



# Decarbonization Strategy

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July 2023



# Future in Action Program



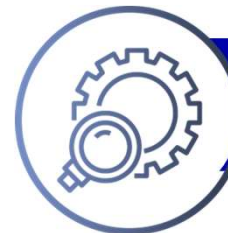
**Sustainable Products  
& Solutions**



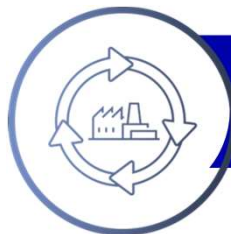
**Water & Biodiversity**



**Decarbonizing our  
Operations**



**Innovation &  
Partnerships**



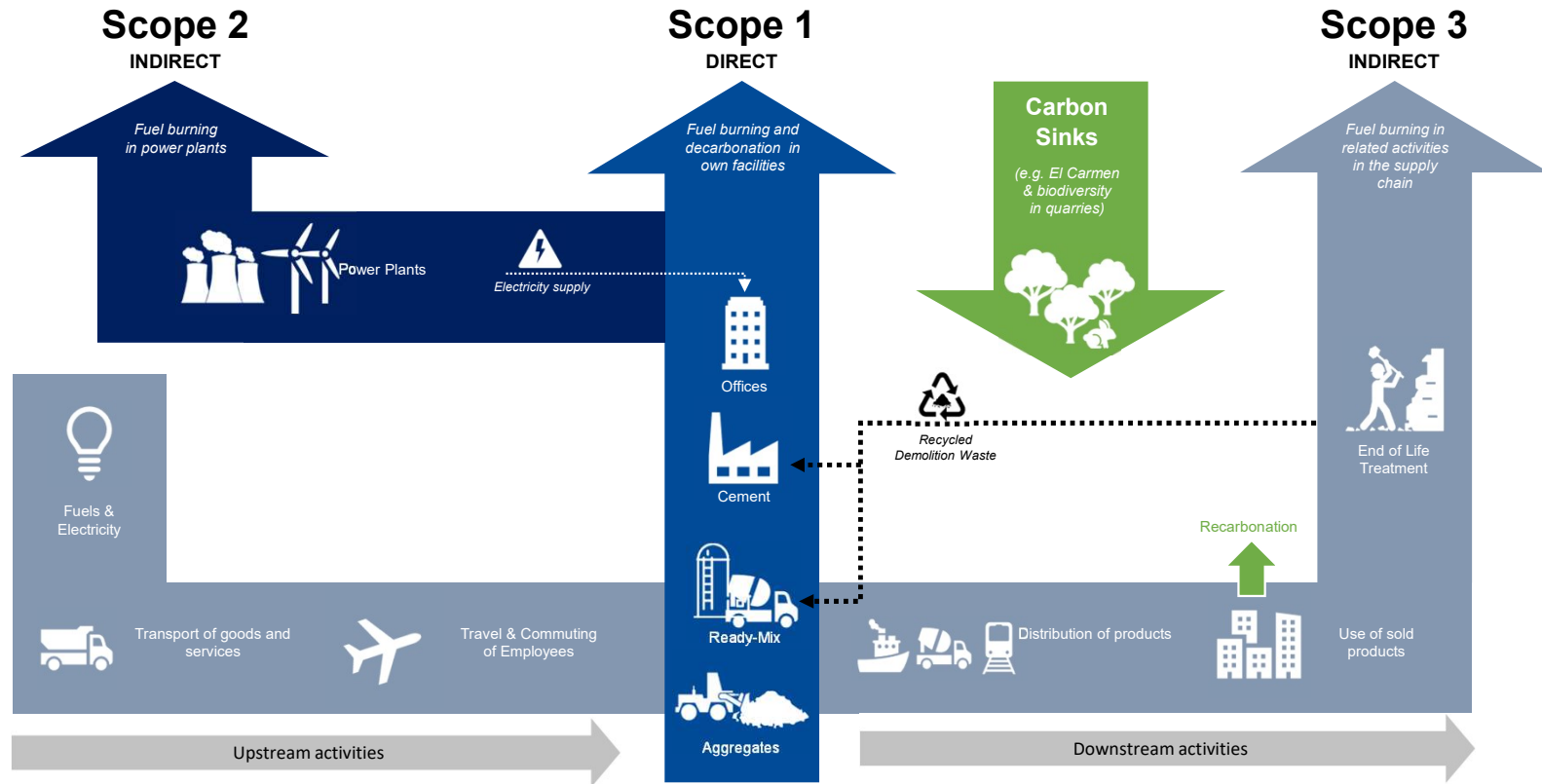
**Circular Economy**



**Promoting a Green Economy**



# Decarbonizing our operations requires having a holistic approach



## Short – Mid Term Strategies

### Scope 1

- Alternative Fuels
- AF aided by Hydrogen
- Blended Cements (SCMs)
  - Limestone
  - Pozzolanic Cements
  - Ternary Cements
- Decarbonated Raw Materials
- Operational Efficiency

### Scope 2

- Solar / Wind Plants
- Virtual Power Purchase Agreement
- Waste heat recovery Projects
- RECs strategy

### Scope 3

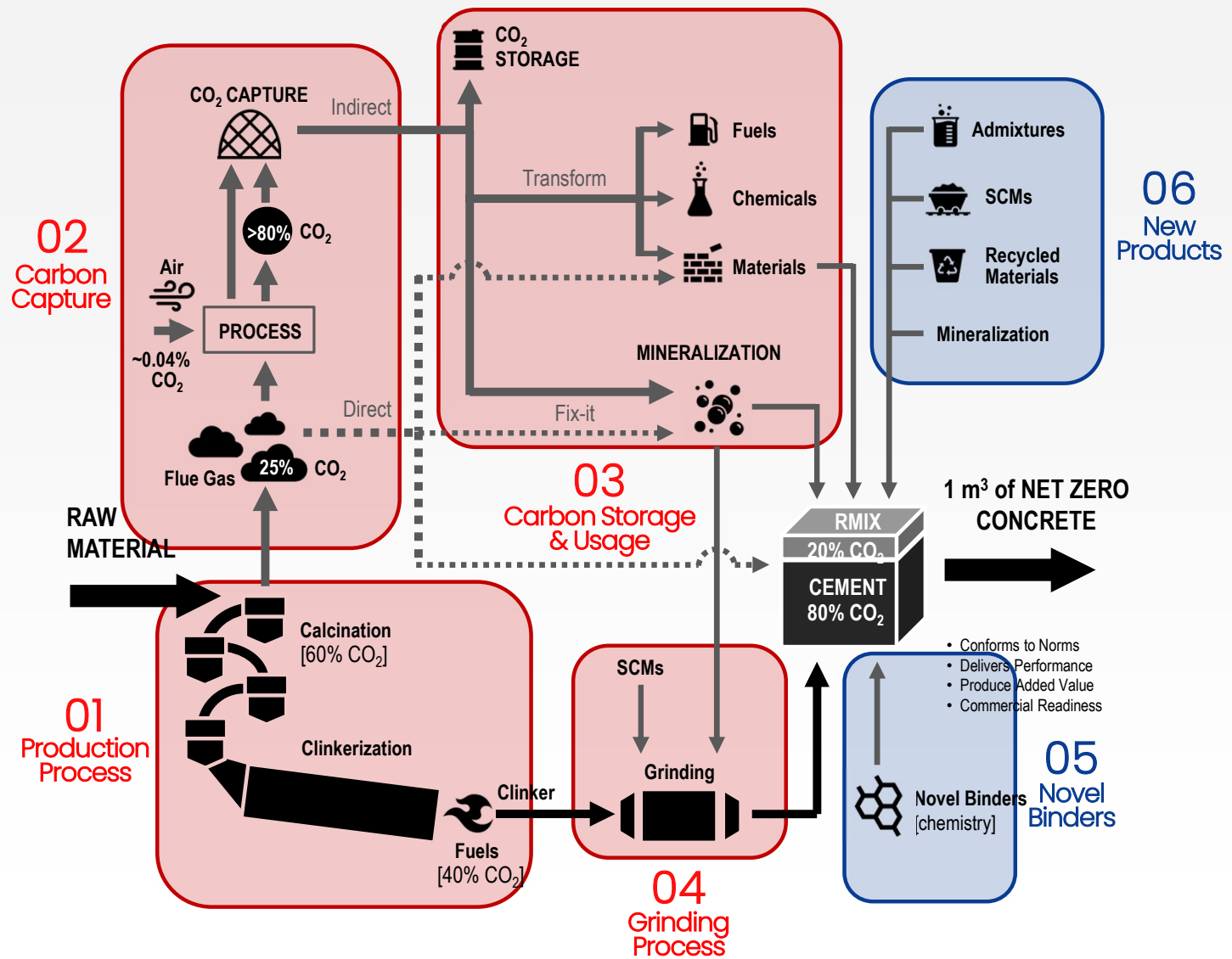
- Fleet optimization
- Renewable Diesel
- Hybrid and Electrical Vehicles
- Imports optimization
- Energy sourcing optimization

***Our 2030 goals rely on proven technologies but there are challenges to full implementation***



# Mid-Long Term Strategy Innovation

- Carbon Capture & Storage
- CC & Utilization (new products)
- Hydrogen
- Electrification
- SCMs activation
- Micronation
- Mineralization
- Admixtures



## Decarbonization Challenges

- Lack of alternative fuels availability due to limited incentives and incompatible regulations to divert waste from landfills.
- Massive retrofits investments required to produce and handle blended cement products across the supply chain
- Reduced sources of Supplementary Cementitious Materials (SCMs) that do not require beneficiation or other approvals susceptible to protracted processes.
- Limited flexibility in product standards (prescriptive-based vs performance-based).
- Absence of incentives / regulations to prioritize the use of lower carbon products, although we are beginning to see more Buy Clean laws
- Expensive Carbon Capture solutions together with limited sequestration hubs available to cement plants and long lead time permitting processes.
- Novel technologies not yet economically viable for escalation



## Closing Remarks

Our industry is committed to do its part but can only do so much unless....

- We have cohesive, supportive policies to support these efforts
- Government and regulators provides the incentives and standards required to accelerate the decarbonization efforts. The passage of the Bipartisan Infrastructure Bill and the IRA are a great start.
- Stakeholders across the value chain embrace and adopt lower carbon products, from the design community supporting performance-based standards & end users.
- Innovation is key
- Associations to support and promote industry collaboration around Novel Technologies, to scale solution faster and reduce overall risk.





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