

Cargill Palm Products Sdn Bhd -Company Profile

Malaysia
(PTM)

Industry Name : Cargill Palm Products Sdn Bhd
 Owner : Subsidiary of Cargill US.
 Location : Kuantan, Pahang, Malaysia
 Industry Type : Food
 Number of employees : 62
 Annual turnover : RM 650 Mil
 Production volume : 450,000 ton/year
 Annual : Energy 310,274GJ @ RM 6.9 million

Products range :
 Refined Bleached Deodorized (RBD) Palm Oil, RBD Palm Olein, RBD Palm Sterin and Palm Fatty Acid Distillate.

Market : More than 90 percent export.

Audit date: July 2003

Activity under Malaysian Industrial Energy Efficiency Improvement Project (MIEEIP)



Cargill Palm Products Sdn Bhd -Energy Audit Findings

Proposed savings

79,861 GJ/yr @ RM 3,240 k/yr

Achieved savings (2005)

24,522 GJ/yr @ RM 1,761 k /yr

No	Measure	Energy savings		CO2 Reduc.	Capital expend.	Annual cost savings	Non energy savings (water)	Payback time	Priority	Implemented
		Elect.	Fuel							
		MWh/yr	GJ/yr							
No cost										
1.0	Boiler excess air improvement	0	4,573	338	0	103	0	0.00	1	
2.0	Increasing low-pressure boiler water TDS level	0	193	14	0	4	0.45	0.00	1	
3.0	Boiler pressure reduction	0	319	24	0	9	0	0.00	2	
4.0	Steam trap maintenance	0	650	48	0	13	0	0.00	1	Yes
5.0	Steam leak maintenance	0	1,108	82	0	18	0	0.00	1	Yes
6.0	Compressed air pipe leakages	296	0	0	0	48	0	0.00	1	Yes
Low Cost										
7.0	Main silo fan redesign	181	0	0	17	38	0	0.45	1	
8.0	Insulation maintenance	0	20,582	1,512	20	510	0	0.04	1	Yes
9.0	Boiler combustion air increase	0	3,492	258	20	56	0	0.36	3	
High Cost										
10.0	Fract plant cooling system optimization	548	0	0	131	131	0	3.05	3	
11.0	Monitoring & Targeting	120	5,345	394	200	95	0	1.66	1	
12.0	Boiler fuel switching	0	0	0	360	1,468	0	0.25	1	Yes
13.0	Installation of boiler economizer	1	14,096	1,035	400	331	0	1.21	2	
14.0	New scheme for condensate recovery system	0	25,377	1,878	500	418	12	1.20	2	Yes
Total		1,146	75,735	5,584	1,648	3,240	13	0.51		

IN-HOUSE IDEAS

- Process heat recovery
- Process control

Hospital Selayang -Building Description



Malaysia
(PTM)



Building Name: Hospital Selayang
 Building Owner: Ministry of Health Malaysia
 Location: Selayang, Selangor, Malaysia
 Building type: Hospital
 Configuration: 2 blocks,
 -Ward Block (In-patient), 10 levels and;
 -Clinical block, 4 levels and 1 level car park
 and 1 engineering services service level

Gross floor area: **127,839 m²**

Air Cond area: **57,389.5 m²**

Operation: 24 hours per day, 365 days a year

Annual energy:

consumption **34,663,847 kWh**

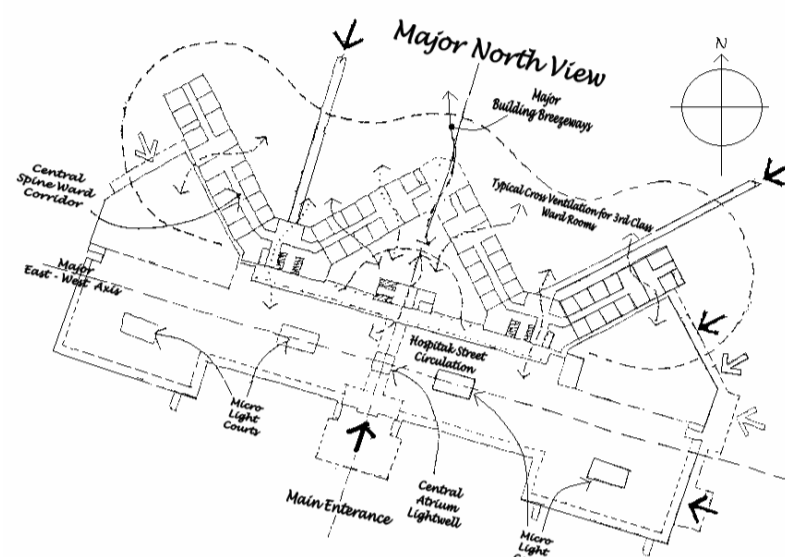
cost **RM 7.9 million**

Building Energy Index (BEI):

Before: **271 kWh/m²/year**

Expected after: **187 kWh/m²/year**

Audit Date: December 2008



Hospital Selayang -Energy Audit Findings

Potential Cost
Reduction 37%

Priority	Measures	Estimated Saving				Estimated Investment (RM)	Estimated Payback
		Electrical		LPG			
		kWh/yr	RM/yr	kg/yr	RM/yr		
1	Sustainable Energy Management No Cost Measures	296,666	87,813	3,763	12,043	100,000	1.00
1	Reduction of OA intake	1,503,500	445,036	0	0	0	-
2	Boiler blow down	0	0	10,277	25,217	0	0
1	Activate Timer to Control Lighting Corridor During day Time Low Cost Measures	40,997	12,135	0	0	0	0
2	Boiler excess air improvement	0	0	93,843	217,729	20	0.00
1	Insulation Management	0	0	2,260	7,233	697	0.10
1	Replace Diffuser and Delamping	2,988	885	0	0	1,700	1.92
1	Improvement of server room air conditioning system High Cost Measures	56,209	16,638	0	0	10,000	0.60
1	Resetting of room temperature set point to 24 °C	1,152,285	341,077	0	0	100,000	0.29
2	Chilled and condenser water pump system improvement	1,857,604	549,851	0	0	320,000	0.58
2	Steam system improvement	0	0	18,817	60,215	250,000	4.15
3	Change CRT Monitor to LCD Monitor	39,056	289,200	0	0	289,200	7.40
1	Hot water system improvement	0	0	56,452	180,646	300,000	1.66
2	Change Magnetic Ballast to Electronic Ballast	281,701	83,383	0	0	200,985	2.41
1	Chiller management	1,326,439	392,626	0	0	445,000	1.13
3	Improvement of 100% exhaust AHU using heat pipe	615,925	182,314	0	0	480,000	2.63
2	Change Fluorecent Tube from T8 to T5	1,126,802	333,533	0	0	696,748	2.09
Total		8,300,174	2,734,491	185,412	503,083	3,194,350	0.99