

ESG impacts on the Chemical Industry – focus on “E” and climate change risks

The importance of coherent net zero
strategies

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Summary

- The rise of ESG – emphasis on Environmental aspects and Climate Change risks
- CO₂ Emissions Reduction and the Chemicals Industry
- Integration with Waste Management and Circular Economy
- What can chemical companies do?
- Conclusion, trends and what to expect in Latin America

The rise of ESG – emphasis on Environmental aspects and Climate Change risks



CO₂ Emissions Reduction and the Chemicals Industry (1)

- In April 2021, the World Economic Forum published a white paper on the policies towards net zero emissions for the chemical sector: the chemicals industry accounts for **6% of global greenhouse gas emissions**:

Chemicals: Total Greenhouse Gas Emissions						
Ticker		Short Name	Tot GHG / CO2 Emiss: 2019C	Tot GHG / CO2 Emiss: 2018C	Tot GHG / CO2 Emiss: 2017C	Tot GHG / CO2 Emiss: 2016C
LIN	GR	LINDE PLC	36.36M	21.29M	--	--
DOW	US	DOW INC	33.65M	--	--	--
AI	FP	AIR LIQUIDE SA	27.85M	27.81M	26.16M	25.24M
APD	US	AIR PRODS & CHEM	27.30M	27.30M	25.40M	30.22M
LYB	US	LYONDELLBASELL-A	22.80M	23.40M	22.90M	21.80M
BAS	GR	BASF SE	20.11M	21.57M	21.49M	20.76M
CF	US	CF INDUSTRIES HO	19.24M	17.63M	18.53M	16.39M
YAR	NO	YARA INTL ASA	18.00M	17.60M	16.00M	13.70M
4188	JP	MITSUBISHI CHEMI	14.19M	14.82M	14.20M	--
NTR	US	NUTRIEN LTD	13.38M	14.24M	--	--
SOLB	BB	SOLVAY SA-A	12.09M	12.40M	12.33M	13.18M

- Alignment with global targets for becoming **net zero by 2050** and achieving goals set on the **Paris Agreement**
- Chemical majors**: reduce carbon emissions in **15%-26% by 2030**, become **net zero by 2050**

CO₂ Emissions Reduction and the Chemicals Industry (2)

- The **polymers production** are highly **associated with the GHGs emissions**, contributing to the climate crisis due to its production processes, uses and sometimes inappropriate disposal.
- The first **Plastic Waste Makers Index**, recently published by Minderoo Foundation:
 - The **100 companies** listed in the index are allegedly responsible for the production of **90% of all single-use plastic waste (SUP)** generated globally and **half of all production** is attributed to **20 major companies**
 - This data consolidation may be a new path for environmental **claims against major companies**

Rank	Polymer Producer	No. of assets	Production of in-scope polymers	Flexible format contribution to SUP waste	Rigid format contribution to SUP waste	Total contribution to SUP waste
1	ExxonMobil	55	11.2	4.7	1.2	5.9
2	Dow	54	9.3	4.7	0.9	5.6
3	Sinopec	82	11.6	4	1.3	5.3
4	Indorama Ventures	26	5.1	0.2	4.5	4.6
5	Saudi Aramco	53	9.5	3.2	1.1	4.3
6	PetroChina	62	8.8	3.3	0.8	4
7	LyondellBasell	69	9.3	2.1	1.8	3.9
8	Reliance Industries	26	5.5	1.8	1.3	3.1
9	Braskem	40	6.7	1.9	1.1	3
10	Alpek SA de CV	12	2.5	0	2.3	2.3

Integration with Waste Management and Circular Economy

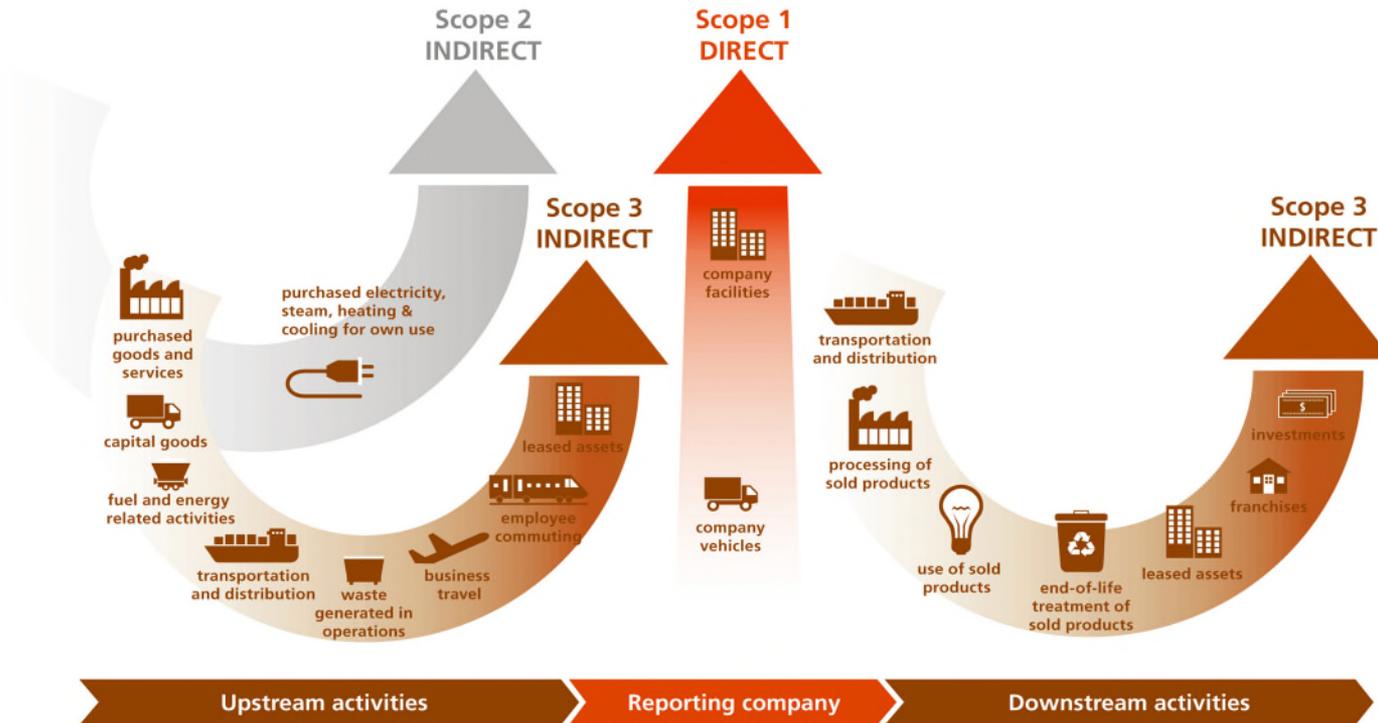
- The current economic model is based on the traditional **Linear Economy**, consisting of extraction of natural resources, production or manufacture of consumer goods, consumption of such goods and disposal of waste. The use of natural resources has tripled since 1970 and tends to double by 2050.
- The **Circular Economy** is associated with sustainable management of natural resources and, contrasting to **Linear Economy**, is based on the logic of creation and reuse (“cradle to cradle”). Science demonstrates that **Circular Economy** can strongly contribute to net zero emissions.

The transition to a Circular Economy requires a connection with technological and industrial innovations, aiming at implementing a **closed cycle system** by means of non-generation, reduction, reuse, sharing, recovery, renewal, remanufacturing and recycling of products / waste.





What can chemical companies do?



Source: GHG Protocol

What can companies do?

- Companies with a clear view of its own particular **strategy** – commitments to sustainability based on facts and science; **contemplating more components such as circular economy, biodiversity, and social factors**
- In order to be **truly net-zero**, companies must look at all **GHG scopes: importance of supply chains and consumers**
- Reduction as primary target and compensation (carbon credits) with a supplementary role
- Controversies regarding emissions compensation through the acquisition of **carbon credits and energy certificates: alignment with company strategy and attention to the quality of credits; the importance of auditing / due diligence**
- Corporate strategies must be **constantly updated**, considering that science and regulations devoted to meeting the goals set on the Paris Agreement are a moving target; **closely follow up developments and trends on regulations and constantly update strategies**
- **Board of Directors and Executives engagement** for the sake of adding credibility and effectiveness for company commitments / targets

Conclusion, trends and what to expect in Latin America

- More **coordination** among Latin American and Caribbean countries on chemical and waste management regulations – UNEP 21-24 Action Plan, but where are the **climate change risks**?
- **Coherent net zero strategies** for chemical companies demand **integration with other ESG risks**, particularly waste management and incorporation of circular economy strategies
- Trend of improvement in **waste management** and governance in Brazil: trend of more regulation and litigation at state and municipal levels
- **Eye on ESG in Latin America – Brazil**: move to Green Economy and Circular Economy with the implementation of current regulations and expected new regulations on Climate Change risks; some gaps to be filled: **(i)** carbon pricing initiatives; and **(ii)** disclosure of ESG and climate change risks
 - The **National Biofuels Policy Act (RenovaBio)** implemented a carbon market which started last year and ended up being a huge success with nearly 100% compliance from obligated parties; and is paving the way for a full-fledged emissions trading system as recommended by the World Bank PMR study in Brazil concluded in December 2020, including the Chemical Industry
 - On the disclosure of ESG and climate change risks for financial institutions and corporations in general, the **Brazilian Central Bank has been very active**, and there are **several regulations currently under consultation** and expected to enter into force by 2022 to address disclosure requirements



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