

PT Kilang Pertamina Internasional (PT KPI) Unit Cilacap

which is the largest refinery in Indonesia, certified ISO 50001 : 2018 by TÜV SÜD since 2021. PT KPI Unit Cilacap achieved cost saving USD 2,797,027 and CO₂ emission reduction 26,934 metric tons through EnMS over one year in 2021.



Figure 1. RFCC Plant PT KPI Unit Cilacap

Case Study Snapshot

Industry	Refining & Petrochemical
Product/Service	Hydrocarbon (Propylene, LPG, Naphta, LCO, DCO, Avtur), Utility (Fuel Gas, HP Steam, Demin Water), N ₂ and Compressed Air, Waste water
Location	RFCC Plant
Energy performance improvement percentage (over the improvement period)	2.75% (over 1 year)
Total energy cost savings (over the improvement period)	USD 2,797,027 (over 1 year)
Cost to implement Energy Management System (EnMS)	USD 18,986
Total energy savings (over the improvement period)	336,675 GJ (over 1 year)
Total CO₂-e emission reduction (over the improvement period)	26,934 metric tons (over 1 year)

Organization Profile / Business Case

[Company profile](#) – PT KPI is a sub holding of Pertamina, Indonesian Government’s Oil Company, which has core business in Refining & Petrochemical. PT KPI consist of 6 refining plant and PT KPI Unit Cilacap is the largest refinery unit in Indonesia with capacity 348 MBSD, 33.2% of total capacity all refinery unit in Indonesia. It was established on 1974, located in Cilacap, Indonesia. Aside from being responsible in fulfilling gasoline supply for national demand, PT KPI Unit Cilacap exports 100 – 200 MB per month of Residual Fluid Catalytic Cracking (RFCC) Plant Decant Oil product and 200 MB per month Light Cycle Oil product.

[EnMS Drivers and Goals](#)

Core Business Driver

Around 62% of manufacturing cost (excluding raw materials) is used for energy consumption (refinery fuel), in 2020 PT KPI Unit Cilacap consumes 39,920,009 MMBTU of energy for fuel. Energy consumption in PT KPI Unit Cilacap comes from refinery fuel which is used for combustion process in furnaces and boiler. Refinery fuel is used to produce steam in boilers which will be supplied to steam turbine generator to generate power. PT KPI Unit Cilacap also utilizes 17 MW electricity from external partner, PLN (State Electricity Company).

PT KPI Unit Cilacap biggest challenge is the volatility of fuel prices which tend to increase, from 22.3 USD/barrel on April 2020 to 77.4 USD/barrel on November 2021 in average. Furthermore, COGS increases along with the increasing crude price (as shown in Figure 2) while, PT KPI Unit Cilacap main products, such as gasoline and jet fuel price are regulated by the requirement of Public Service Obligation (PSO). To rise through the challenge, production cost reduction is necessary and notably focused on energy consumption efficiency as the most significant subject.

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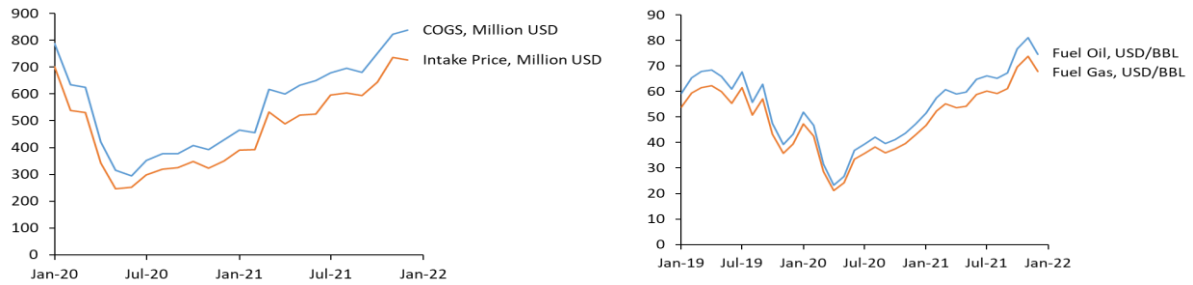


Figure 2. Cost of Goods Sold Vs Total Intake Price (left) and Fuel Price 2020 – 2021 (right)

Survival Driver

- To accelerate PT KPI Unit Cilacap vision to be Digital and World Class Energy Company
- To increase PT KPI Unit Cilacap added value in order to maintain Gold-the highest award in PROPER (National Program for Assessment of Company’s Performance Rating in Environmental Management)
- Along with Indonesia’s commitment to reduce the emission by 29% in 2030, PT KPI Unit Cilacap supports the Government’s effort to reduce greenhouse gas (GHG) emissions as well as develops energy transition in Oil and Gas Industry.
- To comply with government regulations regarding the use of environmentally friendly fuel
- To comply with Ministry of Energy and Mineral Resources regulations (*Permen ESDM No. 14 Tahun 2012*) about Energy Management
- To comply government regulation (*PP No. 70 Tahun 2009*) about energy conservation
- To achieve Energy Intensity Index (EII) as company Key Performance Indicator (KPI) less than 88.61 in 2026.

Energy Management Actions – PT KPI Unit Cilacap has concerned and committed to optimize energy consumption in order to minimize energy cost, risk of energy cost increasing, improve productivity and competitiveness, increase the energy supply security, as well as contributing in emissions reduction. PT KPI Unit Cilacap awareness in environmental issue and the importance of energy management has been increasing. It is proven by PT KPI Unit Cilacap actions and several recognitions below.

- Certified to ISO 14001, 90001, and 50001.
- Building Sulfur Recovery Unit to improve gas emission quality by converting H₂S gas into liquid Sulphur product.
- Installing solar cell 2.6 MW with on grid system (battery less) as renewable energy program to minimize waste.
- Applying Green Building concept for office buildings.
- Achieved several acknowledgements in Energy Management as shown in Figure 3.

Success Story Awards

VISION To be Digital & World Class Refinery in 2028

- To achieve high valuable product yield more than 78.71 % in 2028.
- To achieve EII performance less than 83 in 2028.
- To produce Gasoline and diesel which comply with EURO V in 2028
- To achieve Operational Availability more than 92.75 in 2028
- HSE Compliance, SUPREME with green achievement in 2020.

Strategi	HSE EXCELLENT	OPTIMIZATION & PROFIT	RELIABILITY EXCELLENT	DEVELOP AND GROWTH	SUSTAINABILITY
1. Process Safety Management	1. Crude Oil Management Strategy (COMS)	1. Reliability Strategy	1. Increase refinery complexity index	1. Human Capital Professionalism: Human Capital Management Based Competency	
2. People Safety & Health	2. Operation excellent (Optimizing energy management)	2. Maintenance Management	2. To produce diverse high value product	2. Mindset : To create work culture which focus on excellent performance refer	
3. Security Management (Digital Security System)	3. Security maximum yield valuable product, minimum Hydrocarbon loss, minimum product quality give away)	3. Material Management	3. Feed stock flexibility (energy, petrochemical & base oil)	3. Leadership: to create leadership pattern to rise visionary leader, professional and business oriented role model	
4. Environmental Beyond Compliance	3. Optimizing asset management	4. Turn Around Management	4. Business development (energy, petrochemical & base oil)	4. Infrastructure Management: To build dynamic organization, Excellence Operational Procedures (SOP), Integrated Management System, and accurate IT database	
5. Integrated Emergency Response	4. Minimum Integrated Port Time		5. High Return on Gross Investment (RoG)	5. Business Environment: To create clean business environment, communicative, anticipative, and conductive and deliver positive values to stake holder	

AHLAK (Amanah, Kompeten, Harmonis, Loyal, Adaptif, Kolaboratif)
Spirit CIPS (Change, Innovation, Professional, Speed)

Energy efficiency is one of the pillars of Pertamina Production System in Sub Technology Management which is energy Management System System

Figure 3. Success Story of PT KPI Unit Cilacap (left) and Pillars of EnMS Pertamina Production System

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Top Management believes ISO 50001 can be tools to review company performance as well as help PT KPI Unit Cilacap Energy Management System to be more systematic and further enhanced in order to achieve company vision. ISO 50001 provides a framework for establishing energy management best practice in PT KPI Unit Cilacap and helps to improve the energy efficiency. This system enables PT KPI Unit Cilacap to establish, implement, maintain, and review the Energy Policy, Objectives, Targets, Energy Performance Indicator (EnPIs), and Management Action Plans relating to energy performance.



“Getting certified ISO 50001 it’s not the end of the journey. But paving the way to be efficient, green, and world-class refinery. And we do believe we can make it.”

Scan here – Didik Bahagia, Director of Operational PT KPI

Business Benefits

For initial phase, ISO 50001 has been implemented in RFCC Complex PT KPI Unit Cilacap since 2021 with total implementation cost of USD 18,986.

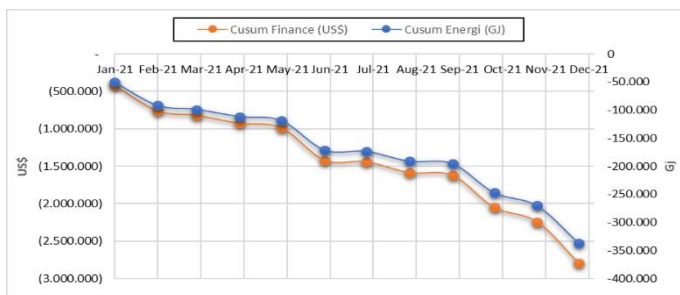


Figure 4. CUSUM in Energy Saving in RFCC Plant

Tangible Benefits

Financial benefits: Cost saving USD 2,797,027 calculated based on energy performance gap between actual energy consumption compared to baseline, then can be described in the cumulative of sum (CUSUM).

Environmental Benefit: CO₂ reduction of 26,934 metric tons equivalent in 2021, calculated based on emission factor of the mix of refinery fuel gas and oil 0.08 ton CO₂/GJ.

Intangible Benefits:

Beyond monetary benefit

- PT KPI Unit Cilacap Energy Intensity Index has significantly improved as a result of the energy program implemented sustainably which complies with ISO 50001. It leads PT KPI Unit Cilacap to be The Best Refinery in Indonesia in Reducing Energy Intensity Index (EII).
- Implementation of Advanced Process Control in Utilities Area leads PT KPI Unit Cilacap to be The 2nd best Refinery in Indonesia in applying boiler and furnace optimization.
- PT KPI Unit Cilacap has committed in routine monitoring and reducing steam leaks in refinery leads PT KPI to be The 2nd best Refinery in Indonesia in achieving Zero Steam Leak Program.
- Enhance personal competency through online learning via TRACO Application, Forum KOMET Webinar and Pertamina Online Learning System (POLIS).
- Certification program has been improved which includes Certification of Auditor Energy, Manager Energy, Internal Audit for Energy Management System.
- Strengthen awareness and improve capability in energy management and conservation.

Optional Topic – PT KPI Unit Cilacap energy improvement programs are capable in increasing RFCC Plant reliability and equipment readiness to maintain in maximum capacity in order to achieve Yield Valuable Product 72.07% Vs target 67.88% with total production 84,176 MB. Thus, national gasoline supply and distribution to consumers (society) will be guaranteed (35% of total national demand/domestic needs)

Plan

Top Management Commitment – Top Management of PT KPI Unit Cilacap is committed to implement the Energy Management System (EnMS) ISO 50001 and continuing the Energy Management System certification. Top Management has committed to form “Tim Energi” and publish Green Policy as well as provide personnel development through training and certification.

During 2017 – 2021 Top Management has committed to provide necessary resources in term of budget totaling of 1.96 million USD (as shown in Figure 5). The budget reached 2.1 million USD in 2019 due to furnace burner replacement, which was one of the energy conservation program. After implementation ISO 50001 budget for energy improvement program is increased to 2.7 million USD.

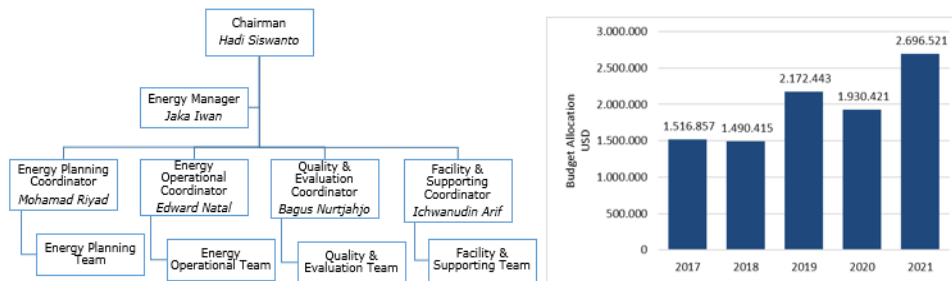


Figure 5 Energy Team Organizational Structure (left) and Energy Program Budget (right)

Energy Review – PT KPI Unit Cilacap conducts energy review which refers to organization procedure (Figure 6). Energy review aims to calculate comprehensive data of energy use and consumption as well as energy conservation opportunities in the future.

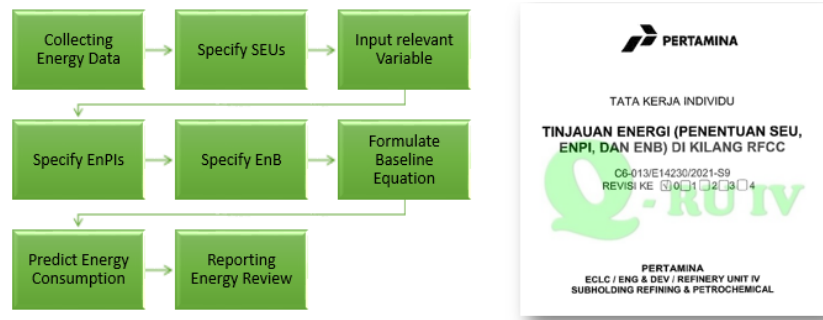


Figure 6. Procedure of Energy Review

Energy Target, ECO List, and Action Plan – Before proceed to executing program “Tim Energi” conducts feasibility study which includes cost analysis.

PT KPI Unit Cilacap has targeted to achieve 0.16 EII reduction in total equivalent to USD 2,797,027. Based on Risk Register scoring (as shown in Figure 7), during 1st year after ISO 50001 implementation PT KPI Unit Cilacap prioritizes Energy Conservation Opportunity (ECO) in maximizing action to optimize fuel energy consumption and steam loss management. PT KPI Unit Cilacap next priority is to improve steam-driven equipments (e.g MAB, cooling water pump, WGC).

Development for Multiple Sites – PT KPI Unit Cilacap realize that after implementation ISO 50001 in RFCC has brought significant impact to energy conservation and cost saving. This drives PT KPI Unit Cilacap to replicate ISO 50001 in other plants for further plan. The evaluation of energy management is reported to top management in regular meeting.

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KRITERIA DAMPAK RISIKO											
Index	Dampak	Perkiraan Kehilangan Laba Bersih 5% dari Laba Bersih		Dampak Pada Reputasi - Reaksi Publik	Dampak Pada Kesehatan & Keselamatan	Dampak Pada Lingkungan (Kualitatif)	Dampak Pada Sasaran Strategis Organisasi	Dampak Pada Sumber Daya Manusia - Reaksi Pekerja	Dampak Pada Aspek Komersial/Hukum PU	Dampak Pada Aspek Pangs Pasar	Dampak Pada Aspek Customer Loyalty Index (CLI)
		>0.8 BTR	>95,157								
5	Catastrophic	>0.8 BTR	>95,157	1. Masyarakat dan/atau LSM melakukan demo 2. DPR/DPRD berkomentar 3. Headline di Harian Nasional	Kematian pada Pekerja atau Masyarakat	Berpengaruh sangat serius dan jangka panjang pada lingkungan dan fungsi ekosistem	Tidak tercapainya sasaran dan Kegagalan mencapai kinerja	1. Karyawan mogok kerja	1. Klien memutus hubungan kerjasama; 2. Kalah dalam gugatan perdata yang berdampak pada pencatutan izin operasi Unit Produksi	1. Kehilangan pangsa pasar >1.6%; 2. Pemutusan kontrak kerja oleh partner strategis	1. Turunnya Index Customer Loyalty lebih dari 0.2 poin
4	Major	0.6 BTR < x ≤ 0.8 BTR	71,368 < x ≤ 95,157	1. Masyarakat dan/atau LSM mengajukan surat keberatan secara tertulis 2. Masuk berita media nasional	Major injuries pada beberapa orang	Berpengaruh serius dan jangka menengah terhadap lingkungan	Tertundanya tercapainya sasaran secara signifikan, Pencapaian kinerja jauh di bawah target	1. Sebagian besar karyawan dan Serikat Karyawan tidak puas kepada manajemen 2. Karyawan dan Serikat Karyawan demo di internal perusahaan	1. Klaim/Denda dari klien dengan nominal yang signifikan; 2. Kalah dalam gugatan perdata yang berdampak pada pembayaran dengan nominal yang signifikan	1. Kehilangan pangsa pasar antara 1.2% - 1.6%	1. Turunnya Index Customer Loyalty antara 0.15 hingga 0.2 poin
3	Moderate	0.4 BTR < x ≤ 0.6 BTR	47,579 < x ≤ 71,368	1. Masyarakat dan/atau LSM berkomentar 2. Masuk Berita media lokal	Major injuries pada 1 orang	Berpengaruh sedang jangka pendek tetapi tidak berpengaruh pada fungsi ekosistem	Tertundanya tercapainya sasaran cukup besar, Pencapaian Kinerja di bawah target	1. Sebagian besar karyawan kecewa dan berkomentar negatif Mempengaruhi orang lain dengan membuat berita negatif 2. Pengaduan ke Serikat Karyawan	1. Klaim/Denda dari klien dengan nominal yang cukup signifikan; 2. Kalah dalam gugatan perdata yang berdampak pada pembayaran dengan nominal yang cukup signifikan	1. Kehilangan pangsa pasar 0.8% - 1.2%	1. Turunnya Index Customer Loyalty antara 0.15 hingga 0.15 poin
2	Minor	0.2 BTR < x ≤ 0.4 BTR	23,789 < x ≤ 47,579	1. Sebagian masyarakat kecewa dan berkomentar 2. Terbit Surat Pembaca di Harian Berita 3. Masuk berita media terbatas 4. Running text di TV	Minor injuries	Berpengaruh kecil pada lingkungan fisik dan biologi	Tercapainya sasaran hanya sedikit di bawah target, target kinerja sedikit di bawah target	1. Sebagian karyawan kecewa dan berkomentar negatif	1. Klien klaim; 2. Kalah dalam gugatan perdata yang berdampak pada pembayaran dengan nominal yang tidak signifikan	1. Kehilangan pangsa pasar 0.4% - 0.8%	1. Turunnya Index Customer Loyalty antara 0.05 hingga 0.1 poin
1	Insignificant	<0.2 BTR	<23,789	1. Hampir tidak ada reaksi yang berarti dari stakeholder 2. Tidak Masuk Harian Berita	Tidak berdampak pada Keselamatan dan kesehatan	Berdampak terbatas/sangat kecil pada lingkungan	Hanya berdampak sangat kecil pada tercapainya sasaran, target kinerja masih mampu dicapai	1. Reaksi individual karyawan yang terkait dengan Permasalahan	Dampak minimum	1. Kehilangan pasar <0.4%	1. Turunnya Index Customer Loyalty kurang dari 0.05 poin

Figure 7. Risk Register Scoring



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“Energy can neither be created nor destroyed - only converted from one form of energy to another. But we surely can manage energy use to enhance the productivity. ISO 50001 helps us to develop an effective energy management system. Save energy, save our future.”

— Arief Budiyanto, General Manager PT KPI Unit Cilacap.

Do, Check, and Act

Energy Review, Baseline, and Energy Performance Indicator (EnPI) – PT KPI Unit Cilacap uses advanced digital metering to obtain all comprehensive data as a basis to analyze and identify the SEUs, EnPI, and EnB (Figure 8). Baseline period used to conduct energy review was set for 1-year operation of 2020 after implementing integrated external electricity source from National State Electricity Company (PLN) with no eliminating data (normalization). PT KPI Unit Cilacap determines EnPI as Gigajoule/ton product to implement energy management system. Product quantity (valuable Product) is a relevant variable (measurable factor which affects significantly in energy performance and regularly change) in RFCC Plant.

Area	SEU	Baseline Equation	R ²	EnPI
Process RFCC	Main Air Blower (MAB)	$y = 0.7648x + 0.49303$	0.8112	GJ/ton product
	Off Gas Compressor (WGC)			
	Steam Super heater			
	CO Boiler (COB)			
Utilities RFCC	Dry Air Compressor	$y = 0.4941x + 2891.174$	0.7594	GJ/ton product
	CW Pump			
	Boiler (151B-501 A/B/C)			

Figure 8. Energy Baseline and EnPI

Implementation & Operation – All the action plan are coordinated with Top Management and Figure 9 shows the top programs that have been implemented. Based on the 1st energy performance report, PT KPI Unit Cilacap has succeeded to obtain total of USD 2,797,027 of energy saving Vs target USD 2,487,386. This number is 12% higher than initial target saving.

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Energy Improvement Program	Cost, USD	Saving, USD	EII
Boiler and Furnace Equipment Improvement			
Replacement of Tip Oil Aux Boiler 151B-501 A/B/C	18,197	684,573	-0.0125
Boiler & Furnace Operating Condition Optimization			
1. Optimizing boiler & furnace operation to reduce fuel consumption	20,490	78,291	-0.0075
2. Conducting Upskilling Boiler & Furnace Optimization			
Steam management			
1. Assessment and repair steam leak and insulation			
2. Pipe insulation and steam trap regular maintenance	13,851	55,111	-0.02
Installing online equipment and basic operation monitoring (BEC and BOC)			
Installation Treated Water Mobile unit			
1. Rent treated water mobile unit package			
2. Upgrade and resizing line PVC PDAM 6" to HDPE 8"	831,959	1,588,332	-0.12
3. Modification line feed, product, concentrate and off grade product to mobile treated unit package			

Figure 9. Energy Improvement Programs

Design and Procurement – PT KPI Unit Cilacap conducts technical and cost evaluation to review specification and budget of the goods and services procurement as Action Plans Step to reduce energy consumption. This new good and services procurement guidelines has significant impact to SEU. In case of mobile treated water services procurement after the implementation of this new procedure, PT KPI Unit Cilacap has gained up to 1.6 million USD while its investment around 0.8 million USD.

Capacity Building – To enhance the competency of the team, 53% of total production personnel were trained for Boiler & Furnace Optimization. In 2021 PT KPI Unit Cilacap has 12 and 6 nationally certified as energy manager and energy auditor respectively.

Monitoring Measurement Plan – PT KPI Unit Cilacap has formed energy management system team, which focus on succeeding energy management system implementation and fully supporting in conducting program relating to energy management and conservation. “Tim Energi” is responsible in:

- arrange planning in energy conservation programs which includes determining target and energy conservation programs
- composing energy conservation operational procedure
- conducting energy audit as well as supporting energy audit recommendation implementation conservations programs
- encouraging personnel awareness in importance of energy saving.

PT KPI Unit Cilacap energy management system team utilize advanced digital measuring tools to monitor and control energy performance (fuel gas and oil consumption, steam utilization). Critical operational parameter (fuel gas and oil flow, steam flow, fuel gas and oil pressure, steam pressure) is monitored through integrated Distributed Control System (DCS) which can be displayed and monitored in real-time via Honeywell Uniformance application.

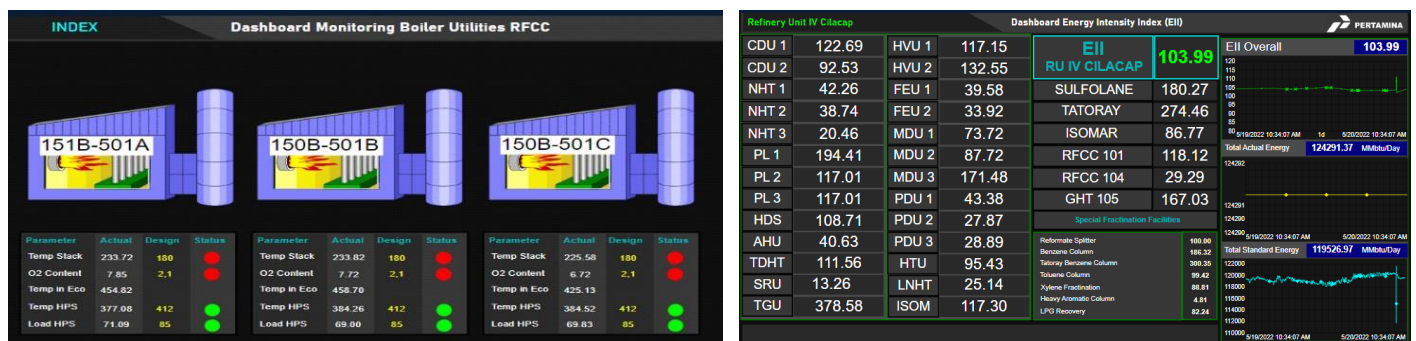


Figure 10. Dashboard of Monitoring Boiler Utilities RFCC (left) and Dashboard Energy Intensity Index (EII) (right)

Aside from doing online monitoring, energy operational team is responsible in coordinating energy consumption analysis and optimizing energy consumption which includes reporting energy optimization result, compiling energy equipment brand list, monitoring energy equipment readiness through BEC and BOC Application, composing repair plan as well as reporting repaired equipment performance.

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101-F-504						
101-F-504	Parameter	Tag No	Min / Deviasi	Max / Normal	UoM / Option	Action
	HP STEAM PRODUCT PRESS.	PG-145	40	44	kg/cm ² G	43.5
	PRESS FUEL GAS BURNER	PG-148	0.1	1.4	kg/cm ² G	0.93
	JUMLAH BURNER FUEL GAS		6	14	PCS	13
	DRAFT KONVEKSI	PG-159	-25	0.5	MM.H2O	-2.5
	DRAFT RADIANT	PG-160	-25	0.5	MM.H2O	-19
	O2 ANALYZER	AT-013	2	4	%	2.27
	FLAME PATTERN		BAD	GOOD	BAD,GOOD	GOOD
	KONDISI TUBE FURNACE		BAD	GOOD	GOOD,BAD	GOOD
	KONDISI REFRACTORY		BAD	GOOD	GOOD,BAD	GOOD
	HOUSE KEEPING		BAD	GOOD	GOOD,BAD	GOOD

Figure 11. BEC and BOC Application

Monitoring and evaluation is regularly reviewed in comprehensive energy meeting to follow up if any issues occurred as well as composing continual improvement.

RFCC Plant adopts Connected Performance Service (CPS) licensed by UOP to monitor process, operational condition, equipment, and corrosion as integrated system which comes with auto generated recommendations.

Verification and Validation – Energy equipment in PT KPI Unit Cilacap is regularly calibrated to ensure correct measurement to provide representative data for energy performance review. Energy performance is regularly reported to Energy Manager and Energy Auditor to be validated by Top Management and Solomon benchmarking study every 2 years period.

Internal Audit and Management Review – PT KPI Unit Cilacap Energy performance is reviewed through several regular programs. Management conducts Management Walkthrough (MWT) weekly to witness operational activities, Energy Team reports energy performance to Board of Director through coordination Monthly Energy Coordination Meeting, surveillance audit is performed annually as well as energy audit and Solomon Benchmark Study which is performed in every 3 years.

Transparency

PT KPI Unit Cilacap journey to achieve ISO 50001 until successfully certified has been published through several media as follows:

Internal Media :

- Internal web portal (<http://simops.pertamina.com>)
- Internal online broadcast Newsletter Perwira Kilang (NYALA)

External Media:

- ANTARA News published article (<https://m.antaranews.com/berita/2428125/kilang-cilacap-pertamina-raih-sertifikat-iso-500012018>)
 - PT KPI Unit Cilacap official website on (www.kpi.pertamina.com)
 - PT KPI Unit Cilacap official social media (instagram.com/pertamina_ru4, youtube.com/Pertamina RU IV Cilacap Official Channel)
 - The Jakarta Post published article (<http://www.thejakartapost.com/adv/2021/10/22/undp-supports-three-key-state-facilities-to-obtain-milestone-in-energy-efficiency.html>)
 - UNDP Indonesia YouTube video (<https://youtu.be/mBGqtaAcuel>)
- PT KPI Unit Cilacap efficiency Energy performance is verified and reported to:
- Daily report to PT KPI Unit Cilacap Management Team
 - Monthly report to PT KPI Head Quarter Jakarta Management Team
 - Annual report to Ministry of Energy and Mineral Resources (ESDM) via Online Energy Management Reporting System (POME).
 - Annual report to Indonesian Ministry of Environment and Forestry (KLHK) via PROPER
 - Annual sustainability report which is published globally



Figure 12. ISO 50001 : 2018 Certificate

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What We Can Do Differently

PT KPI Unit Cilacap fully aware that the implementation of ISO 50001 is not only short term program but Management Energy Team has committed to sustainably perform energy conservation programs as well as explore further programs to support sustainable energy management system in PT KPI Unit Cilacap.

[If PT KPI Unit Cilacap did the process again](#) – PT KPI Unit Cilacap should have implemented ISO 50001 in whole plants with better formula in order to expand EnMS program in whole plants. Thus, PT KPI Unit Cilacap being role model for PT KPI other refineries to implement ISO 50001 as tools for improving their energy management system to be more systematic.

[Recertification ISO 50001](#) – PT KPI Unit Cilacap aims to recertify ISO 50001 in whole plants as commitment to sustainably perform energy conservation programs

[EII Roadmap](#) - Energy Management Team has composed long-term company energy plan which is summarized in EII roadmap as follows.

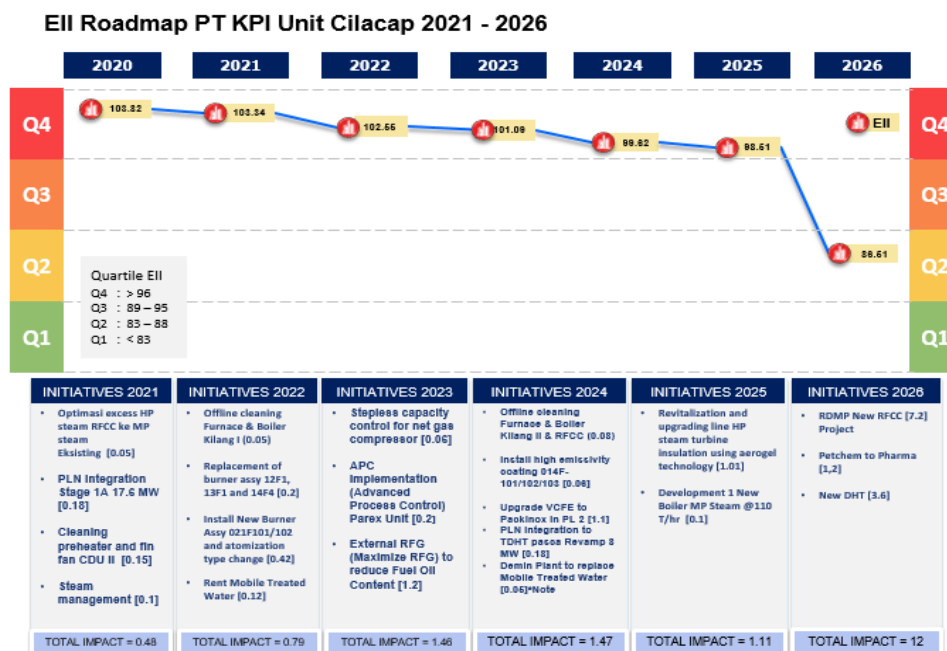


Figure 13. EII Roadmap PT KPI Unit Cilacap 2021 to 2026

Innovation Technology

- Replication Connected Performance Service (CPS) in other plants.
- Implementation aerogel technology as insulation in HP steam header to reduce energy loss and minimize corrosion under insulation (CUI).

New and Renewable Energy Program

- Expanding solar cell installation 1.2 MW for housing use.
- Processing vegetable oil to produce green diesel namely Pertamina Renewable Diesel (RD)

[Energy Team Certification](#) – PT KPI Unit Cilacap currently has 12 and 6 nationally certified as energy manager and energy auditor respectively and plan to increase the number of certified team member. In order to speed up ISO 50001 implementation in whole PT KPI’s plants, additional energy manager and energy auditor is required.



The Energy Management Leadership Awards is an international competition that recognizes leading organizations for sharing high-quality, replicable descriptions of their ISO 50001 implementation and certification experiences. The Clean Energy Ministerial (CEM) began offering these Awards in 2016. For more information, please visit www.cleanenergyministerial.org/EMAwards.