



IEC
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**Opportunity Day
Q3/2015 Performance Result**

The Stock Exchange of Thailand, 26th Nov 2015



Road To Success



Disclaimer

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This presentation was prepared to assist investment community to better understand the company's financial status and operation.

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For further information, please contact Investor Relations Section of the International Engineering PCL. (IEC) at Tel. (662) 6190199 ext. 109 or Email:iecgroup1922@gmail.com



Road To Success



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- **Overview**
- **Strategic Roadmap Update**
- **Financial Performance**
- **Market Outlook & Conclusion**
- **Multimedia**



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Overview

Revenue Focus (as of Q3,2015)

Energy 91 %

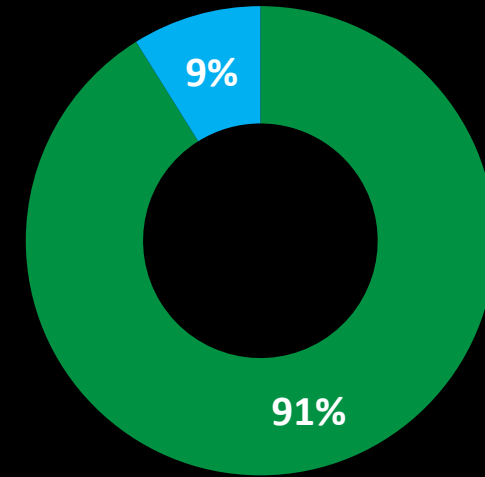
- MSW Power plant
- Solar Power Plants
- Biomass Power

Information 9%

- Hardware & Software



Revenue Focus Q3, 2015



- Energy
- Technology business





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IEC Power Plants

Overview

*Information as of Oct 2015

Power plant	COD	Location	Owned by IEC	PPA (MW)	Installed capacity	Revenue/M (MB)*
Solar Power Plant						
Mae Ramat	Dec-13	Tak	100%	5.25	6.3	7.1
Mae Tha	Sep-13	Lumpoon	100%	1.92	2.6	3.3
Mae Malai	Jun-14	Chiang mai	100%	1.92	2.3	3.3
Total (PV Solar Plants)				9.09	11.2	
Biomass Power Plant						
IEC Sakaeo 1	Apr-13	Sakaeo	75%	8	9.9	17
MSW Power Plant						
Gidec	Dec-14	Songkhla	50%	6.5	6.78	14
Total (IEC Power Plants)				23.59	27.88	45.3





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Hat Yai MSW Power Plant (GIDEC)

Project Description

Location: Hat Yai, Songkla

Shareholder: IECGE 50%, EGCO 50%

SCOD: December 2014

PPA: 6.5 MW

Contract with Municipality : 25 years

Adder: 3.5 Baht

Tipping Fee: 290 Baht/ton

Land: 10 rais (Rental)

Overview





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IEC Sakaeo 1 Power Plant

Project Description

Location: Muang, Sakaeo

Shareholder: IEC 75%, Other 25%

SCOD: April 2013

PPA: 8 MW

Adder: 0.30 Baht

Feedstock: Wood chip, wood bark, palm fiber

Land: 67 rais

Overview





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Overview

Mae Ramat Solar Power Plant

Project Description

Location: Mae Ramat, Tak

Shareholder: IEC 100%

SCOD: December 2013

PPA: 5.25 MW

Adder: 6.5 Baht

Land: 150 rais (Rental)

Upgrade: 0.5 MW in Jan 2016





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Mae Tha Solar Power Plant

Project Description

Location: Mae Tha, Lumpoon

Shareholder: IECGE 100%

SCOD: September 2013

PPA : 1.92 MW

Adder: 6.5 Baht

Land: 43 rais



Overview



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Overview

Mae Malai Solar Power Plant

Project Description

Location: Mae Malai, Chiang Mai

Shareholder: IECGE 100%

SCOD: June 2014

PPA : 1.92 MW

Adder: 8 Baht

Land: 52 rais





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Strategic Roadmap Update

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Rayong Waste Plastic Recycle Plant

Opening Dec
2015.

Project Description

Location: Nikompattana, Rayong

Shareholder: IEC 100%

Installed Capacity: 100 tons per day

Full capacity: 300 tons per day

Production: Plastic Pellet (PE)

Investment: 663 millions Baht

Land: 24 rais

Commercial Operation: Dec 2015





Hat Yai Waste Plastic Recycle Plant

Opening Q2
2016.



Project Description

Target Location: Chaloong Industrial Estate, Hat Yai, Songkla

Shareholder: IEC 100%

Installed Capacity: 100 tons per day

Production: Plastic Pellet (PE)

Investment: 157 millions Baht

IRR: 19% p.a.

PB: 4 years

Land: 20 rais

Project Progress: Under constructions



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Suphanburi Biogas Power Plant



Power plant	COD	Location	Land (Rai)	Investment capital (MB)*	Owned by IEC	Feed stock	PPA (MW)
Biogas (IRR 15% p.a and PB 6 years)							
Nong Ree	TBA	Kanchanaburi	44	270	100%	Vinasse	3
Sa Yai Som	TBA	Suphanburi	41	360	100%	Vinasse	4.6
U-thong Cooperatives	TBA	Suphanburi	41	180	25%	Vinasse	2
Khun Pad Peng	TBA	Suphanburi	41	90	100%	Vinasse	0.99
Total			167	900			10.6

*Estimated amount



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Project Pipeline in 2015

Project name	Expected project size (MB)	Expected Capacity (Tons/day)
Refuse Derived Fuel Landfill (RDF)*:Hat Yai	60	200
Refuse Derived Fuel Landfill (RDF)*: Ban Bueng	30	200
Total	90	400

*Remark: This RDF shall be also available for use by any recycle plastic pellet plants in Rayong and vicinity, including our new recycled plastic pellet plant, which shall be commissioning in Dec this year.





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Future Projects 2016-2017

Project name	Total Capacity (MW)	Project size (MB)
RDF Plants for MSW Power Plants in Southern part	-	122
Singkhon Power Resale to Myanmar	-	35
Additional micro Power Plant at Hat Yai	1	125
Biogas: Hat Yai	1.5	104
Biogas: Rayong	3	197
RDF from landfill: Soong Nearn , Nakornrachasima	-	15
Biogas: Kampaengphet	5.85	400
MSW Plant: Ban Bueng, Chonburi	6	600
Ethanol Plant (IECBP): Rayong	-	800
Watse Plastic Recycling Hat Yai		157
Biogas: Suphanburi and Kanchababuri (4plants)	10.6	900
Biomass Power Plant: IEC Sakeao 2	8	400
Total	35.95	3,855

Excluding: MSW Power Plants (name not disclosed) investment 800 MB



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Q3'15 QUARTERLY BRIEFING

Unit: THB Thousand

	Q3'14	Q3'15	Growth	
			Amt.	%
Total Revenue	248,220	153,927	(94,293)	-38%
EBT	5,873	(4,726)	(10,599)	-180%
Net Profit*	11,514	1,708	(9,806)	-85%

	9M14	9M15	Growth	
			Amt.	%
Total Revenue	419,517	484,613	65,096	16%
EBT	21,652	9,723	(11,929)	-55%
Net Profit*	39,743	41,297	1,554	4%

*Remark: Excluding Non-Controlling interests





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On the Right Track



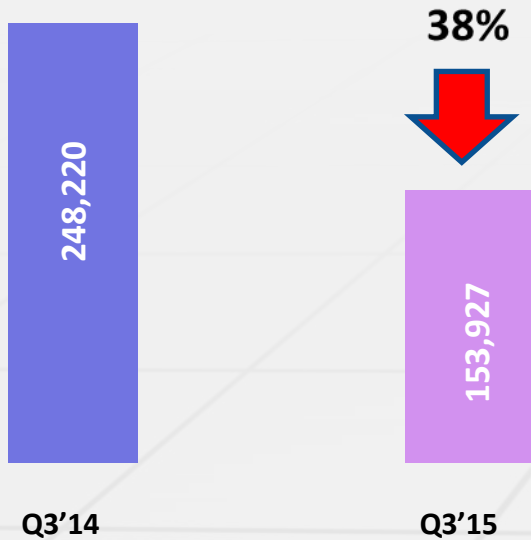


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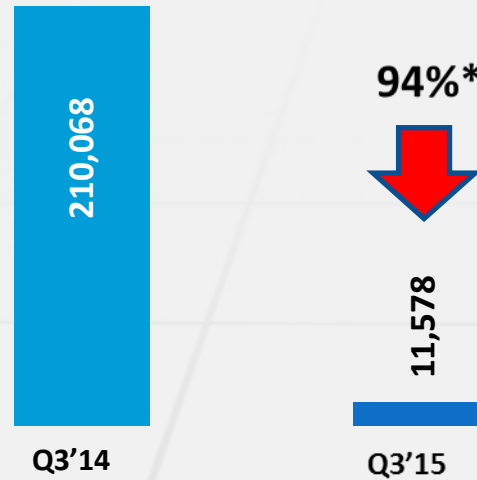
Revenue Breakdown: THB Thousand

Way Forward to Sustainable Income Base

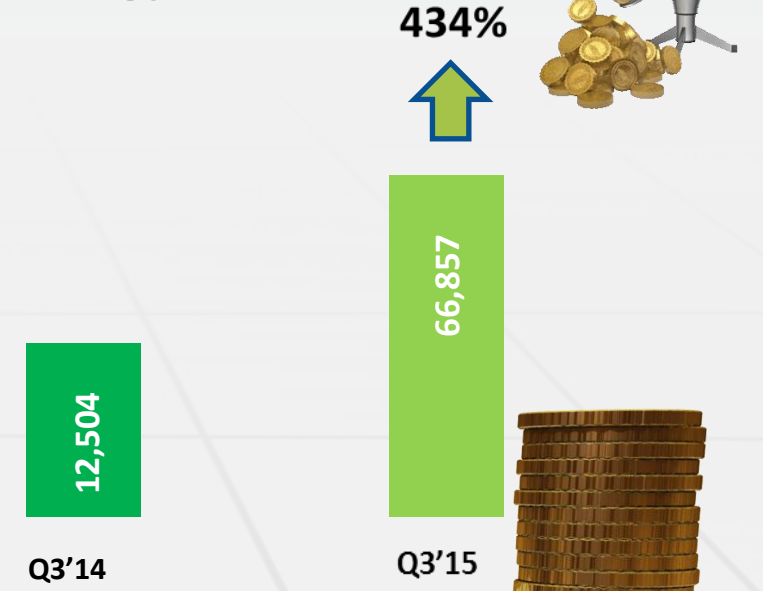
Total Revenue



Technology Business



Energy Business



***Remark: One-off impact arising from the absence of significant ICT project income totaling THB 210 Million**

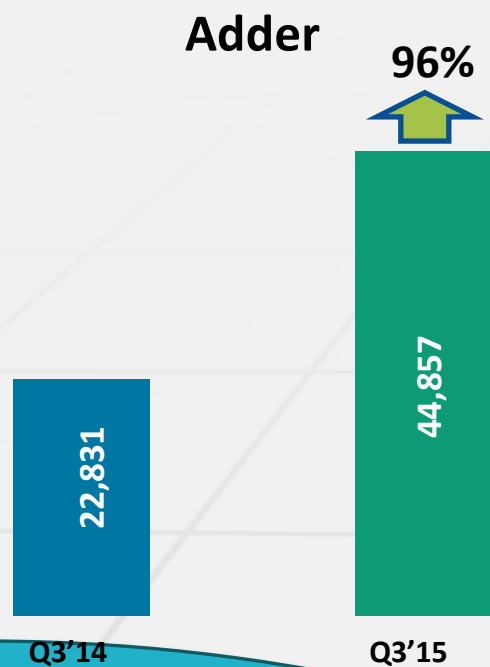




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Revenue Breakdown(con't): THB Thousand

Extra Income from Renewable Energy Business



Tipping Fee





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Financial Highlight



Better Life with Better Margin



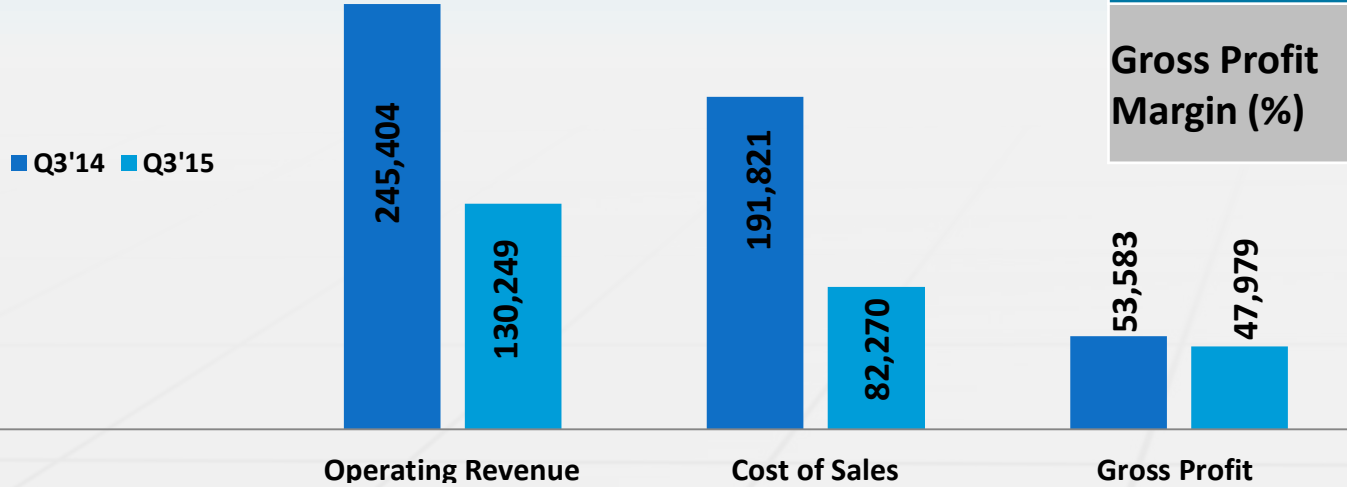


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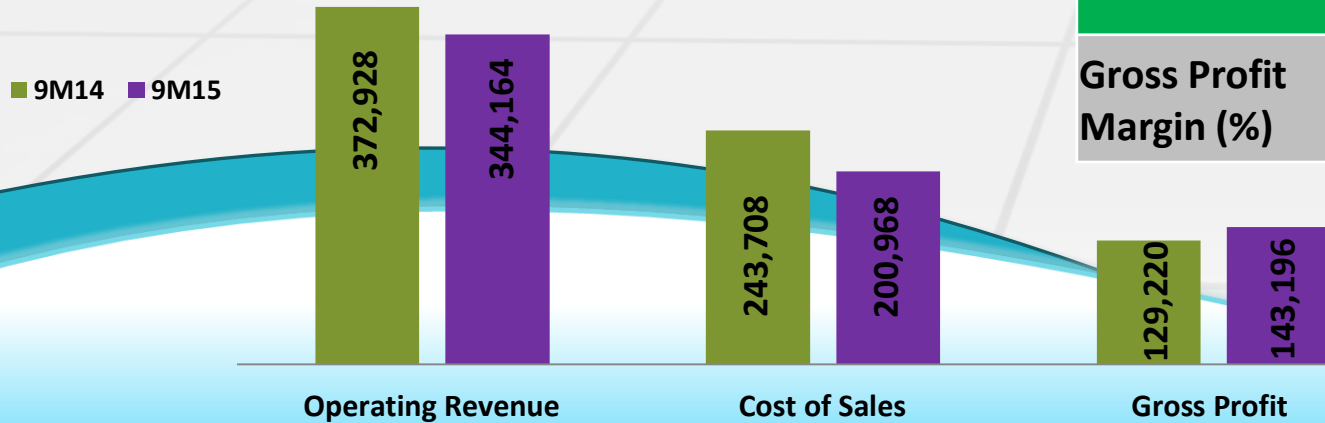
Financial Highlight

Unit: THB Thousand

Company Margin



	Q3'14	Q3'15
Gross Profit Margin (%)	22%	37%



	9M14	9M15
Gross Profit Margin (%)	35%	42%



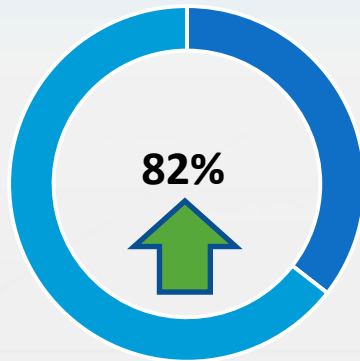


Balance Sheet Strength

Unit: THB Thousand

Total Assets

- Total Assets increased 2,049 million
- IEC SK1: 932 million
 - MSW Rayong: 560 million
 - Ban Bueng Landfill: 160 million
 - IEC Green: 127 million



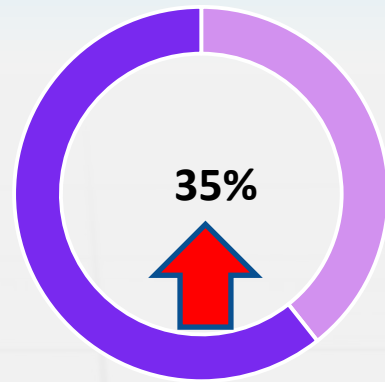
4,561,487

2,512,103

■ 9M14 ■ 9M15

Total Liabilities

- Total Liabilities increased: 392 million
- SK1 Bank loan: 511 million
 - Early loan payment Gidec : -283 million
 - Loan received from Mae Malai : 139 million



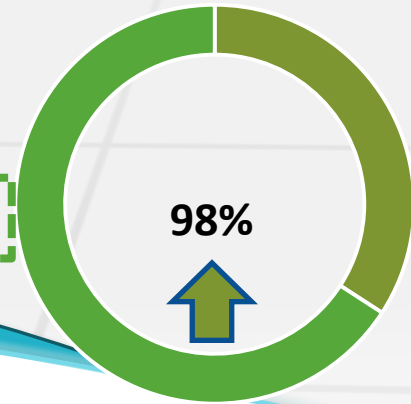
1,119,419

726,433

■ 9M14 ■ 9M15

Total Equity

3,253,164



1,636,233

■ 9M14 ■ 9M15

	9M14	9M15
Current ratio	0.69	1.32
D/E	0.44	0.34

Note: Current ratio significantly improved after complete loan repayment of THB 280 million.





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Funding Plan (2016-2017)

Unit: THB Million

Funding Requirement for Future Projects	3,855
Right Offering (RO) in Q1'16	(497)
Additional Equity Funding	(2,000)
	<hr/>
Additional Loan Requirement	1,358
Total Existing Liabilities	1,119
	<hr/>
Total (new) Liabilities	<u>2,477</u>
	<hr/>
Current Equity	3,253
Expected Equity Funding	2,497
	<hr/>
Total (new) Equity	<u>5,750</u>
Future D/E ratio	0.43





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Promising Market Opportunity



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Market Outlook

Demand for Biogas and Plastic Pellet

Biogas (CBG)

Province	CH4 (Kg/Day)
Chiang Mai	24,844
Lampoon	35,896
Lampang	29,324
Nakhornsawan	67,341
Pichit	85,734
Ayutthaya	13,673
Ang Thong	124,220
Chon Buri	49,688
Total	430,810

Plastic Recycling and Pelleting Systems

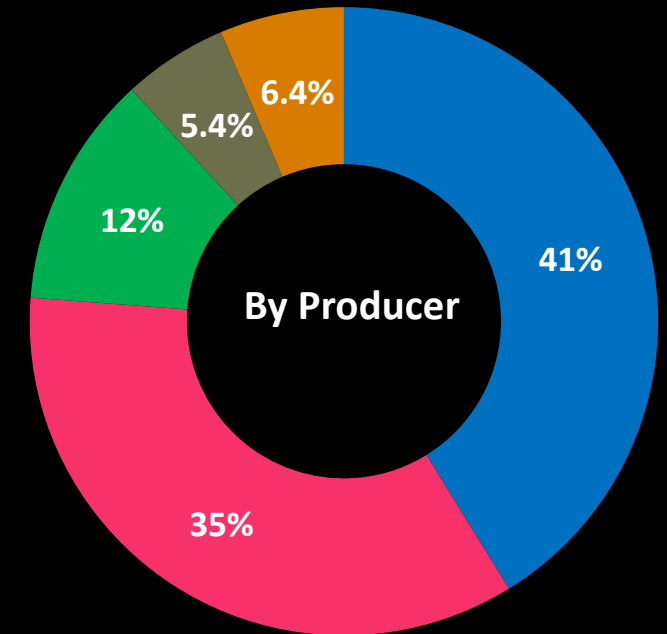
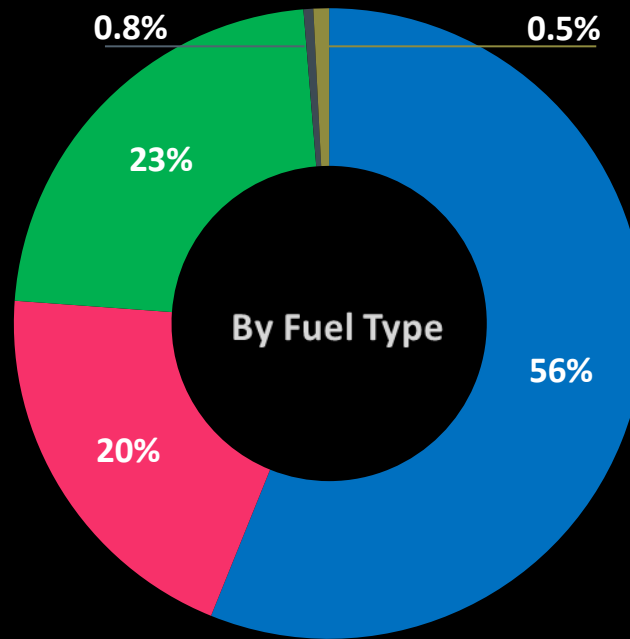
Province	Accumulated waste (tons)	Waste (tons per day)
Samut Prakan	2,001,960	739,231
Nakonratchasrima	826,451	760,825
Chachoengsao	305,066	655,033
Chon Buri	875,191	591,389
Chumphon	135,083	116,491
Pattalung	189,099	35,377
Pattani	197,591	11,964
Yala	268,553	46,645
Total	4,798,994	2,956,955



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Market Outlook

Thailand's Power Industry (PDP 2015)



- Cogeneration
- Heat
- Renewable
- Gas Turbine
- Thai-Malaysian line

- EGAT
- IPP
- SPP
- VSPP
- Import

In 2015, Thailand's power generation is 57,429 MW



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Market Outlook

Alternative Energy Development Plan: AEDP

Power categories	Solar	Wind	Water	Biogas	Energy crops	Biomass	Solid Waste	Massive water power	New form of Energy	Total Electricity (MW)
Current AEDP (MW) Year 2012-2021	3,800	1,800	324	600	3,000	4,800	400	N/A	3	14,727
Draft AEDP (MW) Year 2015-2036	6,000	3,002	376	600	680	5,570	500	2,906.4	0.3	21,676.7
Realized (MW)	1,299	224	142	311	-	2,542	66	-	0.3	4,584

**Draft AEDP: 6,949
MW or 47% more**

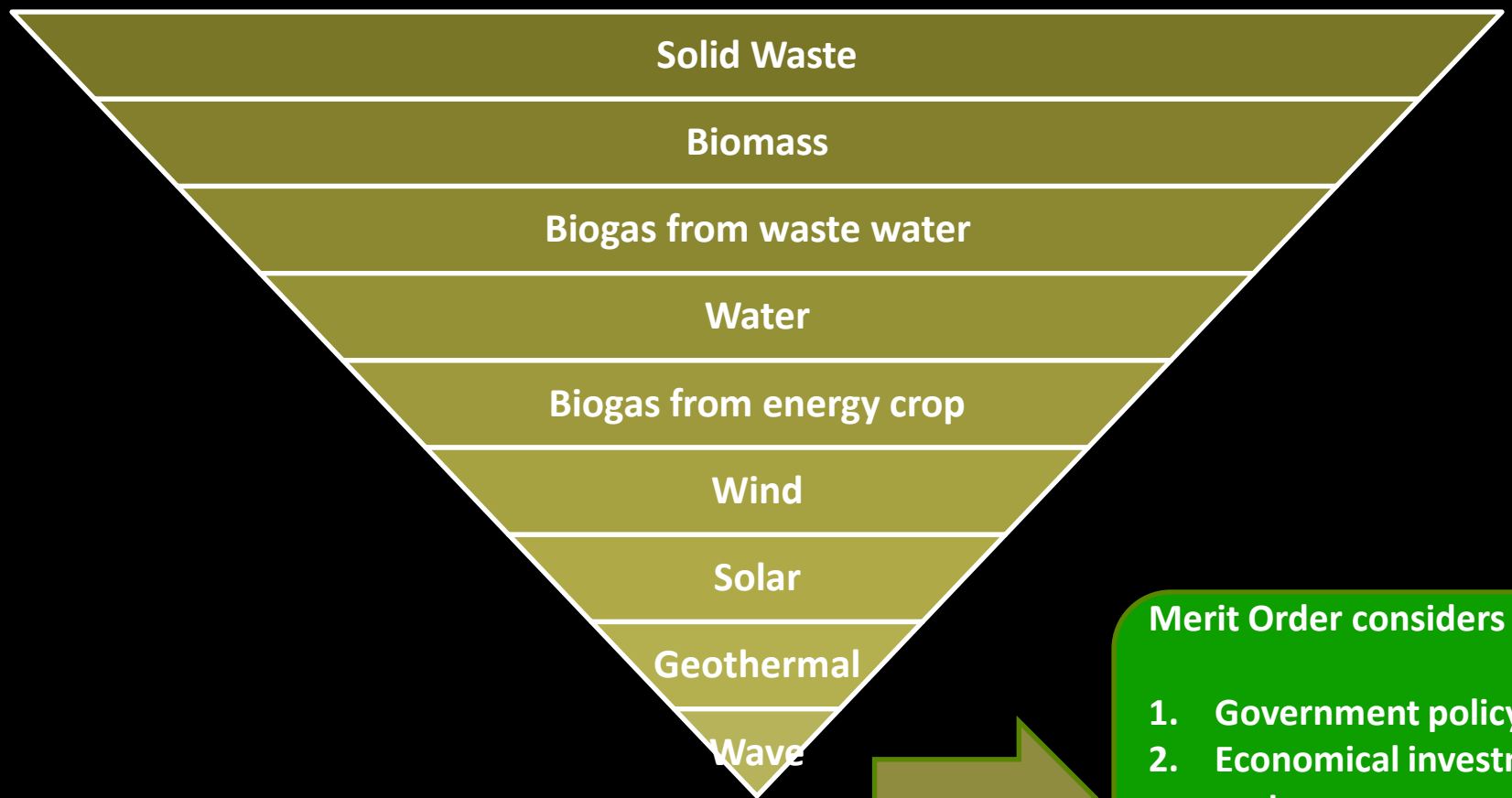
Source: EPP0 and Chulalongkorn University as of 15/02/2015



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Market Outlook

Merit Order



- Merit Order considers below;
1. Government policy
 2. Economical investment cost
 3. Benefits to society (Environment, Employment)

Source: EPPO as of 15/02/2015



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Market Outlook

The Impact of Introducing FiT

Type/ installed capacity	Previous incentive		FIT (Bt/ kWh)				FIT Premium (Bt/ kWh)	
	Adder	Period	Fixed	Variable @2017	Total FIT	Period	Biofuel use for 8 yrs	3 provinces* project life
Waste (Integrate disposal)								
Installed capacity < 1 MW	3.5	7	3.12	3.21	6.33	20	0.70	0.50
Installed capacity >1-3 MW	3.5	7	2.61	3.21	5.82	20	0.70	0.50
Installed capacity > 3 MW	3.5	7	2.39	2.69	5.08	20	0.70	0.50
waste (Sanitary landfill)	2.5	7	5.60	-	5.60	10	-	0.50
Biomass								
Installed capacity < 1 MW	0.5	7	3.13	2.21	5.34	20	0.50	0.50
Installed capacity >1-3 MW	0.3	7	2.61	2.21	4.82	20	0.40	0.50
Installed capacity > 3 MW	0.3	7	2.39	1.85	4.24	20	0.30	0.50
Biogas (waste)	0.3	7	3.76	-	3.76	20	0.50	0.50
Biogas (energy crops)	0.3	7	2.79	2.55	5.34	20	0.50	0.50
Small Hydro								
Installed capacity < 200 kW	0.8	7	4.90	-	4.90	20	-	0.50
Wind	3.5	10	6.06	-	6.06	20	-	0.50
Solar								
Solar farm < 90 MW	6.5-8	10	n.a.	n.a.	5.66	25	-	0.50
Solar rooftop <10 kw	n.a.	n.a.	n.a.	n.a.	6.96	25	-	0.50
Solar rooftop 10-250 kw	n.a.	n.a.	n.a.	n.a.	6.40	25	-	0.50
Solar rooftop 250-1000 kw	n.a.	n.a.	n.a.	n.a.	6.01	25	-	0.50

source : EPPO, MBKET, news, * Yala, Pattani, Narathiwad



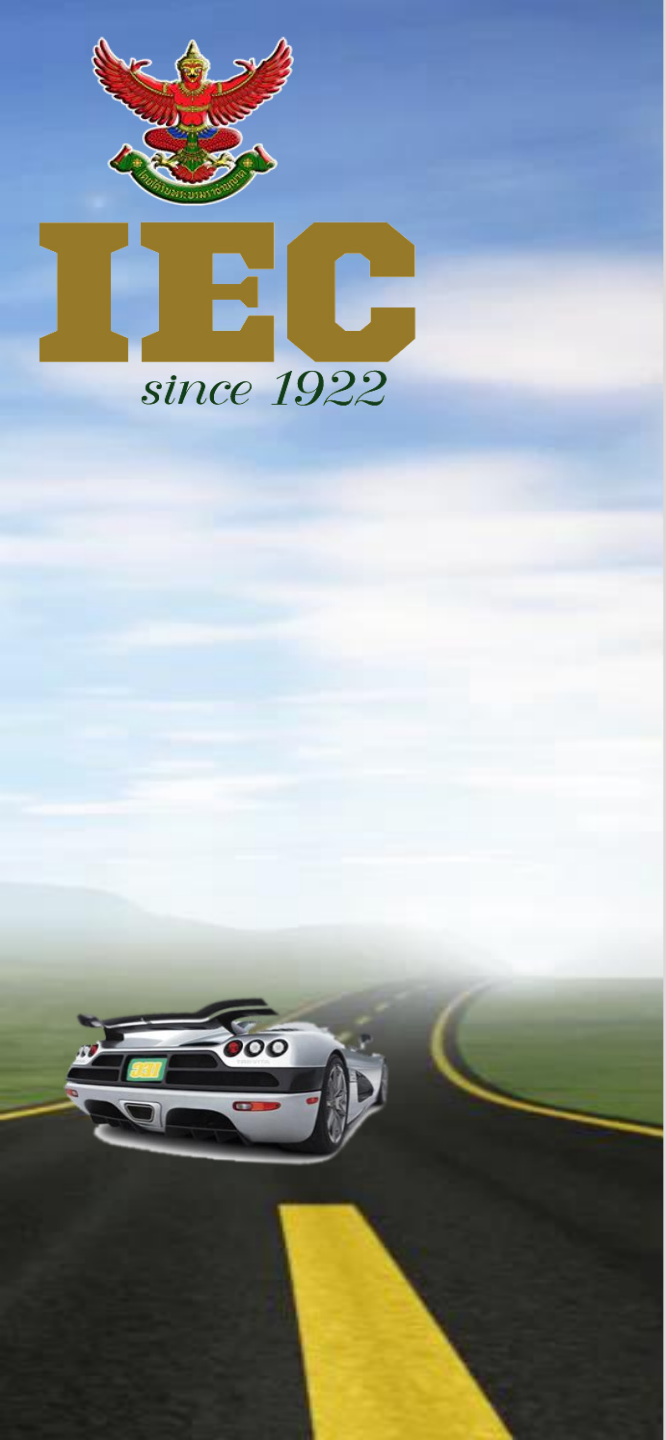
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The Impact of Introducing FiT

Adder	Feed-in Tariff (FiT)
Electricity Price Volatility <ul style="list-style-type: none">Electricity income is floating on the sum of electricity wholesale price+Ft+fixed Adder for 7 - 10 years	Electricity Price Volatility <ul style="list-style-type: none">Fixed FiT rate over 20 - 25 years
Grid Management Stability <ul style="list-style-type: none">The operator might stop their operation after ending of Adder period, considering lower IRR , in particular, Solar farm business.	Grid Management Stability <ul style="list-style-type: none">FiT ensures the operators to keep their operation running until the end of PPA contract.
Potential Electricity Price Adjustment <ul style="list-style-type: none">The government might review the Ft adjustment after the ending of Adder period in order to resolve the potential instability of Grid management, leading to the bigger burden of electricity price to the public.	Potential Electricity Price Adjustment <ul style="list-style-type: none">Thanks to the fixed Fit rate over the PPA period, the operator still enjoy running their operation till the end of PPA period.

Unfair Competition in Biomass Power Business

- The debut of new FiT will definitely leave all present biomass power operators truly inferior to the new biomass power operators under the FiT scheme in term of ability to buy feed stock at the higher price.





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- **IEC Plastic Recycling Rayong**
- **IEC Sakaeo 1 Power Plant**
- **GIDEC Power Plant**



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IEC's Project List

as of 15 November 2015

No.	Project name	Total Capacity (MW)	Offered Letter from PEA	รับ. ๔	PPA from กฟผ.	PPA Requirement	Project Size (million Baht)	Expected CoD	Expected IRR (%)	Expected PBP (year)
1	Biomass Power Plant: IEC Sakeao 1	8.00	Yes	Yes	Yes	Yes	345	10/04/2013	15.00	6.91
2	Solar Farm: Mae Tha	1.00	Yes	Yes	Yes	Yes	176	23/09/2013	10.34	5.22
3	Solar Farm: Mae Ramat	5.25	Yes	Yes	Yes	Yes	402	26/12/2013	17.61	4.09
4	Solar Farm: Mae Malai	1.00	Yes	Yes	Yes	Yes	176	30/06/2014	14.81	4.00
5	MSW Power Plant: GIDEC	6.25	Yes	Yes	Yes	Yes	926	11/12/2014	30.00	3.75
6	RDF from landfill: Hat Yai	-	-	Yes	-	No	60	01/10/2015	16.38	5.30
7	Waste Plastic Recycling: Rayong	-	-	-	-	No	663	01/12/2015	18.00	6.74
8	CAT Telecom projects	-	-	-	-	No	15	21/12/2015	15.78	6.93
9	RDF from landfill: Ban Bueng	-	-	Yes	-	No	30	25/12/2015	18.50	6.00
	Sub Total1	21.50					2,793			
10	RDF Plant for MSW Pwer Plant (IEC Green 1)	-	-	-	-	No	122	01/01/2016	15.38	5.10
11	Additional micro Power Plant at Hat Yai	1.00	-	-	-	No	125	01/01/2016	14.19	6.60
12	Biogas: Hat Yai	1.50	-	-	-	Yes	104	10/01/2016	16.25	5.15
13	Biogas: Rayong	3.00				Yes	197	11/01/2016	16.05	6.74
14	MSW Power Plants (not disclose)	15.00				Yes	800	12/01/2016	16.75	4.01
15	Singkhon Pwer Resales to Myanmar	-	-	-	-	No	35	01/03/2016	17.04	5.00
16	RDF from landfill: Sung Nearn , Nakornrachaseema	-	-	Yes	-	No	15	01/03/2016	15.20	3.67
17	Waste Plastic Recycling: Hat Yai	-	-	-	-	No	157	01/04/2016	19.00	5.27
18	Biogas: Kampaengphet	5.85	Yes	Yes	No	Yes	400	01/07/2016	17.42	4.75
19	MSW Plant: Ban Bueng	6.00	-	-	-	No	600	01/12/2016	17.15	4.52
20	Biogas : Suphanburi and Kanchanaburi (4 plants)	10.60	Yes	Yes 2, No 2	Yes 2, No 2	Yes	900	01/01/2017	15.08	4.37
21	Ethanol Plant: Rayong	-	-	-	-	No	800	01/01/2017	16.01	4.13
22	Biomass Power Plant: IEC Sakeao 2	8.00	Yes	No	No	Yes	400	01/05/2017	16.00	4.21
	Sub Total2	50.95					4655			
	Total	72.45					7,448			



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Funding Plan (2016-2017)

Unit: THB Million

Funding Requirement for Future Projects	3,855
Right Offering (RO) in Q1'16	(542)
Additional Equity Funding	(2,000)
Additional Loan Requirement	1,313
Total Existing Liabilities	1,119
Total (new) Liabilities	<u>2,432</u>
Current Equity	3,253
Expected Equity Funding	2,542
Total (new) Equity	<u>5,795</u>
Future D/E ratio	0.42





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No	Before	After
1		
2		
3		

```
Code

> #DIP Demo 0.01 - 11-03-2015
> library("EBImage")
>
> #Before
> before1 = readImage('B1.jpg')
> before2 = readImage('B2.jpg')
> before3 = readImage('B3.jpg')
> before4 = readImage('B4.jpg')
> before5 = readImage('B5.jpg')
> before6 = readImage('B6.jpg')
> before7 = readImage('B7.jpg')
> before8 = readImage('B8.jpg')
> before9 = readImage('B9.jpg')

> before10 = readImage('B10.jpg')
> fhi = matrix(1, nc=3, nr=3)
> fhi[2,2] = -8

> before1.fhi = filter2(before1, fhi)
> before2.fhi = filter2(before2, fhi)
> before3.fhi = filter2(before3, fhi)
> before4.fhi = filter2(before4, fhi)
> before5.fhi = filter2(before5, fhi)
> before6.fhi = filter2(before6, fhi)
> before7.fhi = filter2(before7, fhi)
> before8.fhi = filter2(before8, fhi)
> before9.fhi = filter2(before9, fhi)
> before10.fhi = filter2(before10, fhi)

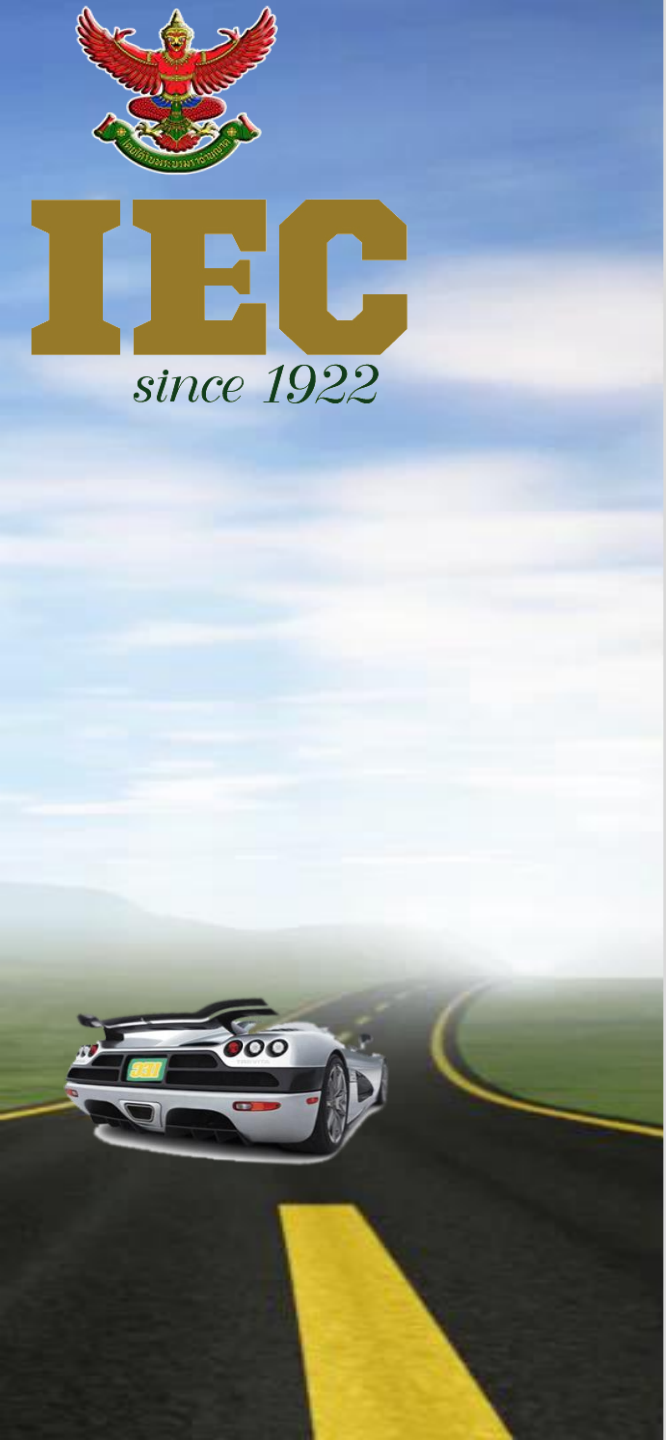
> before1.count = before1.fhi[, ,1]>0.2
> before2.count = before2.fhi[, ,1]>0.2
> before3.count = before3.fhi[, ,1]>0.2
> before4.count = before4.fhi[, ,1]>0.2
> before5.count = before5.fhi[, ,1]>0.2
> before6.count = before6.fhi[, ,1]>0.2
> before7.count = before7.fhi[, ,1]>0.2
> before8.count = before8.fhi[, ,1]>0.2
> before9.count = before9.fhi[, ,1]>0.2
> before10.count = before10.fhi[, ,1]>0.2
> before1.count.label = bwlabel(before1.count)
> before2.count.label = bwlabel(before2.count)
> before3.count.label = bwlabel(before3.count)
> before4.count.label = bwlabel(before4.count)
> before5.count.label = bwlabel(before5.count)
> before6.count.label = bwlabel(before6.count)
> before7.count.label = bwlabel(before7.count)
> before8.count.label = bwlabel(before8.count)
> before9.count.label = bwlabel(before9.count)
> before10.count.label = bwlabel(before10.count)

> before1.count.data = max(before1.count.label)
> before2.count.data = max(before2.count.label)
> before3.count.data = max(before3.count.label)
> before4.count.data = max(before4.count.label)
> before5.count.data = max(before5.count.label)
> before6.count.data = max(before6.count.label)
> before7.count.data = max(before7.count.label)
> before8.count.data = max(before8.count.label)
> before9.count.data = max(before9.count.label)
```



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```
> before10.count.data = max(before10.count.label)

> before1.count.label = bwlabel(before1.count)
> before2.count.label = bwlabel(before2.count)
> before3.count.label = bwlabel(before3.count)
> before4.count.label = bwlabel(before4.count)
> before5.count.label = bwlabel(before5.count)
> before6.count.label = bwlabel(before6.count)
> before7.count.label = bwlabel(before7.count)
> before8.count.label = bwlabel(before8.count)
> before9.count.label = bwlabel(before9.count)
> before10.count.label = bwlabel(before10.count)
>
> before1.count.data = max(before1.count.label)
> before2.count.data = max(before2.count.label)
> before3.count.data = max(before3.count.label)
> before4.count.data = max(before4.count.label)
> before5.count.data = max(before5.count.label)
> before6.count.data = max(before6.count.label)
> before7.count.data = max(before7.count.label)
> before8.count.data = max(before8.count.label)
> before9.count.data = max(before9.count.label)
> before10.count.data = max(before10.count.label)
>
> #After
> after1 = readImage('A1.jpg')
> after2 = readImage('A2.jpg')
> after3 = readImage('A3.jpg')
> after4 = readImage('A4.jpg')
> after5 = readImage('A5.jpg')
> after6 = readImage('A6.jpg')
> after7 = readImage('A7.jpg')
> after8 = readImage('A8.jpg')
> after9 = readImage('A9.jpg')
> after10 = readImage('A10.jpg')
>
> fhi = matrix(1, nc=3, nr=3)
> fhi[2,2] = -8

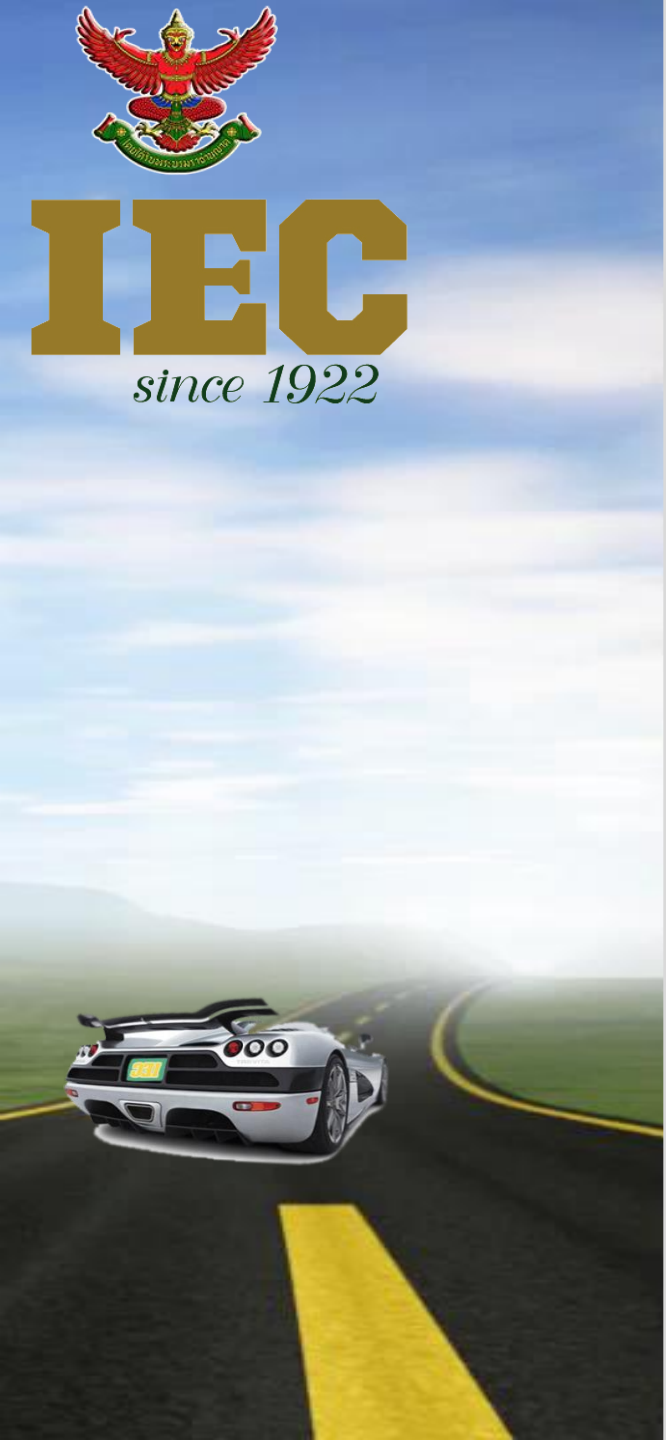
> after1.fhi = filter2(after1, fhi)
> after2.fhi = filter2(after2, fhi)
> after3.fhi = filter2(after3, fhi)
> after4.fhi = filter2(after4, fhi)
> after5.fhi = filter2(after5, fhi)
> after7.fhi = filter2(after7, fhi)
> after8.fhi = filter2(after8, fhi)
> after9.fhi = filter2(after9, fhi)
> after10.fhi = filter2(after10, fhi)

> after1.count = after1.fhi[,,1]>0.2
> after2.count = after2.fhi[,,1]>0.2
> after3.count = after3.fhi[,,1]>0.2
> after4.count = after4.fhi[,,1]>0.2
> after5.count = after5.fhi[,,1]>0.2
> after6.count = after6.fhi[,,1]>0.2
> after7.count = after7.fhi[,,1]>0.2
> after8.count = after8.fhi[,,1]>0.2
> after9.count = after9.fhi[,,1]>0.2
> after10.count = after10.fhi[,,1]>0.2
>
> after1.count.label = bwlabel(after1.count)
```




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```

> after2.count.label = bwlabel(after2.count)
> after3.count.label = bwlabel(after3.count)
> after4.count.label = bwlabel(after4.count)
> after5.count.label = bwlabel(after5.count)
> after6.count.label = bwlabel(after6.count)
> after7.count.label = bwlabel(after7.count)
> after8.count.label = bwlabel(after8.count)
> after9.count.label = bwlabel(after9.count)
> after10.count.label = bwlabel(after10.count)

>> #Compare
> before.data <- rbind(before1.count.data, before2.count.data,
before3.count.data, before4.count.data, before5.count.data,
before6.count.data, before7.count.data, before8.count.data,
before9.count.data, before10.count.data)
> after.data <- rbind(after1.count.data, after2.count.data,
after3.count.data, after4.count.data, after5.count.data,
after6.count.data, after7.count.data, after8.count.data,
after9.count.data, after10.count.data)
> different.data = before.data - after.data
> compare.data <- as.data.frame(cbind(before.data, after.data,
different.data))
> rownames(compare.data) <- NULL
> colnames(compare.data) = c("Before", "After", "Different")
> mean.before <- mean(before.data)
> mean.after <- mean(after.data)
> mean.different <- mean(different.data)
> mean.data = cbind(mean.before, mean.after, mean.different)
> #Summary
> compare.data
  Before After Different
1  33098  6311   26787
2  15450  7882    7568
3   7970  6240    1730
4   7854  4246    3608
5   3404  3632    -228
6   94838 2427   92411
7  165104 5351  159753
8  167042 1915  165127
9  191377 1231  190146
10 140318 8127  132191
> mean.data
  mean.before mean.after mean.different
[1,] 82645.5   4736.2   77909.3
>
> #Test
> t.test(compare.data$Before, compare.data$After, paired=TRUE)

      Paired t-test

data:  compare.data$Before and compare.data$After
t = 3.1502, df = 9, p-value = 0.01173
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 21961.87 133856.73
sample estimates:
mean of the differences
      77909.3 alternative hypothesis: true difference in means
is not equal to 0
95 percent confidence interval:
 21961.87 133856.73

sample estimates:
mean of the differences
      77909.3

```