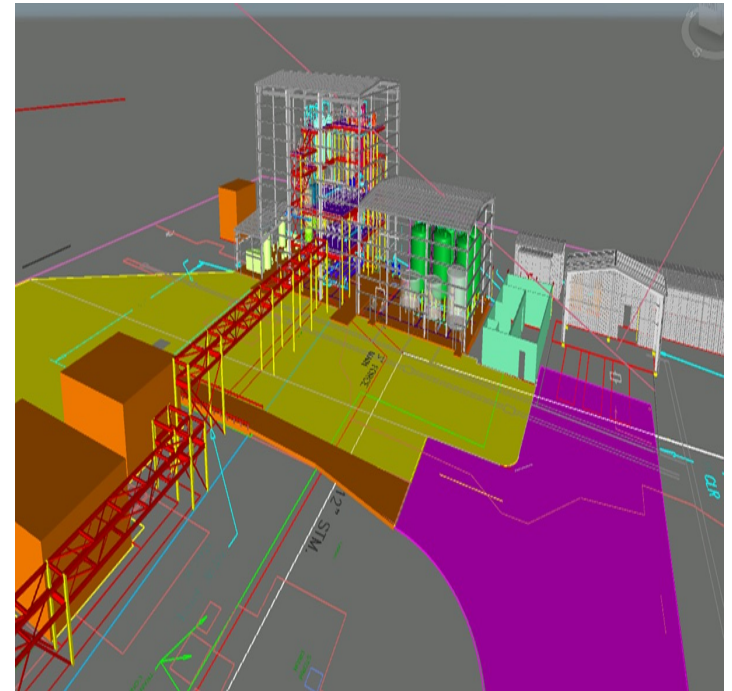
# Organic Growth Projects

## Ultrapure Acid

### Cairo, Ohio Expansion

- 60% increase in UPA capacity at Cairo, Ohio facility
- Significant technology upgrades being made
- Estimated capital cost of ~US\$50-55 million
- 25%+ expected IRR
- Remains on schedule and on budget for commissioning and start-up in 2024

3D Rendering of the Cairo, Ohio Expansion





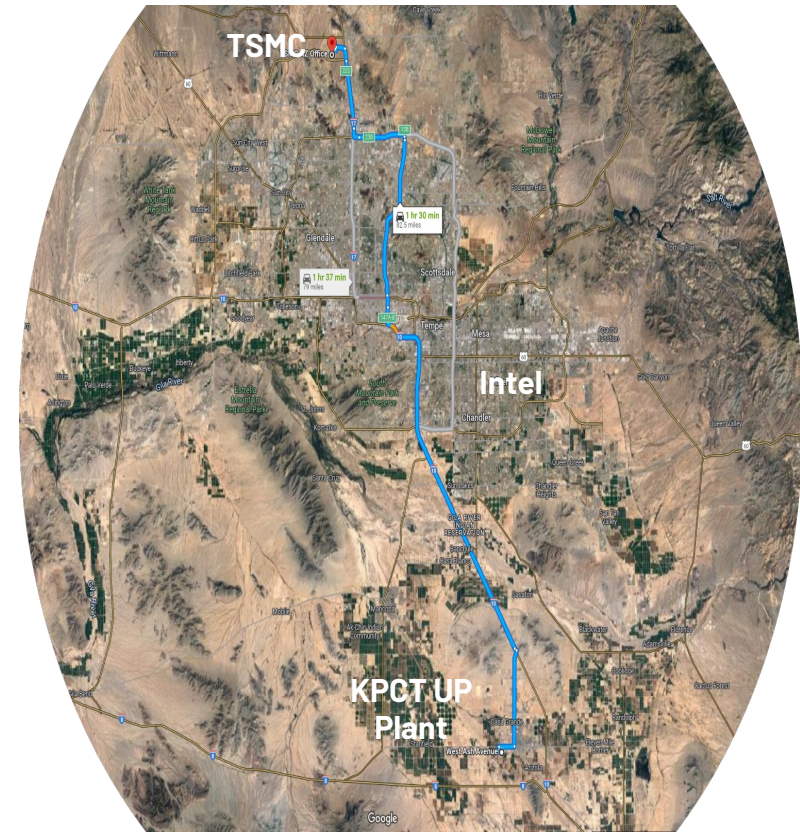
# Organic Growth Projects

## Ultrapure Acid

### Greenfield Plant in Casa Grande, Arizona (KPCT JV)

- JV 49% owned by Chemtrade
- Annual capacity of 100,000 MT of UPA
- Chemtrade working with Chemetics on Oleum plant design
- Kanto-PPC design to be used for Ultrapure units
- Key Milestones:
  - Front End Engineering Design (“FEED”) study completed in Q1 2023
  - Project update around the middle of 2023
  - Construction completion
  - Commissioning and start-up

**Ultrapure Plant located ~40 Miles from Intel and  
~80 Miles from TSMC**



# Organic Growth Projects

## Water Chemicals

- Increasing regulations and population growth support heightened demand for coagulants across North America.
- Industry PACI/ACH demand is growing >5% per year; Chemtrade sales of PACI/ACH up >10% in 2022.
- Small projects to expand capacity for PACI/ACH installed in 2022 and will contribute more meaningfully as 2023 progresses
- Exploring expansion into new specialized products and other growth opportunities:
  - New pilot plant in Augusta, Georgia.
  - Leading to both increased margins and lowered environmental liabilities.

### New Pilot Plant

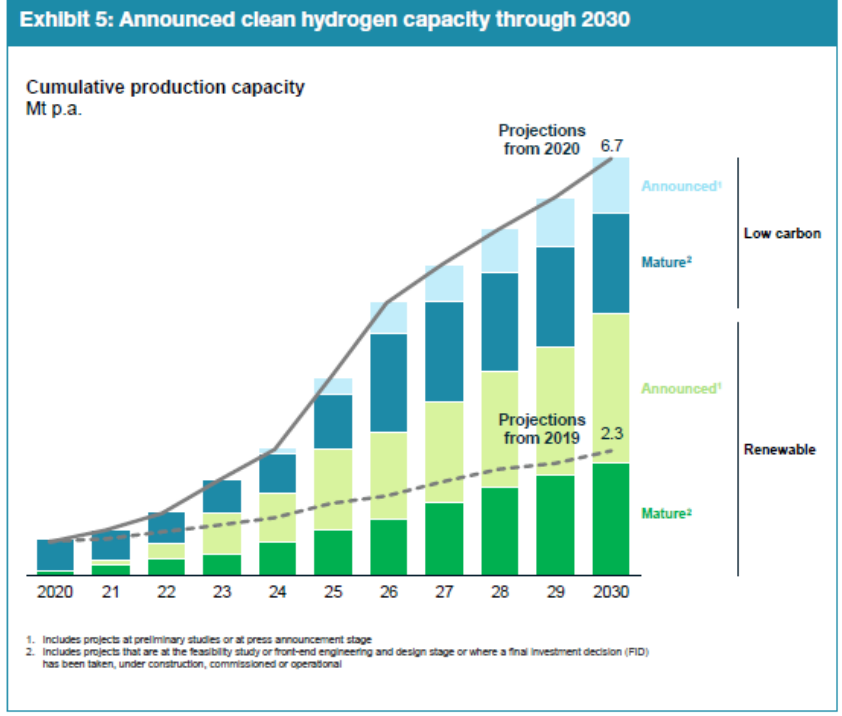


**Chemtrade is one of  
North America's largest suppliers of inorganic  
coagulants for water treatment.**

# Organic Growth Projects

## Hydrogen

- Hydrogen expected to become a more significant energy source in a low carbon future.
- Chemtrade uniquely positioned with “Green hydrogen” produced using hydro-electric power.
- Project at Prince George, BC sodium chlorate plant delayed, as one of Chemtrade’s partners in the project wants to conserve capital due to economic uncertainty.
- Planning continues for 2 additional hydrogen projects which are unaffected by the delay in Prince George.



Source: Hydrogen Insights Report 2021 – Hydrogen Council, McKinsey & Company

# Operational Excellence



# Operational Excellence Productivity and Reliability

**Chemtrade launched Productivity and Reliability initiatives in 2020, building out a culture of continuous improvement.**

## Safety

- 25% reduction in recordable injury rate in 2022 vs. 2021
- Focused on improvements in Engagement, Operating Discipline, and Conditions to build a zero-injury culture

## Reliability

- Have successfully reduced the cost of unplanned downtime by 40% versus 2020 performance
- Turnaround in North Vancouver successfully completed, which contributed to our strong sales
- Improved on-stream time at majority of locations; North Vancouver led the way with a 9% improvement after turnaround vs. 2021
- Implementing Maintenance Excellence best practices, e.g. turnaround planning, reliability risk assessment, and critical spares



# Operational Excellence

## Productivity and Reliability

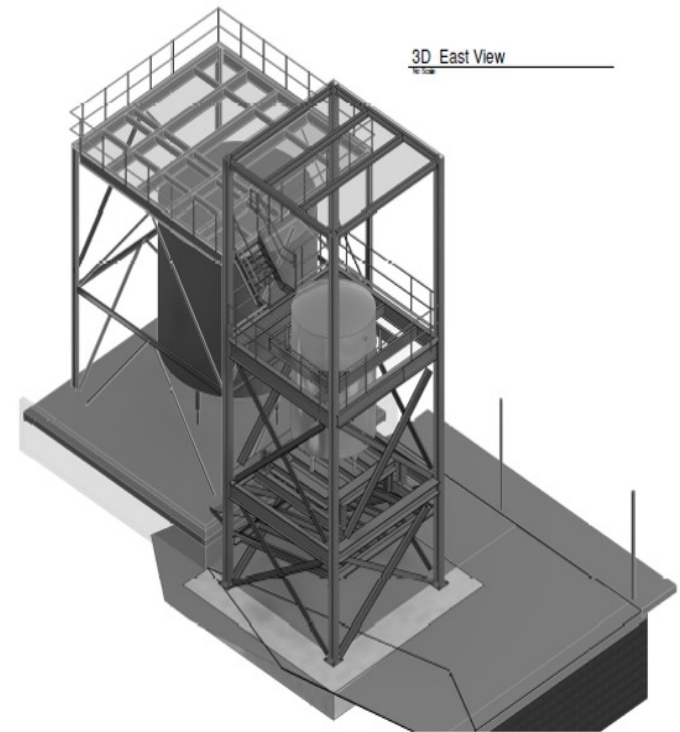
### Productivity

- We have delivered \$15+ million savings each of the last two years and are targeting achieving this level of savings in future years to offset annual inflation
- Chemtrade has built a robust Green Belt and A-3 Lean Six Sigma culture
- Conducting a transformational change workshop for all senior leadership

### Capital

- Established a disciplined capital execution culture. Achieved quarterly targets in 2022.
- Emphasizing growth capital; >50% of capital spending expected to be growth capital in 2023
- Well established capital stage gate process

**New technology will deliver 4X current capacity per ACH reactor**



ENVIRONMENTAL	SOCIAL	GOVERNANCE
<p><b>GHG and other air emissions</b></p> <ul style="list-style-type: none"> <li>Reduce or offset 2021 baseline direct GHG emissions emitted from sources we own or control (Scope 1 emissions) by 50% by 2025<sup>(1)</sup></li> <li>Including all future acquisitions, maintain GHG intensity (kg GHG/kg product) below the chemical industry average</li> </ul>	<p><b>Workforce Health and Safety</b></p> <ul style="list-style-type: none"> <li>Achieve employee occupational injury/illness incident rate (OIR) of 0.7 by 2025</li> <li>Avoid all serious injuries or fatalities (SIFs) for employees and contractors in 2022 and beyond</li> </ul>	<p><b>Governance of Environmental and Social Issues</b></p> <ul style="list-style-type: none"> <li>Demonstrate ESG leadership by reporting material SASB factors in alignment with the Task Force on Climate-Related Financial Disclosure model (Governance, Strategy, Risk Management, Metrics, and Targets)</li> <li>Incorporate ESG related targets into short-term and long-term incentive plans of executives starting in 2022</li> </ul>
<p><b>Industrial and Hazardous Waste</b></p> <ul style="list-style-type: none"> <li>Reduce high clay alumina (HCA) landfill disposal by an additional 20% of 2021 baseline by 2025</li> </ul>	<p><b>Operational Safety, Emergency Preparedness and Response</b></p> <ul style="list-style-type: none"> <li>Reduce Level 1 spills or releases by 50% of 2021 baseline by 2025</li> <li>Reduce the number of transportation incidents by 40% of 2021 baseline by 2025</li> </ul>	<p><b>Board and Executive Diversity Targets</b></p> <ul style="list-style-type: none"> <li>Maintain 30% women and achieve 50% designated groups on Board of Directors by our annual meeting in 2024</li> <li>Maintain 30% women and 50% designated groups in our Executive Officer Positions</li> </ul>
<p><b>Energy Management</b></p> <ul style="list-style-type: none"> <li>Ensure a minimum of 85% of our electricity usage is from hydroelectric or other renewable sources and maintain this target when making acquisitions</li> </ul>	<p><b>Employee Engagement and Diversity</b></p> <ul style="list-style-type: none"> <li>Achieve industry benchmark employee engagement survey results by 2023</li> <li>Across the organization, fill 40% of vacancies with black, Indigenous and people of colour (BIPOC) and/or women by 2024</li> <li>Achieve 50% BIPOC and/or women in all management positions by the end of 2025</li> </ul>	

(1) Reduction and offset is achieved via various strategies, including the capture, use and/or sale of hydrogen produced at our electrochemical facilities.

For more information, please refer to Chemtrade's Sustainability Report, available at [www.chemtradelogistics.com/sustainability](http://www.chemtradelogistics.com/sustainability).

# Financial Prudence





### Equity (CHE.UN)

- 115.8 million units outstanding, as of March 31, 2023.

### Long-Term Debt

- US\$650 million revolving credit facilities
- US\$393.1 million undrawn, as of March 31, 2022
- December 2026 maturity

#### Capital Allocation Priorities:

- Maintaining a strong balance sheet
- Investing in financially accretive organic growth opportunities
- Return of capital to unitholders
- Strategic, opportunistic tuck-in acquisitions
- Reduced debentures by ~\$91 million (19%)

#### Financial Leverage Target:

Net debt to Adjusted EBITDA < 3.0x

### Convertible Unsecured Subordinated Debentures (March 31, 2023 in \$ millions)

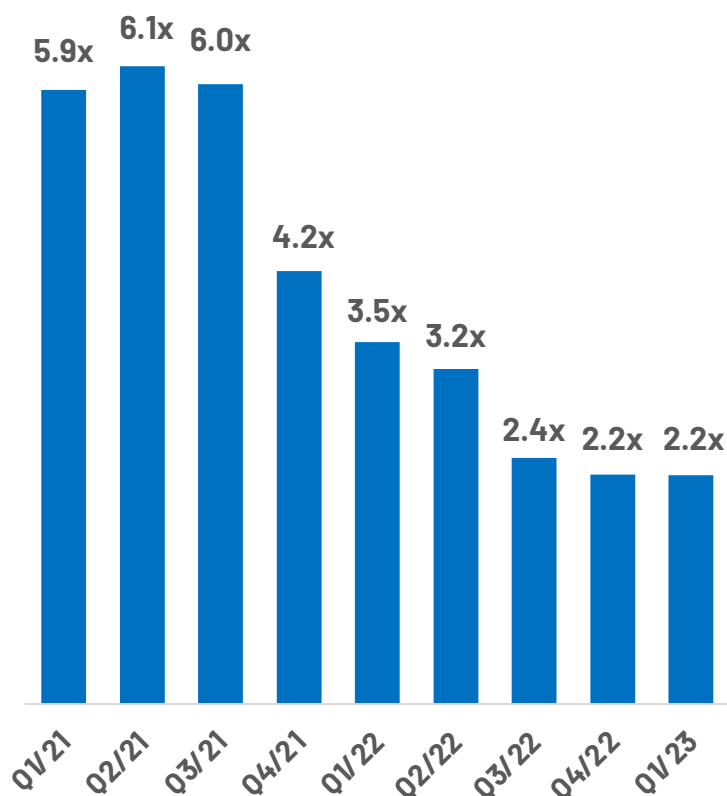
	Fund 2017 Debentures (CHE.DB.D)	Fund 2019 Debentures (CHE.DB.E)	Fund 2020 Debentures (CHE.DB.F)	Fund 2021 Debentures (CHE.DB.G)	Fund 2023 Debentures (CHE.DB.H)	Total
<b>Maturity</b>	May 31, 2024 <sup>(1)</sup>	October 31, 2026	September 30, 2025	August 31, 2027	June 30, 2028	
<b>Interest Rate</b>	4.75%	6.50%	8.50%	6.25%	7.00%	
<b>Principal outstanding</b>	\$201.1	\$100.0	\$86.2	\$130.0	\$110.0	\$627.3 <sup>(2)</sup>
<b>Conversion Price</b>	\$26.70/unit	\$15.80/unit	\$7.35/unit	\$10.00/unit	\$12.85/unit	

(1) Announced full redemption in H1 2023

(2) \$426.2 million following the full redemption of the 4.75% May 2024 Debentures in June 2023



### Net Debt to LTM Adjusted EBITDA



- **Net debt to Adjusted EBITDA <sup>(1)</sup> of 2.2x at the end of Q1 2023, down from 3.5x at the end of Q1 2022.**

- Reflects a combination of cash generated from the business, Adjusted EBITDA growth, an \$86.5 million equity offering completed in Q3 2022, and the sale of an idled sulphuric acid plant in Augusta, GA in Q2 2022.
- Leverage expected to increase slightly in 2023, based on guidance and anticipated Growth capital expenditures of \$110 million - \$140 million, but expect to remain below the 3.0x target

- **Revolving credit facilities of US\$650.0 million – matures in December 2026; fully revolving.**

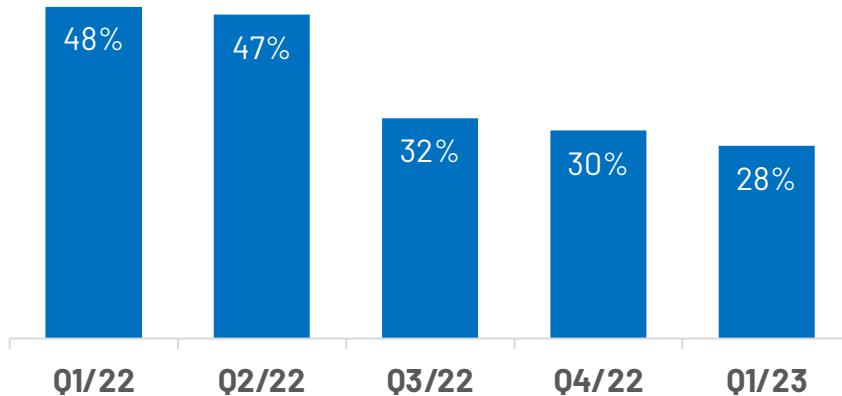
- US\$393.1 million undrawn as of end of Q1 2023, in addition to C\$132.7 million of cash on hand.

- **Redemption of 4.75% May 2024 Debentures**

- Issued \$110.0 million of 7.00% June 2028 Debentures in March 2023.
- Announced the full redemption of the 4.75% May 2024 Debentures by using the net proceeds from the June 2028 Debentures in addition to cash on hand and the credit facility for the remaining balance.

(1) Net debt to Adjusted EBITDA is a Capital management measures. See Appendix for more information.

## LTM Payout Ratio <sup>(1)</sup>



## Distribution of \$0.05/unit per month or \$0.60/unit on an annualized basis.

- 1) Current distribution level is sustainable, as highlighted by LTM Payout ratio of 28%.
- 2) Current distribution yield of approximately 8% <sup>(2)</sup> offers an attractive return of capital to unitholders.
- 3) Current distribution level allows Chemtrade to balance return of capital to unitholders with our other capital allocation priorities, including investing in organic growth opportunities and maintaining a healthy balance sheet.

(1) Payout ratio is a non-IFRS ratio and is based on Distributable cash after maintenance capital expenditures per unit and distributions declared per unit. See Appendix for more information.

(2) As of May 10, 2023.

**Chemtrade has yet to see any materials signs of economic softening in 2023, but believes that it is better-positioned than many chemical manufacturers, should an economic downturn occur.** This is owing to numerous defensive attributes, its diverse product portfolio that is benefitting from a number of varied tailwinds, and its strengthened balance sheet.

### SWC Segment

- Water treatment chemicals are non-discretionary and any decline in raw material costs could result in stronger margins.
- Regen business is resilient as refinery utilization rates generally remain high in a typical recession.
- Ultrapure demand is anticipated to increase irrespective of the economic backdrop, supported by chip shortages and semiconductor industry capacity expansions.
- Merchant acid demand is tied to industrial activity, but North American demand is being supported by global supply dislocations, potentially mitigating the impact of any economic weakness.

### EC Segment

- Chlor-alkali impact determined by relative demand for caustic soda and chlorine.
- High energy pricing for electrochemical production in Europe / Asia contributing to increased North American demand and pricing – expected to remain a competitive advantage for Chemtrade for several years and could support elevated electrochemical prices and demand through an economic downturn.

<b>Market Leadership</b>	<ul style="list-style-type: none"> <li>▪ <b>Diversified</b> exposure to industrial and consumer end-markets, given extensive product portfolio</li> <li>▪ <b>Significant regional market share</b> across products including sulphuric acid, Ultrapure sulphuric acid, sodium chlorate, water chemicals, and caustic soda</li> <li>▪ <b>Advantaged competitive position in electrochemicals</b> for next several years owing to global supply dislocations and elevated overseas energy costs</li> </ul>
<b>Strong Execution</b>	<ul style="list-style-type: none"> <li>▪ <b>Anticipating another record year in 2023</b>, based on updated guidance, reflecting continued strength across most of the businesses</li> <li>▪ <b>Operational and efficiency improvements</b> being realized across footprint</li> </ul>
<b>Compelling Growth</b>	<ul style="list-style-type: none"> <li>▪ <b>\$45 million of Adjusted EBITDA from organic growth projects targeted over the next 3 yrs. and \$75 million of Adjusted EBITDA from organic growth projects targeted over the next 5 yrs.</b></li> <li>▪ <b>Compelling organic growth opportunities across the business</b> (Ultrapure acid; Green Hydrogen; Water Chemicals; Productivity and Reliability initiatives)</li> </ul>
<b>Strengthened Balance Sheet</b>	<ul style="list-style-type: none"> <li>▪ <b>Strong balance sheet</b> (2.2x Net debt to Adjusted EBITDA <sup>(2)</sup>) offers improved financial flexibility</li> <li>▪ <b>Prudent capital allocation and generating shareholder value</b> a core focus</li> </ul>
<b>Defensive Attributes</b>	<ul style="list-style-type: none"> <li>▪ <b>Many key products are expected to see limited impact in a typical economic recession</b></li> <li>▪ <b>Natural inflation hedge</b> through exposure to higher commodity pricing</li> </ul>
<b>Attractive and Sustainable Distribution</b>	<ul style="list-style-type: none"> <li>▪ <b>~7.8% distribution yield</b> (annualized)<sup>(1)</sup>; Long track-record of paying distributions</li> <li>▪ <b>LTM Payout ratio of 28%</b>; Implied 2023 Payout ratio of ~32% or lower based on updated guidance<sup>(2)</sup></li> </ul>
<b>ESG</b>	<ul style="list-style-type: none"> <li>▪ <b>Chemtrade aiming to be an industry-leader on ESG</b>, based on 2025 ESG targets</li> </ul>

(1) As of May 11, 2023.

(2) Payout ratio and Net debt to Adjusted EBITDA are non-IFRS ratios and are shown as of Q1 2023. See Appendix for more information.

# APPENDIX

## Management Team

<b>Scott Rook</b> President and Chief Executive Officer	<b>Rohit Bhardwaj</b> Chief Financial Officer	<b>Tim Montgomery</b> Group Vice- President Manufacturing and Engineering	<b>Alan Robinson</b> Group Vice- President, Commercial	<b>Emily Powers</b> Group Vice- President Human Resources and Responsible Care	<b>Tejinder Kaushik</b> Vice-President Information Technology	<b>Susan Paré</b> General Counsel and Corporate Secretary
<ul style="list-style-type: none"> <li>• Joined Chemtrade in 2019 as COO</li> <li>• CEO since March 2021</li> <li>• More than 28 years experience in the chemical industry including commercial, operational, and business leadership roles</li> <li>• Previously Senior VP, Commercial at Ascend Performance Materials</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Chemtrade in 2006 as CFO</li> <li>• Oversees Finance, IT, Investor Relations, Corporate Development, and Legal</li> <li>• Previously CFO, Corporate Secretary and Executive VP, Operations of TSX-listed Inscope Corporation</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Chemtrade in 2020</li> <li>• Oversees Manufacturing, Engineering, and Procurement</li> <li>• More than 30 years experience in the chemical industry</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Chemtrade in 2022</li> <li>• Oversees Commercial</li> <li>• More than 22 years experience in commercial, business leadership, and supply chains in the chemical industry</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Chemtrade in 2016</li> <li>• Leads the Human Resources and Responsible Care functions</li> <li>• More than 23 years experience in the chemical industry</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Chemtrade in 2016</li> <li>• Leads Information Technology operations</li> <li>• More than 20 years of IT experience across multiple industries</li> <li>• Formerly Senior Director of Global IT at Celestica</li> </ul>	<ul style="list-style-type: none"> <li>• Joined Chemtrade in 2006</li> <li>• Leads the Legal Department and is Corporate Secretary of the Board of Trustees</li> <li>• Also oversees the Environmental Risk group</li> </ul>

## Board of Trustees

**Douglas Muzyka**  
Chair of the Board

- Trustee since November 2020
- Corporate director
- Previously Senior VP and Chief Science and Technology Officer of E.I. DuPont de Nemours

**Lucio Di Clemente**  
Chair of the Compensation and Corporate Governance Committee

- Trustee since July 2009
- Executive mentor, corporate financial advisor and corporate director

**Daniella Dimitrov**  
Chair of the Audit Committee

- Trustee since May 2020
- Previously President and CFO of IAMGOLD

**Emily Moore**  
Chair of the Responsible Care Committee

- Trustee since July 2019
- Director of Troost Institute for Leadership Education in Engineering at the University of Toronto and corporate director

**Luc Doyon**  
Corporate Director

- Trustee since May 2022
- Corporate director
- 34-year career with Air Liquide

**Katherine Rethy**  
Corporate Director

- Trustee since July 2015
- Corporate director
- Previously Senior VP, Global Services at Falconbridge Ltd.

**David Mutombo**  
Corporate Director

- Trustee since November 2022
- CEO of Regideso S.A., the national water utility company of the Democratic Republic of Congo.

**Scott Rook**  
CEO, Corporate Director

- Trustee since March 2021
- President and CEO of Chemtrade
- Previously Senior VP, Commercial at Ascend Performance Materials



## Record Q1 for Adjusted EBITDA and second highest quarterly Adjusted EBITDA ever

	Q1 2023	Q1 2022	Change (\$)	Change (%)
Revenue	471.2	390.3	80.9	21%
Net Earnings (Loss)	79.5	10.7	68.8	644%
Adjusted EBITDA <sup>(1)</sup>	131.7	107.8	23.8	22%
Cash Flows from Operating Activities	54.4	37.1	17.2	46%
Distributable cash after maintenance capital expenditures <sup>(1)</sup>	87.6	63.3	24.3	38%
DCPU <sup>(1)(2)</sup>	0.76	0.61	0.15	25%
LTM Payout ratio (%) <sup>(1)(3)</sup>	28%	48%	n/a	n/a
Net debt <sup>(1)</sup>	978.0	1,160.1	(182.1)	(16)%
Net debt to Adjusted EBITDA <sup>(1)</sup>	2.2x	3.5x	n/a	n/a

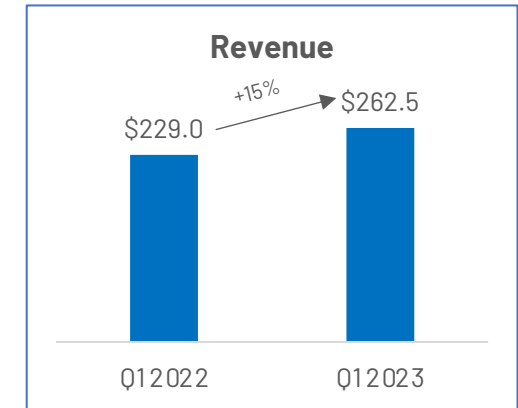
(1) Adjusted EBITDA is a Total of segments measures; Distributable cash after maintenance capital expenditures is a non-IFRS financial measure and DCPU (Distributable cash after maintenance capital expenditures per unit) and Payout ratio are non-IFRS ratios. Net debt to Adjusted EBITDA is a Capital management measures that includes Net debt, which is a non-IFRS measure. See Appendix for more information.

(2) Based on weighted average number of units outstanding for the period.

(3) Payout ratio for the last twelve months.

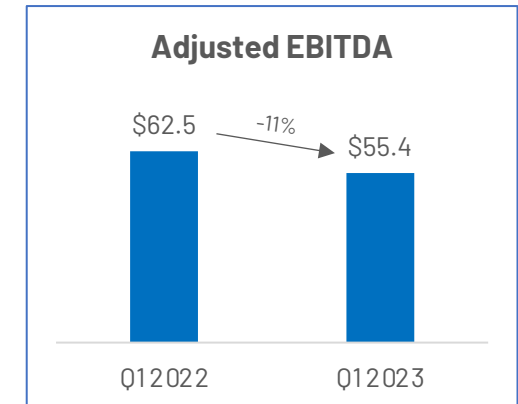
## Revenue

- Higher selling prices of water solutions products, sodium nitrite, Regen acid and merchant acid.
- Lower Regen acid volumes due to elevated customer maintenance turnaround activity.
- Lower selling prices of sulphur products.



## Adjusted EBITDA <sup>(1)</sup>

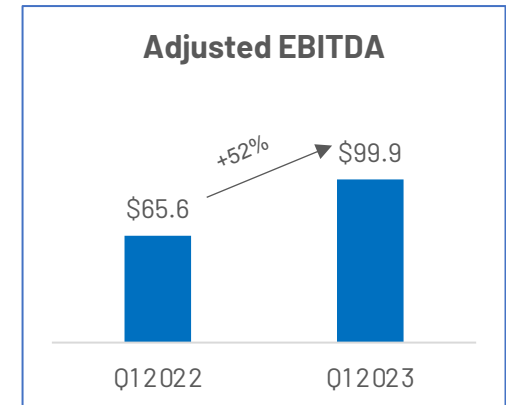
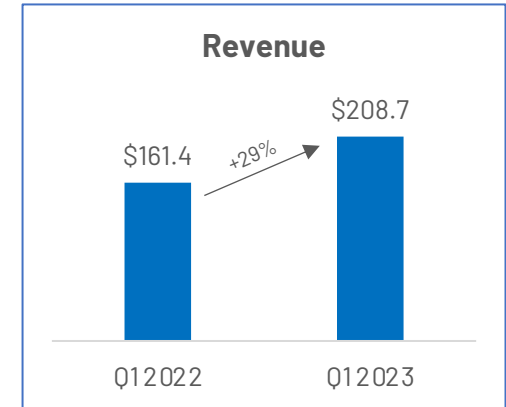
- Higher revenue, as noted above.
- Higher maintenance costs related to the maintenance turnarounds at the Beaumont and Richmond plants during Q1 2023.
- Weaker results for acid products due mainly to higher maintenance turnaround activity more than offset improved results for water solutions products.



(1) Adjusted EBITDA is a Total of segments measure. See Appendix for more information.

## Revenue

- Higher selling prices for all three chlor-alkali products (caustic soda, chlorine, and HCl) – Realized MECU netbacks up ~\$550 year-over-year, with ~60% of the increase attributable to stronger pricing for chlorine and hydrochloric acid, and the balance attributable to higher realized prices for caustic soda.
  - Merchant chlorine pricing benefitting from reduced industry supply.
  - Strong HCl demand due to increased fracking activity in North America.
  - Asian caustic soda fundamentals supported by reduced supply in Europe due to very high electricity costs, benefitting Chemtrade.
- Significantly higher selling prices for sodium chlorate, reflecting a global shift in operating rates.
- Higher revenue in Brazil.



## Adjusted EBITDA <sup>(1)</sup>

- Higher revenue, as outlined above.

(1) Adjusted EBITDA is a Total of segments measure. See Appendix for more information.

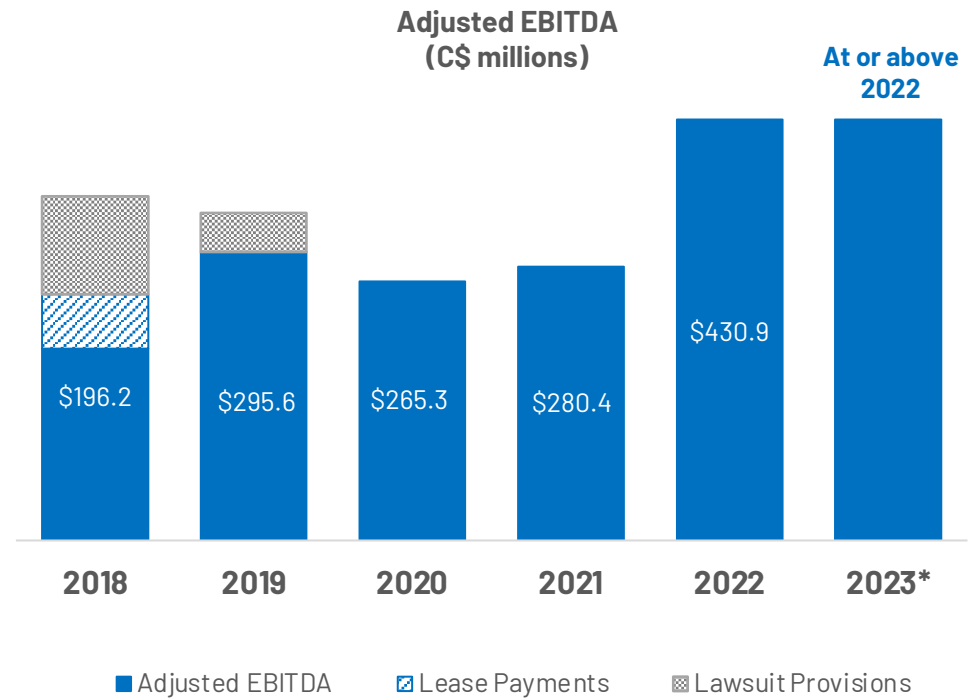
## Corporate Costs

- Realized foreign exchange loss of \$0.6 million, compared to a gain of \$2.1 million in Q1 2022.
- Short-term incentive compensation costs increased by \$1.6 million year-over-year.
- Partial offset from \$0.8 million of reserves for legal proceedings in Q1 2022.
- Excluding the factors cited above, corporate costs were consistent year-over-year.



## 2023 Guidance

- Increased the 2023 Adjusted EBITDA guidance to at or above the record 2022 Adjusted EBITDA
- The updated 2023 outlook reflects the strong start to the year and improved outlook for the remainder of 2023
- Implied Payout ratio <sup>(1)</sup> at or below ~32% based on the updated guidance highlights the sustainability of Chemtrade’s distribution



\* 2023 Adjusted EBITDA Guidance

(1) Payout ratio is a non-IFRS ratio. See Appendix for more information.

2023 Guidance (\$ million)	Updated 2023 Guidance	Prior 2023 Guidance	Actual 2022 Results
Adjusted EBITDA <sup>(1)</sup>	At or above 2022	\$360 - \$400	\$430.9
Maintenance Capital Expenditures <sup>(1)</sup>	\$80 - \$105	\$80 - \$105	\$99.8
Growth capital expenditures <sup>(2)</sup>	\$110 - \$140	\$110 - \$140	\$21.6
Lease Payments	\$50 - \$60	\$50 - \$60	\$52.4
Cash interest <sup>(1)</sup>	\$50 - \$55	\$50 - \$55	\$51.7
Cash Tax <sup>(1)</sup>	\$10 - \$20	\$10 - \$20	\$12.0

(1) Adjusted EBITDA is a Total of segments measures. Maintenance capital expenditures, Cash interest and Cash tax are Supplementary financial measures. See Appendix for more information.

(2) Growth capital expenditures is a non-IFRS financial measure. See Appendix for more information

Key Assumptions	Updated 2023 Assumption	Prior 2023 Assumption	2022 Actual
Approximate North American MECU sales volumes	185,000	170,000	184,000
2023 average MECU Netback being lower than 2022 average per MECU*	↓ CAD \$60	↓ CAD \$340	N/A
2023 average CMA <sup>(1)</sup> NE Asia caustic spot price index being lower per tonne than 2022 average	↓ US\$185 <sup>(2)</sup>	↓ US\$185	N/A
Approximate North American production volumes of sodium chlorate (MTs)	285,000	310,000	343,000
USD to CAD average foreign exchange rate	1.330	1.280	1.302
Long Term Incentive Plan costs (in \$ millions)	\$10.0 - \$20.0	\$10.0 - \$15.0	\$21.0

(1) Chemical Market Analytics by OPIS, a Dow Jones Company, formerly IHS Markit Base Chemical

(2) Implies that the index pricing H2 2023 will be approximately US\$390 per tonne

### Caustic Soda Price

- Change of US\$50/DMT = CA\$13 million

### Sodium Chlorate Price

- Change of CA\$50/metric tonne = CA\$14.3 million

### CA\$/US\$ exchange rate

- Change of 1 cent = CA\$4.0 million (favourable if C\$ weakens and vice versa)





# Non-IFRS Financial Measures and Ratios

Non-IFRS financial measures are financial measures disclosed by an entity that (a) depict historical or expected future financial performance, financial position or cash flow of an entity, (b) with respect to their composition, exclude amounts that are included in, or include amounts that are excluded from, the composition of the most directly comparable financial measure disclosed in the primary financial statements of the entity, (c) are not disclosed in the financial statements of the entity and (d) are not a ratio, fraction, percentage or similar representation. Non-IFRS ratios are financial measures disclosed by an entity that are in the form of a ratio, fraction, percentage or similar representation that has a non-IFRS financial measure as one or more of its components, and that are not disclosed in the financial statements of the entity.

These non-IFRS financial measures and non-IFRS ratios are not standardized financial measures under IFRS and, therefore, are unlikely to be comparable to similar financial measures presented by other entities. Management believes these non-IFRS financial measures and non-IFRS ratios provide transparent and useful supplemental information to help investors evaluate our financial performance, financial condition and liquidity using the same measures as management. These non-IFRS financial measures and non-IFRS ratios should not be considered as a substitute for, or superior to, measures of financial performance prepared in accordance with IFRS.

The following slides outline our non-IFRS financial measures and non-IFRS ratios, their compositions, and why management uses each measure. It includes reconciliations to the most directly comparable IFRS measures. Except as otherwise described herein, our non-IFRS financial measures and non-IFRS ratios are calculated on a consistent basis from period to period and are adjusted for specific items in each period, as applicable.



*Distributable cash after maintenance capital expenditures –*

**Most directly comparable IFRS financial measure:** Cash flows from operating activities

**Definition:** Distributable cash after maintenance capital expenditures is calculated as cash flow from operating activities less lease payments net of sub-lease receipts, Maintenance capital expenditures and adjusting for Cash interest and current taxes, and before decreases or increases in working capital.

**Why we use the measure and why it is useful to investors:** It provides useful information related to our cash flows including the amount of cash available for distribution to Unitholders, repayment of debt and other investing activities.



## *Distributable cash after maintenance capital expenditures per unit –*

**Definition:** Distributable cash after maintenance capital expenditures per unit is calculated as Distributable cash after maintenance capital expenditures divided by the weighted average number of units outstanding.

**Why we use the measure and why it is useful to investors:** It provides useful information related to our cash flows including the amount of cash available for distribution to Unitholders, repayment of debt and other investing activities.

## *Payout ratio –*

**Definition:** Payout ratio is calculated as Distributions declared per unit divided by Distributable cash after maintenance capital expenditures per unit.

**Why we use the measure and why it is useful to investors:** It provides useful information related to our cash flows including our ability to pay distributions to Unitholders.



# Non-IFRS financial measures and ratios

C\$ Millions, except per unit metrics and ratios

	For the quarter ended				
	Q1 2023	Q4 2022	Q3 2022	Q2 2022	Q1 2022
<b>LTM Cash flow from operating activities</b>	\$ 386.4	\$ 369.2	\$ 357.8	\$ 295.7	\$ 262.6
Add (Less):					
LTM lease payments net of sub-lease receipts	(53.6)	(52.4)	(51.6)	(51.3)	(51.4)
LTM (decrease) Increase in working capital	(18.6)	(6.0)	(12.5)	(19.2)	1.7
LTM changes in other items <sup>(1)</sup>	28.2	4.0	6.6	0.8	(2.1)
LTM Maintenance capital expenditures	(103.1)	(99.8)	(103.0)	(91.9)	(81.3)
<b>LTM Distributable cash after maintenance capital expenditures</b>	<b>239.4</b>	<b>215.1</b>	<b>197.4</b>	<b>134.2</b>	<b>129.5</b>
Weighted average number of units outstanding	111,234,533	108,445,732	105,596,847	104,187,478	103,869,170
<b>LTM Distributable cash after maintenance capital expenditures per unit</b>	<b>\$ 2.15</b>	<b>\$ 1.98</b>	<b>\$ 1.87</b>	<b>\$ 1.29</b>	<b>\$ 1.25</b>
LTM Distributions declared per unit <sup>(2)</sup>	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60	\$ 0.60
<b>LTM Payout ratio (%)</b>	<b>28%</b>	<b>30%</b>	<b>32%</b>	<b>47%</b>	<b>48%</b>

(1) Changes in other items relates to Cash interest and current taxes.

(2) Based on actual number of units outstanding on record date.

*Net debt -*

**Most directly comparable IFRS financial measure:** Total long-term debt, Debentures, lease liabilities, and long-term lease liabilities, less cash and cash equivalents

**Definition:** Net debt is calculated as the total of Long-term debt, the principal value of Debentures, lease liabilities and long-term lease liabilities, less cash and cash equivalents.

**Why we use the measure and why it is useful to investors:** It provides useful information related to our aggregate debt balances.

	For the quarter ended								
	Q1 2023	Q4 2022	Q3 2022	Q2 2022	Q1 2022	Q4 2021	Q3 2021	Q2 2021	Q1 2021
<b>Long-term debt <sup>(1)</sup></b>	<b>\$ 327.8</b>	<b>\$ 370.0</b>	<b>\$ 377.5</b>	<b>\$ 498.3</b>	<b>\$ 524.1</b>	<b>\$ 373.5</b>	<b>\$ 714.2</b>	<b>\$ 730.2</b>	<b>\$ 745.3</b>
Add (Less):									
Debentures <sup>(1)</sup>	627.3	517.4	517.4	517.4	517.4	661.1	531.1	531.1	531.1
Lease liabilities	47.9	45.6	45.4	43.9	44.4	47.2	48.7	48.5	46.6
Long-term lease liabilities	107.8	94.1	90.8	90.7	93.8	100.9	107.9	113.2	107.2
Cash and cash equivalents	(132.7)	(72.6)	(36.9)	(23.3)	(19.5)	(13.9)	(16.8)	(14.3)	(12.0)
<b>Net debt</b>	<b>\$ 978.0</b>	<b>\$ 954.5</b>	<b>\$ 994.2</b>	<b>\$1,126.8</b>	<b>\$1,160.1</b>	<b>\$1,168.8</b>	<b>\$1,385.1</b>	<b>\$1,408.7</b>	<b>\$1,418.2</b>

(1) Principal amount outstanding.

## Growth capital expenditures –

**Most directly comparable IFRS financial measure:** Capital expenditures

**Definition:** Growth capital expenditures is calculated as Capital expenditures less Maintenance Capital expenditures, plus Investments in a joint venture

**Why we use the measure and why it is useful to investors:** It provides useful information related to the capital spending and investments intended to grow earnings

	Three months ended		Year ended
	March 31, 2023	March 31, 2022	December 31, 2022
<b>Capital Expenditures</b>	\$ 27,903	\$ 16,168	\$ 115,440
Add (Less):			
Maintenance capital expenditures	(17,531)	(14,192)	(99,766)
Non-maintenance capital expenditures	10,372	1,976	15,674
Investment in a joint venture <sup>(1)</sup>	-	-	5,931
<b>Growth capital expenditures</b>	\$ 10,372	\$ 1,976	\$ 21,605

(1) KPCT Advanced Chemicals LLC ("KPCT") joint venture's project to build an ultrapure sulphuric acid facility in Arizona

Capital management measures are financial measures disclosed by an entity that (a) are intended to enable an individual to evaluate an entity's objectives, policies and processes for managing the entity's capital, (b) are not a component of a line item disclosed in the primary financial statements of the entity, (c) are disclosed in the notes of the financial statements of the entity, and (d) are not disclosed in the primary financial statements of the entity.

## *Net debt to Adjusted EBITDA-*

**Definition:** Net debt to Adjusted EBITDA is calculated as Net debt divided by LTM Adjusted EBITDA. LTM Adjusted EBITDA represents the last twelve months Adjusted EBITDA and is calculated from Adjusted EBITDA reported in the MD&A.

**Why we use the measure and why it is useful to investors:** It provides useful information related to our debt leverage and our ability to service debt. We monitor Net debt to Adjusted EBITDA as a part of liquidity management to sustain future investment in the growth of the business and make decisions about capital.

# Total of Segments Measures

Total of segments measures are financial measures disclosed by an entity that (a) are a subtotal of two or more reportable segments, (b) are not a component of a line item disclosed in the primary financial statements of the entity, (c) are disclosed in the notes of the financial statements of the entity, and (d) are not disclosed in the primary financial statements of the entity.

The following slide provides an explanation of the composition of the Total of segments measures.



Adjusted EBITDA –

**Most directly comparable IFRS financial measure:** Net earnings (loss)

	Three months ended March 31	
	2023	2022
<b>Net earnings (loss)</b>	<b>\$ 79,533</b>	<b>\$ 10,686</b>
Add (Less):		
Depreciation and amortization	52,140	52,201
Net finance costs (income)	(12,736)	28,845
Income tax expense (recovery)	13,875	17,816
Change in environmental liability	894	66
Net loss (gain) on disposal and write-down of PPE	1,787	(69)
Loss of disposal of assets held for sale	-	716
Unrealized foreign exchange (gain) loss	(3,824)	(2,429)
<b>Adjusted EBITDA</b>	<b>\$ 131,669</b>	<b>\$ 107,832</b>

*Adjusted EBITDA –*

**Most directly comparable IFRS financial measure:** Net earnings (loss)

	LTM Adjusted EBITDA for the quarter ended								
	Q1 2023	Q4 2022	Q3 2022	Q2 2022	Q1 2022	Q4 2021	Q3 2021	Q2 2021	Q1 2021
<b>LTM Net earnings (loss)</b>	<b>\$ 178.0</b>	<b>\$ 109.1</b>	<b>\$ (59.7)</b>	<b>\$ (155.2)</b>	<b>\$ (204.1)</b>	<b>\$ (235.2)</b>	<b>\$ (80.5)</b>	<b>\$ (108.6)</b>	<b>\$ (90.1)</b>
Add (Less):									
LTM depreciation and amortization	216.9	217.0	222.1	222.1	229.4	239.6	235.9	244.0	252.4
LTM net finance costs	8.4	50.0	69.7	114.2	123.5	116.2	83.3	110.8	94.3
LTM Income tax (recovery) expense	56.1	60.1	49.3	44.7	41.4	15.0	(21.8)	(47.7)	(34.9)
LTM impairment of intangible assets and PPE	-	-	130.0	130.0	130.0	130.0	-	-	-
LTM change in environmental liability	0.8	-	0.6	0.6	0.6	0.6	4.4	4.4	4.8
LTM net (gain) loss on disposal and write-down of PPE	(13.4)	(15.3)	(18.3)	(19.3)	(0.6)	(0.4)	2.1	22.0	21.6
LTM loss on disposal of assets held for sale	(0.2)	0.5	7.6	7.6	7.9	7.1	-	-	-
LTM unrealized foreign exchange (gain) loss	8.2	9.6	17.8	4.6	4.6	7.5	8.6	4.6	(8.3)
<b>LTM Adjusted EBITDA</b>	<b>\$ 454.7</b>	<b>\$ 430.9</b>	<b>\$ 419.2</b>	<b>\$ 349.3</b>	<b>\$ 332.8</b>	<b>\$ 280.4</b>	<b>\$ 232.1</b>	<b>\$ 229.5</b>	<b>\$ 239.8</b>

Adjusted EBITDA –

**Most directly comparable IFRS financial measure:** Net earnings (loss)

Adjusted EBITDA for the year ended December 31					
	2022	2021	2020	2019	2018
<b>Net earnings (loss)</b>	<b>\$ 109.1</b>	<b>\$ (235.2)</b>	<b>\$ (167.5)</b>	<b>\$ (99.7)</b>	<b>\$ (131.5)</b>
Add (Less):					
Depreciation and amortization	217.0	239.6	253.9	262.5	214.5
Net finance costs	50.0	116.2	140.3	88.5	74.1
Income tax (recovery) expense	60.1	15.0	(47.5)	(24.3)	(48.7)
Impairment of intangible assets and PPE	-	130.0	56.0	65.6	90.0
Change in environmental liability	-	0.6	8.2	-	-
Net (gain) loss on disposal and write-down of PPE	(15.3)	(0.4)	21.0	13.8	(4.0)
Loss on disposal of assets held for sale	0.5	7.1	-	-	-
Unrealized foreign exchange (gain) loss	9.6	7.5	0.8	(10.8)	1.8
<b>Adjusted EBITDA</b>	<b>\$ 430.9</b>	<b>\$ 280.4</b>	<b>\$ 265.3</b>	<b>\$ 295.6</b>	<b>\$ 196.2</b>

Supplementary financial measures are financial measures disclosed by an entity that (a) are, or are intended to be, disclosed on a periodic basis to depict the historical or expected future financial performance, financial position or cash flow of an entity, (b) are not disclosed in the financial statements of the entity, (c) are not non-IFRS financial measures, and (d) are not non-IFRS ratios.

The following provides an explanation of the composition of those Supplementary financial measures.

## *Maintenance capital expenditures*

Represents capital expenditures that are required to sustain operations at existing levels and include major repairs and maintenance and plant turnarounds.

## *Non-maintenance capital expenditures*

Represents capital expenditures that are: (a) pre-identified or pre-funded, usually as part of a significant acquisition and related financing; (b) considered to expand the capacity of our operations; (c) significant environmental capital expenditures that are considered to be non-recurring; or (d) capital expenditures to be reimbursed by a third party.

## *Cash interest*

Represents interest expense related to long-term debt, interest on Debentures, and pension plan interest expense, net of interest income.

## *Cash tax*

Represents current income tax expense.