



# **Best Practice from Energy Management Leadership Award**

(PT IKPP Tangerang Mill)

Presented by:

**Kholisul Fatikhin**



# History



- PT IKPP Tangerang was founded in 1976 by Mr. Soetopo.
- Sinar Mas Group acquired 67% of Indah Kiat's total shares in 1986
- PT Indah Kiat Tangerang began to produce color paper in 1996 and successfully produce 100% color paper in 2006.



# Product Portfolio

## ✓ Main Product

Color Paper	Fancy Color Paper	Stationery & Art		
<ul style="list-style-type: none"><li>▪ Quran Paper</li><li>▪ High Smoothness Color Paper</li><li>▪ WF Color Paper</li></ul>	<ul style="list-style-type: none"><li>▪ Bi-Color Card</li><li>▪ Embossed</li></ul>	<ul style="list-style-type: none"><li>▪ Loose Leaf</li><li>▪ File Divider</li><li>▪ Index Card</li><li>▪ Color photocopy</li><li>▪ Sticky Note</li></ul>	<ul style="list-style-type: none"><li>▪ Envelope</li><li>▪ Pad</li><li>▪ Memo</li><li>▪ Kokoru</li></ul>	
				



# Energy Conservation Project



## ✓ E.C. Project Journey:

- 1991:** Boiler Modification from single to Dual Burner (Diesel oil & Gas)
- 1995:** Install Co-Gen (GT+WHRB)
- 1996:** Implement ISO 14001
- 2005:** Install CFB 20 T/H
- 2006:** Replace DC Drive to AC Drive
- 2008:** Upgrade PLN Capacity
- 2009:** Install BFB 15 T/H

What next ...

"We have to integrate the energy efficiency activity into day to day operation control"

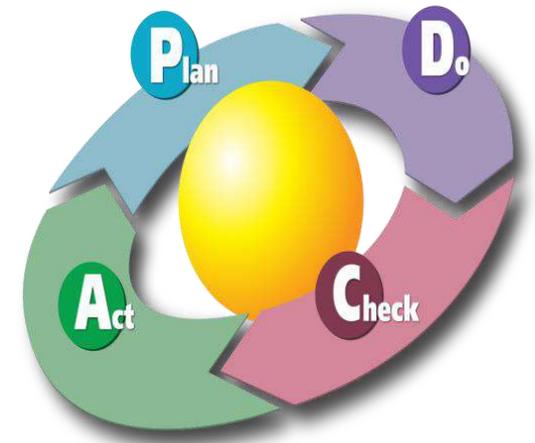


# Energy Management System

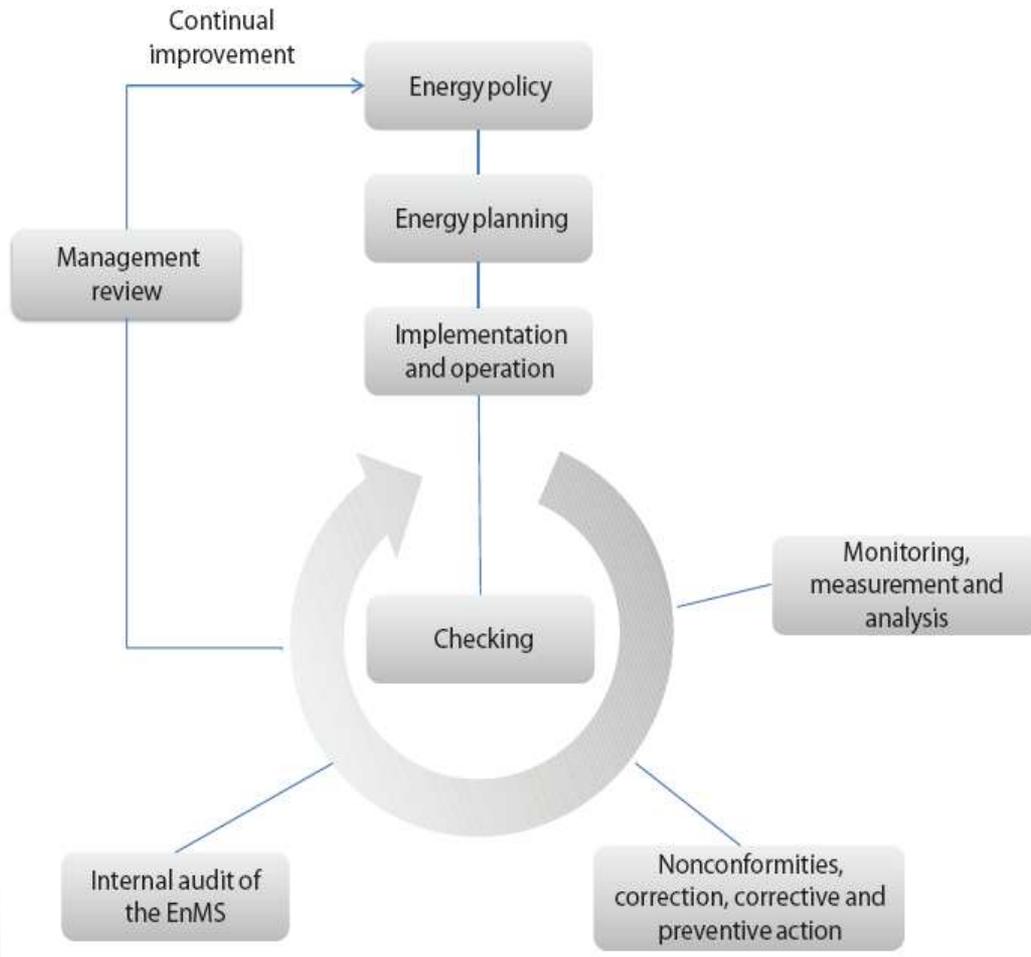
- ✓ PT IKPP Tangerang started to implement ISO 50001 in 2012
- ✓ Certification date: **November 2013**

## ✓ Why ISO 50001:

- Systematic Approach (PDCA)
- Support from Top Management
- Employee Involvement
- Tangible Benefit
- Support Network



# ISO 50001 Process



- Energy policy
- Energy planning
- Implementation
- Checking
- Management review

Source: ISO 50001:2011



# Management Commitment



- Continual improvement in energy performance
- Ensure the availability of information and of necessary resources to achieve objectives and targets
- Comply with applicable legal requirements and other requirements
- Supports the purchase of energy efficient products and services and design for energy performance improvement
- Provides the framework for setting and reviewing energy objectives and targets
- Conduct energy review periodically.



# Management Commitment

## ENERGY POLICY

**indahkiat**  
pulp and paper products

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TANGERANG MILL  
COMPLIANCE & DEVELOPMENT DEPARTMENT

**KEBIJAKAN PERUSAHAAN**

PT. INDAH KIAT PULP & PAPER Tbk. - PABRIK TANGERANG BERKOMITMEN UNTUK :

- MEMUASKAN ATAU MELAMPAUI HARAPAN PELANGGAN DAN SELURUH STAKEHOLDER
- MENCEGAH pencemaran lingkungan dan mengendalikan pemakaian sumberdaya
- MENCEGAH KECELAKAAN KERJA DAN PENYAKIT AKIBAT KERJA
- MENGHORMATI DAN MELINDUNGI HAK ASASI MANUSIA, MEMBERIKAN MANFAAT POSITIF DAN BERKELANJUTAN TERHADAP PEMBANGUNAN MASYARAKAT MELALUI PROGRAM PEMBERDAYAAN MASYARAKAT DI DAERAH SEKITAR PERUSAHAAN
- MENINGKATKAN KINERJA ENERGI
- Mendukung pengadaan produk, jasa dan design yang hemat energi

PERUSAHAAN AKAN TERUS – MENERUS MEMPERBAIKI EFEKTIFITAS SISTEM MANAJEMEN, MENETAPKAN DAN MENINJAU KEMBALI TUJUAN DAN SASARAN PERUSAHAAN SECARA PERIODIK, MENGEVALUASI KINERJA, MEMENUHI SEMUA PERUNDANG – UNDANGAN DAN PERSYARATAN LAIN YANG RELEVAN, MENYEDIAKAN INFORMASI DAN SUMBER DAYA YANG DIPERLUKAN UNTUK MENCAPAI TUJUAN DAN SASARAN.

**COMPANY POLICY**

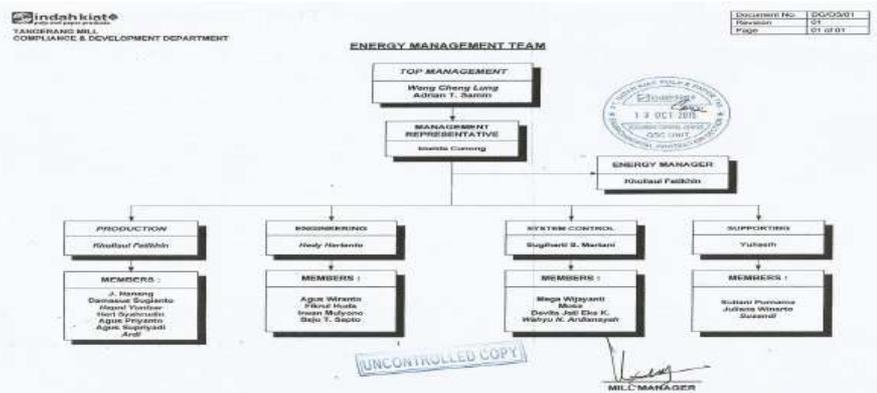
PT. INDAH KIAT PULP & PAPER Tbk. – TANGERANG MILL COMMITTED TO:

- MEET OR EXCEEDING ALL CUSTOMER AND STAKEHOLDERS' EXPECTATIONS;
- PREVENT ENVIRONMENTAL POLLUTION AND CONTROL THE USE OF RESOURCES;
- PREVENT WORK RELATED ACCIDENTS AND DISEASE;
- RESPECT AND PROTECT HUMAN RIGHTS, GIVE POSITIVE AND CONTINUOUS BENEFIT TO LOCAL COMMUNITIES THROUGH COMMUNITIES DEVELOPMENT PROGRAM IN MILL'S NEARBY AREA
- IMPROVE ENERGY PERFORMANCE
- SUPPORT THE PURCHASE OF PRODUCTS, SERVICES AND DESIGN THAT ENERGY EFFICIENT.

THE COMPANY SHALL CONTINUOUSLY IMPROVE ITS MANAGEMENT SYSTEM, SET AND REVIEW ITS OBJECTIVES AND TARGETS PERIODICALLY, EVALUATE ITS PERFORMANCE, COMPLY WITH LEGAL REGULATIONS AND OTHER RELEVANT REQUIREMENTS, PROVIDE INFORMATION AND NEEDED RESOURCES TO ACHIEVE OBJECTIVES AND TARGETS.

MILL MANAGER

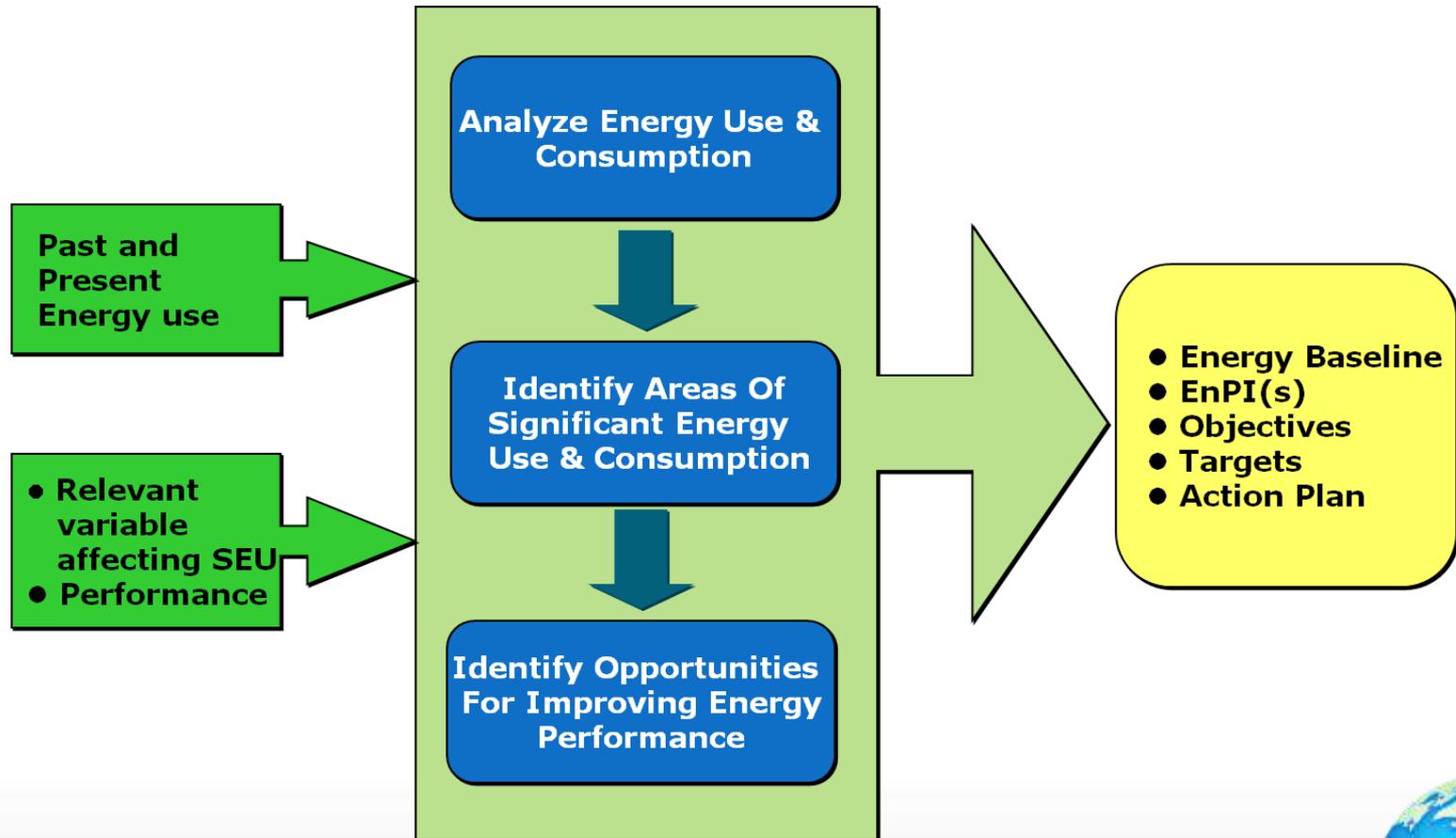
## ENERGY MANAGEMENT TEAM



## ROLE & RESPONSIBILITY

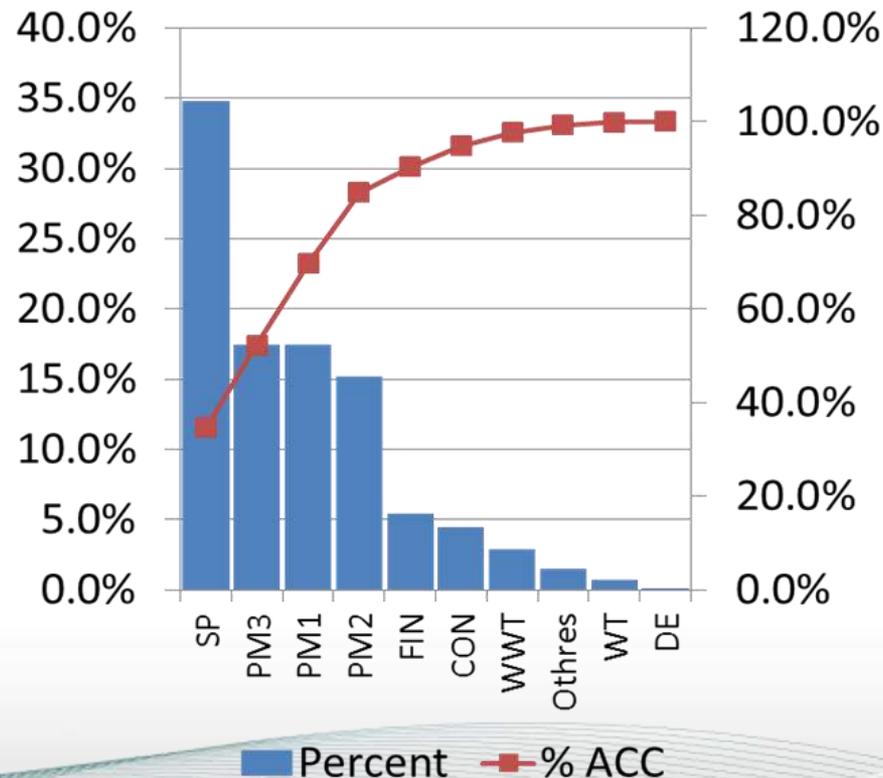
	Sterling Committee	Energy Mgt Rep	Energy Manager	Production Dept Head	Production Manager **	Engineering Dept Head	Maintenance Manager *	Project & Mfr Manager	EP Manager	Mill Service Dept Head	Procurement Manager	General/Affairs Manager	Accounting Manager	HR Manager	Warehouse Manager	
<b>R</b>	Responsible/Lead															
<b>S</b>	Support/Participate															
<b>I</b>	Informed															
<b>Preparation &amp; Commitment</b>																
Define scope and boundaries of the EnMS	R	S	S	I	I	I	I	I	I	I	I	I	I	I	I	
Manage roles and responsibilities	R	S	S	I	I	I	I	I	I	I	I	I	I	I	I	
Establish and Approve the energy policy	R	S	S	S		S				S						
Review the energy policy	R	S	S	S		S				S						
Consider energy performance in long term	R	S	S	I	I	I	I	I	I	I	I	I	I	I	I	
Set objectives and targets	R	S	S	I	I	I	I	I	I	I	I	I	I	I	I	
<b>Planning</b>																
Legal and other requirements	I	R							S	S						
Complete the energy review steps	I	S	R	S	S	S	S	S	S				I			
<b>Operating</b>																
Implement training	I	S	S	S	S	S	S	S	S	S	S	S	S	R	S	
Internal Communication		R	S	I	I	I	I	I	S	I	I	I	I	I	I	
External Communication	I	R	S						S	R	S	S				

# Energy Planning

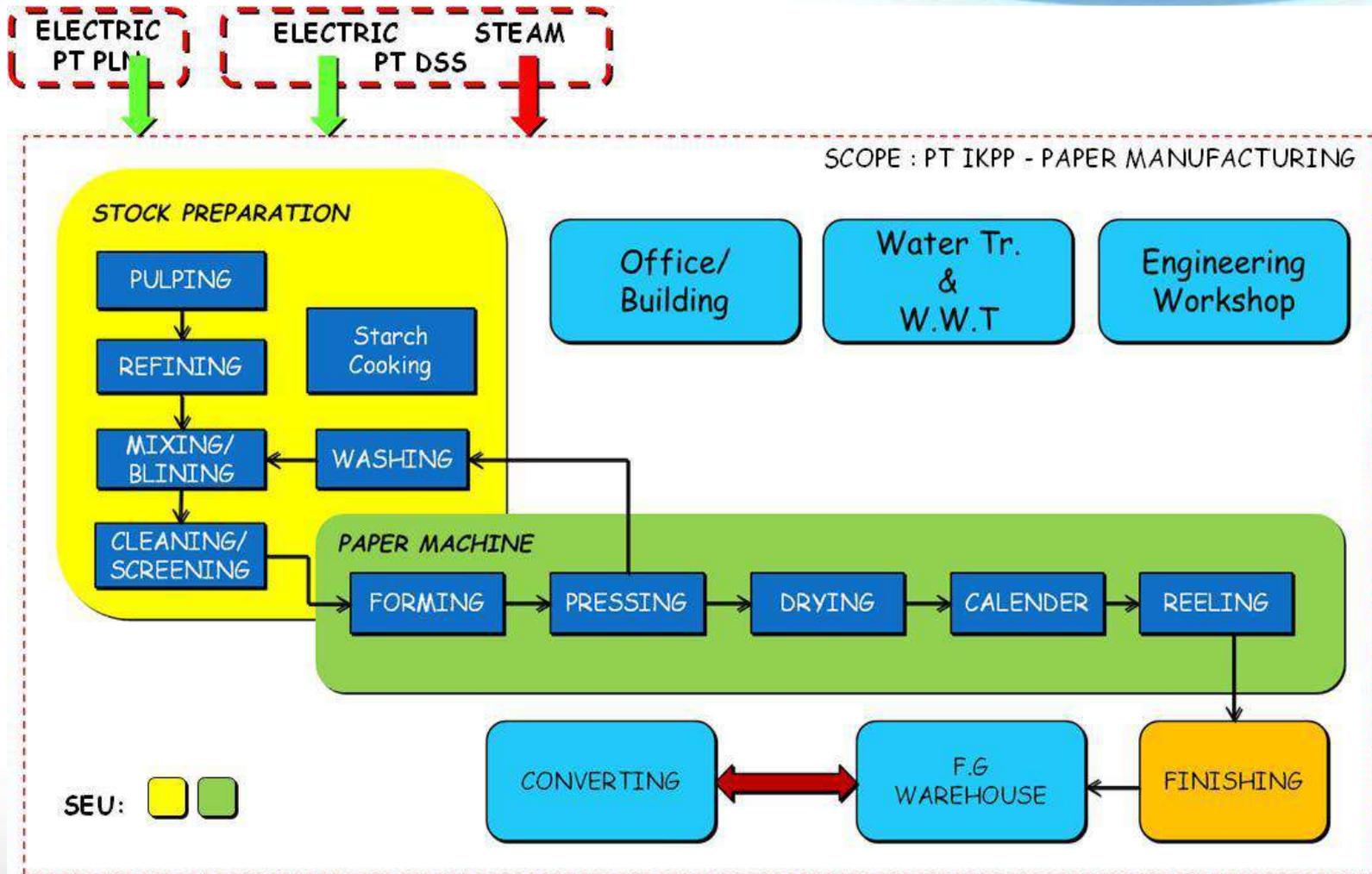


# Energy Planning

- Analyze energy use and consumption
- Identify the areas of **significant energy use**
- Identify other relevant variables affecting significant energy uses

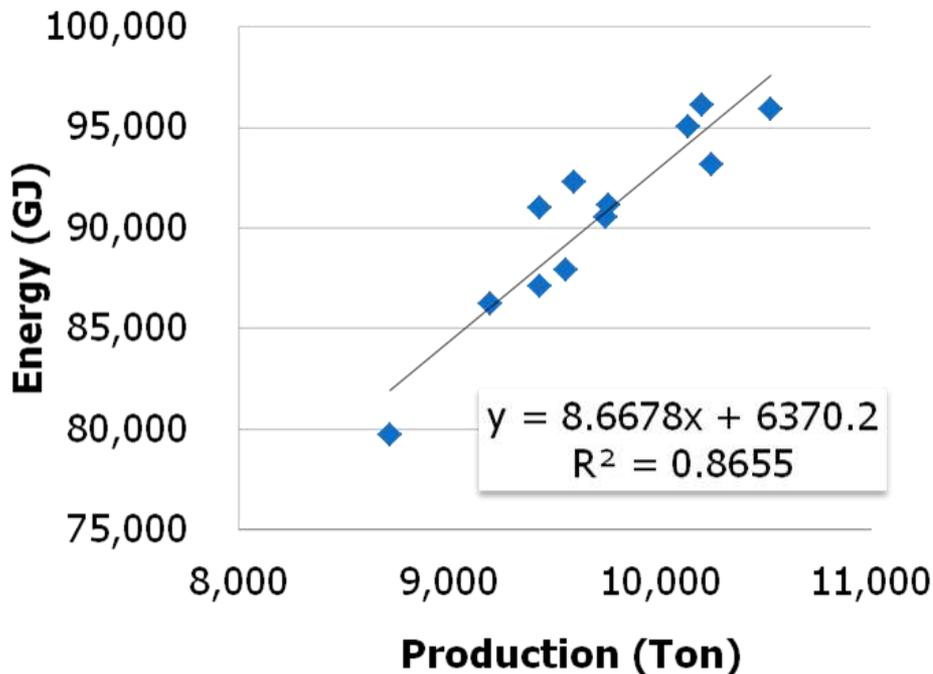


# Energy Planning



# Energy Planning

## ● Establish Energy Baseline & EnPI



- Establish an energy baseline(s) using the information in the initial energy review considering a data period suitable to the company
- Record methodology for determining and updating Baseline & EnPI



# Energy Planning

- Identify, prioritize, and record opportunities for improving
- Establish, implement, and maintain action plans for achieving its objectives and targets

ID	Description of Opportunity	Service	SEU	Estimated Annual Savings			Est. Inv. Cost (USD)	Payback (Year)	Priority
				kWh Elec.	Ton Steam	Financial (USD)			
1	Reduce Air Compressor Pressure from 7 BarG to 6 BarG	Electric	SP/PM	134,244		18,794	-		1
2	Reduce Level Medium Chest SP from 90% to 60%	Electric	SP	2,746		384			1
3	Install interlock Deflacker (Auto Off)	Electric	SP	29,290					1
4	Install interlock Pulper Chest Pump (Auto Off)	Electric	SP	13,730					1
5	Install daylight switch (Auto Off) Exhaust Fan No 5	Electric	PM1	54,918					1

**Target 10% reduction by end of 2014**

**Define Criteria of Priority**

## ENERGY CONSERVATION ACTION PLAN

ID	Action	Service	SEUs	Priority	Person Responsible	Target Completion Date	Verification Method
1	Reduce Air Compressor Pressure from 7 BarG to 6 BarG	Electric	SP/PM	1	Ruiyan	20-Feb-13	Cek Power dg KW meter
2	Reduce Level Medium Chest SP from 90% to 60%	Electric	SP	1	J Nanang	5-Mar-13	Cek load-unload Time & Amper
3	Install interlock Deflacker (Auto Off)	Electric	SP	1			Cek fungsi dari Interlock
	- Siapkan program pada DCS						
	- Tarik kabel dan modiikasi Panel						
4	Install interlock Pulper Chest Pump (Auto Off)	Electric	SP	1			Cek fungsi dari Interlock
	- Siapkan program pada DCS						
	- Tarik kabel dan modiikasi Panel						
5	Install daylight switch (Auto Off) Exhaust Fan No 5	Electric	PM1	1	Heryanto	20-Mar-13	Cek fungsi dari Interlock
	- Pasang daylight switch				Heryanto	4-Mar-13	
	- Tarik kabel dan modiikasi Panel				Heryanto	4-Mar-13	

**Details Action Plan**

**method of verifying the results.**



# Implementation

## → Daily Operation Control

### ▶ Energy Awareness Training & Communication

ensure SEU's operators are aware of the impact, actual or potential, with respect to energy use and consumption, of their activities.



### ▶ Daily Critical O&M Control

establishing and setting criteria for the effective operation and maintenance of SEU

SEU Area: Stock Preparation									
SEU (Peralatan)	Parameter	Eng Units	Normal set point	Batas Atas	Batas Bawah	Frekuensi pemeriksaan	Cara Pengukuran	Pelaksana	Lapor ke
Pulper (Agitator, Pompa)	Consistency	%	4.5	4.7	4.2	-	manual	Operator SP	Ka. Regu
Refiner	Pressure (inlet)	kg/cm	2	3	1	8x/Shift	manual - Pressure Gauge	Operator SP	Ka. Regu
	Pressure (outlet)	kg/cm	4	5	3	8x/Shift	manual - Pressure Gauge	Operator SP	Ka. Regu
	Consistency	%	4.5	4	5	3x/Shift	Auto - DCS	Operator SP	Ka. Regu
	Load	A	50	60	40	8x/Shift	manual - Amper meter	Operator SP	Ka. Regu

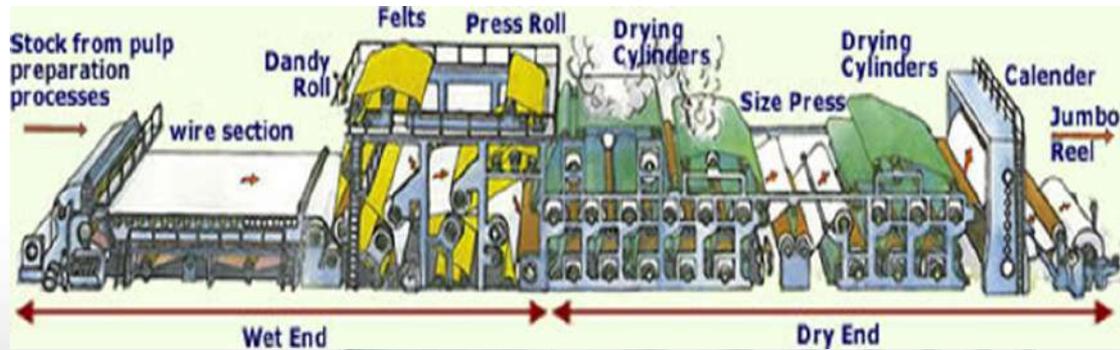
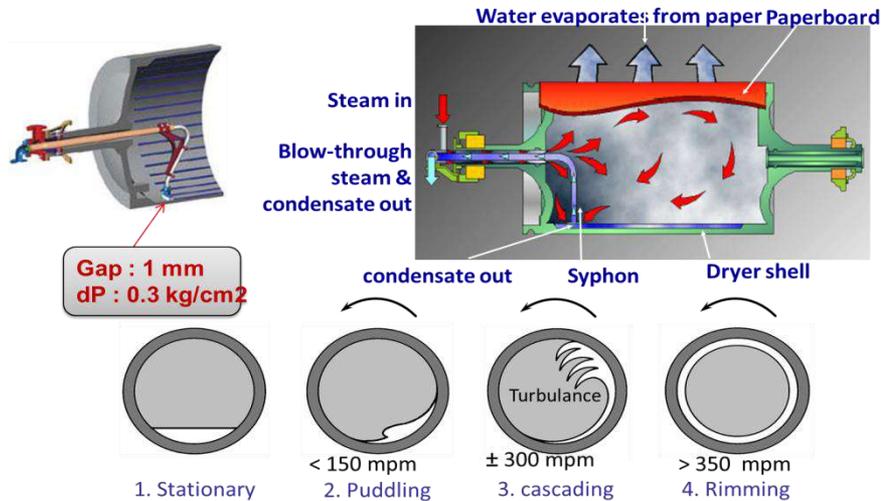
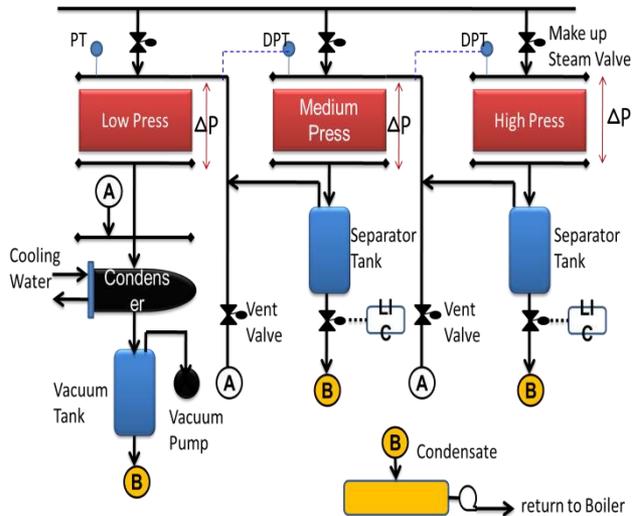


Visual Control



# Implementation

## ➔ Steam System Optimization



# Implementation

## Auto Stop Motor Trim Blower (idle)



Each Trim blower motor around 10 – 18 KW , modify auto stop when machine not running

## Replace V-Belt With Timing Belt

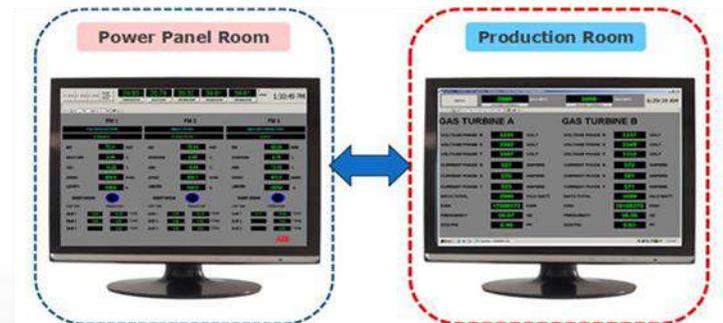


Replace V-belt Nash Pump with Timing Belt will eliminate slippery and reduce electric consumption, PM 3 Done 5 unit

## Upgrade line shaft to Sectional Drive



## Energy Monitoring System



# Implementation

## Employee Involvement

*Ikutilah Sayembara!*

**SAVE ENERGY**

Turn WORDS into ACTION

Turn ACTION into RESULTS

Ada Apa sih?  
Sayembara I-Suggest  
Tema: Mengurangi pemakaian energi di Indah Kiat Tangerang

Bagaimana Caranya?  
Segera daftarkan ide camrifang anda ke <http://tgc-suggest-app.co.id/>  
Waktu pendaftaran: 1 Agustus – 31 Oktober 2014

Apa saja sih Syaratnya?  
Sayembara dapat diikuti seluruh karyawan Indah Kiat Tangerang termasuk outsourcing max. level 5  
Ide harus dapat di implementasikan dengan baik

mbos  
Indah Kiat Tangerang

Informasi selengkapnya hubungi:  
MBOS Team ext. 4104 - 4106

Indah Kiat  
Indah Kiat Paper Products  
Indah Kiat Energi



Auto On-Off broke screen dan pengontrolan ke DCS (04141000053)

Presented By:  
DAKRUN S (1001653)

## Improvement Activity:

- ✓ Small Group Activity
- ✓ Skill Development Activity
- ✓ Employee suggestion System.
- ✓ TPM (5S)



# Checking



- ✓ Energy Performance is tracked monthly compared to predicted energy performance (based on regression equation)
- ✓ Energy Team reviews the EnPIs to determine energy performance quarterly
- ✓ Preventative and Corrective action is also reviewed at that time
- ✓ Internal Audit conducted once a year



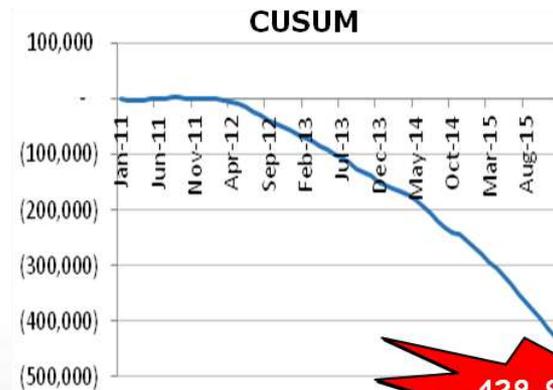
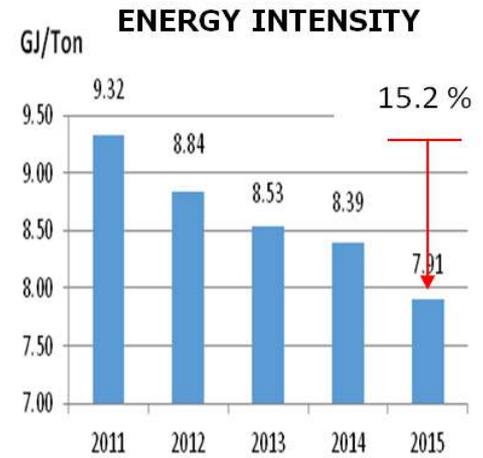
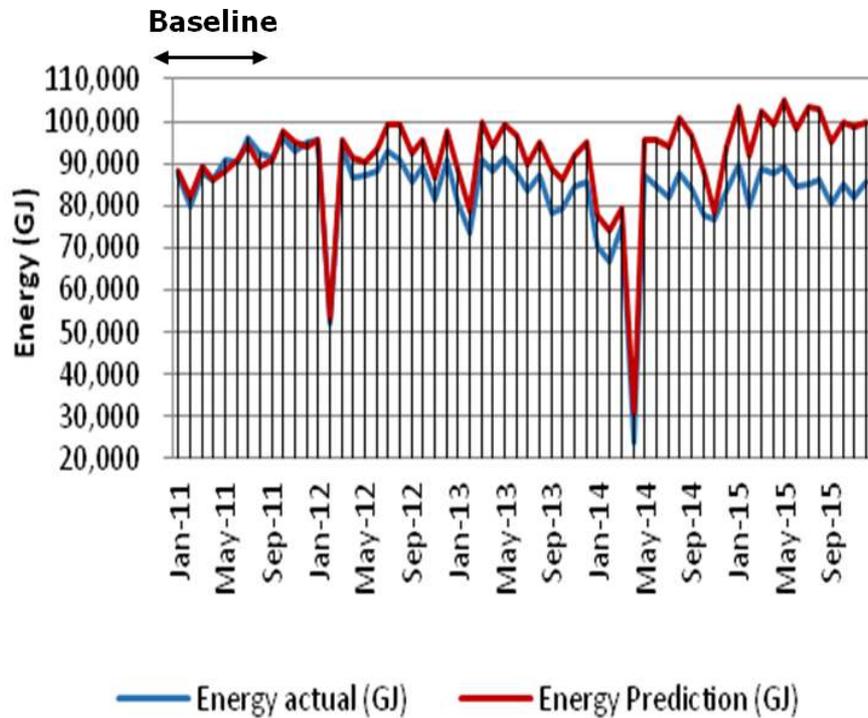
# Management Review

Management Review conducted once a year if any decisions or actions related to:

- Changes in the energy performance of the organization
- Changes to the energy policy
- Changes to the EnPIs
- Changes to objectives, targets or other elements of the EnMS, consistent with the organization's commitment to continual improvement
- Changes to allocation of resources.



## Energy Performance Indicator



# Energy Management Leadership Awards



## Benefit to the Company:

- Gain global recognition for efficient energy management
- Demonstrate your clean energy leadership to investors, customers, and employees.
- Receive prestigious recognition for contributing a quality case study.
- Affirm your organization's leadership in a global gathering of energy ministers and high-level international organizations.

More details at: [www.cleanenergyministerial.org/Energy-Management-Leadership-Awards](http://www.cleanenergyministerial.org/Energy-Management-Leadership-Awards)





**Thank You**

