

Appendix 1. Presentation Themes by Partners

Subject	Specialist company	Best Available Technologies (BATs) and Best Practices (BPs)
Consulting-Process efficiency & new technologies	KBR Consulting-APAC	<ol style="list-style-type: none"> 1. Renewables in Petchem (e.g. direct and indirect integration - Green H2/Chemicals) 2. Recycling in Petchem (e.g. plastic to chemical) 3. Energy Efficiency in Petchem (e.g. LGHR, QPinch, other main areas for tangible improvements) 4. View on energy efficient catalyst - examples on KBR's K-SAAT and other technologies
	Toyo Engineering Corporation	Overall energy conservation in both process unit and utility through HERO System (Hybrid Energy system Re-Optimization System) Novel energy saving distillation technology SUPERHIDIC® (Advanced Heat Integrated Distillation Column ; Advanced HIDiC)
Holistic control of the process, utility and throughput by the aid of Digitalization technologies	Yokogawa/KBC	Energy Benchmarking and Gap Analysis, Operational Energy Improvements, Assessment of Energy Efficiency Opportunities, Rigorous analysis of energy vs yield trade-offs, Digital Twins for sustained Real-Time optimisation and monitoring of energy use and emissions, Energy Management Systems and web enabled dashboards, Co-Pilot and Cloud-based solutions
	TLV INTERNATIONAL, INC.	Steam System Optimization Program. (Reduce CO ₂ emissions, Safely, Reliability and Profitability) Phase 1 : Best Practice of Steam Trap Management : Optimize all condensate discharge locations Phase 2 : Best Practice of Steam System Management : Optimize all steam applications such as steam-using equipment Phase 3 : Steam System Balance : Optimize entire steam system balance.
Cogeneration	Mitsubishi Heavy Industries	<ol style="list-style-type: none"> 1. General Outline of Cogeneration (Introduction of Various Type of Cogeneration) 2. Industrial Cogeneration <ul style="list-style-type: none"> • Heat to Power Ratio • Typical Industrial Cogeneration • Combination with Renewable Energy 3. Recovery from Lower Heat Sources – ORC Application 4. SOFC Practical Application of 250kW and 1MW 5. ENERGY CLOUD® – Improving Overall Performance of Factory
CCUS	Nippon Steel Corporation	New technology of CCUS <ol style="list-style-type: none"> 1. Overview 2. Recent outstanding CCUS related technologies 3. Technologies promoted by Nippon Steel
Best Practice	ECCJ	<ul style="list-style-type: none"> • Energy Saving by Pinch Technology • Energy Saving by Utilization of LNG Cold Energy • Reduction of Steam Leakage from 100,000 Steam Traps • Energy Conservation by Additional Boiler Installation to Gas Turbine • Energy Conservation of Hydrogen Plant by Utilization of Petrochemical by-product Hydrogen etc.

Appendix 2. List of Participants from Japan

◆ ECCJ

Name	Company	Position	Department
Dr. Hirokazu Taniguchi	The Energy Conservation Center, Japan (ECCJ)	Managing Director	Energy Conservation Support Service Division
Mr. Yasushi Tanaka	The Energy Conservation Center, Japan (ECCJ)	Senior General Manager	International Collaboration Center, International Research & Communication Dept., International Cooperation Div
Mr. Suzuki Hidetoshi	Idemitsu Engineering	Director of Board	Assistant to Chief Executive Officer

◆ Partners

Name	Company	Position	Department
Mr. Arjun Balakrishnan	Yokogawa-KBC	Senior Consultant	Energy Services
Dr. Cheng Wang	Yokogawa Engineering Asia Pte Ltd	Business Development Manager - Consulting	Advanced Solutions Division
Dr. Toshihiro Wakabayashi	Toyo Engineering Corporation (TEC)	General Manager	Environment and Energy Management Development Department, Business Development Division
Mr. Guoxian “Alan” Hou	TLV International, inc.	Manager	Consulting Group of CES Center
Mr. Tetsuya Mita	TLV International, inc.	General Manager	CES Center
Mr. Masao Nishimura	TLV International, inc.	Director	TLV PTE LTD
		President	TLV Inc, Korea
Dr. Koji Saito	Nippon Steel Corporation	Executive Adviser	Research & Development
Mr. Scott Badger	KBR Consulting - APAC	Business Development Director	Downstream - APAC
Dr. Juan L. Gomez-Prado	KBR Consulting - APAC	Lead Consultant	
Dr. Ng Kian Soon	KBR Consulting - APAC	Energy & Process Optimization Simulation Specialist	
Mr. Masao Ishikawa	Mitsubishi Heavy Industries, Ltd. (MHI)	Senior Corporate Adviser	Power & Energy Solutions Power Systems
Mr. Noriharu Shida	Mitsubishi Heavy Industries, Ltd. (MHI)	General Manager	Business Development, Jakarta Liaison Office