



TOGETHER TO NET ZERO

GC's decarbonization pathways

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The only number
that matters



What is key differentiation between Neutrality vs. net zero?

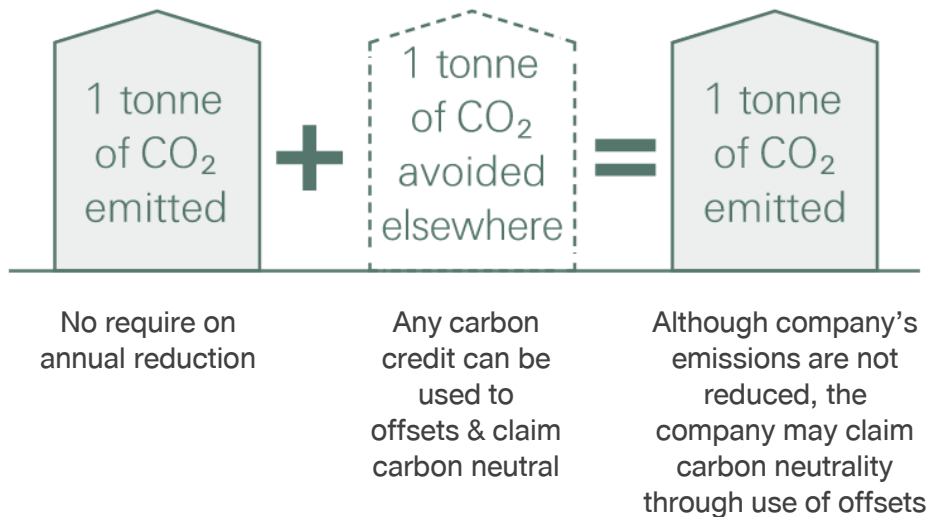
Typical terms:

Carbon = Carbon dioxide only

Climate = Carbon dioxide + other GHG (e.g. methane, nitrous oxide, fluorinated gases)

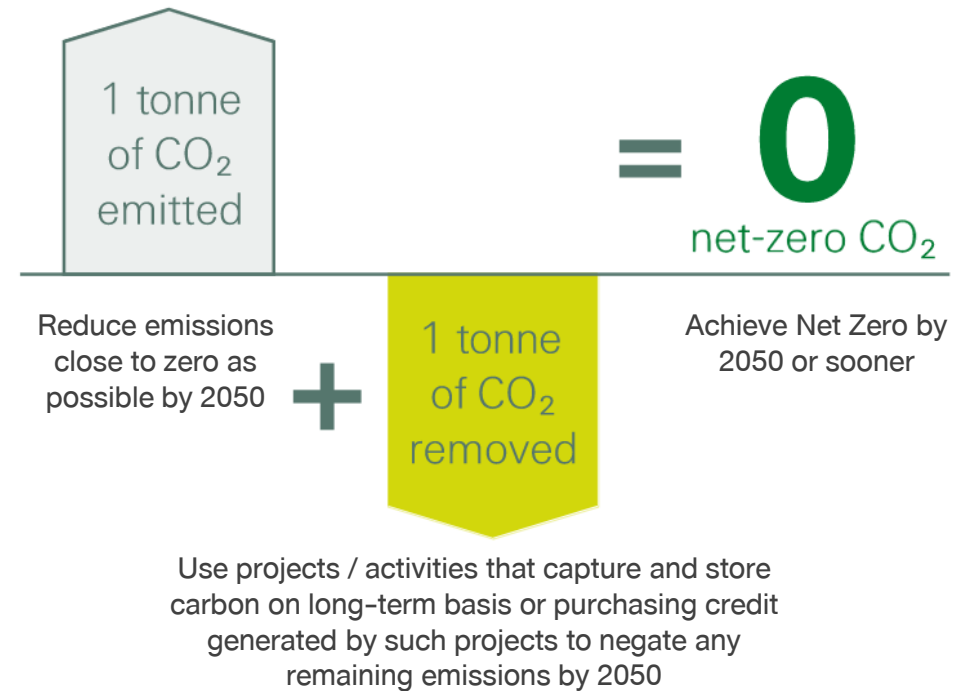
Neutrality

BSI PAS 2060, TGO Carbon Neutral



Net zero

SBT, Oxford Net-Zero, Net Zero Initiative (Carbone 4), UN Race to Zero



Why climate action is very important?

Economic case estimation

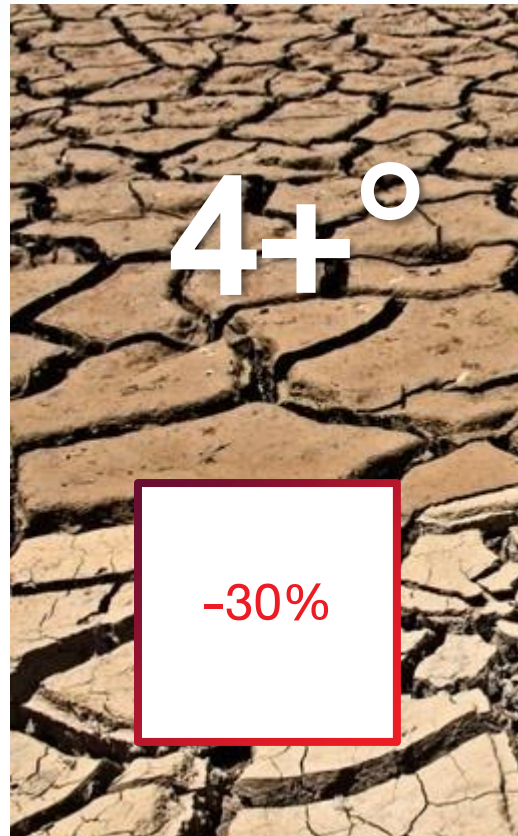


Global warming
by 2100

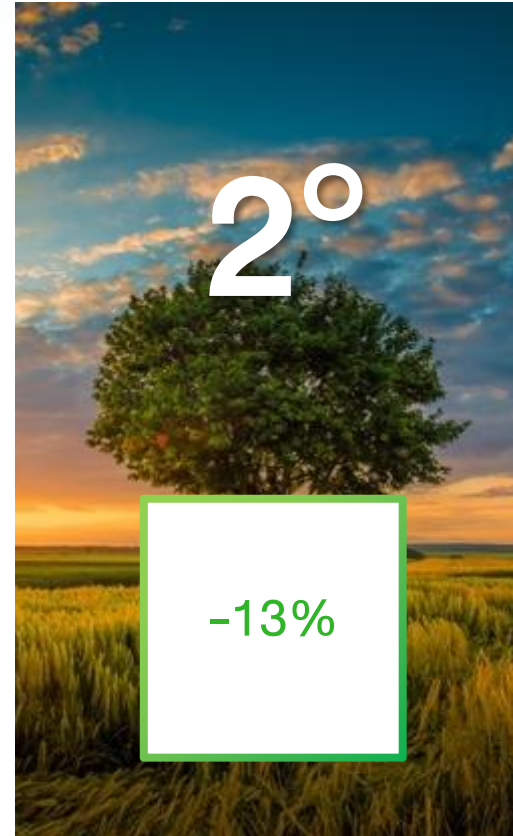


GDP per
capita in 2100,
relative to no
additional warming

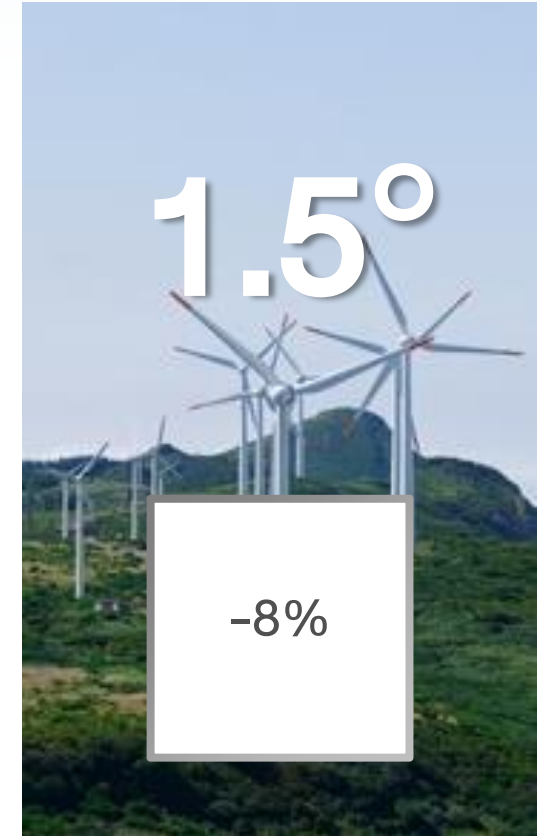
Current path



Paris goal



Paris ambition



Conference of the Parties (COP) is established to
Enhance global climate actions



COP21

Creating the mechanisms
to raise ambition

From Paris...



COP26




Bridging the gaps of NDCs
implementation
+ more multilateral efforts

to Glasgow...and beyond



COP27

Strengthening the
ambition???

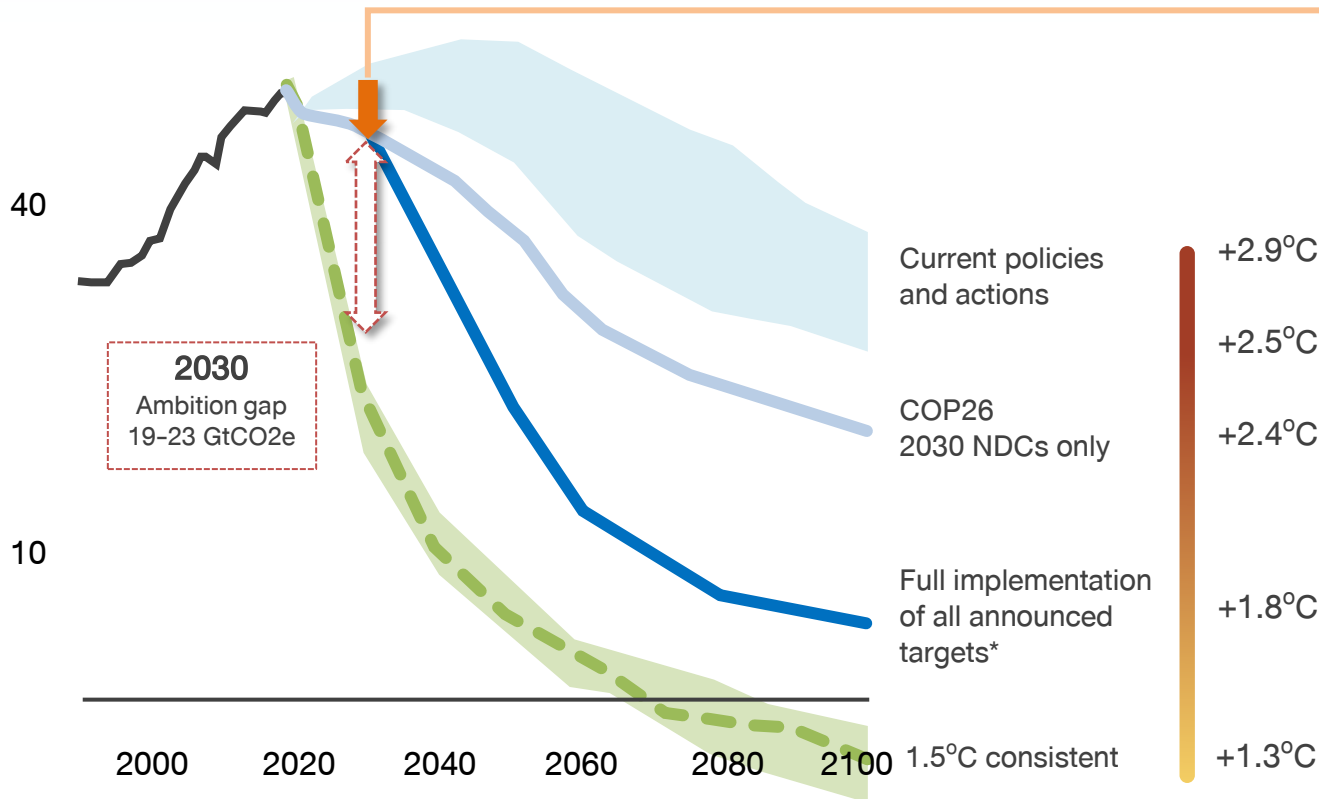


The 1st five-year after NDC submission
(NDC = Nationally Determined Contributions)

More pledges & initiatives made in COP26...but Significant gap remains



Global GHG emission estimation based on COP26 progresses
(GtCO₂e/year)



New / updated pledges



- The back of US
- India net zero pledge
- Multiple countries NDCs update

New initiatives



- **Deforestation:** reverse deforestation by 2030
- **Methane:** Reduce methane emission 30% by 2030
- **Fossil fuel:** Phase down coal, phase out insufficient fossil fuel subsidies and stop funding “unabated” oversea projects
- **Automotive:** all new cars and vans will be zero emission by 2040, and by 2035 in leading markets

New Accelerators

- **Finance:** 100 billion/yr continue support from developed countries, Glasgow Financial Alliance for Net Zero (GFANZ)
- **Innovation:** Glasgow Breakthroughs, Breakthrough Energy Catalyst
- **Others:** First Movers Coalition (FMC), Green Public Procurement

New Standards

- **The Paris Rulebook:** Disclosure transparency, international carbon market creation (Article 6)
- **The net zero standard:** SBT
- **The new disclosure standards:** more to comes-avoid greenwashing

Hence, climate actions are critical for Long-term competitiveness

Element	From	To...
 Objective	<ul style="list-style-type: none"> Regulatory license to operate 	<ul style="list-style-type: none"> Social license to operate
 Focus	<ul style="list-style-type: none"> Efficient HSE performance Fulfill corporate social responsibilities 	<ul style="list-style-type: none"> Reduce emission to address climate change Value protections & value creations
 Stakeholder	<ul style="list-style-type: none"> Regulator, employee and local community 	<ul style="list-style-type: none"> Regulator, employee and global community Shareholder and customer
 Reporting	<ul style="list-style-type: none"> Voluntary and ad-hoc 	<ul style="list-style-type: none"> Standard and regular practice
 Responsibility	<ul style="list-style-type: none"> HSE, PR with input from line management 	<ul style="list-style-type: none"> Clear board oversight Senior management accountability

Being a good corporate citizen

Long-term business competitiveness

GC continuously strengthen our Sustainability in actions



Value Creation 2020-Now

Balanced Profitability with Sustainability Outcomes

Integration 2018-2019

STEP UP Strategy
- Decarbonization
- Circular Economy
Upcycling the Ocean
GC Circular Living

Disclosure 2012-2017

GRI | DJSI | < IR >



สร้างรายได้กว่า

>330,000

ล้านบาทในปี 2563

อันดับ 1
ของโลก

กำลังการผลิตพลาสติกชีวภาพ (PLA + PBS)

อันดับ 1
ของโลก

MEMBER OF
Dow Jones Sustainability Indices
In Collaboration with RobecoSAM

ด้านความยั่งยืนในธุรกิจเคมีภัณฑ์ 3 ปีซ้อน (2019-2021)



บริษัทแรก
ในประเทศไทย

Sustainability Award
Gold Class 2021

S&P Global

บริษัทเคมีภัณฑ์
แห่งเดียวในเอเชีย

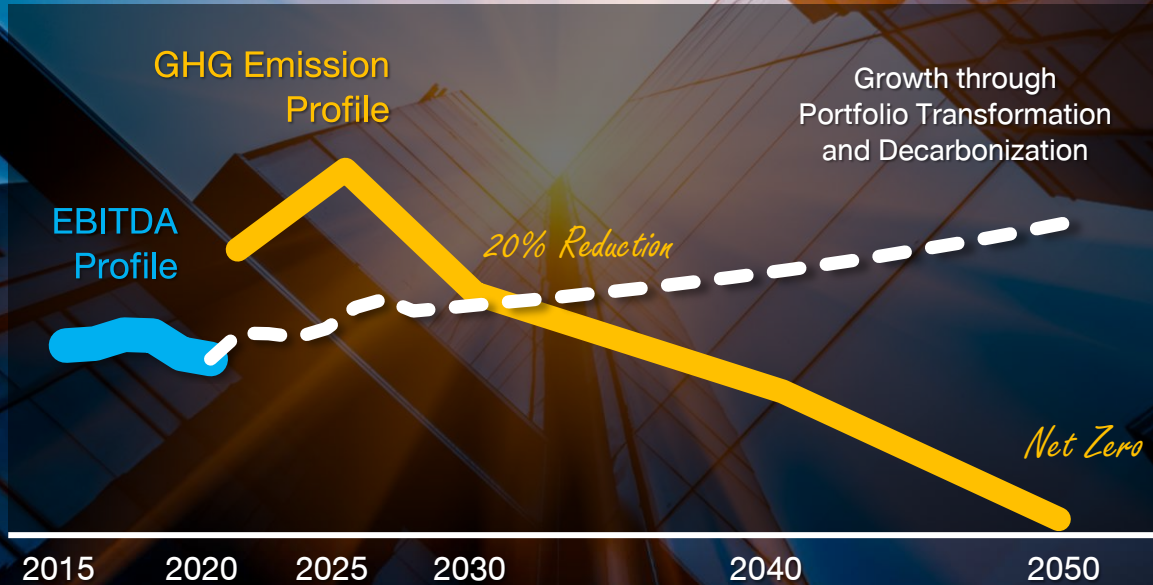


A List: Climate & Water

บริษัทเคมีภัณฑ์
แห่งเดียวในประเทศไทย



Our next step...we will become a
Net zero company



with sustainable business growth

Creating innovative products for

Better Living

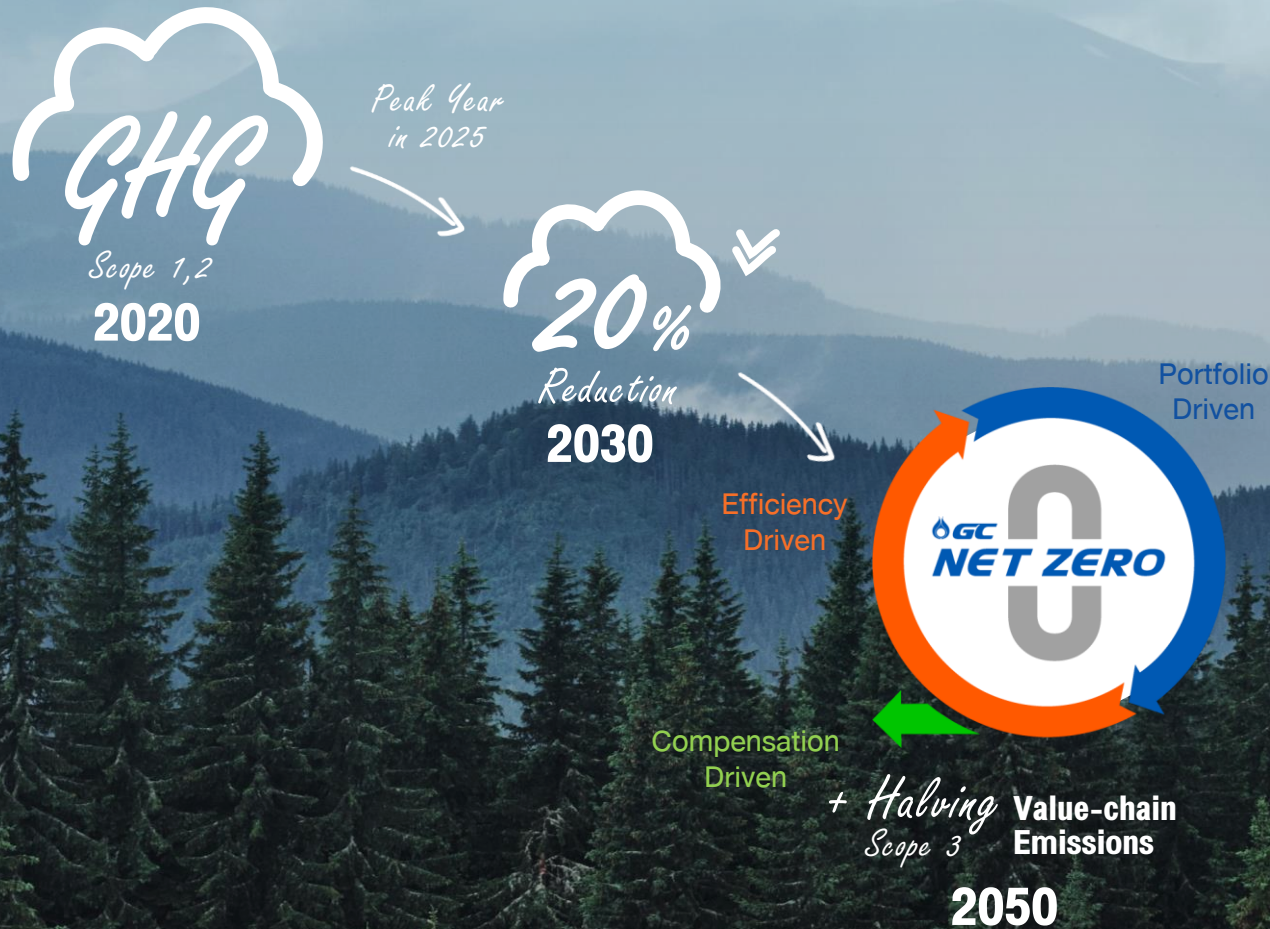
that foster low-carbon economy transition

Operating business using manufacturing processes that create

Better Responsibility

to community and environment

Our clear targets and frameworks to become Net zero company



3 Pillars

To transition to Net Zero Company



Efficiency-Driven

Maximizing efficiency across all assets and implementing new breakthrough technologies



Portfolio-Driven

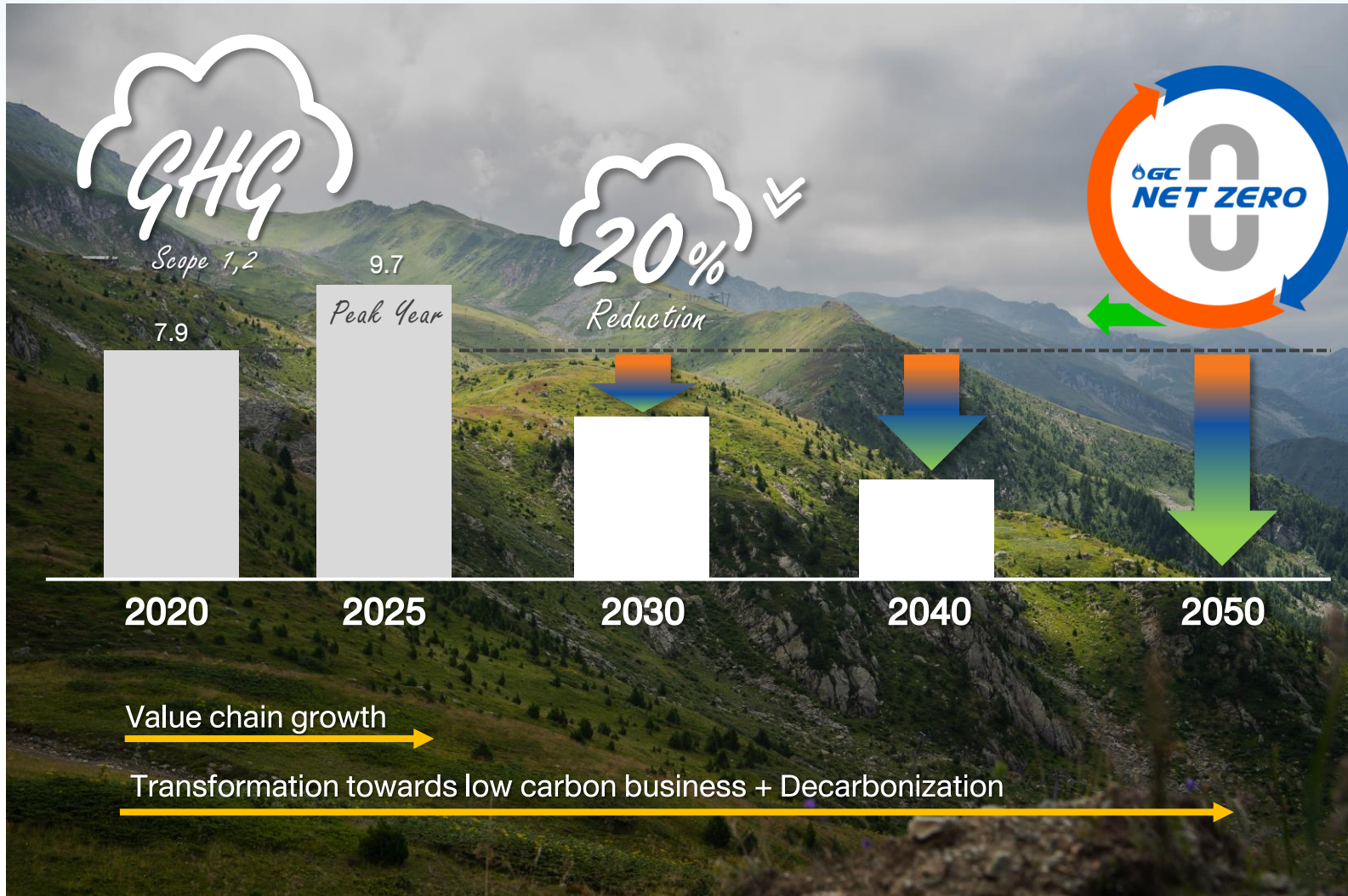
Portfolio adjustment to increase quality of earning, while adopting integrated circular economy concept



Compensation-Driven

Capture & offset carbon using multiple approaches and technologies

Our clear targets and frameworks to become Net zero company



3 Pillars

To transition to Net Zero Company



Efficiency-Driven

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Portfolio-Driven

Portfolio adjustment to increase quality of earning, while adopting integrated circular economy concept



Compensation-Driven

Capture & offset carbon using multiple approaches and technologies

Efficiency-driven

Maximizing efficiency across all assets and implementing new breakthrough technologies

~20%



1,000,000⁺ tCO₂e[≈]

Energy conservation and efficiency improvement initiatives (2050)



100%

Clean energy utilization¹ in manufacturing processes (2050)

Feasibility study to assess economic viability in replacing portion of natural gas by biogas (2.0 x 10⁶ MMBTU)

Remark: ¹Renewable energy, or co-gen with CCS, or the mix of them



New Low Carbon Tech

Deployment to overcome today's limitation towards net zero (2050)

- Blue / Green Hydrogen
- Electrification

Portfolio-driven

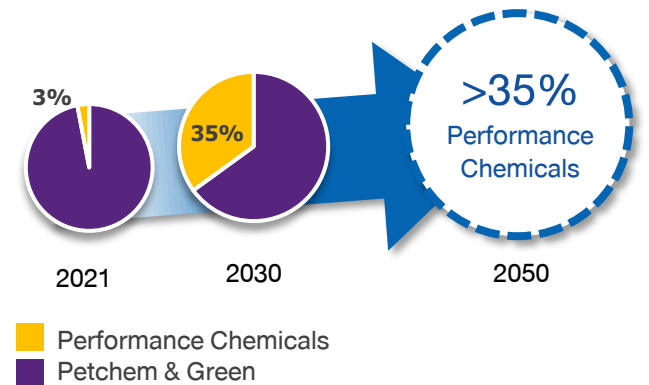
Portfolio adjustment to increase quality of earning, while adopting integrated circular economy concept

~25%



3,300,000 tCO₂e✓

Portfolio adjustment to enhance Quality of Earning such as more invest in Performance Chemicals (HVB and others)



Portfolio-driven

Portfolio adjustment to increase quality of earning, while adopting integrated circular economy concept

~25%



Circularity Solutions

Create options for customers and value chain partners to reduce GHG and plastic waste at the same time

- Low carbon and eco products¹ solutions

+1,000 KTA

Bio-based products
(2,400 KTA in 2025)

+75 KTA

Recycling capacity (2025)
Mechanical & Chemical Recycling

- Value enhancement solutions
- Waste management solutions
- Plastic recycling solutions

Remark: ¹Performance resins, bio-based products, recycled resins.

Compensation-driven

Capture & offset carbon using multiple approaches and technologies

~55%



6,300,000⁺ tCO₂e[≈]

Carbon Capture and Storage (CCS) through collaboration with strategic partners

- 1,200,000 tCO₂ (before 2030)
- Continue to evaluate potential capacity addition for the rest of remaining GHG (after 2035)



1,000,000 tCO₂e[≈]

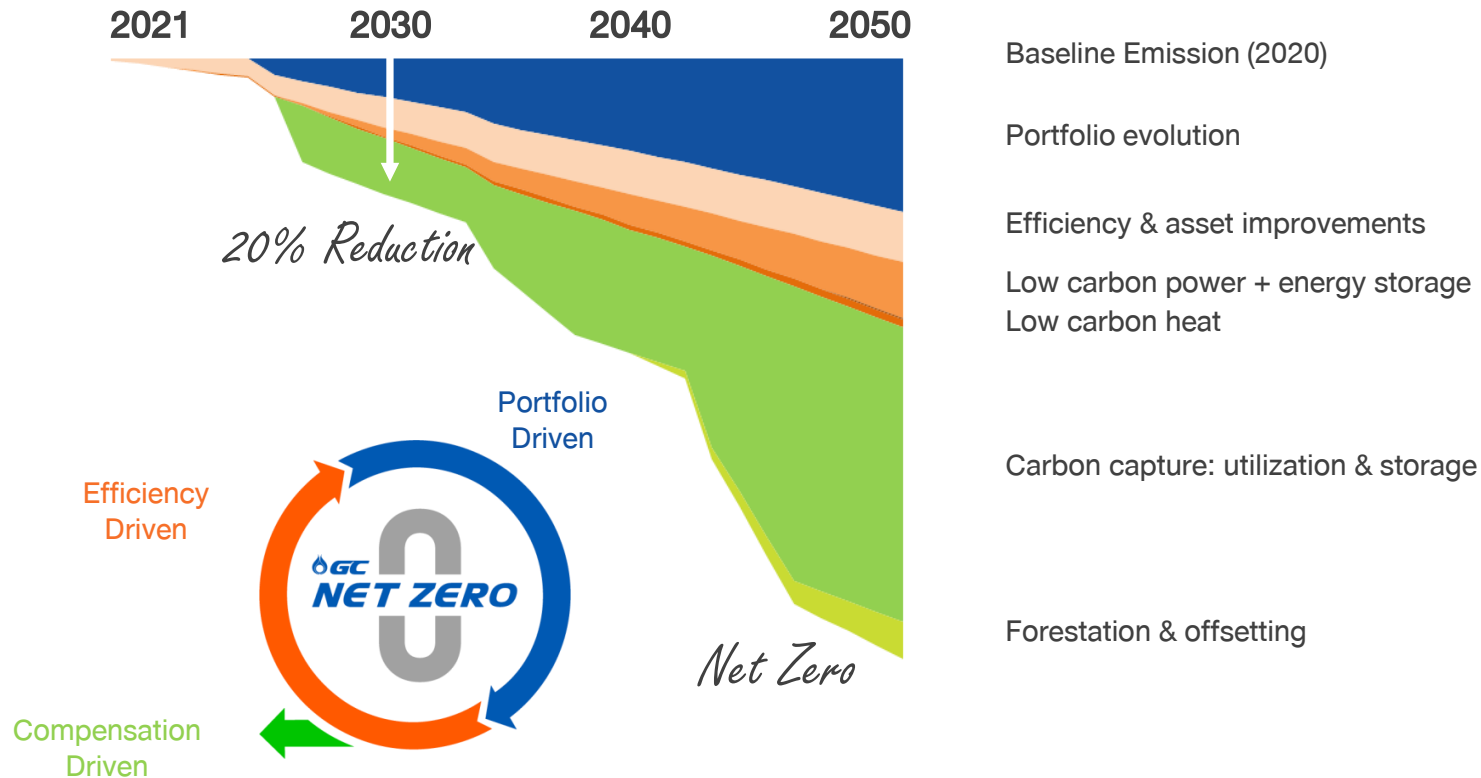
Compensate carbon with projects / activities that capture and store carbon on long-term basis (2050) such as

- Execute reforestation projects
- Purchase credit generated by such the projects and carbon credit management
- Deploy breakthrough technologies, such as Direct Air Capture, if economic is favor

Our roadmap for GHG reduction to Net Zero

Accumulated GHG reduction 2021-2050

(Scope 1,2)



Estimated level of investment (2021-2050)

5⁺⁺
Billion USD

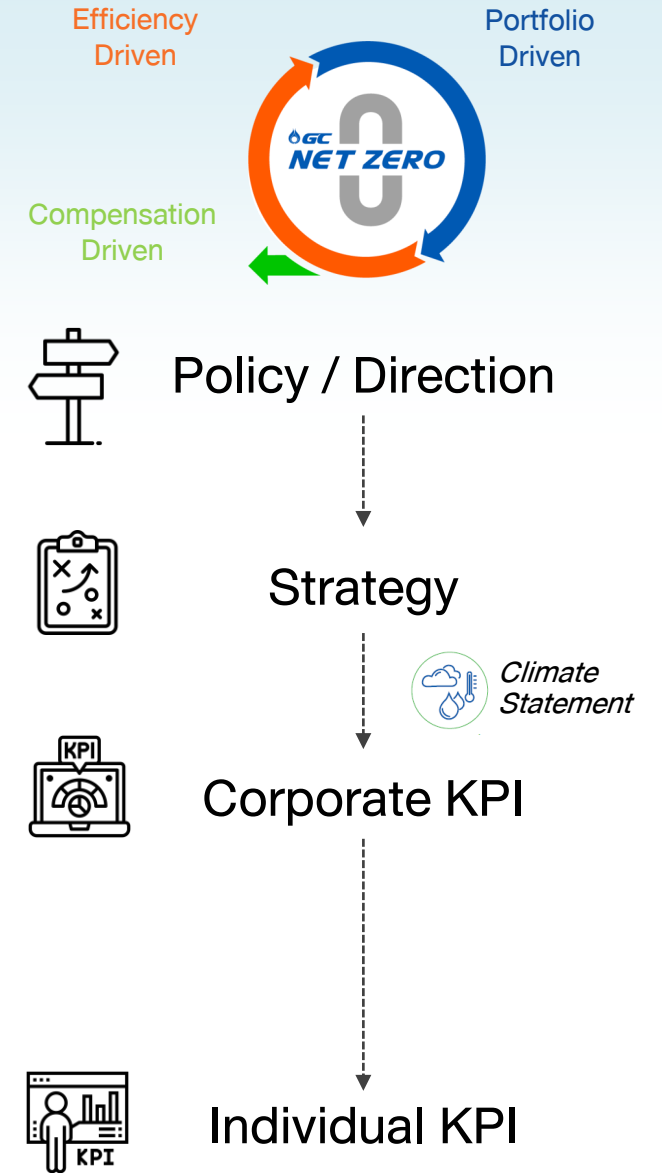
Reduce / eliminate GHG

22⁺⁺
Billion USD

Growth with portfolio adjustment towards low carbon business

More than pledging...

This is our commitment



TOGETHER TO NET ZERO

