



1KWH of power saved =
0,4kg of coal saved + a reduction of 0.785kg
of CO2 emissions



*We will help you to use electricity
efficiently thanks*



Electric energy-saving device for Domino's Pizza Singapore

Objective

- To achieve electrical energy saving minimum -8%

Problem Statement

- Energy saving is a persistent strategy to enhance competitiveness and environmental conservation.

Method

Smart Optimizer ECOD is an electric power saving device which

- Control the voltage and current in the optimum range
 - Filtering harmonic and increase power factor
 - Improve quality of electrical power supply in overall.
- Increasing lifespan of Electrical equipment at stores by reducing current of the load /reducing KVAR and KW demand/

Working Principle

- Electronic controller regulates the direction of the current in coil of each transformer (one per phase) to regulate and balance the network parameter to sustain within it highest performance whilst minimize power loss in the network.

• TEST CONCLUSION

1. From 25 of April at store **Domino's Pizza Killiney Road 71 Singapore** have been installed device **Smart-Optimizer ECOD** for achieve reducing of electricity consumption
2. From 25 of May at store **Domino's Pizza Tajong Katong Road Singapore** have been installed device **Smart-Optimizer ECOD** for achieve reducing of electricity consumption
3. From 26 of May at store **Domino's Pizza Tampines Ave 4 Singapore** have been installed device **Smart-Optimizer ECOD** for achieve reducing of electricity consumption

After comparison bills of months with using and without ECOD, we can determine differences (reducing) of electricity consumption on close to 10%.

Also, we can determine a reducing KVAR(reactive power) and KW (Demand).

• Test result

Tampines												
	March	April	May	Average	June	July	August	September	October	Average	Difference	%
BILL	2636.77	2585.84	2763.57	2662.06	2361.49	2411.8	2362.26	2407.11	2262.35	2361.00		
Bill per day	85.06	86.19	89.15	86.80	78.72	77.80	76.20	80.24	72.98	77.19	-9.61	-11.07
KWH per day	477.40	483.96	500.54	487.30	441.60	436.83	427.86	450.52	409.76	433.31	-53.99	-11.08
KVAR	8972.63	8842.26	8830.25	8881.71	6891.98	7046.83	6922.53	7112.19	6863.37	6967.38	-1914.33	-21.55
KW-Max	33.44	31.96	34.16	33.19	30.88	31.62	30.34	31.04	32.18	31.21	-1.97	-5.95
Tajong Katong Road												
	March	April	May	Average	June	July	August	September	October	Average	Difference	%
BILL	3111.38	2846.23	3030.43	2996.01	2661.74	2821.19	2746.20	2538.51	2655.53	2684.63		
Bill per day	100.37	94.87	97.76	97.67	88.72	91.01	88.59	84.62	85.66	87.72	-9.95	-10.18
KWH per day	563.54	532.70	548.88	548.37	498.17	510.98	497.39	475.10	480.97	492.52	-55.85	-10.18
KVAR	3412.05	3371.51	3623.67	3469.08	1621.45	1599.20	1354.98	1441.42	1492.47	1501.90	-1967.17	-56.71
KW-Max	38.24	37.93	38.78	38.32	37.52	37.26	36.82	35.80	38.27	37.13	-1.18	-3.09
Killiney 71												
	February	March	April	Average	May	June	July	August	September	Average	Difference	%
BILL	2533.65	2980.55	2725.5	2746.57	2806.37	2399.72	2785.2	2906.53	2548.57	2689.28		
Bill per day	90.49	96.15	97.34	94.66	90.53	79.99	89.85	93.76	84.95	87.82	-6.84	-7.23
KWH per day	508.07	539.84	546.54	531.48	508.29	449.16	504.46	476.93	450.47	477.86	-53.62	-10.09
KVAR	10561.00	12041.00	11104.29	11235.43	8936.00	8160.09	9089.72	7684.92	7990.32	8372.21	-2863.22	-25.48
KW-Max	36.94	39.10	39.20	38.41	39.33	35.63	36.88	37.11	36.08	37.01	-1.41	-3.66

• Test result



Name: DOMINO'S PIZZA SINGAPORE PTE LTD
 Account No: CU00003532
 MSSL No: 9301090040
 Contract End Date: 31/05/20
 Premise Address: 802 TAMPINES AVE 4 #01-23 Singapore 520802

Consumption period: 01/10/2019 - 31/10/2019

Summary charges

Total Charges Before Tax:	SGD	2,114.35
7% Goods and Services Tax	SGD	148.00
Total	SGD	2,262.35

Energy Usage Charges

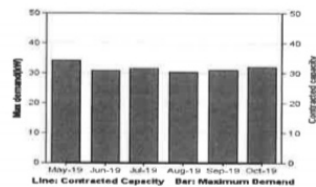
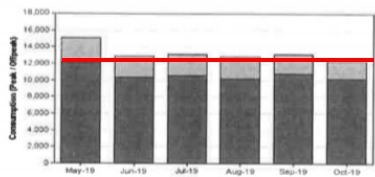
HSFO - Fixed, All day	12,702.57 KWh	0.16260000 \$/KWh	SGD	2,065.44
Sub total:			SGD	2,065.44

MSS Recurring Charges

Market Development and Systems Charge (Futures)	12,702.57 KWh	0.00200000 \$/KWh	SGD	25.41
Sub total:			SGD	25.41

Other Charges

Carbon Tax	12,702.57 KWh	0.00185000 \$/KWh	SGD	23.50
Sub total:			SGD	23.50



Maximum Demand : 32.18 kW - occurred during the interval of : 20 10 2019 11:00:00 pm

Total kVarh : 6,863.37 kVarh.

All rates are displayed to eight decimal places.

*Non Taxable

**The total meter charge will be capped at \$12.50 per month.



Name: DOMINO'S PIZZA SINGAPORE PTE LTD
 Account No: CU00003532
 MSSL No: 9301090156
 Contract End Date: 31/05/20
 Premise Address: 301 TG KATONG RD Singapore 437084

Consumption period: 01/10/2019 - 31/10/2019

Summary charges

Total Charges Before Tax:	SGD	2,481.80
7% Goods and Services Tax	SGD	173.73
Total	SGD	2,655.53

Energy Usage Charges

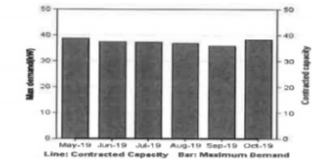
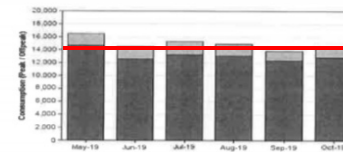
HSFO - Fixed, All day	14,910.20 KWh	0.16260000 \$/KWh	SGD	2,424.40
Sub total:			SGD	2,424.40

MSS Recurring Charges

Market Development and Systems Charge (Futures)	14,910.20 KWh	0.00200000 \$/KWh	SGD	29.82
Sub total:			SGD	29.82

Other Charges

Carbon Tax	14,910.20 KWh	0.00185000 \$/KWh	SGD	27.58
Sub total:			SGD	27.58



Maximum Demand : 38.27 kW - occurred during the interval of : 05 10 2019 12:30:00 pm

Total kVarh : 1,492.47 kVarh.

All rates are displayed to eight decimal places.

*Non Taxable

**The total meter charge will be capped at \$12.50 per month.

• Investment analysis

- Total consumption per month – average **14,000.00 kW/h**
 - Average bill per month - **2,800.00 SGD**
 - **Required investment per store – 4,490.00 SGD**
 - **Minimum saving 8% = 224.00 SGD (per month)**
- Payback period of investment around 16 months because real energy saving effect is close 10%
- Warranty period of (120) months from the date of sale
 - Price include audit, shipping and installation

References letter



REFERENCES

Feigin Electric Singapore PTE. LTD have been started testing a Smart-Optimizer ECOD Model Line electricity savings devices for Domino's Pizza Singapore from the end of April 2019.

After testing period April 2019 – November 2019 we came to conclusion that by use Smart-Optimizer ECOD we have got few benefits:

- 1) Reducing energy consumption in KWH – average 8-10%
- 2) Reducing energy Demand KW – on average
- 3) Reducing reactive power KVAR
- 4) Protect electrical equipment of over voltage
- 5) Increase lifespan of electrical equipment by reducing the current of the load
- 6) Filtering of harmonics

We have ordered device Smart-Optimizer ECOD 55-100 for all stores

Signature 
Haidi Mustafiz Mohd Din
Maintenance Manager
Domino's Pizza MY & SG

THE PIZZA DELIVERY EXPERTS™

- Explanation what is KWH, KVAR, KW Demand

1. KWH - A kilowatt hour (kWh) is a measure of how much energy you're using.

2. KW - Reflects the rate of electricity usage. Peak demand.

3. KVAR – A Reactive power. Domino's Pizza don't pay for reactive power but higher KVAR caused higher losses and higher KVAR mean higher current of load as a results affected on lifespan of electrical equipment because heating are calculated according to the Joule –Lenz law* the power of heating generated by an electrical current I: $W = R \cdot I^2$, where the conductor resistance is $R = (1/g) \cdot (L/A)$. The electric current value could be calculated $I = V / R$