SUMMARY AUDIT ENERGI PT. ADM CASTING PLANT

Approved.		Checked.		Prepared.
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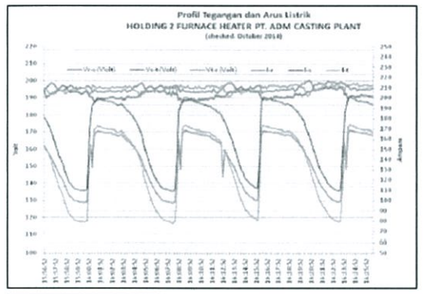
I Purpose

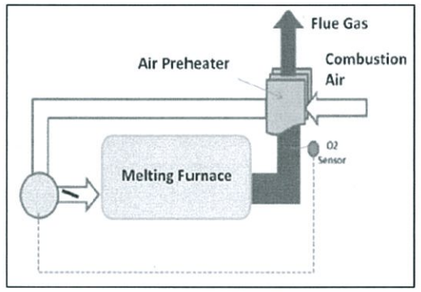
1. Supporting government regulation about Energy Management and Energy Consumption Reduction
2. Complying to PROPER, Government Law no 30 2007, PP no 70 2009, Energy Minister Rule no 14 2012

II Background

1. Current Unbalance in HF LPC#2 (38%)



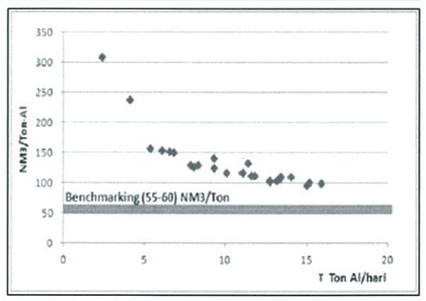
2. There were potential exhaust gas usage for air preheater



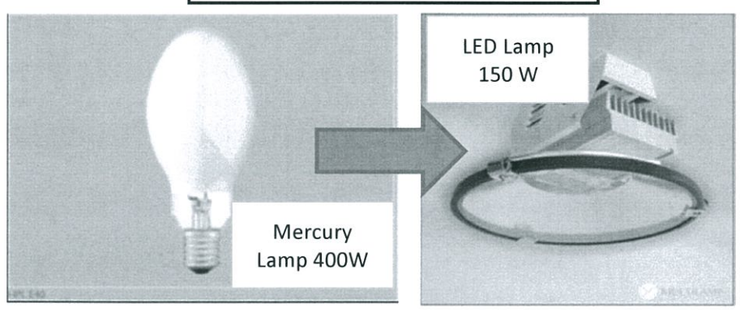
3. Temperature Intake Compressor 42°C

ENERGY CALCULATION Several case		
AIR COMPRESSOR		
Properties	**Case-1**	**Case-2**
Air in T (°C)	35.0	42.0
Compr. Air discharge , T (°C)	244.7	256.2
Air in, P (kg/cm2)	1.0	1.0
Compr. Air discharge, P (kg/cm2)	8.5	8.5
F (NM3/hr)	1,000.0	1,000.0
Power (kW, Th)	**70.0**	**70.9**
Selisih kW	**0.9**	
Persentase saving	**1.31%**	

4. Gas Consumption / ton in MF Hiraro over from benchmark data



5. Current Factory Lighting is using Mercury Lamp 400 W



III Target

No	Langkah Perbaikan Efisiensi Energi	Potensi Penghematan Energi			Reduksi emisi	Penghematan Biaya (Rp/tahun)	Investasi (Rp)	PBP (tahun)	Keterangan
		Listrik (kWh/tahun)	Natural Gas (NM3/tahun)	Persentase pertahun	CO_2 (ton)				
	Holding Furnace								
1	Perbaikan dinding refraktori dan electric heater Holding Furnace LPC-2	237,600	-	1.4% dari kons. Listrik	176.1	225,720,000	320,000,000	1.2	Low Cost
	Pemanfaatan Panas Gas Buang Melting Furnace								
2	Pemasangan 1 Unit Air Preheater di Melting Furnace Striko	-	86,526	7.9% dari kons. N.Gas	170.5	406,672,200	360,000,000	0.9	Low Cost
	Sistem Udara Bertekanan								
3	Perbaikan sistem sirkulasi dan penurunan temperatur udara intake kompresor	85,558	-	0.5% dari kons listrik	63.4	81,279,720	225,000,000	2.8	Medium Cost
	Melting Furnace								
4	Penggantian Melting Furnace Hiraro dengan New High Efficiency Melting Furnace	-	127,512	11.74% dari kons. Gas	251.2	599,306,400	3,200,000,000	5.3	High Cost
	Sistem Penerangan								
5	Penggantian Lampu Merkuri 400W dengan lampu LED 150W	75,900	-	0.5% dari	56.2	94,875,000	607,500,000	6.4	High Cost

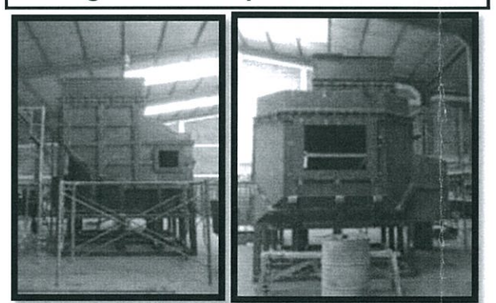
IV Schedule Activity

No	Langkah Perbaikan Efisiensi Energi	KERANGKA WAKTU IMPLEMENTASI PELUANG KONSERVASI ENERGI				
		TAHUN				
		2015	2016	2017	2018	2019
	Holding Furnace					
1	Perbaikan dinding refraktori dan electric heater Holding Furnace LPC-2		→			
	Pemanfaatan Panas Gas Buang Melting Furnace					
2	Pemasangan 1 Unit Air Preheater di Melting Furnace Striko	→				
	Sistem Udara Bertekanan					
3	Perbaikan sistem sirkulasi dan penurunan temperatur udara intake kompresor		→			
	Melting Furnace					
4	Penggantian Melting Furnace Hiraro dengan New High Efficiency Melting Furnace	→				
	Sistem Penerangan					
5	Penggantian Lampu Merkuri 400W dengan lampu LED 150W			→	→	→

V Proposed Countermeasure and Progress

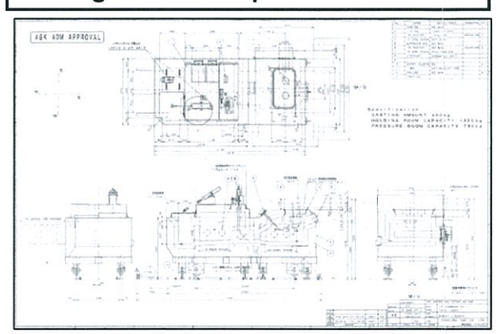
No	Problem	Countermeasure	Progress	Due Date	PIC
1	Current Unbalance in HF LPC#2 (38%)	Replacement Holding Furnace LPC 2 (or Relining)	Design Discussion, PO finished	Aug-15	ADP
2	Exhaust gasses from melting furnace is not used before	Implementation Air Preheater ex Melting Furnace Striko	Concept (design and proposal)	Dec-15	ADP
3	Temperature Intake Compressor 42oC	Implementation Ducting for Exhaust Air Dryer, and Relocation Duct Compressor, Increase air opening in Compressor Room	Concept (design)	2016	AIS
4	Gas Consumption / ton in MF Hiraro over from benchmark data	Replacement Melting Furnace New Efficient Tower System	PO finished, In Progress Manufacturing	Jun-15	ADP
5	Current lighting using Mercury Lamp 400W (is not efficient)	Replacement Lighting from Mercury to LED	Concept (design)	2019	ADP

Melting Furnace Replacement Hiraro



In progress Manufacturing and Refractory lining, PO finished

Holding Furnace Replacement LPC 2



Drawing (concept) approval, PO finished