

Carbon Management : Opportunity and Impact



The Consumption Crisis and Why Carbon Accounting is Essential

The Impact of Over-Consumption: Economic, Climate, and Health Crisis

Over the Last Two Decades

Atmospheric CO2 levels **Surpassed** 400 ppm*

Global Sea Level **risen** by 3 inches

Global ice losses **soared** to 1.2 trillion tons per year



Leading to Three Pressing Long-Term Impacts

Failure to **mitigate** climate change

Failure of **adapt** climate change

Natural disasters and extreme weather events



Urgent need gap in the market for accounting for Carbon/GHG Emissions

Everyone's buzzing about the consumption boom. Let's dive into the economic challenges it spawns and the new industry rising to tackle them.

*Pre-industrial CO2 levels were about 280 parts per million (ppm); sustained increase level at 400ppm will worsen global warming and climate change.

Why Carbon Accounting is the Key to Addressing the Crisis: Global & Indian View

The Urgency of Addressing Climate Change

- Without significant intervention, **global temperatures could rise by 2°C by 2050** (IPCC)
- **Unchecked climate** change could **reduce India's GDP by up to 2.8% annually** by 2050 (World Bank)

Posing Significant risks to business globally

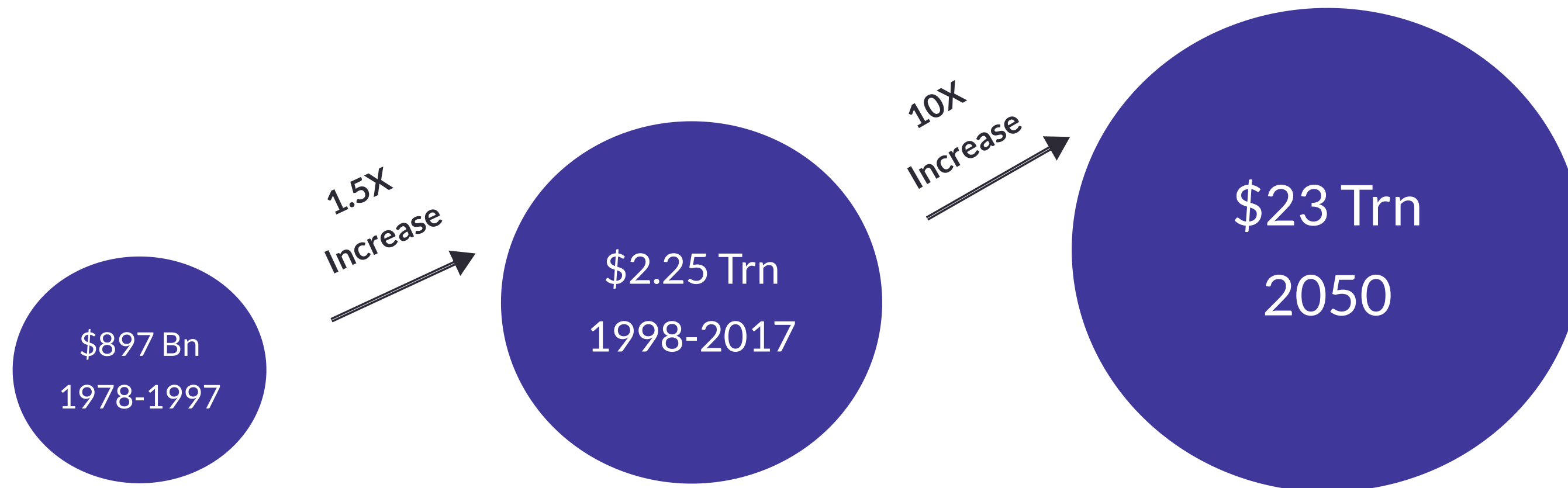
- **Physical Risks:** Floods and droughts can **disrupt supply chains** and damage infrastructure.
- **Transition Risks:** Companies may incur **higher costs due to carbon taxes and regulatory compliance** as nations pursue carbon neutrality

Showcasing Carbon Accounting Opportunities

- Accurate carbon accounting aids in **tracking and reducing carbon footprints**.
- It **ensures transparency**, mitigating risks of non-compliance and reputational damage.

As climate risks intensify, comprehensive carbon accounting is not just a regulatory requirement but a strategic imperative for sustainable growth.

The Inescapable Need for Carbon Accountability



Cost of climate-related disasters globally soared 150%

The earlier you start your carbon accounting journey, the more financially sustainable you will be as a business due to new regulations and carbon credits growing cost

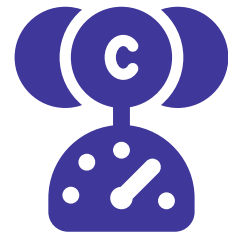
Understanding Carbon Accounting: Terminology and Process

Decoding Carbon Terminology



Carbon Footprint

Total amount of green house gas (GHG) emissions, including CO2 generated by an event, individual, organization, service, place or product, during any given time



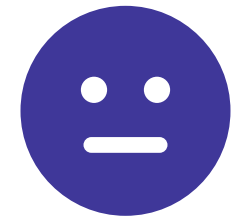
Carbon Credit

A carbon credit represents the **right to emit 1 metric ton of CO2**



Carbon Offsetting

A carbon offsets represent **reduction of 1 metric ton of CO2**, in order to compensate for emission made elsewhere

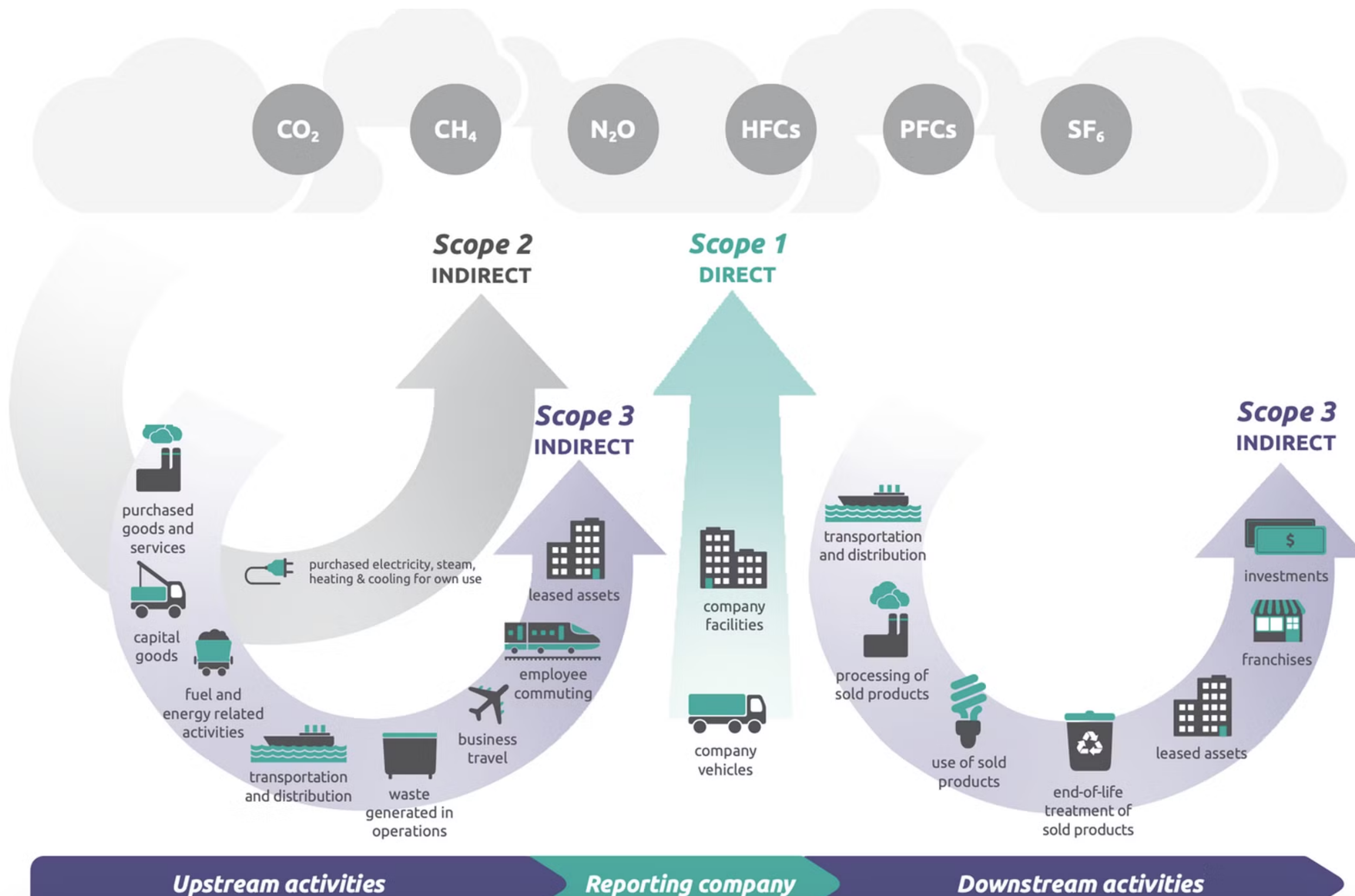


Carbon Neutrality

A **state of balance between the CO2 emitted and removed** from the atmosphere

Breaking Down Carbon Footprints: Multi-Scope Insights

A carbon accounting platform enables companies to track their activities, record related expenditures, and accurately calculate the GHG emissions associated with each activity.



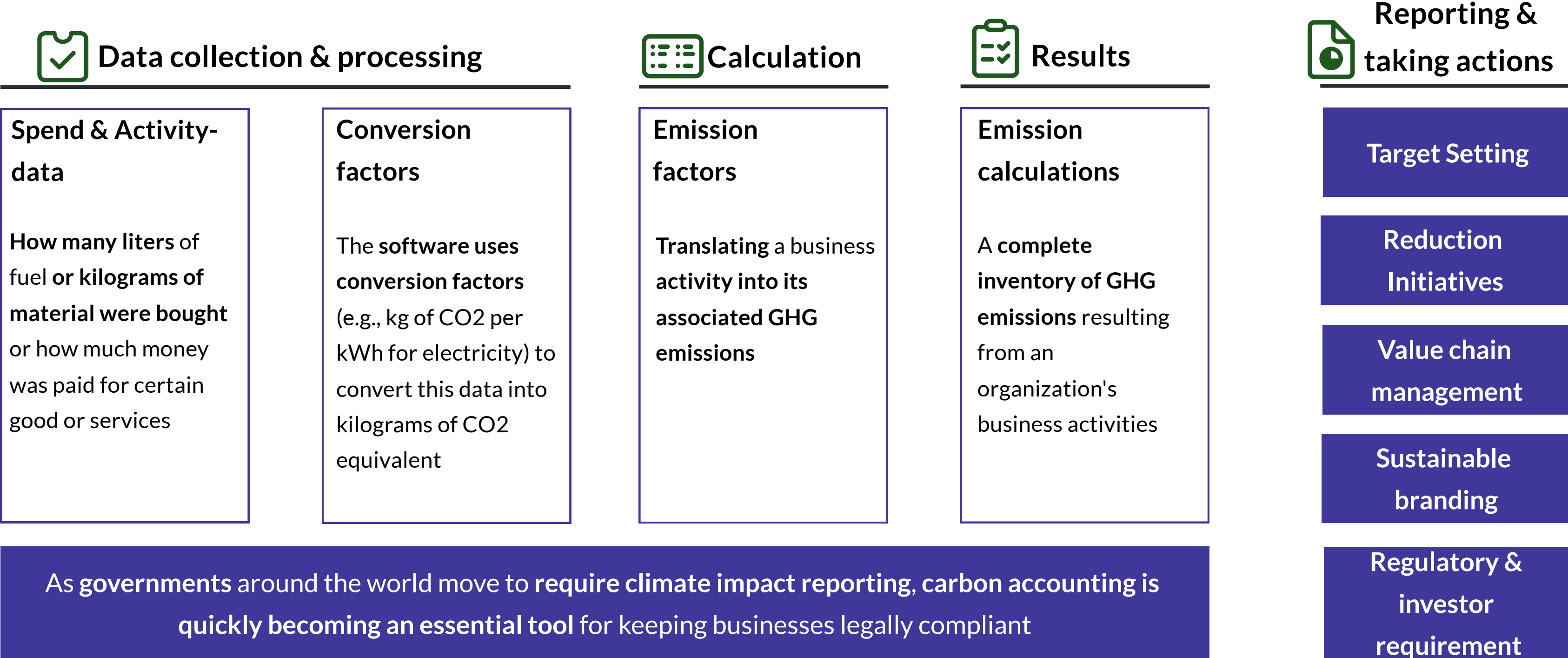
Scope 1 emissions - direct emissions from owned or controlled sources

Scope 2 emissions - indirect emissions from acquired services

Scope 3 emissions - all other indirect emissions that occur in a company's value chain

The Fundamentals of Carbon Accounting: How It's Done

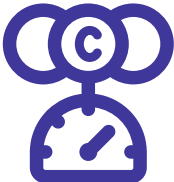
Carbon accounting involves quantifying a company's GHG emissions—from data collection to reporting—using a manufacturing setup as an example.



The Role of Technology in Driving Carbon Accountability

Tech-Driven Carbon Accountability


Startups have mushroomed across the globe to calculate & facilitating the offset of GHG emissions




Measure GHG emissions



Set a GHG reduction target



Reduce GHG emissions annually



Offset GHG emissions

Remember the last page of Classmate a footnote saying—
“You saved a tree by using recycled paper”
It made us feel like we made an impact
Now, technology has brought new ways for consumers and companies to account for and mitigate the environmental impact in their day-to-day activities

The Future of Carbon Accountability: How Tech Is Leading the Way

One of the key benefits of tech platforms in carbon accounting is that it enables **companies to continuously monitor and track their emissions in real time**

Correlation between technology and achieving sustainability targets

Average CO2 reduction



**Process Optimization
in Data Collection**

5-10%

- Cloud based data & digital platform
- AI-driven cost & emission optimization

**Transparency in
Carbon Conversion**

30-40%

- IoT & blockchain tracking solution
- Data visualization & impact reporting

**Customized Products &
Services**

5-10%

- Human-centered design & product
- Behavioral analytics

**Building unified
Data Ecosystem**

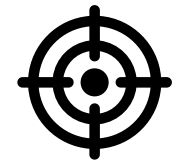
5-10%

- Data sharing & ecosystems
- Cyber resilience

The combination of process automation, carbon data transparency, circular product or service design, and sustainable business models can reduce emissions by 45-70%

The Road Ahead: Role and Challenges of Carbon Accounting

Role.



Helps in setting **realistic reduction target** and monitoring progress



Policymakers can make **informed policy decisions** with data



Encourage **corporate responsibility** by evaluating envt. impact



Attract **green investment** as ESG factors gain importance for investors

Roadblocks.



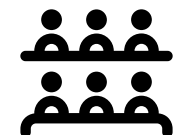
Lack of accurate and **quality emission data** from various sources



Lack of **technical expertise** hinders carbon accounting



Softwares overlooks **sectoral and regional challenges** in India



Lack of **public awareness**, essential to promote sustainable practices

Exploring the Carbon Market: Opportunities and Growth in India

Global Carbon Reporting Standards: Navigating Cross-Border Rules

Countries like Japan and the EU started reporting GHG emissions in 2005, while the US and China began 10-12 years earlier.

US

SEC's regulation

Requires **publicly traded companies** to report direct & indirect **GHG emissions**. Disclose information about their climate-related risks, governance, and strategy.

Europe

Corporate Sustainability Reporting Directive

Mandates **comprehensive sustainability reporting**- detailed disclosures on carbon emissions and climate-related risks, for a **broader range of companies**.

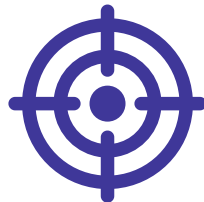
UK

Streamlined Energy and Carbon Reporting

Requires **large companies** to report on their **energy use, carbon emissions**, and energy efficiency measures as part of their annual reports.

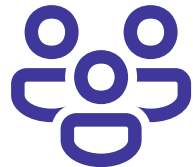
India's Booming Carbon Market: Opportunities for Growth

Launch of Future
Compliance
Market by 2025



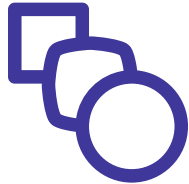
Target

Sets specific GHG emission benchmarks and reduction targets for industries.



Participants

Obligated entities from sectors like steel, iron ore, refineries, petrochemicals & aluminium.



Transition

From ESCerts to carbon credits, CCTS-2023, aims to reduce GHG emissions through carbon credit trading

India's Net Zero goal involves creating exchanges for carbon credit trading, leveraging climate finance, and adopting low-cost climate technologies.

The Union Budget presented in July'23 has reiterated that “hard to abate” sectors should transition from ‘energy efficiency targets’ to ‘emission targets’ – a roadmap will follow soon.

Building Local Carbon Accounting Solutions for India's Future

A one-size-fits-all approach to carbon accounting is often impractical due to the unique requirements, complexities, and challenges each sector and region faces.

Tailored Compliance Needs

Each country has a different regulatory environment. For example, India follows SEBI's BRSR rules. **Foreign software often can't accommodate all** these regulations, which creates a need for local companies

Cost Sensitivity

Indian SMEs are price-sensitive, making global carbon accounting solutions less accessible. Local startups can provide affordable, scalable options tailored to their budgets.

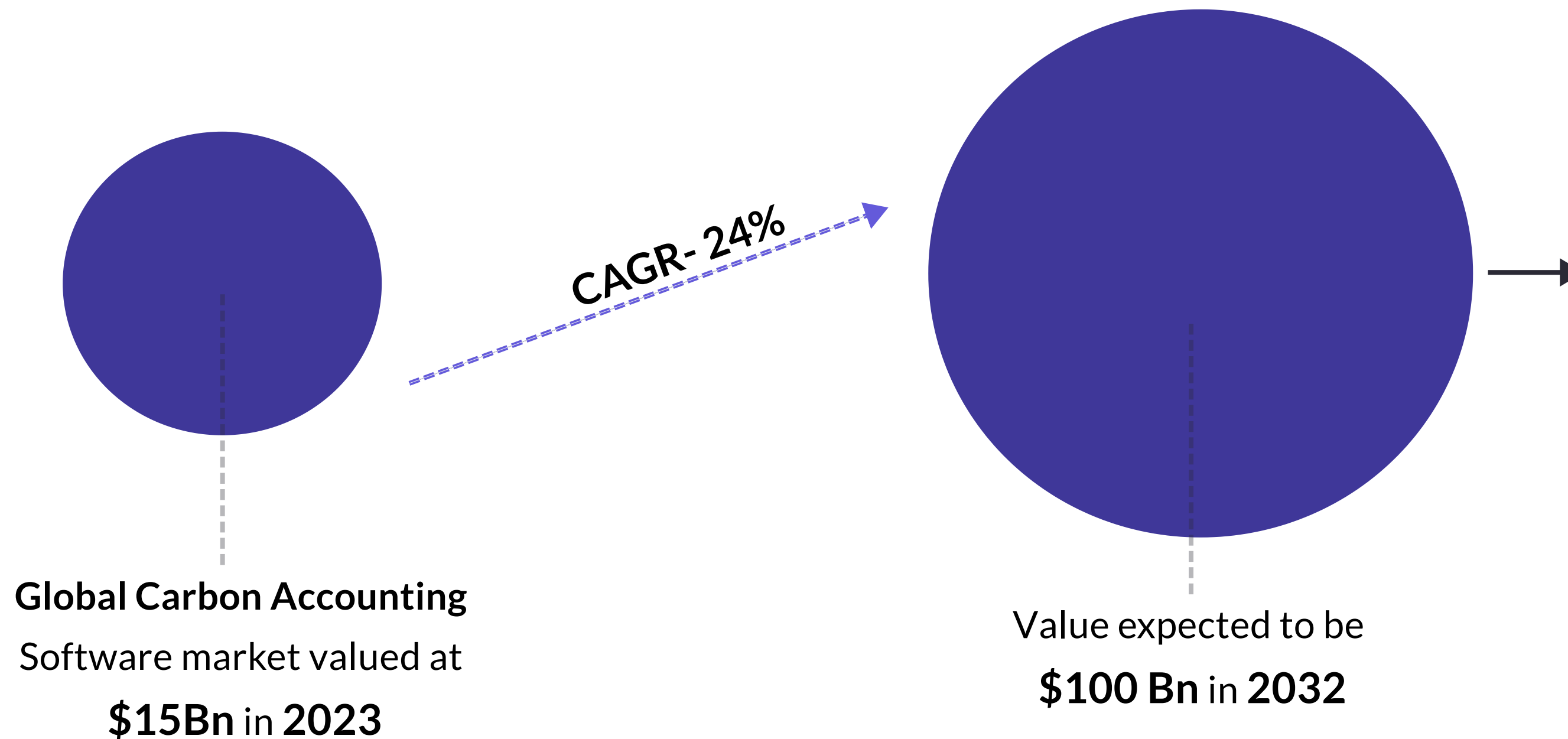
Sector-Specific Solutions

Indian carbon accounting **startups develops solutions tailored to specific sectors** like agriculture, energy, or manufacturing, where the carbon footprint and sustainability challenges are distinct.

Customizable Features

Businesses in India have unique operational & reporting needs. Local carbon accounting software offers customizable features, unlike rigid global solutions focused on standard practices.

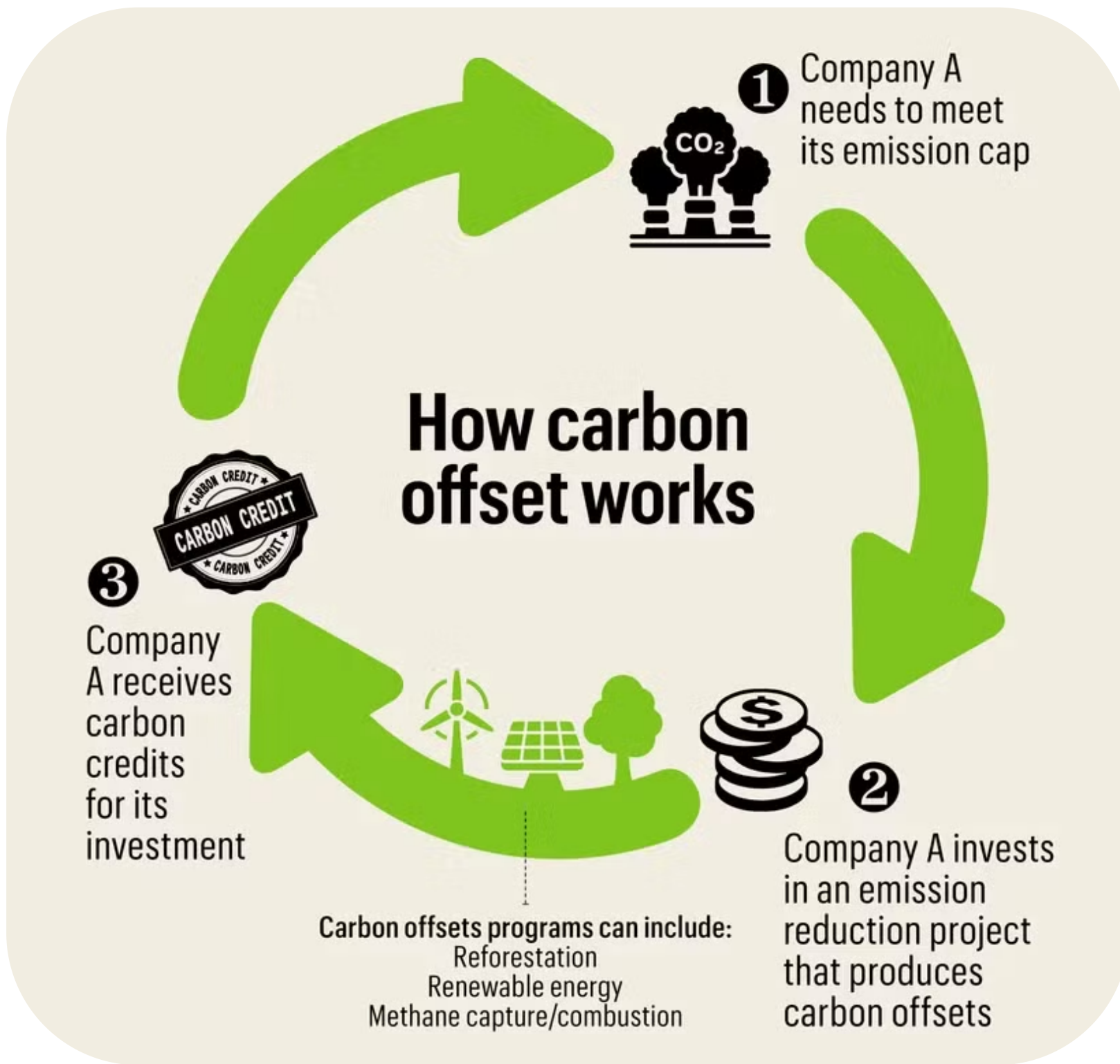
Some Carbon Accounting Facts



- A total of **\$1.9 Bn** has been raised to date by global carbon accounting software companies
- Only **\$14.5 Mn** has been raised by Indian carbon accounting platforms till date
- **Asia-Pacific** will dominate the market and will register the highest **CAGR** during the forecast period

The Path Forward: From Carbon Accounting to Offsetting and Market Participation

Beyond Accounting: The Path to Offsetting Your Carbon Footprint



Indian Market Landscape - Schemes for trading carbon credit

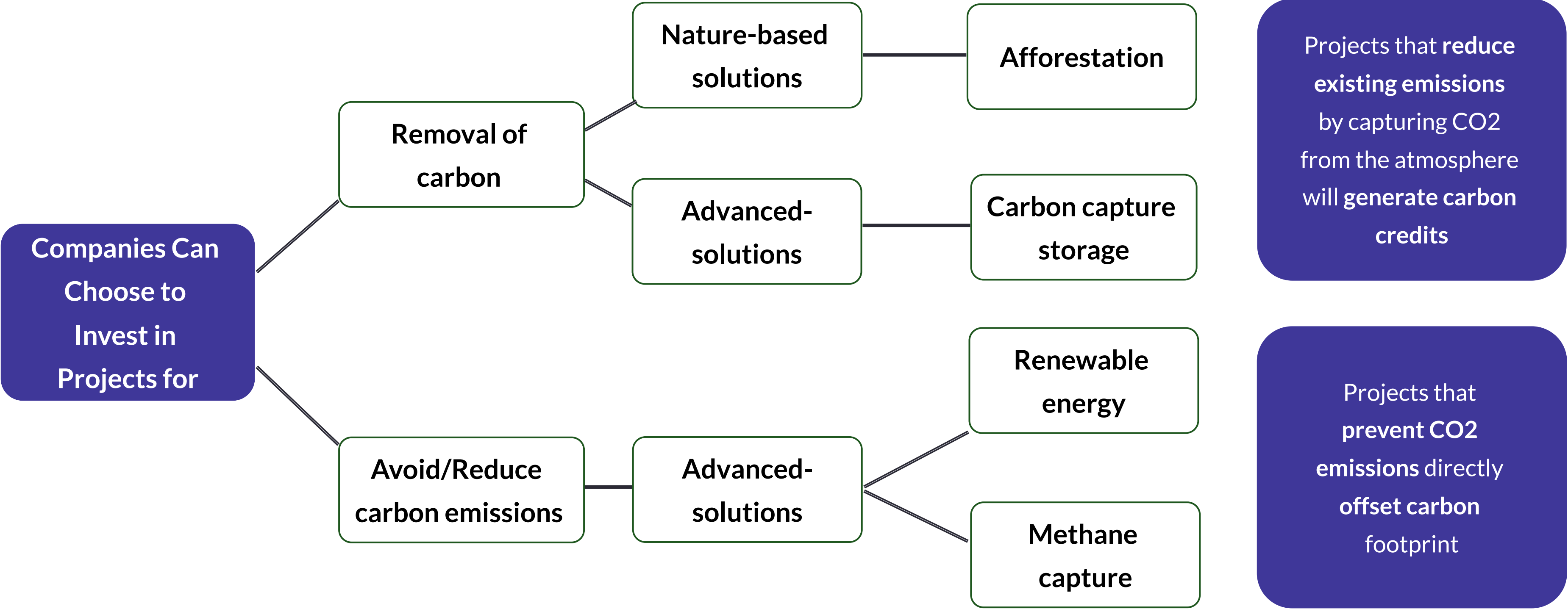
Old Scheme- Perform, Achieve, and Trade (PAT) Scheme (introduced in 2012)

- Limited participation - only obligated entities
- Incompatible standards
- Lack of clear targets
- Inefficient markets

New Scheme- Indian Carbon Credit Trading Scheme 2023

- Allows both obligated and non-obligated entities
- Integrity and credibility
- More dynamic - better price discovery
- Broader Sectoral Coverage

Practical Solutions to Reduce or Remove Your Carbon Footprint



Reducing emissions is key to fighting climate change, but it might not remove all CO2. That's where Carbon Dioxide Removal (CDR) comes in. Investing in CDR projects generates carbon credits, which can be traded.

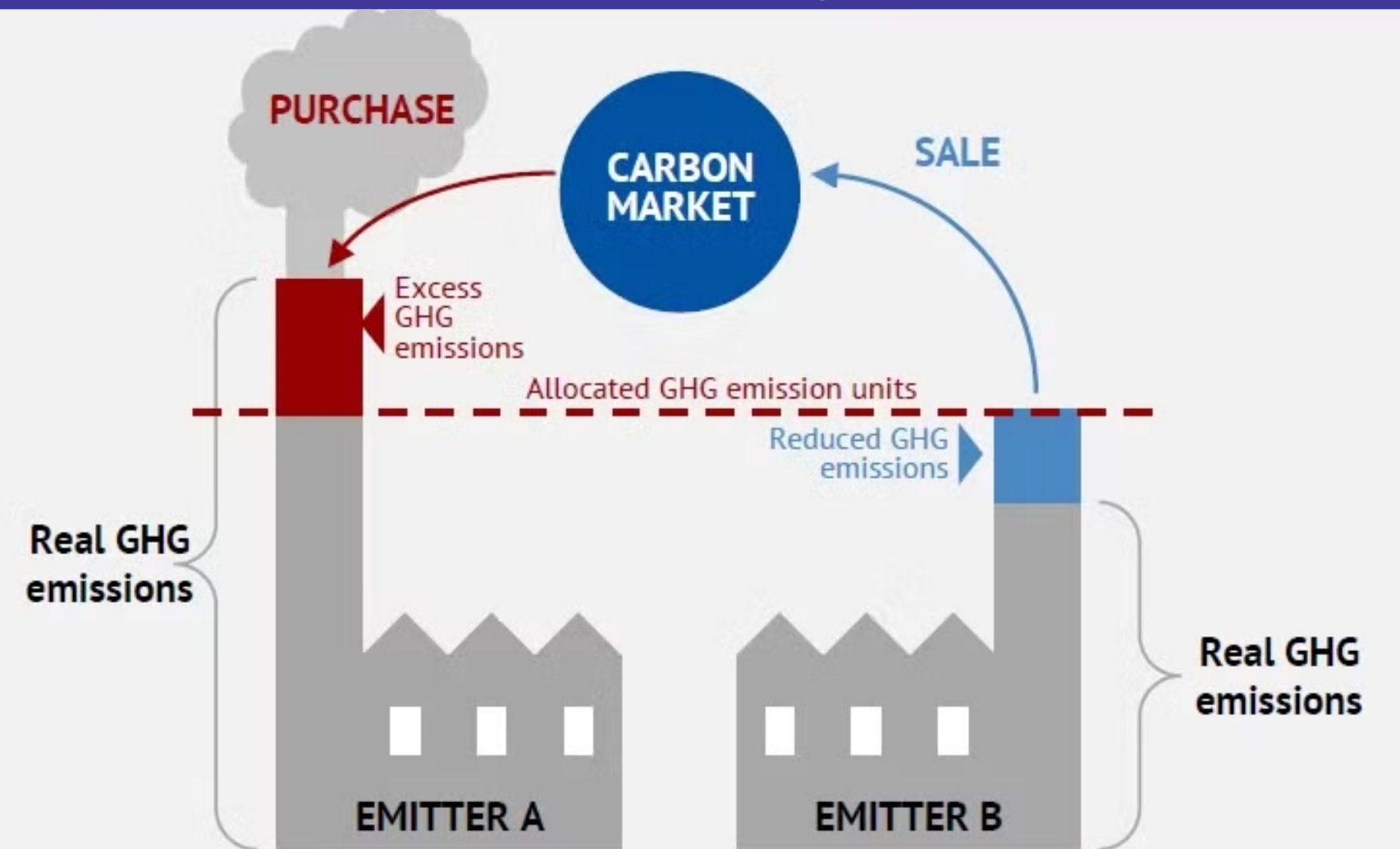
The Carbon Marketplace: Paving the Way to Net Zero by 2050

For the sale of carbon credits, there are two main markets:-

Regulated market, set by regulatory bodies for obligated entities

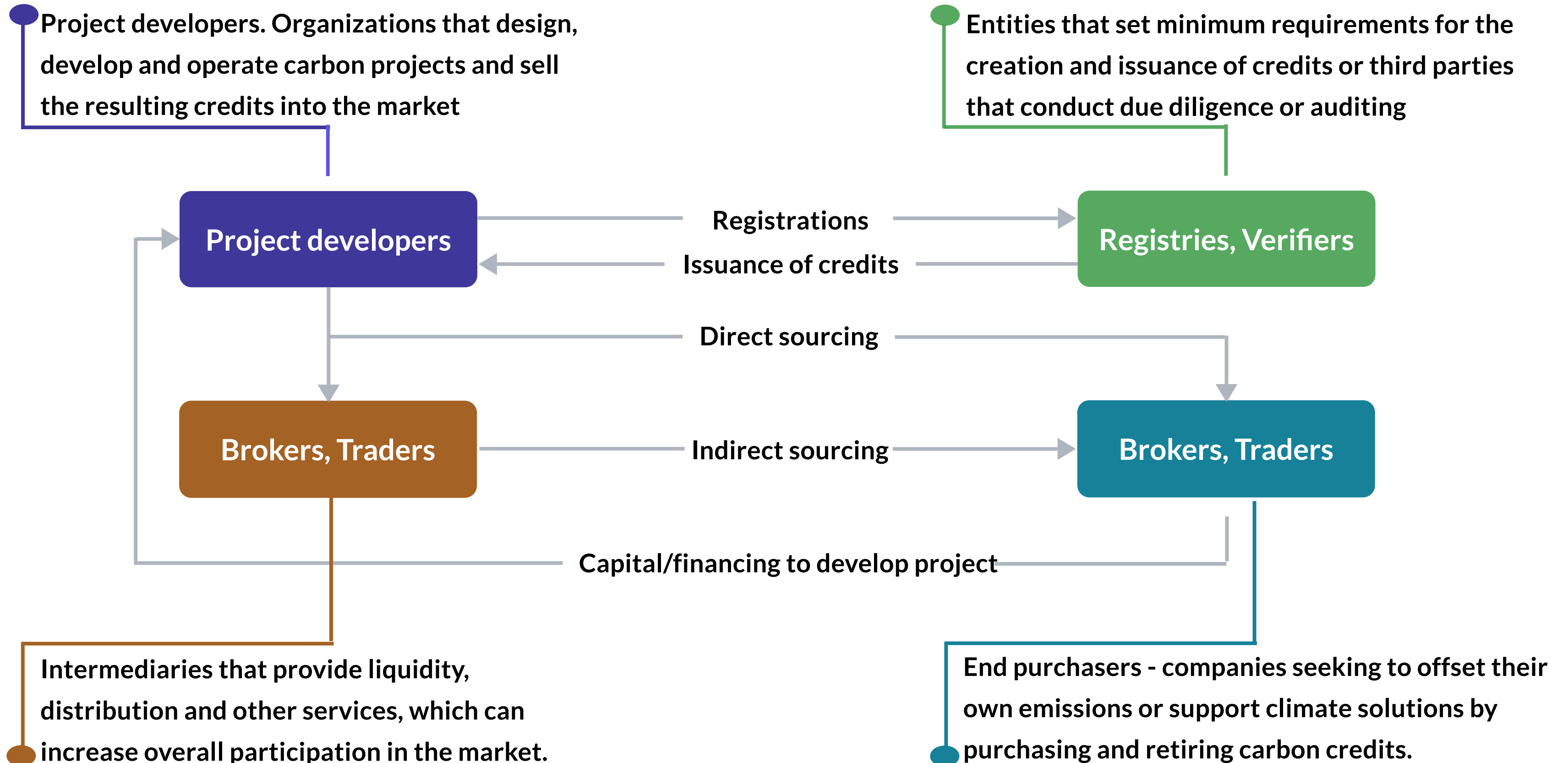
Voluntary market, where businesses and individuals purchase credits to offset their carbon emission

How an emission trading system works



- Allowances are either freely allocated or auctioned, and then may be traded.
- The supply and demand for these allowances establishes a market price.
- Emitters can also choose to “bank” allowances and hold them for use in future years.
- Emitters with an insufficient amount of allowances required for their industry at the end of the reporting period incur penalties.

Who's Involved? Key Players in the Carbon Market



The Financial Power of Carbon Credits: A Booming Business

India and China are likely to emerge as the biggest sellers and Europe is going to be the biggest buyers of carbon credits

India has been a major supplier of carbon credits and not the buyer as things are not mandatory here. However, the concept is making inroads and in the next 2-3 years we will see more companies and brands adopting the idea

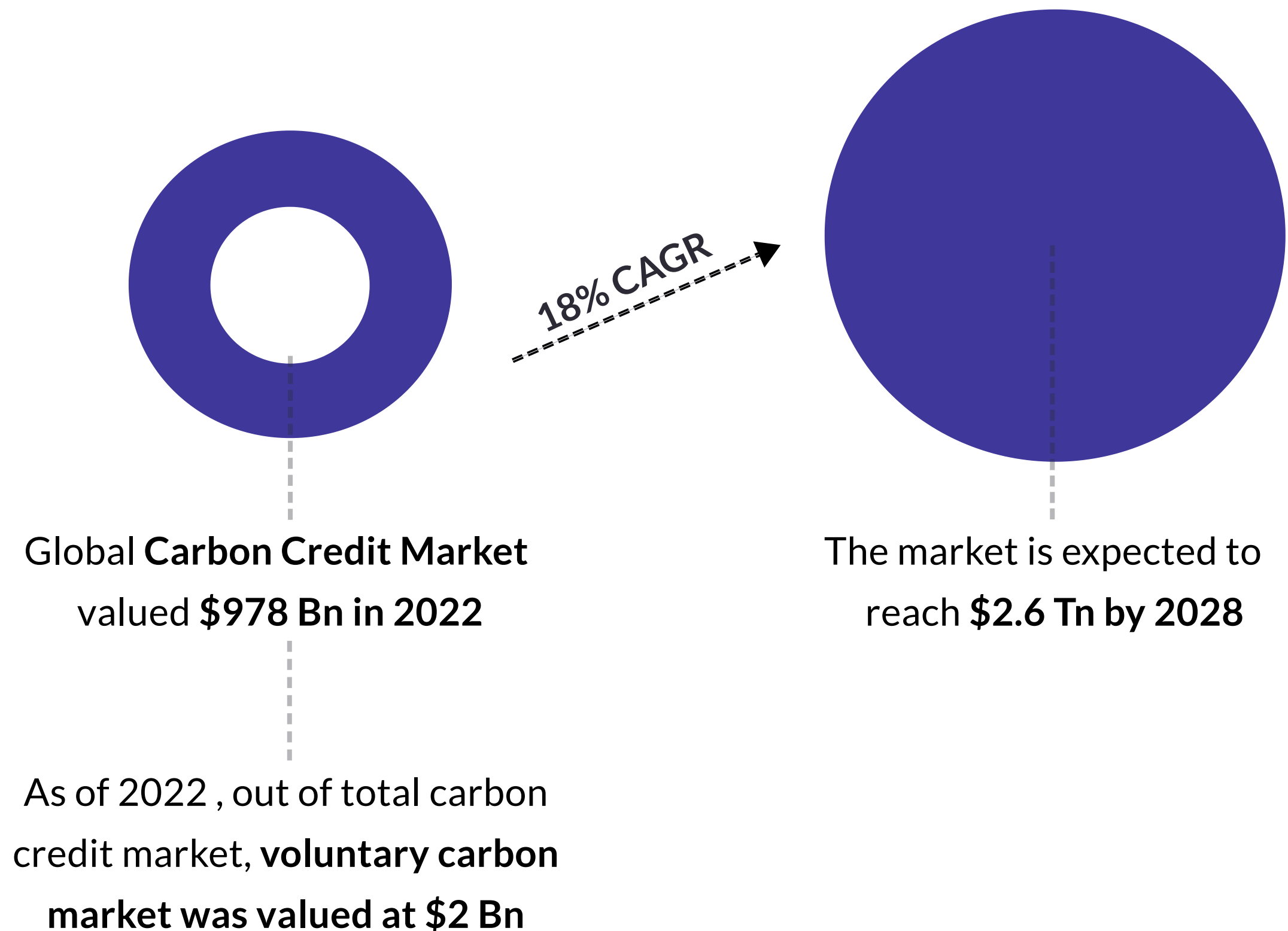
India has 1,451 projects registered or under various stages of consideration at the world's two leading carbon registries*

Carbon credits issued to Indian entities are worth **11%** of India's annual GHG emissions in 2021

Indian entities have already earned about **\$652 million** from carbon credits used to offset emissions

*Verra and Gold Standard, world's two leading carbon crediting programmes, control roughly 90% of the non-governmental carbon credits issued across the world

Carbon Credit Market: The Sunshine Industry on the Rise



Carbon Credit Market in India

- Increasing regulatory and stakeholder pressure on global corporations to lower emissions.
- India is developing a regulated Cap and Trade emission trading market, allowing both obligated and non-obligated entities to trade carbon credits, which will incentivize emission reductions and promote cleaner technologies.

Spotlight on Market Map & Recent Fundraising

Carbon Market Map

Vertical Software

Real estate decarbonization

accacia

Industrial manufacturing

sentra.world

Supply chain

Emitwise

Transport & Logistics

Sangti  **AVARNI**


FITSOL
SUPPLY CHAIN SOLUTIONS PRIVATE LIMITED

Fashion and retail industry

**carbon
trail**

Horizontal Software


myplan8

 **Sprih**

 **carboledger**

greenly

planA

 **PERSEFONI**


SWEEP

CLIMETO 
TURN IT GREEN!

Carbon Credit Marketplace

 **CLIMES**

 **Creduce**

 **eki**
STEERING THE PLANET TO NET ZERO

 **COMPLIANCE KART**

Varaha
Disrupting Carbon Footprint


OFFSETGO

Vertical software is tailored for **specific industries**, like manufacturing or energy.

Horizontal carbon accounting software serves **multiple industries** with broad, general features.

Carbon credit marketplace lets companies to **trade carbon credits**, helping them offset their emissions.

Investment in Carbon Markets: Recent Fundraising Highlights

<u>Startups</u>	<u>Total fundraise</u>	<u>Investors</u>
 PERSEFONI	\$171 Mn	The Rise Fund, Rice Investment Group, Prelude Ventures, Parkway VC
 greenly	\$78.6 Mn	Fidelity International Strategic Ventures, Benhamou Global Ventures
 varaha <small>Disrupting Carbon Footprint</small>	\$12.7 Mn	RTP Global, Omnivore, Orios Venture Partner, Better Capital
 accacia	\$9 Mn	Illuminate Financial, AC Ventures, Accel, B Capita
 Sprih	\$3 Mn	Leo Capital
 sentra.world	\$2 Mn	Avaana Capital, RPG Ventures, Golden Sparrow
 CLIMES	\$1.2 Mn	Peak XV Partners, Avaana Capital, Kalaari Capital, Rainmatter

Thank You

Basic Roots Consulting | teambrc@basicroots.in