



Shaping a sustainable future for India

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Need for progress in India

01

Natural
catastrophes

310 'extreme'
climate
events in the
last 15 years

02

Extreme
temperatures

Avg. temp up
1.8°C (1997
to 2019);
Double temp
volatility

03

Lower agri.
productivity

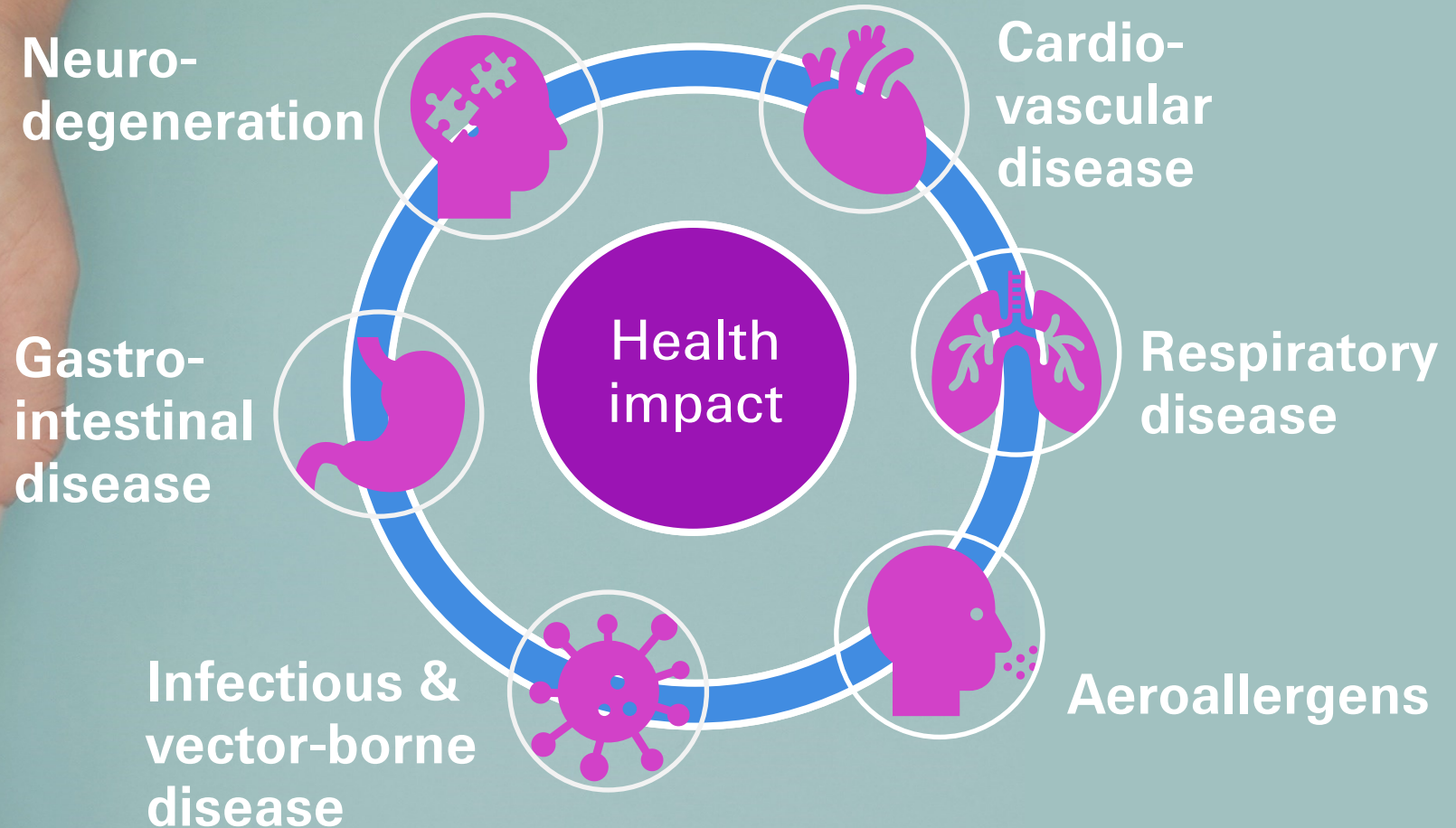
Farmers
could lose up
to 25% of
their income
with climate
change

04

Human
suffering

Climate
change
forced >14m
to migrate
(2020)

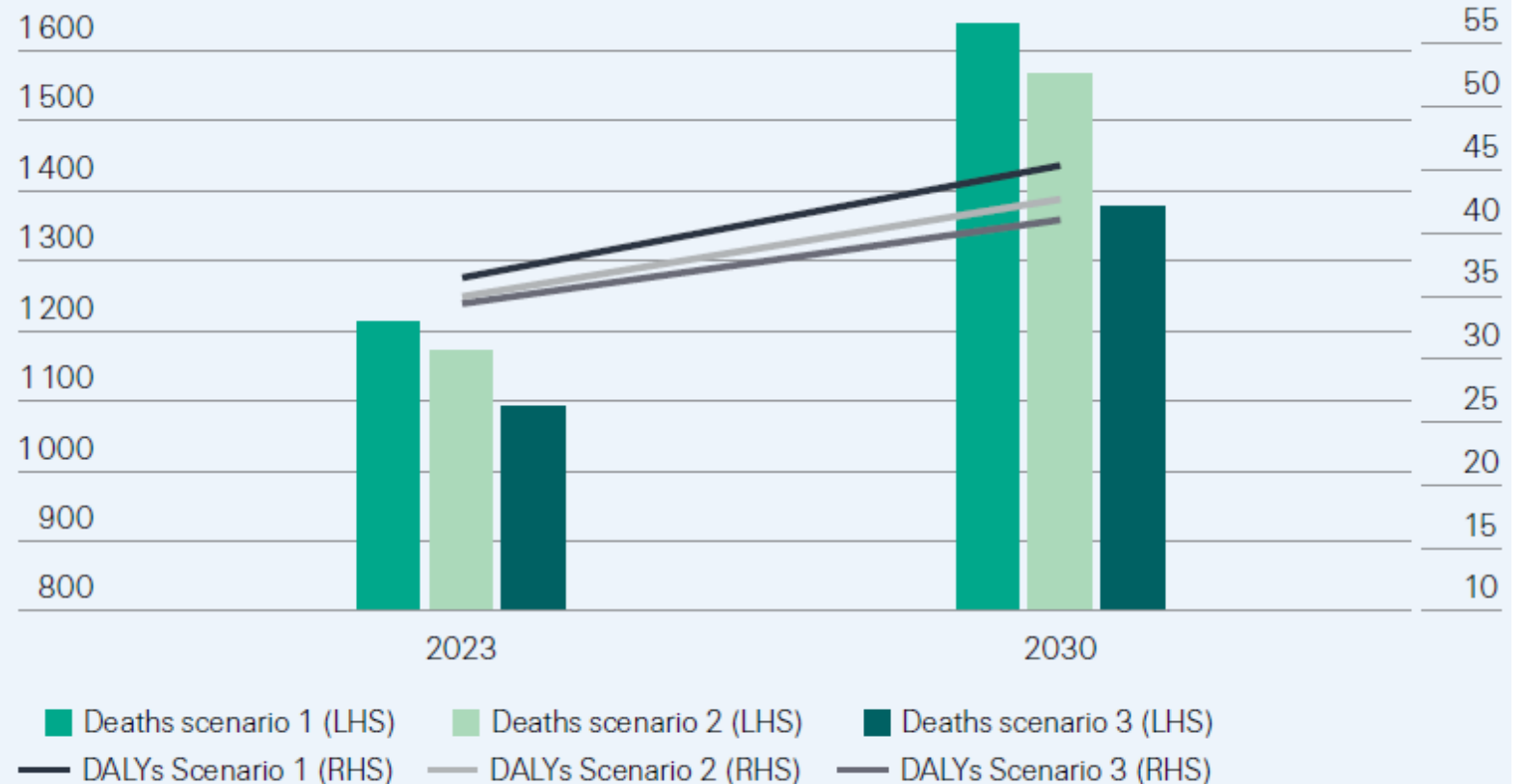
Serious health impact of climate change-related exposures



Air pollution may cause 1.6m annual premature deaths

Modelling India's PM 2.5 challenge: deaths and Disability Adjusted Life Years (DALYs) under three alternate scenarios

Air pollution
45 billion DALYs
1.6m pre-mature
deaths
PER YEAR



Source: Swiss Re Institute, Global Burden of Disease and State of Global Air

Mental health is also impacted adversely

10.6% of adults
in India face
mental
disorders

2,400 DALYs
per 100,000
people

21 age adjusted
suicides per
100,000

Extreme climate to hurt agriculture yields in India

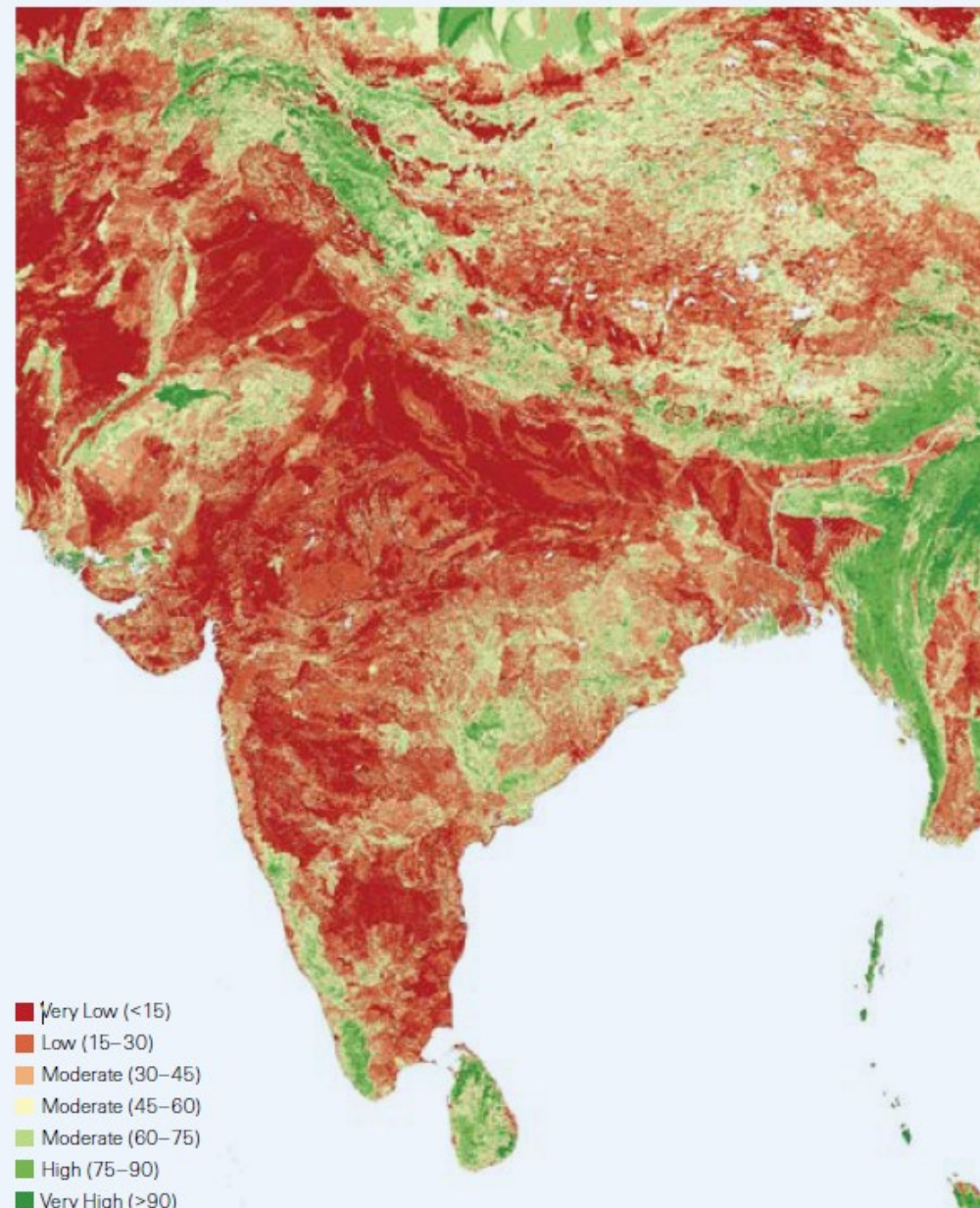
Rising temperatures to drive decline in average **wheat** production in Indo-Gangetic Plains

15-40% of current **rainfed rice** growing areas will be at risk

Soyabean yields to fall by 19% or 42% with rise in temperature of 4°C or 8°C respectively

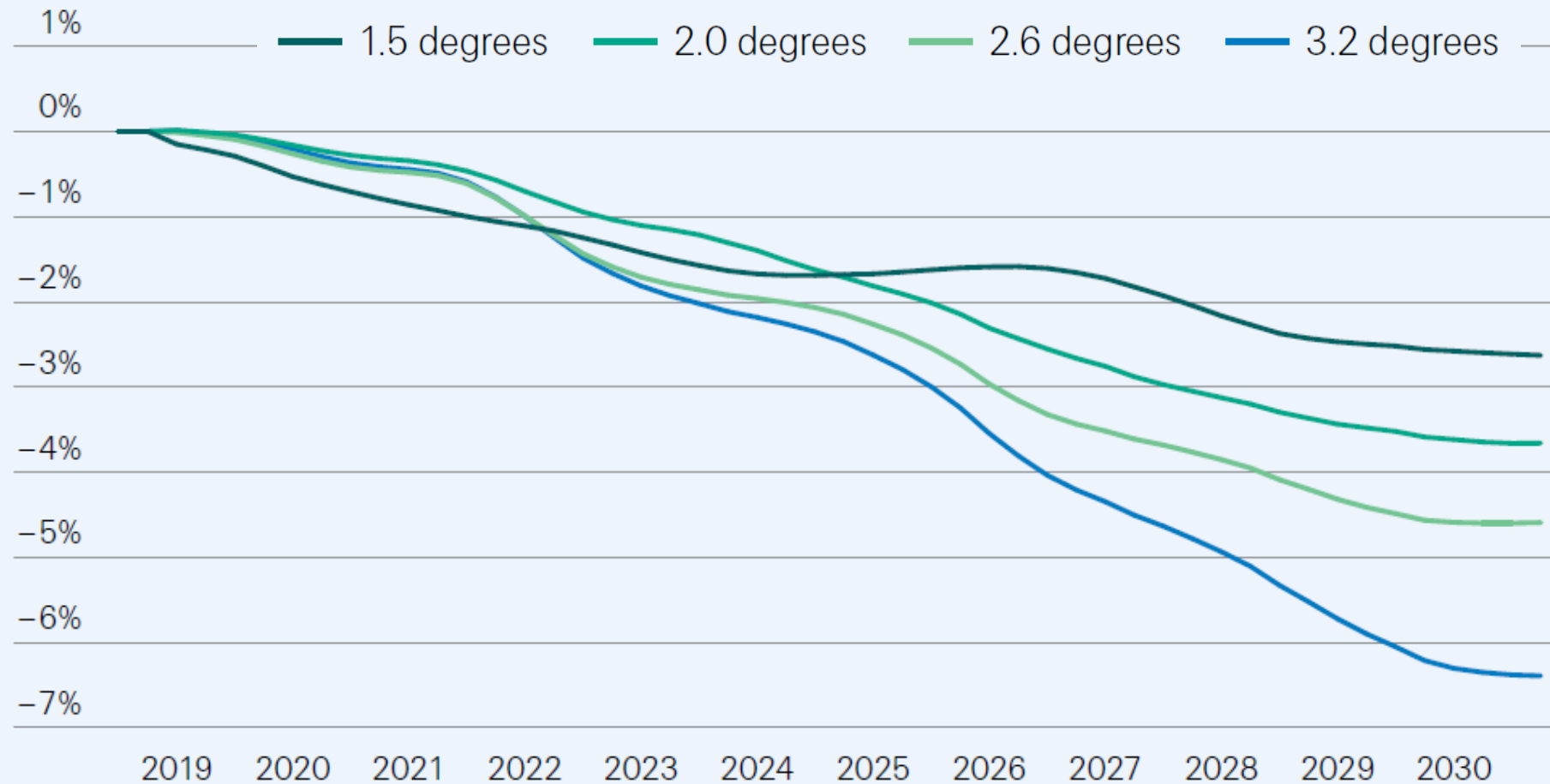
Will nature be able to support economic activity?

Only 1% of land in India lies in the 'very high' biodiversity & ecosystem services (BES) category



Source: Swiss Re Institute BES Index

Climate change: GDP drop by 6.4% in 2030, 35% by 2050



Insurers have a role to play



Sustainability in underwriting

- Net-Zero Insurance Alliance
- Screen transactions for ESG risk exposure



Responsible investing

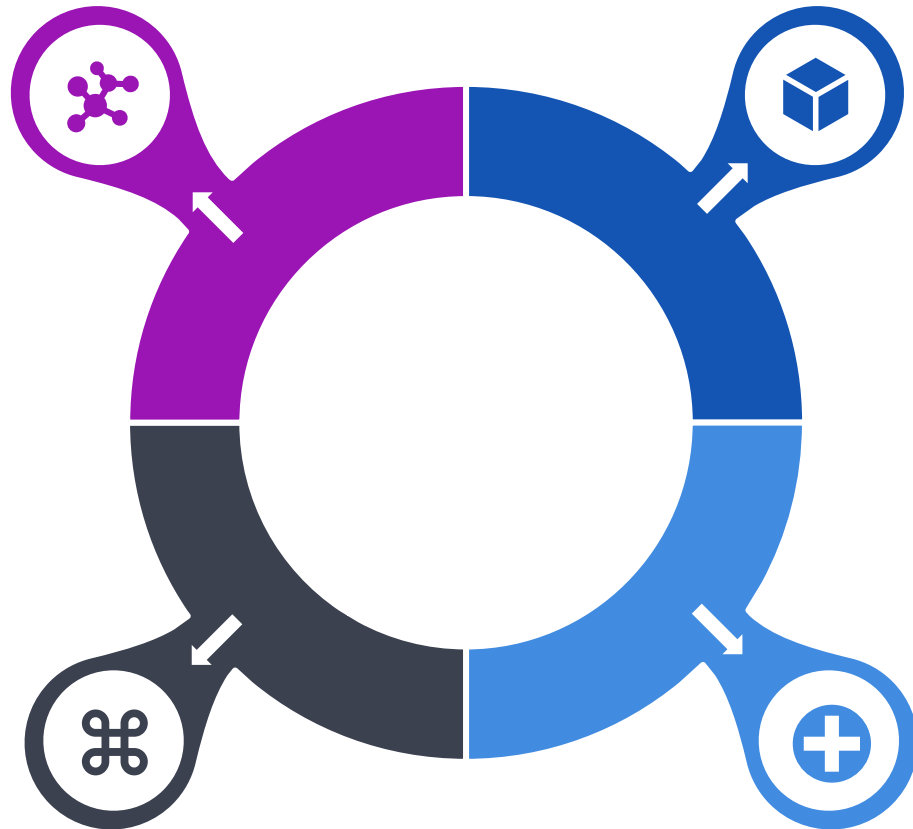
- Reduce carbon intensity of portfolios
- Green, social and sustainability bonds



Sustainable operations

- Carbon Steering Levy
- Emissions compensation mix

There are also opportunities



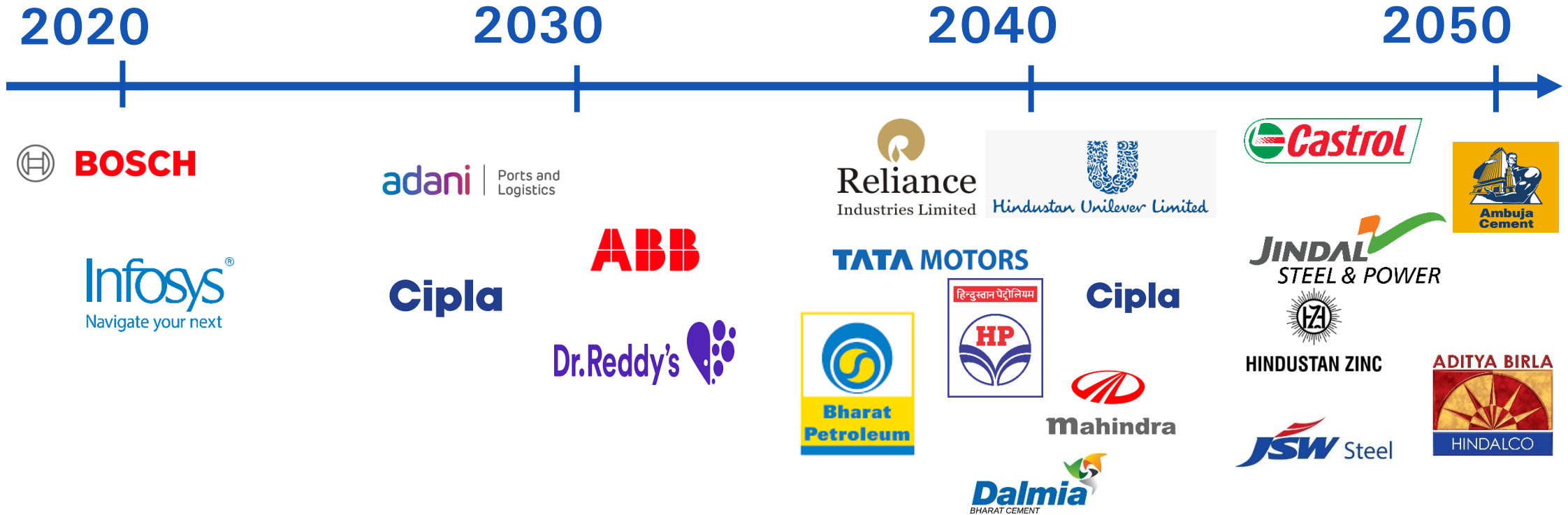
Accelerate the energy transition

De-risk the industrial transition

Protect health and agriculture

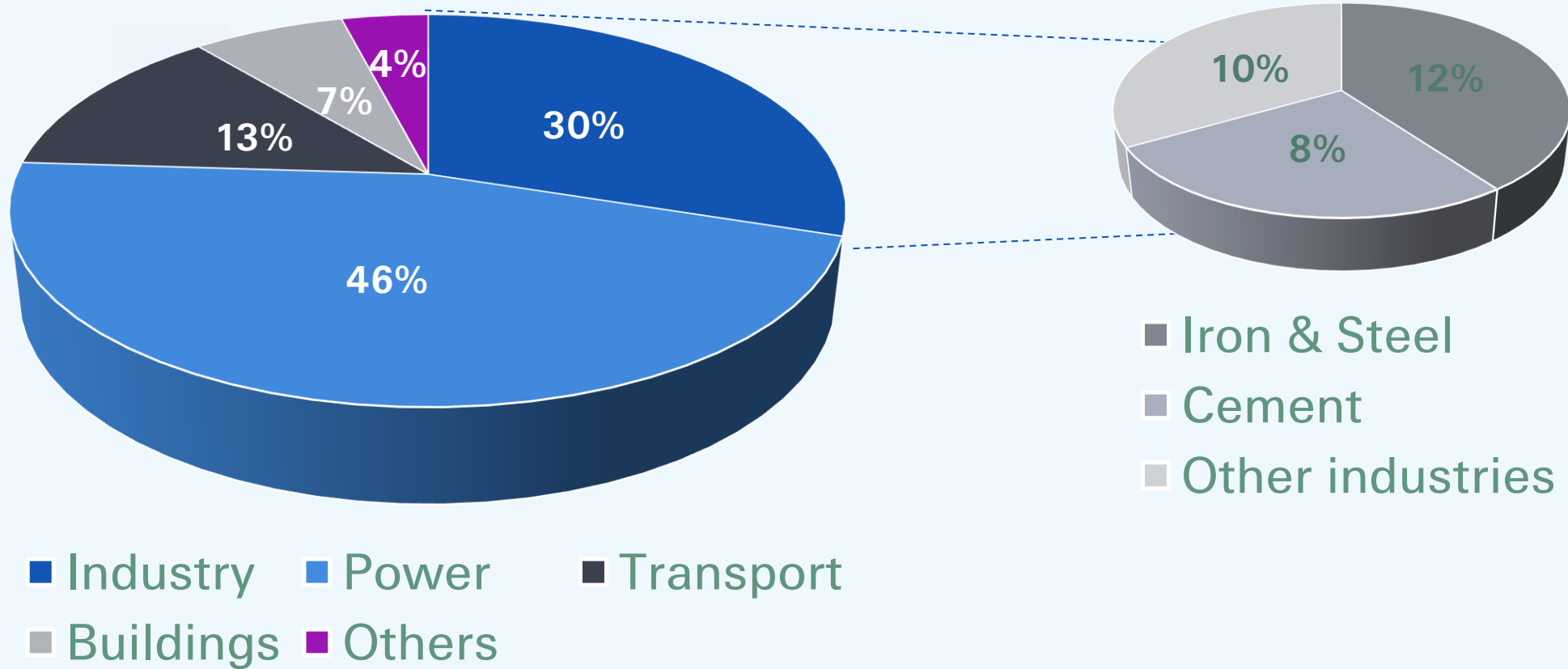
Digitise to close protection gaps

The biggest names in India have net-zero ambitions

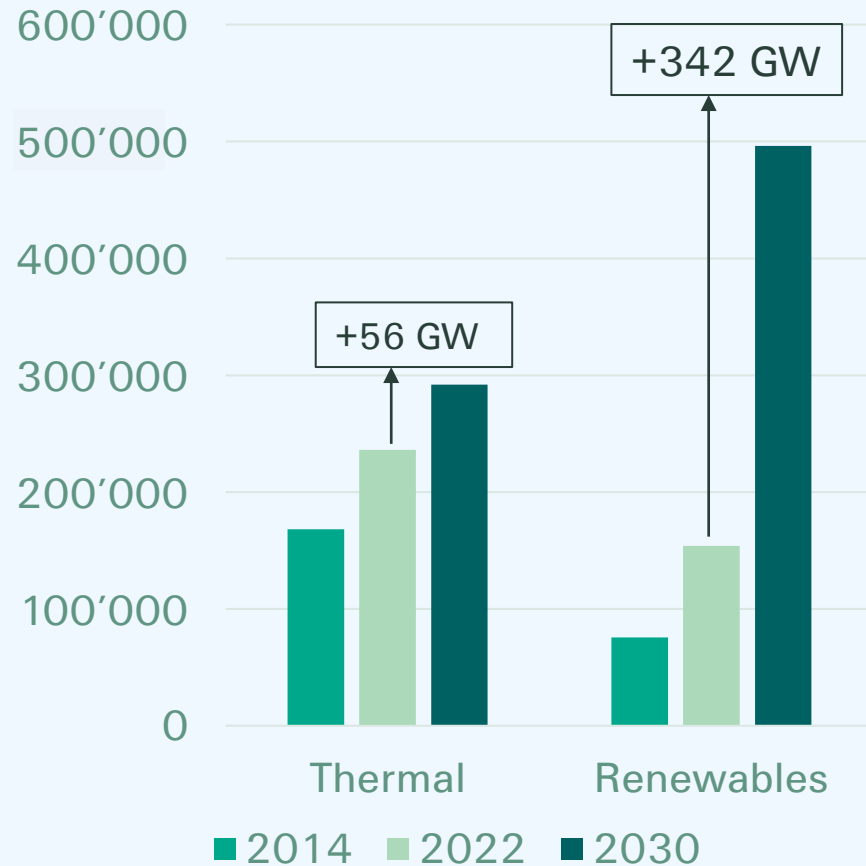


Growing consensus to lower carbon footprints

Breakdown of India's CO₂ emissions by sector

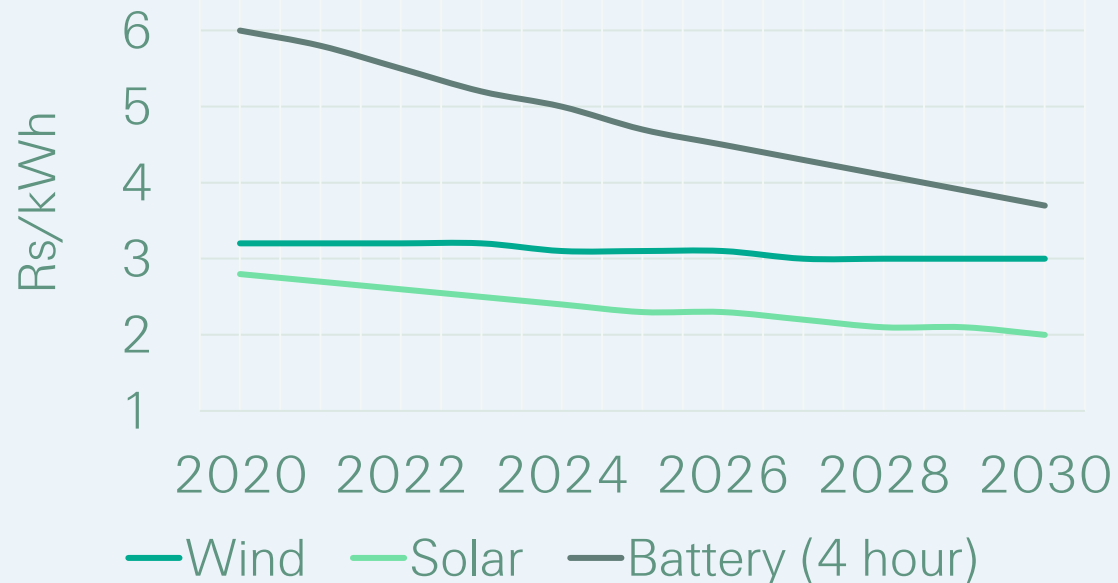


Advancing renewable energy is high on the agenda



Energy storage to supplement renewable energy growth

Potential decline of LCOE for wind and solar, and LCOS for battery storage (Rs/kWh)



500GW of non-fossil capacity target by 2030 can be supplemented by grid-scale battery storage

Source: Least-Cost Pathway for India's Power System Investments through 2030, N. Abhyankar, S. Deorah, A. Phadke, Lawrence Berkeley National Laboratory ([link](#))

Why talk about hydrogen?

- **Wide range of applications:**
 - Blended with natural gas
 - Produce synthetic fuels
 - Energy storage
- **Risk factors to be addressed:**
 - More complex exposures
 - Unknowns on re-purposed infrastructure

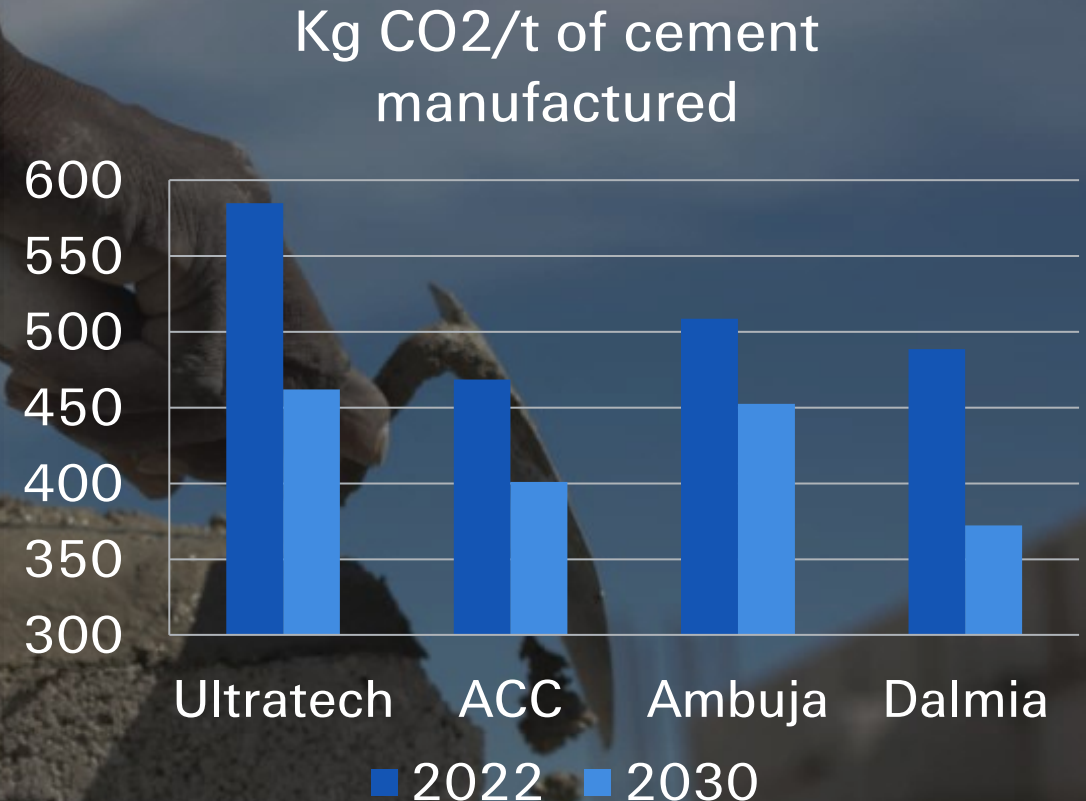


Sustainable steel is critical but could involve new hazards



Cement production can be made less carbon intensive

- Lower clinker content, new materials and novel cement
- New materials also come with inherent risks for insurers
- Higher risk of failure than a product refined over decades
- Consider how policies respond to defects for projects with new materials



Source: Company data, UBS. Ultratech target is 2032

Carbon capture: A bridge solution for hard-to-abate sectors



Early industry efforts

- Pilot CCUS projects
- IOCL MoU with ONGC & Oil India
- Dalmia Cement and Tata Steel are leading efforts

Initial policy steps

- NALCO, ONGC, BHEL etc. setting up CCUS
- Exploring end use of carbon; concrete curing etc.
- Dialogue with US-DoE and DST on CCUS

More enablers needed

- Comprehensive policy ecosystem
- Enabling finance to cover additional cost
- Address low awareness

EVs are key to sustainable mobility; risks need mitigation



Manufacturing

- Prototypes
- Few skilled contractors



Transportation

- Second hand EVs
- Overcharging



Use & Repair

- Costly repairs
- Driver risks
- Higher severity



Disposal

- Environment
- Fires
- Training

The time to act is NOW

Energy transition

Solar, wind, energy storage

Holistic cover, extended warranties, risk engineering, risk expertise

Industrial transition

Higher efficiency, CCUS

Risk-based occupancy, data backed pricing, risk engineering services

Agricultural transition

Higher crop yield, better storage

Parametric solutions, wider cover, faster payouts, nature-based solutions

Health risk mitigation

Resilience, lifestyles mental health

Parametric products, wider cover, mental health solutions, disincentivize pollution

Swiss Re Institute library



- [The economics of climate change](#)
- [De-risking the hydrogen economy](#)
- [Biodiversity and the benefits of human health](#)
- [The insurance rationale for carbon removal](#)
- [Responsible Investments - Roadmap to net zero](#)
- [Remote sensing innovation: progressing sustainability goals and expanding insurability](#)

Thank you!



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