

現地調査資料

1. 訪問工場リスト

企業名	工場名	所在地	生産規模
Sime Darby(運営) MPOB(研究開発)	PUSAT TEKNOLOGI KILANG SAWIT(POMTEC)	NEGERI SEMBILAN	30t-FFB/h
Southern Edible Oil Industries (M) Sdn. Bhd	K.K.S. GOLCONDA	SELANGOR	30t-FFB/h
SERI ULU LANGAT PALM OIL S/B.	SERI ULU LANGAT PALM OIL MILL	SELANGOR	45t-FFB/h
KULIM(Malaysia) Berhad	KILANG KELAPA SAWIT SINDORA	JOHOR	40t-FFB/h
LKPP Corporation S/B	DOMINION SQUARE SDN.BHD.	PAHANG	40t-FFB/h
FELDA PALM INDUSTRY SDN BHD	KILANG SAWIT JENGA 21	PAHANG	40t-FFB/h

3. 技術紹介セミナー資料（トータルソリューション）

2013/12/18_Technical Seminar_Malaysian Palm Oil Board (MPOB) [Malaysia/Kuala Lumpur]



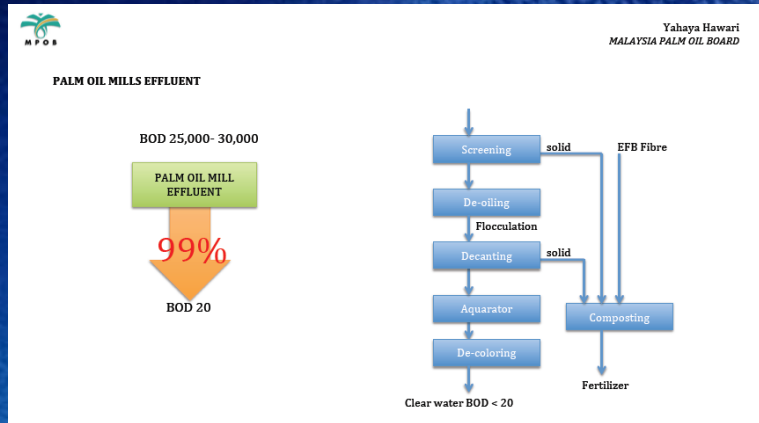
**Total Solution
for Improvement of
Wastewater Treatment
System and Cyclical
Use of Resources for
Palm Oil Mill in Malaysia**

Japanese Combined Teams
(Representative: Hanshin Engineering Co., Ltd.)

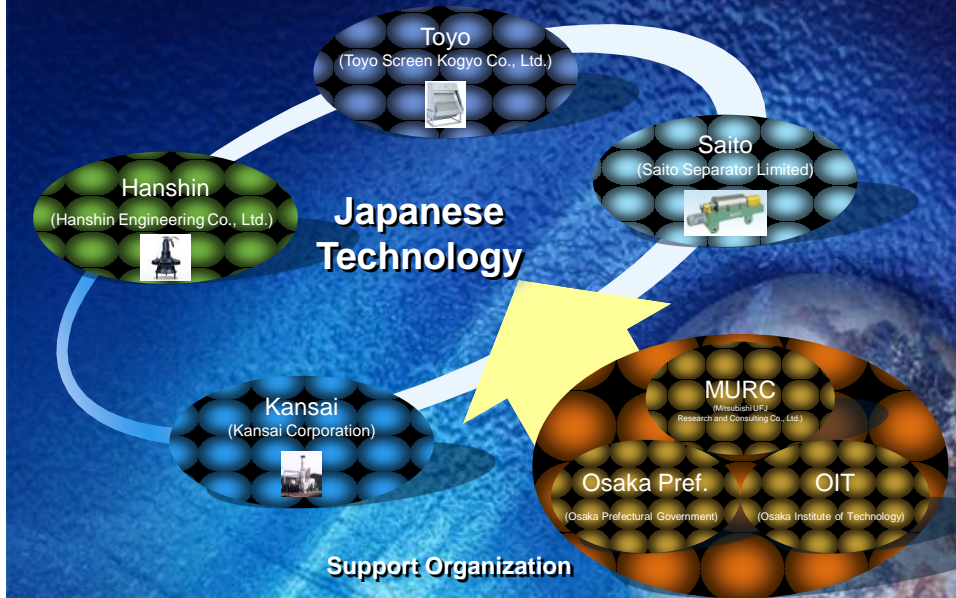
Purpose

- Improve the wastewater treatment system of palm oil mills and achieve BOD20.
- Use the resources cyclically, and carbonize or/and compost sludge for fuel production, wastewater treatment improvement or soil modification.

Current Agenda



Total Solution Structure



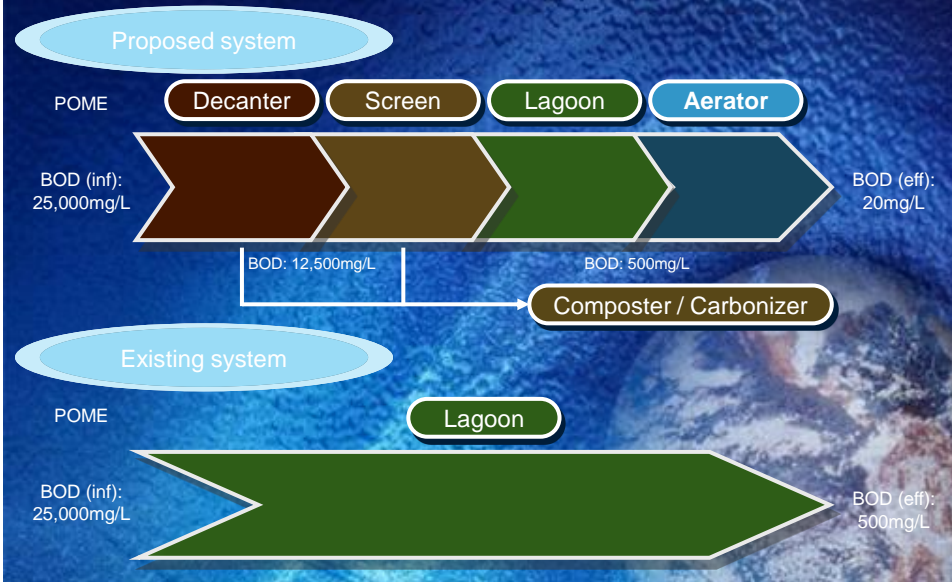
Existing System



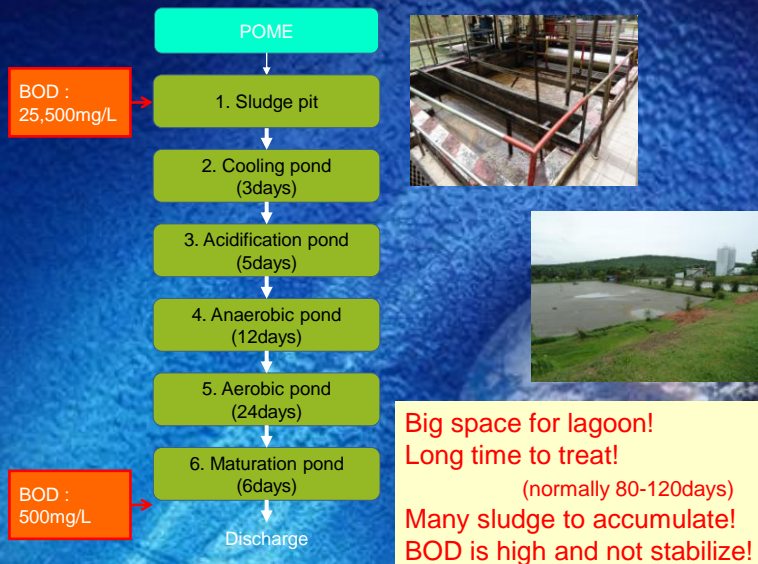
Comparison of Water Quality

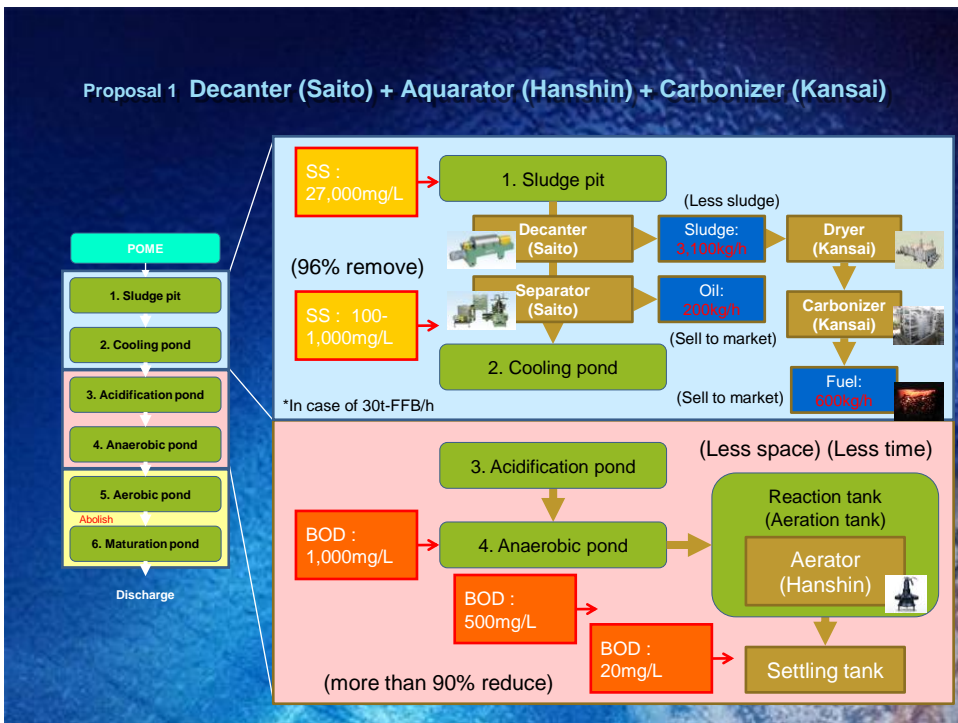
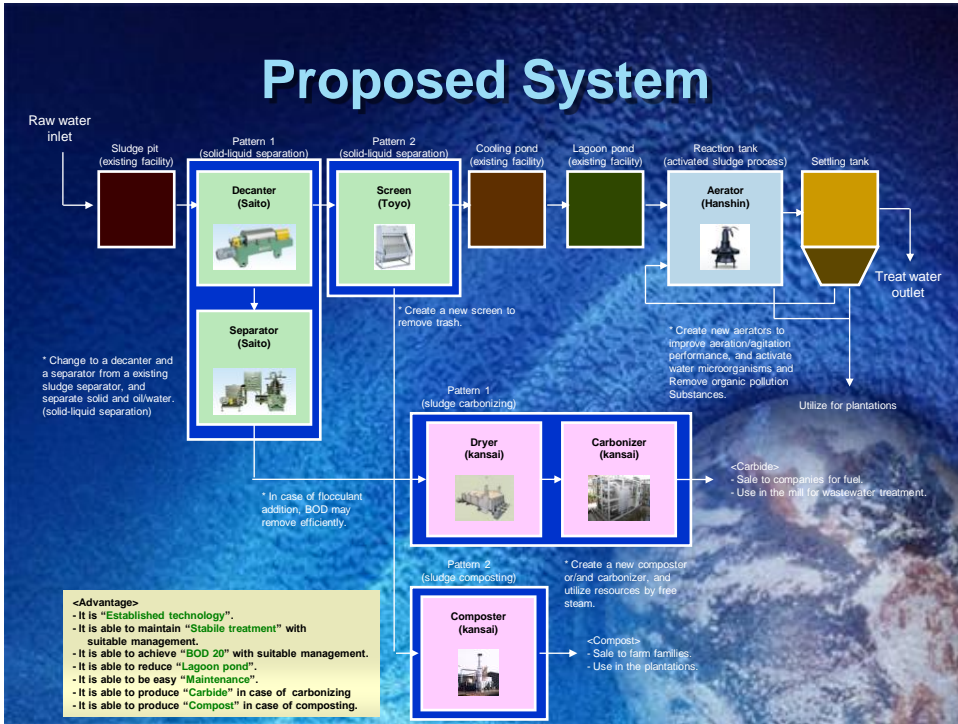
BOD3 concentration	Raw water inlet (mg/L)	Aerobic lagoon inlet (mg/L)	Treat water outlet (mg/L)
POMTEC	17,100	N/A	N/A
Mill A	56,925	1,572	507
Mill B	73,350	800	540
Mill C	24,450	1,164	661
Mill D	21,000	N/A	114
Mill E	36,500	739	340

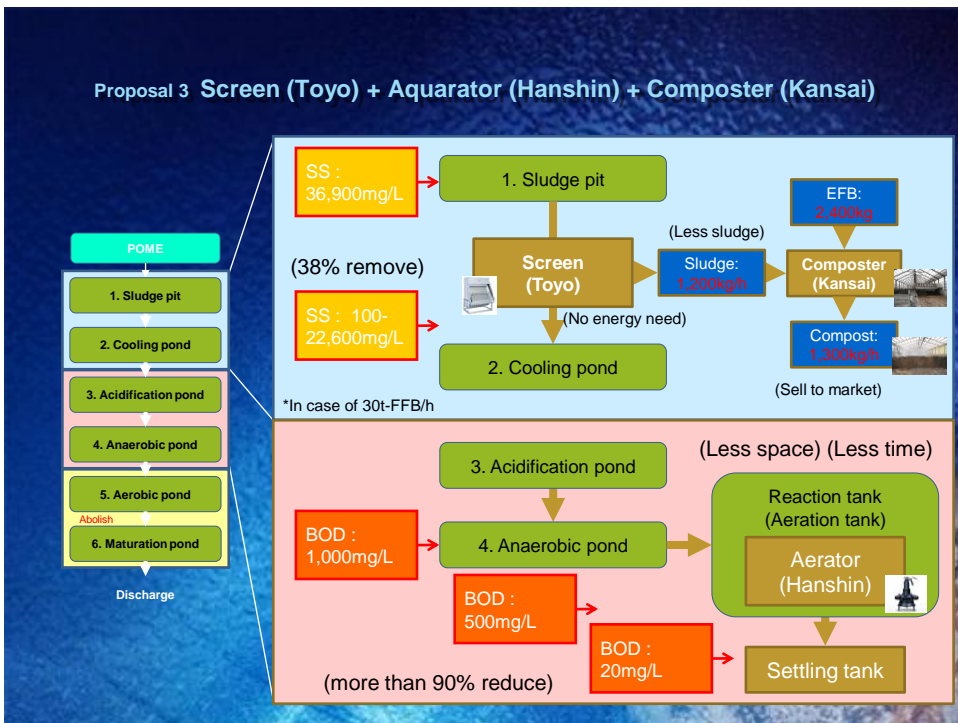
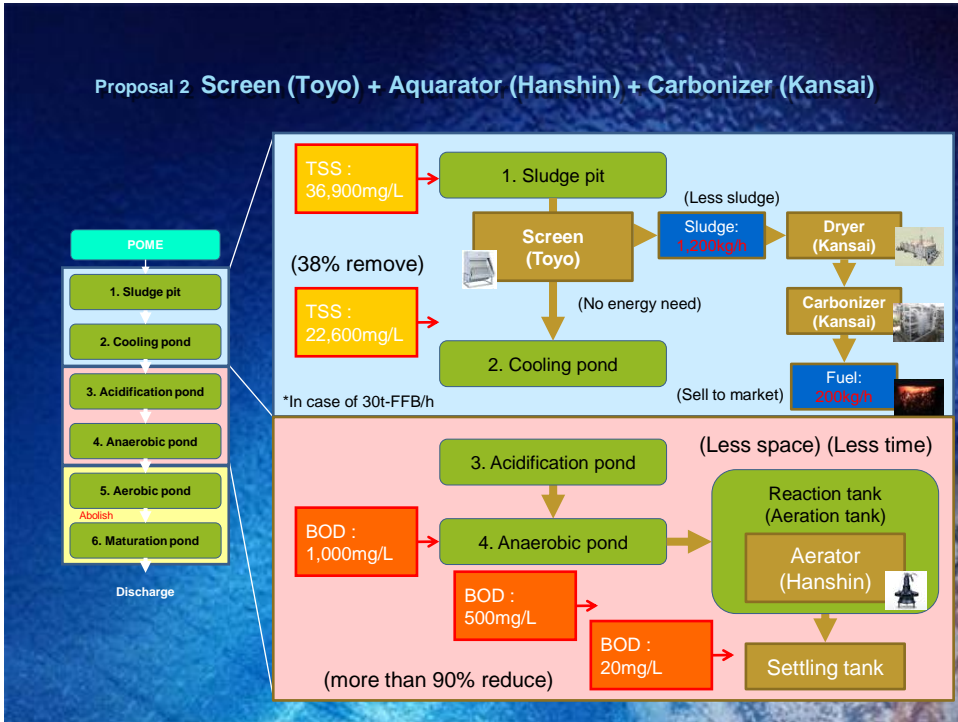
Comparison of Proposed and Existing System



Issue of Existing System







Agenda for Applying Proposed System

- The investigation is not enough for consideration of completed solution.
- Japanese combined teams are planning to apply new ODA project scheme next year.
- Malaysian opinion (managers, engineers and researchers etc. of MPOB, DOE, the palm oil industry and company etc.) is important.
- Consideration of technology and price through discussing with Japanese group and Malaysian members.
- Consideration of design change and local production to suit the local demand and to reduce the cost.

4. 現地調査 写真

<p>パームオイル工場排水の処理前原水 高い汚濁負荷量であることが分かる</p>	<p>スラッジピット 90℃前後の排水が集合する</p>
	
<p>ポンドへの流入水 高い汚濁負荷量であることが分かる</p>	<p>既存の表面攪拌装置 表面のみの攪拌であり効果が薄い</p>
	
<p>某工場（河川放流）の放流点の状態 右側の濃い色の水が、処理後の放流水</p>	<p>某工場（農場散布）の放流点の状態 農場内の水路に放流されている</p>
	

パーム残渣ボイラー
大型ボイラーが導入されている



三次高度処理プラント
活性汚泥法処理だが成績が安定しない

