

Productivity Up, Costs Down, Zero Accidents

Indonesian Open Cut Coal Mine achieves 4th Milestone of its Operational Excellence Journey

Owned by PT Kitadin which is a Banpu Group company, **Tandung Mayang** is an open cut coal mine located near Bontang in East Kalimantan, Indonesia.

The site commenced its Total Productive Maintenance (TPM) improvement journey to Operational Excellence and World Class Performance in May 2006 with a 2-day Getting TPM & Lean to Work workshop. Six years and numerous employee development workshops later, the site has achieved great success.

Figure 1 – Tandung Mayang Current Site Status



After the success of Banpu's Lampang Open Cut Coal Mine in Thailand which was the first site in the world to achieve Level 5 of CTPM's 5 Level Milestone TPM³ Excellence Awards, Tandung Mayang has been using the Milestone Assessment Process as a key part of their Improvement Vision.

Their TPM³ approach is an enhanced Australasian version of TPM & Lean developed by CTPM, which involves the progressive engagement and development of all people on site to find problems at the earliest possible time and follow a structured process to get to the root causes.

On 26-27 June 2012 CTPM's President Ross Kennedy visited the site for their Level 4 Milestone TPM³ Excellence Award verification assessment.

The site of 884 people had 114 Area Based Teams supported by numerous Cross-functional Teams involved in on-going improvement activities. These teams are continually generating significant benefits for the business.

Following the verification assessment, Ross was very pleased to report back to Banpu's Board of Directors in Thailand that he was very impressed with the site's progress since the Level 3 verification assessment 2 years prior.

Ross commended everyone at the site for their efforts and enthusiasm as they progress towards their goal of achieving Level 5 within the next 2 years. With Banpu's pilot TPM site at Lampang in Thailand achieving Level 5 in May 2007, it is an added incentive at Tandung Mayang to 'beat the best' and exceed the achievement of their sister site.

Figure 2 – Site Goal to Beat the Best!

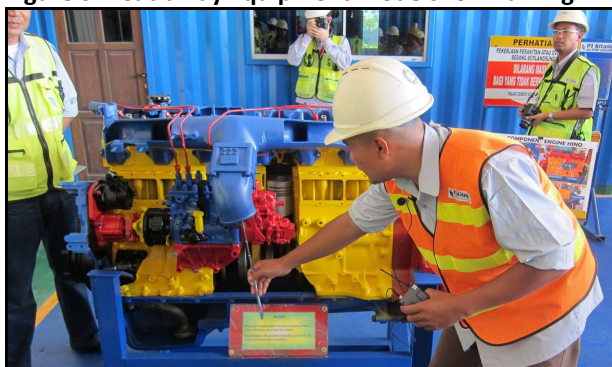


The impressive highlights of the verification assessment as reported to the Board of Directors included:

- Excellent Safety Performance of zero accidents for more than 16 months;
- Impressive targets for future Cost Reductions along with significant cost savings of over \$20m achieved to date;
- Very good and comprehensive Community and Environmental activities;

- Impressive Shift Change System in the pit, along with their Formula 1 Pit Stop approach to refuelling and checking for defects on their fleet;
- Significant Maintenance improvement activities supported by the various awards their teams have achieved at Indonesian Innovation Conferences;
- The new Training Centre and comprehensive approach to training all people on site;
- The new Fleet Management System which is highlighting even more opportunities for further improvement;
- Excellent team presentations supported by very good Noticeboards and Scoreboards, along with employees demonstrating their learnings using cut-away equipment models – well done to all involved; and
- Impressive TPM³ Library and electronic Knowledge Base of learnings which is developing very well.

Figure 3 – Cut-away Equipment Models for Training



The fact sheet outlining their impressive annual achievements, confirms the great work everyone has put into making their site a safer and more productive workplace while achieving significant cost savings.

Figure 4 – Tandung Mayang Fact Sheet

Achievements	2007	2008	2009	2010	2011	2012*	Gain
TPM ³ Excellence Award		Level 1 28 Sept	Level 2 4 Aug	Level 3 29 Jun	-	Level 4 27 Jun	
Production Improvement							
- EX2500 (BCM/hr) ⁴	937	970	1,092	1,164	1,096	1,093 ¹	17%
- PC1250 (BCM/hr)	-	444	558	619	560	524 ²	26%
- OB Haul Distance (km)	1.87	1.48	1.31	1.29	1.26	1.23*	34%
- OB Dump Volume (M.BCM)	24.10	35.26	51.61	53.42	48.96	19.86*	103%
- In-Pit Dump Volume (M.BCM)	6.21	19.01	32.47	41.71	26.98	10.58*	334%
- Percent In-pit Dump (%)	26	54	63	78	55	53*	104%
People Development							
- KOMPAK Achievement (Acc. No.)	6	24	171	213	230	233*	378%
- One Point Lesson (Acc. No.)	249	857	944	1081	1283	2,555*	926%
- Improvement Sheet (Acc. No.)	11	32	184	355	531	1,037*	9327%
Business Outcome							
- Fuel Consumption (Liter/BCM)	0.96	0.93	0.82	0.78	0.86	0.87*	10%
- Cost Reduction against budget (USD)	-	-	5,130,513	8,143,000	4,979,000	1,710,484 ³	\$20m

* As at YTD May 2012

¹ World Class Rate of EX2500 = 1,100 BCM/hr

² World Class Rate of PC1250 = 550 BCM/hr

³ As at Q1 2012

⁴ 708 BCM/hr (Y2005), 817 BCM/hr (Y2006)

A key element of Banpu's success is their top management's involvement in promoting and supporting their TPM³ Activities. As seen below, Chanan Vong Kusolkit, **Director / Chief Executive Officer / Head of Risk Management Committee** demonstrates his support and commitment to the Tandung Mayang site by visiting and getting a firsthand briefing on their TPM³ activities.

Figure 5 – Site visitor briefing



Banpu also sees TPM³ as a means to ensure they are minimising operational risk as they improve the business. According to their risk management policy, any hazard or uncertainty that threatens the company's achievement of business objectives or business plans shall be managed in a systematic manner and in accordance with the risk management best practices, in order to protect the company from losses and capture any opportunities.

CTPM's TPM³ methodology, with its systematic approach to finding the smallest of problems / issues at the earliest possible time and addressing them rapidly, fits neatly within the company risk management policy and as such is being progressively rolled out to all their sites.

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