

ASEAN-Japan Steel Initiative (AJSI)

Purpose and Activities

ASEAN-Japan Steel Initiative Activity in 2024
“Achieving Carbon Neutral in the Steel sector”
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Technology, Environment & Energy
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ASEAN-Japan Steel Initiative since 2014

Purpose

- Exchange knowledge and experiences and thereby contribute to the energy saving and environmental protection in ASEAN
- Encourage technology transfer from Japan to ASEAN steel industry

Participants

Public Sector

Ministries and governmental organization related to steel industry and energy saving in ASEAN and Japan

Cooperation

Private sector

ASEAN Iron and Steel Council(AISC), national association in ASEAN, JISF and their member companies, technology suppliers

Main Activities

1

Steel Plant Diagnosis



2

Technologies Customized List



3

Public and Private Collaborative Seminar



at Thailand in 2017 Seminar

Main Activities of 2023-24


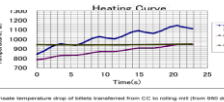
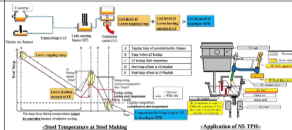
1 Steel Plant Diagnosis

On-site diagnosis in an ASEAN country

- Day1 - ISO14404* data collection with experts in each process
- Day2 - Plant Observation on-site
- Day3 - Evaluation of energy efficiency level using ISO 14404
- Day4 - QA discussions
- Day4 - Feedback session & Discussion on the feasibility of **proposed measures**

Item 2-5

Best Available Technologies

A-17		A. Energy Saving for Electric Arc Furnace (EAF) NS-Tundish Plasma Heater (NS-TPH)		A-17	
Item		Content		Diagram	
5. Direct Effect (Annual Operating Cost)	<ul style="list-style-type: none"> Economic Effect (payback time) Productivity Improvement Maintenance Cost Reduction 	<p>Profit from electricity savings.</p> <p>A-19 Induction type billet heater for direct rolling</p>  <p>Substitution coil</p> 		 <p>NS-Tundish Plasma Heater (NS-TPH)</p>	
7. Efficiency Level of Technology in Japan	<ul style="list-style-type: none"> Water saving 	<p>Heating Curve</p> <p>Temperature (°C)</p> <p>Time (min)</p> <p>Legend: Substitution coil, Normal, Control</p>		<p>Diagram</p> <p>NS-Tundish Plasma Heater (NS-TPH)</p> <p>Applied to NS-TPH:</p> <p>NS-TPH is a device that heats molten steel through the process of the world's only Tundish Plasma Heater technology. NS-TPH is a device that heats molten steel through the process of the world's only Tundish Plasma Heater technology.</p>	
9. Technologies Reference:	<ul style="list-style-type: none"> Technology Development/Innovation 	<p>Substitution temperature drop of billets transferred from CO to rolling and from 900 degC to 1000 degC.</p> <p>Substitution of gas (natural gas) for electricity (induction heating furnace).</p>		<p>Effect with growing demands for improvements in productivity and slab quality in recent years, NIPPON STEEL (NIPPON STEEL CO., LTD.) offers solutions to steel industry problems through the process of the world's only Tundish Plasma Heater technology. NS-TPH is a device that heats molten steel through the process of the world's only Tundish Plasma Heater technology.</p> <p>Effect:</p> <ul style="list-style-type: none"> Lower energy consumption of conventional plant → Reduce Slab quality Higher productivity Low emergency cost <p>Investment Cost: 100Million JPY (approx.) (3.8M USD @ 1.0)</p> <p>Operational Cost: increased 10% by regular maintenance. (2.0M USD @ 1.0)</p> <p>Reduction of CO2</p> <ul style="list-style-type: none"> 4.8M t-CO2/yr @ 100,000 t/annuity 7.8 kg CO2/ton steel @ 0.43 t-CO2/annuity <p>Electricity Saving: 1.000MW/yr @ 100,000 t/annuity</p>	
10. Preconditions	<ul style="list-style-type: none"> Electricity Transformer Gas (natural gas) 	<p>Substitution temperature drop of billets transferred from CO to rolling and from 900 degC to 1000 degC.</p> <p>Substitution of gas (natural gas) for electricity (induction heating furnace).</p>		<p>Diagram</p> <p>NS-Tundish Plasma Heater (NS-TPH)</p> <p>Applied to NS-TPH:</p> <p>NS-TPH is a device that heats molten steel through the process of the world's only Tundish Plasma Heater technology.</p>	



2 Technologies Customized List

3 Public and Private Collaborative Seminar – AJSI Webinar (2024/2/6)

While mobilization of stronger and more ambitious climate action is urgently required, how could the steel industry –a hard-to-abate sector- achieve Carbon neutral? We will introduce cutting-edge initiatives of both the public and private sector.

Session 1 (Public initiative)

- METI ① Government initiatives toward Carbon Neutrality
- ② Overview of the GX league
- ECCJ (Energy Conservation Center)
- Programs for overseas human resource development
- ACE (ASEAN Center of Energy)
- Enabling Environment and Finance Solutions
- SEAISI (South East Asia Iron & Steel Institute)
- How to support ASEAN steel industries on CN

Session 2 (Private initiative)

- Roadmap towards carbon neutrality of ASEAN (Indonesia and Thailand) & Japanese steel makers
- We will also feature
- Best practice of EAF company
 - Best Available Technologies
 - and more!

*ISO14404 is an international standard for calculating CO2 emissions from a steel plant .

- Thank you for your attention!

Contact below if you have any questions.

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