



**TPI POLENE POWER**  
PUBLIC COMPANY LIMITED

บริษัท ทีพีโอ โพลีน พาวเวอร์ จำกัด (มหาชน)  
TPI POLENE POWER PUBLIC COMPANY LIMITED

TPIPP



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## Company & Business Overview



# TPIPP 'S Vision and Mission





สถาบันไทยพัฒน์ ได้ประเมินข้อมูลด้านสิ่งแวดล้อม สังคม และธรรมาภิบาล  
(Environmental Social and Governance: ESG)  
จากภาพรวมผลการดำเนินงานด้าน ESG ปี 2563  
โดยใช้ตัววัด WFE ESG Metrics จำนวน 30 ตัวชี้วัด  
ของสมาพันธ์ตลาดหลักทรัพย์โลก (World Federation of Exchanges)  
สรุปคะแนนได้ โดยในภาพรวม  
ผลการประเมินด้าน ESG ของ TPIPP ปี 2563 อยู่ในระดับ



รับรางวัล Asia's Most Influential Companies

หรือ

บริษัทที่มีอิทธิพลสูงสุดในเอเชีย ประจำปี 2021

จากองค์กร

Asia Corporate Excellence & Sustainability Awards (ACES)

จัดโดย MORS Group ซึ่งเป็นองค์กรด้านสื่อจากประเทศมาเลเซีย





# Thailand Stance on COP

Total CO<sub>2</sub> Emission in 2030 = 555m tons

## Paris Agreement 2015

NDC by 2030 = 115m tons  
(20.8% of total emission)

- Industry = 43m tons
- Transport = 41m tons
- Energy = 24m tons
- Others = 7m tons

## COP26 (Glasgow)

NDC by 2030 = 46m tons  
(40% of 115m tons)

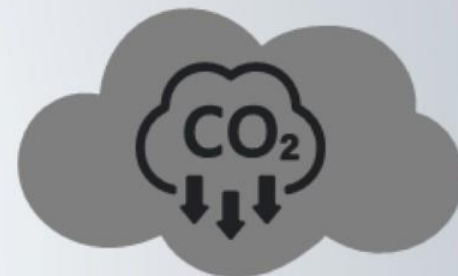
NDC by 2050 = 115m tons  
(total NDC)

NDC by 2065 = 555m tons  
(net zero)



# TPIPP Greenhouse Gas Reduction

## Green Power Plant



## Coal Power Plant Capacity Per Total Power Plant Capacity



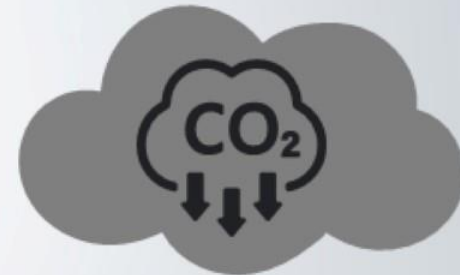
WTE



1 Ton MSW



2.32 Ton



## Reduce MSW to Land fill in Year 2023

17,000 Ton / Day

5.2 mil Ton / Year

12.0 mil Ton-CO<sub>2</sub>

## Reduce MSW to land fill in Year 2025

29,000 Ton / Day

8.6 mil Ton / Year

20.0 mil Ton-CO<sub>2</sub>



# Value of Carbon Market Update 2021

## Increases in Participation

According to the [World Bank's Carbon Pricing Dashboard](#), which provides tracking data on all existing and emerging carbon pricing jurisdictions worldwide, there are currently 64 carbon pricing initiatives. This is a continuation of the increase observed in our previous article of 61 initiatives in 2020 and 50 initiatives in 2019.

This year, the included initiatives would collectively cover 11.65 billion metric tonnes of carbon dioxide equivalent (11.65 Gt CO<sub>2</sub>e) or about 21.5% of the estimated global greenhouse gas emissions. This is a slight decrease from the 2021 estimates of last year, but with [China](#) commencing operation of its [new Emissions Trading System](#) (ETS), there is hope that the next few years will see a significant decrease in emissions from the world's largest emitter of greenhouse gasses.

## The Rise in Carbon Prices

The carbon price of the [EU ETS](#), which had never consistently traded for more than €30 has now jumped up to more than €50 in May 2021. This is a huge increase from the €18 price in 2020, and prices are expected to continue to rise as the EU strives to meet its emissions reduction goals and carbon allowances become less available.

Following the drop in carbon prices after the 2008 financial crisis, the EU developed the Market Stability Reserve (MSR) in order to control the supply of carbon units, which led to the sharp rise in carbon prices in 2018. Likewise, carbon prices in other markets are reaching all-time highs. [IHS Markit's Global Carbon Index](#) tracks carbon credit markets globally by consolidating data from the European Union Allowances (EUA), California Carbon Allowances (CCA), and Regional Greenhouse Gas Initiative (RGGI). According to their estimates, the current weighted carbon price is \$34.99 (as of June 2021), which is up from around \$20 near the end of 2020. Before December of 2020, the IHS Markit Global Carbon Index calculation of carbon credit cost had not risen above \$22.15.

As mentioned in Pianpian Wang's [original article](#) on this topic, 2021 marks the beginning of a new phase for the EU ETS focused on establishing larger reduction goals and adjusting the number of allowances available in the Market Stability Reserve. With long-term goals to reach [net-zero carbon emissions by 2050](#), carbon prices will continue to rise and carbon allowances are being seen as an increasingly valuable investment.



# TPIPP Certification and Awards 2021



SOCOTEC CERTIFICATION INTERNATIONAL



## ESG100

Environmental • Social • Governance



กรมโรงงานอุตสาหกรรม  
DEPARTMENT OF INDUSTRIAL WORKS



กระทรวงอุตสาหกรรม



## THAILAND ENERGY AWARDS



CREATIVE ENERGY CATEGORY



## ASEAN Centre for Energy

One Community for Sustainable Energy



# TIPL as TIPL'S Flagship for Power Business

Unit : THBmm

	TIPL (Q3 2021)	TIPL (9M 2021)
Main Business	Electricity generation from waste heat and refused derived fuel (RDF) power plants and operation in petrol and gas stations.	
Total Revenue	2,943	8,649
Operating EBITDA *	1,238	4,142
Net Profit	943	3,192
Total Assets	46,857	46,857
Total Liabilities	17,005	17,005
Registered and Paid-up Capital	8,400	8,400
Total Equity	29,853	29,853
Market Cap as of 30 Sep 2021	35,616	35,616

**Remark :**

1.Operating EBITDA of Q3 2021 excluded net foreign exchange loss 4.08 THBmm

2.Operating EBITDA of 9M 2021 excluded net foreign exchange loss 19.55 THBmm



Cement Business



Concrete Business



LDPE Business



EVA Business



Public

70.24%

29.76%



Power Plant Business



# Summary of TPIPP's Power Plant Operations

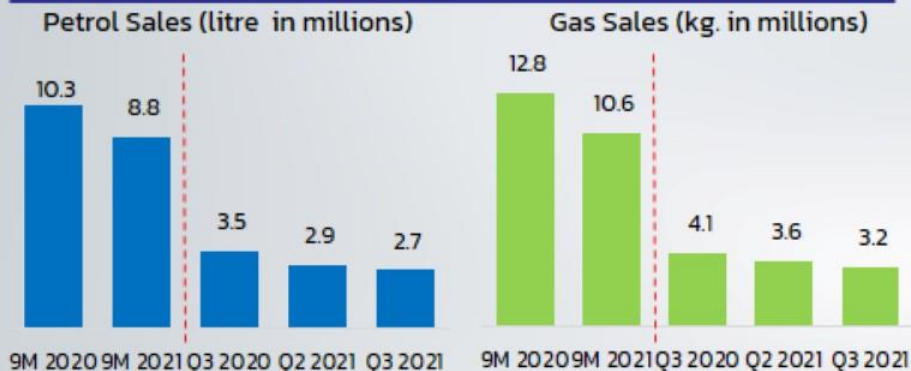
## Operates the Alternatives fuels and Electricity Energy

- Alternative Fuels RDF Plant
- Renewable Energy Power Producer SPP VSPP
- Power plant IPS ( Independent Power Supply )

## Operates petrol stations and gas stations

- Currently owns and operates 8 petrol stations, 1 gas station and 3 petrol and gas stations

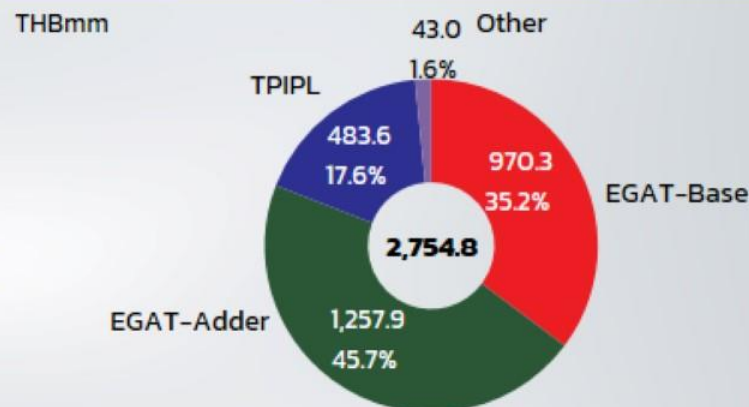
### Historical Sales Volume



### TPIPP's Installed Capacity Breakdown by Fuel



### TPIPP's Q3 2021 Energy & Utilities Revenue Breakdown



2



## Financial Highlights



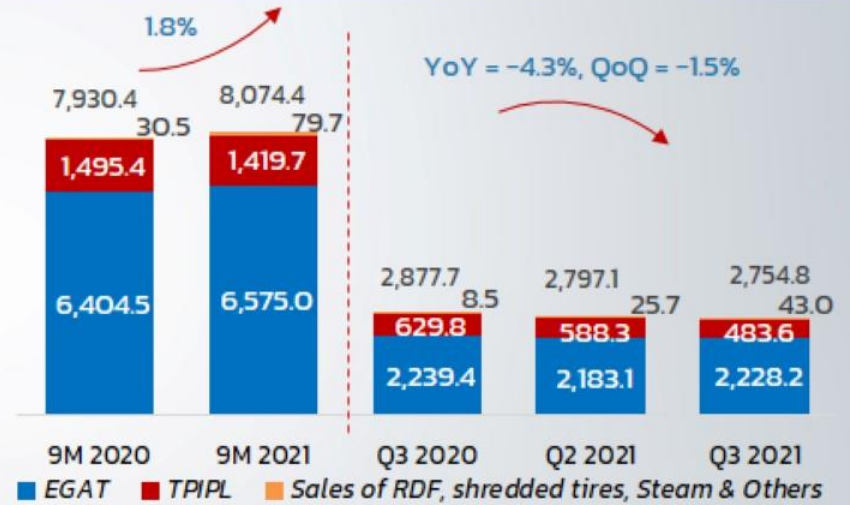
# Revenue

## Diversified Revenue Streams Led by Growing Revenues from Energy & Utilities Division

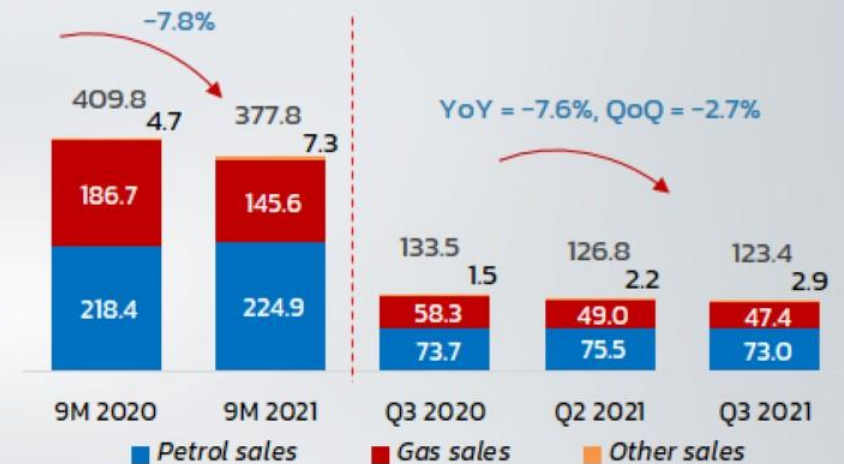
### Total Revenue from Sales of Goods (THBmm)



### Revenue from Energy & Utilities (THBmm)



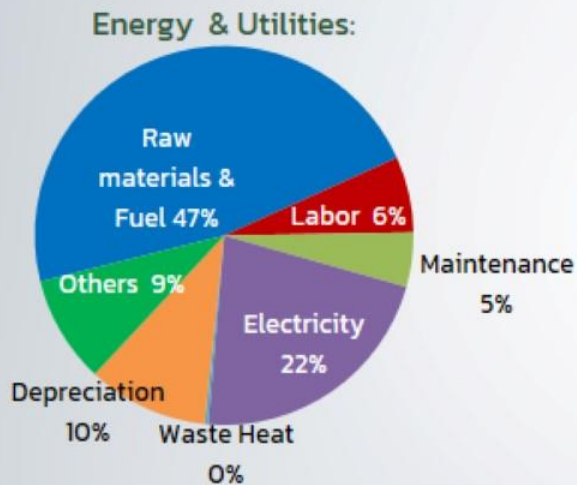
### Revenue from Petrol & Gas Station (THBmm)





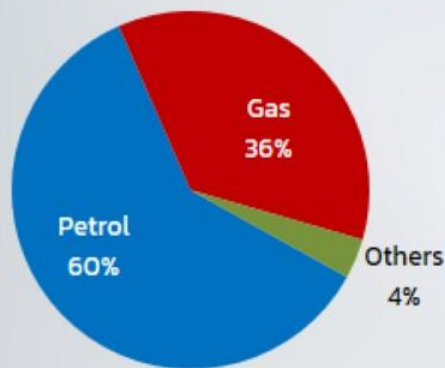
# Cost of Sales & Gross Profit

### Q3 Y2021 Cost of Sales Breakdown (THBmm)



**Total: THB 1,659.6 mm**

### Petrol & Gas Station:



**Total: THB 110.4 mm**

### Gross Profit (THBmm) and Gross Profit Margin<sup>(1)</sup> (%)



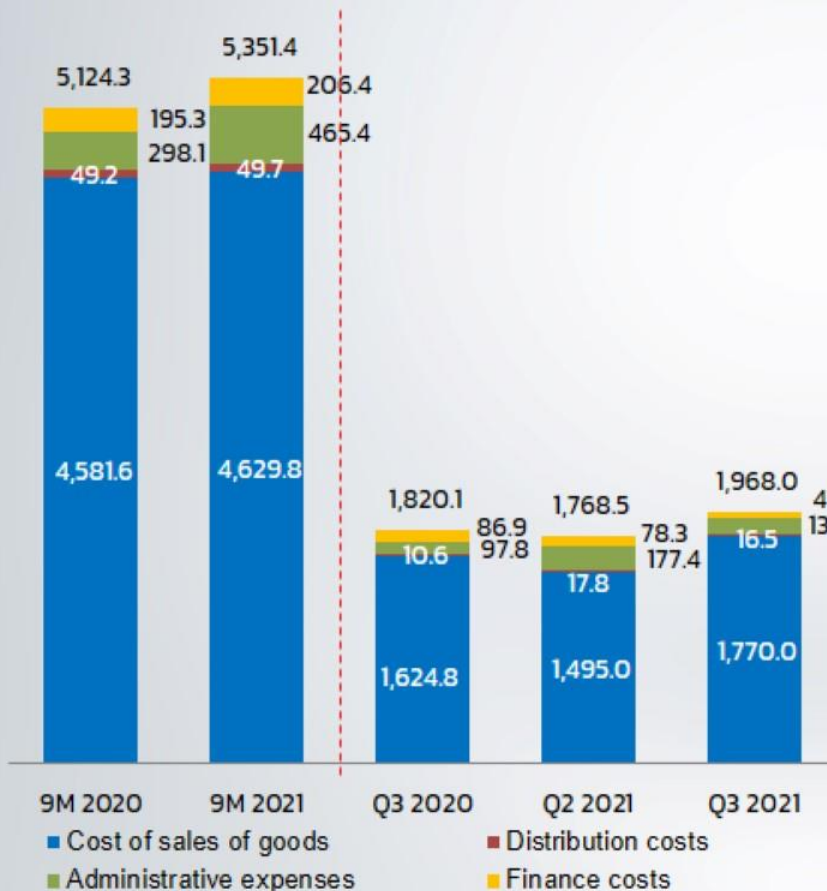
Note:  
 (1)  $Gross\ profit\ margin = \frac{Gross\ profit\ (loss)}{Revenue\ from\ sales\ of\ goods} \times 100$





# Cost & Expenses vs. EBITDA & NPAT

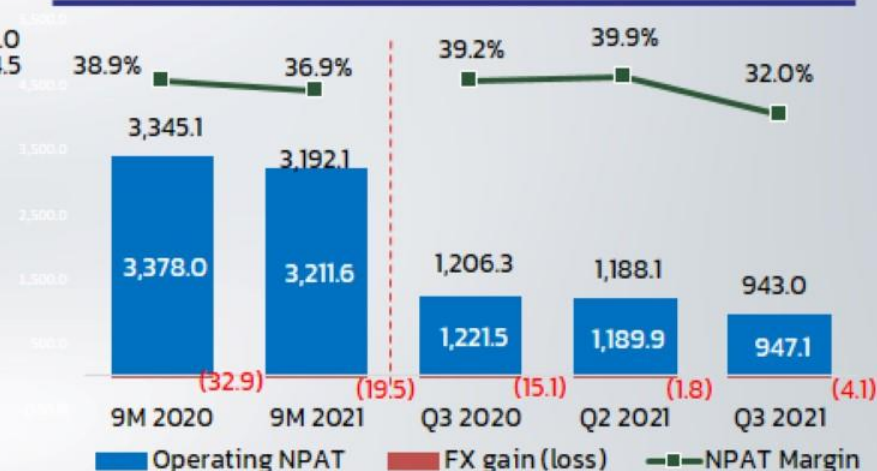
Cost & Expenses Items (THBmm)



Operating EBITDA<sup>(1)</sup> (THBmm) and Operating EBITDA margin<sup>(2)</sup> (%)



Operating NPAT (THBmm) and NPAT margin<sup>(3)</sup> (%)



Notes:

- (1) Operating EBITDA exclude net foreign exchange gain(loss) and compensation from insurance claims. The Company considers EBITDA to be an important performance measure and the Company believes that EBITDA is used by many industries and investors as one measure of cash flow from operations. EBITDA should not be considered by an investor as an alternative to actual cash flow from operations as determined in accordance with TFRS, and is not a standard measure under TFRS. The Company's calculation of EBITDA may differ from similarly titled computations of other companies.
- (2) Operating EBITDA margin = operating EBITDA / Revenue from sales of goods and services x 100
- (3) Net profit margin = Profit (loss) for the year / Total Revenues x 100



# Comparing Profit and Loss Statement – YoY and QoQ

Unit : THBmm

	2020	2021	2020	2021	2021	Compare (%)		
	9M	9M	Q3	Q2	Q3	YoY (9M)	YoY (Q)	QoQ
<b>Income</b>								
Revenue from base tariff	4,339.2	4,264.9	1,615.4	1,525.9	1,453.9	-1.7%	-10.0%	-4.7%
Revenue from power adder	3,560.7	3,729.8	1,253.7	1,245.4	1,257.9	4.7%	0.3%	1.0%
Other Sales Revenue	440.3	457.5	142.0	152.5	166.3	3.9%	17.1%	9.1%
Other income	131.3	167.5	52.3	45.9	52.5	27.6%	0.4%	14.4%
<b>Operating Revenues</b>	<b>8,471.5</b>	<b>8,619.7</b>	<b>3,063.5</b>	<b>2,969.7</b>	<b>2,930.7</b>	<b>1.8%</b>	<b>-4.3%</b>	<b>-1.3%</b>
<b>Expenses</b>								
Cost of sales of goods	4,581.6	4,629.8	1,624.8	1,495.0	1,770.0	1.1%	8.9%	18.4%
Distribution & administrative expenses	347.4	515.1	108.4	195.2	151.0	48.3%	39.3%	-22.7%
<b>Operating expenses</b>	<b>4,929.0</b>	<b>5,145.0</b>	<b>1,733.2</b>	<b>1,690.2</b>	<b>1,921.0</b>	<b>4.4%</b>	<b>10.8%</b>	<b>13.7%</b>
<b>Operating EBIT</b>	<b>3,542.4</b>	<b>3,474.8</b>	<b>1,330.3</b>	<b>1,279.5</b>	<b>1,009.7</b>	<b>-1.9%</b>	<b>-24.1%</b>	<b>-21.1%</b>
Plus Depreciation & Amortization	654.1	666.9	216.4	221.1	228.3	2.0%	5.5%	3.2%
<b>Operating EBITDA</b>	<b>4,196.5</b>	<b>4,141.7</b>	<b>1,546.7</b>	<b>1,500.6</b>	<b>1,238.0</b>	<b>-1.3%</b>	<b>-20.0%</b>	<b>-17.5%</b>
Compensation from insurance claims	99.6	0.0	8.5	0.0	0.0	-100.0%	-100.0%	0.0%
Net foreign exchange gain (loss)	(32.9)	(19.5)	(15.1)	(1.8)	(4.1)	40.5%	73.1%	-122.6%
<b>Total EBITDA</b>	<b>4,263.3</b>	<b>4,122.2</b>	<b>1,540.0</b>	<b>1,498.8</b>	<b>1,234.0</b>	<b>-3.3%</b>	<b>-19.9%</b>	<b>-17.7%</b>
Investment income	30.5	29.2	5.1	10.9	12.4	-4.2%	145.6%	14.1%
Finance costs	(195.3)	(206.4)	(86.9)	(78.3)	(47.0)	5.7%	-45.9%	-40.0%
Income tax expense	(99.3)	(86.0)	(35.5)	(22.2)	(28.1)	-13.4%	-20.7%	26.7%
Depreciation & Amortization	(654.1)	(666.9)	(216.4)	(221.1)	(228.3)	2.0%	5.5%	3.2%
<b>Net Profit (loss) for the year</b>	<b>3,345.1</b>	<b>3,192.1</b>	<b>1,206.3</b>	<b>1,188.1</b>	<b>943.0</b>	<b>-4.6%</b>	<b>-21.8%</b>	<b>-20.6%</b>

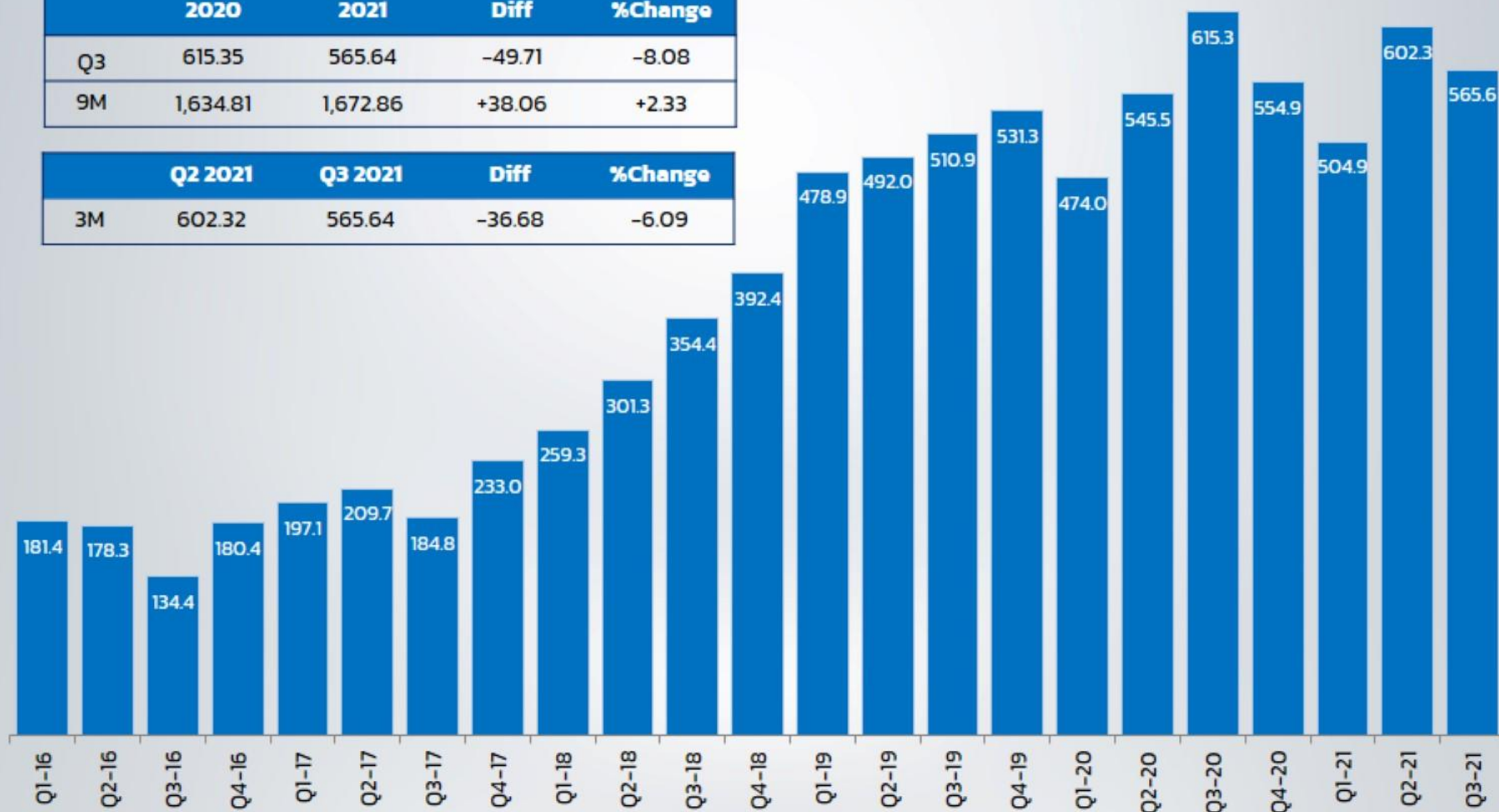


# Operating Statistic

## Generated Amount of Electricity (M.KWh) and Capacity (MW)

	2020	2021	Diff	%Change
Q3	615.35	565.64	-49.71	-8.08
9M	1,634.81	1,672.86	+38.06	+2.33

	Q2 2021	Q3 2021	Diff	%Change
3M	602.32	565.64	-36.68	-6.09





# Debt Profile and Leverage Ratios

## Interest Bearing Liabilities (THBmm)

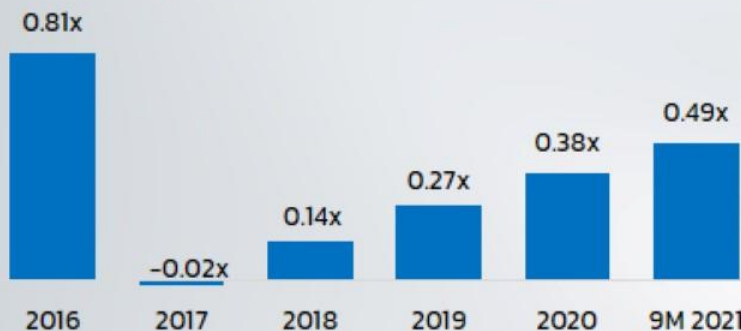
Increase in long-term loans from financial institution and related parties



## Cash / Cash Equivalents & Other current financial assets (THBmm)



## Net Debt<sup>(1)</sup> to Equity (x)



## Interest Coverage Ratio<sup>(2)</sup> (x)



Notes:

(1) Net debt = Interest Bearing Liabilities – Cash and cash equivalents

(2) Interest coverage ratio = Cash flows from operating activities before changes in operating assets and liabilities / Finance cost

3



## Key Operation Highlights



# TPIPP' S WTE Power Plant Situation

<b>IPS</b>  Power Plants with Electricity Sales to TPIPL			<b>Capacity</b>
	TG1		20 MW
	TG2		20 MW
	TG7		70 MW
	TG8		150 MW
	<b>Total</b>		<b>260 MW</b>
<b>SPP</b>  Power Plants with Electricity Sales to EGAT		<b>Capacity</b>	<b>PPA</b>
	TG3	20 MW	18 MW
	TG5	60 MW	55 MW
	TG4	30 MW	90 MW
	TG6	70 MW	
	<b>Total</b>	<b>180 MW</b>	<b>163 MW</b>
<b>Total Power Capacity</b>		<b>440 MW</b>	

■ WH    
 ■ RDF/WH    
 ■ Coal RDF supplement

## BOILERS' TYPE

### 1 WHRB

- WHB AQC, SP1
- WHB AQC, SP2
- WHB AQC, SP3
- WHB AQC, SP4

### 2 RDF CFB

- B1
- B2
- B3
- B4
- B5
- B9
- B10

### 3 MSW GRATE

- B11
- B12
- B13
- B14
- B15

### 4 COAL RDF CFB

- B6
- B8



# TPIPP' S WTE Power Plant Situation

## Grate Boiler B13, B14, B15







**1** RDF Cost Reduction

**3** Improvement Plant Availability

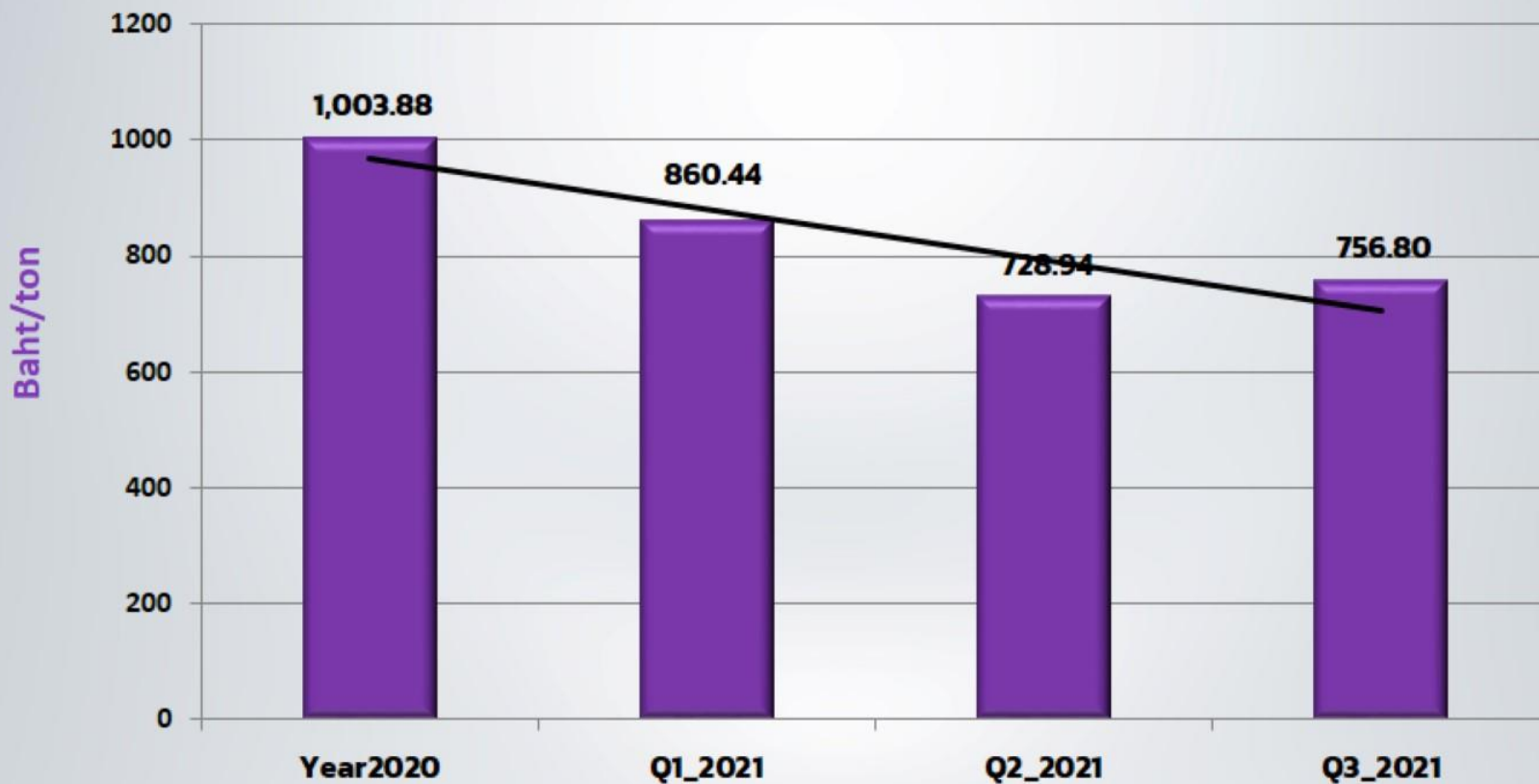
**2** Improvement of Power Plant Efficiency

**4** Coal Replacement



# 1. RDF Cost Reduction

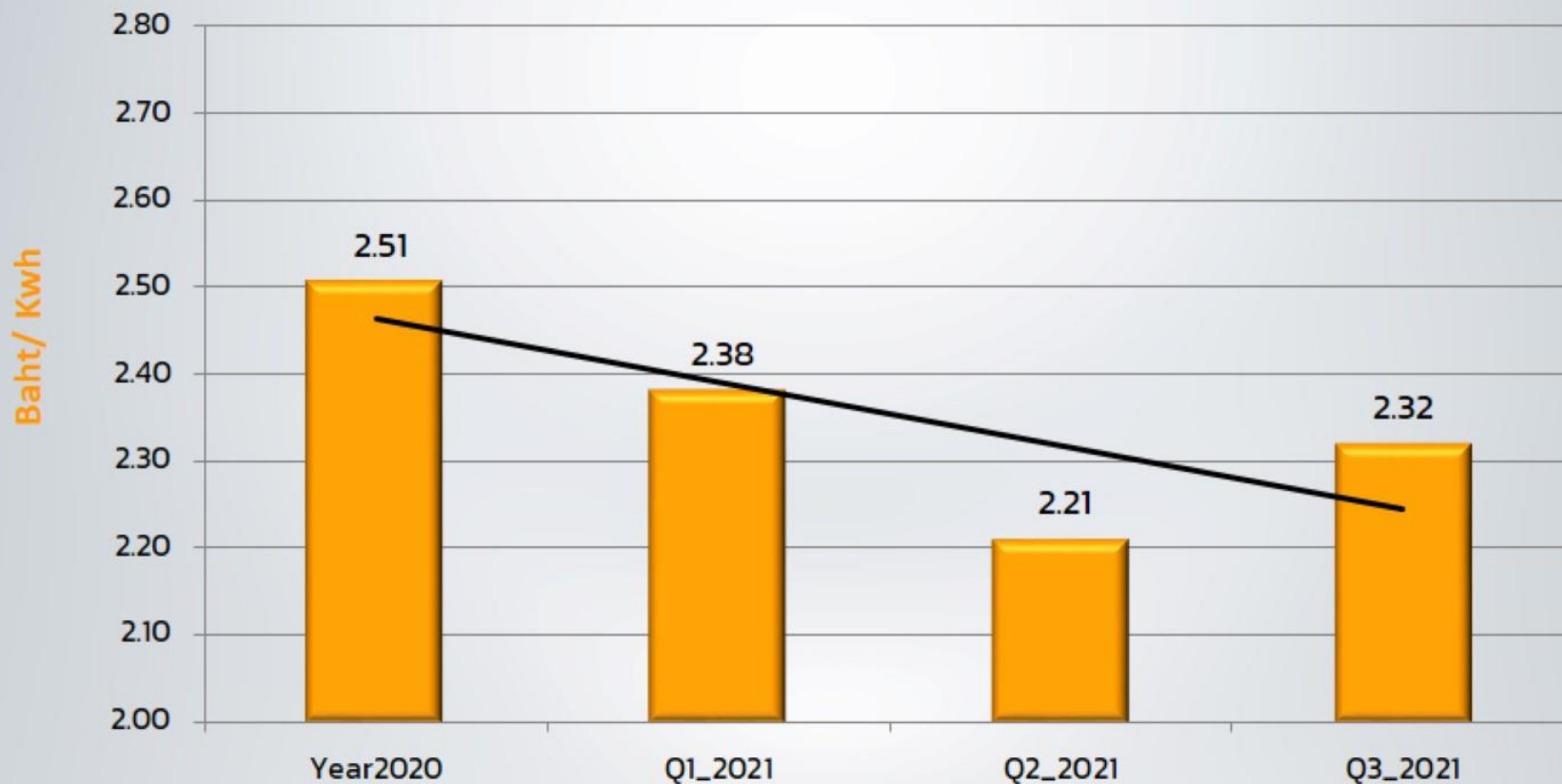
## RDF





## 2. Improvement of Power Plant Efficiency

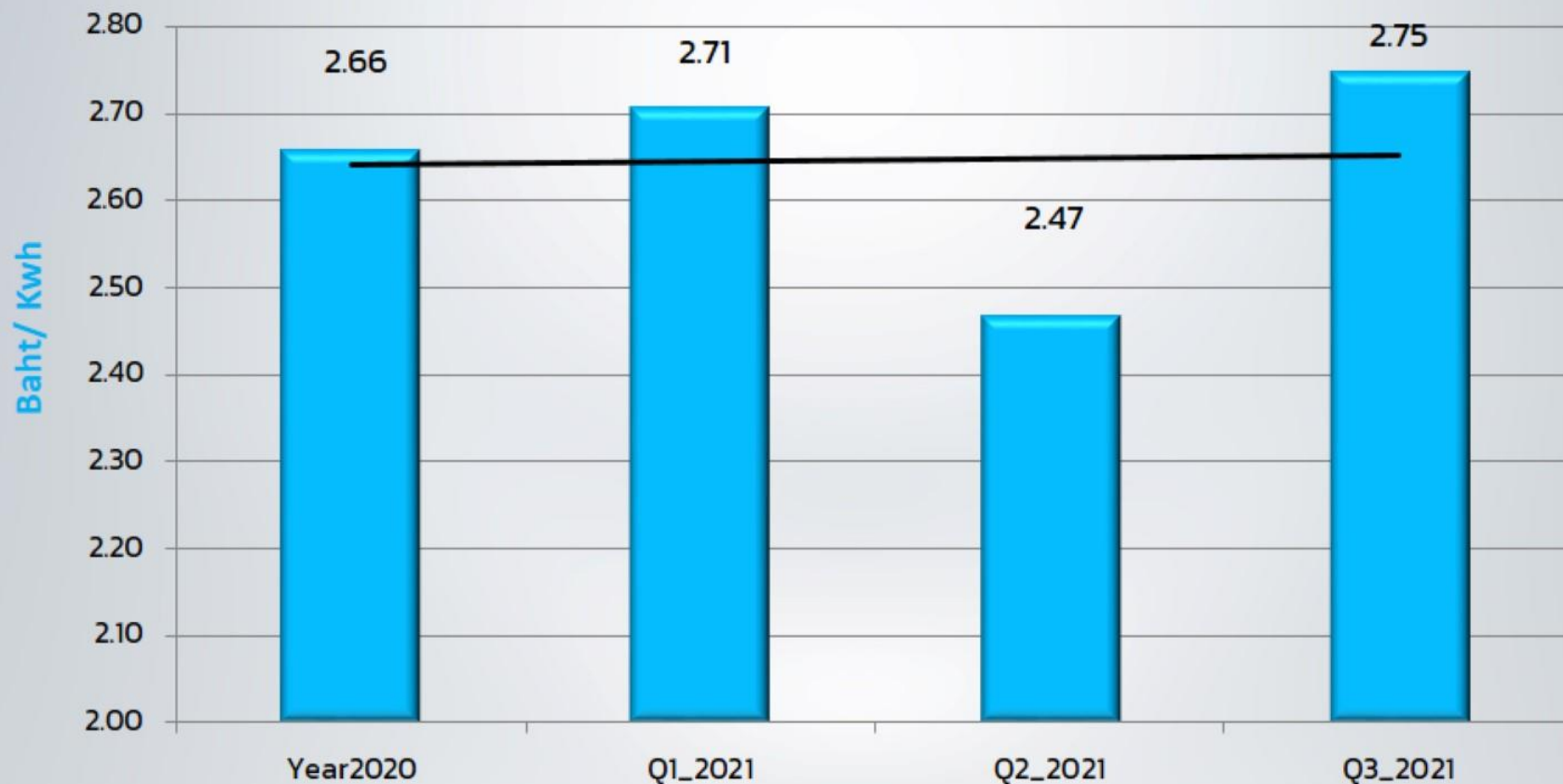
### SPP





## 2. Improvement of Power Plant Efficiency

### TPIPL



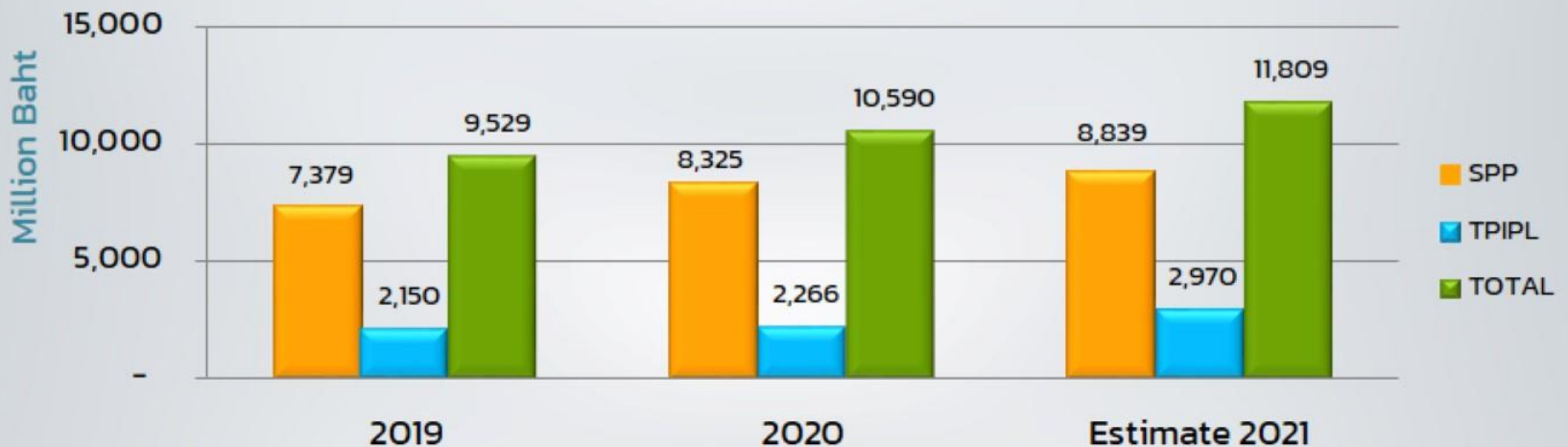


### 3. Improvement Plant Availability

#### Electricity Sale Unit



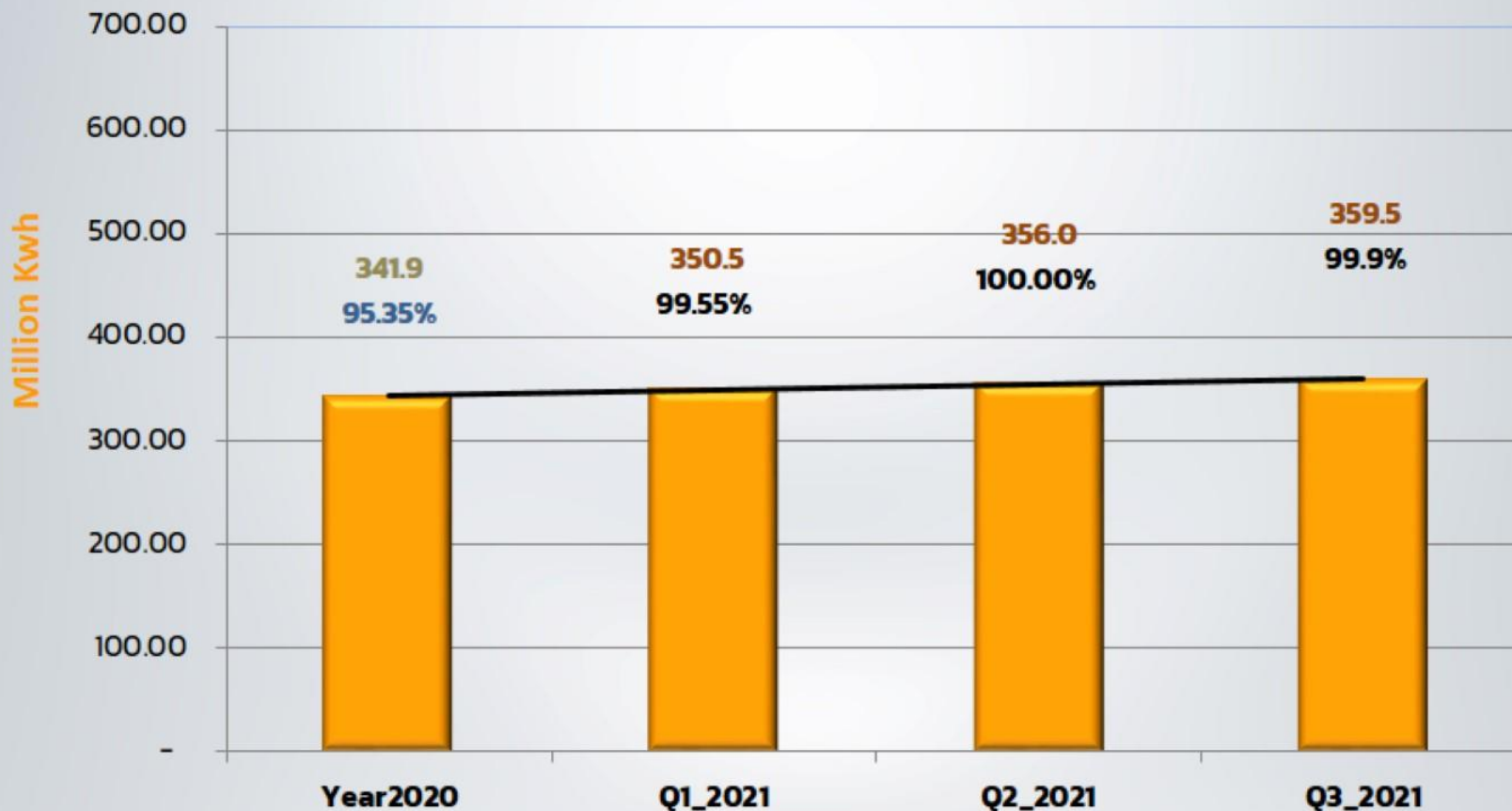
#### Revenue



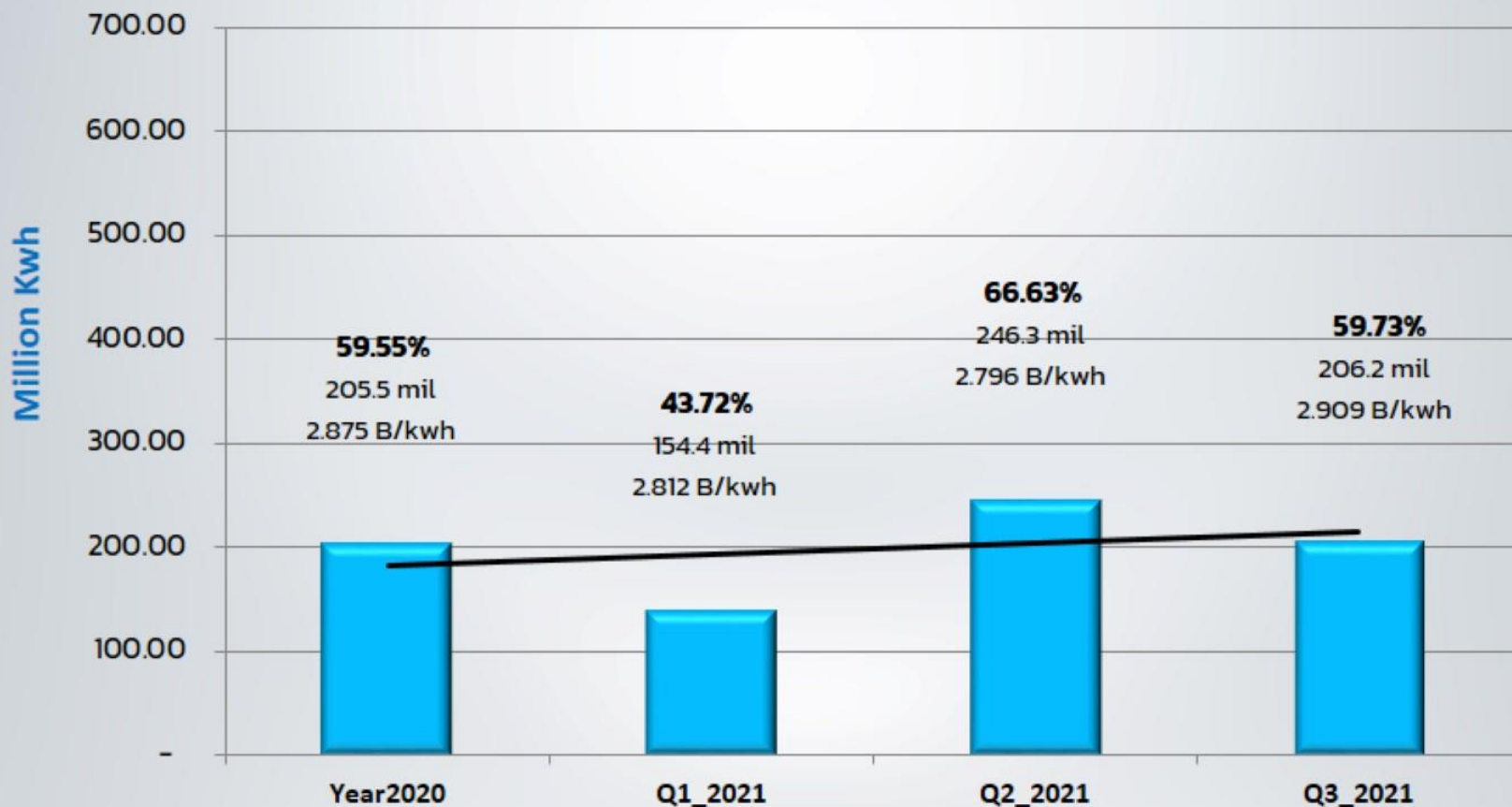


### 3. Improvement Plant Availability

## SPP



# TPIPL





## 4. Coal Replacement

### Coal replacement by High Heating Value RDF

#### RDF Plant 3 Project

- 5 Lines production with 4,500 ton per day Capacity
- Investment 1,000 Mil Baht
- Jan – Oct 2023

#### B8 Coal Replacement Project

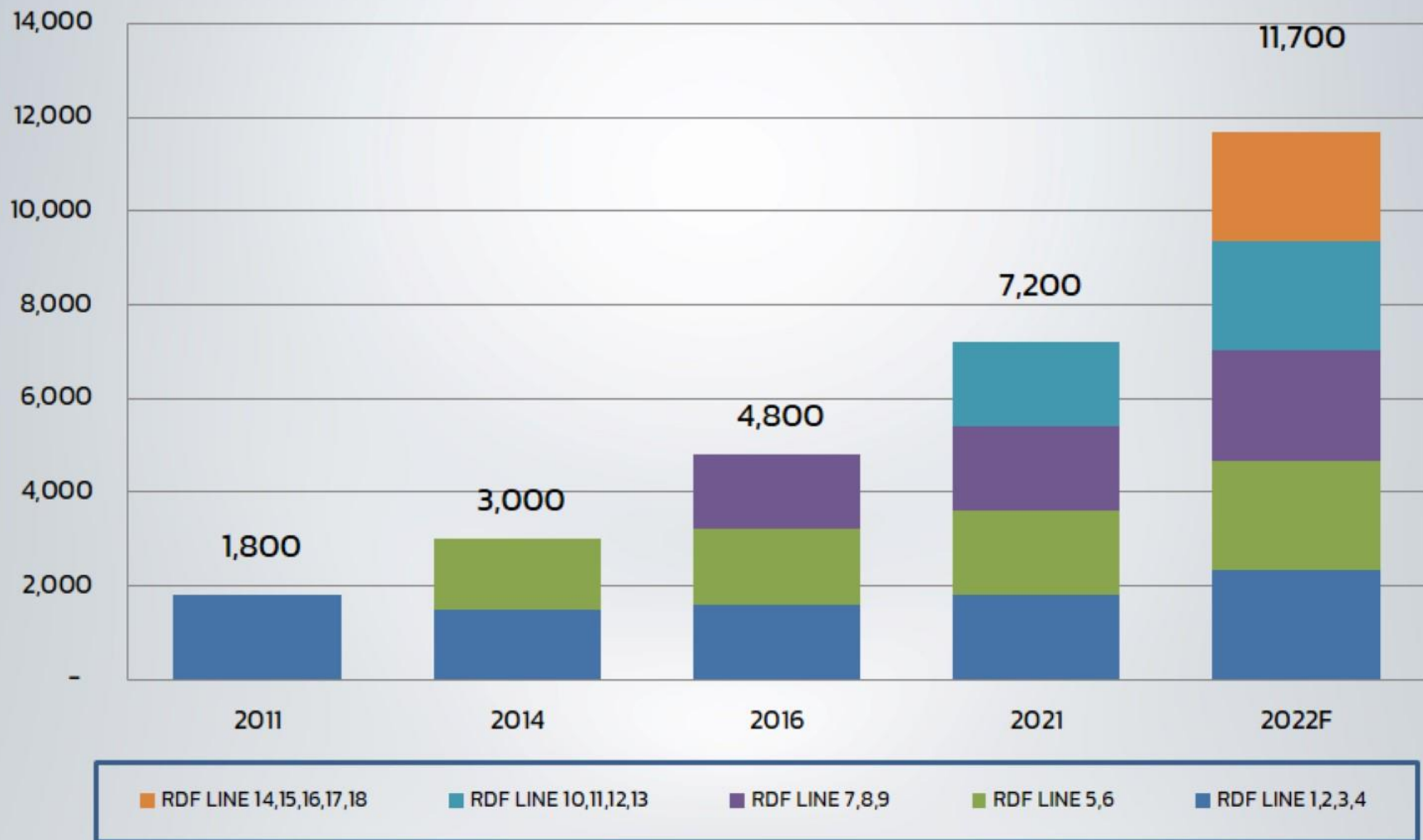
- B8 and Expansion Modification for 80 % RDF replacement
- Investment 2,500 mil Baht
- Phase 1 Jan- May 2023
- Phase 2 May 2023 – May 2025

#### B6 Coal Replacement Project

- B6 and Expansion Modification for 100 % RDF replacement
- Investment 800 mil Baht
- Phase 1 Jan-July 2023
- Phase 2 Mar 2023 – Aug 2024



## RDF PRODUCTION PLAN





RDF Supply for Cement Kiln Plants

Covid – 19 Waste



# RDF Supply for Cement Kiln Plants

- RDF requirement for coal replacement in 4 Kiln Plants is 2,500 ton per day
- Production and Selling RDF to TPIPL is approx. 750,000 Ton per year
- Investment of RDF plant 1,200 Mil Baht BOI Tax Incentive 8/5
- Estimate Revenue for RDF revenue 650 Mil baht per year
- KILN 3 and KILN 2 have been operated since Q4 2020 and Q2 2021
- KILN 4 and KILN 1 will operate in Q4 2021 and Q2 2022



## อนุมัติ 'TPIPP' เดินเครื่อง รง.กำจัดขยะติดเชื้อโควิด

กรม. มีมติให้กระทรวงอุตสาหกรรม และหน่วยงานที่เกี่ยวข้อง เร่งรัดการแก้ไขปัญหาขยะติดเชื้อ กระทรวงอุตสาหกรรมจึงออกประกาศ ณ วันที่ 8 ตุลาคม 2564 เรื่อง นโยบายการนำขยะมูลฝอยติดเชื้อมาเป็นเชื้อเพลิงในเตาเผาของโรงงานเป็นการชั่วคราว ภายใต้สถานการณ์แพร่ระบาดของโรคโควิด 19 เพื่อให้เร่งดำเนินการนำขยะติดเชื้อไปเผาในโรงงานที่มีความพร้อมและศักยภาพ



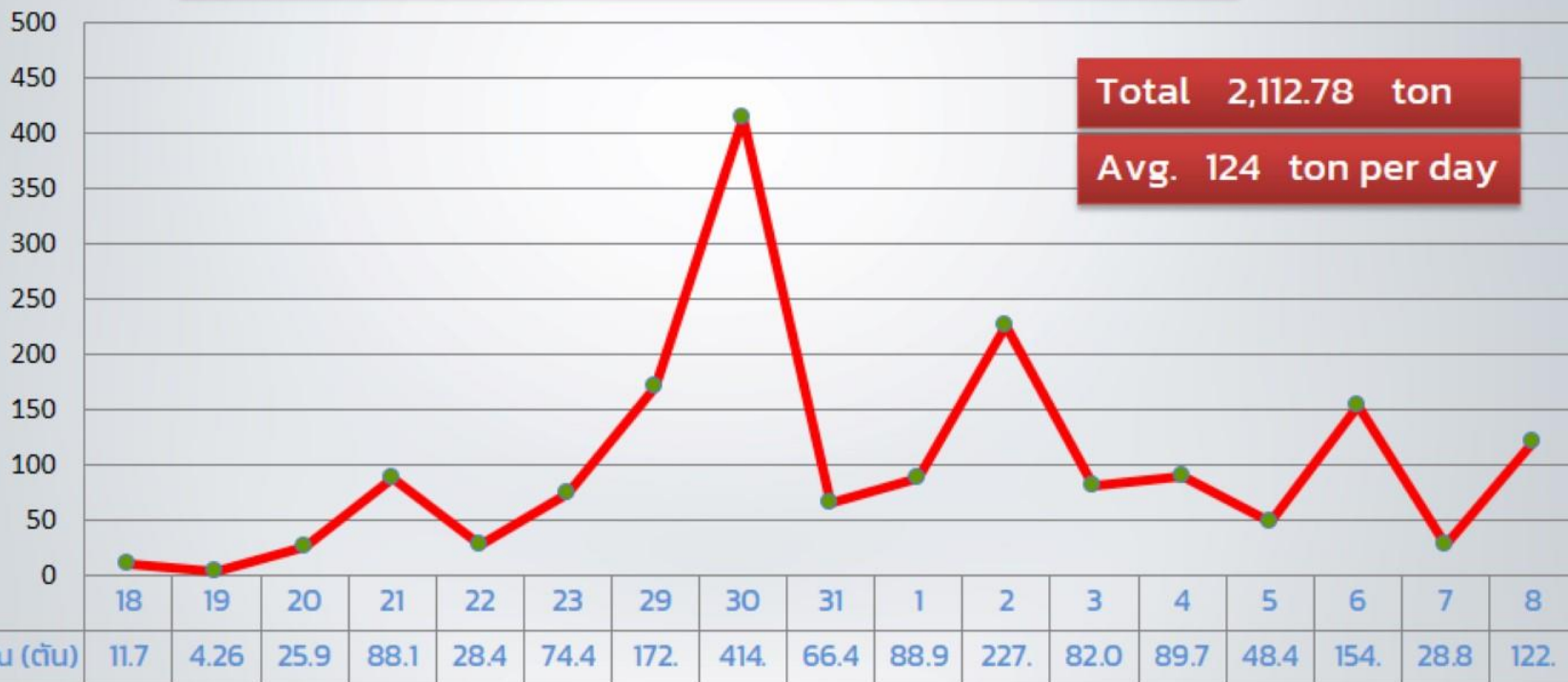
# Special Activity- Covid-19 waste





# Special Activity- Covid-19 waste

## ปริมาณขยะ COVID-19 เดือนตุลาคม - พฤศจิกายน 2564



Total 2,112.78 ton  
Avg. 124 ton per day

Revenue 10.5 Mil Baht (17 days)

**1**

New Power Plant MSW Incinerator  
PDP2018



**2**

New Power Plant MSW Incinerator  
EEC



**3**

INDUSTRIAL WASTE POWER PLANTs



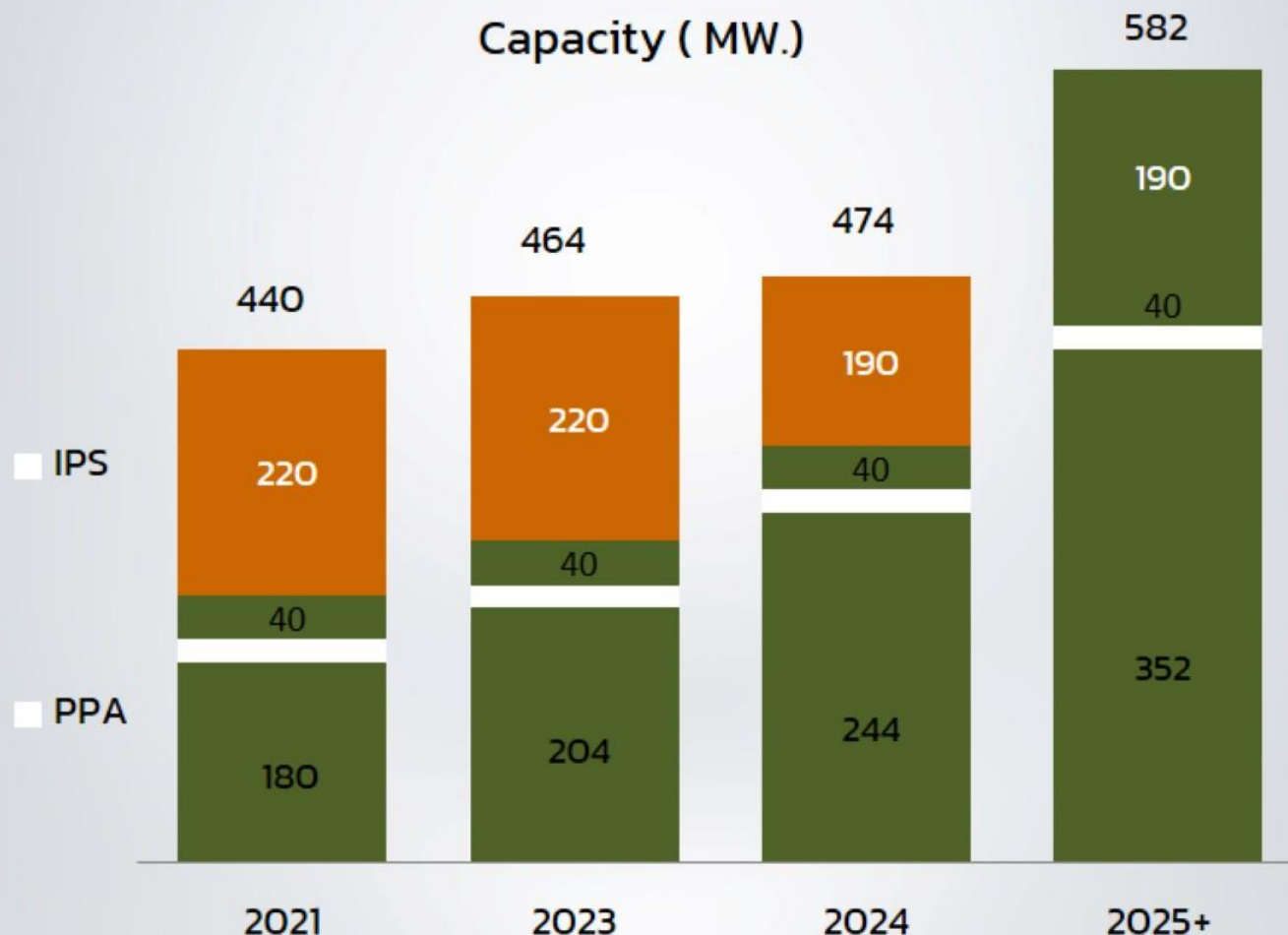
**4**

Southern Economic Zone





# Prospect Power Plant Capacity





# แนวทาง บริหารจัดการขยะ ในพื้นที่ EEC

**เป้าหมาย**  
กำจัดขยะใหม่  
ถูกกำจัดทุกวัน  
ขยะ-สะสม  
**5.57**  
ล้านตัน  
ถูกกำจัดหมด

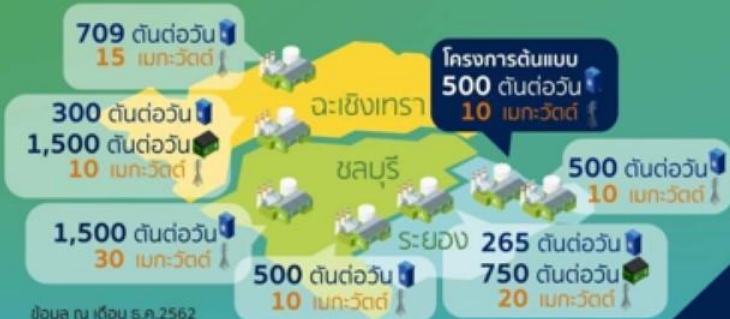


**ประสิทธิภาพการ  
กำจัดขยะแบบสมบูรณ์**

กำจัดขยะในพื้นที่ EEC	6,524 ตันต่อวัน
ขยะรายวัน	4,274 ตันต่อวัน
ขยะ-สะสม	2,250 ตันต่อวัน
ผลิตไฟฟ้าจากขยะใช้ในพื้นที่ EEC ได้ถึง	130 เมกะวัตต์ต่อปี
ลดพื้นที่ฝังกลบขยะได้	317 ไร่ต่อปี
ลดก๊าซเรือนกระจกได้ราว	186 ล้านตันต่อปี

สถานการณ์ปริมาณขยะมูลฝอยในพื้นที่ EEC  
ปี 2561 มีอยู่ราว 4.2 พันตันต่อวัน  
คาดว่า ปี 2580 จะเพิ่มขึ้นเป็น 6.8 พันตันต่อวัน

โรงงานกำจัดขยะและโรงไฟฟ้าขยะ 6 แห่ง และ  
ศูนย์กำจัดขยะแปลงเป็นไฟฟ้าต้นแบบ 1 แห่ง



กำจัดขยะ-มูลฝอย 
 กำจัดขยะ-สะสม 
 ผลิตพลังงานไฟฟ้าจากขยะ





## Southern Economic Zone (SEZ)

01

New Generation  
Technology  
Industrial Park



02

Smart  
City



03

Deep sea Ports  
And  
Distribution  
Center



04

Clean  
Energy  
Center





## The development of Southern Economic Zone (SEZ)

- On October 4<sup>th</sup> 2016, the cabinet had a resolution to approve the promotion of the “Triangle of Security, Prosperity, Sustainability” for 4 prototype cities.
  1. Betong District, Yala Province
  2. Su ngai go lok District, Narathiwat Province
  3. Nhong Jik District, Pattani Province
  4. Chana District, Songkhla ProvinceHowever, the cabinet only approved to start the development of the first three districts to avoid all investments flocking into only Chana District.
- During 2018–2019, the Southern Border Provinces Administrative Center (SBPAC) has decided that it is the right time to start the development of the fourth district as already approved by the cabinet. The SBPAC went out to discuss the possibility with all related sectors, including the private sector. After getting all the needed information, the SBPAC let the cabinet to approve the project again.
- On May 7<sup>th</sup> 2019, the cabinet had a resolution to approve the promotion of the fourth district of the “Security, Prosperity, Sustainability Triangle Model City 4 Projects” in Chana District
- On October 31<sup>st</sup> 2019, the Southern Corridor Strategy Development Committee (SCSDC) had a resolution to let the SBPAC use section 7, 9, 10 and 18 of the Southern Border Provinces Administration Act.
- On January 21<sup>st</sup> 2020, the cabinet had a resolution to approve and acknowledge the SCSDC’s resolution on Oct 31<sup>st</sup>.
- On July 16<sup>th</sup> 2020, the SCSDC had a resolution to approve the SBPAC to contact all needed government agencies to change the planning permission of Chana District.
- On August 18<sup>th</sup> 2020, the cabinet had a resolution to approve and acknowledge the SCSDC’s resolution on July 16<sup>th</sup>.



## The development of Southern Economic Zone (SEZ) (Continue)

- On January 7<sup>th</sup> 2021, there is a subordinate legislation by the MOC to waive all register and notarization fees to all companies in 4 southern provinces and 4 districts in Songkla.
- On February 22<sup>nd</sup> 2021, the investigation for accuracy committee led by Capt. Thamanat Prompow had advised the prime minister that SBPAC should contact the NESDB before moving forward.
- On March 1<sup>st</sup> 2021, SBPAC held a meeting with the NESDB with Deputy Prime Minister Witsanu Kreangam , who confirms that SEA is not needed but insisted the SBPAC must complete the Feasibility study. Also allowing the SBPAC and related parties to move forward with the EIA and EHIA processes.
- On March 25<sup>th</sup> 2021, there is a subordinate legislation by the MOI to reduce all transfer and mortgage fees related to real estate in 4 southern provinces and 4 districts in Songkla.
- On May 25<sup>th</sup> 2021, the cabinet had a resolution to approve the of BOI's announcement announced that Chana District (as the fourth prototype city) will received the highest tax incentives as the law permitted.
- On June 4<sup>th</sup>, 2021, On July 23<sup>rd</sup> 2021, there is a subordinate legislation by the MOI to waive all initial and yearly fees to all factories in 3 southern provinces and 4 districts in Songkla.
- On July 23<sup>rd</sup> 2021, there is a subordinate legislation by the MOF to approves Chana District as a fourth prototype city and becoming a tax-free zone.
- On Oct. 14<sup>th</sup>-Oct. 21<sup>st</sup> 2021, the Songkla Provincial Administrative Organization surveys all the relevant communities to ask about ideas on changing the land use.

