

# Bangchak Way for Sustainability



**The 33<sup>rd</sup> JCCP International symposium 2015**

**22 Jan 2015**

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Acting Senior Petroleum Refining Executive  
Bangchak Petroleum PLC**



# Agenda



**1. Introduction to Bangchak Petroleum PLC**

**2. Bangchak Sustainability Strategy and Improvement Roadmap**

**3. Bangchak Corporate Social Responsibility (CSR)**





## 1. Introduction to Bangchak Petroleum PLC

## 2. Bangchak Sustainability Strategy and Improvement Roadmap

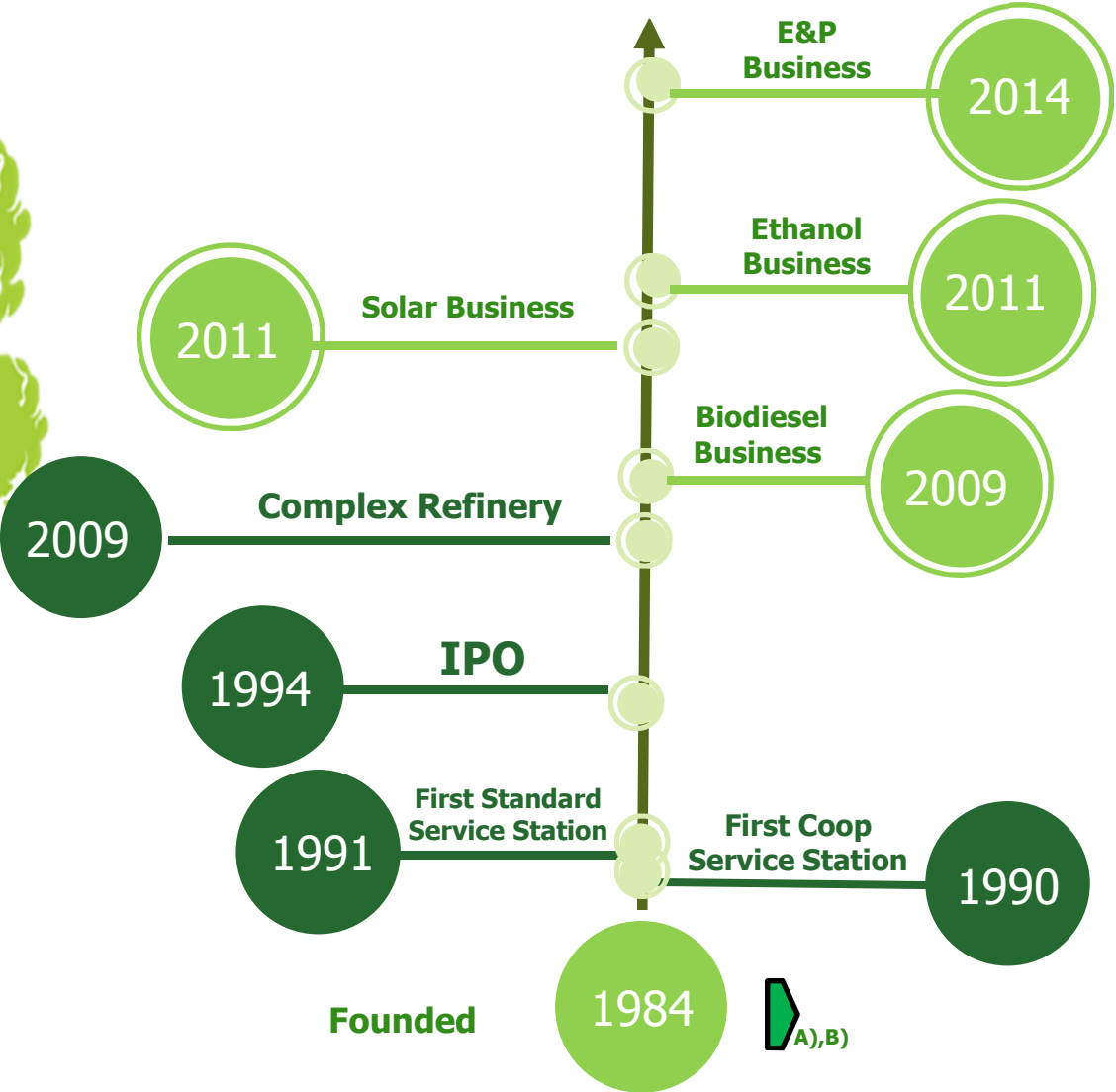
## 3. Bangchak Corporate Social Responsibility (CSR)



# 30<sup>th</sup> Years, The Journey of Bangchak Petroleum PLC



## GREENERGY EXCELLENCE



# Bangchak Business Model today



Ministry of Finance,  
9.98%

PTT Plc  
27.22%

Public  
62.80%

**The Bangchak Petroleum PLC ("BCP")**  
Paid-up Capital: 1,376,923,157 Baht

## Refinery Business

Capacity: 120 KBD  
Trading channels:  
• Retail Market (43%)  
• Industrial Market (32%)  
• Export (11%)  
• Wholesale (13%)



*Related Company:*  
• Fuel Pipeline Transportation Co., Ltd (BCP: 5.07% shareholding)  
• ASEAN Potash Mining Plc. (BCP: 12.73% shareholding)

## Marketing Business

No. of service stations: 1,078\*  
• Standard : 446  
• Coop : 632  
  
*Subsidiary:*  
• Bangchak Green Net Co., Ltd (BCP: 49% shareholding)



\*As of Dec 2014

## Renewable Energy

**Solar Business**

No. of solar plants: 8  
Total Capacity: 118 MW  
  
*Subsidiary:*  
• Bangchak Solar Energy Co., Ltd (BCP shares: 100%)

**Biodiesel Business**

Capacity: 360,000 litre/day  
  
*Subsidiary:*  
• Bangchak Biofuel Co., Ltd (BCP: 70% shareholding)

**Ethanol Business**

Capacity: 400,000 litre/day  
  
*Associated Company:*  
• Ubon Bio Ethanol Co., Ltd (BCP: 21.28% shareholding)

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## Vision

### “Greenergy Excellence”

**Creating an energy business that is environmental friendly  
for sustainable development**



## Corporate Strategy

- 1. Increase refinery competitiveness via efficiency and throughput**
- 2. Operate the refinery with the highest standards of safety and environment**
- 3. Expand retail marketing business to secure the domestic sale and take advantage of higher margins**
- 4. Implement new business development strategies aimed at achieving the following:**

### **Financial Stability**

**Mitigate Single-Asset Concentration Risk**

### **Leap Growth of Business**

**Further Strengthen Company's Profit Margin**

# Bangchak Aims for Sustainable Business Operation (Target to listed in DJSI Emerging Market by 2020)



## 4 Pillars of our strategies

- 1 Grow the business and diversify risks to businesses with secure income
- 2 Low carbon dioxide emission to minimize environmental impacts
- 3 Socially and Environmental Friendly Business Models
- 4 Open, Transparent and Verifiable in Operations



Dow Jones  
Sustainability Indexes  
Emerging Markets





# Bangchak Refinery Target in 2020



# To be 5 Stars Environmental Refinery Roadmap



2014

2020

**2005**

- Processing Majority of Domestic Crude (Waxy and Low Sulfur) as well as New Crudes C)

**2010**

- Utilization of Natural Gas replacing Fuel Oil D)
- Online Emission Report to Public E)

**2013**

- Sulfur Recovery Unit & Tail Gas Treating Unit F)

**2014**

- Energy Efficiency Improvement Projects G)
- Wastewater Improvement Projects (20% of Wastewater Recycling)

**2015**

- Enclosed Ground Flare (With Capacity 120 Ton/h)

**To be 5 Stars Environmental Refinery** H)

- Energy Efficiency Improvement Projects
- Wastewater Improvement Projects (80% of Wastewater Recycling)

1. Introduction to Bangchak Petroleum PLC

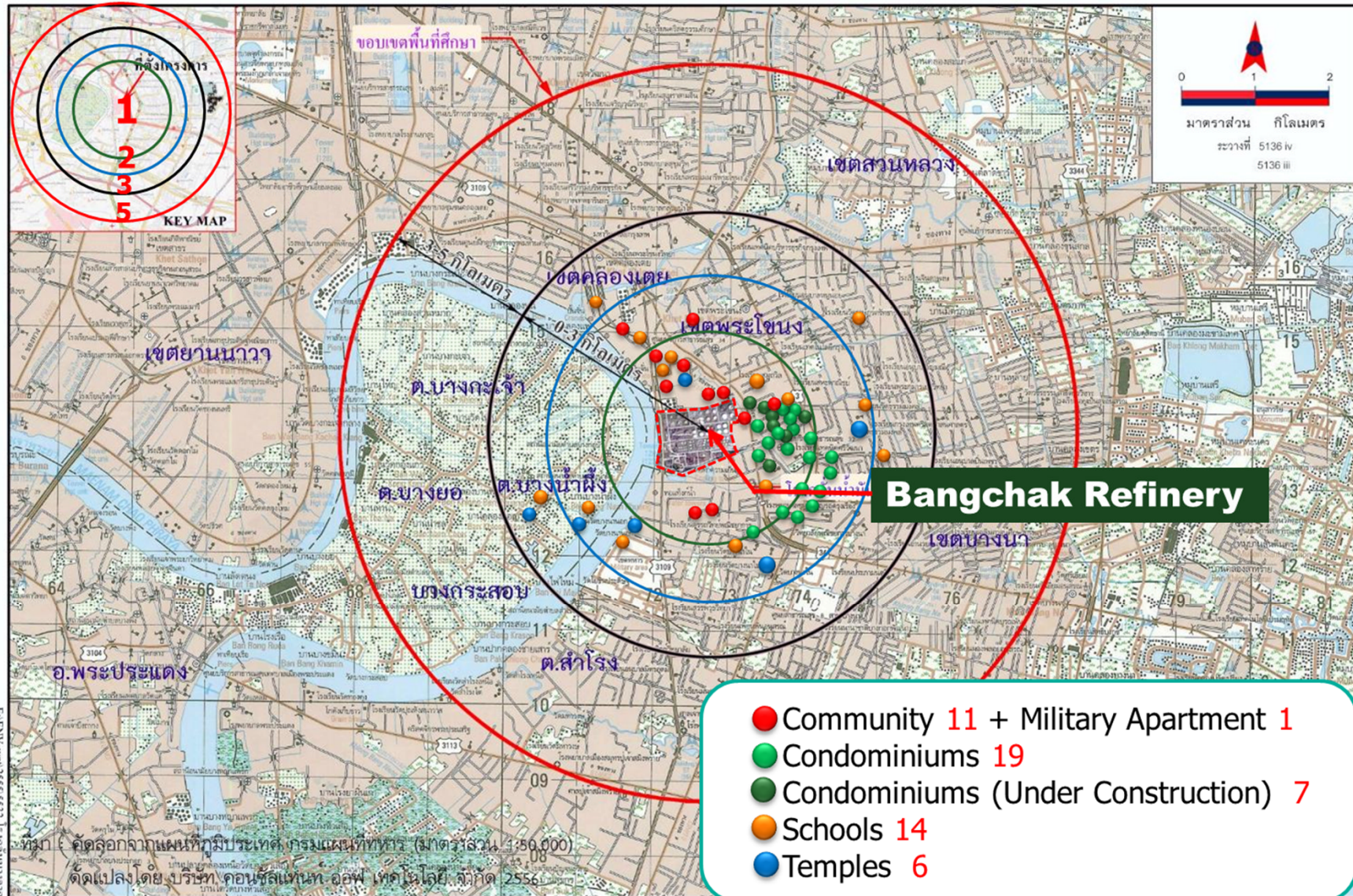
2. Bangchak Sustainability Strategy and Improvement Roadmap



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# Bangchak CSR Boundary



# Bangchak CSR Activities



# Bangchak CSR Activities



## Education



## Environment



## Safety



# Bangchak CSR Activities



## Quality of Life



## Communication



## Sport



## Communication





Thank you

**GREEN  
SOCIETY**

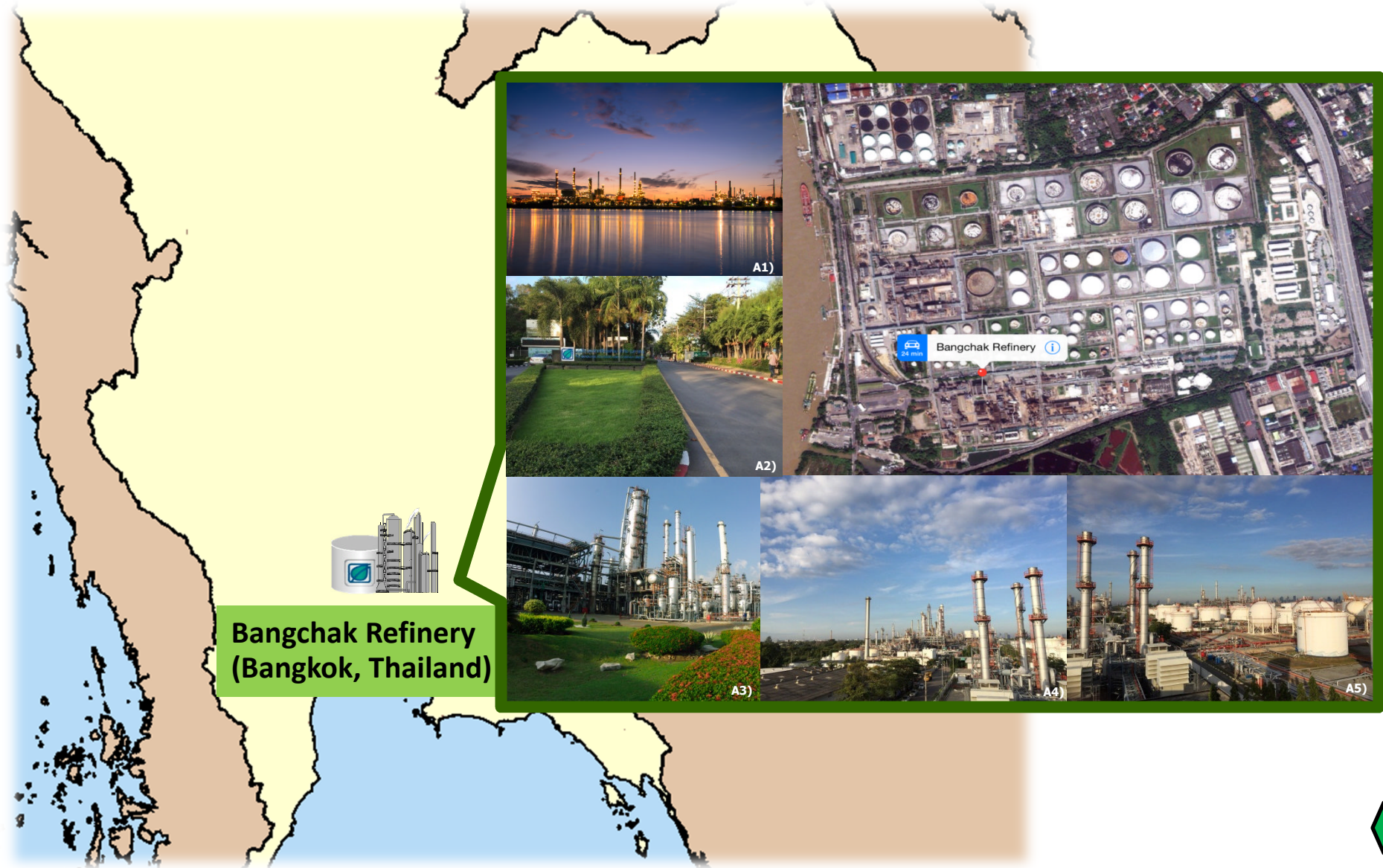
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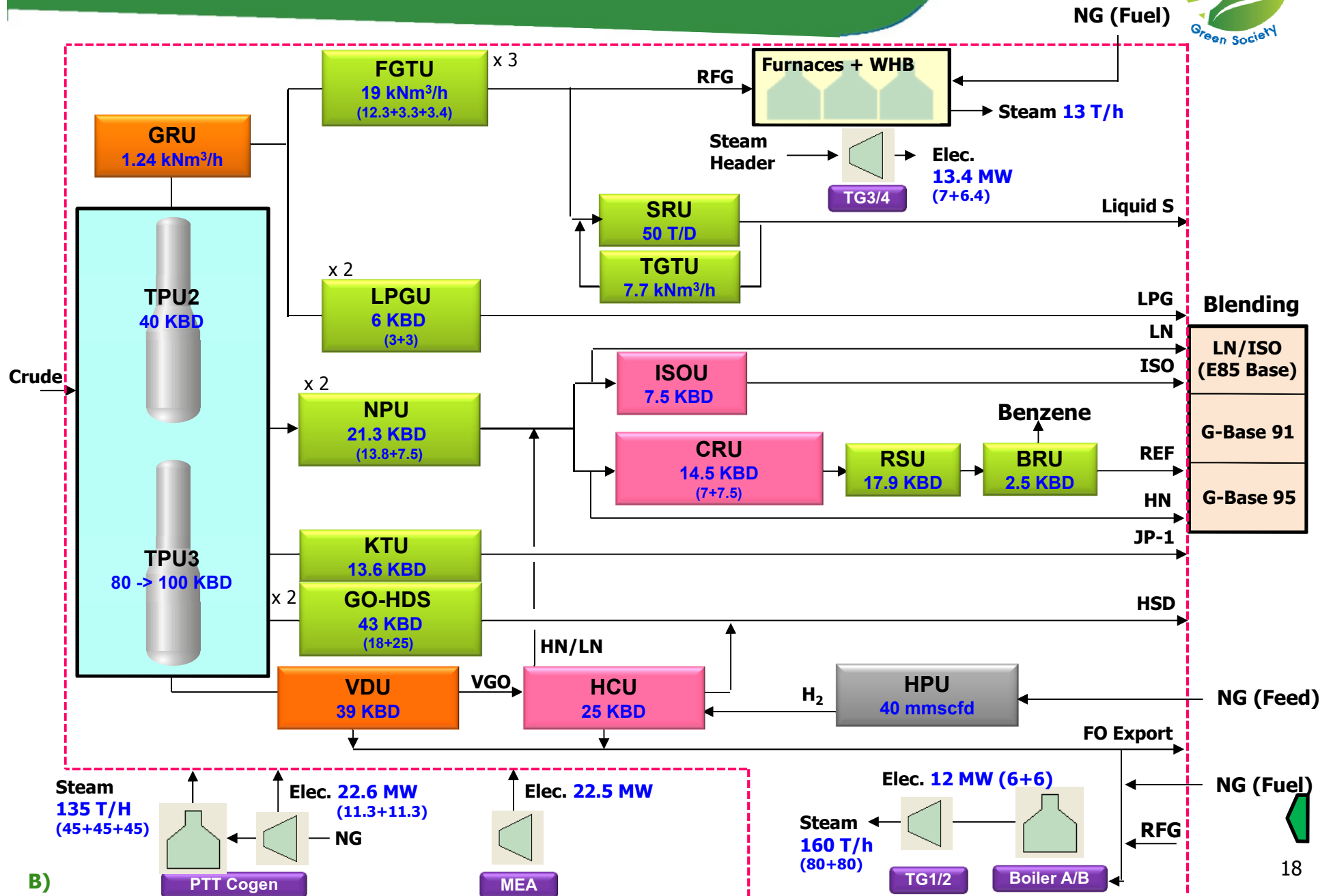
# The only one refinery in Bangkok, BCP



  
**Bangchak Refinery  
(Bangkok, Thailand)**



# Bangchak Refinery Process



# Bangchak Refinery in the Heart of Bangkok



# Bangchak Refinery in the Heart of Bangkok



# Bangchak Refinery in the Heart of Bangkok



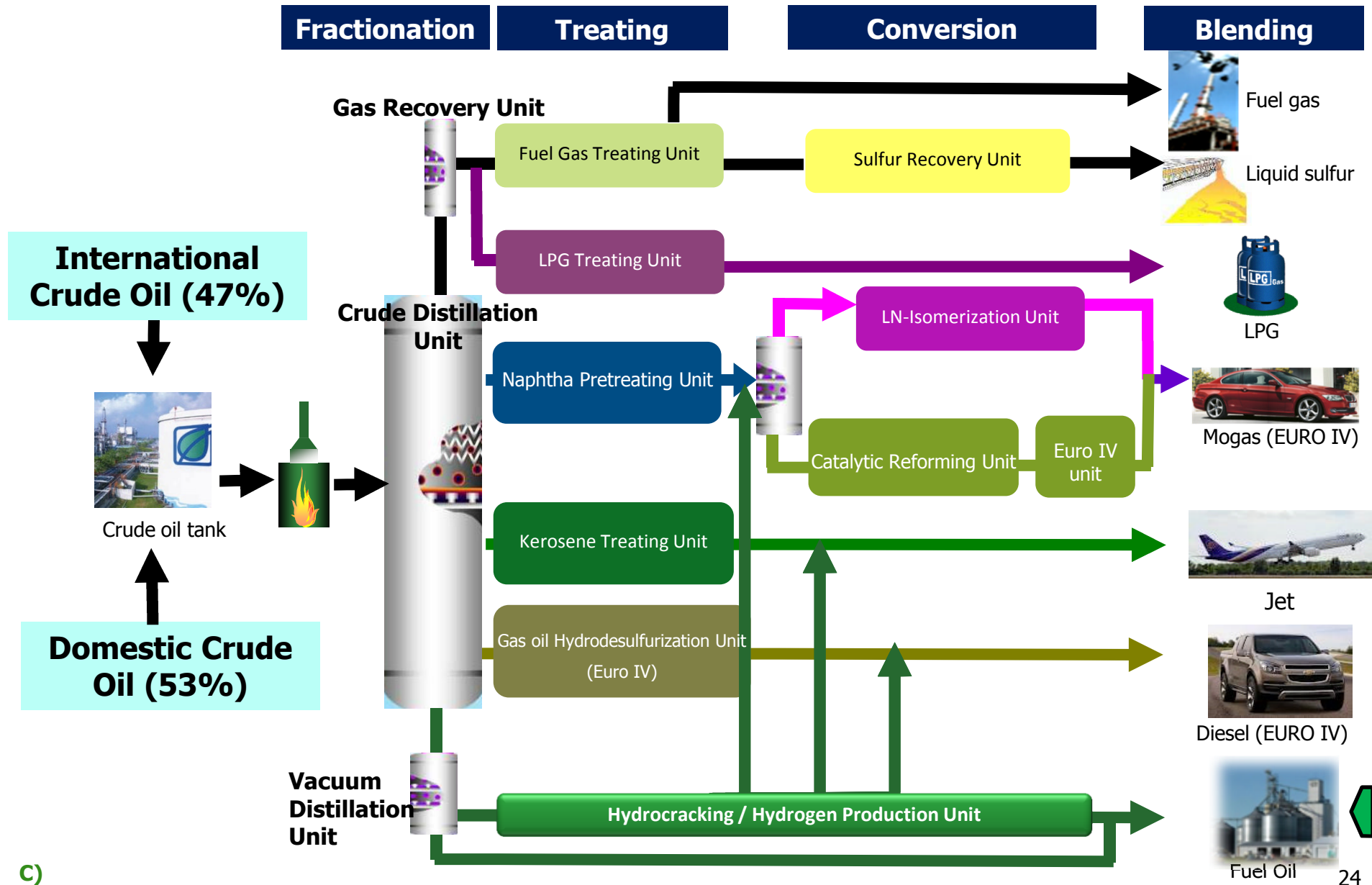
# Bangchak Refinery in the Heart of Bangkok



# Bangchak Refinery in the Heart of Bangkok



# Processing Majority of Domestic Crude (Waxy and Low Sulfur)



c)



# Utilization of Natural Gas Replacing Fuel Oil

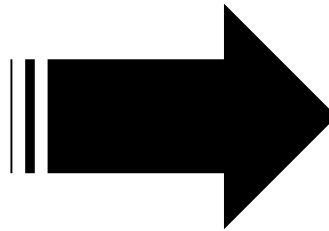


## Own Produced Fuel

- Fuel Gas : 63%
- Fuel Oil : 11%

## Purchased Fuel

- Natural Gas : 26%



# Online Emission Report to Public



## Display at Refinery Main Gate



## Display at Community



## Air Emission

Pass Thailand Air Emission Quality Standard



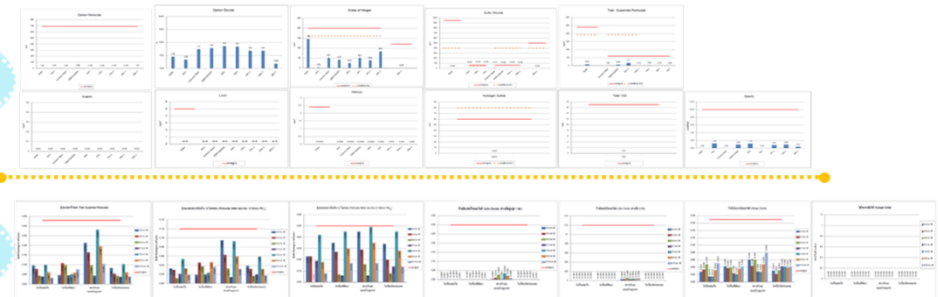
Stack



Ambient



Working Environment



จุดวัด	วันที่วัด	สารประกอบอินทรีย์ระเหยง่าย (VOCs)					PM10	PM2.5	SO2	NO2	CO	O3	ค่าเฉลี่ยรายปี
		Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylene (ppm)	Others (ppm)							
จุดวัดที่ 1	3.8.58	<10	<10	<10	<10	<10	<0.04	0.5	<0.001	<0.002	-	-	-
จุดวัดที่ 2	3.8.58	<10	<10	<10	<10	<10	<0.04	1.0	<0.001	<0.002	-	-	-
จุดวัดที่ 3	3.8.58	<10	<10	<10	<10	<10	<0.04	0.03	<0.001	<0.002	-	-	-
จุดวัดที่ 4	3.8.58	<10	<10	<10	<10	<10	<0.04	1.1	<0.001	<0.002	<0.007	-	-
จุดวัดที่ 5	3.8.58	<10	<10	<10	<10	<10	<0.04	0.3	<0.001	<0.002	-	-	-
จุดวัดที่ 6	3.8.58	<10	<10	<10	<10	<10	-	0.1	-	-	-	-	-
จุดวัดที่ 7	3.8.58	<10	<10	<10	<10	<10	-	0.1	-	-	-	-	-
จุดวัดที่ 8	3.8.58	<10	<10	<10	<10	<10	-	0.7	-	-	-	-	-
จุดวัดที่ 9	3.8.58	<10	<10	<10	<10	<10	-	0.2	-	-	-	-	-
จุดวัดที่ 10	3.8.58	-	-	-	-	-	-	-	-	<0.001	<0.002	-	-
จุดวัดที่ 11	3.8.58	-	-	-	-	-	-	-	-	<0.001	<0.002	-	-
จุดวัดที่ 12	3.8.58	-	-	-	-	-	-	-	-	<0.001	<0.002	-	-
จุดวัดที่ 13	3.8.58	-	-	-	-	-	-	-	-	<0.001	<0.002	-	-
จุดวัดที่ 14	3.8.58	-	-	-	-	-	-	-	-	<0.001	<0.002	-	-
จุดวัดที่ 15	3.8.58	-	-	-	-	-	-	-	-	<0.001	<0.002	-	-
ค่าเฉลี่ยรายปี	3.8.58	10 <sup>1</sup>	20 <sup>1</sup>	10 <sup>1</sup>	10 <sup>1</sup>	10 <sup>1</sup>	20 <sup>1</sup>	-	-	<0.001	0.1 <sup>1</sup>	10 <sup>1</sup>	-

# Sulfur Recovery Unit & Tail Gas Treating Unit



**Sulfur Recovery Unit**



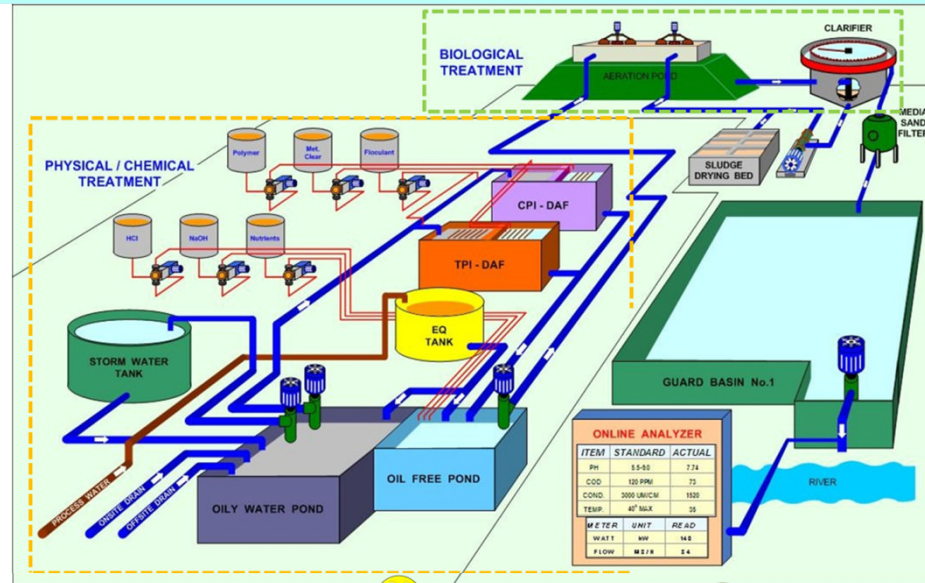
**Tail Gas Treating Unit**



# Wastewater Improvement Projects



## Bangchak Wastewater Treating System



ITEM	STANDARD	ACTUAL
PH	5.5-9.0	7.74
COD	120 PPM	75
COND.	3000 UMICM	1520
TEMP.	40° MAX	35

METER	UNIT	READ.
WAT 1	M3	14.8
FLOW	M3/H	2.4

**Discharged Water**

**Pass** Thailand Effluent Quality Standard



# 5 Stars Environmental Refinery Projects



## Enclosed Ground Flare



Capacity 120 Ton/h

## Wastewater Improvement Project



Membrane Bio-Reactor  
With 80% of wastewater recycling

