

lyondellbasell

# Capital Markets Day

March 14, 2023



# WELCOME AND OPENING REMARKS



**David Kinney**

Head of  
Investor Relations

# AGENDA

8:30 AM – 9:45 AM

## FORMAL PRESENTATIONS

Welcome and Opening Remarks

*David Kinney, Head of Investor Relations*

Creating Solutions for Everyday Sustainable Living

*Peter Vanacker, Chief Executive Officer*

Unlocking Value through Culture Transformation

*Dale Friedrichs, EVP, Operational Excellence and HSE*

Utilizing Technology to Enable Future Growth

*Jim Seward, EVP and Chief Innovation Officer*

Leadership in Sustainability: Fundamental and Creating Value

*Tracey Campbell, EVP, Sustainability and Corporate Affairs*

9:45 AM – 10:05 AM

Q&A

10:05 AM – 10:15 AM

Break

10:15 AM – 12:00 PM

## FORMAL PRESENTATIONS

Upgrading the Core and Enabling Circular & Low Carbon Solutions

*Ken Lane, EVP, Olefins & Polyolefins*

Establishing Leadership in Circular & Low Carbon Solutions

*Yvonne van der Laan, EVP, Circular & Low Carbon Solutions*

Transforming APS to Drive Growth

*Torkel Rhenman, EVP, Advanced Polymer Solutions*

Driving the Next Phase of Growth in Intermediates & Derivatives

*Kim Foley, EVP, Intermediates & Derivatives and Refining*

Disciplined Financial Management Enabling Value Creation

*Michael McMurray, Chief Financial Officer*

Concluding Remarks

*Peter Vanacker, Chief Executive Officer*

12:00PM – 12:30 PM

Q&A



# CAUTIONARY STATEMENTS

The statements in this release relating to matters that are not historical facts are forward-looking statements. Actual results could differ materially based on factors including, but not limited to, market conditions, the business cyclicalities of the chemical, polymers and refining industries; the availability, cost and price volatility of raw materials and utilities, particularly the cost of oil, natural gas, and associated natural gas liquids; our ability to successfully implement initiatives identified pursuant to our value enhancement program and generate anticipated earnings; competitive product and pricing pressures; labor conditions; our ability to attract and retain key personnel; operating interruptions (including leaks, explosions, fires, weather-related incidents, mechanical failure, unscheduled downtime, supplier disruptions, labor shortages, strikes, work stoppages or other labor difficulties, transportation interruptions, spills and releases and other environmental risks); the supply/demand balances for our and our joint ventures' products, and the related effects of industry production capacities and operating rates; our ability to manage costs; future financial and operating results; our ability to recognize the benefits and synergies of any proposed transactions; legal and environmental proceedings; tax rulings, consequences or proceedings; technological developments, and our ability to develop new products and process technologies; our ability to meet our sustainability goals, including the ability to operate safely, increase production of recycled and renewable-based polymers to meet our targets and forecasts, and reduce our emissions and achieve net zero emissions by the time set in our goals; our ability to procure energy from renewable sources; the successful shut down and closure of the Houston Refinery, including within the expected timeframe; potential governmental regulatory actions; political unrest and terrorist acts; risks and uncertainties posed by international operations, including foreign currency fluctuations; uncertainties and impacts related to the extent and duration of the pandemic; and our ability to comply with debt covenants and to repay our debt. Additional factors that could cause results to differ materially from those described in the forward-looking statements can be found in the "Risk Factors" section of our Form 10-K for the year ended December 31, 2022, which can be found at [www.LyondellBasell.com](http://www.LyondellBasell.com) on the Investor Relations page and on the Securities and Exchange Commission's website at [www.sec.gov](http://www.sec.gov). There is no assurance that any of the actions, events or results of the forward-looking statements will occur, or if any of them do, what impact they will have on our results of operations or financial condition. Forward-looking statements speak only as of the date they were made and are based on the estimates and opinions of management of LyondellBasell at the time the statements are made. LyondellBasell does not assume any obligation to update forward-looking statements should circumstances or management's estimates or opinions change, except as required by law.

This release contains time sensitive information that is accurate only as of the date hereof. Information contained in this release is unaudited and is subject to change. We undertake no obligation to update the information presented herein except as required by law.

## ***Information About Our Financial Measures***

Effective January 1, 2023, our *Catalloy* and polybutene-1 businesses were moved from the Advanced Polymer Solutions segment and integrated into the Olefins and Polyolefins-Americas and Olefins and Polyolefins-Europe, Asia, International segments. The segment information contained in this presentation gives effect to this change. Please see our Current Report on Form 8-K filed with the Securities & Exchange Commission on March 7, 2023 for further information about this change.

Please refer to the Appendix for information related to our use of non-GAAP financial measures and reconciliations of these measures to the comparable GAAP measures.

**CREATING SOLUTIONS  
FOR EVERYDAY  
SUSTAINABLE LIVING**



**Peter Vanacker**

Chief Executive  
Officer

# LYONDELLBASELL AT A GLANCE (NYSE: LYB)

Diverse portfolio with advantaged feedstocks, leading market positions and high-quality assets

2009

FOUNDED

19,300

EMPLOYEES  
2022

\$41 B

ENTERPRISE VALUE<sup>1</sup>

\$3.9 B

NET INCOME 2022

\$4.1 B

NET INCOME EX. IDENTIFIED ITEMS<sup>3</sup>

\$6.3 B

EBITDA 2022

\$6.5 B

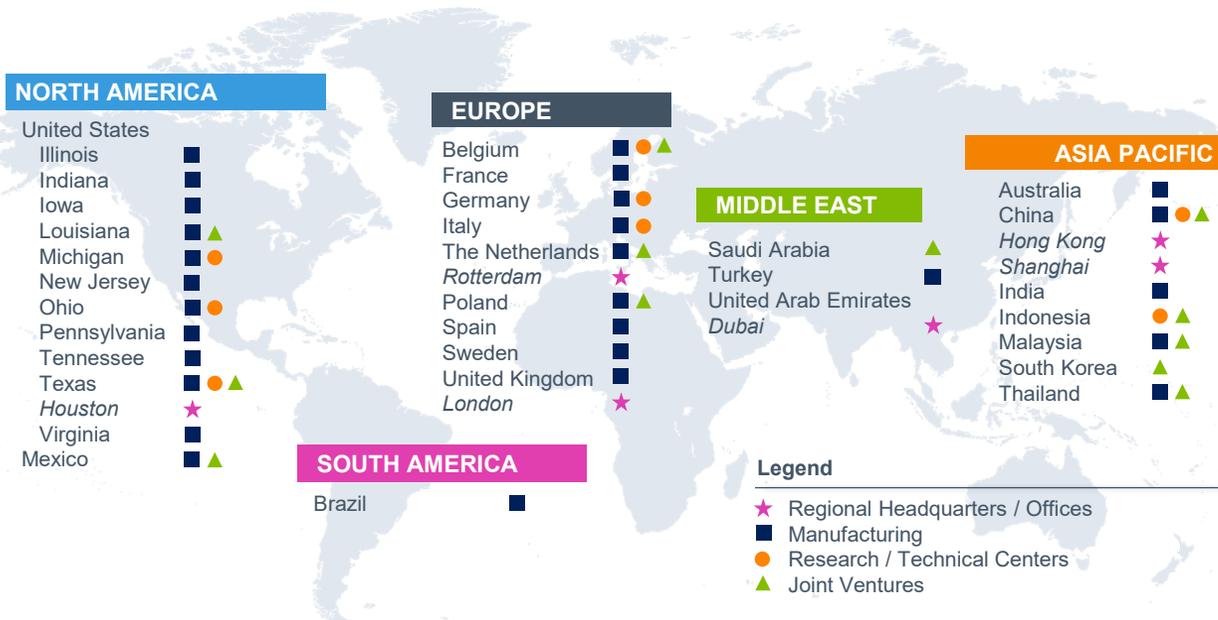
EBITDA EX. IDENTIFIED ITEMS<sup>3</sup>

\$6.1 B

CASH FROM OPERATING  
ACTIVITIES 2022

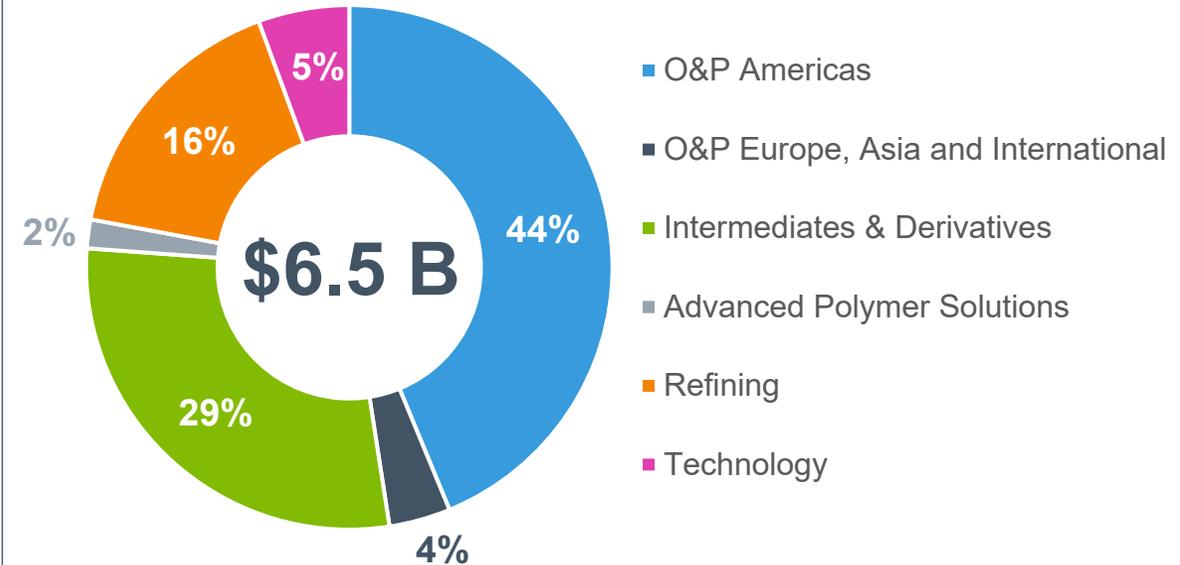
## GLOBAL PRESENCE<sup>2</sup>

Sales in >100 Countries  
~100 Manufacturing Sites and JVs Globally



## 2022 EBITDA

ex. identified items<sup>3</sup>



1. Enterprise value is based on market capitalization as of February 28, 2023 plus total debt, net of cash and cash equivalents, restricted cash and short-term investments, redeemable non-controlling interests and non-controlling interests as of December 31, 2022.

2. Map data as of December 31, 2022.

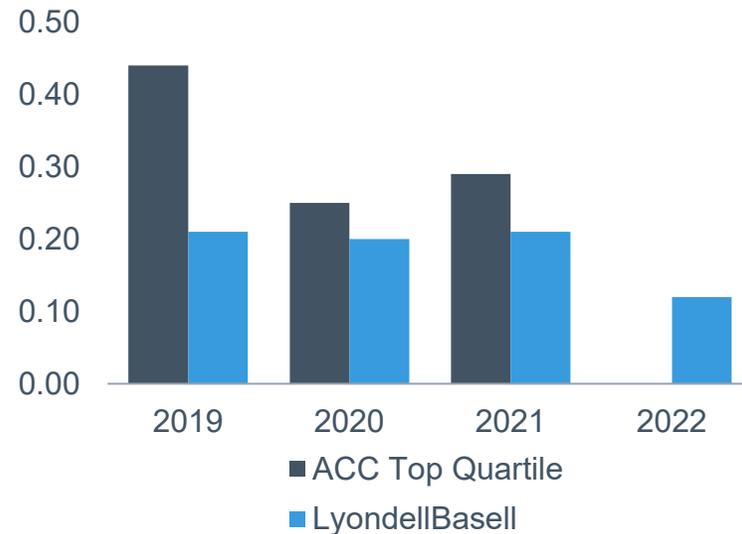
3. Identified items include adjustments for lower of cost or market ("LCM"), impairments and refinery exit costs.

# BUILDING ON FOUNDATIONAL STRENGTHS

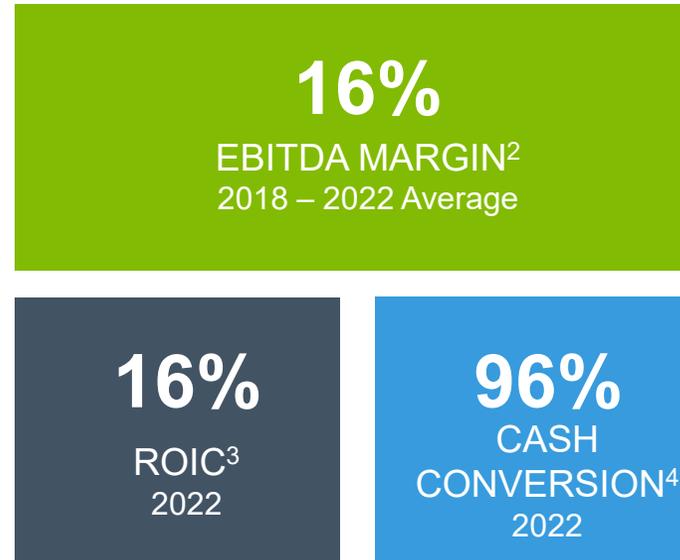
Proven track-record of utilizing strengths to drive best-in-class operations

## SAFETY<sup>1</sup>

Injuries per 200,000 hours worked



## EFFICIENCY



## SCALE

**53 MM TONS**  
OF GLOBAL CAPACITY

**330+**  
POLYOLEFIN  
LICENSES SOLD

## INNOVATIVE TECHNOLOGY DRIVES LEADERSHIP POSITIONS<sup>5</sup>

#1

PP compounds and polyolefin licensing  
**GLOBALLY**  
Polyethylene and polypropylene  
**EUROPE**  
Propylene  
**NORTH AMERICA**

#2

Polypropylene, propylene oxide and oxyfuels  
**GLOBALLY**  
Styrene  
**NORTH AMERICA**

#3

Polyethylene + polypropylene  
**GLOBALLY**  
Ethylene, polyethylene and acetic acid  
**NORTH AMERICA**

1. Sources: American Chemistry Council (ACC) and LyondellBasell. Number of hours worked includes employees and contractors.
2. EBITDA margin is EBITDA excluding identified items divided by revenue. Identified items are LCM, impairments and refining exit costs.
3. Return on invested capital means income from continuing operations, adjusted for interest expense, net of tax and items affecting comparability between periods divided by a two-year average of invested capital adjusted for items affecting comparability.
4. Cash conversion equals cash from operating activities divided by EBITDA excluding LCM and impairment.
5. Based on Chemical Market Analytics (CMA) and LyondellBasell nameplate capacities as of December 31, 2022.

# INTRODUCING OUR LONG-TERM STRATEGY

Impactful three-pronged strategy supported by exceptional cash generation and an investment grade balance sheet



## Grow & Upgrade the Core

- Focusing growth on **attractive, resilient assets** – enabled by industry-leading performance
- **Acting decisively** to shape our portfolio toward businesses where we have distinct advantages at scale
- Identifying and implementing **capacity expansions and improved reliability** through our value enhancement program



## Build a Profitable Circular & Low Carbon Solutions Business

- Building **scale, differentiation** and **access to waste plastic feedstocks**
- Creating **integrated hubs** at scale
- **Technology optionality** to maximize value from waste
- Leading our industry by aligning with **science-based emission reduction guidance**
- **\$1 B+ of incremental EBITDA<sup>1</sup>** from our Circular & Low Carbon Solutions (CLCS) business by 2030



## Step Up Performance & Culture

- Shifting culture from **cost-control to value realization** and unlocking continuous value improvement
- Expanding margins through **strong customer focus, value-driven purchasing strategy and improved logistics sourcing** using the value enhancement program

# HOW OUR STRATEGY IS DIFFERENTIATED

Simultaneous, focused and synergetic moves that deliver a more profitable and sustainable growth engine



**Grow &  
Upgrade  
the Core**



**Build a Profitable  
Circular & Low  
Carbon Solutions  
Business**



**Step Up  
Performance  
& Culture**

## WHAT DIFFERENTIATES OUR STRATEGY?

### Disciplined Focus

- Shaping our portfolio to focus on businesses with enduring advantaged positions
- Growing our advantages through disciplined reinvestment

### Establishing Leadership

- Augmenting existing strengths of scale, market access and technology leadership to establish robust supply chains for advantaged circular and renewable feedstocks
- Addressing customer needs with a market-leading pathway for emission reductions

### True Culture Shift

- Leveraging our cultural foundations in cost management while developing a more comprehensive view on value creation



# GROWING & UPGRADING THE CORE

Distilling and building on greatest legacy strengths to define our future Core

## WHAT GOT US HERE

- Low-cost operating model
- Deep technical and marketing experience
- Safe and reliable operations
- Advantaged feedstocks in North America and the Middle East
- Proprietary technologies within our businesses, licensing and JVs
- Innovation-driven growth through global partnerships and JVs
- Leadership in catalysis and process technology
- Innovation from deep knowledge of customer and brand owner needs
- Global footprint



## WHERE WE ARE GOING

### Strategic Criteria to Define Core Assets

- 1** **Leading** market positions
- 2** **Growing** end markets
- 3** **Attractive returns** above cost of capital
- 4** Access to **advantaged feedstocks** and, increasingly, **circular and renewable feedstocks**
- 5** Strategic focus on **Circular & Low Carbon Solutions**

# PURSuing INTENTIONAL STRATEGIES TO BUILD UPON OUR STRENGTHS TAILORED TO INDIVIDUAL MARKETS

Matching Core assets with advantaged positions to grow and improve



## NORTH AMERICA

Leveraging scale and strong low-cost positioning for feedstocks

## SOUTH AMERICA

Providing tailored local solutions for global brand owners

## EUROPE

Focus on high demand for sustainability by building cost-advantaged feedstock networks across the Circular & Low Carbon Solutions portfolio

## MIDDLE EAST

Becoming partner of choice for low-cost feedstock players to add value with our advantaged technologies and market access

## ASIA PACIFIC

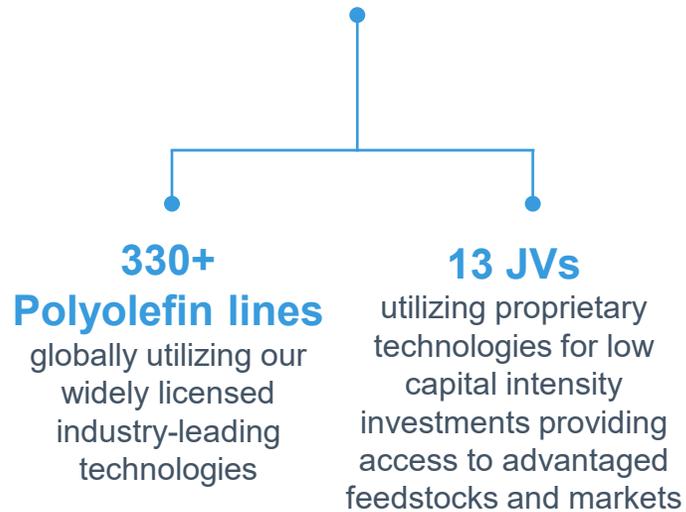
Utilizing technologies within JVs to capture market growth with minimal capital investment



# TECHNOLOGY LEADERSHIP IS A KEY ENABLER FOR GROWTH

Differentiated technology solutions support our position as a “partner of choice”

**Leading technology** provides meaningful license and JV opportunities at **favorable returns**



**MoReTec**

### PROPERTIES

- Replacement for fossil-based feedstocks
- Lower energy and carbon footprint compared with other technologies

### CUSTOMER BENEFITS

- Meet sustainability goals
- Sustainable product development partnerships



**Hyperzone PE**

- Improves processability
- Superior toughness
- Improves chemical resistance

- Increased productivity
- Improved durability
- Improved crack resistance
- Lightweighting



**PO/TBA**

- Low-cost feed to make clean burning oxyfuels

- 1<sup>st</sup> quartile technology to meet growing propylene oxide (PO) demand



# OUR INDUSTRY-LEADING SUSTAINABILITY AMBITIONS AND ACTIONS

Leading the way to profitably advance and innovate sustainable solutions

## ENDING PLASTIC WASTE

### 2 MM+ TONS

of recycled and renewable-based polymers produced and marketed annually by 2030

### FOR EVERY \$

we will invest in venture funds that address the plastic waste challenge; we help catalyze \$5 from co-investors

### ZERO

plastic pellet loss to the environment from our facilities

## TAKING CLIMATE ACTION

### NET ZERO

greenhouse gas emissions from operations by 2050<sup>1</sup>

### 42%

absolute scope 1 and 2 greenhouse gas emissions reduction from operations by 2030<sup>2</sup>

### 30%

absolute scope 3 greenhouse gas emissions reduction by 2030<sup>2</sup>

### 50%

minimum of electricity produced from renewable sources by 2030<sup>2</sup>

## SUPPORTING A THRIVING SOCIETY

### ZERO

incidents, injuries and accidents

### ACHIEVE

gender parity in global senior leadership by 2032

### INCREASE

the number of people from underrepresented groups in U.S. senior leadership roles to reflect the general population ratio by 2032

### ASSESS

a minimum of 70% of our key global suppliers using sustainability criteria by 2025



# A DIFFERENTIATED APPROACH TO ESTABLISH LEADERSHIP IN CIRCULAR AND RENEWABLE SOLUTIONS

Accelerating circularity to meet the increasing need for sustainable solutions from our customers and society

## VIEW ON POLYMERS

- Critical to enable a low-carbon world and drive renewable energy transition
- Improves food packaging to minimize waste, GHG emissions and help feed a growing population
- Essential material to support rise of the global middle-class



## FOCUS ON VALUE CREATION

- Creating complete suite of sustainable solutions across multiple recycling processes
- Providing customers with sustainable solutions while capturing healthy premiums driven by demand outpacing supply
- Establishing low-cost leadership positions globally through creation of integrated hubs

## HOW WE WILL CONTRIBUTE

1

### PROVIDE

access to best-in-class technology and sustainable-focused products

2

### GROW

multiple recycling solutions under our *Circulen* brand

3

### SCALE

operations to accommodate for growing demand and need for sustainable solutions

4

### SUPPORT

effective policies and infrastructure development that improve plastic waste management and recycling

Target to produce and market 2 MM+ tons of recycled and renewable-based polymers annually by 2030



# UNLOCKING VALUE THROUGH OWNERSHIP CULTURE

Culture shift has enabled focus on global value enhancement program to deliver untapped value

## KEY VALUE OPPORTUNITIES



**Manufacturing & Operational Excellence**



**Procurement & Supply Chain**



**Commercial Excellence**



## SIGNIFICANT VALUE AND GROWTH OPPORTUNITIES AHEAD

Expanding VEP to regions outside U.S.

Robust pipeline of additional opportunities

Strategic investments in **reliability and debottlenecks** across advantaged assets

1. EBITDA is estimated based on 2017-2019 mid-cycle margins and modest inflation relative to 2021 baseline.

# WE ARE ALREADY EXECUTING OUR STRATEGY



1. PPA stands for Power Purchase Agreements.

# DIVERSE AND HIGHLY EXPERIENCED LEADERSHIP TEAM POSITIONED TO WIN

Recent organizational changes support greater autonomy and efficiency



**Peter Vanacker**

30+ Years

Chief Executive Officer



**Ken Lane**

30+ Years

EVP, Olefins & Polyolefins



**Yvonne van der Laan**

25+ Years

EVP, Circular & Low Carbon Solutions



**Kim Foley**

35+ Years

EVP, Intermediates & Derivatives and Refining



**Torkel Rhenman**

35+ Years

EVP, Advanced Polymer Solutions



**Michael McMurray**

35+ Years

Chief Financial Officer



**Dale Friedrichs**

35+ Years

EVP, Operations and HSE



**Jim Seward**

30+ Years

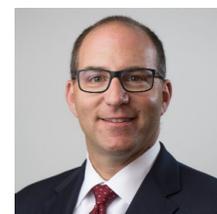
EVP and Chief Innovation Officer



**Tracey Campbell**

35+ Years

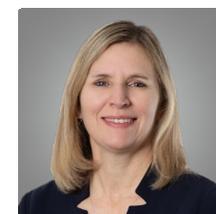
EVP, Sustainability and Corporate Affairs



**Jeffrey Kaplan**

30+ Years

EVP and General Counsel



**Trisha Conley**

25+ Years

EVP, People and Culture

Combined global industry experience

## KEY HIGHLIGHTS

- New leadership roles
  - EVP, Circular & Low Carbon Solutions
  - EVP, People and Culture
  - EVP, Sustainability and Corporate Affairs
- Provided business leaders with global responsibility for manufacturing operations
- Streamlined operations to enable better execution of near- and long-term opportunities

Over 300 years of global industry experience

# PRIMED TO GROW AND IMPROVE, GUIDED BY OUR FOCUSED STRATEGY

Continued delivery of free cash flow and investor returns while growing and upgrading the portfolio

	2022	2025 Normalized EBITDA <sup>1</sup>	2027 Normalized EBITDA <sup>1</sup>
<b>EBITDA</b>	<b>\$6.3 B</b>	<b>\$9 B</b>	<b>\$10 B</b>
<b>Cash Conversion<sup>2</sup></b>	<b>96%</b>	<b>80%</b>	<b>80%</b>
<b>Diluted EPS<sup>3</sup></b>	<b>\$11.81</b>	<b>\$19</b>	<b>\$23</b>

## CREATING A FOCUSED PORTFOLIO POISED TO GENERATE HIGHER RETURNS

- Build on lasting competitive advantages
- Focus on areas where we have leadership positions
- Cement our position as our customer's preferred supplier
- Establish a profitable and rapidly growing leadership position in Circular & Low Carbon Solutions

1. 2025 and 2027 Normalized EBITDA reflects 2013-2022 historical average margins and operating rates. Please see Appendix for additional information on Normalized EBITDA.

2. 2022 cash conversion equals cash from operating activities divided by EBITDA excluding LCM and impairment. 2025 and 2027 cash conversion rates are targets based on average 2013-2022 cash conversion.

3. 2025 and 2027 diluted EPS are derived from estimated net income assuming a 20% tax rate and 70% of free cash flow allocated to share repurchases and a progressively growing quarterly dividend.

# KEY TAKEAWAYS

1

Global industry leader growing sustainable value at scale across a more focused portfolio of businesses

2

Well-positioned to execute on our new strategy by leveraging foundational strengths and sharpening our focus on value creation

3

Positioning our portfolio for the future through technology leadership, innovative customer solutions and favorable positions in attractive and growing global markets

4

Strengthening our proven ability to achieve exceptional cash generation and deliver compelling returns to shareholders



**UNLOCKING VALUE  
THROUGH CULTURE  
TRANSFORMATION**



**Dale Friedrichs**

EVP, Operational  
Excellence & HSE

# CULTURE SHIFT TO UNLOCK VALUE AT SCALE, NOW AND INTO THE FUTURE

## VALUE ENHANCEMENT PROGRAM IDENTIFIED

# \$750 MM

**RECURRING  
ANNUAL EBITDA<sup>1</sup>**  
by the end of 2025

## CONTINUOUS PROCESS EMBEDDED IN OUR MINDSET

- ✓ Maintaining best-in-class operations while we shift corporate focus to value enhancement
- ✓ Igniting new energy within employees to find value enhancing opportunities
- ✓ Pursuing initiatives that will drive long-term value
- ✗ Not simple one-time cost savings
- ✗ Not seeking to defer needed maintenance
- ✗ Not aiming for broad headcount reductions

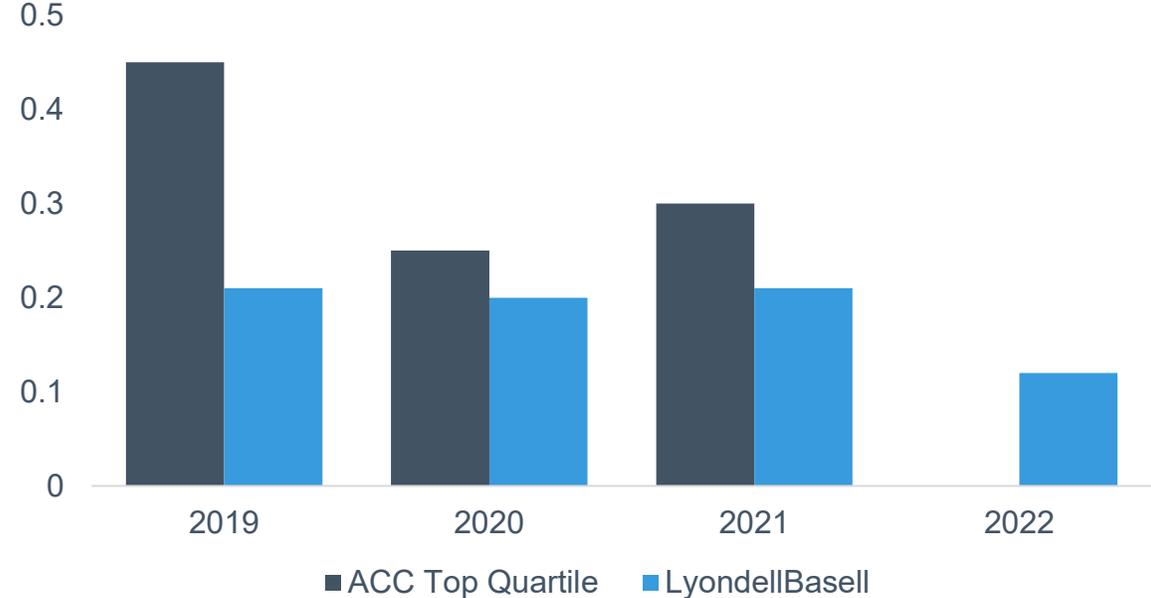
# ADVANTAGED POSITION AS INDUSTRY LEADING OPERATOR

Culture driven by relentless benchmarking and continuous improvement

## SAFETY LEADERSHIP

Industry-leading Safety Is the Cornerstone of Our Operations

Injuries per 200,000 Hours Worked



## OPERATIONAL EXCELLENCE

Proven Operator in the Industry with High Asset Reliability

2022 Reliability Rates<sup>1</sup>



1. 2022 reliability rates for U.S. and EU ethylene crackers, global polyolefins and U.S. and EU propylene oxide units.

# SHIFTING OUR MINDSET TO CAPTURE VALUE CREATING OPPORTUNITIES

Focused on unlocking significant incremental EBITDA

## COST CONTROL

2009 - 2022

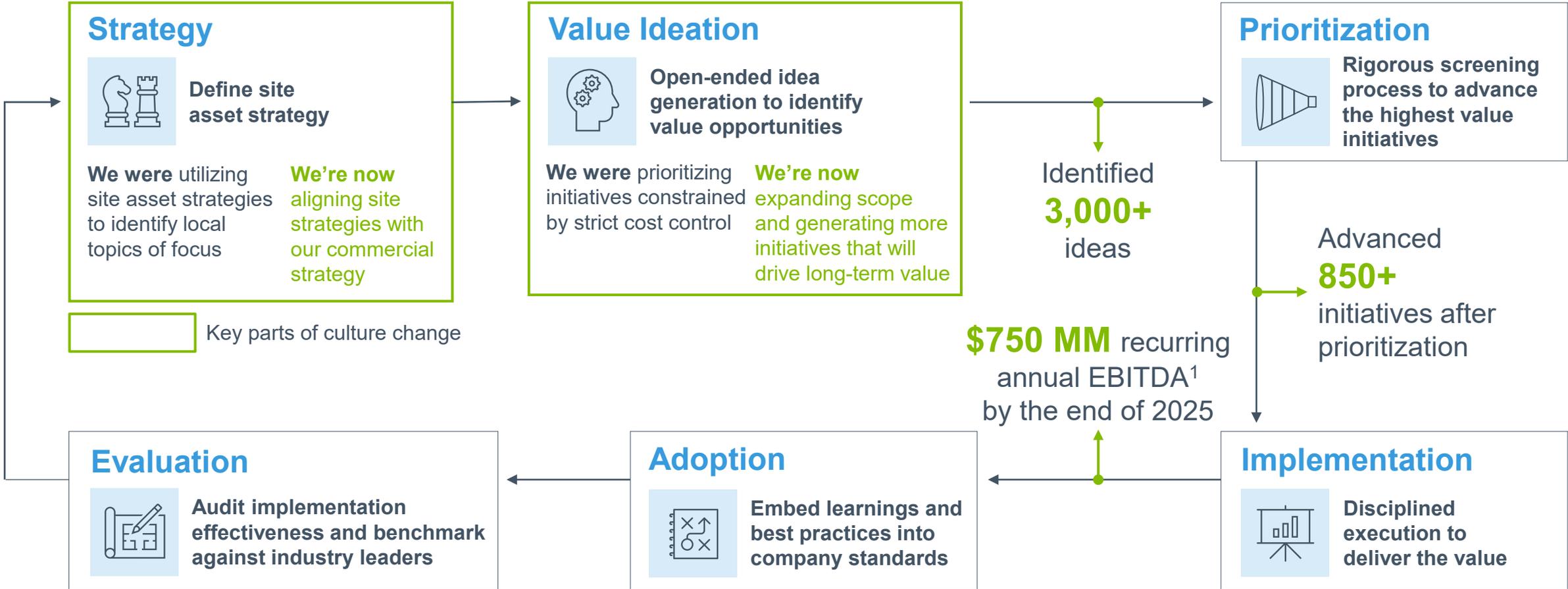
- Established processes to become the most cost-effective supplier in our industry
- Identified cost-saving activities to maximize returns
- Constrained decision-making beyond our low-cost focus
- Overly focused on optimizing internal processes rather than serving our customers

## VALUE CREATION

2022+

- Evolving our culture to unlock value in alignment with our strategic focus
- Executing value creating projects that drive incremental EBITDA
- Targeting investments in our Core to unlock value while maintaining cost discipline
- Increasing our focus on customer centricity to enable value generation

# OPTIMIZING OUR PROVEN OPERATING MODEL TO UNLOCK SIGNIFICANT UNTAPPED VALUE



Continue to utilize our proven operating model to execute

1. EBITDA is estimated based on 2017-2019 mid-cycle margins and modest inflation relative to 2021 baseline.

# VALUE ENHANCEMENT PROGRAM IS ADVANCING THE WAY WE OPERATE

Identified clear initiatives to deliver on the program's estimated EBITDA

## KEY VALUE OPPORTUNITIES



### Manufacturing & Operational Excellence



- ✓ Improving asset reliability
- ✓ Implementing high value debottlenecks
- ✓ Reducing manufacturing variable and fixed costs
- ✓ Increasing energy efficiency
- ✓ Leveraging automation



### Procurement & Supply Chain



- ✓ Consolidating and simplifying raw material purchases
- ✓ Centralizing functional services
- ✓ Improving competitive sourcing for logistics and transportation



### Commercial Excellence



- ✓ Improving customer experience with better processes and tools
- ✓ Enhancing customer loyalty
- ✓ Increasing transaction efficiency

# VEP CASE STUDY | OPERATIONAL EXCELLENCE

Utilizing digital tools to improve workforce efficiency and decrease plant downtime

## IDENTIFIED OPPORTUNITY

The global turnaround organization identified an opportunity to improve workforce efficiency and decrease plant downtime

- Each turnaround involves thousands of approval steps previously done in person and on paper requiring travel time across the facility for each step
- The installation of Wi-Fi within the facilities has unlocked advanced digital tools
- Cost focused culture of the past did not prioritize digitization of turnarounds

## SOLUTION

The turnaround organization partnered with IT to integrate technology into our global turnaround processes to improve efficiency

- Electronic permitting
- Digitized turnaround work progress tracking
- Fully digital work closure system

## RESULTS

Project is expected to reduce plant outages by an average of two days, or ~3% of total average downtime

- Estimated benefit of **\$6.5 MM to \$8.3 MM recurring annual EBITDA<sup>1</sup>** beginning in 2024
- 2023 one-time cost \$1.5 MM for IT tools
- Significantly improved team satisfaction



# VEP CASE STUDY | OPERATIONAL EXCELLENCE

Applying automation to reduce energy intensity and greenhouse gas emissions

## IDENTIFIED OPPORTUNITY

Site personnel identified energy inefficiency requiring manual adjustments to furnaces

- Previously resolved excess oxygen in furnaces through manual adjustment by operators in the field
- Excess oxygen in furnaces requires additional fuel gas and reduces combustion efficiency leading to higher greenhouse gas emissions
- Automation system in place, but did not allocate resources needed to develop and implement the project

## SOLUTION

Utilize advanced process controls to automatically adjust excess oxygen in the olefins furnaces to improve furnace efficiency

- Reduce fuel usage and CO<sub>2</sub> emissions
- Initial trial ongoing at one U.S. site with potential to scale globally

## RESULTS

Project is expected to reduce furnace fuel consumption and lower emissions

- Estimated benefit of **\$5.5 MM recurring annual EBITDA<sup>1</sup>** by the end of 2024
- 2023 one-time cost \$0.2 MM
- 51 KTA CO<sub>2</sub> equivalent reduction



# VEP CASE STUDY | MANUFACTURING

Optimizing existing assets to drive incremental value and lower energy intensity

## IDENTIFIED OPPORTUNITY

Technical staff identified opportunity to unlock incremental production from existing olefins asset

- Shift to shale-advantaged lighter feedstocks has led to suboptimal operation on older assets designed for heavier feedstocks
- Relocating distillation tower feed point would improve operating efficiency
- Project was identified several years ago but delayed due to required outage and competing resources

## SOLUTION

Adding additional feed point flexibility to a distillation tower reduces energy intensity allowing for incremental production from existing equipment

- Simple piping modification
- Accelerating project development to implement within scheduled outage
- Potentially replicable at other sites

## RESULTS

Project is expected to generate 30 KTA incremental ethylene capacity while lowering energy intensity

- Estimated benefit of **\$6 MM recurring annual EBITDA<sup>1</sup>** by the end of 2025
- Cost totaling \$1.9 MM through 2025
- Maintains feedstock flexibility of prior configuration



# VALUE ENHANCEMENT PROGRAM IS ENABLING GREAT RETURNS

Embedded the value enhancement program within our culture to continuously identify future initiatives



## JUST GETTING STARTED

- Ignited new energy within our workforce to pursue value enhancing opportunities
- Recently expanded program to Europe and smaller U.S. sites
- Embedded continuous process to generate new ideas beyond 2025
- Realigned compensation incentives to focus on value
- Created tangible and achievable goals that are already producing results

# KEY TAKEAWAYS

1

Proven track record of operating safely and efficiently

2

Shifting mindset and culture from cost control to value creation, unlocking the full potential of our global team

3

Leverage high-performance operating model aligned with culture transformation to deliver differential value

# UTILIZING TECHNOLOGY TO ENABLE FUTURE GROWTH



**Jim Seward**

EVP & Chief  
Innovation Officer

# KEY MESSAGES

1

Technology drives both value and growth

2

Leader in technology-enabled products and processes with a proven ability to move up from laboratory bench to world-scale capacity

3

Investments in innovation monetized through two businesses: technology and products

4

Partner of choice for licensing and JVs, providing strong growth opportunities with efficient capital investment

# TECHNOLOGY BUSINESS CONSISTS OF **PROCESS LICENSING** AND **POLYOLEFIN CATALYST SALES**

**\$693 MM** 2022 SEGMENT REVENUE

**\$366 MM** SEGMENT EBITDA

**6,000+**

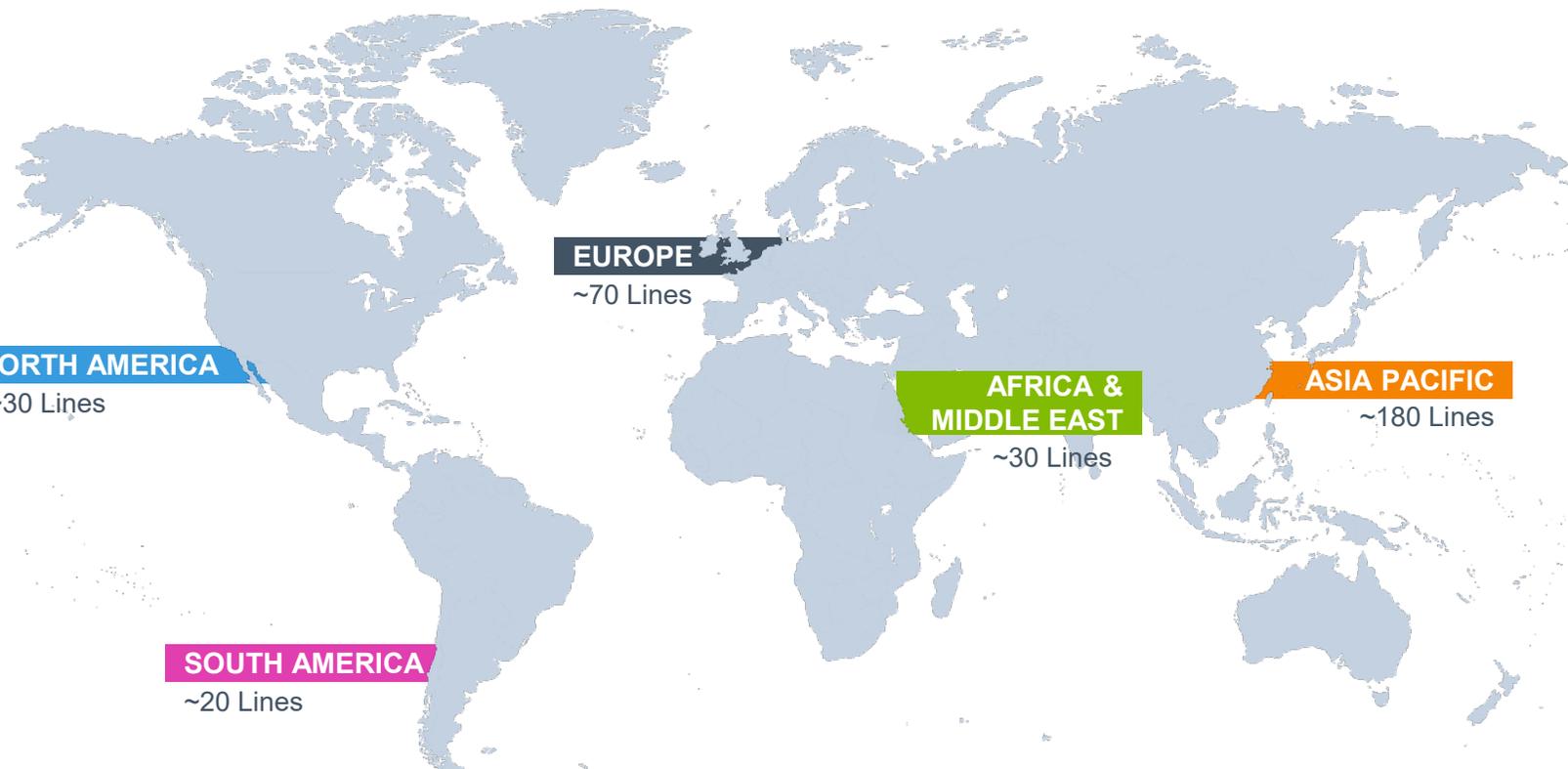
PATENTS AND APPLICATIONS

**80**

MM TONS OF LICENSED PE AND PP CAPACITY<sup>1</sup>

**~30%**

OF GLOBAL PE + PP NAMEPLATE CAPACITY<sup>2</sup>



## TECHNOLOGY STRATEGY

- Unique, rapid and low-cost innovation platform
- Integrated R&D supporting developments in processes, catalysts and products
- Highly efficient R&D investments monetized through two businesses: technology and products

## MARKET-LEADING SCALE & INNOVATION<sup>3</sup>

**#1**

Global polyolefin licensing

**#1**

Global polypropylene licensing

**#2**

Global polyethylene licensing

**> 100 polyolefin lines licensed in last 10 years**

- **> 10 Spherizone lines licensed in China targeting production of non-commodity PP**
- **> 20 Hostalen ACP lines licensed in emerging countries providing PE for infrastructure projects**
- **>10 Lupotech PE lines licensed in the last 5 years enabling production of photovoltaic cells**

# TECHNOLOGY BUSINESS CONSISTS OF PROCESS LICENSING AND POLYOLEFIN CATALYST SALES

**\$693 MM** 2022 SEGMENT REVENUE

**\$366 MM** SEGMENT EBITDA

**4**

CATALYST PRODUCTION SITES

**30%**

GROWTH IN OUR CATALYST PRODUCTION CAPACITY OVER PAST 5 YEARS

## CATALYST STRATEGY

- Value-based approach with long-term customer relationships and leading innovation capabilities
- Process licensing provides opportunities to build long-term catalyst sales relationships
- Unique R&D capabilities from bench to pilot to world-scale combined with access to market enables fast, low-cost commercialization
- Differential value offering with both proprietary and 3<sup>rd</sup>-party polymerization technologies

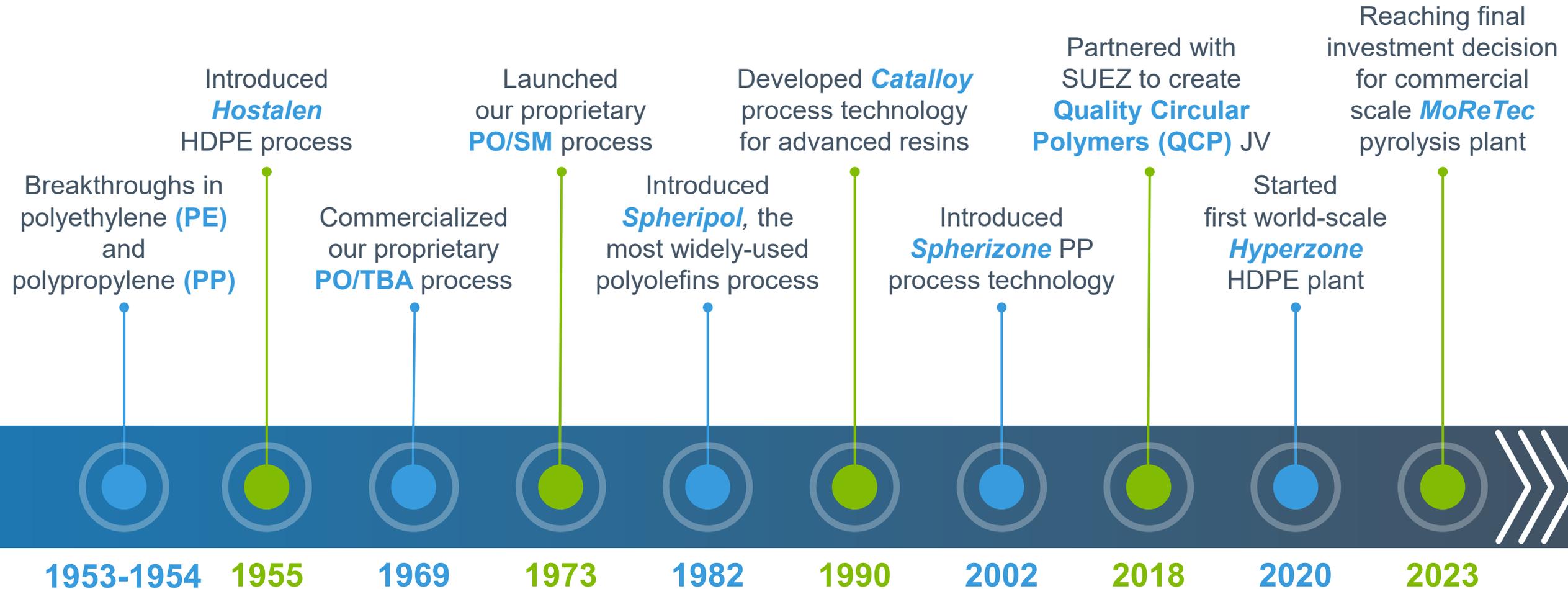
## MARKET-LEADING POSITION

**#1** Polypropylene catalysts



# PROVEN TRACK RECORD OF DRIVING MARKET INNOVATION FOR 70 YEARS

Creating proprietary technologies and generating significant returns from our innovations



# CORE BUSINESSES UTILIZE TECHNOLOGY INNOVATION TO DRIVE VALUE

Leveraging our innovations to extend advantages across the portfolio



**Propylene Oxide**



**Catalloy**



**Spherizone PP**



**Hyperzone PE**



**MoReTec Recycling**

## WHAT DOES IT DO?

Leading propylene oxide co-product processes: PO/TBA and PO/SM

Thermoplastic resins that combine the advantages of elastomers and polyolefins

Multizone reactor technology providing an exceptional range of PP products

Produces HDPE resins with optimal balance between processability and performance

Returns post-consumer plastic waste to molecular form for use as feedstock for new polymer materials

## WHY IS IT MARKET-LEADING?

World's largest PO plant incorporating the latest technology advancements  
Lowest PO production cost

Differential position in industrial applications such as roofing and construction

Combines leading scale with differential positions in consumer and flexible applications such as packaging

Combines leading scale with differentiated positions in pipe and industrial packaging as well as producing the full range of HDPE products

Pyrolysis process combines scale with leading energy efficiency and CO<sub>2</sub> footprint

# PO/TBA: A WORLD-LEADING TECHNOLOGY

## STARTING UP OUR NEW U.S. GULF COAST PO/TBA PLANT

- World's largest propylene oxide plant
- Lowest propylene oxide production cost
- Incorporates the best technologies from our 5 prior PO/TBA plants
- Implements new innovations to drive improvements in yield and PO recovery



## STAND-OUT INNOVATION

- **Increased Scale**
  - Latest process design significantly increases the scale of the plant
  - Maximizes economy of scale
  - Minimizes unit production costs
- **Lower Capital Costs**
  - Relative to conventional PO/TBA plant configuration
- **Improved Yield**
  - Latest process technology significantly improves propylene oxide yield
  - Reduced reliance on downstream PO derivatives, optimizing product flexibility
- **Strong Safety Culture**
  - Reduced risk start up process
  - >50 years of operational excellence, innovative design and safe operating practices

Our PO/TBA technology is world-leading in innovation, scale and cost of production

# WHY IS ADVANCED RECYCLING SO IMPORTANT?

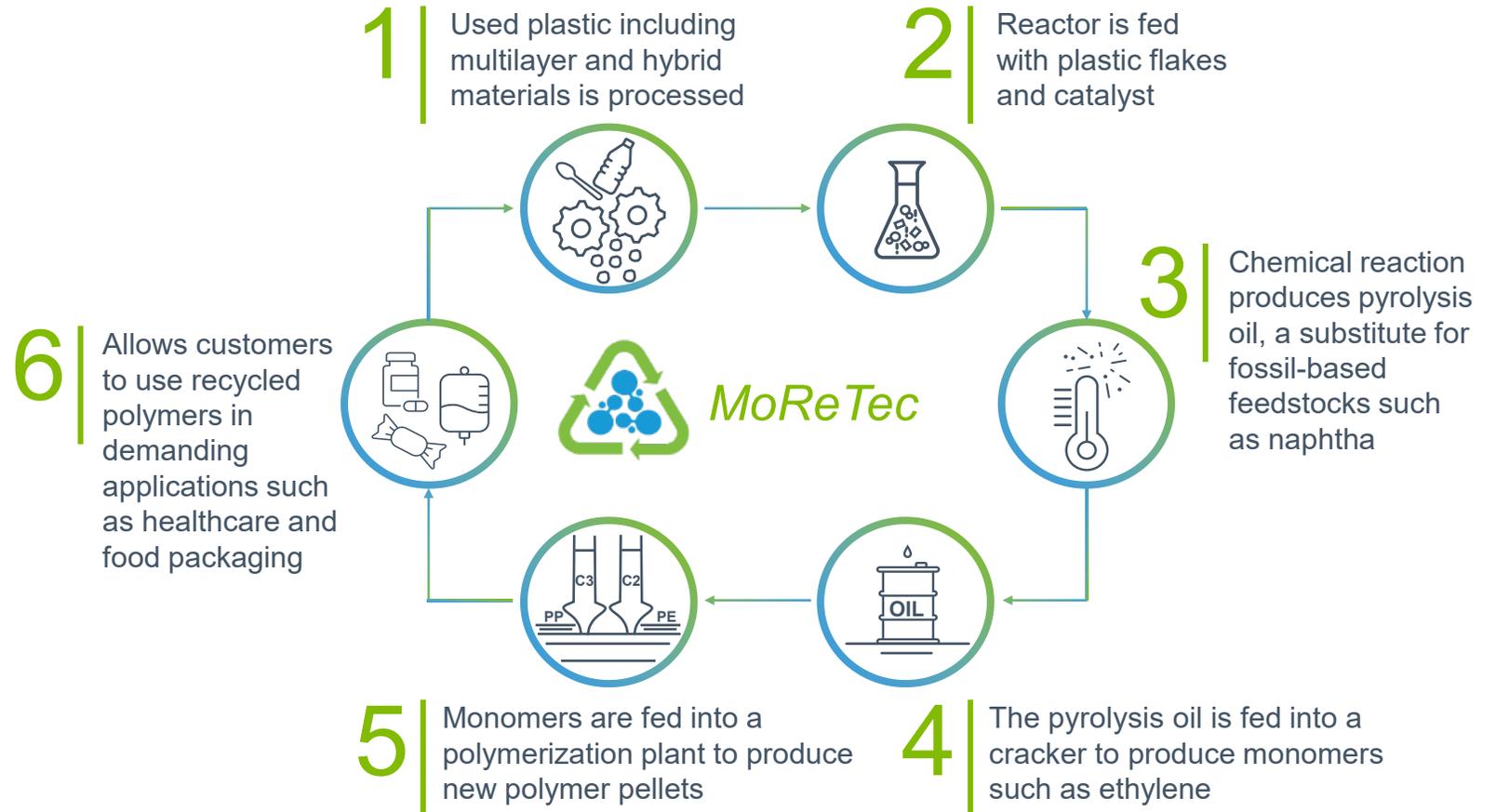
## Identified Opportunity

- Complementary to mechanical recycling
- Addresses hard-to-recycle post-consumer mixed plastic waste
- Recovers plastic waste that today ends up in incineration and landfills
- Serves applications requiring high purity such as food packaging and healthcare

## MoReTec Value Proposition

- Large scale with innovative process technology
- Proprietary LyondellBasell catalyst technology driving economic advantages
- Leading environmental footprint with less by-products and lower energy consumption
- Produces feedstocks that can be utilized in our existing global asset base of flexible ethylene crackers

## How MoReTec Works



# MoReTec: A DIFFERENTIATING TECHNOLOGY

## SCALABLE TECHNOLOGY

- Innovative single-train design enables scale-up for the future
- Removes heat transfer limitation associated with modular designs
- Continuous char removal for high asset utilization
- Initial unit designed to convert 50 KT of plastic waste per year
- Scalable to match the size of our world-class production facilities in Europe and the U.S.
- Helping deliver feedstock needed to produce and market over 2 MM tons of recycled and renewable-based polymer annually by 2030

## REDUCED CARBON FOOTPRINT

- Innovative process maximizes the plastic recycling rate while minimizing waste and fuels
- High energy efficiency of our process reduces energy costs and associated GHG emissions
- 100% electrification possible enabling the future use of renewable electricity
- *MoReTec* plants designed to align with our goals to reach net zero scope 1 & 2 greenhouse gas emissions by 2050

## FUTURE FOCUSED

Our focus on circularity, carbon footprint reduction, higher yields and scalability helps us prepare for the future

- 2018 Breakthroughs in LyondellBasell R&D labs in Europe & U.S.
- 2020 Semi-industrial scale plant started at Ferrara R&D site
- 2022 Advanced engineering for commercial scale *MoReTec* plant
- 2025 First *MoReTec* plant planned startup

## SCALE IS KEY

Our new, proprietary, future-focused technology has significant potential because of its lower energy use and more efficient conversion process relative to alternatives

# LEVERAGING LEADING TECHNOLOGIES TO BE A PARTNER OF CHOICE

A key enabler to driving higher returns

## UTILIZING PROPRIETARY TECHNOLOGIES

to create partnerships in advantaged regions and reduce our capital intensity



**Hyperzone PE**



**Catalloy**

### Key Technology Advantages

- Delivers the latest generation of polymer technology
- Provides lightweight, crack-resistant polymers with high processability
- Enables our customers to produce cost-effective and durable products

### Key Technology Advantages

- Adds value by replacing higher-priced flexible polymers
- Provides performance required for demanding end-use applications
- Modifies and enhances material properties when blended with other polyolefins

## CREATING EMERGING TECHNOLOGIES

to accelerate future opportunities



**MoReTec**

### Key Technology Advantages

- Reduces energy consumption with a catalyzed process that operates at lower temperatures with higher rates and yields
- Converts hard-to-recycle waste plastic into pyrolysis oil with similar qualities to fossil-based feedstock
- Provides customers and brand owners with a more sustainable solution

# KEY TAKEAWAYS

1

Technology drives both value and growth

2

Leader in technology-enabled products and processes with a proven ability to move up from laboratory bench to world-scale capacity

3

Investments in innovation monetized through two businesses: technology and products

4

Partner of choice for licensing and JVs, providing strong growth opportunities with efficient capital investment

# LEADERSHIP IN SUSTAINABILITY: FUNDAMENTAL AND CREATING VALUE



**Tracey  
Campbell**

EVP, Sustainability  
and Corporate Affairs

# ESTABLISHING OURSELVES AS AN ESG LEADER IN OUR INDUSTRY

Sustainability and safety performance is embedded in our strategy and incentive programs



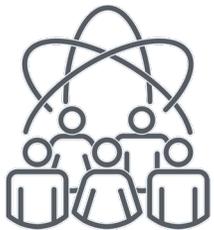
## Ending Plastic Waste

- Pioneering and scaling production of recycled and renewable-based polymers
- Catalyzing venture co-investors to invest in plastic waste reduction
- Driving to zero plastic pellet loss from our facilities



## Taking Climate Action

- Net Zero greenhouse gas emissions from operations by 2050<sup>1</sup>
- Lead industry in driving Scope 1, 2 and 3 greenhouse gas emissions reduction
- 50%+ of energy usage from renewable sources by 2030<sup>2</sup>



## Supporting a Thriving Society

- Achieve zero incidents, injuries and accidents
- Establish gender parity in senior leadership globally by 2032
- Reflect the levels of general population diversity within U.S. senior leadership roles by 2032
- Increase use of sustainable global suppliers through rigorous assessment

# OUR ACTIONS ARE ALIGNED WITH BRAND OWNER COMMITMENTS

Our largest customers need reliable partners to deliver their sustainability requirements

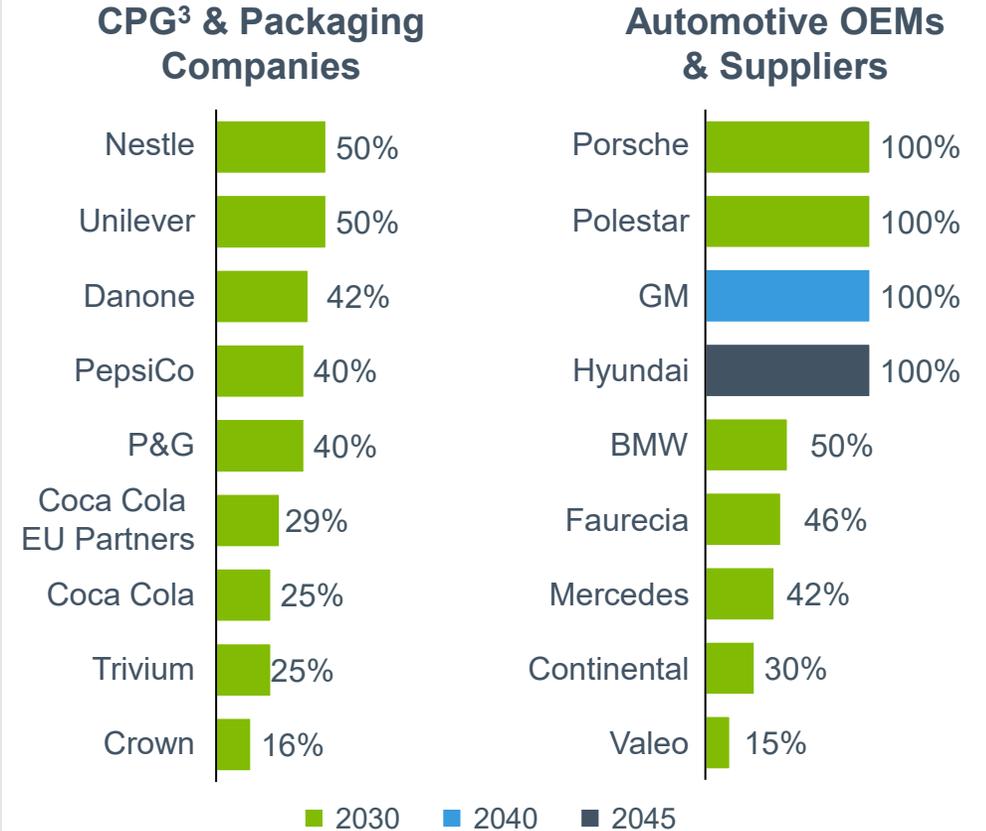
## COMMITMENT TO A CIRCULAR ECONOMY<sup>1</sup>

“ more than 1,000 businesses, governments, and other organizations have united behind a common vision of a **circular economy for plastic, in which it never becomes waste**. Signatories to the Global Commitment, which together account for **more than 20% of the plastic packaging market**, have set ambitious 2025 targets to help realize that common vision. ”

### Key Progress Metrics

- 1** **Ensure** 100% of plastic packaging is reusable, recyclable or compostable
- 2** **Increase** the share of post-consumer recycled content target across all plastic packaging used
- 3** **Decrease** the use of fossil-based plastic in packaging
- 4** **Take action** to move from single-use towards reuse models where relevant
- 5** **Eliminate** problematic or unnecessary plastic packaging

## SCOPE 3 EMISSION REDUCTION TARGETS<sup>2</sup>



1. Source: Ellen MacArthur Foundation Global Commitment 2022 Report.

2. Sources: Science-based Targets Initiative and LyondellBasell. Emission reduction targets based on percentage reduction relative to company specific reference point. Data retrieved on March 3, 2023.

3. Consumer packaged goods.

# WE ARE A LEADER AMONG OUR PEERS

Preparing to capture early-mover advantages as demand for low carbon footprint materials outpaces supply

Emission Reduction Aspirations by 2050 <sup>1</sup> by Major Petrochemical Producers	lyondellbasell	PEERS <sup>2</sup>							
		1	2	3	4	5	6	7	8
Scope 1 & 2 Reductions by 2030	 <b>42%</b> absolute emissions	 <b>&gt;40%</b> absolute emissions	 <b>15%</b> absolute emissions <sup>3</sup>	 <b>50%</b> absolute emissions	 <b>33%</b> absolute emissions	 <b>15%</b> emissions intensity <sup>4</sup>	 <b>20-30%</b> emissions intensity	 <b>20%</b> emissions intensity	 <b>35%</b> absolute emissions
Scope 3 Reductions by 2030	 <b>30%</b> absolute emissions	 <b>30%</b> absolute emissions		 <b>20%</b> emissions intensity					
Net Zero by 2050									

1. Sources: Company reports and websites, press releases, ICIS; updated as of February 2023.

2. Peers include (in alphabetical order) ChevronPhillips, Dow, ExxonMobil, Formosa Plastics, Ineos, Shell, TotalEnergies and Westlake.

3. Commitment includes product benefits (avoided emissions), which is currently not permissible under science-based target definitions.

4. Assume commitments are similar to parent company. Intermediate target for 2028.

# OUR ACTIONS CREATE VALUE

Sustainability efforts undergo the same returns scrutiny as any other business initiative and will create value



## FOR CUSTOMERS

- Innovating at scale
- Offering recycled, renewable and fossil-based materials with lower carbon footprints
- Collaboration with know-how to deliver solutions



## FOR OPERATIONS

- Reducing cost through improved energy efficiency
- Capturing incentives
- Identifying opportunities through a differential approach



## FOR TALENT

- Increased sense of purpose at work
- High employee engagement and retention
- Improved ability to attract the best talent



## FOR INVESTORS

- Profitable growth
- Reduced risk
- Access to expanding pools of ESG capital

# IT TAKES A DIVERSE AND INSPIRED WORKFORCE TO DRIVE INNOVATION

We are investing in the people creating the future of LyondellBasell



## ENGAGE

- Through COVID we sustained strong employee engagement levels, with 83% of employees responding favorably and above norms for our sector
- Safety incident metrics are consistently among the lowest in the industry, with 2022 delivering best-ever performance



## INNOVATE

- Since 2021, we launched 6 employee networks and now have thousands of employees engaging in these social groups
- Launched a new program to help 65 diverse employees advance their leadership skills



## SUPPORT

- Our leaders have won the Women MAKE Award<sup>1</sup> two years in a row
- Launched new e-learning platform, with 31% of our workforce participating in ~10,000 training hours aimed at increasing knowledge and improving skills
- Tripled the size of our executive mentoring and peer learning programs

# OUR BOLD ACTIONS ARE DELIVERING RESULTS AND GAINING RECOGNITION

Strong governance and social scores bolstered by improving sustainability ratings



Ecovadis Sustainability Gold Rating



LyondellBasell's "B" rating from CDP Climate does not account for our accelerated climate targets announced in December 2022



FTSE4Good

Added to FTSE4Good Indices



MSCI ESG A Rating



Consistently delivering top performing governance and social ratings as reported by ISS and Sustainalytics



Above industry average according to S&P's 2022 Corporate Sustainability Assessment

# KEY TAKEAWAYS

1

Sustainability is foundational to how we operate and grow

2

Our actions are creating value and aligned with increasing demand for sustainable solutions

3

We are establishing ourselves to become an ESG leader in our industry and capture early mover advantages

4

Our bold actions are gaining increased recognition by industry-leading 3<sup>rd</sup> party organizations

# UPGRADING THE CORE AND ENABLING CIRCULAR & LOW CARBON SOLUTIONS

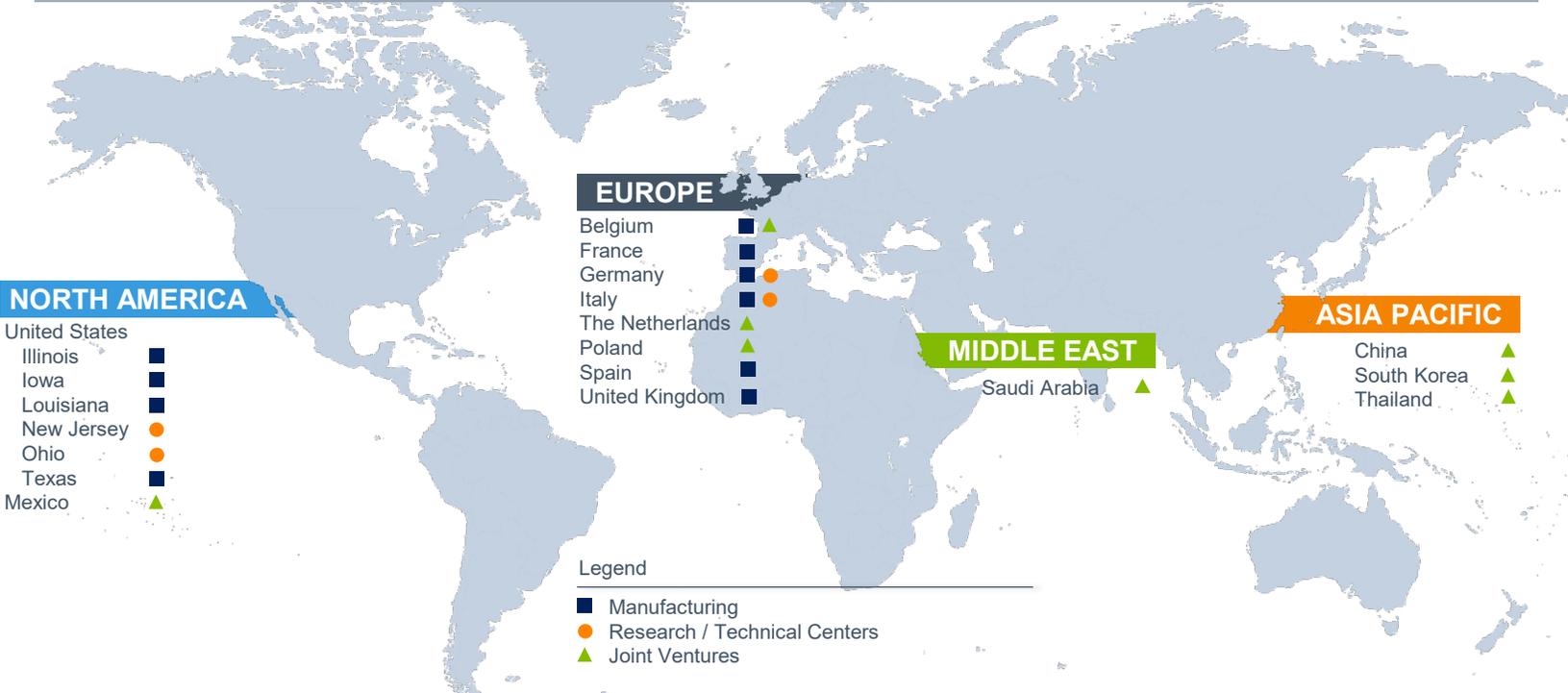


**Ken Lane**

EVP, Olefins &  
Polyolefins

# OLEFINS AND POLYOLEFINS SNAPSHOT

Diversified portfolio and global scale driving resilient results



1. 2022 revenue and EBITDA include results from *Catalloy* and polybutene-1 businesses which moved from APS segment on January 1, 2023.  
 2. Identified items include adjustments for lower of cost or market ("LCM"), impairments and refinery exit costs.  
 3. Manufacturing facilities include 12 joint venture sites.

## COMPETITIVE ADVANTAGES

- ✓ Integrated assets
- ✓ Feedstock flexibility
- ✓ Operational excellence
- ✓ Breadth and positioning of portfolio
- ✓ Circular & Low Carbon Solutions (P&L consolidated in O&P)

## GLOBAL LEADER IN O&P

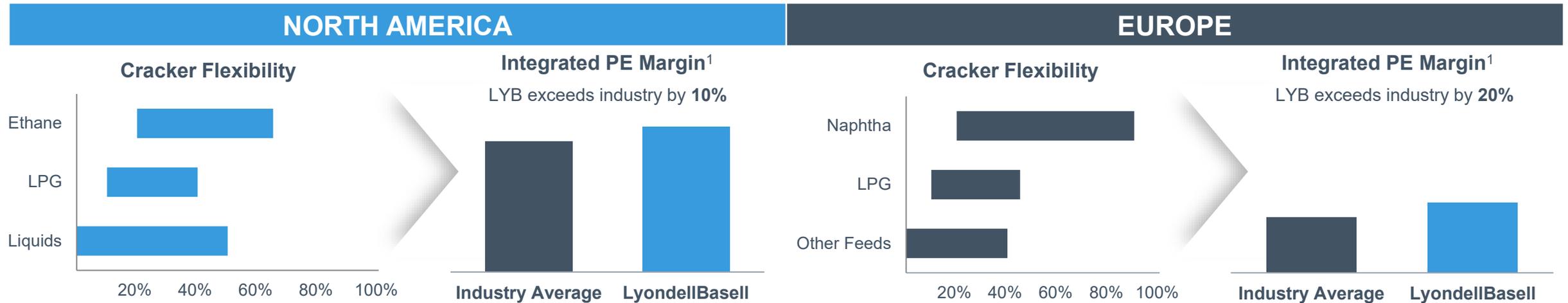


## GLOBAL CAPABILITIES

- ✓ Extensive marketing and sales capabilities
- ✓ Unparalleled channels to market

# OLEFINS AND POLYOLEFINS IS CORE TO LYONDELLBASELL

Leveraging our integrated assets to optimize and drive value



LOW-COST ENABLERS			
<b>INTEGRATED ASSETS</b>	<b>FEEDSTOCK FLEXIBILITY</b>	<b>POLYOLEFINS OPERATIONAL EXCELLENCE</b>	<b>OPTIONALITY FOR SUSTAINABLE FEEDSTOCKS</b>
Established market positions and focused customer service drive premium polymer pricing	Balanced global fleet of 13 crackers utilizing NGLs, naphtha, and recycled and renewable feedstocks	Culture enables utilization exceeding industry benchmarks <sup>2</sup>	Capability to process recycled and renewable-based feedstocks

1. Sources: Industry consultants and LyondellBasell. Average annual LyondellBasell integrated olefins and polyethylene cash margins relative to industry benchmarks from 2012-2021.  
 2. From 2012-2021 ~2% polyolefin capacity utilization advantage to average industry consultant benchmark for both North America and Europe.

# TECHNOLOGY LEADERSHIP CREATES ATTRACTIVE JV GROWTH OPPORTUNITIES AS A “PARTNER OF CHOICE”

Leverage joint ventures as part of our unique, proven innovation growth model



## COMPETITIVE STRENGTHS ENABLING HIGHER RETURNS

### 1 Leading Technologies

- Leverage leading, differentiated technologies at world scale

### 2 World-Class Operator

- Staff and institutional know-how support best-in-class operations

### 3 Global Marketing Network

- Maximize product returns through marketing and product development expertise

## SHARE OF OUR GLOBAL CAPACITY SERVED BY JVs

18%

of our 6.8 MM tons of total PE capacity

32%

of our 6 MM tons of total PP capacity

# INDUSTRY LEADING BREADTH OF POLYOLEFIN PRODUCTS

Well-positioned across value chains

Leading market position geared toward durable products

Opportunity to create cost-advantaged circular products

**CATALLOY**



Infrastructure 5%  
Flexible 3% | Automotive 2%  
Demand Growth<sup>1</sup>

**POLYPROPYLENE**



4.5% Demand Growth<sup>2</sup>

**HIGH-DENSITY  
POLYETHYLENE**



4.5% Demand Growth<sup>2</sup>

**LOW-DENSITY  
POLYETHYLENE**



3% Demand Growth<sup>2</sup>

**LINEAR LOW-DENSITY  
POLYETHYLENE**



4% Demand Growth<sup>2</sup>

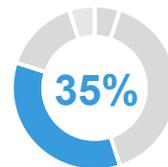
% of Polymers Volume<sup>3</sup>



Automotive, roofing, wire and cable, textile, carpets



Consumer products, medical, rigid packaging



Pressure pipes, toys, plastic bottles



Soft containers, healthcare and medical, cable jacketing

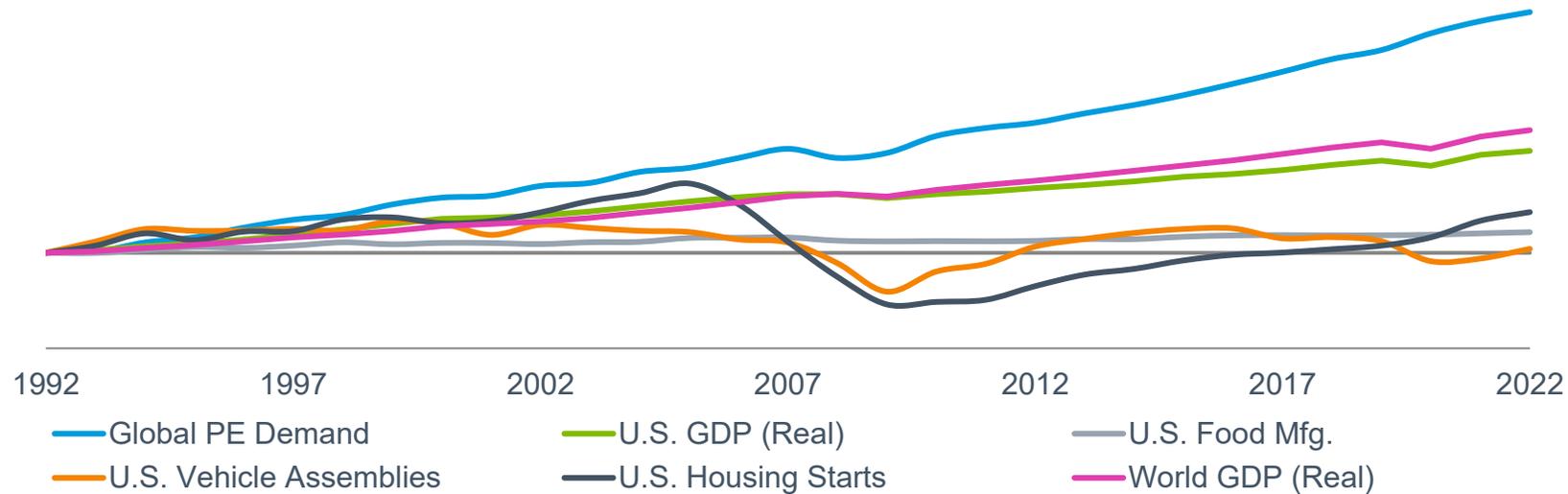


Shrink/stretch film, coatings

# KEY MACRO TRENDS DRIVING POLYOLEFIN DEMAND

Historically consistent demand growth

Market Trends<sup>1</sup>  
Indexed to 1992



## KEY MACRO TRENDS



Food Safety  
& Access



Clean  
Water



Lightweighting



Quality  
Healthcare



Agricultural  
Efficiency

INCREASING GLOBAL  
DEMAND<sup>2</sup>

800  
Million

Global population  
growth by 2030

\$3.7  
Trillion

Global infrastructure  
investment annually,  
2019-2030



# GROW & UPGRADE THE CORE: OLEFINS AND POLYOLEFINS

## CORE CRITERIA

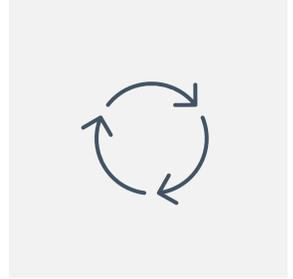
- 1 **Leading** market positions
- 2 **Growing** end markets
- 3 **Attractive returns** above our cost of capital
- 4 Access to **advantaged feedstocks** and, increasingly, **circular and renewable feedstocks**
- 5 Strategic focus on **Circular & Low Carbon Solutions**



## HOW THIS APPLIES TO O&P



**Evaluating**  
and optimizing  
global asset  
portfolio



**Enabling**  
circular and  
low carbon  
solutions growth  
of \$1 B+  
incremental  
EBITDA<sup>1</sup> by 2030



**Upgrading**  
our Core and  
driving EBITDA  
and margin  
growth



# OUR APPROACH TO GROWING O&P THROUGH M&A AND JVs

Focusing on strategic fit with a value mindset to maximize returns



## OPERATIONAL EXCELLENCE

Integrated, world-scale assets in Core product area



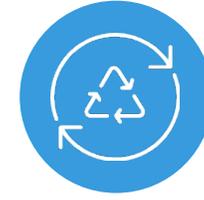
## ADVANTAGED FEEDSTOCKS

Middle East JVs leveraging our technology and providing access to advantaged feedstocks



## ACCESS TO GROWTH MARKETS

Asia JVs providing access to growing markets and leveraging our technology to reduce capital intensity



## ENABLING SUSTAINABILITY

Upstream collaborations providing access to feedstocks for Circular & Low Carbon Solutions

## INVESTMENT RETURN TARGETS

>12% IRR

**Accretive** to earnings

**Maintain** strong investment grade credit rating



# ENABLING A SUSTAINABLE FUTURE

## EMPOWERING GROWTH OF CIRCULAR & LOW CARBON SOLUTIONS BUSINESS UNIT

- **Providing** access to markets to build relationships with key brand owners
- **Enabling** access to cost-advantaged plastic feedstock
- **Producing** ISCC+ certified circular and renewable products at flagship sites
- **Reducing** GHG emissions of our asset base

## UTILIZING EXISTING O&P FOOTPRINT to produce circular and renewable products



### Cologne, Germany Hub

- Capacity to process up to 2 MM tons per year of renewable or plastic waste-based feedstock
- Engineering an advanced recycling plant using our proprietary *MoReTec* technology



### Houston, Texas Hub

- Capacity to process up to 3.6 MM tons per year of renewable or plastic waste-based feedstock
- Reducing greenhouse gas emissions from fuels by partially replacing natural gas with hydrogen
- Pipeline connections to Houston Refinery provide optionality

# DRIVING CUSTOMER AND COMMERCIAL EXCELLENCE (CCE) TO CREATE ADDITIONAL VALUE

A 3-year transformation journey to increase EBITDA margins



## Shift the Culture

Be more customer-centric and create unique value for our customers while preserving our cost discipline

**Drive a market- and customer-focused organization**



## Enhance Systems, Tools and Operating Model

Continue to optimize our operational foundation to deliver

**Building capabilities to more efficiently and effectively serve customers**



## Partner of Choice for Leading Customers

Anticipate customer needs and provide tailored solutions that will unlock value

**Develop products and services that our customers value**



## Penetrate High Growth Markets

Leverage our best-in-class product portfolio to further penetrate attractive markets (e.g., Circular & Low Carbon Solutions)

**Leverage broad portfolio to optimize market segment and product for highest value**

# 2027 GROWTH TARGETS

(USD, millions)

O&P EAI  
O&P Americas



1. 2022 EBITDA includes \$2,865 million and \$178 million of O&P Americas and O&P EAI segments, respectively, including results from the *Catalloy* and polybutene-1 businesses moved from the APS segment.  
 2. Portfolio normalizations reflect a 2022 year-end asset portfolio with 2013-2022 historical average margins and operating rates.  
 3. 2027 Normalized EBITDA reflects 2013-2022 historical average margins and operating rates. 2027 Normalized EBITDA includes \$5,388 million and \$1,662 million of O&P Americas and O&P EAI segments, respectively. Please see Appendix for additional information on Normalized EBITDA.

## Grow & Upgrade the Core \$1,250 MM

- Improve reliability and grow volume from our existing O&P assets through our value enhancement program (VEP)
- Strategic growth in O&P Americas and O&P EAI JVs
- Reviewing business portfolio through strategic lens

## CLCS Growth & Emissions Reduction Savings \$550 MM

- Investments in circular solutions to serve the market while standing up our growing CLCS business
- Includes \$50 MM benefit from reducing GHG emissions from our asset base with lower energy intensity and cost

## Step Up Performance & Culture \$250 MM

- Delivery of quality, service and innovation to customers through CCE
- VEP targeted cost and margin improvements

# KEY TAKEAWAYS

1

## LEADING POSITIONS

Portfolio of diverse products and assets leveraging advantaged feedstocks, operational excellence and local market presence

2

## GROW & UPGRADE THE CORE

Utilizing industry-leading technologies to strengthen our advantage, extend our reach and upgrade our core business

3

## ENABLING SUSTAINABILITY

Grow our Circular & Low Carbon Solutions business and reduce GHG emissions

4

## STEPPING UP PERFORMANCE & CULTURE

Expand margins through strong customer focus, value-selling strategy and improved manufacturing efficiency

# ESTABLISHING LEADERSHIP IN CIRCULAR & LOW CARBON SOLUTIONS



**Yvonne  
van der Laan**

EVP, Circular &  
Low Carbon Solutions

# SOCIETY, CONSUMERS AND REGULATIONS ARE DRIVING BRAND OWNER COMMITMENTS FOR CIRCULAR AND LOW CARBON SOLUTIONS

Changing global landscape is driving demand for recycled content and reductions in GHG emissions

## CHANGING GLOBAL LANDSCAPE

### 1 Societal Aspirations

- Growing societal aspiration for reductions in GHG emissions and plastic waste

### 2 Consumer Awareness

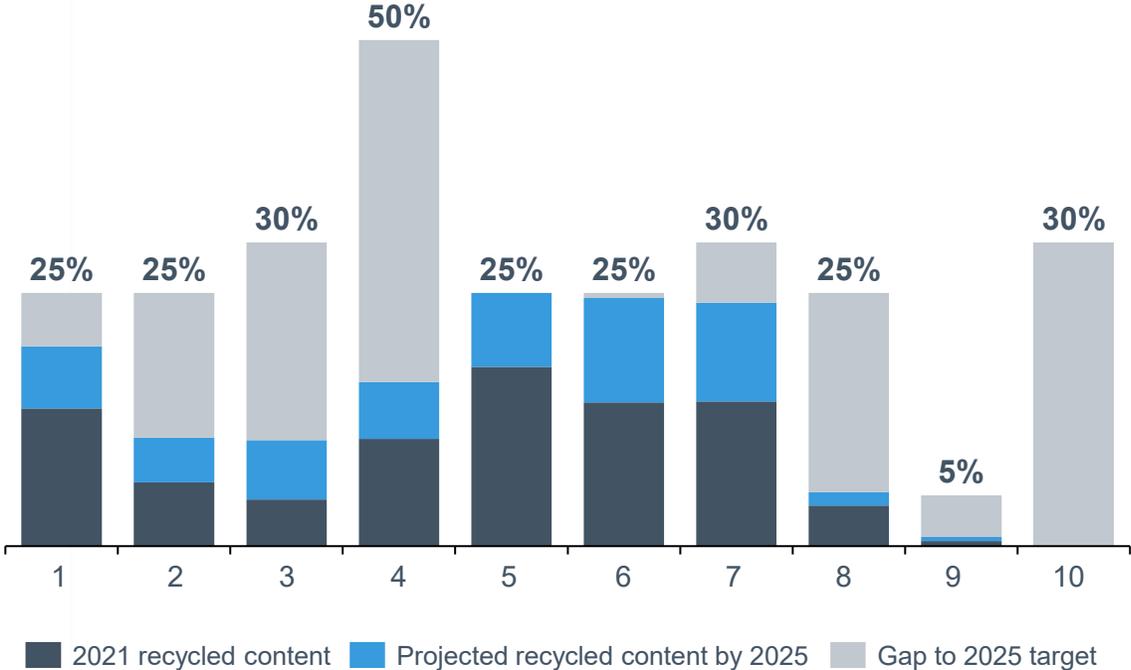
- Increasing consumer awareness and willingness-to-pay for circular and renewable products

### 3 Evolving Regulations

- New requirements across the world, including North America and Europe
- Recycling targets, plastic taxes, Extended Producer Responsibility (EPR) schemes and climate regulations are also driving demand and economics

## BRAND OWNER COMMITMENTS<sup>1</sup>

Top 10 Global Brand Owner Recycled Content Targets by 2025 and Projected Share at Current Pace  
% of total packaging content

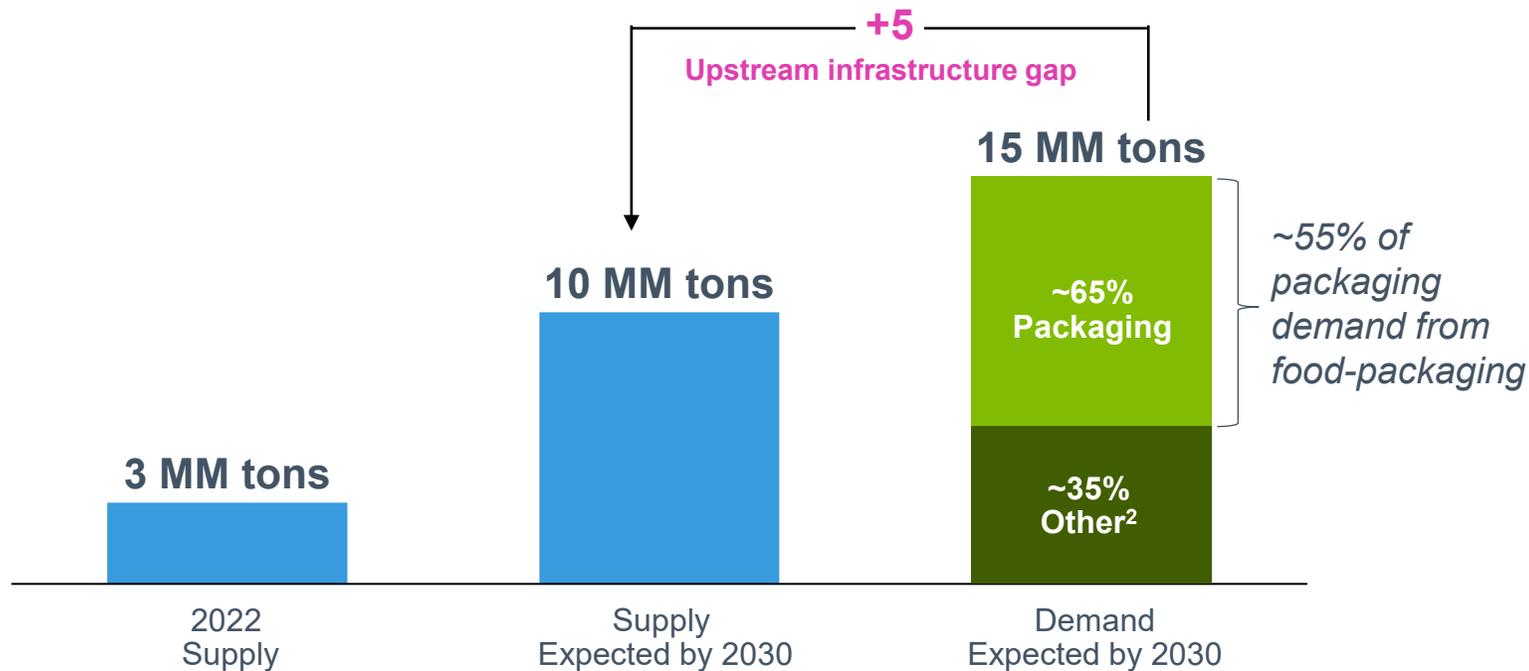


1. The 10 top companies' commitment represent ~12% of total recycled content demand in packaging by 2025. Source: Ellen MacArthur Foundation Global Commitment 2022 Progress Report.

# DEMAND FOR RECYCLED CONTENT EXPECTED TO OUTPACE SUPPLY BY 50%

Our target of 2 MM+ tons per year of recycled and renewable polymers by 2030 would establish our market leadership in North America and Europe

## UPSTREAM INFRASTRUCTURE GAP IS CREATING A SIGNIFICANT SUPPLY SHORTAGE<sup>1</sup>



## MARKET ASSESSMENT

- More than **50% of total demand growth for PE/PP** driven by recycled and renewable-based content<sup>1</sup>
- **Consumer packaging sector** has the highest growth in demand for recycled content
- **Greenfield capacity** is needed to bridge the supply gap
- Persistent shortage of supply is expected to sustain **healthy premiums**

1. Sources: McKinsey Chemical Insights, IHS Markit. Supply and demand for recycled and renewable-based polyethylene and polypropylene in North America and Europe.

2. Other includes automotive, durable goods and construction.

# COMPREHENSIVE STRATEGY PRIMED FOR LONG-TERM PROFITABLE GROWTH

Expect to capture at least \$1 B in incremental EBITDA<sup>1</sup> by 2030

**\$25 B+**

Total addressable market<sup>2,3</sup>

**20%+**

Market share for LyondellBasell<sup>3</sup>

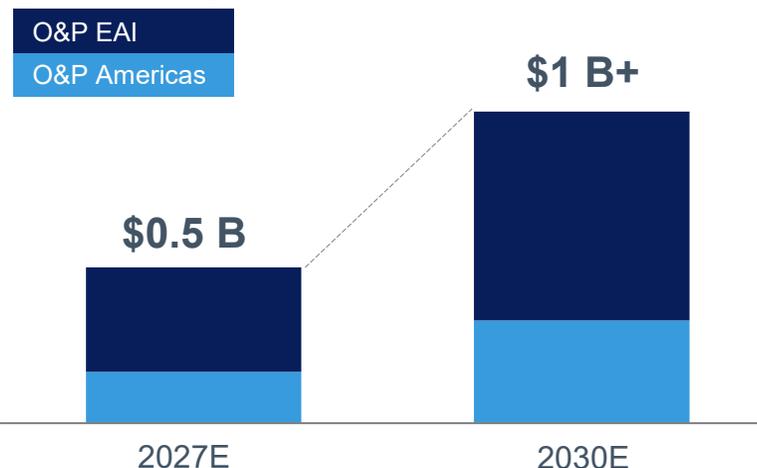
**2 MM+ Tons**

Recycled and renewable-based polymers produced and marketed by LyondellBasell

Annually by 2030

## GROWTH TARGETS

(USD, billions)



Relatively low capital intensity:  
~15% of our expected capital investment  
from 2023 – 2030

## OUR UNIQUE SUCCESS FACTORS

- 1 Access to large customers and brand owners
- 2 Ability to leverage existing asset base
- 3 Innovative and differentiated technologies (e.g., *MoReTec*)
- 4 Differentiated operating model resourced for success
- 5 Access to plastic waste through strategic partnerships and footprint in strategic locations

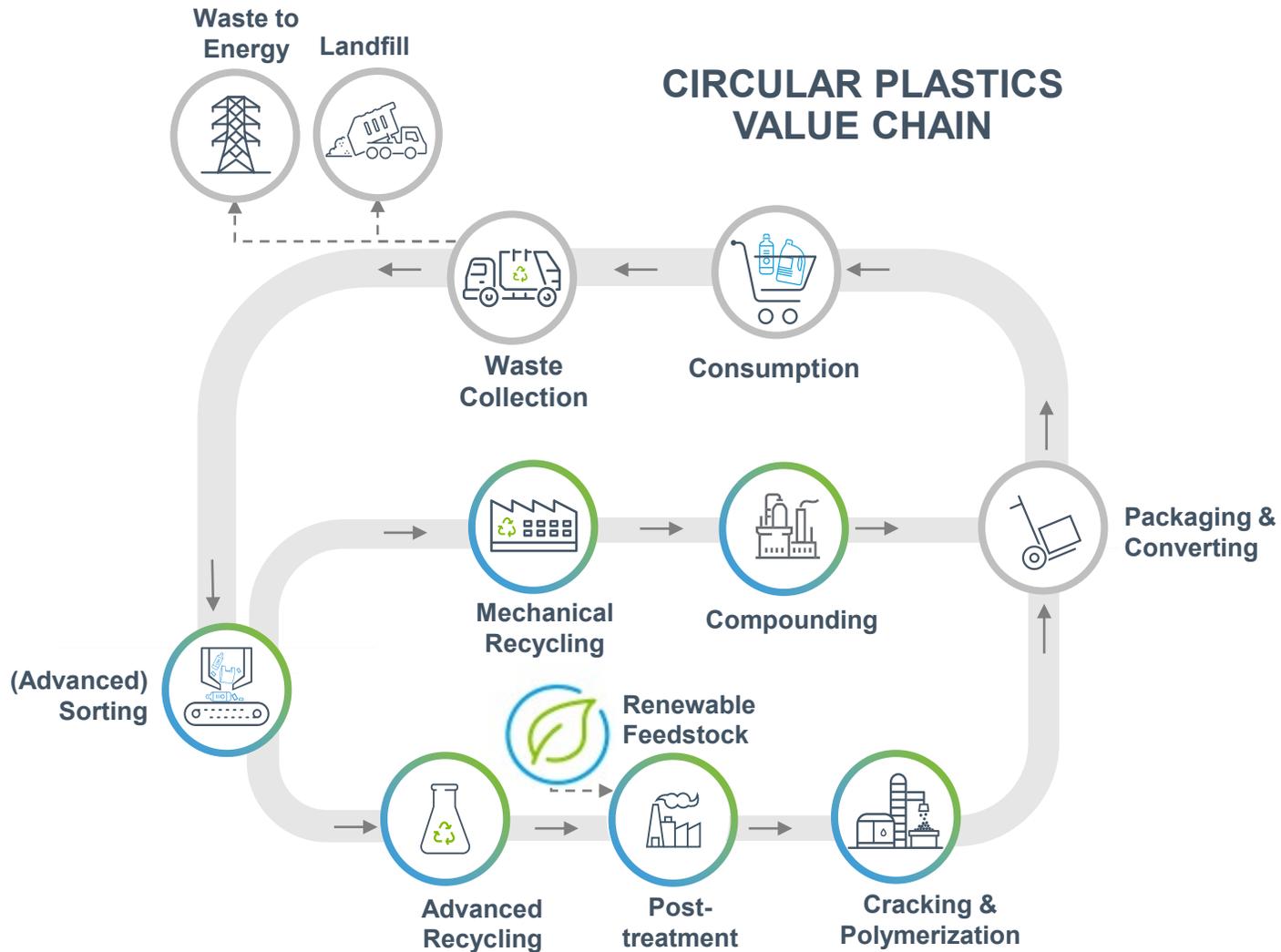
1. EBITDA is incremental to LyondellBasell's fossil-based O&P Americas and O&P EAI annual EBITDA. 2027 CLCS EBITDA is included in the 2027 Normalized EBITDA for O&P Americas and O&P EAI. Please see Appendix for additional information on CLCS EBITDA and Normalized EBITDA.

2. Sources: McKinsey Chemical Insights, IHS Markit and LyondellBasell.

3. In North America and Europe.

# TODAY'S CIRCULARITY VALUE CHAIN

Lacking the infrastructure required to efficiently gather and supply waste feedstock



## KEY SUPPLY DYNAMICS

- Plastic waste is localized and extremely fragmented
- Underdeveloped sorting technologies in highly populated areas do not optimize the value of recyclable feedstock at scale
- Regulations vary by region
- Opportunity to create innovative recycling technologies that provide scale and make economic sense

# LYONDELLBASELL IS OPTIMIZING THE VALUE CHAIN FOR CIRCULARITY BY BUILDING INTEGRATED HUBS AND LEVERAGING EXISTING CAPABILITIES

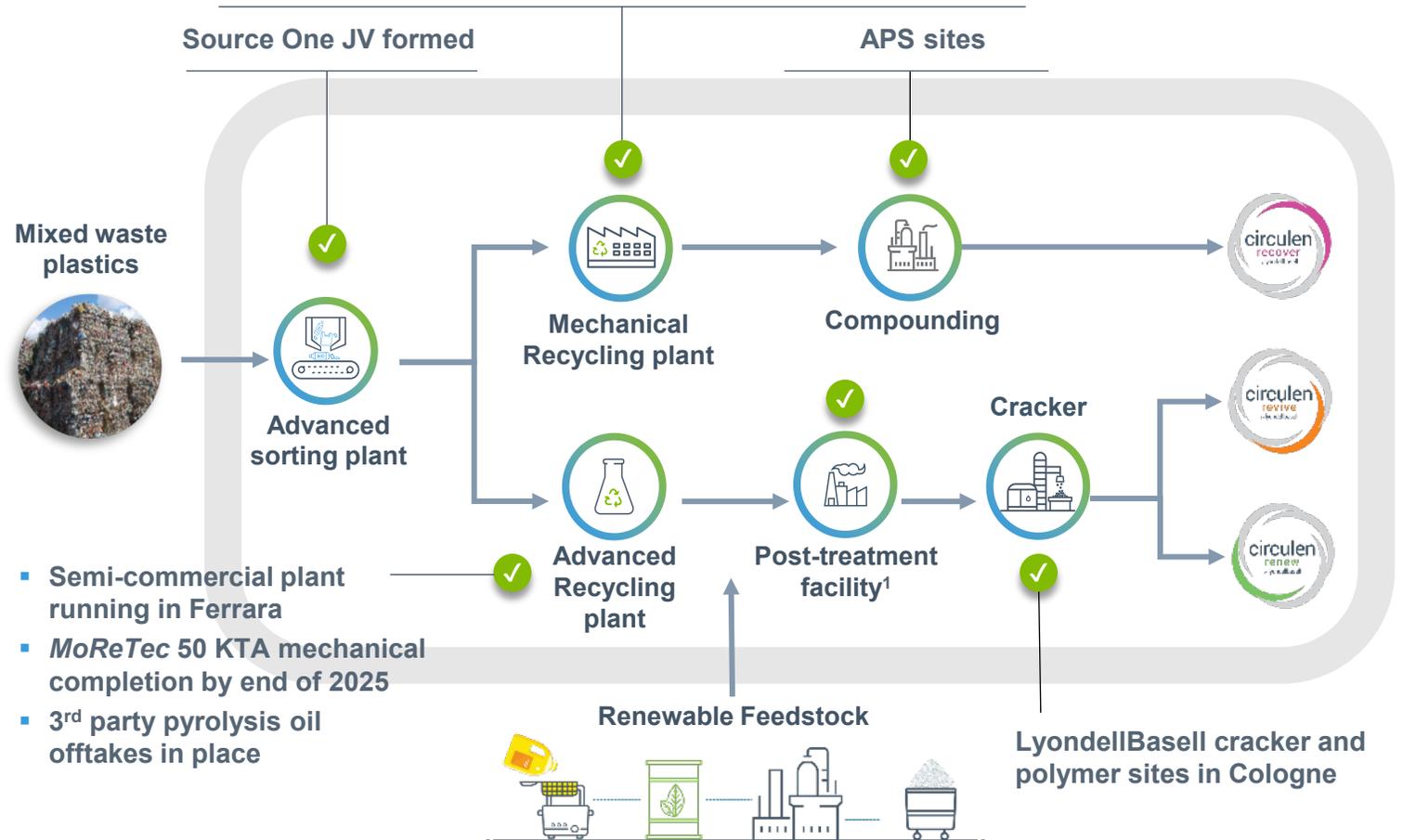
Building scale, reducing cost and capturing value from waste to final product

## INTEGRATED 'HUB' CONCEPT

- Leveraging existing capabilities at **Cologne and Houston sites**
- **Preferred strategic partner** to feedstock owners
- **Collaborating with brand owners** to provide a range of optimal solutions via *Circulen* brands
- **Differentiated technology** play (e.g., *MoReTec*) through the value chain
- **Regional hubs** to access and supply feedstock into integrated hubs

## LYONDELLBASELL INTEGRATED 'HUB' IN COLOGNE

QCP JV processing 55 KTA, APK technology 8 KTA



# WE ARE UNIQUELY POSITIONED TO CREATE VALUE IN CIRCULAR AND LOW CARBON SOLUTIONS

Most attractive partner for both feedstock owners and brand owners

Attributes to compete in circular and low carbon solutions market	lyondellbasell	PEERS <sup>1</sup>				
		1	2	3	4	5
PE / PP product offering	✓	✗	✓	✗	✓	✗
Integrated footprint in U.S. and EU	✓	✓	✗	✓	✓	✓
Mechanical and advanced recycling footprint	✓	✓	✓	✓	✗	✗
Liquid naphtha crackers for advanced recycling and renewable feed processing	✓	✓	✓	✗	✓	✓
Compounding capability to upgrade mechanical recycling product portfolio	✓	✗	✓	✗	✗	✗

✓ Has capabilities   ✗ Does not have capabilities

# ADDRESSING GROWING BRAND OWNER DEMAND WITH OUR *CIRCULEN* PORTFOLIO

Full-suite of solutions for our customers' sustainability needs



Products made from **mechanical recycling processes**, including QCP JV



SAMSONITE  
Magnum ECO  
suitcase<sup>1</sup>



Products made from **advanced recycling processes**, including proprietary *MoReTec* technology



L'OCCITANE EN  
PROVENCE cosmetic  
packaging tubes<sup>1</sup>



Products made from **renewable bio-based feedstocks**



CORINE DE  
FARME personal  
care packaging<sup>1</sup>

Building business and operating models to support rapidly **growing customer demand** with over 100 employees dedicated to business unit by end of 2024

**175,000+ Tons**

*of recycled and renewable-based polymers sold by LyondellBasell since 2019*

**2,000,000+ Tons**

*of recycled or renewable-based polymers produced and marketed annually by 2030*

*Approximately 20% of 2022 PE and PP sold globally by LyondellBasell*

# KEY TAKEAWAYS

1

Growing and sustained demand for recycled and renewable polymers driven by brand owners and regulation

2

Clear path to value creation in circular and low carbon solutions

3

We are well-positioned to lead in this market at scale with our integrated hub business model

4

Our Circular & Low Carbon Solutions business is expected to capture \$1 B+ in incremental EBITDA<sup>1</sup> by 2030

# TRANSFORMING APS TO DRIVE GROWTH



**Torkel  
Rhenman**

EVP, Advanced  
Polymer Solutions

# ADVANCED POLYMER SOLUTIONS TODAY<sup>1</sup>

Significant value creation opportunity to be realized from APS transformation<sup>2</sup>



## INTEGRATION ACCOMPLISHMENTS

- Expansive global compounding footprint with regional expertise and knowledge
- Achieved \$200 MM in synergy capture
- Consolidated and optimized information systems towards a singular ERP & Innovation Pipeline Platform
- Building AI solutions for innovation speed
- Significantly improved safety performance<sup>2</sup>

## CURRENT STATE

- Complexity of business model not well-suited for LyondellBasell operating model
- Cost control focus resulted in customer service level deficiencies

## APS TRANSFORMATION

- Launched in Q4 2022

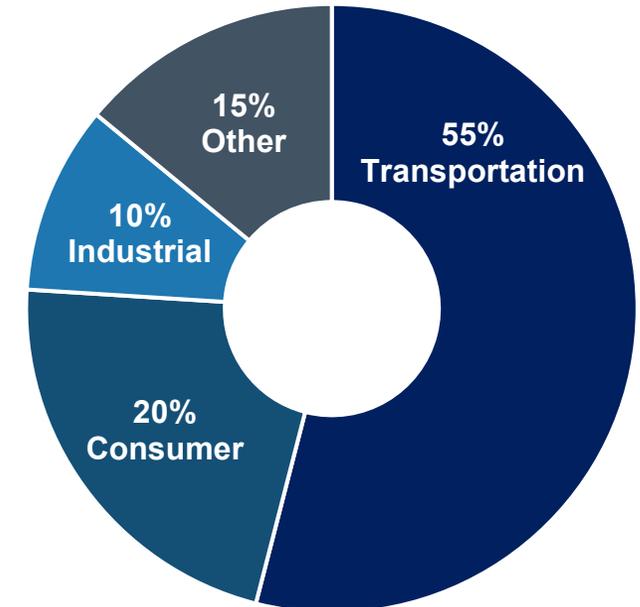
1. APS segment excludes *Catalloy* and polybutene-1 businesses which were moved to O&P Americas and O&P EAI segments on January 1, 2023.  
 2. Over 2x improvement in Total Recordable Incident Rate.

# SOLUTIONS OFFERING IS DEEPLY INTEGRATED IN EVERYDAY LIFE

Delivering innovative products over a wide array of complex and customizable solutions

	<b>Polypropylene Compounds</b>	Thermoplastic resins using base polyolefins, fillers, reinforcements, pigments and additives
	<b>Engineering Polymers</b>	Specialized high-performance plastic compounds and resins
	<b>Masterbatches</b>	Enhanced additive concentrates to improve appearance and performance
	<b>Colors Concentrates</b>	Wide portfolio and custom color matching services for optical and additive applications
	<b>Specialty Powders</b>	Size reduction technology delivering powders tailored for specialized markets and applications
	<b>Engineered Composites</b>	Thermoset compounds portfolio of bulk, sheet, and thick-molded engineered composites

2022 APS Sales Volumes by Market<sup>1</sup>



# 2027 GROWTH TARGETS

## Transforming APS to unlock significant value

(USD, millions)



### APS GROWTH FUNDAMENTALS<sup>3</sup>

#### Restore Base \$120 MM

- Customer focus
- Organizational restructure
- Integrated business planning

#### Market Recovery \$115 MM

- Automotive
- Labor
- Raw materials

#### Focused Growth \$150 MM

- Sustainability and circularity
- Mobility
- Modern living

1. 2022 EBITDA excludes *Catalloy* and polybutene-1 businesses, which were moved to the O&P Americas and O&P EAI segments on January 1, 2023.

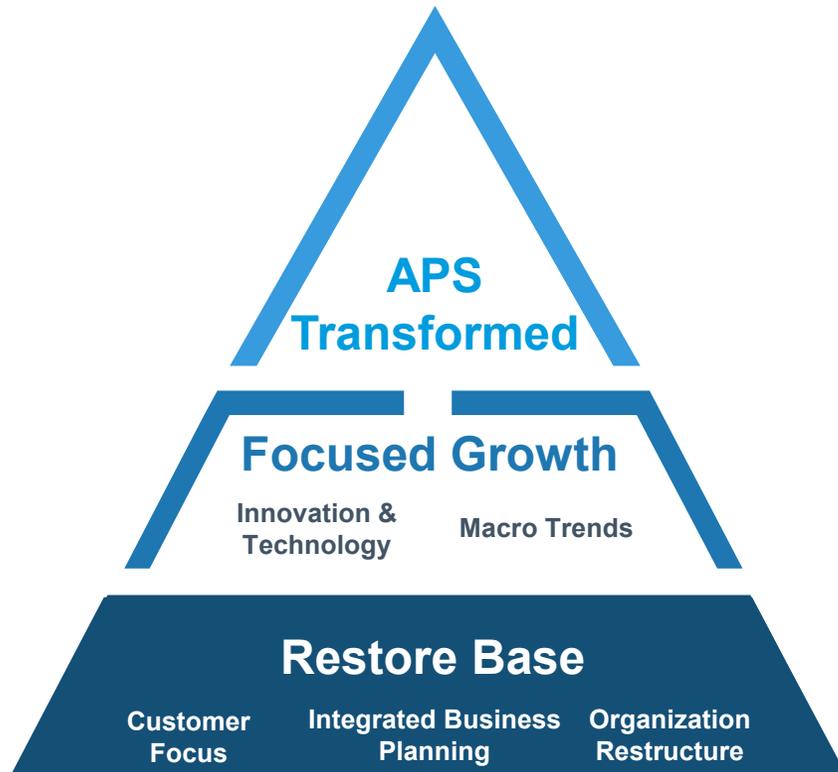
2. 2027 Normalized EBITDA reflects 2013-2022 historical average margins and operating rates. Please see Appendix for additional information on Normalized EBITDA.

3. APS growth fundamentals are included in Step Up Performance & Culture within the Normalized EBITDA of LyondellBasell.

# RESTORING AND ENHANCING CORE APS BUSINESS

Transformation activities underway and delivering in 2023

## APS TRANSFORMATION



### Customer Focus

- Restoring service levels
- Adding resources for customer engagement
- Pivot from integration to growth and innovation

### Integrated Business Planning

- Full alignment across commercial, manufacturing and support functions
- Empowering and shifting accountability to market-facing employees
- Increase business agility and faster decision-making
- Moved *Catalloy* and polybutene-1 to O&P businesses to narrow focus on compounding solutions

### Organization Restructure

- Enable greater efficiency of products to customers
- Operations and planning tied to strategy
- Investing in digital forecasting tools and material optimization
- Defining clear metrics and KPIs for success

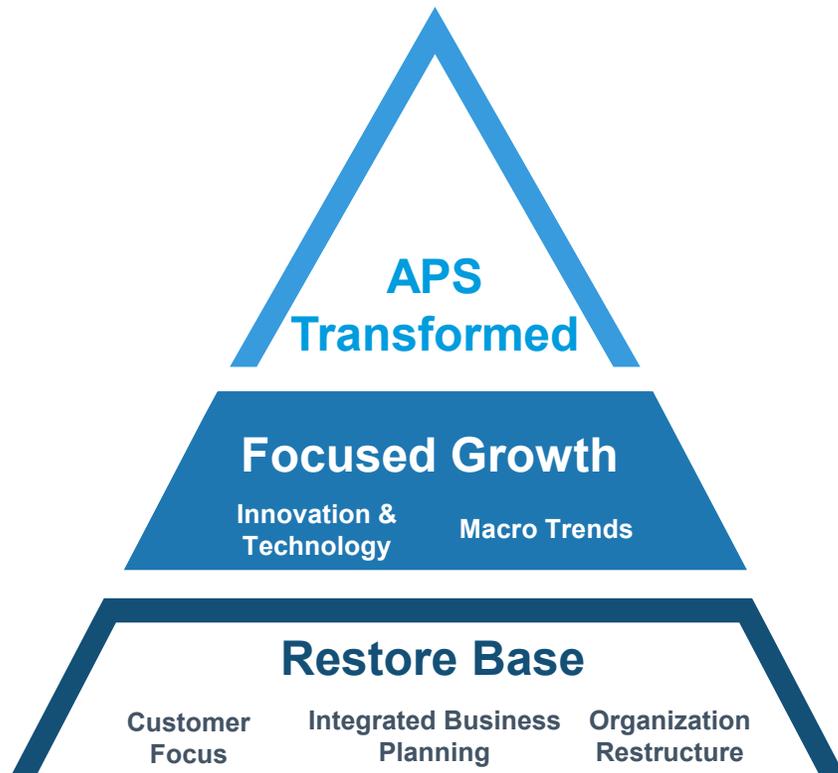
## EXPECTED OUTCOMES

- ✓ Service levels restored by mid-year 2023
- ✓ Organization focused and accountable to drive growth
- ✓ Execution excellence to respond to customer demand and ensure reliable delivery

# SHIFTING FOCUS TO GROWTH

Acceleration through innovation, technology and macro trends

## APS TRANSFORMATION



### Investing in Resources

- Innovation platforms and people

### Leverage Knowledge

- Vast compounding formulation library
- Deep industry knowledge

### Technology and AI

- Advance innovation from digital intelligence through utilization of AI
  - Speed of formulation
  - Cost effectiveness
  - Enhanced material performance

### Innovative Customer Partnerships

- Close loop customer initiatives
- Collaborative sustainable product innovation

## MACRO TRENDS



**Circularity**



**Mobility**



**Modern Living**

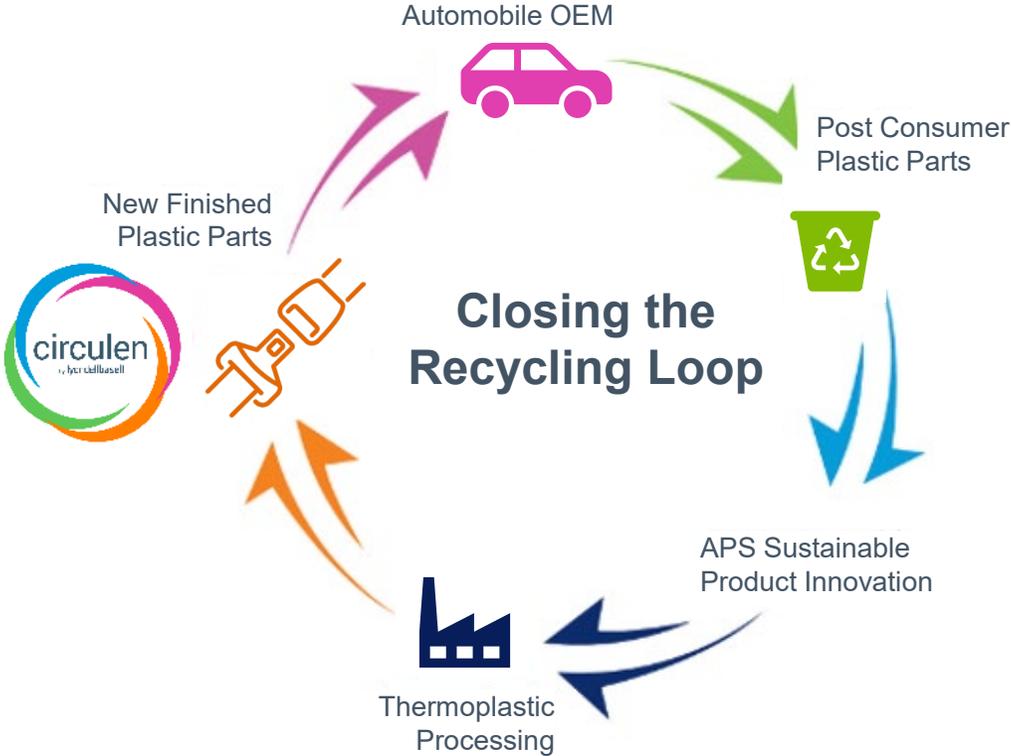
# ACCELERATING GROWTH THROUGH CIRCULARITY

APS is uniquely positioned to leverage macro trends in circularity



## CIRCULARITY

- Majority of customers and brand owners making recycling target commitments
- Mandates emerging driving content requirements for end products
- Growing focus from customers on greenhouse gas emissions reduction and sustainable solutions
- Supply scarcity enabling a “green” premium



1. Project count and percentages include projects from other components of the growth funnel such as mobility and modern living, therefore, total percentage is >100%.

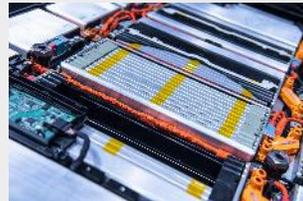
# PROVIDING SOLUTIONS FOR MOBILITY AND MODERN LIVING

Growth in global population and a rising middle class accelerating trends, increasing demand for our innovative materials



## MOBILITY

- Global focus on lightweighting vehicles
- Rising need for EVs creating opportunities in battery systems, charging ports and thermal cooling
- Investments in charging station infrastructure
- 3% annualized growth rate in automotive coupled with 1% uplift from compounded material penetration<sup>1</sup>



## MODERN LIVING<sup>2</sup>

- Consistently growing need for products within food packaging, personal care and hygiene as global populations grow in developing markets
- Packaging designed for circularity
- Energy production and storage
- Agricultural productivity



1. Source: IHS Autobuild.

2. Includes packaging, consumer goods, agriculture, electrical & electronics, appliances and healthcare.

3. Project count and percentages include projects from other components of the growth funnel such as circularity and mobility, therefore, total percentage is >100%.

# INDUSTRY LEADING BREADTH OF COMPOUND PRODUCTS AND ENGINEERED PLASTICS SOLUTIONS

We are a leading solutions provider well-positioned to drive significant growth

## COMPETITIVE ADVANTAGES

Industry-leading  
Global Scale

Backward  
Integration  
in Circularity

Best-in-class  
Breadth of  
Offering

Superior  
Product  
Performance

## ENABLING ADVANCED APPLICATIONS AND END USES



### Mold-in-Color

Metallic-like parts to eliminate painting, lightweight, reduce carbon intensity, and enhance appearance



### “Save 10” Initiative

Help automotive customers meet their CO<sub>2</sub> requirements (EU) and CAFÉ requirements (U.S.) to eliminate 10 kg of vehicle mass



### Energy Efficiency

Highly innovative products to increase natural gas recovery with acute focus on environmental impact and responsibility



### Circularity

Formulation know-how to match customer requirements with recycled polymer content

# TRANSFORMING APS

Unlocking the ability to deliver its full potential of \$500 MM in EBITDA by 2027

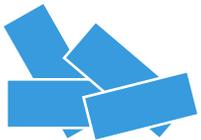
## BUILDING A HIGH-PERFORMING BUSINESS

### Previous Business Model

#### Focus on Costs & Integration



Lacked focus on foundational building blocks



Building blocks of unique strengths

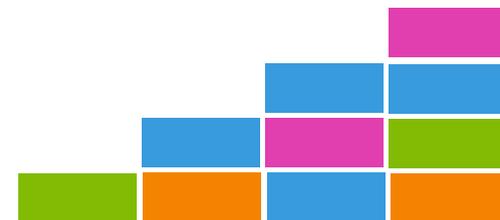


Building blocks of systems and processes disjointed

### New Business Model

#### Focus on Future Growth

- Foundation of customer focus for innovative solutions
- Leveraging unique and differentiated strengths in the market
- Increasing collaboration and connectivity between systems and processes to drive efficiencies



Stacking up the building blocks

## TRANSFORMATION KEY TAKEAWAYS

1

Improved **customer service and optimization** of strategic business planning processes

2

Drive **profitable growth** by leveraging our customer relationships and unique global innovation capabilities

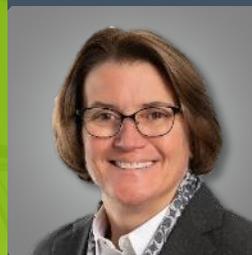
3

Focus on **high growth markets** and macro trends

4

Uniquely positioned to capture value from brand owners and OEMs by being the complete **circular and renewable solution provider**

# DRIVING THE NEXT PHASE OF GROWTH IN INTERMEDIATES & DERIVATIVES



**Kim Foley**

EVP, Intermediates &  
Derivatives and  
Refining

# INTERMEDIATES & DERIVATIVES SNAPSHOT

Stable cash generation with transformational growth starting in 2023 from world's largest propylene oxide plant

**\$13 B**

REVENUE  
2022

**\$1.9 B**

EBITDA  
2022

**2,100**

EMPLOYEES

**#1**

IN LOW-COST  
PROPYLENE OXIDE  
TECHNOLOGIES



## COMPETITIVE ADVANTAGES

### CONTINUOUS INNOVATION

- Innovating to extend the advantage of our industry-leading propylene oxide technologies

### OPERATIONAL EXCELLENCE

- Industry-leading safety performance

### GLOBAL PORTFOLIO OPTIMIZATION

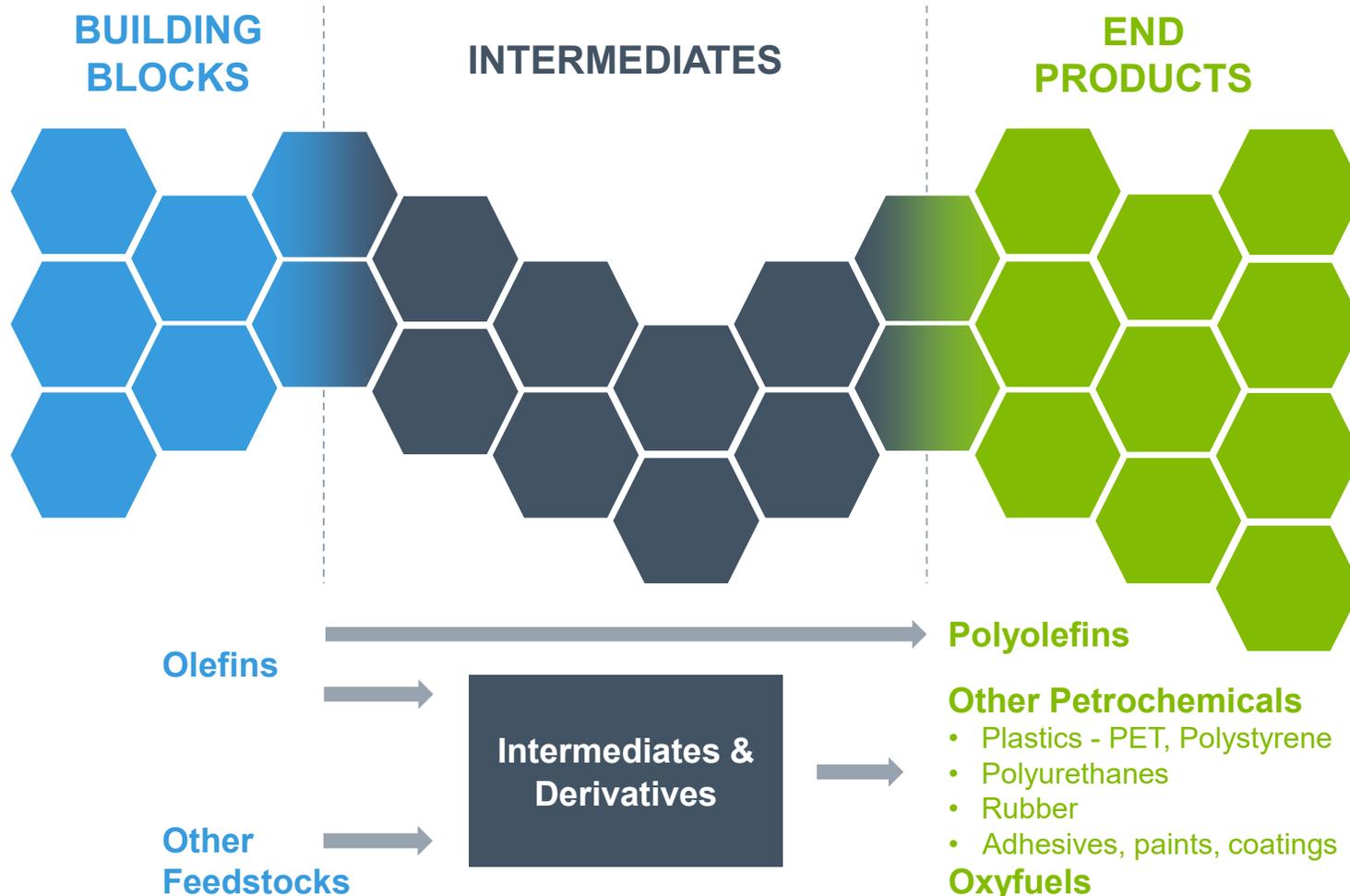
- Balancing feedstock advantages with localized support

### ADVANCING SUSTAINABILITY

- Increasing circular and renewable content in our products
- Executing targeted greenhouse gas emissions reductions

# WHAT IS INTERMEDIATES & DERIVATIVES?

Provides critical link from olefins to polymers and other diverse applications



## KEY MACRO TRENDS

Urbanization



Energy Efficiency



Clean Air



## CHARACTERISTICS

- Global merchant seller of intermediate chemicals
- Provides vital intermediates in more complex chemical value chains
- Naturally diversified across almost every end market
- Strong and stable cash generation

## DIFFERENTIATIONS

- Continuous process innovation with advantaged low-cost proprietary technology in 1<sup>st</sup> or 2<sup>nd</sup> quartile cost positions
- Serve diversified end markets
- Capability to reduce carbon intensity through circular and/or renewable content

# DIVERSE PRODUCT PORTFOLIO DELIVERS RESILIENT PERFORMANCE

Serving our customers across a wide variety of attractive markets

## CORE GROWTH DRIVER

## COST-ADVANTAGED CO-PRODUCTS

## OPTIMIZED FOR CASH GENERATION

### Propylene Oxide & Derivatives (PO&D)



4% Demand Growth<sup>2</sup>

### Oxyfuels & Related Products



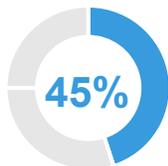
3% Demand Growth<sup>2</sup>

### Intermediate Chemicals (including styrene, acetyls, methanol and ethylene oxide & derivatives)



3% Demand Growth<sup>2</sup>

% of I&D EBITDA<sup>1</sup>



Bedding, furniture, appliances, insulation, coatings, electronics



High octane, clean burning gasoline component; tires, lubricants



Adhesives, coatings, paints, films, safety glass, solar panels

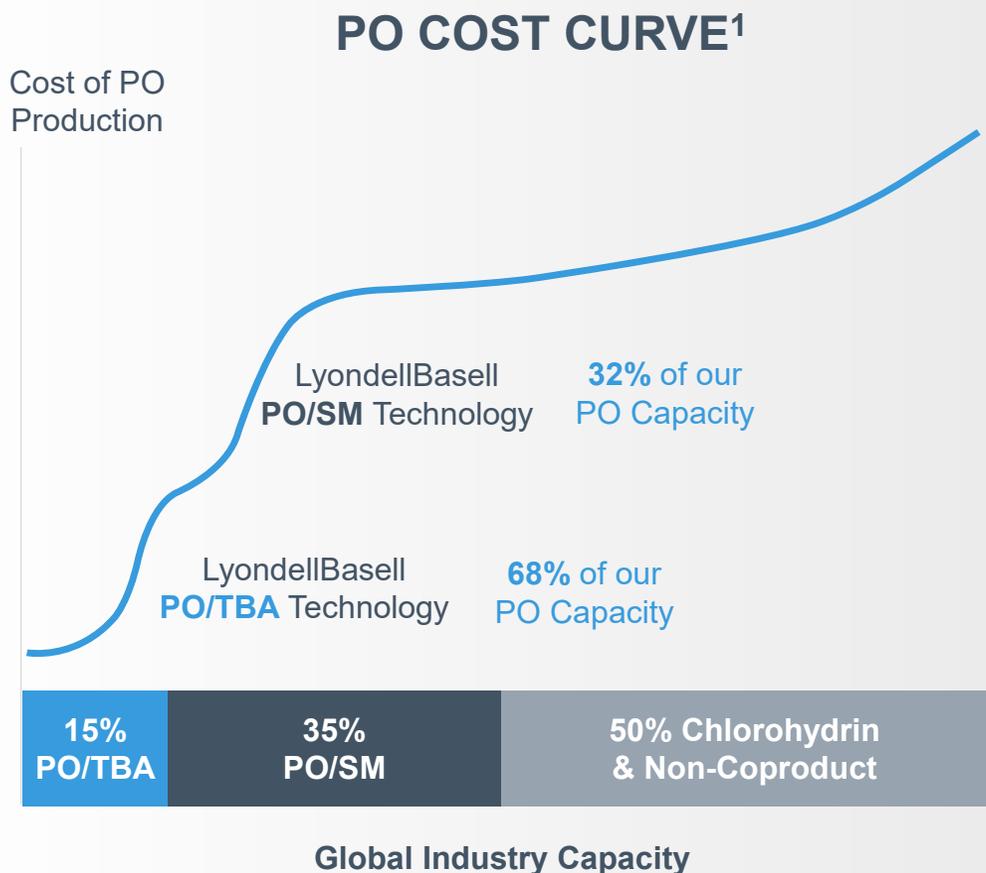
Clothing, bottles, coolants, detergents, coatings

1. Average percentage contribution to total I&D EBITDA from 2013 – 2022.

2. Average global demand growth from 2022 – 2030. Sources for demand growth: industry consultants and LyondellBasell.

# PROPYLENE OXIDE IS A CORE BUSINESS

Advantaged technologies and feedstocks with operational and commercial excellence providing platform for growth



## STRATEGIC ADVANTAGES

### Leading Technology

Our assets are 1<sup>st</sup> or 2<sup>nd</sup> quartile with lowest cost PO technologies

### Low-cost Feedstock

Benefit from shale-advantaged butane, ethylene, and propylene feedstocks with our U.S. Gulf Coast assets

### Operational and Commercial Excellence

World-class safety culture, 97% reliability across our operated PO assets in 2022 and experienced global business team



# LEVERAGING LEADING TECHNOLOGY TO GROW AND UPGRADE THE CORE

We are growing our global PO capacity by ~50% in 2022-2023 with our new PO/TBA plant and China JV

## GROW & UPGRADE THE CORE



### Starting up our new PO/TBA capacity

- Utilizes **1<sup>st</sup> quartile technology** to meet growing global demand for PO
- Takes advantage of **low-cost** butane feedstock to make clean-burning oxyfuels
- Expecting **~50% of 470 KT** PO full-year nameplate capacity during 2023 as plant ramps up

- Acetyls reliability improvements and debottlenecks provide **~\$100MM recurring annual EBITDA<sup>1</sup>** by 2027
- Successful startup of **50:50 PO/SM JV** in China in January 2022
- Progressing **further JV opportunities** for PO and derivatives in China and the Middle East
- **Styrene** growth through our PO/SM technology in select markets

## STEP UP PERFORMANCE & CULTURE



- **High return, quick payback** projects within our value enhancement program
- Renewed efforts on Customer and Commercial Excellence activities aimed at **optimizing pricing and margin**



# OPTIMIZING OUR PORTFOLIO TO DRIVE VALUE

## Exploring strategic alternatives for ethylene oxide & derivatives (EO&D)



EO&D production facilities at the Bayport Underwood Plant (Pasadena, TX)

	ETHYLENE OXIDE	ETHYLENE GLYCOL	GLYCOL ETHERS	OTHER
Annual Nameplate Capacity	CRUDE EO: 385 KTA HIGH PURITY EO: 180 KTA	GLYCOLS: 295 KTA	E-SOLVENTS: 136 KTA	ACETATES

# ~\$85 MM

EO&D EBITDA  
~1% of LyondellBasell EBITDA<sup>1</sup>

Attractive assets, but not a business where LyondellBasell seeks a leading position

- Consistent cash generating assets
- Global product demand expected to grow in-line with GDP<sup>2</sup>
- Assets that provide scale for participants in the EO and downstream derivatives markets
- Fully integrated platform with access to cost advantaged feedstocks and logistics networks
- Well maintained and highly reliable assets with a flexible and diverse product slate



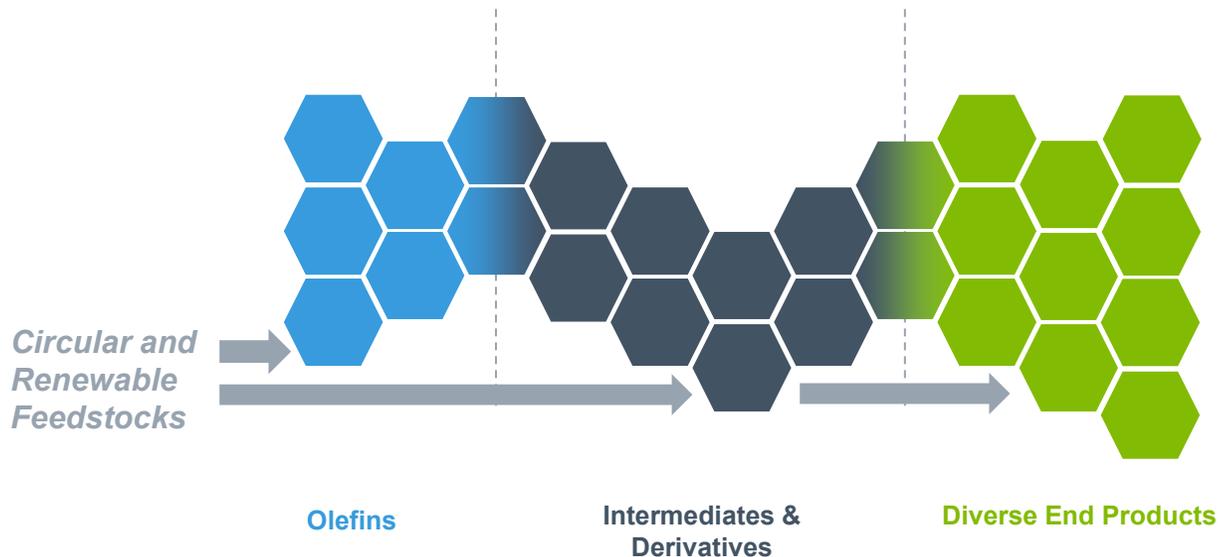
# ENABLING A SUSTAINABLE FUTURE

Active programs in place to advance sustainability and meet customer needs

Providing value to our customers by executing and delivering:



## LOW CARBON SOLUTIONS IN PRACTICE



## EXAMPLES AND TARGETS



2 MM tons of bio-ETBE sold globally in 2022



First sales of renewable chemical products (styrene) in 2022



Developing circular and renewable targets for 2030, in addition to oxyfuels

# 2027 GROWTH TARGETS

I&D poised to deliver ~40% EBITDA growth<sup>1</sup> over the next five years

(USD, millions)



1. Relative to 2022 EBITDA following portfolio normalizations.

2. Portfolio normalizations reflect a 2022 year-end asset portfolio with 2013-2022 historical average margins and operating rates.

3. 2027 Normalized EBITDA reflects 2013-2022 historical average margins and operating rates. Please see Appendix for additional information on Normalized EBITDA.

## I&D GROWTH FUNDAMENTALS

**Grow & Upgrade the Core** **\$500 MM**

- Growing and upgrading the core with transformational PO/TBA capacity, value enhancement program (including debottlenecks and improved reliability) and JVs, net of M&A

**Step Up Performance & Culture** **\$100 MM**

- Value enhancement program (including energy and cost saving measures) along with a renewed focus on customer and commercial excellence

# KEY TAKEAWAYS

1

Propylene oxide is Core to our strategy with healthy market growth rates above GDP

2

Market leader with the lowest cost technologies, global feedstock advantages and unparalleled expertise

3

Serve diverse global end markets that provide stable cash generation with moderate cyclicality

4

Aim to deliver a 40% increase in EBITDA<sup>1</sup> by 2027

# DISCIPLINED FINANCIAL MANAGEMENT ENABLING VALUE CREATION



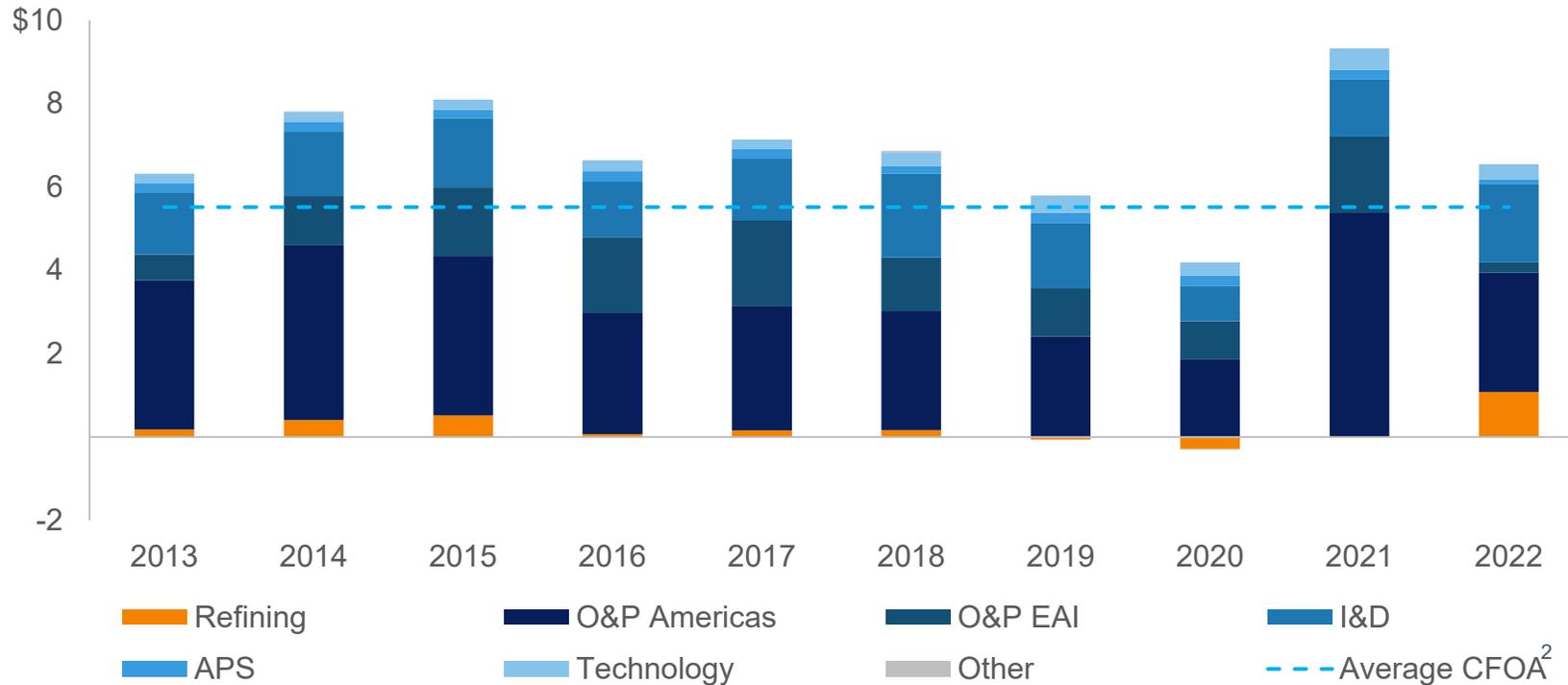
**Michael  
McMurray**

Chief Financial  
Officer

# HISTORICAL FINANCIAL PERFORMANCE

Resilient portfolio with significant cash generation and efficient conversion

EBITDA ex. identified items<sup>1</sup>  
USD, billions



**\$5.5 B**

Cash from operating activities

2013–2022 average



**~80%**

Cash conversion<sup>3</sup>

2013–2022 average

Established track-record of delivering strong results through-cycle

1. Identified items include adjustments for lower of cost or market (“LCM”), impairments and refinery exit costs.

2. Average CFOA is the average 2013-2022 cash from operating activities.

3. Cash conversion equals average 2013-2022 cash from operating activities divided by EBITDA excluding LCM and impairment.

# STRONG INVESTMENT GRADE BALANCE SHEET

Disciplined financial management supporting our capital allocation priorities



	lyondellbasell	Diversified Chemicals <sup>3</sup>	Specialty Chemicals <sup>3</sup>	Commodity Chemicals <sup>3</sup>
Leverage (Net Debt to EBITDA) <sup>2</sup>	1.4x	2.0x	2.5x	1.5x
Weighted Average Maturity (Years) <sup>4</sup>	17.5	5.4	5.1	6.3

1. Free cash flow equals cash from operating activities minus capital expenditures.

2. Leverage is net debt to EBITDA excluding LCM and impairment for LyondellBasell and net debt to adjusted EBITDA for diversified chemicals, specialty chemicals and commodity chemicals as of December 31, 2022. Net debt is total debt less cash and cash equivalents, restricted cash and short-term investments.

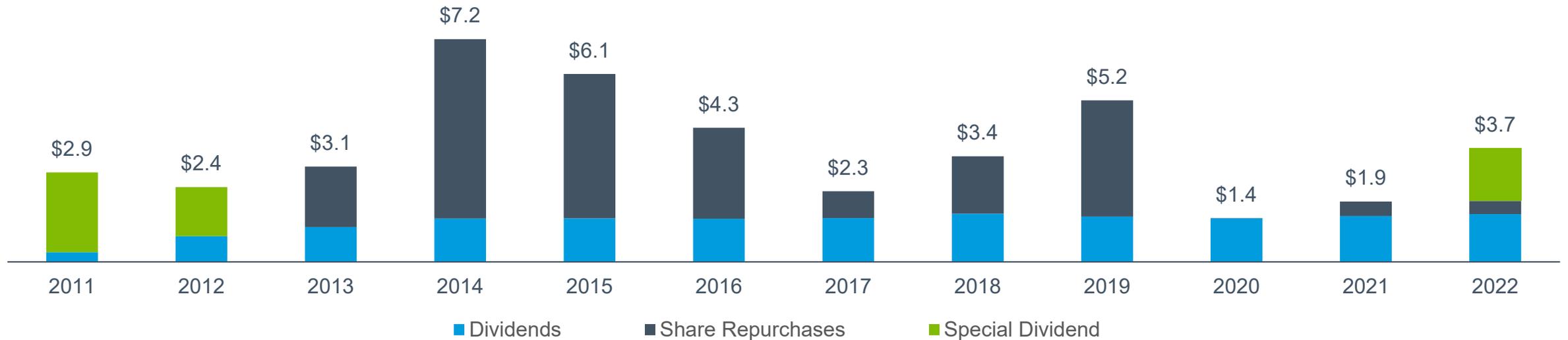
3. Diversified chemicals include BASF, Celanese, Eastman and Huntsman; Specialty chemicals include Albemarle, Avient and PPG; Commodity chemicals include Cabot, Chemours, Covestro, Dow, Methanex, Olin, Orion, Trinseo and Westlake.

4. Weighted average maturity of corporate bonds as of February 28, 2023.

# EXTENDING OUR TRACK RECORD OF RETURNING CAPITAL

Substantial capital returns for shareholders expected to continue

## RETURNED **\$44 B** TO SHAREHOLDERS in Dividends and Share Repurchases Since 2011



**5%** Dividend yield  
As of February 28, 2023

**12<sup>th</sup>** Consecutive year of  
annual dividend growth

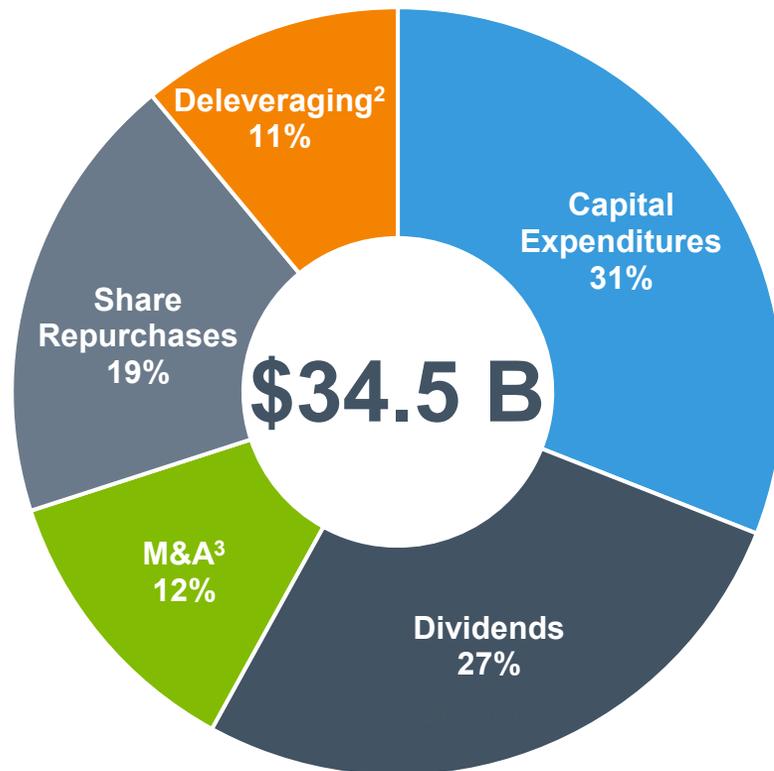
**22%** Dividend per share CAGR  
2011 through 2022

# DISCIPLINED CAPITAL ALLOCATION FRAMEWORK

Targeting payout of approximately 70% of future free cash flow<sup>1</sup> to shareholders

## CAPITAL ALLOCATION PROFILE

(2018-2022)



## PRIORITIES

- 1 Sustaining CAPEX
- 2 Progressive dividend
- 3 Organic growth
- 4 Capital returns for shareholders and M&A

1. Free cash flow is cash from operating activities minus capital expenditures.

2. 2021 deleveraging efforts.

3. M&A primarily includes acquisition of A. Schulman and 50% equity interests in Louisiana Integrated Polyethylene (Sasol) JV, Bora JV and China PO/SM JV.

# NEW STRATEGY DRIVING FOCUS, DIFFERENTIAL GROWTH AND VALUE CREATION

Positioning LyondellBasell to deliver sustainable and profitable long-term growth



**Grow &  
Upgrade  
the Core**

Shaping our portfolio to leverage strengths, support growth, increase resiliency and drive higher returns

**\$1.8 B**

Incremental  
Normalized EBITDA<sup>1</sup>  
by 2027



**Build a Profitable  
Circular & Low  
Carbon Solutions  
Business**

Building a leading CLCS business at scale to meet current and growing future demand for sustainable solutions

**\$0.5 B**

Incremental  
Normalized EBITDA<sup>1</sup>  
by 2027



**Step Up  
Performance  
& Culture**

Unlocking significant opportunities across the portfolio by reshaping culture to focus on continuous value creation

**\$0.7 B**

Incremental  
Normalized EBITDA<sup>1</sup>  
by 2027

# GROWING AND UPGRADING THE CORE

Distilling and building on greatest legacy strengths to define our future Core

## Strategic Criteria to Define Core Assets

- 1 **Leading** market positions
- 2 **Growing** end markets
- 3 **Attractive returns** above our cost of capital
- 4 Access to **advantaged feedstocks** and, increasingly, **circular and renewable feedstocks**
- 5 Strategic focus on **Circular & Low Carbon Solutions**

## EXAMPLES

- Louisiana Integrated Polyethylene JV
- New PO/TBA capacity
- New plastic waste sorting and recycling facilities
- Planned exit of refining business
- Strategic review of ethylene oxide & derivatives business

# OUR APPROACH TO GROWTH THROUGH M&A AND JVs

Sharpening our focus to extend our advantages with growth

## LEVERAGING OUR STRENGTHS

- Global network and capabilities
- Operational and commercial excellence
- Resilient portfolio supported by technology enabled solutions
- Disciplined financial policies and investment grade balance sheet
- Strong governance, oversight and leadership

**INVESTMENT  
RETURN TARGET**

**>12%  
IRR**

**Accretive  
to earnings**

**Maintain strong  
investment grade rating**

## AREAS OF FOCUS



**Growing and  
upgrading the Core**



**Growth platform  
for Circular & Low  
Carbon Solutions**



**Expanding access  
to advantaged and  
sustainable feedstocks**



**Technology enabled  
growth**

**Targeting strong strategic fit to maximize returns**

# LONG-TERM FINANCIAL GOALS

Positioned to grow and improve, guided by our focused strategy

	2022	2025 Normalized EBITDA <sup>1</sup>	2027 Normalized EBITDA <sup>1</sup>
<b>EBITDA</b>	<b>\$6.3 B</b>	<b>\$9 B</b>	<b>\$10 B</b>
<b>Cash Conversion<sup>2</sup></b>	<b>96%</b>	<b>80%</b>	<b>80%</b>
<b>Diluted EPS<sup>3</sup></b>	<b>\$11.81</b>	<b>\$19</b>	<b>\$23</b>

## CREATING A FOCUSED PORTFOLIO POISED TO GENERATE HIGHER RETURNS

- Build on enduring competitive advantages
- Focus on areas where we have leadership positions
- Cement our position as our customer's preferred supplier
- Establish a profitable and rapidly growing leadership position in Circular & Low Carbon Solutions

1. 2025 and 2027 Normalized EBITDA reflects 2013-2022 historical average margins and operating rates. Please see Appendix for additional information on Normalized EBITDA.

2. 2022 cash conversion equals cash from operating activities divided by EBITDA excluding LCM and impairment. 2025 and 2027 cash conversion rates are targets based on average 2013-2022 cash conversion.

3. 2025 and 2027 diluted EPS are derived from estimated net income assuming a 20% tax rate and 70% of free cash flow allocated to share repurchases and a progressively growing quarterly dividend.

# FINANCIAL PRINCIPLES

Policies, targets and assumptions underpinning our new strategy



**GROW & UPGRADE  
THE CORE**



**BUILD A PROFITABLE  
CIRCULAR & LOW CARBON  
SOLUTIONS BUSINESS**



**STEP UP PERFORMANCE &  
CULTURE**



Expect annual investments in capital expenditures to average \$2 B from 2023-2025 and remain within historical ranges through 2027



Targeting ~70% of free cash flow to be allocated toward shareholder returns



Plan to extend our 12-year track record of annual growth for our regular dividend



Expect to continue converting ~80% of EBITDA into cash from operating activities



Seek to maintain minimum of \$1 B to \$1.5 B in cash and short-term investments



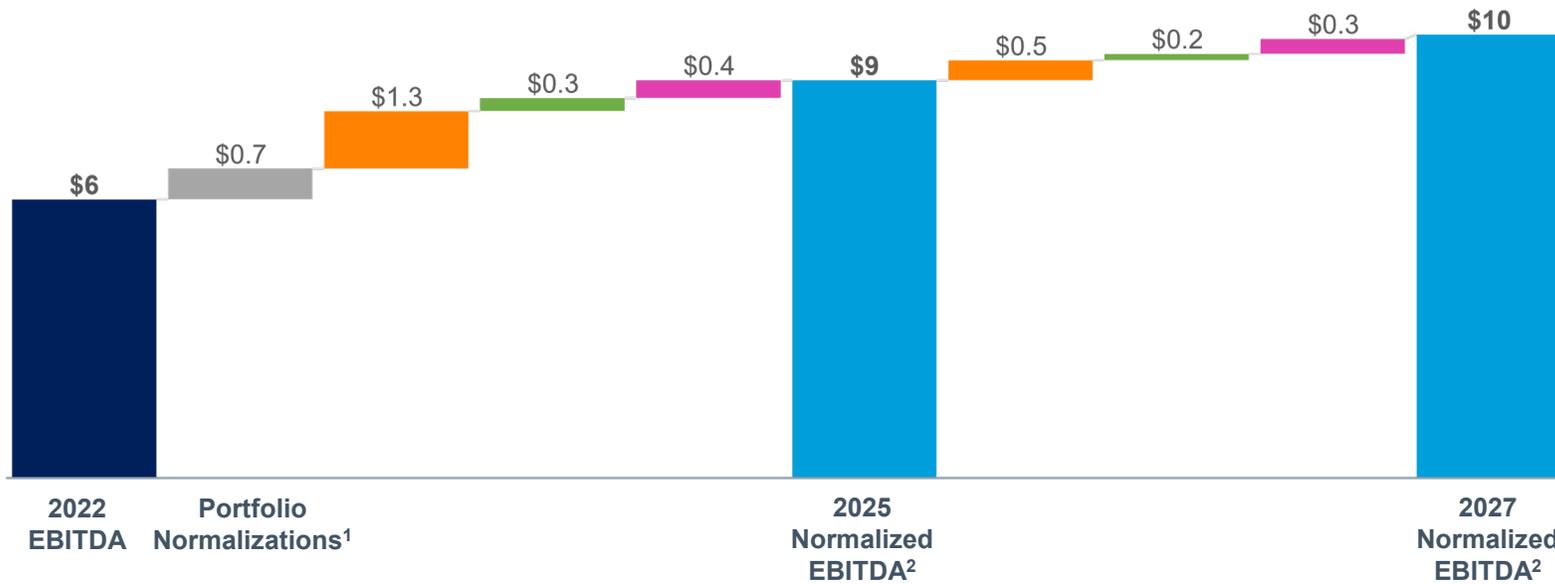
Target net debt to EBITDA ratios below 2.5x to support our investment grade credit ratings



Anticipate additional share repurchases and potential special dividends through 2027

# 2027 GROWTH TARGETS

(USD, billions)



## Grow & Upgrade the Core

PO/TBA, VEP volume growth, profit generating CAPEX, net M&A



## Circular & Low Carbon Solutions Growth and Emission Reduction Savings



## Step Up Performance & Culture

VEP margin improvement, CCE, Advanced Polymer Solutions improvement

1. Portfolio normalizations reflect a 2022 year-end asset portfolio with 2013-2022 historical average margins and operating rates.
2. 2025 and 2027 Normalized EBITDA reflects 2013-2022 historical average margins and operating rates. Please see Appendix for additional information on Normalized EBITDA.
3. 2027 cash from operating activities is estimated based on 2027 Normalized EBITDA, assuming 80% cash conversion target based on average 2013-2022 cash conversion.
4. 2027 diluted EPS is derived from estimated net income assuming a 20% tax rate and 70% of free cash flow allocated to share repurchases and a progressively growing quarterly dividend.

## CASH FROM OPERATING ACTIVITIES<sup>3</sup>

(USD, billions)



## DILUTED EPS<sup>4</sup>



# KEY TAKEAWAYS

1

Confident in our strategy and its ability to drive focus, differential growth and value creation

2

Resilient cash generation and investment grade balance sheet underpins our strategic actions

3

Disciplined financial principles and capital allocation priorities drive growth, value and the continued delivery of shareholder returns

4

Unlocking significant opportunities across the portfolio by evolving our culture to focus on continuous value creation

# CONCLUDING REMARKS



**Peter Vanacker**

Chief Executive  
Officer

# OUR STRATEGY – DIFFERENTIATED, IMPACTFUL AND ACHIEVABLE

Simultaneous, focused and synergetic moves that deliver a more profitable and sustainable growth engine



## STRATEGY SUPPORTED BY:

Experienced leadership team, optimized organizational structure & ownership culture

Strong balance sheet and cash flow

Advantaged cost position and global scale

Value enhancement program

Comprehensive capital allocation plan with emphasis on returns discipline

# APPENDIX

# GLOSSARY OF TERMS

**Circular & Low Carbon Solutions Growth and Emission Reduction Savings** includes circular and low carbon solutions growth and energy cost savings associated with greenhouse gas (GHG) emission reduction projects.

**Grow & Upgrade the Core** includes PO/TBA, value enhancement program (VEP) volume growth, profit generating CAPEX and net M&A based on 2013-2022 historical average margins and operating rates.

**Normalized EBITDA** equals the sum of 2022 EBITDA, Portfolio Normalizations, Grow & Upgrade the Core, Circular and Low Carbon Solutions Growth & Emission Reduction Saving and Step Up Performance & Culture. See slides 18, 60, 74, 89, 96, 99, 101 and 104.

**Portfolio Normalizations** reflect a 2022 year-end asset portfolio with 2013-2022 historical average margins and operating rates.

**Step Up Performance & Culture** includes VEP margin improvement, customer & commercial excellence (CCE) and Advanced Polymer Solutions improvement based on 2013-2022 historical average margins and operating rates.

# INFORMATION RELATED TO FINANCIAL MEASURES

This presentation makes reference to certain “non-GAAP” financial measures as defined in Regulation G of the U.S. Securities Exchange Act of 1934, as amended.

We report our financial results in accordance with U.S. generally accepted accounting principles (“U.S. GAAP”), but believe that certain non-GAAP financial measures provide useful supplemental information. Non-GAAP financial measures should be considered as a supplement to, and not as a substitute for, or superior to, the financial measures prepared in accordance with GAAP. We also present certain non-GAAP measures exclusive of identified items. Identified items include adjustments for “lower of cost or market” (“LCM”), impairments and refinery exit costs. Our inventories are stated at the lower of cost or market. Cost is determined using the last-in, first-out (“LIFO”) inventory valuation methodology, which means that the most recently incurred costs are charged to cost of sales and inventories are valued at the earliest acquisition costs. Fluctuation in the prices of crude oil, natural gas and correlated products from period to period may result in the recognition of charges to adjust the value of inventory to the lower of cost or market in periods of falling prices and the reversal of those charges in subsequent interim periods, within the same fiscal year as the charge, as market prices recover. Property, plant and equipment are recorded at historical costs. If it is determined that an asset or asset group’s carrying value exceeds fair value, an impairment charge is recognized to write the asset down to its’ estimated fair value. In April 2022 we announced our decision to cease operation of our Houston Refinery no later than the end of 2023. In connection with exiting the refinery business, we began to incur costs primarily consisting of accelerated lease amortization costs, personnel related costs, accretion of asset retirement obligations and depreciation of asset retirement costs.

These measures as presented herein, may not be comparable to similarly titled measures reported by other companies due to differences in the way the measures are calculated.

Our non-GAAP measures are as follows:

Cash conversion – net cash provided by operating activities divided by EBITDA excluding LCM and impairment. This measure is commonly used by investors to evaluate liquidity.

EBITDA – income from continuing operations plus interest expense (net), provision for (benefit from) income taxes, and depreciation and amortization. This measure provides useful supplemental information to investors regarding the underlying business trends and performance of our ongoing operations and is useful for period-over-period comparisons of such operations. EBITDA should not be considered an alternative to profit or operating profit for any period as an indicator of our performance, or as an alternative to operating cash flows as a measure of our liquidity.

EBITDA excluding identified items – EBITDA less identified items. This measure provides useful supplemental information to investors regarding the underlying business trends and performance of our ongoing operations and is useful for period-over-period comparisons of such operations. EBITDA excluding identified items should not be considered an alternative to profit or operating profit for any period as an indicator of our performance, or as an alternative to operating cash flows as a measure of our liquidity.

EBITDA margin – EBITDA excluding identified items divided by revenues. This measure provides useful supplemental information to investors regarding the underlying business trends and performance of our ongoing operations and is useful for period-over-period comparisons of such operations.

Free cash flow – net cash provided by operating activities less capital expenditures. This measure is commonly used by investors to evaluate liquidity.

# INFORMATION RELATED TO FINANCIAL MEASURES (CONTINUED)

Net debt – total debt less cash and cash equivalents, restricted cash and short-term investments. This measure is commonly used by investors to evaluate liquidity.

Net debt to EBIDA excluding LCM and impairment – net debt divided by EBITDA excluding LCM and impairment. This measure is commonly used by investors to evaluate liquidity.

Net income excluding identified items – net income less identified items. This measure provides useful supplemental information to investors regarding the underlying business trends and performance of our ongoing operations and is useful for period-over-period comparisons of such operations. Net Income excluding identified should not be considered an alternative to profit or operating profit for any period as an indicator of our performance.

Normalized EBITDA – EBITDA assuming Portfolio Normalizations and reflecting benefits associated with the following strategic initiatives: Grow & Upgrade the Core, Circular & Low Carbon Solutions Growth and Emission Reduction Savings and Step Up Performance & Culture.

Return on invested capital (ROIC) – income from continuing operations, adjusted for interest expense, net of tax and items affecting comparability between periods divided by a two-year average of invested capital adjusted for items affecting comparability. This measure is commonly used by investors to evaluate the efficiency at which a company's capital is allocated to generate income during a particular period.

Certain forward looking non-GAAP measures can not be reconciled as discussed below:

## **Circular & Low Carbon Solutions (CLCS) Presentation**

CLCS EBITDA is incremental to LyondellBasell's fossil-based O&P Americas and O&P EAI annual EBITDA. 2027 CLCS EBITDA is included in the 2027 Normalized EBITDA for O&P Americas and O&P EAI. 2030 CLCS EBITDA is incremental to the 2022 baseline. CLCS EBITDA cannot be reconciled to net income due to the inherent difficulty in quantifying certain amounts that are necessary for such reconciliation at the business unit level, including adjustments that could be made for interest expense (net), provision for (benefit from) income taxes and depreciation & amortization, the amounts of which, based on historical experience, could be significant. See slides 8, 56, 65 and 70.

## **Intermediates & Derivatives (I&D) Presentation**

Acetyls EBITDA and EO&D EBITDA cannot be reconciled to net income due to the inherent difficulty in quantifying certain amounts that are necessary for such reconciliation at a business unit level, including adjustments that could be made for interest expense (net), provision for (benefit from) income taxes and depreciation & amortization, the amounts of which, based on historical experience, could be significant. See slides 86 and 87.

## **Advanced Polymer Solutions (APS), Financial, Intermediates & Derivatives (I&D) and Olefins & Polyolefins (O&P) Presentations**

Incremental Normalized EBITDA and Normalized EBITDA cannot be reconciled to net income due to the inherent difficulty in quantifying certain amounts that are necessary for such reconciliation at the segment level, including adjustments that could be made for interest expense (net), provision for (benefit from) income taxes and depreciation & amortization, the amounts of which, based on historical experience, could be significant. See slides 60, 74, 89, 96 and 104.

## Reconciliation of Net Income to EBITDA Including and Excluding Identified Items

	Year Ended December 31,									
<u>Millions of dollars</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
Net income	\$ 3,853	\$ 4,168	\$ 4,474	\$ 3,837	\$ 4,877	\$ 4,690	\$ 3,397	\$ 1,427	\$ 5,617	\$ 3,889
Loss from discontinued operations, net of tax	7	4	5	10	18	8	7	2	6	5
Income from continuing operations	3,860	4,172	4,479	3,847	4,895	4,698	3,404	1,429	5,623	3,894
Provision for (benefit from) income taxes	1,136	1,540	1,730	1,386	598	613	648	(43)	1,163	882
Depreciation and amortization <sup>(a)</sup>	1,021	1,019	1,047	1,064	1,174	1,241	1,312	1,385	1,393	1,267
Interest expense, net	294	319	277	305	467	315	328	514	510	258
add: Identified items										
LCM charges	—	760	548	29	—	—	33	16	—	—
Impairments <sup>(b)</sup>	—	—	—	—	—	—	—	582	624	69
Refinery exit costs <sup>(c)</sup>	—	—	—	—	—	—	—	—	—	157
EBITDA excluding identified items	6,311	7,810	8,081	6,631	7,134	6,867	5,725	3,883	9,313	6,527
less: Identified items										
LCM charges	—	(760)	(548)	(29)	—	—	(33)	(16)	—	—
Impairments <sup>(b)</sup>	—	—	—	—	—	—	—	(582)	(624)	(69)
Refinery exit costs <sup>(c)</sup>	—	—	—	—	—	—	—	—	—	(157)
EBITDA	<u>\$ 6,311</u>	<u>\$ 7,050</u>	<u>\$ 7,533</u>	<u>\$ 6,602</u>	<u>\$ 7,134</u>	<u>\$ 6,867</u>	<u>\$ 5,692</u>	<u>\$ 3,285</u>	<u>\$ 8,689</u>	<u>\$ 6,301</u>

(a) Depreciation and amortization includes depreciation of asset retirement costs of \$30 million expensed during the year ended December 31, 2022, in connection with exiting the Refining business.

(b) The years ended December 31, 2020 and 2021 reflects impairment charges related to the Houston refinery. The year ended December 31, 2022 reflects impairment charges related to the sale of our Australian polypropylene business.

(c) Refinery exit costs, include accelerated lease amortization costs, personnel related costs and accretion of asset retirement obligations, of \$91 million, \$64 million and \$2 million, respectively, during the year ended December 31, 2022.

## Reconciliation of Net Income to Net Income Excluding Identified Items

---

	<b>Year Ended December 31, 2022</b>
<b>Millions of dollars</b>	
Net income	\$ 3,889
add: Identified items	
Impairments, after-tax <sup>(a)</sup>	69
Refinery exit costs, after-tax <sup>(b)</sup>	144
Net income excluding identified items	<u>\$ 4,102</u>

---

(a) The year ended December 31, 2022 reflects impairment charges related to the sale of our Australian polypropylene business.

(b) Refinery exit costs, after-tax, include accelerated lease amortization costs, personnel related costs, accretion of asset retirement obligations and depreciation of asset retirement costs, of \$70 million, \$49 million, \$2 million and \$23 million, respectively, for the year ended December 31, 2022.

**Reconciliation of EBITDA to EBITDA Excluding Identified Items by Segment (unaudited)**

Millions of dollars	Year Ended December 31,									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>EBITDA:</b>										
Olefins & Polyolefins - Americas	\$ 3,573	\$ 3,911	\$ 3,661	\$ 2,875	\$ 2,981	\$ 2,851	\$ 2,380	\$ 1,852	\$ 5,370	\$ 2,865
Olefins & Polyolefins - EAI	623	1,141	1,615	1,824	2,050	1,288	1,160	919	1,830	178
Intermediates & Derivatives	1,492	1,459	1,475	1,333	1,490	2,011	1,557	833	1,378	1,872
Advanced Polymer Solutions	216	225	210	245	233	186	248	243	231	115
Refining	182	65	342	72	157	167	(65)	(871)	(624)	921
Technology	232	232	243	262	223	328	411	324	514	366
Other	(7)	17	(13)	(9)	—	36	1	(15)	(10)	(16)
<b>EBITDA</b>	<b>\$ 6,311</b>	<b>\$ 7,050</b>	<b>\$ 7,533</b>	<b>\$ 6,602</b>	<b>\$ 7,134</b>	<b>\$ 6,867</b>	<b>\$ 5,692</b>	<b>\$ 3,285</b>	<b>\$ 8,689</b>	<b>\$ 6,301</b>
<b>Add: Identified items</b>										
<b>Impairments:</b>										
Olefins & Polyolefins - EAI	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 69
Refining	—	—	—	—	—	—	—	582	624	—
<b>Refinery exit costs:</b>										
Refining	—	—	—	—	—	—	—	—	—	157
<b>LCM charges:</b>										
Olefins & Polyolefins - Americas	—	279	160	26	—	—	28	3	—	—
Olefins & Polyolefins - EAI	—	44	30	—	—	—	—	—	—	—
Intermediates & Derivatives	—	93	181	—	—	—	—	10	—	—
Advanced Polymer Solutions	—	—	—	3	—	—	5	3	—	—
Refining	—	344	177	—	—	—	—	—	—	—
Total LCM charges	—	760	548	29	—	—	33	16	—	—
Total Identified items	\$ —	\$ 760	\$ 548	\$ 29	\$ —	\$ —	\$ 33	\$ 598	\$ 624	\$ 226
<b>EBITDA excluding Identified items:</b>										
Olefins & Polyolefins - Americas	\$ 3,573	\$ 4,190	\$ 3,821	\$ 2,901	\$ 2,981	\$ 2,851	\$ 2,408	\$ 1,855	\$ 5,370	\$ 2,865
Olefins & Polyolefins - EAI	623	1,185	1,645	1,824	2,050	1,288	1,160	919	1,830	247
Intermediates & Derivatives	1,492	1,552	1,656	1,333	1,490	2,011	1,557	843	1,378	1,872
Advanced Polymer Solutions	216	225	210	248	233	186	253	246	231	115
Refining	182	409	519	72	157	167	(65)	(289)	—	1,078
Technology	232	232	243	262	223	328	411	324	514	366
Other	(7)	17	(13)	(9)	—	36	1	(15)	(10)	(16)
<b>EBITDA excluding Identified items</b>	<b>\$ 6,311</b>	<b>\$ 7,810</b>	<b>\$ 8,081</b>	<b>\$ 6,631</b>	<b>\$ 7,134</b>	<b>\$ 6,867</b>	<b>\$ 5,725</b>	<b>\$ 3,883</b>	<b>\$ 9,313</b>	<b>\$ 6,527</b>

Note: Effective January 1, 2023, our *Catalloy* and polybutene-1 businesses were moved from the Advanced Polymer Solutions segment and integrated into the Olefins and Polyolefins-Americas and Olefins and Polyolefins-Europe, Asia, International segments. The segment information presented above gives effect to this change.

**Components of Cash and Liquid Investments and Total Liquidity**

	<b>December 31, 2022</b>
<b>Millions of dollars</b>	
Cash and cash equivalents and restricted cash	\$ 2,156
Short-term investments	—
Cash and liquid investments	2,156
Availability under Senior Revolving Credit Facility	3,050
Availability under U.S. Receivables Facility	794
Total liquidity	<u>\$ 6,000</u>

**Reconciliation of Net Income to Normalized EBITDA**

	<b>2025 Normalized EBITDA</b>	<b>2027 Normalized EBITDA</b>
<b>Millions of dollars</b>		
Net income	\$ 5,550	\$ 6,260
Provision for income taxes	1,390	1,565
Depreciation and amortization	1,475	1,650
Interest expense, net	585	525
Normalized EBITDA <sup>(a)</sup>	<u>\$ 9,000</u>	<u>\$ 10,000</u>

(a) Normalized EBITDA reflects 2013-2022 historical average margins and operating rates.

**Reconciliation of Total Debt to Net Debt and Calculation of Net Debt to EBITDA excluding LCM and Impairment**

	<b>December 31, 2022</b>
<b>Millions of dollars</b>	
Current maturities of long-term debt	\$ 432
Short-term debt	349
Long-term debt	10,540
Total debt	11,321
Less:	
Cash and cash equivalents	2,151
Restricted cash	5
Short-term investments	—
Net debt	<u>\$ 9,165</u>
Divided by:	
EBITDA excluding LCM and impairment <sup>(a)</sup>	\$ 6,370
Net Debt to EBITDA excluding LCM and impairment <sup>(a)</sup>	<u>1.4</u>

(a) See Reconciliation of net cash provided by operating activities to EBITDA including and excluding LCM and impairment.

## Reconciliation of Net Cash Provided by Operating Activities to EBITDA Including and Excluding LCM and Impairment

Millions of dollars	Year Ended December 31,									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Net cash provided by operating activities	\$ 4,835	\$ 6,048	\$ 5,842	\$ 5,606	\$ 5,206	\$ 5,471	\$ 4,961	\$ 3,404	\$ 7,695	\$ 6,119
Adjustments:										
Depreciation and amortization	(1,021)	(1,019)	(1,047)	(1,064)	(1,174)	(1,241)	(1,312)	(1,385)	(1,393)	(1,267)
Impairments <sup>(a)</sup>	—	—	—	—	—	—	—	(582)	(624)	(69)
Amortization of debt-related costs	(21)	(20)	(16)	(16)	(15)	(14)	(11)	(21)	(35)	(14)
Charges related to repayment of debt	—	—	—	—	(49)	—	—	—	—	—
Share-based compensation	—	—	(53)	(38)	(55)	(39)	(48)	(55)	(66)	(70)
Inventory valuation charges	—	(760)	(548)	(29)	—	—	(33)	(16)	—	—
Equity income (loss), net of distributions of earnings	17	101	54	(18)	12	(18)	(22)	97	146	(344)
Deferred income tax benefit (provision)	46	(177)	(181)	(357)	587	(260)	(209)	(331)	198	(369)
Gain on sale of business and equity method investments	—	—	—	84	108	36	—	—	—	—
Changes in assets and liabilities that used (provided) cash:										
Accounts receivable	64	(358)	(780)	383	521	(433)	(367)	246	1,519	(1,005)
Inventories	151	205	240	(123)	237	141	129	(340)	742	91
Accounts payable	(275)	378	786	(383)	(165)	199	251	(217)	(1,301)	464
Other, net	57	(230)	177	(208)	(336)	848	58	627	(1,264)	353
Net income	3,853	4,168	4,474	3,837	4,877	4,690	3,397	1,427	5,617	3,889
Loss from discontinued operations, net of tax	7	4	5	10	18	8	7	2	6	5
Income from continuing operations	3,860	4,172	4,479	3,847	4,895	4,698	3,404	1,429	5,623	3,894
Provision for (benefit from) income taxes	1,136	1,540	1,730	1,386	598	613	648	(43)	1,163	882
Depreciation and amortization	1,021	1,019	1,047	1,064	1,174	1,241	1,312	1,385	1,393	1,267
Interest expense, net	294	319	277	305	467	315	328	514	510	258
add: LCM charges	—	760	548	29	—	—	33	16	—	—
add: Impairments	—	—	—	—	—	—	—	582	624	69
EBITDA excluding LCM and impairment	6,311	7,810	8,081	6,631	7,134	6,867	5,725	3,883	9,313	6,370
less: LCM charges	—	(760)	(548)	(29)	—	—	(33)	(16)	—	—
less: Impairments	—	—	—	—	—	—	—	(582)	(624)	(69)
EBITDA	\$ 6,311	\$ 7,050	\$ 7,533	\$ 6,602	\$ 7,134	\$ 6,867	\$ 5,692	\$ 3,285	\$ 8,689	\$ 6,301
Average cash from operating activities										\$ 5,519

(a) Reflects impairment charges related to our Houston refinery, recognized in 2020 and 2021, and impairment charges related to the sale of our polypropylene manufacturing facility in Australia, recognized in 2022.

**Calculation of Cash Conversion**

<b>Millions of dollars</b>	<b>Year Ended December 31,</b>										
	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Average</b>
Net cash provided by operating activities	\$ 4,835	\$ 6,048	\$ 5,842	\$ 5,606	\$ 5,206	\$ 5,471	\$ 4,961	\$ 3,404	\$ 7,695	\$ 6,119	\$ 5,519
Divided by:											
EBITDA excluding LCM and impairment <sup>(a)</sup>	\$ 6,311	\$ 7,810	\$ 8,081	\$ 6,631	\$ 7,134	\$ 6,867	\$ 5,725	\$ 3,883	\$ 9,313	\$ 6,370	\$ 6,813
Cash conversion	<u>77 %</u>	<u>77 %</u>	<u>72 %</u>	<u>85 %</u>	<u>73 %</u>	<u>80 %</u>	<u>87 %</u>	<u>88 %</u>	<u>83 %</u>	<u>96 %</u>	<u>81 %</u>

(a) See Reconciliation of net cash provided by operating activities to EBITDA including and excluding LCM and impairment.

## Return on Invested Capital

<u>Millions of Dollars</u>	<u>Year Ended December 31,</u>	
	<u>2021</u>	<u>2022</u>
Net income		\$ 3,889
Loss from discontinued operations, net of tax		5
Income from continuing operations		3,894
Add:		
Interest expense, net		258
Tax effect		(52)
Interest expense, net, after tax		206
Special items effecting comparability:		
Refinery exit costs, after tax <sup>(a)</sup>		144
Total special items		144
Adjusted income from continuing operations		\$ 4,244
Divided by:		
Average adjusted invested capital:		
Shareholders' equity	\$ 11,858	\$ 12,615
Long-term debt	11,246	10,540
Long-term operating lease liabilities	1,649	1,510
Current operating lease liabilities	336	344
Current debt:		
Current maturities of long-term debt	6	432
Short-term debt	362	349
Invested capital	25,457	25,790
Cumulative effect of adjustments, after tax <sup>(b)</sup>	927	1,071
Adjusted invested capital	\$ 26,384	\$ 26,861
2-Yr average adjusted invested capital		\$ 26,623
Return on invested capital		16 %

(a) Refinery exit costs, after-tax, include accelerated lease amortization costs, personnel related costs, accretion of asset retirement obligations and depreciation of asset retirement costs of \$70 million, \$49 million, \$2 million and \$23 million, respectively.

(b) Cumulative effect of adjustments, after tax, include impairments, after tax, of \$446 million and \$481 million recognized in 2020 and 2021, respectively, and refinery exit costs, after tax, recognized in 2022.

## Calculation of Dividends and Share Repurchases

Millions of dollars	Year Ended December 31,												
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Cumulative
Repurchases of Company ordinary shares	\$ -	\$ -	\$ 1,949	\$ 5,788	\$ 4,656	\$ 2,938	\$ 866	\$ 1,854	\$ 3,752	\$ 4	\$ 463	\$ 420	\$ 22,690
Dividends - common stock	313	833	1,127	1,403	1,410	1,395	1,415	1,554	1,462	1,405	1,486	1,542	15,345
Special dividends - common stock	2,580	1,582	-	-	-	-	-	-	-	-	-	1,704	5,866
Dividends and share repurchases	<u>\$ 2,893</u>	<u>\$ 2,415</u>	<u>\$ 3,076</u>	<u>\$ 7,191</u>	<u>\$ 6,066</u>	<u>\$ 4,333</u>	<u>\$ 2,281</u>	<u>\$ 3,408</u>	<u>\$ 5,214</u>	<u>\$ 1,409</u>	<u>\$ 1,949</u>	<u>\$ 3,666</u>	<u>\$ 43,901</u>

## Calculation of Enterprise Value

Millions of dollars (except share data)	February 28, 2023
Market capital:	
Common stock outstanding	326,236,415
Closing share price	\$ 95.99
Market capital	<u>\$ 31,315</u>
	<b>December 31, 2022</b>
Plus:	
Current maturities of long-term debt	\$ 432
Short-term debt	349
Long-term debt	<u>10,540</u>
Total debt	11,321
Less:	
Cash and cash equivalents	2,151
Restricted cash	5
Short-term investments	<u>—</u>
Net Debt	<u>\$ 9,165</u>
Plus:	
Redeemable non-controlling interests	114
Non-controlling interests	14
Enterprise value <sup>(a)</sup>	<u><u>\$ 40,608</u></u>

(a) Enterprise value is based on market capitalization as of February 28, 2023 plus total debt, net of cash and cash equivalents, restricted cash and short-term investments, redeemable non-controlling interests and non-controlling interests as of December 31, 2022.

## Calculation of EBITDA Margin

<u>Millions of dollars</u>	Year Ended December 31,					Average
	2018	2019	2020	2021	2022	
EBITDA excluding identified items <sup>(a)</sup>	\$ 6,867	\$ 5,725	\$ 3,883	\$ 9,313	\$ 6,527	\$ 6,463
Divided by:						
Sale and other operating revenues	\$ 39,004	\$ 34,727	\$ 27,753	\$ 46,173	\$ 50,451	\$ 39,622
EBITDA Margin	18 %	16 %	14 %	20 %	13 %	16 %

(a) See Reconciliation of net Income to EBITDA including and excluding identified items

## Reconciliation of Free Cash Flow

<u>Millions of dollars</u>	Year Ended December 31, 2022
Net cash provided by operating activities	\$ 6,119
Less:	
Capital expenditures	1,890
Free cash flow	\$ 4,229

## Reconciliation Net Income to EBITDA

<u>Millions of dollars</u>	2023 <sup>(a)</sup> Recurring Annual EBITDA	2025 <sup>(a)</sup> Recurring Annual EBITDA
Net income	\$ 115	\$ 575
Provision for income taxes	25	140
Depreciation and amortization	10	35
Interest expense, net	—	—
EBITDA	\$ 150	\$ 750

(a) In 2022, we launched a value enhancement program targeting \$150 million and \$750 million in recurring annual EBITDA by the end of 2023 and 2025, respectively.