T-VER Project

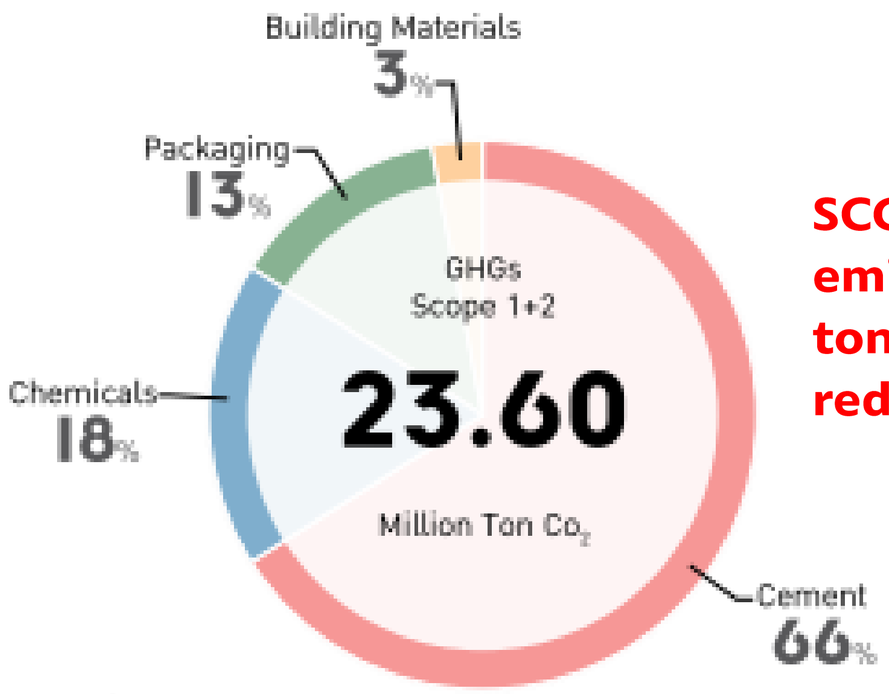
RIL 1996 Co., Ltd

The Affiliate of Chemicals Business, SCG

By Weerapong Wattananoi
Energy and Climate Change Manager
SCG Chemicals Co.,Ltd

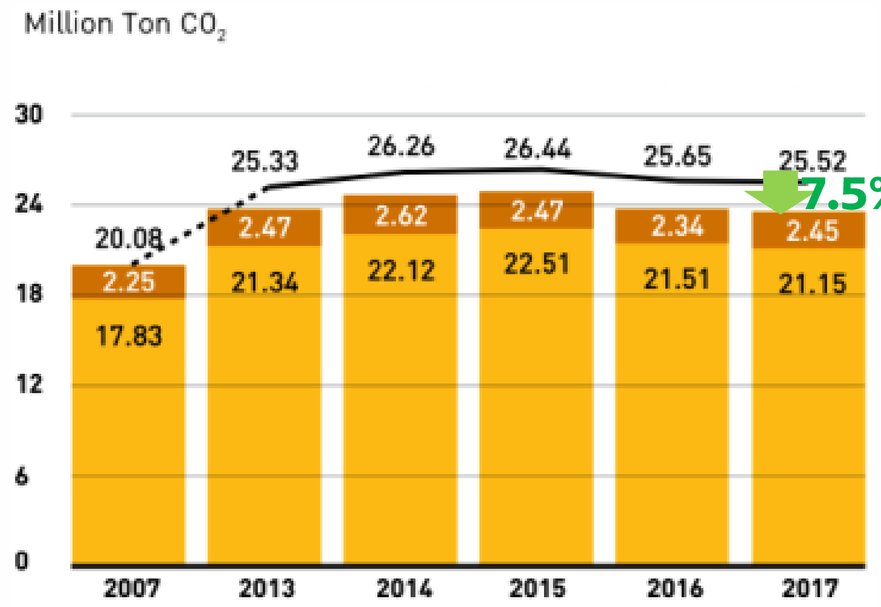
SCG Energy & GHG management

For GHG emission, SCG emitted GHG 23.60 ton which Cement business is the main contributor at 66%.

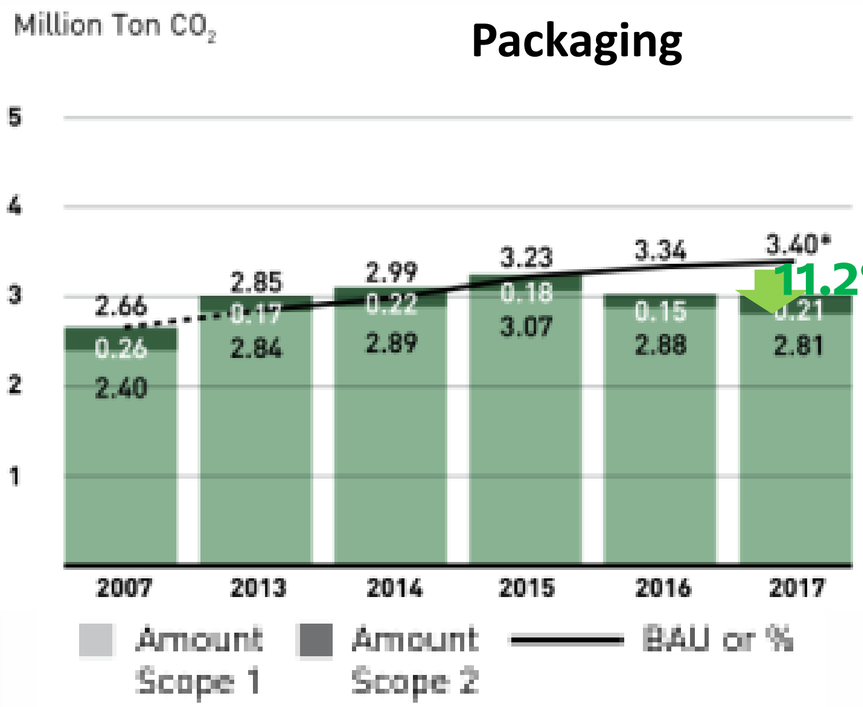


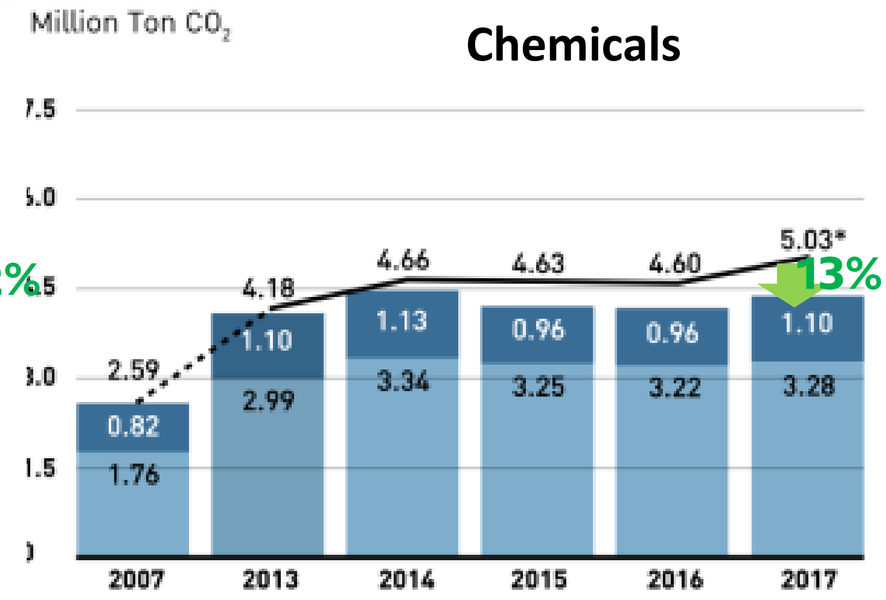
Target: 10% reduction by 2020

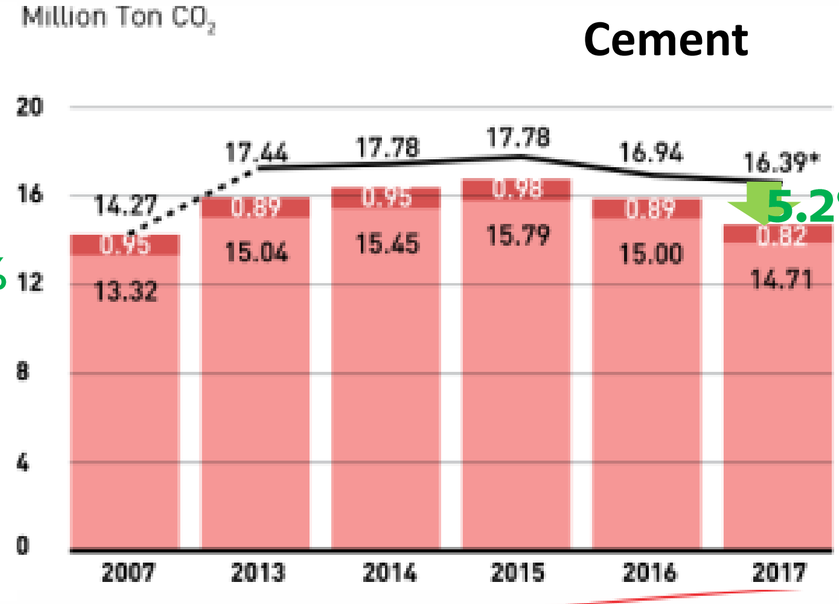
SCG managed to reduce emissions by 1.92 million tons, equivalent to 7.5% reduction against BAU.



Total GHG emission

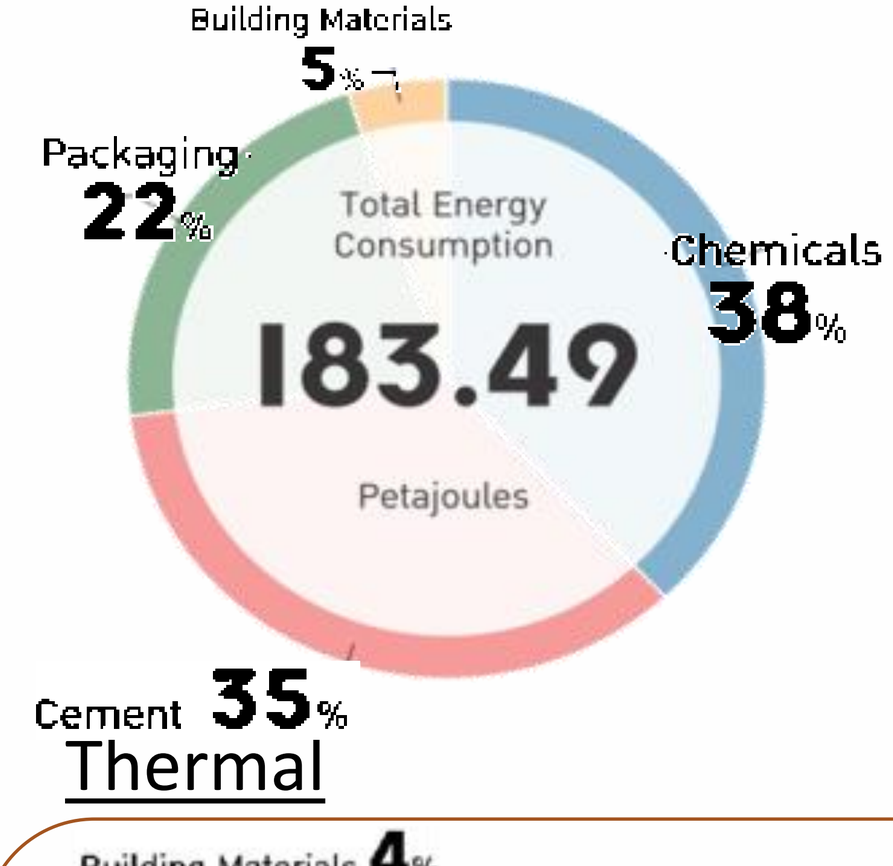


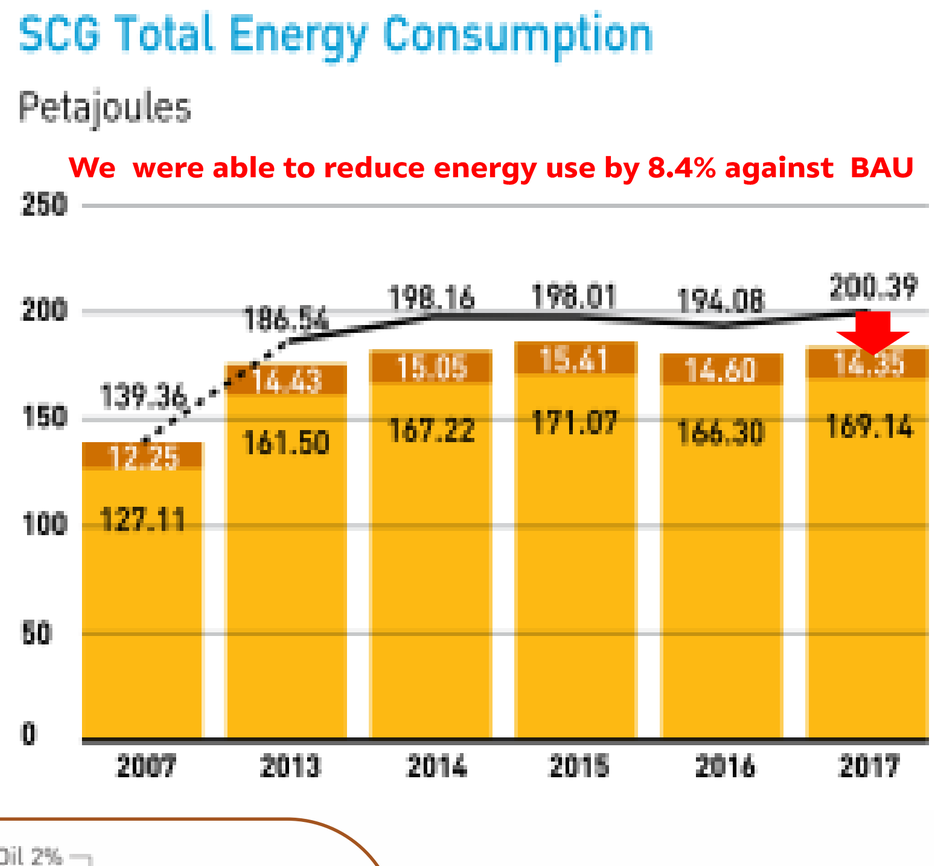




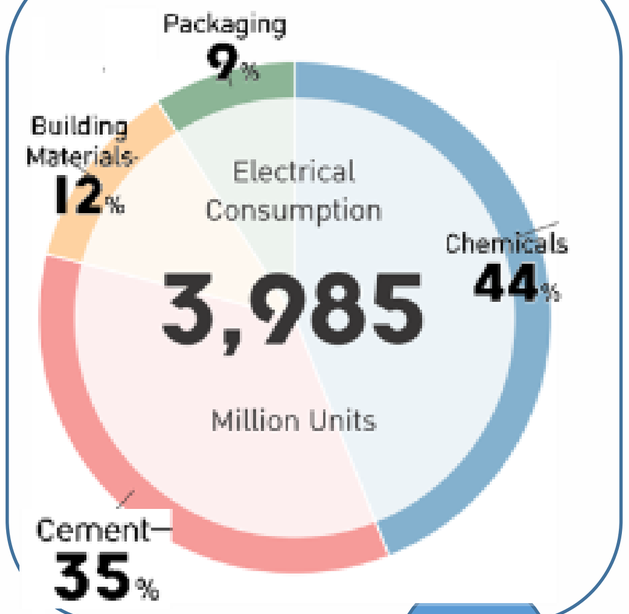
SCG's total energy use is 183.5 petajoules which Chemicals business is the main contributor at 38%.

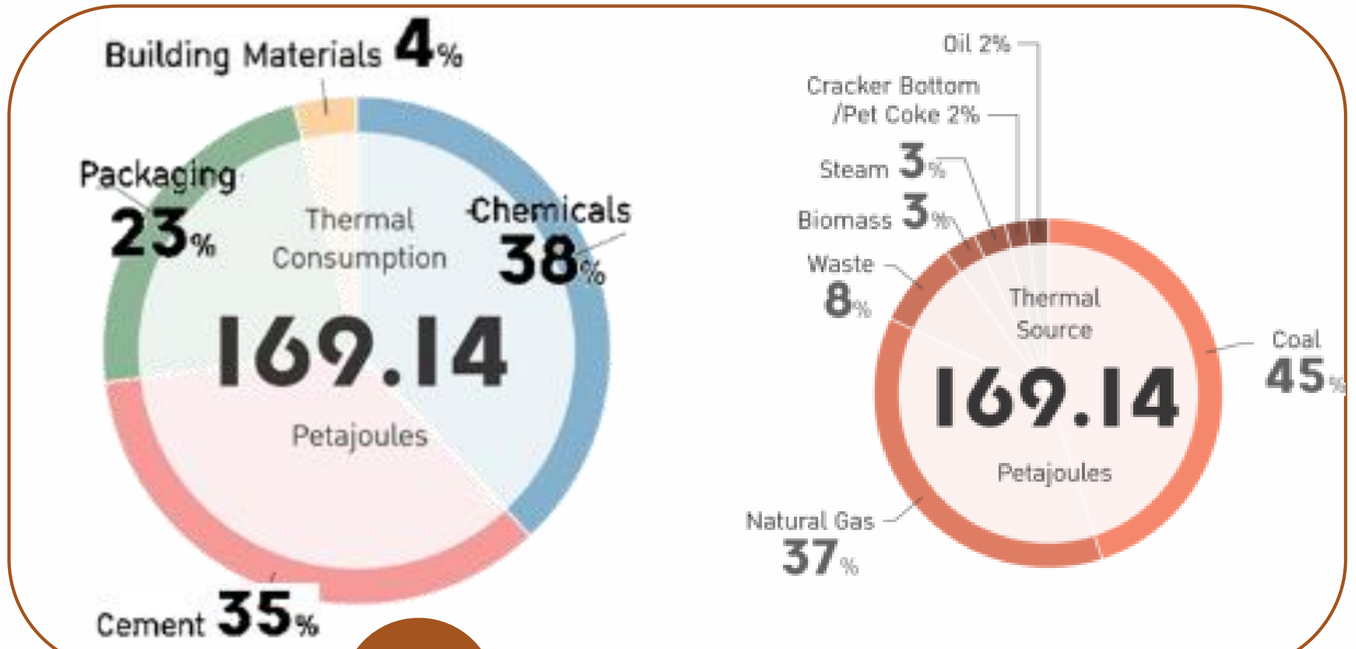
Total energy consumption





Electrical





8% Total 4.4 M TOE 92%

Chairman of Sustainable Development Committee Statement

- Reducing Greenhouse Gas emissions, using less energy, and using less water from external sources per production unit. We managed to reduce water usage by 7.5, 8.4 and 3.2% according to the Business As Usual (BAU) scenario. SCG will continue to step up our efforts to achieve our targets.

With the Principles of Sufficiency Economy of His Majesty the late King Bhumibol Adulyadej embedded in our backbone, SCG steers in the direction of Circular Economy, placing great importance on our planet's limited resources and making sustainable development widely accepted.

Cholanat Yanaranop
President, SCG Chemicals
Chairman, SCG Sustainable Development Committee

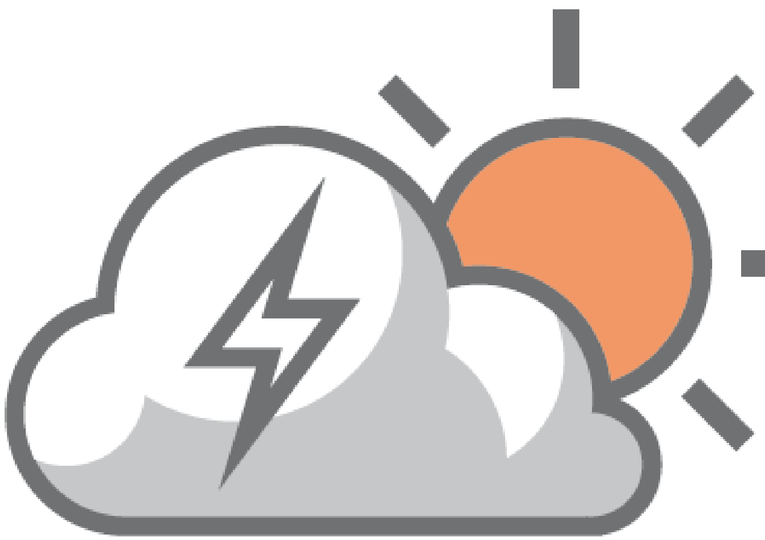
Target

Within 2030, reduction the GHG emission by 28% compared with business as usual (BAU) of the base year 2014

Energy & GHG management Strategies

Development Strategies

1 Creating stability and improved efficiency in energy consumption.



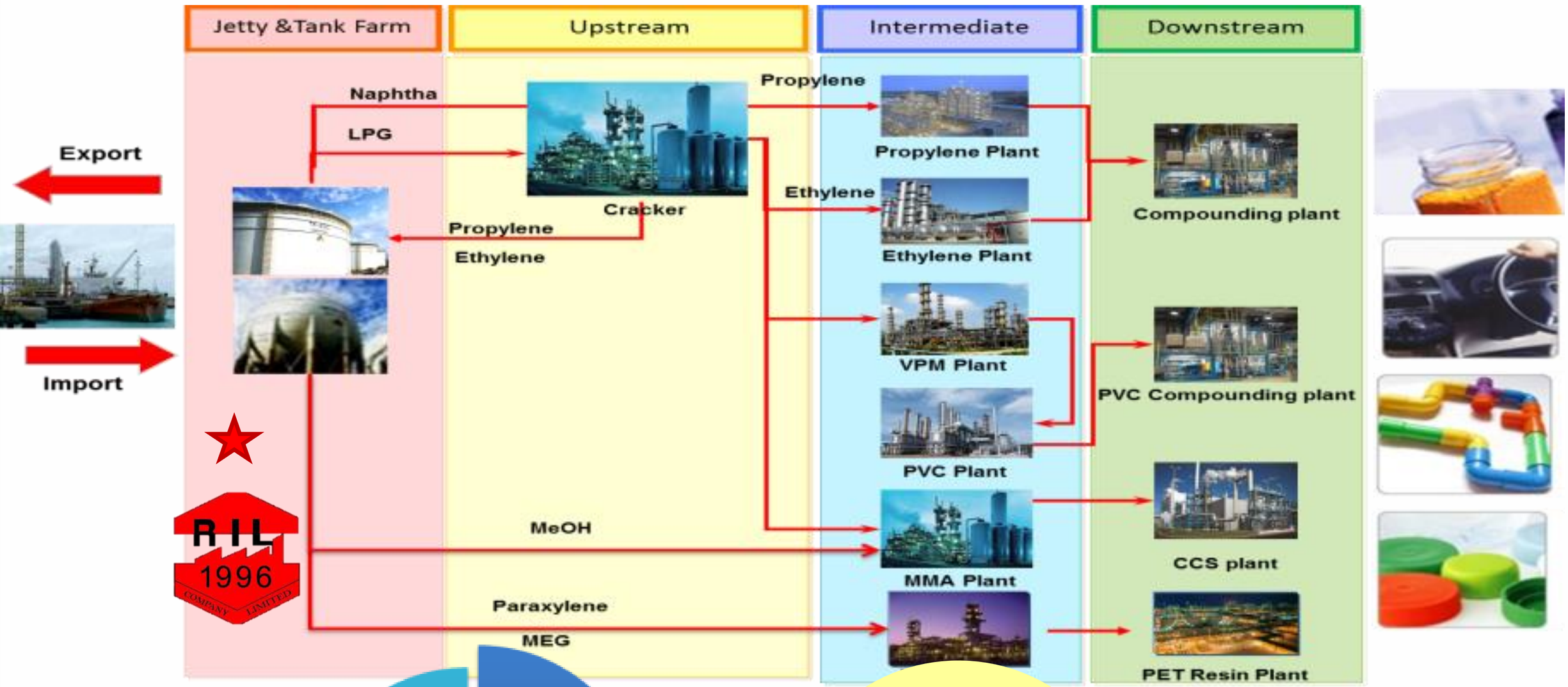
2 Offering products and services, as well as develop innovation and technologies that reduce GHG emissions.

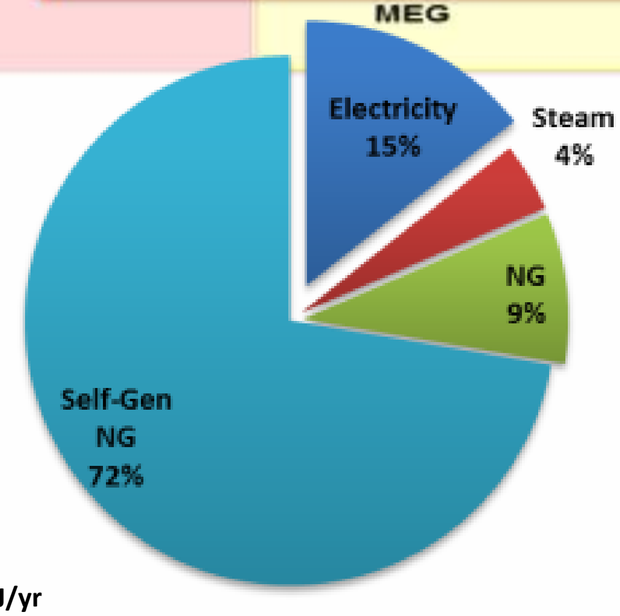
3 Promoting energy awareness among employees.

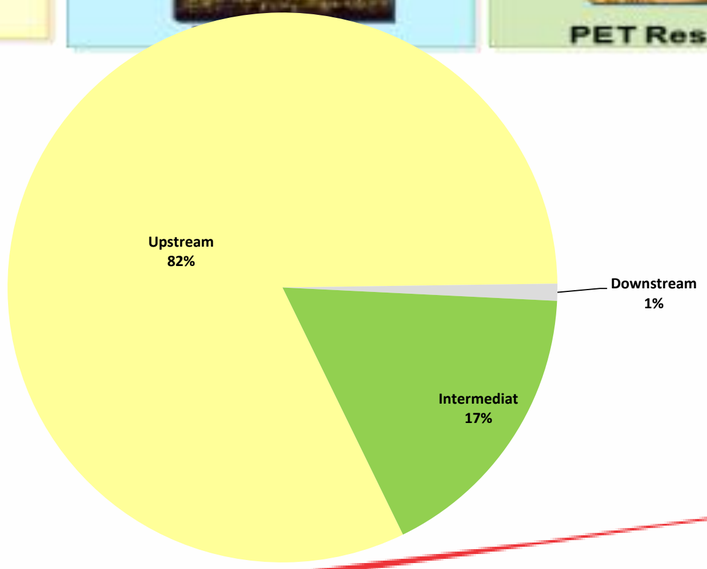
Energy and GHG Landscape

Chemicals Business, SCG

Upstream business is the main portion of energy use and its fuel gas self generation is 72% of total fuel consumption of chemicals business





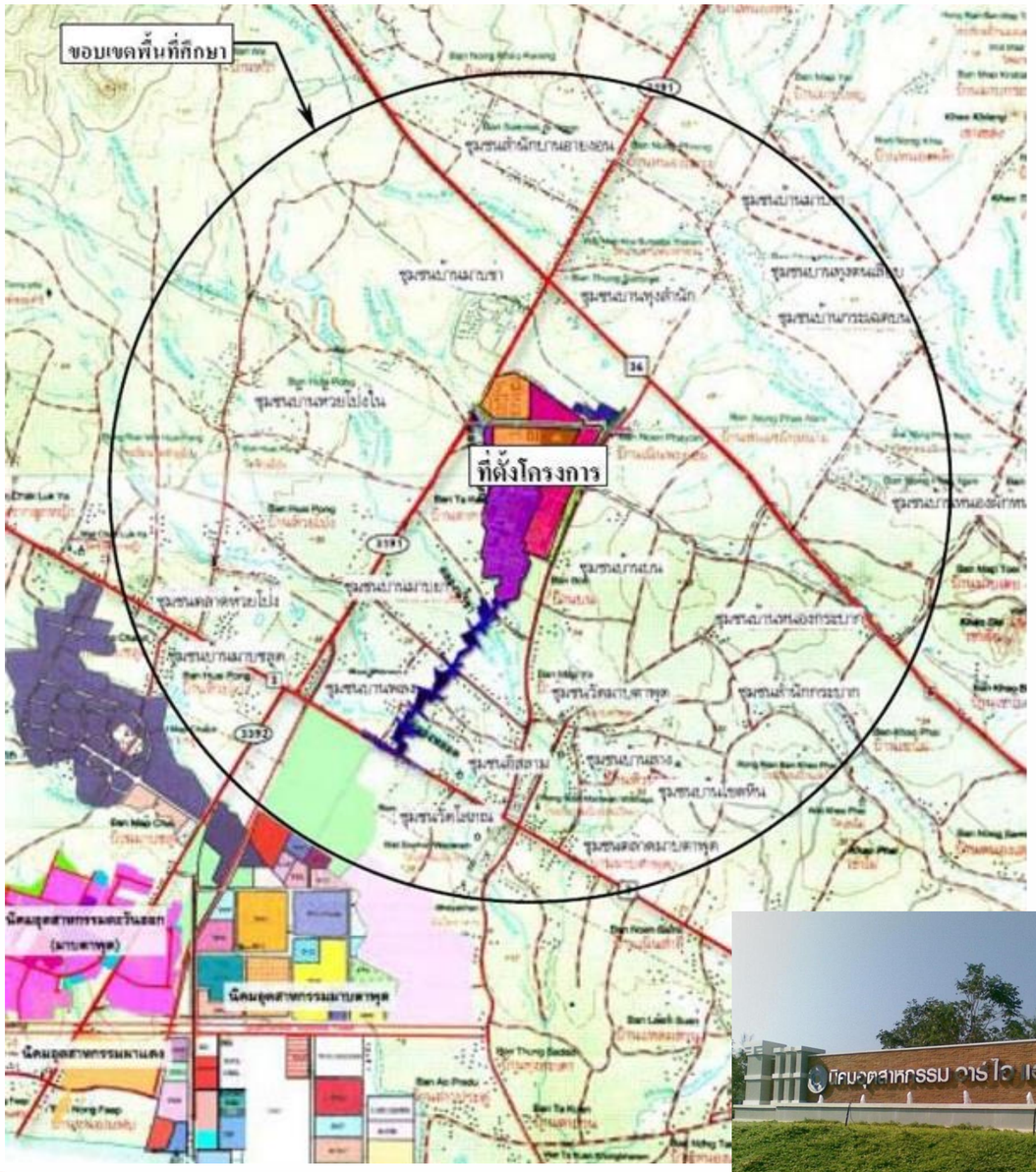


Total energy consumption 60 mGJ/yr

T-VER Projects
by RIL 1996 Co., Ltd

RIL 1996 Co., Ltd.

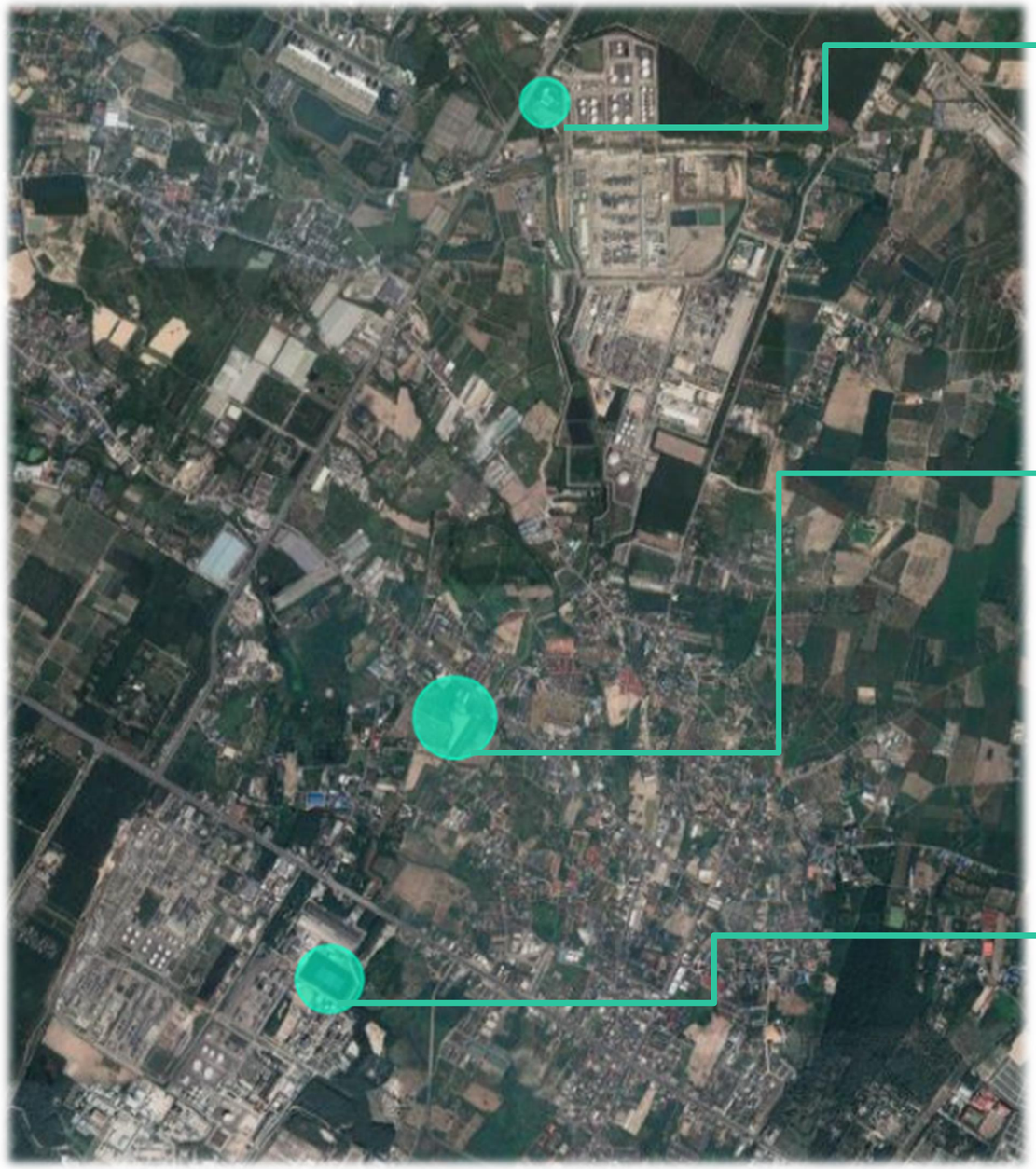
To be world class eco industrial estate



Our Visions

- **The Smart Asset utilization**
- **Seeking for new business opportunity to improve industrial facilities**
- **Operational Excellence**
- **Sustainable Development with clean energy**

T-VER Projects by RIL 1996 Co., Ltd



Project I :
140.76 kWp Solar rooftop project at administration building of Rayong Industrial Estate (RIL) 1996, Maptaphut Sub-district, Mueang Rayong District, Rayong

Project III :
4,422.90 kWp solar farm project on pipeline corridor inRayong Industrial Estate (RIL)1996, Maptaphut Sub-district, Mueang Rayong District, Rayong,

Project II :
978.75 kWp floating solar farm project on pond of SCG chemicals Site#3 Maptaphut Sub-district, Mueang Rayong District, Rayong,

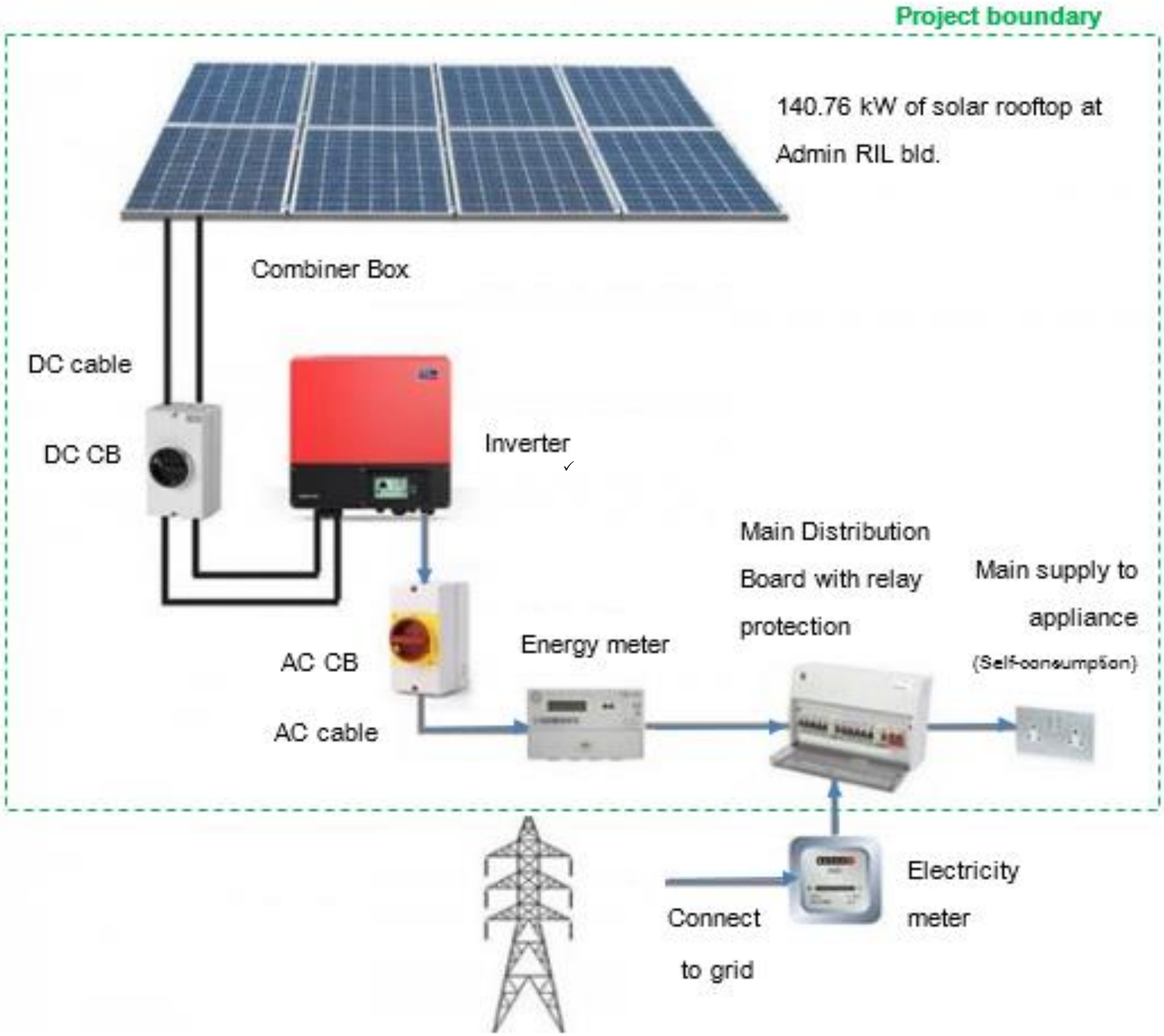
T-VER

4,457 tCO2 e/y in total

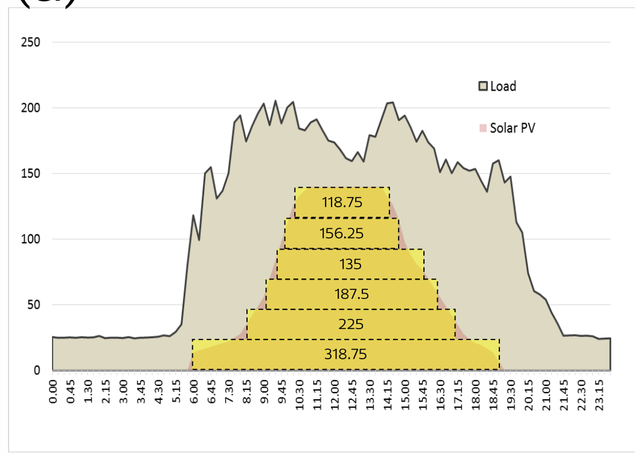
Project I : On-grid Solar Rooftop Admin RIL, Rayong

Project details	
Installed capacity (PV panels)	140.76 kWp
Purpose	Self-consumption (Full load only in weekdays)
COD Date	15 May 2017
Expected amount of GHG emission reduction per year	198 tonCO_{2e} /y
Period of carbon credit counted	7 years ; 01/06/2017 – 31/05/2024

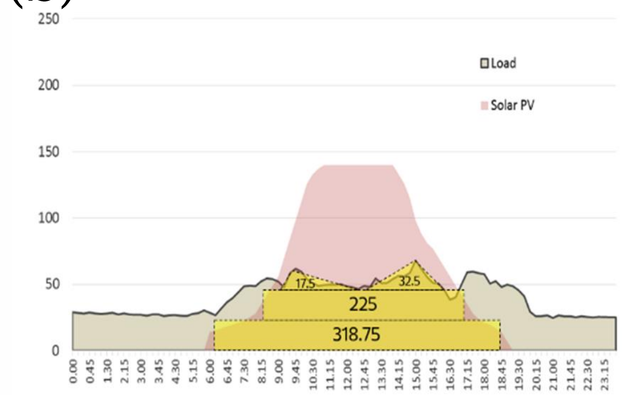
Project I : On-grid Solar Rooftop Admin RIL, Rayong



(a)

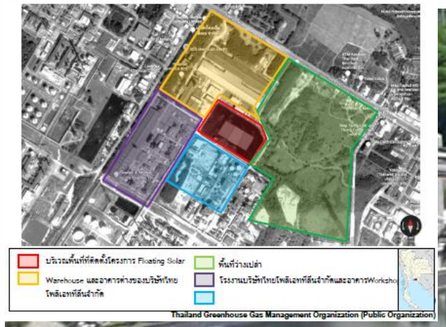


(b)



Expected Solar generation in daily in measure of kWh with 2 cases;
weekdays (a) and weekend (b)

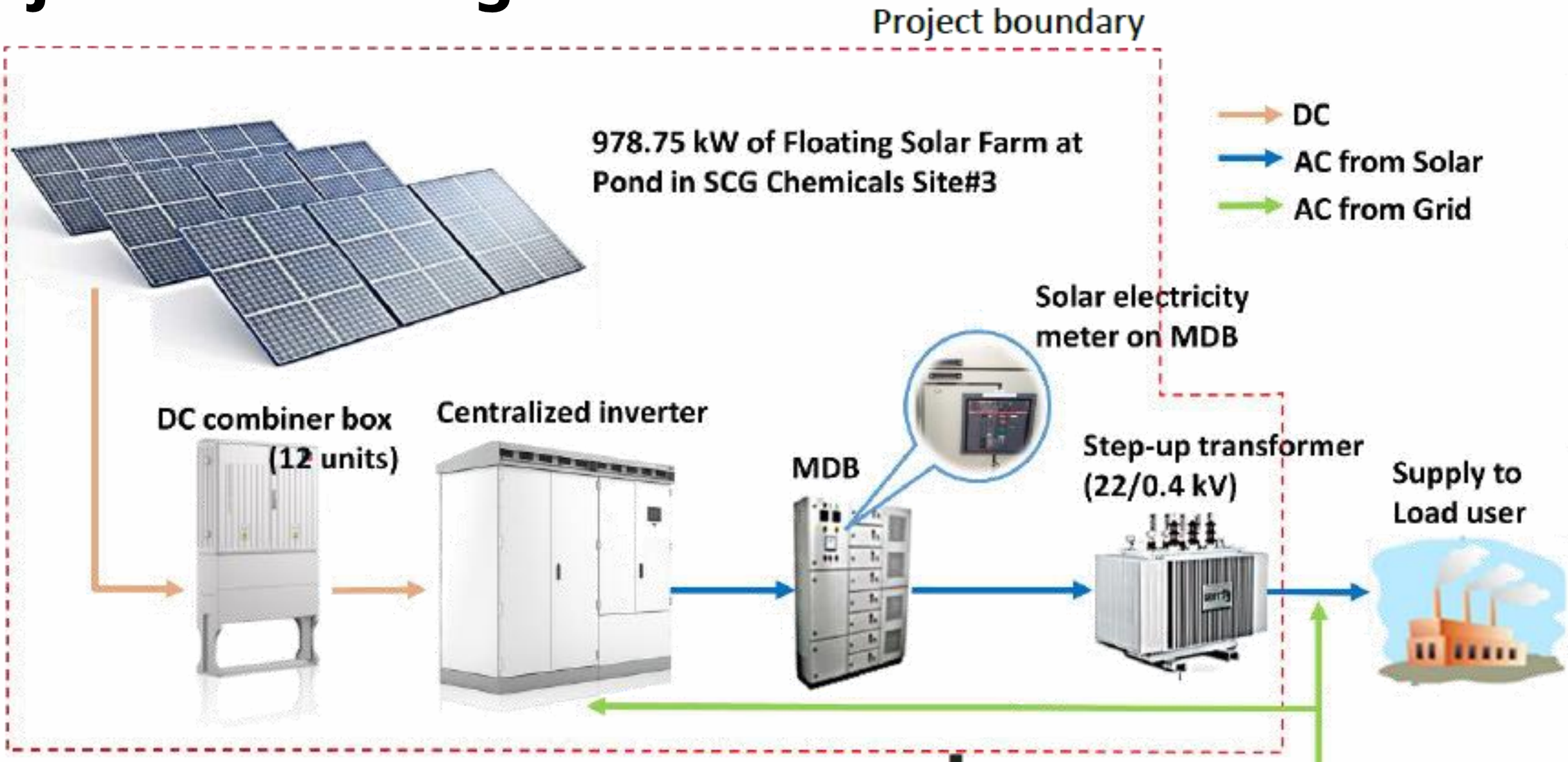
Project II : Floating Solar Farm



Project details	
Installed capacity (PV panels)	978.75 kWp
Purpose	Self-consumption
COD Date	June 2018
Expected amount of GHG emission reduction per year	771 tonCO_{2e} /y
Period of carbon credit counted	7 years; 01/01/2019 – 31/12/2025

Project II : Floating Solar Farm

978.75 kW of Floating Solar Farm at Pond in SCG Chemicals Site#3

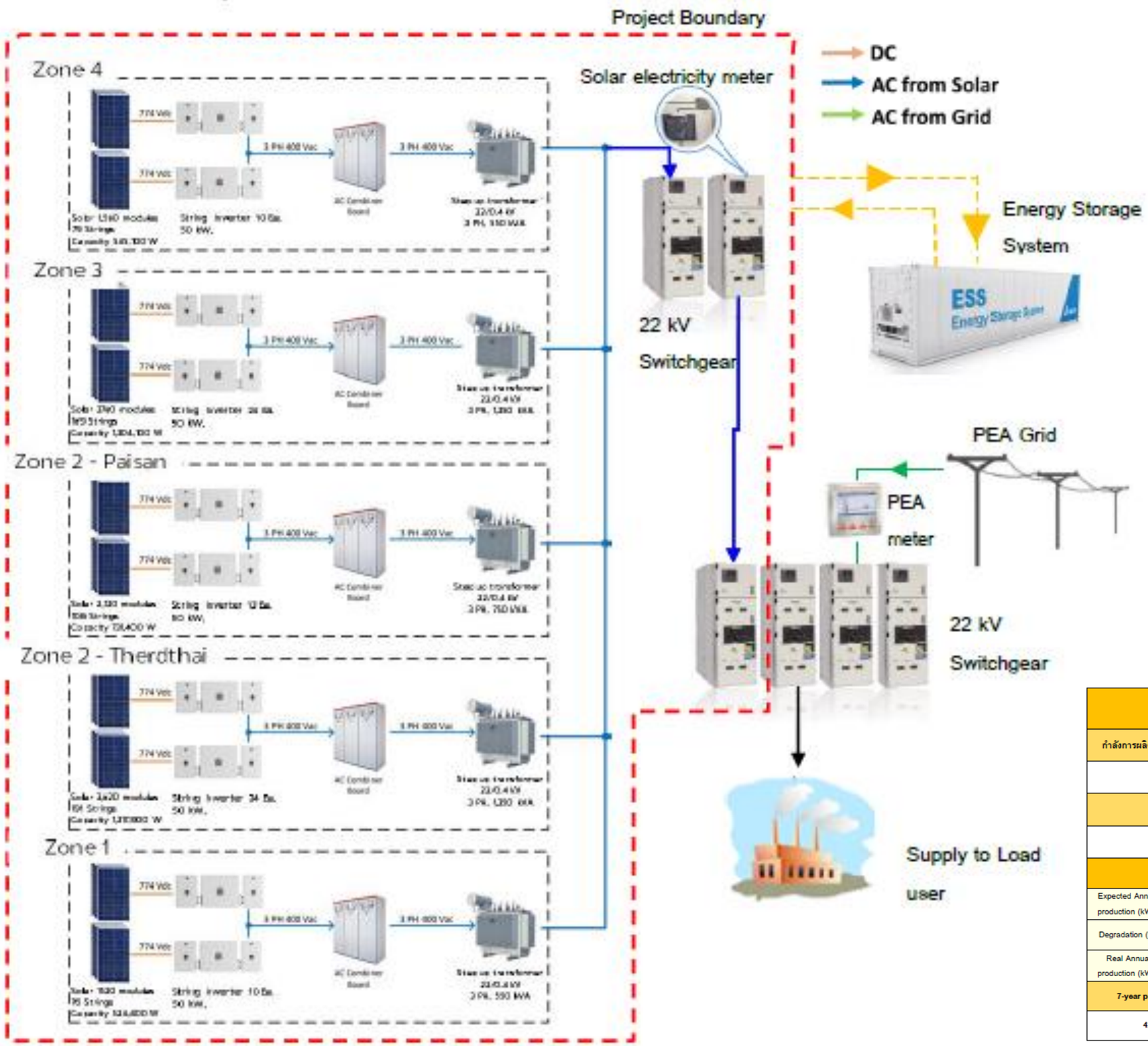


การคำนวณปริมาณไฟฟ้าที่ผลิตได้ Floating Solar Farm							
กำลังการผลิตของแผงเซลล์แสงอาทิตย์ (วัตต์)		จำนวนแผง		หมายเหตุ			
290		3,375		1) ข้อมูลจาก As-Built 2) ชั่วโมงแดดต่อวัน			
ชั่วโมงที่ผลิตได้สูงสุดต่อวัน (ชั่วโมงต่อวัน)							
4							
	ปี 1	ปี 2	ปี 3	ปี 4	ปี 5	ปี 6	ปี 7
Expected Annual production (kWh)	1,428,975	1,428,975	1,428,975	1,428,975	1,428,975	1,428,975	1,428,975
Degradation (%)	0.97	0.963	0.956	0.949	0.942	0.935	0.928
Real Annual production (kWh)	1,386,105.75	1,376,102.93	1,366,100.10	1,356,097.28	1,346,094.45	1,336,091.63	1,326,088.80
7-year production (kWh)		Average annual production (kWh)					
9,492,681		1,356,097					

Project II : RIL Solar Farm

Project details	
Installed capacity (PV panels)	4,422.9 kWp
Purpose	Self-consumption
COD Date	Jan 2019
Expected amount of GHG emission reduction per year	3,414 tonCO_{2e} /y
Period of carbon credit counted	7 years; 01/01/2019 – 31/12/2025

Project II : RIL Solar Farm



การคำนวณปริมาณไฟฟ้าที่ผลิตได้ Solar Farm							
กำลังการผลิตของแผงเซลล์แสงอาทิตย์ (วัตต์)		จำนวนแผง		หมายเหตุ			
145		12,820		1) ข้อมูลจาก As-Built 2) ชั่วโมงแดดต่อวัน			
ชั่วโมงที่ผลิตได้สูงสุดต่อวัน (ชั่วโมงต่อวัน)							
4							
	ปี 1	ปี 2	ปี 3	ปี 4	ปี 5	ปี 6	ปี 7
Expected Annual production (kWh)	6,457,434.00	6,457,434	6,457,434	6,457,434	6,457,434	6,457,434	6,457,434
Degradation (%)	0.97	0.963	0.956	0.949	0.942	0.935	0.928
Real Annual production (kWh)	6,263,710.98	6,218,508.94	6,173,306.90	6,128,104.87	6,082,902.83	6,037,700.79	5,992,498.75
7-year production (kWh)		Average annual production (kWh)					
42,896,734		6,128,105					

Key success factors of T-VER

Planning and communi-cation

TGO has clearly set the timeline form report to verification process

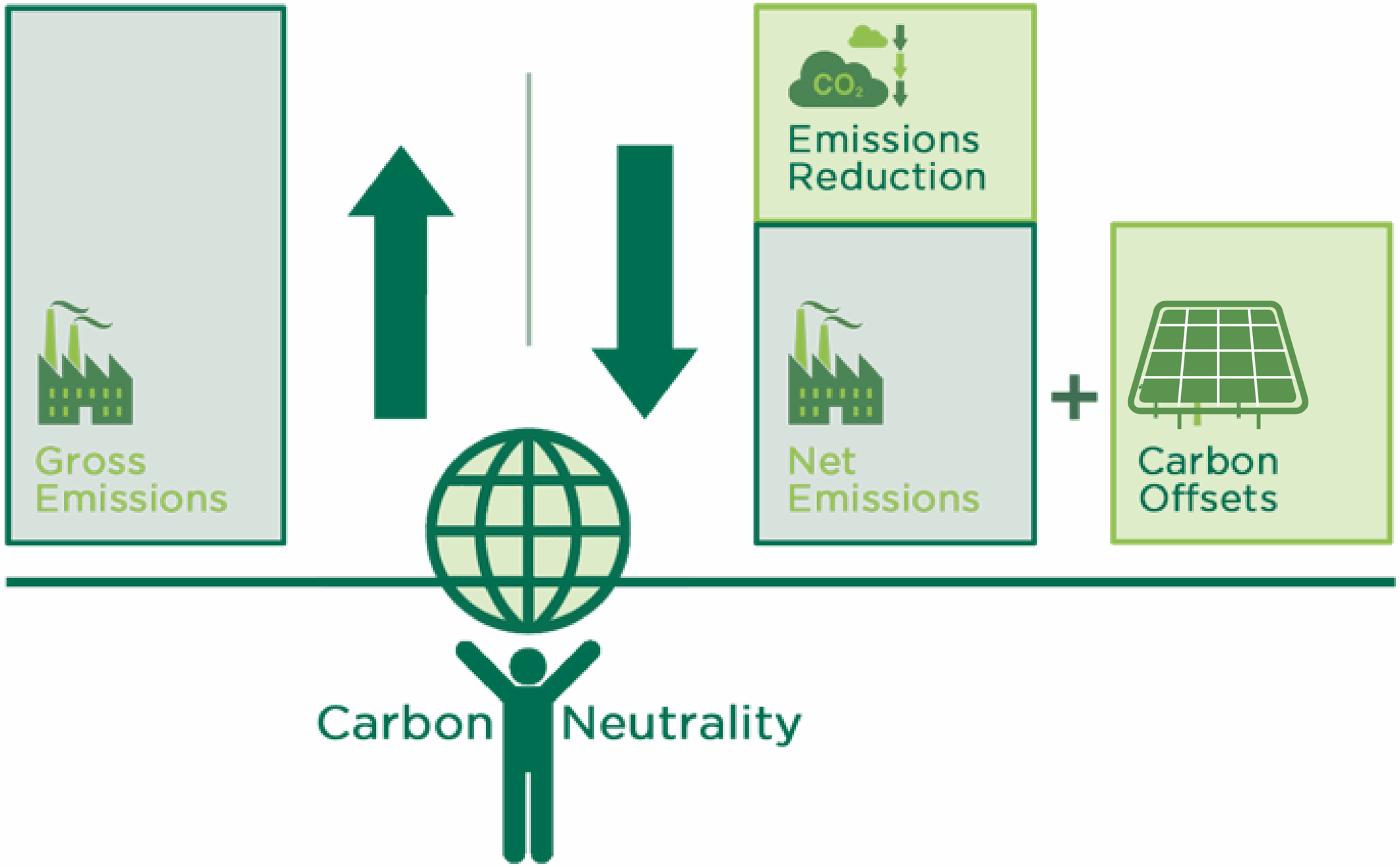
TGO has a methodology guideline to run process of project verification

Obvious process and tools to verification

Skills of consultation

TGO team can help consult and give useful suggest to project team to verifying as methodology recommendation

Offset emission to be carbon neutrality in RIL



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Sustainability

is in your hands