

FINAL REPORT

General Assessment Information

Company: PT. Nippon Shokubai Indonesia Company Assessment Type: Steam
Plant: Chemical Industry Dates: September- October, 2014

Plant Information

Industry Code: Employed: 400
Principal Products: Area: 125 acres
Address: Kawasan Industri Panca Puri, Jl. Raya Anyer Km 122

Participant Contact Information

Plant Contact
Name: Alifuddin R
Title: Utility Engineer
Phone: 085648278295
Email: alifuddin@shokubai.co.id

Energy Expert Contact
Name: Hariyanto
Company: BPPT
Phone: 08111774065
Email: hariyt@yahoo.com

Corporate Contact
Name: Mr. Daryanto
Phone: 0811122016
Email: daryanto@shokubai.co.id

Energy Manager Contact

1 Executive Summary

The steam system assessment at PT.NSI is conducted in order to know current status of steam system performance and to recommend potential saving opportunities. Assessment of Steam System is carried out by 1 person national expert candidate of UNIDO.

At normal operating condition, PT. NSI produce of about 100 -110 ton per hour. Steam is distributed at 4 steam header, i.e: 30 bar, 20 bar, 6 bar and 2 bar. The current overall performance of steam system at.PT NSI is good. At steam generating section is supported by three type of boilers : package natural gas boiler, Heat Recovery Steam Generator (HRSG) and waste heat boiler (WHB). The package NG boiler is only running for 3400 hours/year, while HRSG and WHB are operated continuously for 8760 hours/year.

Base on the result of assessment, the estimated total identified energy saving is 20,276.17 MWh or equal to the cost saving of about USD 869,753.40 if all of the opportunities implemented. Pay back period for implementation of some potential saving opportunities are varying between 0.08 – 0.99 years.

In addition to the opportunities mentioned above, some qualitative recommendations are; Monitoring the boiler efficiency regularly, Calibration of in-situ instruments (pressure gauge , thermometer, steam flow meter), and optimizing the HRSG and WHB boiler prior to operate package boiler.

In order to anticipate the increase in steam demand in the next future, it is necessary to optimize the boilers operating configuration.

2 Summary Table of Energy Optimization Opportunities

Tabel.1 energy optimization opportunities

Assessment Opportunities		Estimated Annual Savings					Simple Payback (years)
ESO	Recommended Opportunities	MWh	KW	GJ	CO2 (Metric Tons)	Cost Savings (\$)	
1	Eliminating NG Boiler	0	0	36,040	1,910.12	375,428.68	0.04-0.05
2	Increase condensate recovery	0	0	10,830	573.97	112,811.36	0.74-0.92
3	Replace the leakage's steam trap	0	0	18,565	983.93	193,388.36	0.24-0.35
4	Utilization of low pressure steam for absorption chiller to replace electric chiller	2,100	250	0	1,302,000.00	188,125.00	2.21-2.66
	Total	2,100.00	250.00	65,434.23	1,305,468.01	869,753.40	0.08-0.99