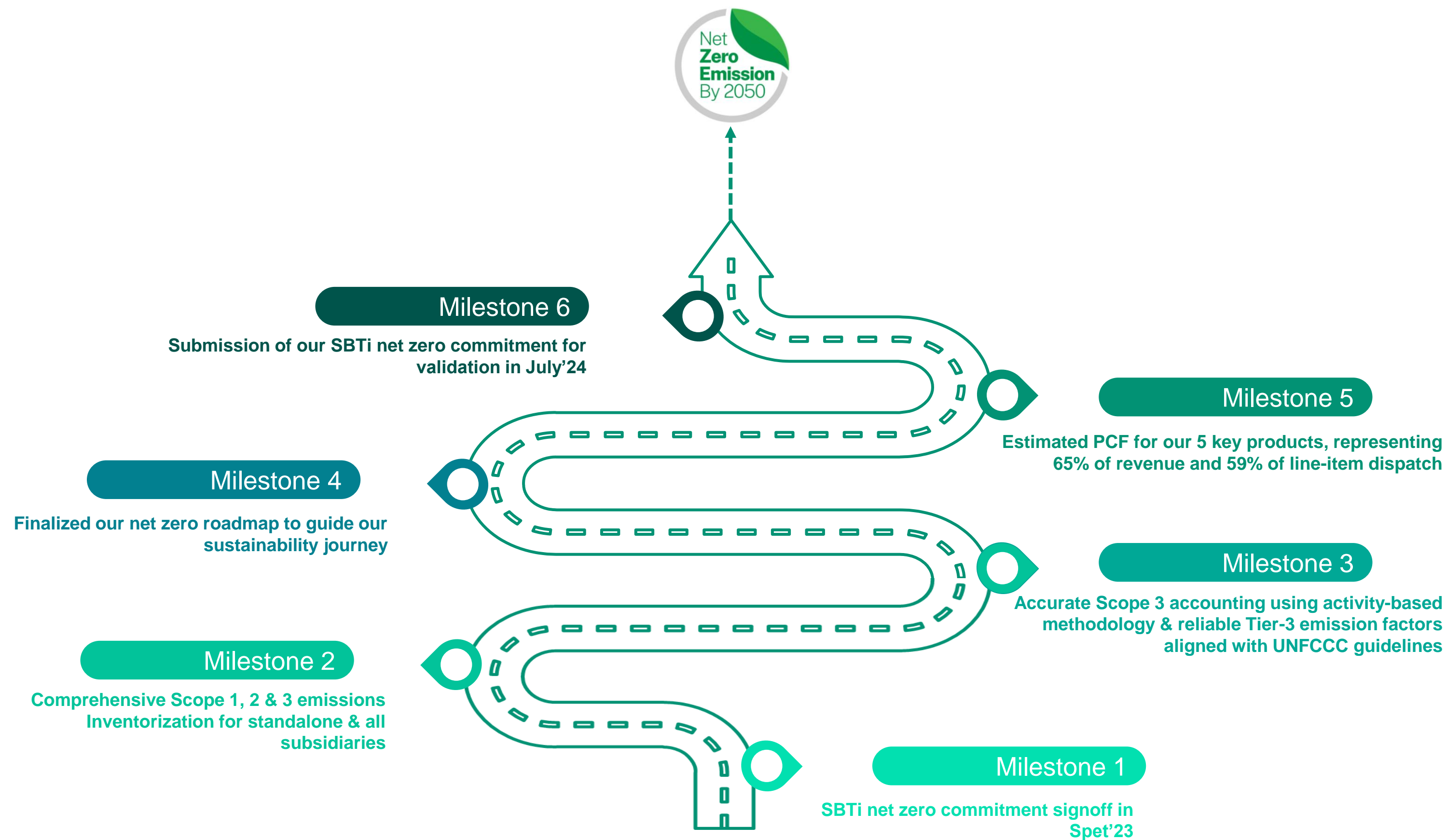


# Decarbonization Strategy

Vision | Approach | Methodology



# Our decarbonization vision



# Our Carbon Footprint

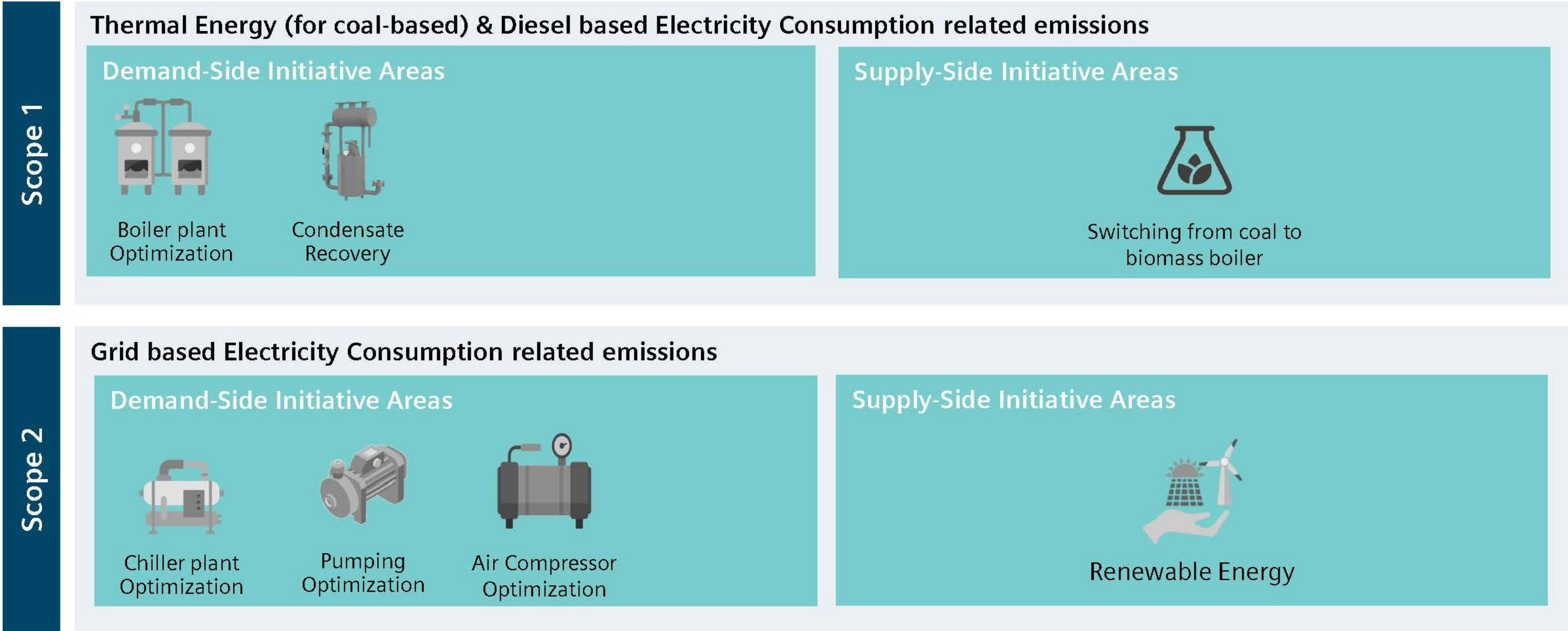
Granules GHG Emission Profile , tCo2 eq		Emission Profile For FY 2022-23			Emission Profile For FY 2023-24		
Scope	Emission Category	GIL Standalone	GIL-All Subsidiaries	GIL Consolidated	GIL Standalone	GIL-All Subsidiaries	GIL Consolidated
Scope-1	Direct emissions from sources owned or controlled by a company (Coal, Fuels)	56,265	1,551	57,816	56,254	2,001	58,254
Scope-2 (Market-Based)	Indirect emissions from the generation of purchased energy (Electricity)	56,306	1,668	57,974	31,632	2,886	34,519
Scope-2 (Location -Based)	Indirect emissions from the generation of purchased energy (Electricity)	62,433	1,668	64,101	60,191	2,886	63,078
	Scope-1+2 Total	1,12,571	3,219	1,15,790	87,886	4,887	92,773
Scope-3	Category 1 - Purchased Goods & Services	4,95,807	882	4,96,689	5,14,516	5,292	5,19,808
Scope-3	Category 2 - Capital Goods	4,705	465	5,170	10,265	18,565	28,830
Scope-3	Category 3 - Fuel and Energy Related Activities	26,788	403	27,191	22,579	875	23,453
Scope-3	Category 4 - Upstream Transportation & Distribution	8,392	33	8,425	8,557	83	8,640
Scope-3	Category 5 - Waste Generated from Operations	2,992	1,625	4,618	3,571	150	3,721
Scope-3	Category 6 - Business Travel	295	37	332	850	81	931
Scope-3	Category 7 - Employee Commuting	1,476	314	1,790	1,571	518	2,089
Scope-3	Category 8 - Upstream Leased Assets	587	4,205	4,792	1,628	6,153	7,781
Scope-3	Category 9 - Downstream Transportation & Distribution	22,381	3,131	25,512	24,827	1,097	25,924
Scope-3	Category 10 - Processing of Sold Products	46,658	-	46,658	41,187	1	41,188
Scope-3	Category 11 - Use of Sold Products	-	-	-	-	-	-
Scope-3	Category 12 - End of Life Treatment of sold products	4,031	28	4,059	4,287	43	4,330
Scope-3	Category 13 - Downstream Leased Assets	-	-	-	-	-	-
Scope-3	Category 14 - Franchises	-	-	-	-	-	-
Scope-3	Category 15 - Investments	-	-	-	-	-	-
	Scope-3 Total	6,14,113	11,123	6,25,236	6,33,837	32,857	6,66,694
Total Emissions - Scope 1 ,Scope 2 (marked Based) and Scope 3		7,26,684	14,342	7,41,026	7,21,723	37,744	7,59,467



# Our Decarbonization Action Plan:

## Addressing Scope 1 and Scope 2 emissions

To reduce Scope 1 and Scope 2 GHG emissions a balanced approach of supply-side and demand-side initiatives has been identified to support decarbonization till 2030. It identifies that beyond 2030 a high green energy support will be needed to meet the decarbonization goals. This strategy is based on a detailed study at the Bonthapally and Gagillapur facilities, where the primary sources of emissions are coal-fired boilers and grid electricity. Granules will utilize a similar approach for other operational locations.



# Our Decarbonization Action Plan:

## Addressing Scope 3 emissions - Various levers identified

Category	Recommended initiatives	Carbon reduction impact	Implementation time	Feasibility
Cat 1: Purchased Goods & Services	Supplier Mix Optimization	High	Medium	High
	Scope 1/2 Targets	High	Low	Medium
	Sustainable Packaging	Low	Medium	Low
Cat 3: Fuel & Energy Related Activities	Emissions savings due to coal savings from FIMs	Medium	Low	High
	Emissions savings due to electricity savings from FIMs	Low	Low	High
	Emission savings due to grid decarbonization	High	High	High
Cat 4: Upstream T&D	Consolidating Shipments			
	Utilizing Multi-Modal Transportation			
Cat 5: Waste	Reduction of non-hazardous paper waste	Low	High	Medium
Cat 6: Business Travel	Optimize Mode of Travel	Low	Low	High
	Green Travel Options	Low	Low	High
Cat 7: Employee Commute	Flexible Working Hours	Low	Low	High
	Carpooling & Shared Mobility	Low	Low	High
	Offer EV charging Infra and Leasing Options for EV Adoption	Low	Medium	High
	EV Fleet for company buses / cars	Low	Medium	High
Cat 8: Upstream Leased Assets	Integrate renewable energy and implement BMS	Low	Medium	Medium
Cat 9: Downstream T&D	Transition of shipment mode from air to sea	Medium	High	Low
	Consolidation of container utilization	Low	High	Low
	Shift to EVs	Low	High	Low



# Our Decarbonization Action Plan:

## Pioneering Green Science (3-Pillar approach)

### Green Molecule Platform



Building our flagship green pharmaceutical plant

### Green molecules

Such as Hydrogen ( $H_2$ ), Ammonia ( $NH_3$ ), Nitric acid ( $HNO_3$ ) and Methanol ( $CH_3OH$ )



Built-in circularity

### Green Chemistry



Granules eco-scale for product development



Enzyme and bio transformation for resource-efficient processes



Flow technology and continuous manufacturing platform

### Sustainable Formulations



Plant-based excipients



Solvent/Polymer-free formulations



Water-efficient manufacturing



Biodegradable & sustainable packing



# Our Decarbonization Action Plan:

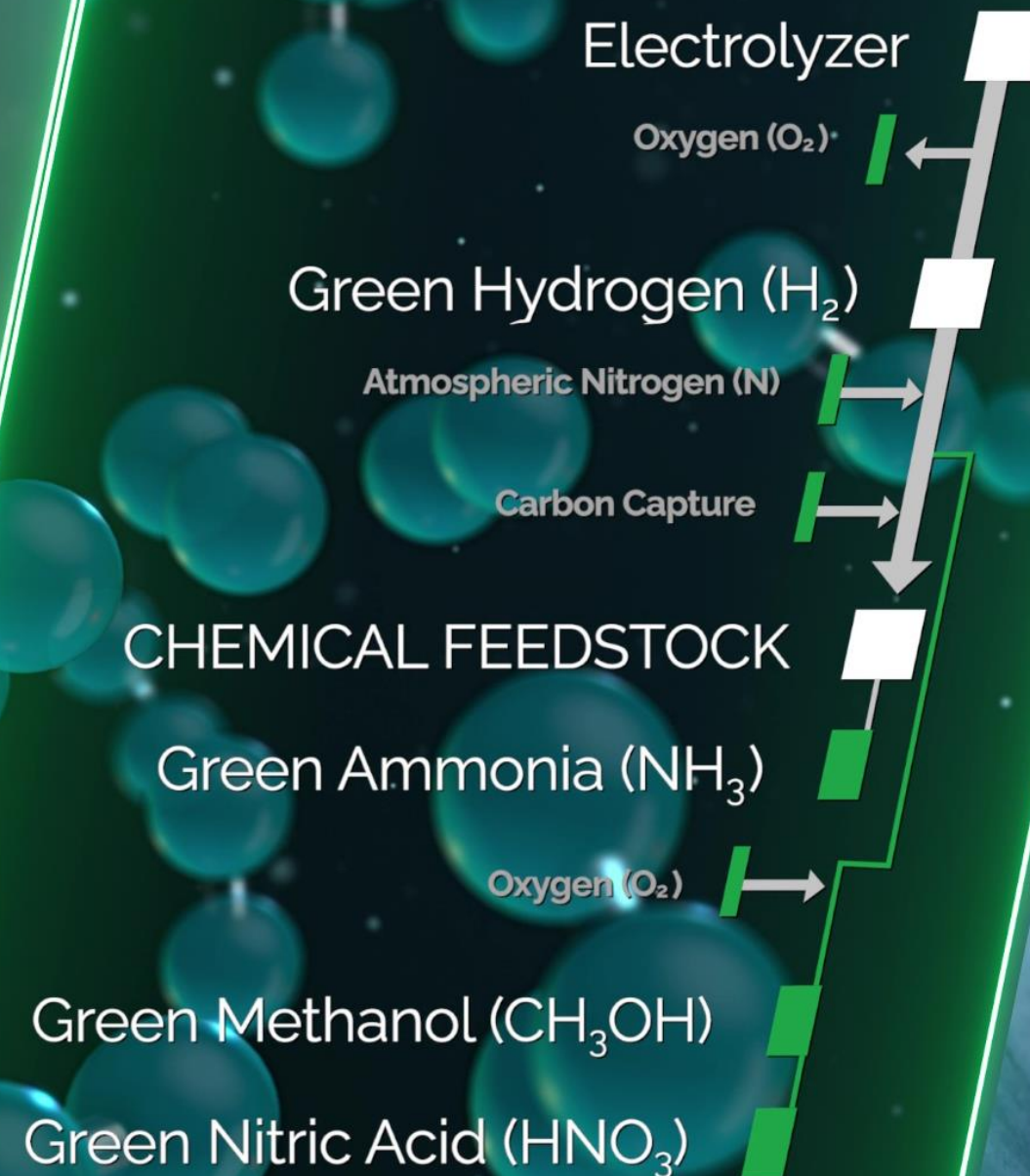
## Pioneering Green Science (Pillar-1)

### Green Molecules platform

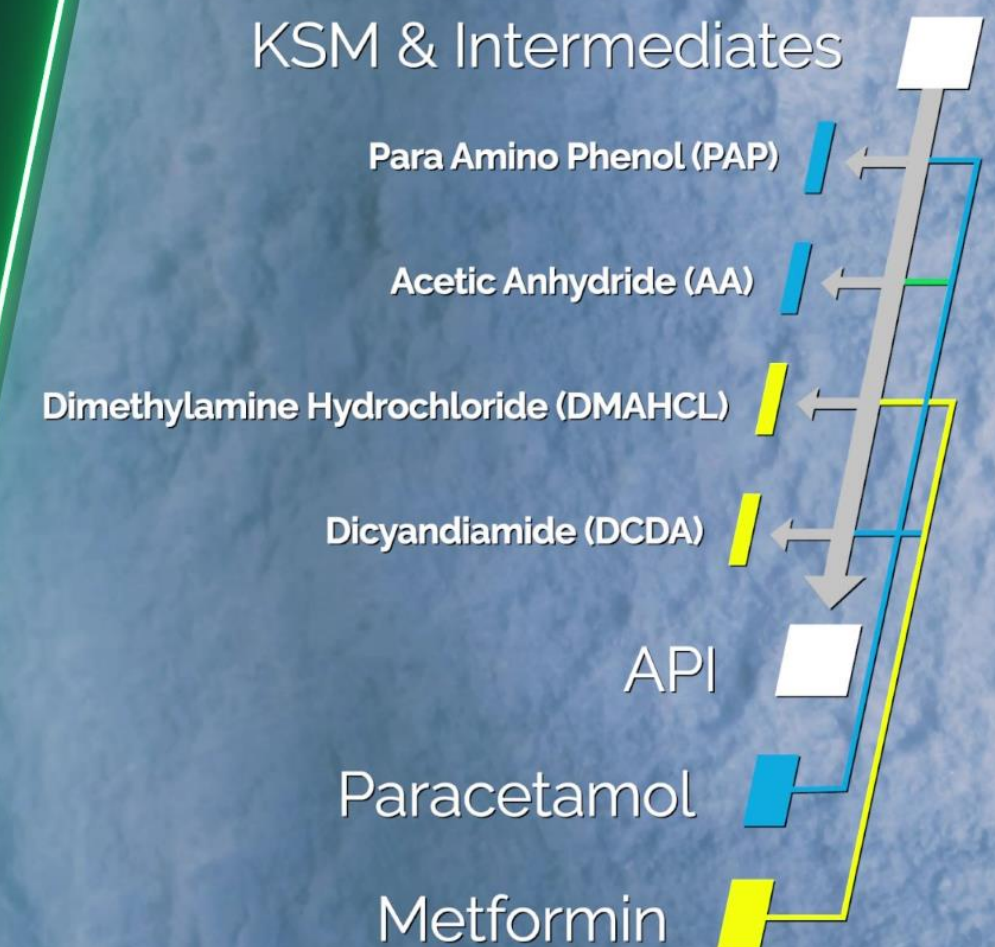
#### Energy



#### Molecule



#### Chemical





# Our Decarbonization Action Plan:

## Pioneering Green Science (Pillar-2)

### Green Chemistry

#### Product

Granules **ECO SCALE**

6 Parameters and 38 sub-parameters  
at every stage of the reaction

Atom Economy

Atom Efficiency

Safer Process

Reduced Effluent  
& Waste

Improved Yield

#### Process

Enzymatic Bio  
Transformation

Greater Selectivity

Low Pressure  
& Temperature

Resource Efficiency

#### Technology

Flow & Continuous  
Manufacturing

Lower Carbon Footprint

Efficient Heat  
& Mass Transfer

Safe & Faster Operation



# Our Decarbonization Action Plan:

## Pioneering Green Science (Pillar-3)

### Sustainable Formulations



Plant-Based  
Excipients



Solvent-Polymer  
Free Formulations



Water-Efficient  
Manufacturing



Biodegradable &  
Sustainable Packing



# Our Decarbonization Action Plan:

## Supplier Sustainability Program



Our Supplier Engagement Approach



# Our Decarbonization Action Plan:

## Supplier Sustainability Program

### Our Ask to Supplier Commitment



**1. Disclose Carbon Footprint**

Disclose Scope 1, 2, and 3 emissions related to Granules business by the end of 2024.



**2. Commitment to Science Based Target Initiative (SBTi)**

Develop and submit a science-based target to the SBTi by the end of 2025.



**3. Declare Product Carbon Footprint (PCF)**

Provide Product carbon footprint (PCF) for products and facilities for business with Granules.



**4. Commit to Accelerating Renewable Energy Adoption** Increase renewable energy in the electricity purchase and to 100% renewable energy within next 5 years.

We have rolled out the supplier sustainability program for top suppliers covering the more than 80 % of our purchase value.



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