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CHEMICAL INDUSTRY FORUM 2024

Trends, Risks and Opportunities

AGENDA

- Welcome Remarks
- Chemical Industry Trends
- Circular Transformation for the Chemical Industry
- Emerging Litigation Threats and Risk Management Issues
- AI in the Chemical Industry
- Global Trade Trends: From the EU's imposition of CBAM to US-China Tariff Battles
- View from the General Counsel's Office

WELCOME REMARKS

Jon Van Gorp

Chairman

Mayer Brown

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CHEMICAL INDUSTRY TRENDS

Matthew Smith

Portfolio Lead
Chemicals & Natural Resources
Accenture

Phil McDivitt

CEO
Ascend Performance Materials

Chemicals Industry Trends – Key Themes

More innovative & faster growing than ever

Product Innovation to accelerate **High-growth end-markets***

Shift to Bio-based, recycled materials will re-shape supply chains

More volatility and turbulence in the business world

Economic and Geopolitical uncertainty (Europe, China)

Increasing industrial policy changes (IRA, IIJA, Chips Act, etc.)

Europe De-industrialization

Talent, AI

Increasing regulation and customer commitments

Increasing **customer commitments and regulations** in EU, but also in US

Net zero, PFAS, substances of concern, plastic waste, etc.

Energy Policy divergence – US/EU, Developing counties

Vast increase in capital expenditure to achieve Net Zero

Customer demand and commitments **require NZ emissions**

On average **require increase in annual capex** by 50% / year for the next ~30 years until 2050

New performance frontier on cost efficiency

Financing the transition to NZ and related innovations

New level of **cost efficiency**

Restructure and focus on core, MA&D

Digitization and automation transform company functions

* e.g. batteries, alt fuel / EV, medical, high tech / semicon, water treatment, etc

** CEFIC Chem Industry Council study (Accenture, NexantECA)

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CIRCULAR TRANSFORMATION FOR THE CHEMICAL INDUSTRY

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Global Sustainability Director
Dow

Jean-Phillipe Montfort

Leader, Global Chemical
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Julie Solmer Stine

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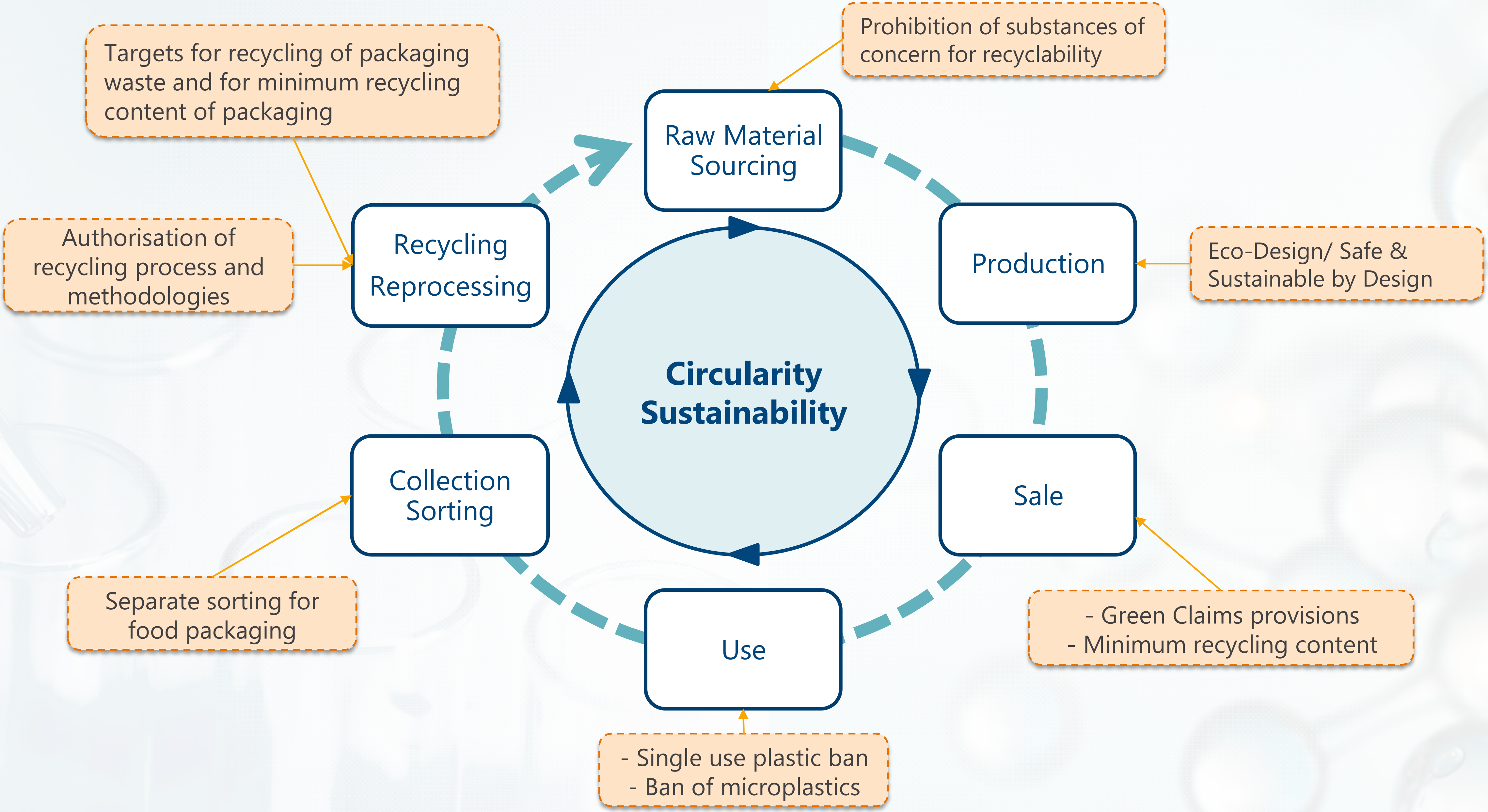
Tessa Bysong

Partner, Performance Improvement and
Circularity Practices
Bain

THE GREEN DEAL - TOWARDS CIRCULARITY



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EMERGING LITIGATION THREATS AND RISK MANAGEMENT ISSUES

Dan Ring

Co-Leader, Product Liability & Mass Torts
Mayer Brown

Peter Jordan

Partner, Litigation & Dispute Resolution
Mayer Brown

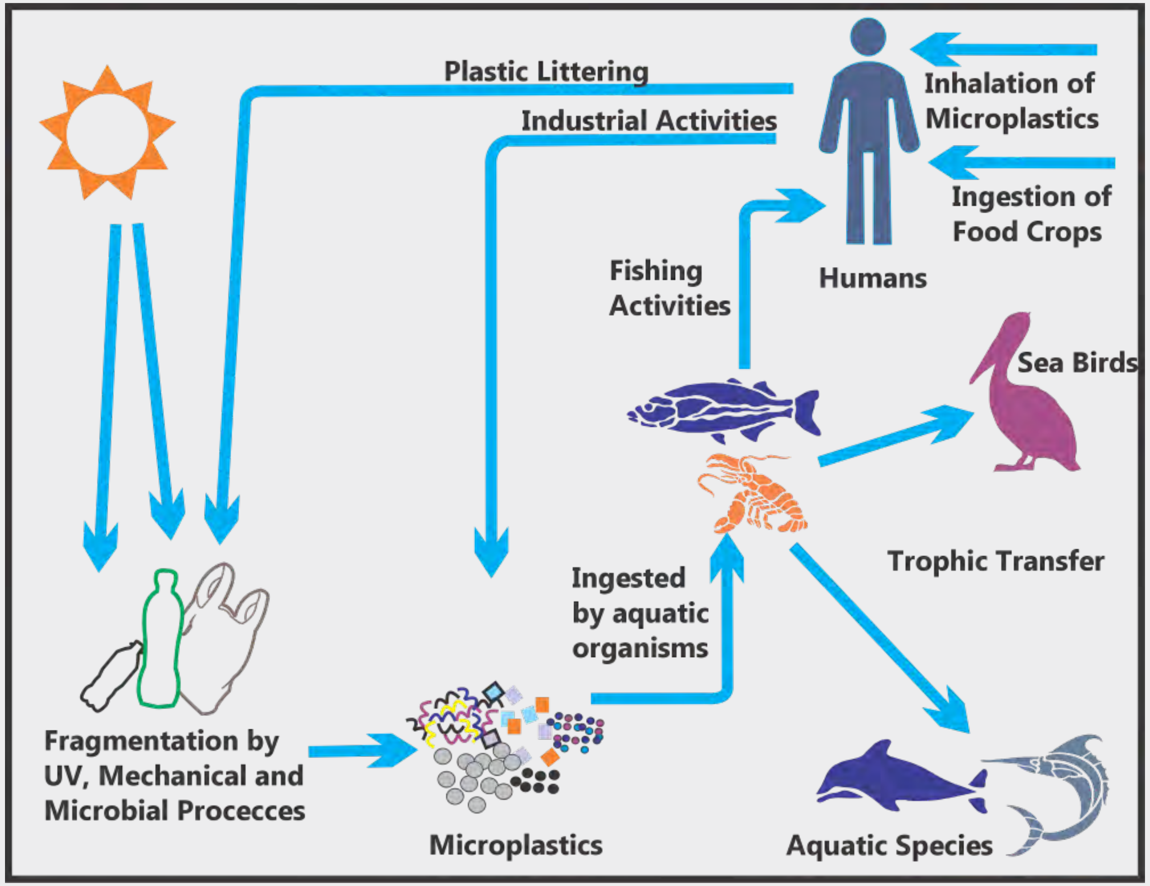
IDENTIFYING CURRENT AND FUTURE VULNERABILITIES

- Objectives
  - Identifying the “next big thing” in chemicals litigation for your own company and the industry at large
  - Understanding your risk profile
  - Taking proactive measures to mitigate and manage your risk
  - Properly planning for the risk you cannot eliminate and advising your clients accordingly
  - *Not* for purposes of encouraging or discouraging participation in any particular market

PFAS Resources (fsawwa.org)

BACKGROUND ON RECENT RISKS – PFAS

- **Key Concerns**:
  - **P**ersistence
  - **B**ioaccumulation/bioconcentration
  - **T**oxicity
  - **M**obility
  - **W**idespread Use/Occurrence

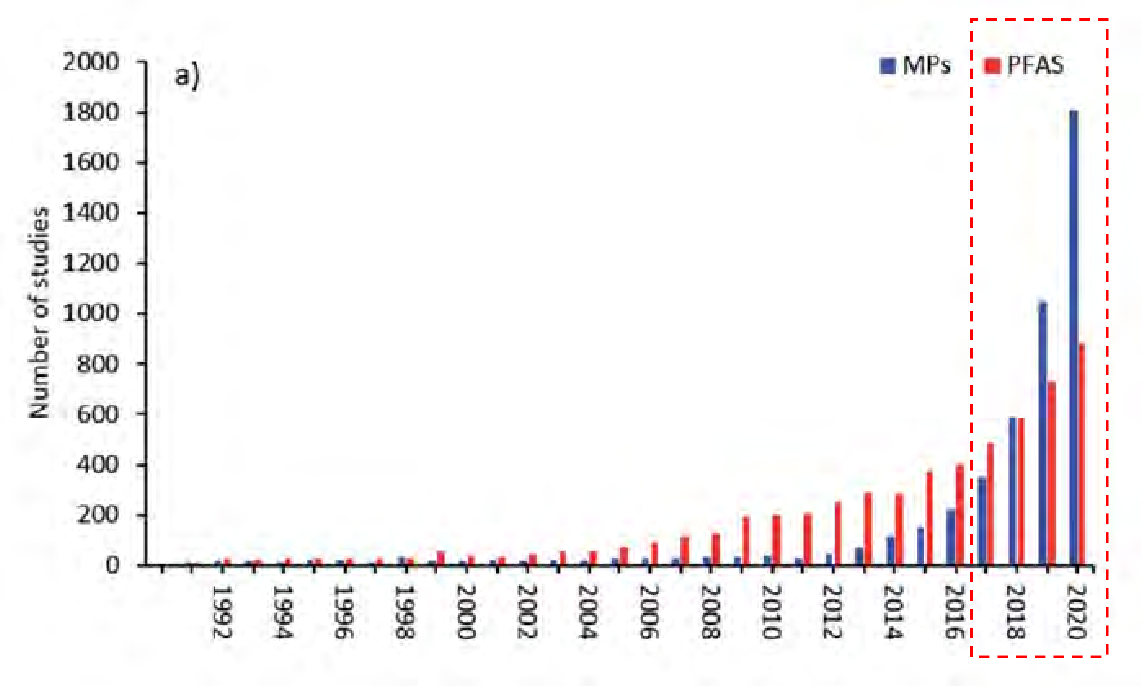


https://mp-1.itrcweb.org/wp-content/uploads/2023/09/Microplastics-figure-Pathways-2-9_13_23.png

BACKGROUND ON POSSIBLE EMERGING RISKS – MICROPLASTICS

- Early lawsuit – *People of the State of New York v. PepsiCo Inc., et al.* (N.Y. Sup. Ct. 2023)
- Similarity to PFAS:
  - **P**ersistence?
  - **B**ioaccumulation/bioconcentration?
  - **T**oxicity?
  - **M**obility?
  - **W**idespread Use/Occurrence?

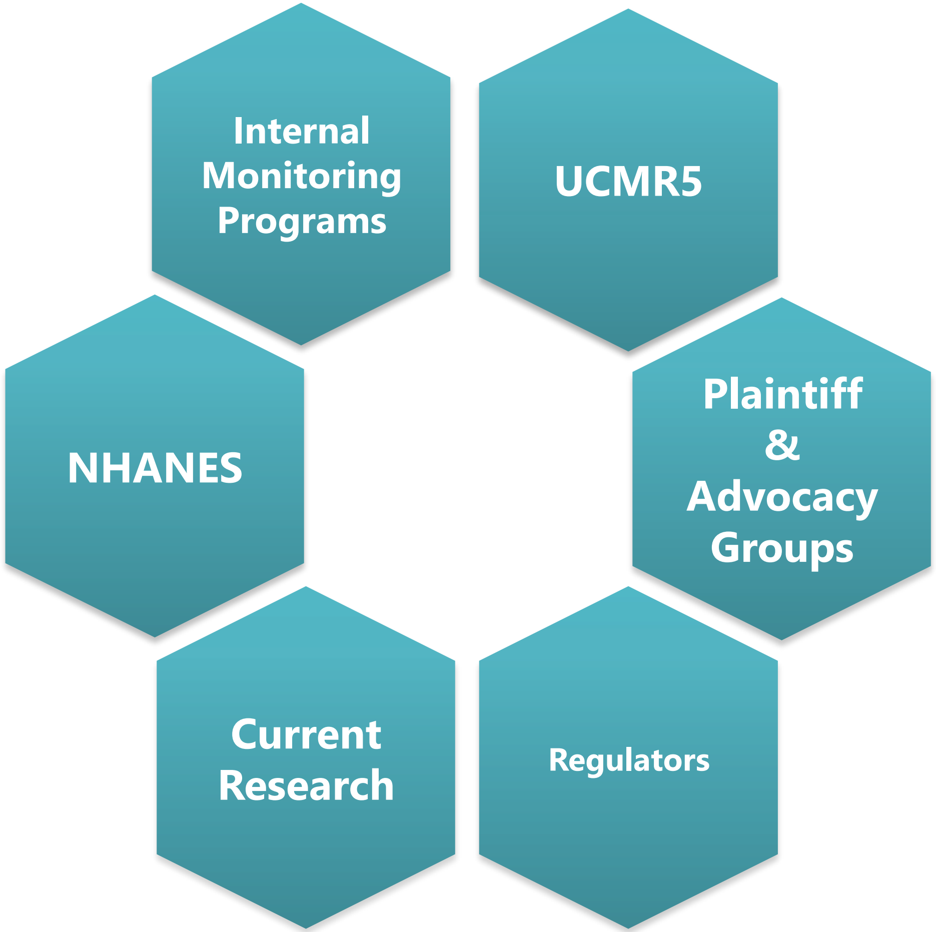
RESEARCH FOCUS CAN TRIGGER FOR REGULATORY ACTIVITY AND LITIGATION.



RSC Adv., 2022, **12**, 4973

LITIGATION CAN TRIGGER REGULATORY ACTIVITY AND RESEARCH.

SOME OTHER PLACES TO LOOK FOR WHAT'S NEXT?



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UNDERSTANDING YOUR RISK PROFILE: PFAS AS A MODEL

Litigation Drivers	Non-Litigation Drivers
• Personal injury • Toxic tort, med monitoring, AGs and regulatory issues • Government Investigations • Site-specific claims • Greenwashing claims and brand impairment • Satellite Litigation (securities, disclosure issues) • Customer/commercial claims	• Reporting/disclosure obligations • Operational Risk • Business, budget, financial planning

LITIGATION

PERSONAL INJURY, TOXIC TORT, REGULATORY CLAIMS

- *AFFF MDL*
  - *In Re: Aqueous Film-Forming Foams Prods. Liab. Litig.*, Case No. 2:18-mn-02873 (D.S.C.) – 6,000+ cases asserting claims based on PFAS in firefighting foam products and turnout gear.
    - Water providers, rate-payers, private and public entities (property damage/remediation), State AGs, individual personal injury/property damage, medical monitoring/class actions
- *Non-MDL*
  - Site-specific (tanneries, paper mills, carpet manufacturing, metal plating, textile finishing, mining, oil & gas extraction and other industries)
  - Landfills, biosolids, water treatment facilities, etc.
  - Consumer products – targeting retailers/fast-food/cosmetics (possible next wave to expand to product sellers – downstream customers)

GREENWASHING CLAIMS

Environmentally Friendly!

- Spike in consumer fraud lawsuits based on the presence of PFAS
- Generally targeting consumer-facing sellers, and many have struggled to gain traction, but plaintiffs haven’t stopped poking at the theory and looking for the legal theory/fact pattern
  - *Kanan v. Thinx Inc.*, Case No. 20-cv-10341 (C.D. Cal. 2021) – declining to dismiss consumer fraud case where specialized menstrual garments were advertised as “safe,” “free of harmful chemicals and nanoparticles,” and made from “95% organic cotton” despite allegedly containing PFAS.

GREENWASHING CLAIMS CONTINUED…

- *Julian v. Only What You Need, Inc.*, Case No. 23-cv-09522 (S.D.N.Y. 2023) – asserting deceptive trade practices claims based on the alleged presence of PFOA in protein drinks marketed as containing "Only What You Need" and "Nothing You Don't."

- *Hamman v. Cava Group, Inc.*, Case No. 22-cv-593 (S.D. Cal. 2023) – declining to dismiss claims based on marketing representations that food products were "healthy" and "sustainable."

- *Humphrey v. J.M. Smucker Company*, Case No. 22-cv-06913 (N.D. Cal. 2023) – allowing various consumer fraud claims to proceed where based on presence of PFAS in packaging of pet food that claimed to be natural and healthy for pets.

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REPORTING/DISCLOSURE OBLIGATIONS

REPORTING/DISCLOSURE OBLIGATIONS – RECENT PFAS LEGISLATION

- Increasing regulation across multiple jurisdictions – US EPA, FDA, States, EU, other countries
- Changing federal landscape
  - Proposed MCLs for certain PFAS
  - Proposed CERCLA designation
  - Proposed RCRA rules
  - Enhanced TSCA Reporting + Testing Orders
  - Biosolids Risk Assessment
- Increasing Bans/Restrictions on Products (“intentionally added” PFAS)

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OPERATIONAL RISK

OPERATIONAL RISK

- EPA encouraging states to use discharge permits to combat PFAS[1].
  - Discharge monitoring requirements
  - Limited the levels of PFAS components in effluent

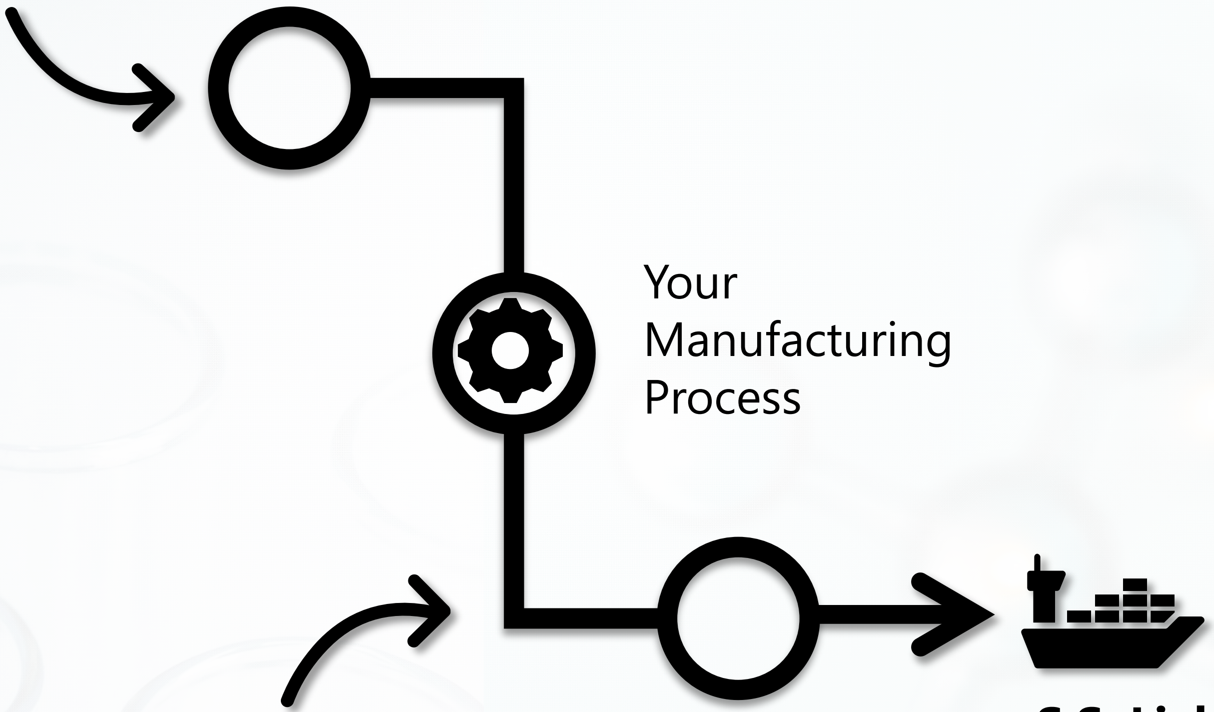
- Running afoul of permitting requirements or permitted limits of PFAS in effluent jeopardizes the continued operation of facilities
  - Clean Water Act Section 309 authorizes[2] :
    - ***Civil*** actions that can result in injunctive penalties
    - ***Criminal*** actions that can result in daily penalties upwards of $25,000 - $50,000 per day
  - Particularly precarious for sites sitting in "just-in-time" supply chains

1. Memorandum from the EPA Off. of Water, to EPA Reg'l Water Div. Dirs., Regions 1-10 (Dec. 5, 2022).
2. Clean Water Act, 33 U.S.C. § 1319 (1972).

HOW TO GET AHEAD OF RISK

IDENTIFYING PFAS IN YOUR SUPPLY CHAIN

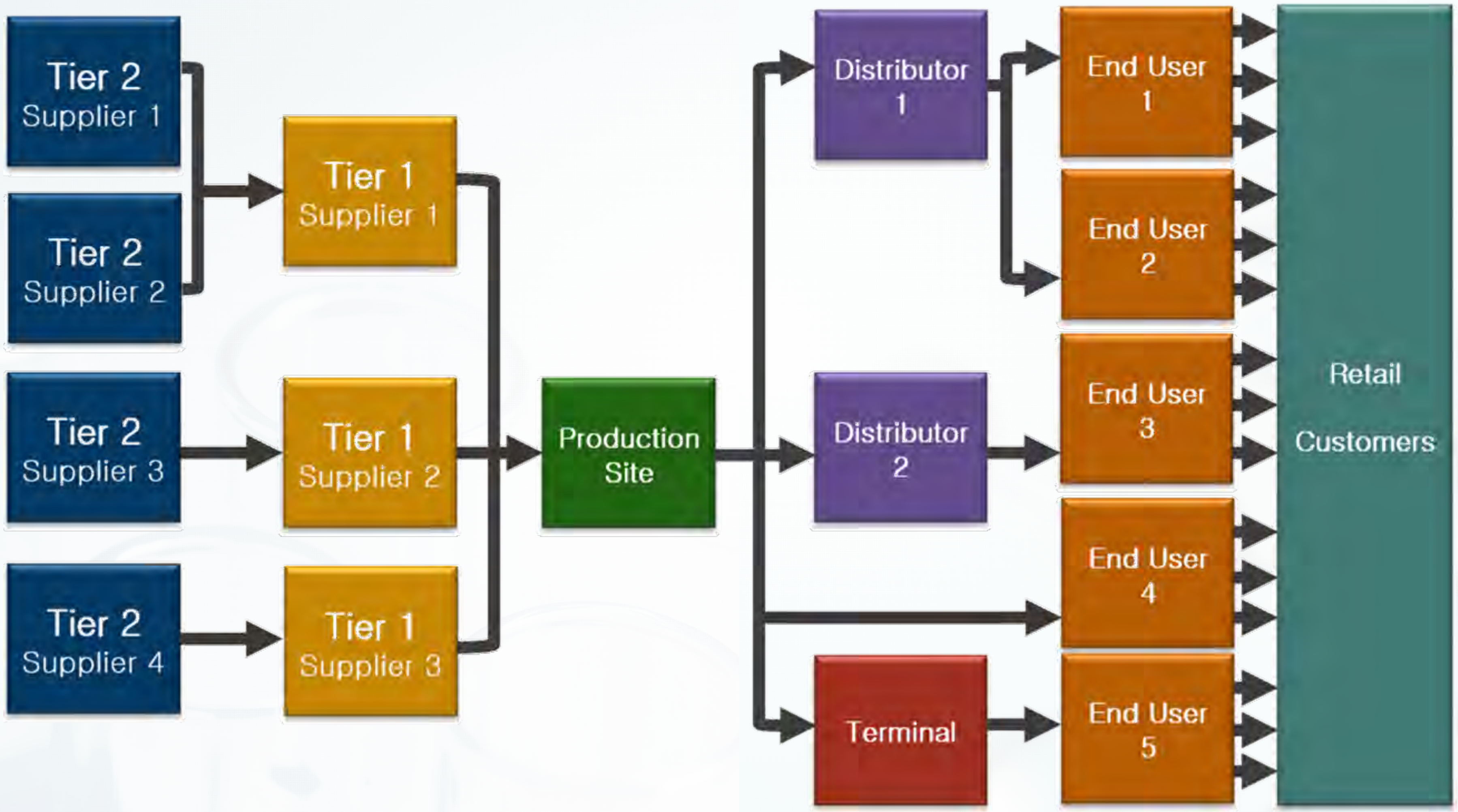
<u>Upstream entry point</u>:
Added to the raw materials
or intermediates



<u>Customers/Downstream Users</u>:
Who are we selling it to?
Who are they selling it to?
In what products does it land?

<u>S.S. Liability</u>:
Product delivery to
millions of consumers.

SUPPLY CHAIN MAPPING



SUPPLY CHAIN RISKS & PROTECTIONS

Upstream Risk

- "Intentionally added"
- *Unintentionally* added

Identify the Risk

- Diligence your suppliers
- Diligence your suppliers' suppliers
- Purchasing
- Procurement

Downstream Risk

- Final product – Where does it end up?

Where are your products going?

- Customers?
- End Users?
- Sales Team
- Commercial Team

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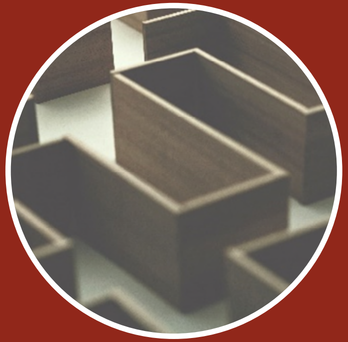
CHALLENGES

SUPPLY CHAIN MAPPING CONTINUED…



Complexity

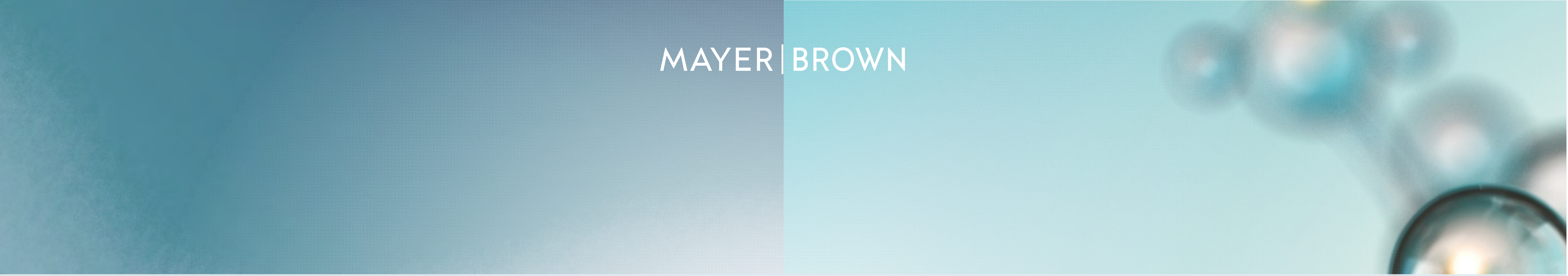
Cost

Supplier or Customer Burden

Supplier or Customer Secrets

WHAT CAN YOU DO?

Upstream Controls and Protections	Downstream Controls and Protections
• PFAS-specific specifications for, and certifications from, suppliers • Complementary contractual indemnities, hold-harmless clauses, etc. • Careful process to respond to questions from customers – don’t assume facts without inquiry	• Contractual indemnities, hold-harmless clauses, etc. • Restrictions on use



M&A

M&A DUE DILIGENCE

- Particularly on the buy side
- Where ***do*** the target's products go?
- Where ***did*** the target's products go?
  - Need to be thoughtful about where your target/partner's (possibly discontinued) products may have gone
- Are risk allocations and indemnity rights sufficient?
- Does this impact viability of the deal?

END GAME: WHERE THIS GETS US

- Very difficult (maybe impossible) to eliminate potential exposure if PFAS is in the supply chain
- Objective was to understand risk profile in order to manage and properly prepare for it
- Legal Budgeting
  - This exercise can potentially give you concrete data you need when telling your clients they can expect $XX, $YY, or $ZZ in defense and liability spending in near and medium term
  - Only thing worse than significant legal spending is **unexpected** significant legal spending
  - Give your clients the information **they** need to make the decisions **they** need to make and take the actions **they** need to take to manage risk

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NETWORKING BREAK

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AI IN THE CHEMICAL INDUSTRY

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Accenture Data & AI
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Industry Leader
ISG

Marina Aronchik

US Leader, Global Chemicals
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Mayer Brown

Julian Dibbell

Senior Associate
Mayer Brown

WHAT IS GEN AI

Generative AI is a type of artificial intelligence that can **create new content** based on patterns it has learned
(e.g., text, images, audio)

Inputs

- **Text** (Wiki)
- **Image and Videos** (YouTube)
- **Voice** (Podcast)
- **Structured Data** (Financial Statements)
- **Code** (GitHub, StackExchange)
- ...

Massive datasets

Foundation model

Very large model trained once, used in many ways

Outputs

- Question Answering
- Summarization
- Coding
- Generating content
- Automation

Multimodal and emerging capabilities

GEN AI AUGMENTS THE ENTERPRISE AI CONTINUUM

Diagnostic	Predictive		Generative
Why did this happen?	**What might happen in the future?**	**What should we do next?**	**How can AI help with the execution?**
Analyze	Pattern	Simulate	Advise
			Create
Scenario	Forecast	Optimize	Code
			Automate
Segment	Model	Recommend	Protect
Compressor failure RCA	Gas lift optimization	Refinery throughput scenario modeling	Market sensing for trading

AI Budgets – Industry View

What proportion of your organization's applications are currently AI-enabled…
In 2024, what do you expect to be allocated to Generative AI vs Predictive AI?
What percentage of your organization's IT spending in 2023 was allocated to AI…

	AI Enabled Applications	Generative vs Predictive AI	AI as a % of IT Budget 2023/2024/2025
BFSI	425 / 2174	45% / 55%	1.9% / 3.4% / 5.4%
Chemical/Energy	408 / 1795	58% / 42%	2.0% / 3.6% / 5.4%
Healthcare	363 / 1359	50% / 50%	1.7% / 3.4% / 5.4%
Manufacturing	330 / 1556	49% / 51%	1.9% / 3.6% / 5.7%
Retail/Consumer	477 / 2052	46% / 54%	2.5% / 4.3% / 6.8%

Enabled 2023
Enabled 2024
All Apps

Generative
Predictive

2023
2024
2025

Industry Adoption and Willingness to Pay

In which of the following application areas has your organization actively piloted or enabled AI features?
What **price increase do you consider your organization would accept** on a per-seat basis for the application to incorporate AI?

BFSI	Chem/Energy	Healthcare	Manufacturing	Retail/Consumer
Analytics and BI **7.6%**	Analytics and BI **7.5%**	Analytics and BI **7.9%**	Analytics and BI **6.7%**	Analytics and BI **7.3%**
CRM **7.3%**	ERP Operations **5.3%**	CRM **8.0%**	SCM **9.2%**	eCommerce **7.3%**
ITSM **7.5%**	SCM **9.1%**	Content Mgmt. **4.2%**	Collaboration **7.0%**	Content Mgmt. **7.2%**
Collaboration **7.6%**	ERP Financial **5.9%**	ITSM **9.4%**	Content Mgt **7.0%**	CRM **4.2%**
Content Mgmt. **3.1%**	CRM **5.6%**		CRM **7.5%**	SCM **6.9%**
	ITSM **10.4%**		ITSM **7.0%**	Shading relates to % implementing. Only >40% shown.
	Content Mgmt. **8.6%**		eCommerce **4.1%**	

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GLOBAL TRADE TRENDS: FROM THE EU'S IMPOSITION OF CBAM TO US-CHINA TARIFF BATTLES

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Timothy Keeler
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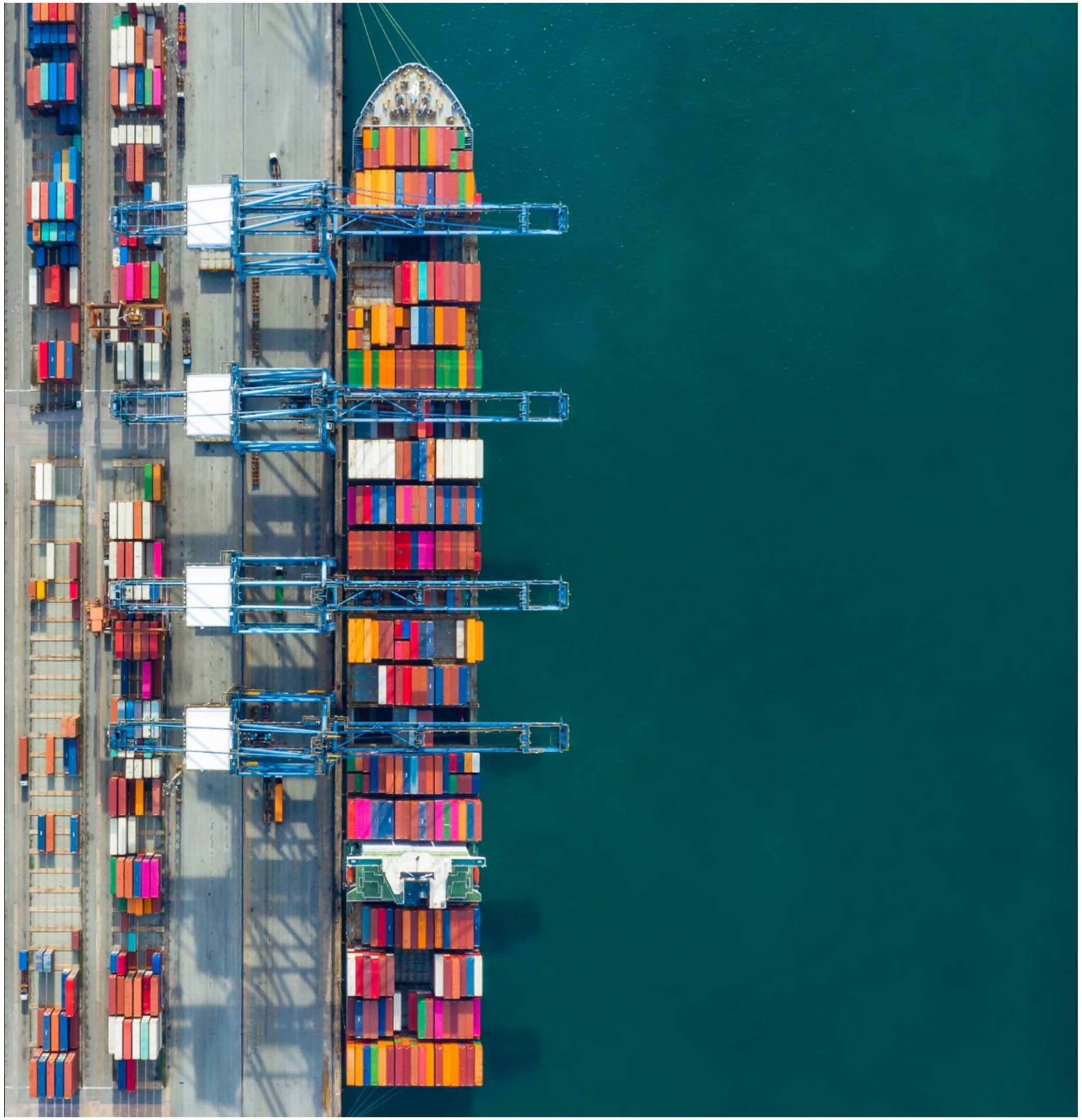
GLOBAL TRADE TRENDS

- Greenhouse Gas Regulation and Climate Change
  - The EU CBAM
- Overcapacity in China
  - Tariff Wars
  - Trade Remedy actions

Greenhouse Gas Regulation and Climate Change

The EU CBAM



THE EU CARBON BORDER ADJUSTMENT MECHANISM (CBAM): KEY ASPECTS

- **Objective:** addressing risk of "carbon leakage" by regulating greenhouse gas (**GHG**) emissions embedded in products imported into the EU.
- **Obligation:** surrender "CBAM certificates" reflecting carbon price of embedded emissions in the covered products imported into the EU.
- **Parallel with the EU Emission Trading System ("ETS"):** application of carbon price to imported goods equivalent to that applied to goods manufactured in EU.

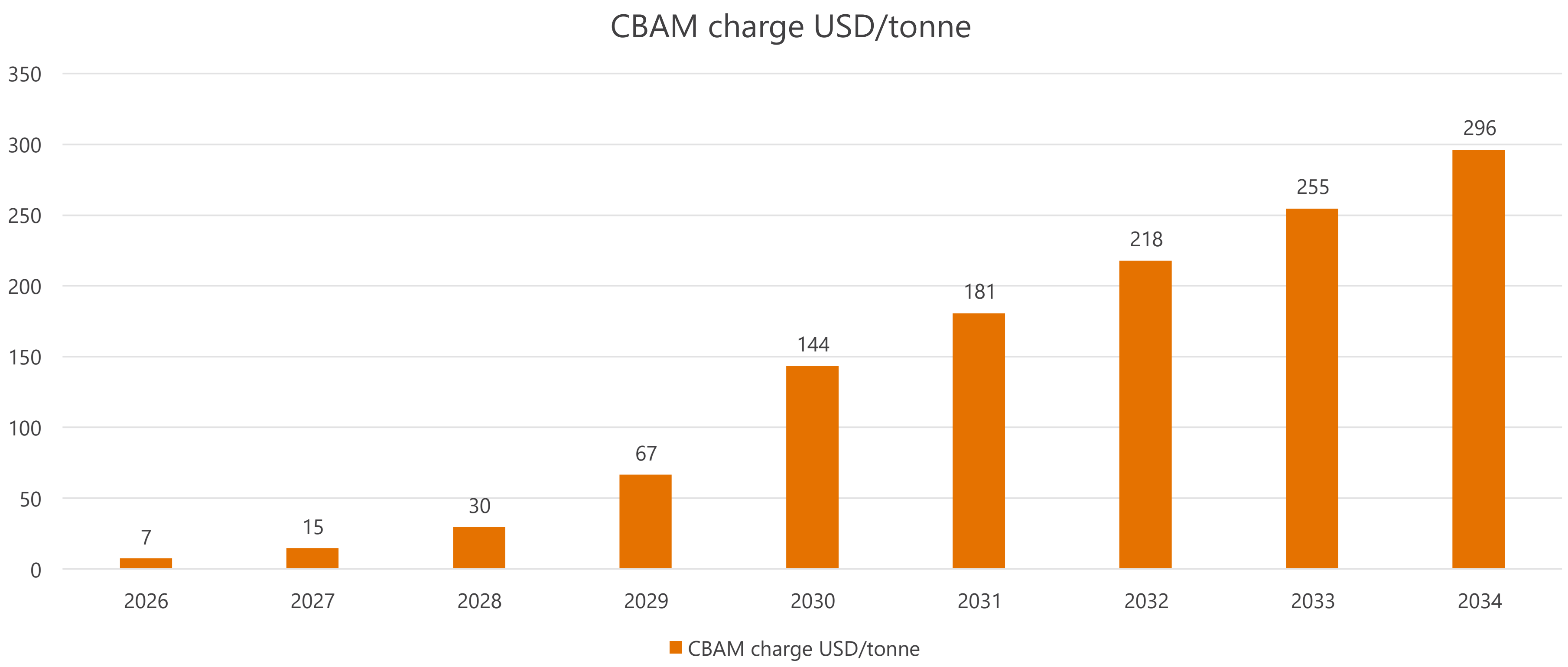
THE EU CBAM: PRODUCT SCOPE

- **Current product scope:** cement, steel, aluminum, electricity, fertilizers (including ammonia) and hydrogen.
- **Chemical products** are excluded for the time being due to export-oriented nature of EU production and complex value chains.
- **By 2025:** the European Commission will produce a report recommending CBAM scope extension.
- **By 2030:** all products covered by EU ETS including polymers, diverse chemicals and mineral oil products should be covered by CBAM.

THE EU CBAM: KEY DATES

- **Transition period 1 October 2023 – 31 December 2025:**
  - Quarterly reporting by importers of emissions embedded in imports, but no charges.
- **1 January 2026: Beginning of the Definitive Period:**
  - Imports will be subject to charges which will gradually increase, in line with the phase-out of free allowances in sectors covered by the CBAM.
- **2034: CBAM Fully Operational:**
  - CBAM charges will apply in full, in line with a complete phase-out of free allowances under the EU ETS.

GRADUAL PHASE-IN OF CBAM CHARGE FOR AMMONIA

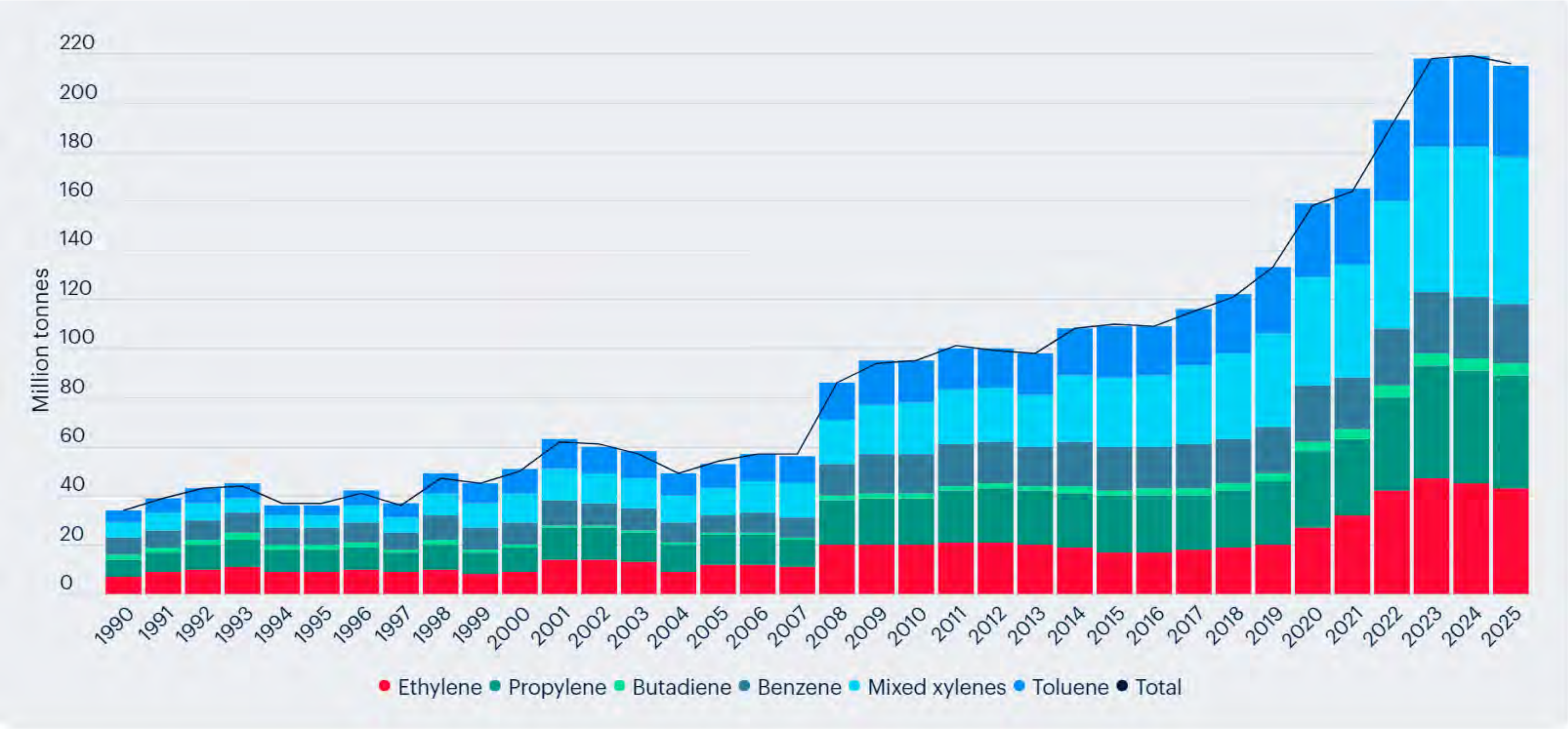


Based on default value for CO2 emissions and the cost of CO2 of 100 EUR/MT and exchange rate of 1.05 USD/EUR.

China's Overcapacity

Tariffs and Trade Remedies

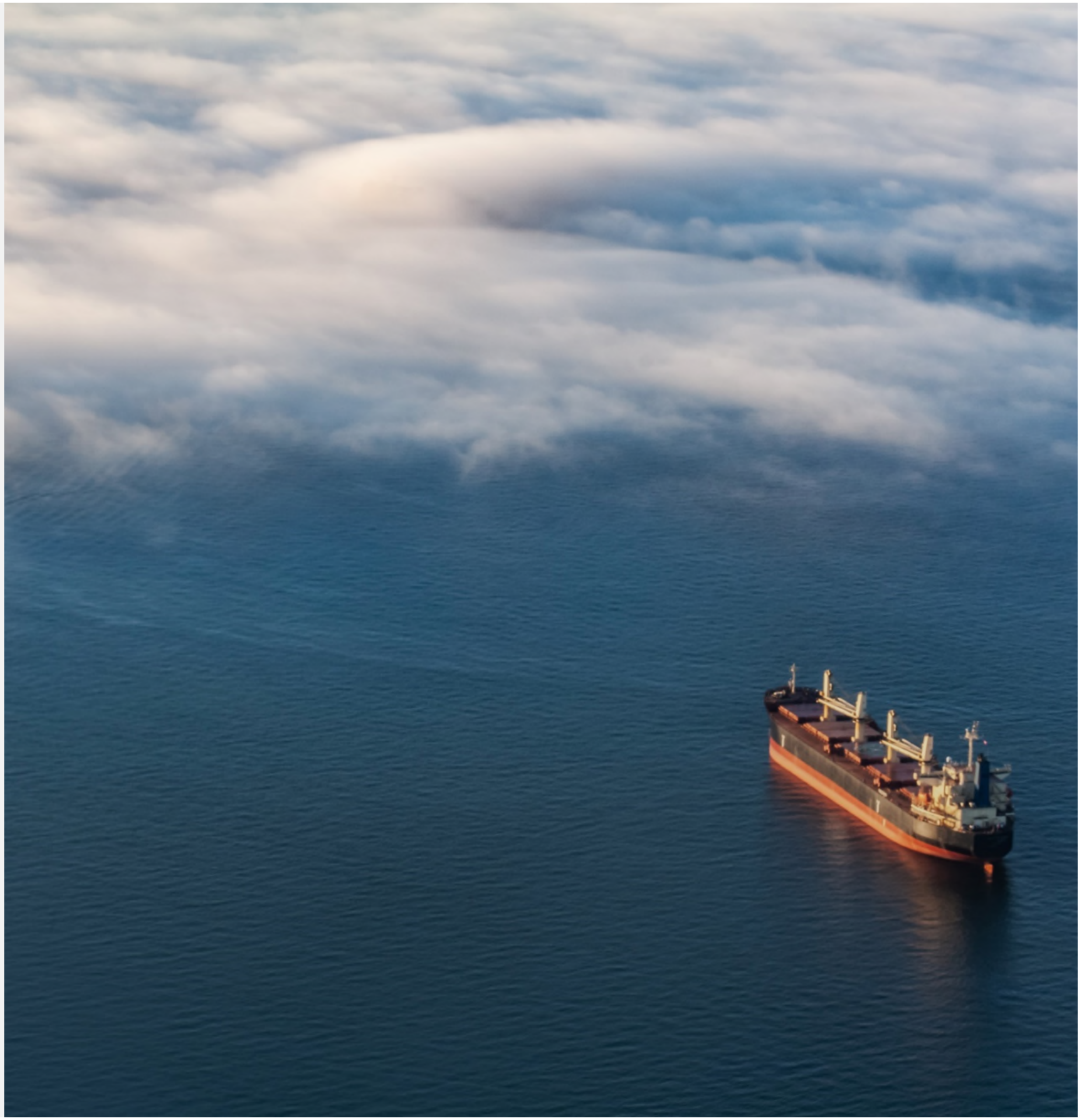
GLOBAL CAPACITY EXCEEDING DEMAND IN THE SIX PETROCHEMICAL BUILDING BLOCKS



Source: ICIS Supply & Demand Database

U.S. – CHINA TRADE ISSUES

- U.S. continues to impose tariffs on imports from China
  - Includes most chemical products
  - Tariffs range from 7.5% to 25%
  - Imposed by Trump under Trade Act of 1974 Sec. 301; Biden continued
- China retaliated on US exports



U.S. – CHINA TRADE ISSUES (CONT.)

- Tariffs currently subject to litigation
  - Upheld by U.S. Court of International Trade; Appealed to Federal Circuit, long odds
- Biden team considering increasing tariffs on EVs and supply chain, possibly broader
- EU and US next moves to impose anti-dumping/countervailing duties?

EU – CHINA TRADE ISSUES

- EU lacks jurisdiction in the matters of national security and thus cannot rely on tools like Section 232 tariffs in the US
- EU also opposes the use of Section 301-type tariffs to respond to foreign trade practices prior to a recourse to the WTO Dispute Settlement
- EU has to rely therefore primarily on trade remedy actions to address trade imbalances
- EU anti-subsidy investigation into Chinese electric vehicles will be the test case to see how the EU will cope with a growing trade deficit with China

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A VIEW FROM THE GENERAL COUNSEL'S OFFICE

David Stryker

Executive Vice President,
General Counsel & Secretary
Huntsman Corporation

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NETWORKING RECEPTION AND LUNCH

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