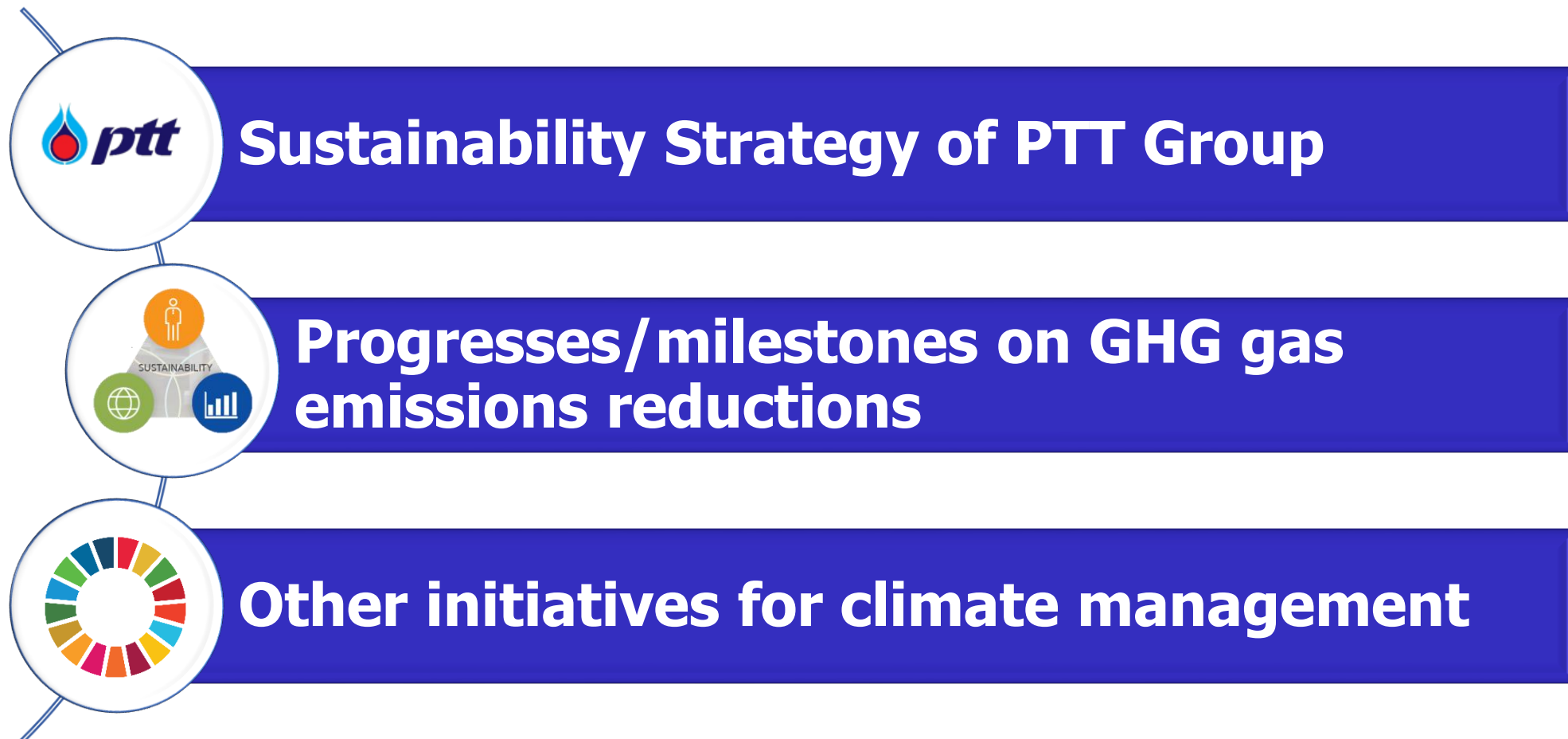


Sustainable Growth for All



GHG management under PTT Sustainability Strategy toward SDGs








12 SEP 2019



Our major business and activities integrated throughout value chain



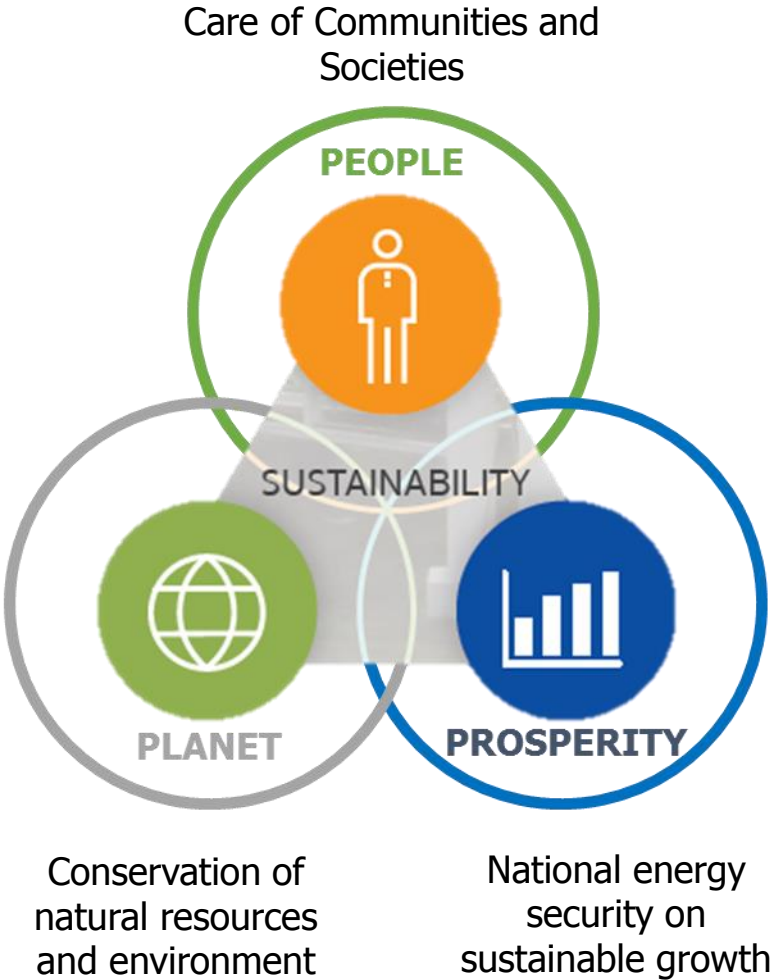
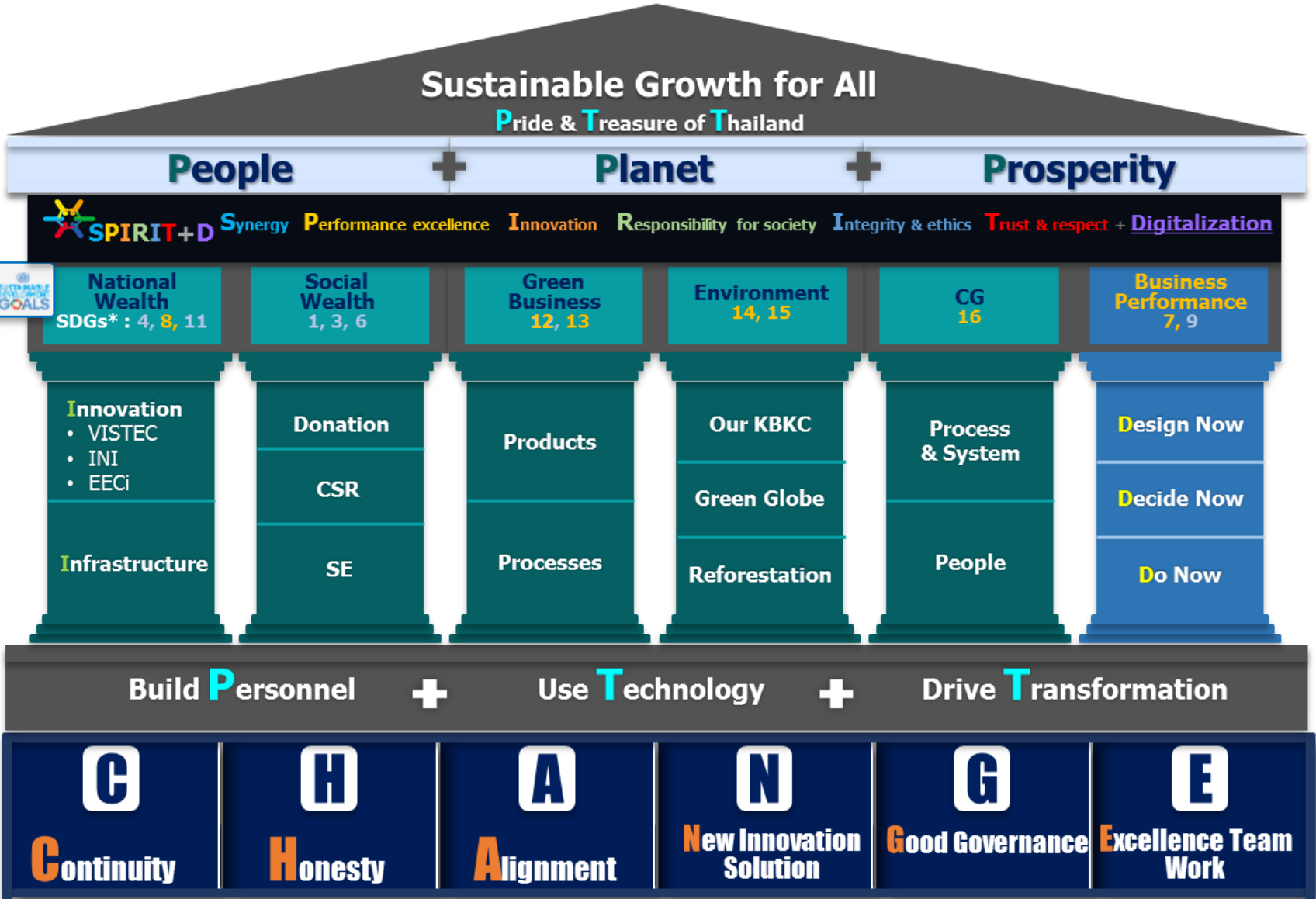
Unique position as State-owned Enterprise (Government) AND Stock-listed Company (Private)

	Business Areas		Company	PTT's holding* (%)	Activities
Upstream	E&P		PTTEP	65.29%	Exploration and Production
	Coal		PTTGM (PTT Global Management)	100%	Coal Business
Intermediate	Gas		PTT PLC		
			• Gas Pipeline	100%	Sole owner/operator of the Transmission pipeline
Downstream	Int'l Trading		• S&M	100%	Supply & Marketing of Natural Gas
			• GSP	100%	Extracting Hydrocarbon contents in NG for Petrochemical's feedstock
	Oil Marketing		• Int'l Trading	100%	Import/Export/Out-Out trading of petroleum and petrochemical products
			PTTOR**	100%	Retail service stations and commercial marketing
	Petrochemical & Refining		PTTGC	48.18%	Petrochemical Flagship
TOP			48.03%	Refinery Flagship	
IRPC			48.05%	Integrated Refinery & Petrochemical	
Infrastructure	Power		GPSC	22.58%	Power Flagship

*PTT's holding as of Jun 30, 2018, **Transferred asset to PTTO

*PTT's holding as of Jun 30, 2018, **Transferred asset to PTTOR on July 1, 2018

Business strategy under PEOPLE PLANET & PROSPERITY



* PTT SDGs Focus | PTT SDGs Involvement

Why PTT needs to have climate strategy



ENERGY TRANSITION

Recognized as company contributing to climate change



COMPETITIVE ADVANTAGE

- ✓ Lower operating cost through Energy efficiency
- ✓ Renewable as investment opportunity
- ✓ Access to new BCG economy

INVESTORS

Good perception for strong governance and actions on climate change



COMPETITIVE ADVANTAGE

- ✓ Attract investors
- ✓ Lower cost of capital
- ✓ Access to capitals and green climate funds

Achievements



Climate Change Strategy “PTT Group Clean and Green Strategy”



Reduce GHG emissions from operations (improve energy efficiency, reduce flare and unintentional methane leakage)



Efficiently use of materials and natural resources by integrate **Circular Economy** concept into business operation (reuse and recycle)

Target : Reduce PTT Group’s GHG emissions by 20% vs BAU by 2030



Increase the proportion of **Renewable Energy** and **Natural Gas**



Develop **Environmentally Friendly Products** and **Services**



Integrate **Carbon Price** in investment decision process

Target : Increase revenue from low carbon product in 2023



Establish a strategy for **Investment** relating to Clean & Green Strategy



Develop and invest in **Electricity Value Chain**



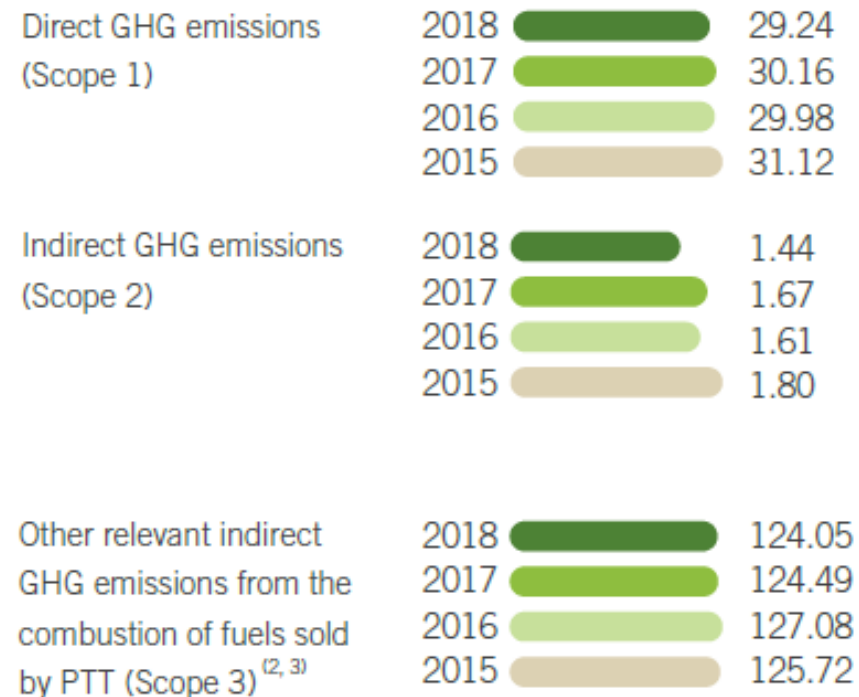


Striving to improve Climate Performance



PTT Group Direct and Indirect Greenhouse Gas Emissions¹

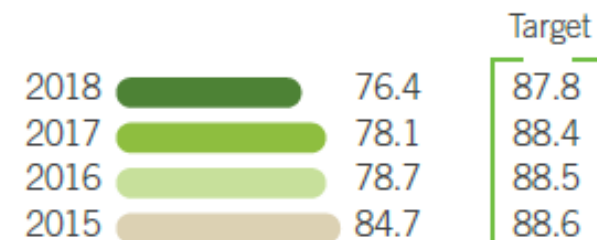
(million tonnes of CO₂ equivalents)



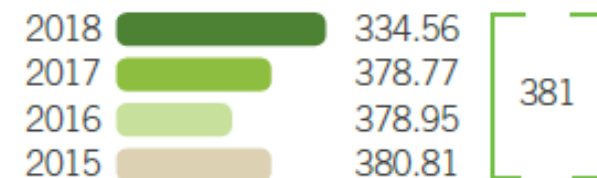
Greenhouse Gas Intensity

(kilogram CO₂ per barrel of oil equivalents)

Direct and indirect GHG emissions from PTT activities
(Scope 1 and 2)



Direct and indirect GHG emissions from PTT activities
and the combustion of PTT's fuel products sold
(Scope 1, 2 and 3)



PEOPLE : Promote several initiatives

Community Biogas System from Pig Framing Project

3 existing sites

 **671** households benefiting from the project

 Reduce cost and generate income at **≈3,745,786** baht per year

 Greenhouse gas emissions reduced by **5,013** tonnes of CO₂ equivalent per year



Vidyasirimedhi Institute of Science and Technology (VISTEC) and Kamneotvidya Science Academy (KVIS)

Promote human resource development through supporting the education.



84 students graduated from KVIS & VISTEC
386 students are still studying



Café Amazon for Change

To create opportunities for people with hearing disabilities to become baristas.

12 employees, **4** branches are opened in 2018




Since 2016, PTT has successfully developed the Floating PV and solved water management issues for 11 communities.

 **500** households benefiting from the project

 **135,000** units of electricity generated per year

 Households can save up to **885,000** baht per year from the reduced electricity expenditures

 Greenhouse gas emissions reduced by **78.58** tonnes of CO₂ equivalent per year

PLANET : Support of Forestry in Bangkok



PTT Reforestation Institute : 1,164,638 rai reforest areas under care with **2.18** MtonCO₂/yr absorbed with initiatives in urban area.



PTT Green in the City Learning Center

2 ha area to support knowledge sharing on reforestation and conservation, and public recreational space

75% forested areas and **10%** of water body. The rest is green building



Khung Bang Kachao Conservation Project

From Corporate CSR to Social Collaboration with 34 public and private organizations working together where PTT leads the green area group

Largest green area of Bangkok with 9.6 km² to be conserve within 5 years

PROSPERITY : Performance



Social investment
1,558.51 MB



Income taxes payment
53,647 MB (PTT)
~86,000 MB (PTT Group)

2018

38
New
products

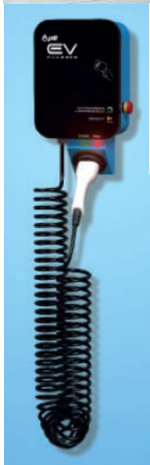


Registered
3 patents



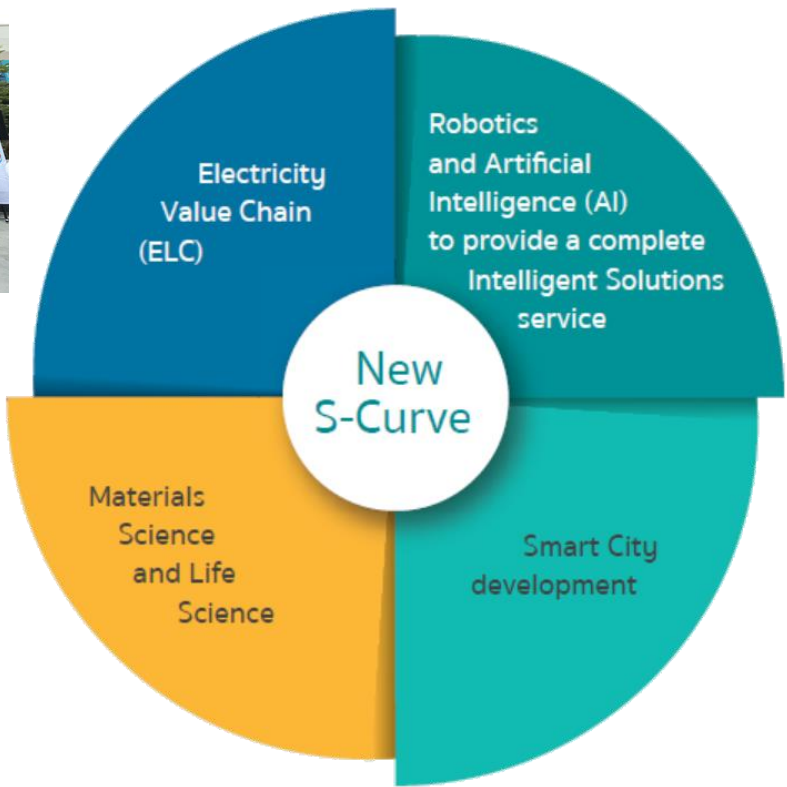
Present

PTT is holding **132** patents
and petty patents in total



Electric Vehicle Charging Station

14 stations installed



1

Critical
Suppliers

2

Key
Suppliers

3

Manage
Suppliers

Sustainable Supplier Management

Encourages supplier to comply with PTT Supplier Sustainable Code of Conduct (SSCoC)



100%
of new suppliers were
screened by ESG criteria



100%
of PTT suppliers with PO
over 2 MB signed and
complied with SSCoC

