



MEMIONTEC
MEMBRANE IONEXCHANGE TECHNOLOGY

CORPORATE PRESENTATION

JANUARY 2022



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BUSINESS OVERVIEW

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MEMIONTEC
Membrane Ionexchange Technology



MR TAY KIAT SENG
Executive Chairman and CEO

Mr Tay co-founded Memiontec in 1992 with Managing Director Ms Soelistyo Dewi Soegiharto. He has over 31 years of experience in the water treatment industry. Prior to co-founding Memiontec, Mr Tay spent two years as a senior manager at water treatment company, Watermac Engineering Pte Ltd. He started his career with Memtec Ltd, an Australian water treatment company, where he worked as a design engineer, focusing on the MEMCOR membrane product line for two years. Mr Tay graduated from the University of Strathclyde, United Kingdom, with a **Bachelor of Engineering in Mechanical Engineering** in 1988 and is a member of Singapore Institute of Directors.



MR LOW KIAN BENG
Executive Director

Mr Low is our Executive Director and he is involved in the decision making on the Group's operational and financial matters, together with rest of the Board. From 2010/11 to 2017, Mr Low was the Group Deputy CEO and Executive Director of ecoWise Holdings Limited, a Singapore SGX-listed environmental company. Prior to that from 2000 to 2006, he was the Managing Director and CEO of SP Corporation, a SGX-listed industrial services company, and from 2006 to 2010, he was the CEO of Envipure Pte Ltd. Mr Low obtained **his BSc Degree (with honours) in Engineering** from Imperial College of Science and Technology, London (UK) in 1980 and a Master of Business Administration Degree (with distinction) from Oklahoma City University, Texas (USA) in 1989. Since May 2012, Mr Low has served as a non-executive council member of the Sustainable Energy Association of Singapore.



MR LEE QUANG LOONG
Chief Financial Officer

Mr Lee is our Chief Financial Officer and he joined Memiontec in August 2021. He is primarily responsible for the overall financial management of the Group including financial reporting, corporate finance, treasury, risk management and government frameworks. Mr Lee has more than 20 years of senior management experience, covering various functions in the field of finance, tax and audit, in specialist foundation engineering and construction, real estate, manufacturing and coal mining operations across the Asia Pacific Region. Mr Lee obtained his professional accountancy qualification from The Association of Chartered Certified Accountants (ACCA) in 1997 and is currently a member of the Institute of Singapore Chartered Accountant.



MS SOELISTYO DEWI SOEGIHARTO
Managing Director

Ms Dewi co-founded Memiontec in 1992 with Executive Chairman and CEO Mr Tay Kiat Seng. She has more than 28 years of experience in the water treatment business. Prior to co-founding Memiontec, she worked as a sales and project engineer for a year at Scotts center Pte. Ltd., a water treatment solutions company in Singapore. She was instrumental in developing the market and foundation of the Group's Indonesian subsidiary. Ms Dewi graduated from the University of New South Wales, Australia, with a **Bachelor of Engineering in Chemical Engineering** in 1991 and is a member of Singapore Institute of Directors.



MR LIM WEI KUAN
Director, Memiontec Pte Ltd

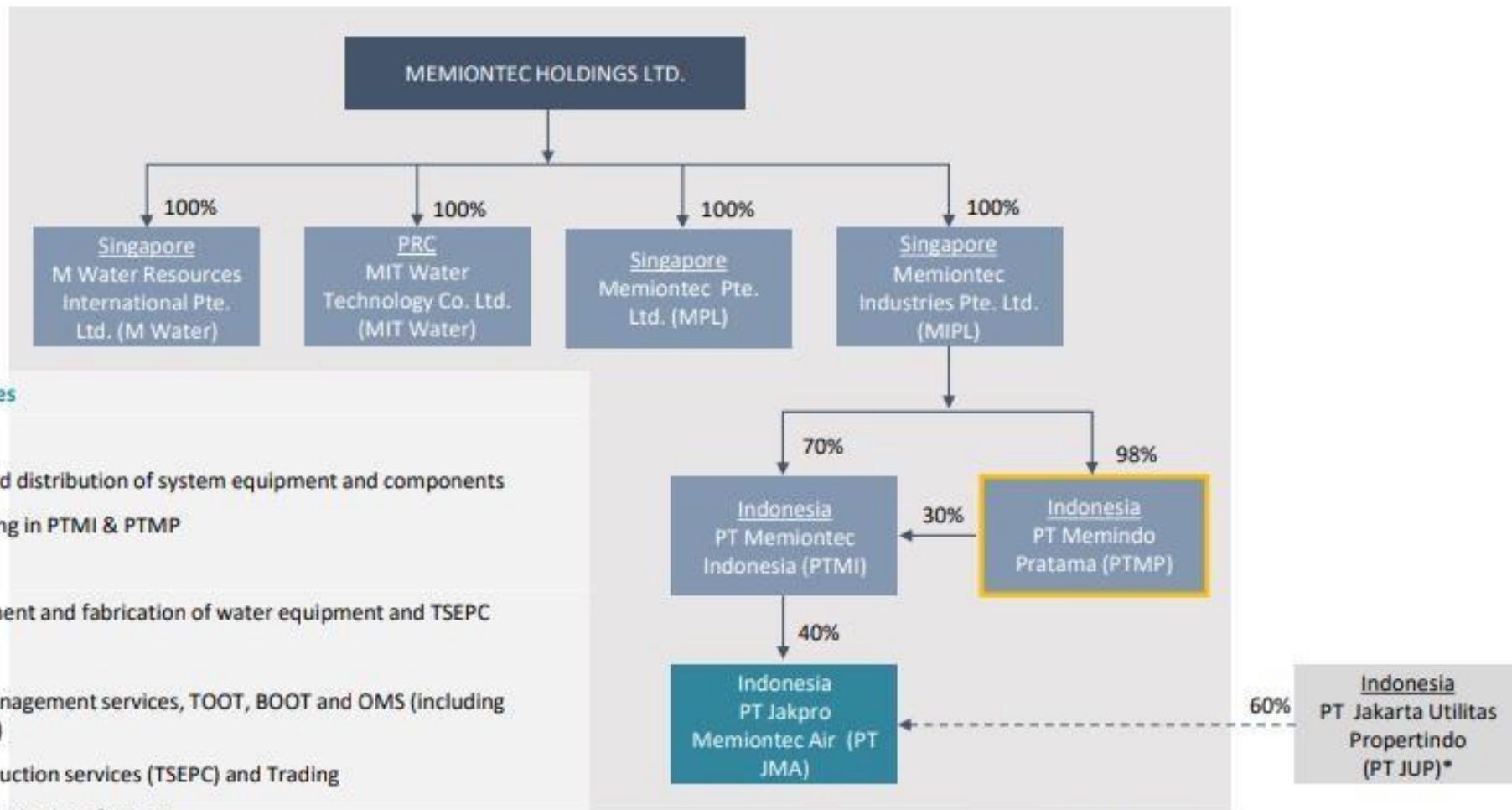
Mr Lim has been with the Group since his university graduation in 2006 when he joined as a Project & Application Engineer. He was promoted to General Manager of MPL in 2014 and in December 2019, MrLim was appointed to his current role as Director of MPL. As Director of MPL, Mr Lim is responsible for the overall design, engineering and overseeing project implementation, service and maintenance works in Singapore. He is also accountable to the Managing Director for the delivery of revenue, budget, cost control and overall performance of our subsidiary, MPL, in Singapore. Mr Lim obtained a **Bachelor of Engineering in Chemical Engineering** from the University of Malaya in 2006.



MS IRAWATI TAN
Director, PT Memiontec Indonesia

Ms Irawati first joined the Group in 2009. She assists our Executive Chairman and CEO in managing the overall business and operations in Indonesia and is responsible for sales and marketing, project execution, procurement, budget and cost control of the Group's Indonesia business units. Prior to Memiontec, she started her career at the Astel Group after graduation, where she held various roles, including budget and finance controller. Before Ms Irawati left the Astel Group to join the Group in 2009, she last held the position of procurement manager. Ms Irawati graduated from Bina Nusantara University with a Bachelor of Accounting in 2004.

GROUP STRUCTURE



Singapore

MPL

M Water

MIPL

China

MIT Water

Indonesia

PTMI

PTMP

PT JMA

Business and Services

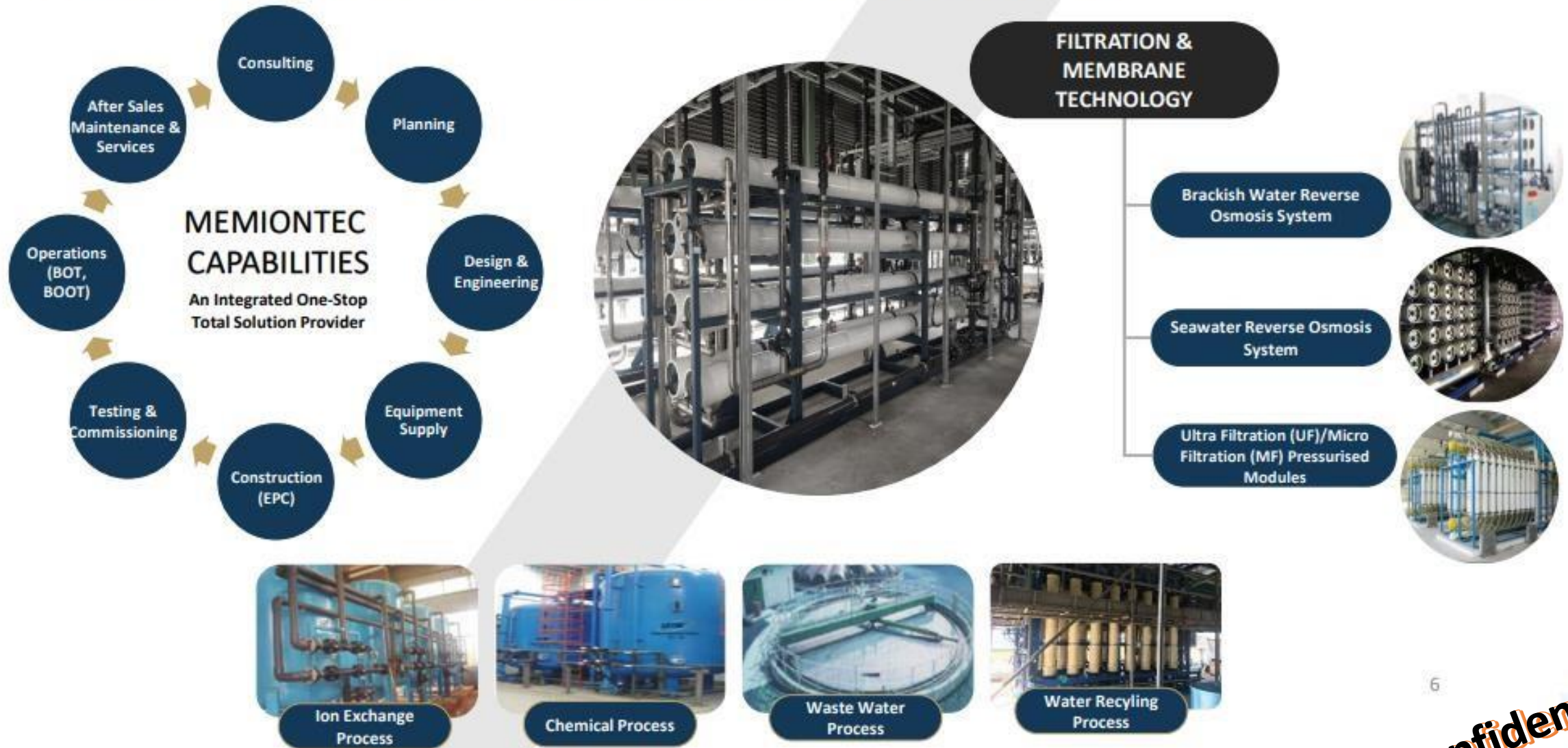
- TSEPC and OMS
- Customisation and distribution of system equipment and components
- Investment holding in PTMI & PTMP
- Design, procurement and fabrication of water equipment and TSEPC
- TSEPC, Water management services, TOOT, BOOT and OMS (including component sales)
- Integrated construction services (TSEPC) and Trading
- Owner of BOOT and sales of water

Our Company has established effective control over 98.0% of PTMP; and a further 29.4% of PTMI through PTMP's 30.0% shareholding interest in PTMI, through MIPL. Accordingly, PTMI and PTMP are considered a 99.4% subsidiary and 98.0% subsidiary of our Company respectively.

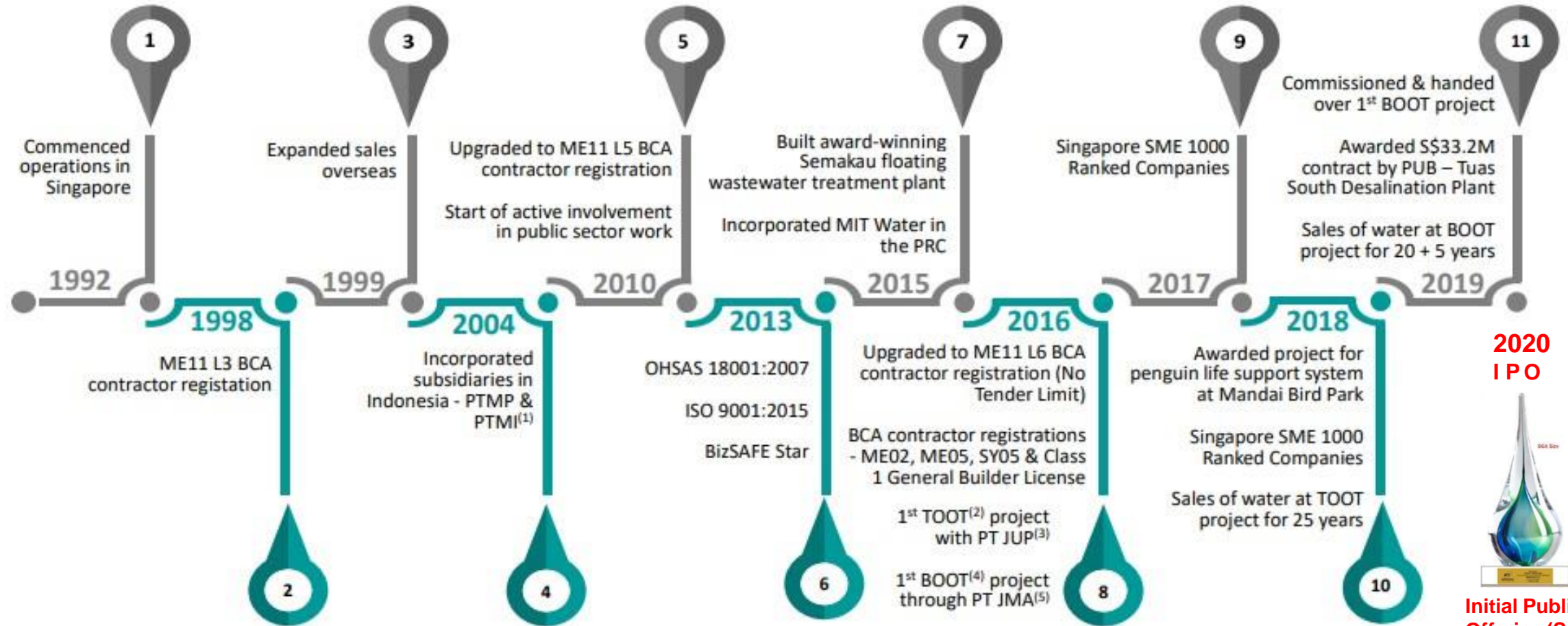
* PT Jakarta Utilitas Propertindo ("PT JUP") is a wholly-owned subsidiary of PT Jakarta Propertindo, an enterprise which is ultimately owned by the state government, Daerah Khusus Ibukota Jakarta

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A ONE-STOP INTEGRATED WATER TECHNOLOGY TOTAL SOLUTION PROVIDER - PROCESS, DESIGN & ENGINEERING DRIVEN



OPERATING TRACK RECORD OF OVER 20 YEARS



(1) PTMP: PT Memindo Pratama; PTMI: PT Memiontec Indonesia

(2) TOOT: Transfer-Own-Operate-Transfer

(3) PT Jakarta Utilitas Propertindo ("PT JUP") is a wholly-owned subsidiary of PT Jakarta Propertindo, an enterprise which is ultimately owned by the state government, Daerah Khusus Ibukota Jakarta

(4) BOOT: Build-Own-Operate-Transfer

(5) PT Jakpro Memiontec Air ("PT JMA") is a joint venture entity. The remaining 60.0% of PT JMA is owned by PT JUP, an independent third party to the Group



Initial Public
Offering (SGX)

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DIFFERENTIATED BUSINESS MODEL FROM EXISTING KEY WATER INDUSTRY PLAYERS

TOTAL SOLUTIONS WITH ENGINEERING, PROCUREMENT & CONSTRUCTION SERVICES (TSEPC)

Customised processes and treatment solutions:

- Water
- Wastewater
- Water recycling
- Sea water & desalination

SALES & DISTRIBUTION OF SYSTEMS & EQUIPMENT

- Modular and customised water systems
- Water treatment equipment & components
- Blended/specialty chemicals
- Distributorship for membranes & media



PROJECTS WITH RECURRING INCOME

- Jointly owned BOOT and TOOT projects with a water supply agreement for a concessionary period
- Develop, Design, Build, Operate and Maintain BOOT and TOOT projects

SALES OF WATER

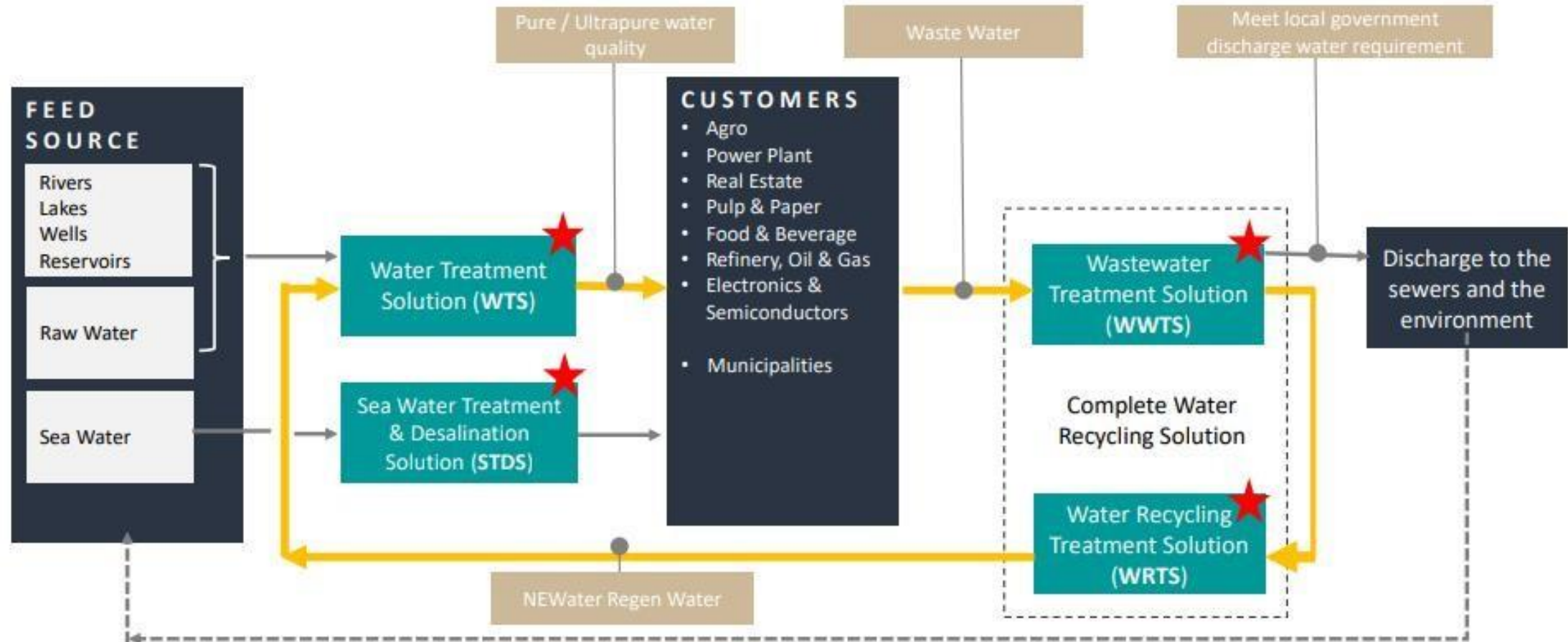
- Sell treated water

OPERATION, MAINTENANCE & SERVICE (OMS) OF WATER & WASTEWATER TREATMENT PLANTS

- Ongoing services for water treatment plants – owned and built and PUB works
- Provision of technical support and consultation

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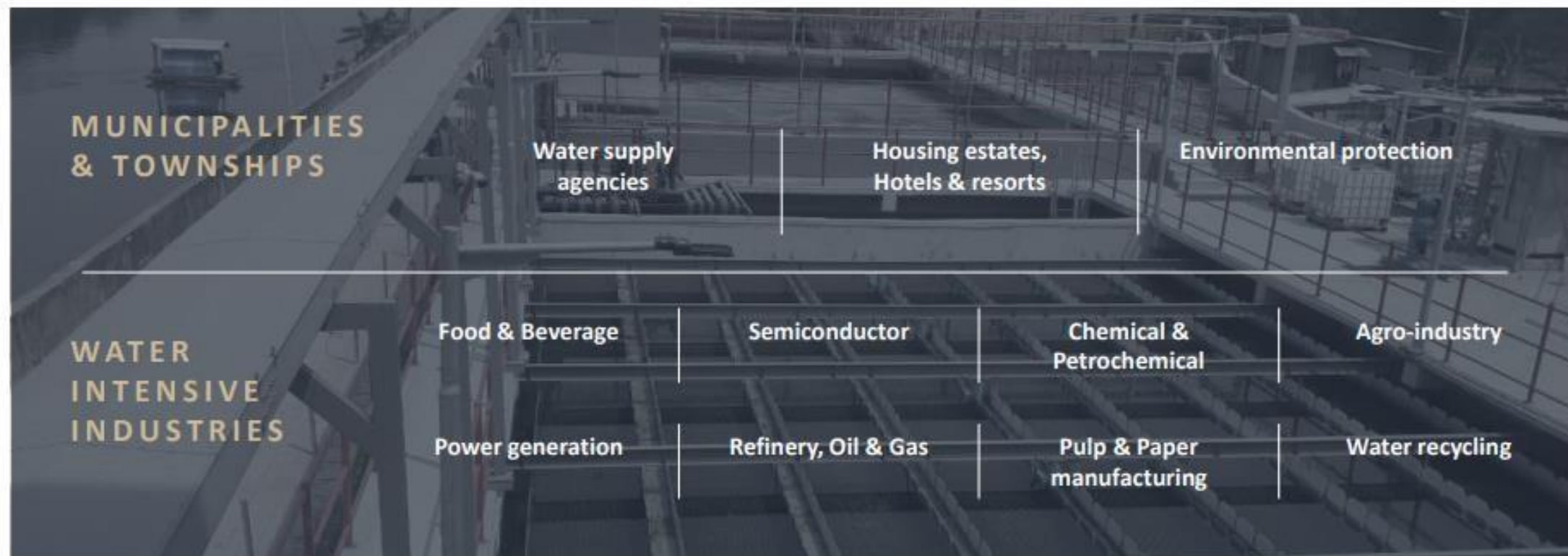
INNOVATIVE TECHNOLOGY PRODUCING ENVIRONMENTALLY GREEN & NEAR ZERO DISCHARGE SOLUTION



- Core inhouse capabilities & cost effective technological solution
- Customised solutions for specific requirements of customers, can offer as Lease to Own or BOOT

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PROCESS & DESIGN CAPABILITIES ACROSS MUNICIPALS & DIVERSE INDUSTRIES



A DIVERSE & ESTABLISHED CUSTOMER BASE

Strong working relationships with customers that include:

- PUB - since 2014
- Sinarmas Group
- STATS ChipPAC
- PT JMA
- Petrochemical Corporation of Singapore (Private) Limited

Customers over the past 20 years:

SINGAPORE

Public Sector



Microelectronics, Manufacturing & Food



Others



INDONESIA

Public Sector



Power, Refinery, Palm oil & Food Industries



Others



CHINA & GLOBAL

Microelectronics, Manufacturing, Food & Other Industries



QUALITY CERTIFICATIONS, MATERIAL LICENCES & AWARDS

High Safety Standards

- ISO 45001:2018
- bizSAFE Star
- OHSAS 18001:2007

Quality Assurance

- ISO 9001: 2018

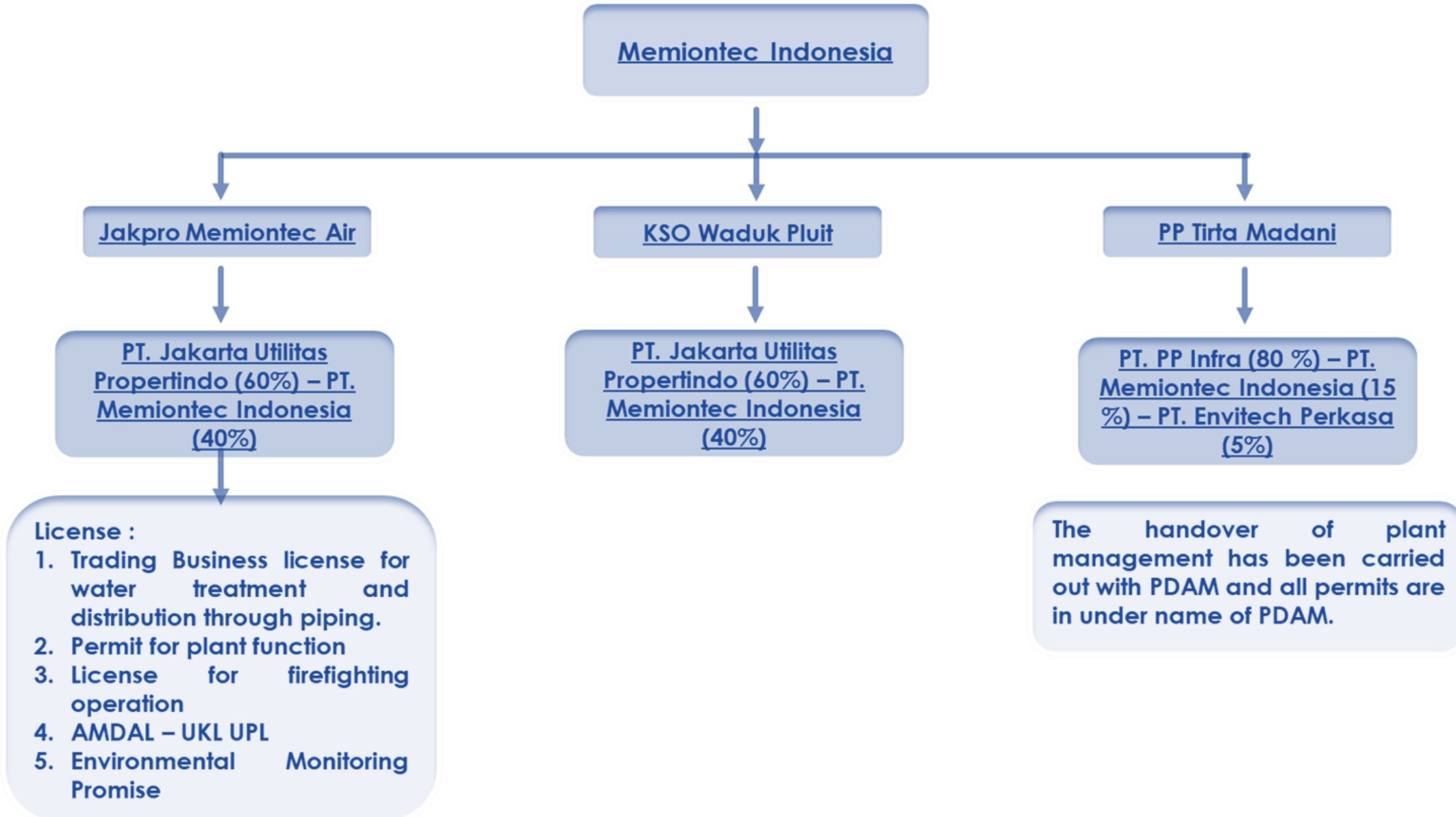
Material Licences

- BCA - ME02, ME05, ME11 and SY05 (Singapore)
- BCA - General Builder Class 1 (Singapore)
- Class B2 and B1 Class construction service licence (Indonesia)



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Memiontec Indonesia's BOOT Joint Venture Structure



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Memiontec Indonesia's Project Joint Venture Structure

Memiontec Indonesia

PP – Memiontec KSO
Project WWTP B 1
Makassar

PT. PP (80 %) – PT.
Memiontec Indonesia
(20%)

Memiontec Indonesia as EPC for
Mechanical – Electrical work and
Operation Maintenance.

Abipraya –
Memiontec KSO
Project WWTP B 1
Jambi

PT. Brantas Abipraya (51
%) – PT. Memiontec
Indonesia (49%)

Job Split system : Memiontec
Indonesia as EPC for Mechanical
– Electrical work and Operation
Maintenance.

PT. Memiontec
Indonesia – BSB
Konstruksi KSO
Project SPAM
Mandalika

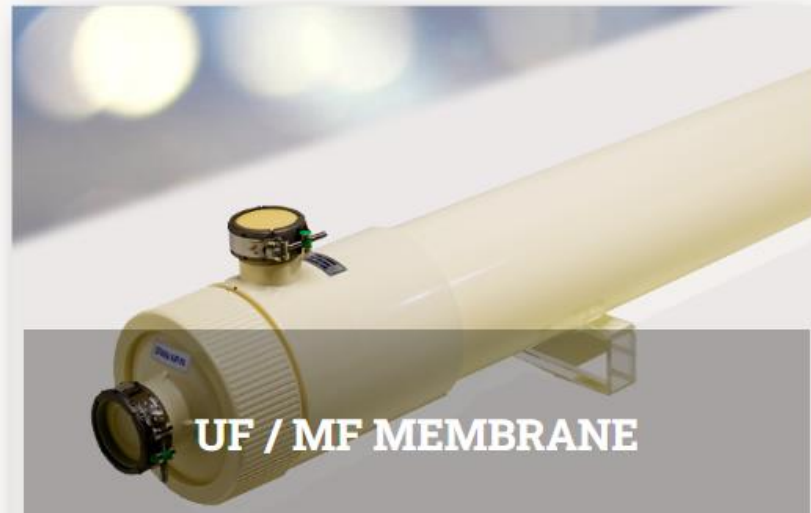
PT. Memiontec Indonesia
(51 %) – BSB Konstruksi
(49%)

The work handle together by KSO

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REVERSE OSMOSIS MEMBRANE



UF / MF MEMBRANE



RESIN



MEDIA



CARTRIDGE FILTER



HOUSING



STAINLESS STEEL NOZZLE



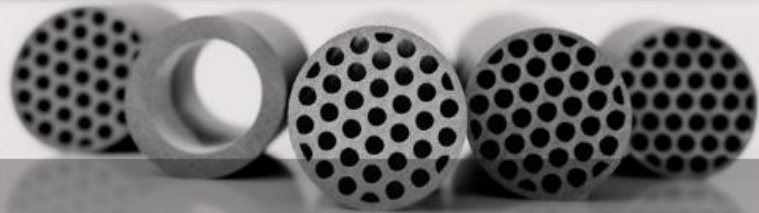
NOZZLE/DISTRIBUTORS



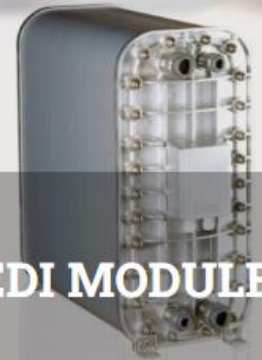
TRANSFER PUMP



DIFFUSER



CERAMIC MEMBRANE



EDI MODULE



WTP & WWTP CHEMICAL



INSTRUMENTS



DOSING PUMP



UV / TOC EQUIPMENT



DAF



FILTER PRESS





Ion Exchange Process

Water Recycling Treatment Solutions



Industrial Waste Water Recycling Process

Wastewater Treatment Solutions, Water Recycling Treatment Solutions



Municipalities & Townships Waste Water Recycling Process

Wastewater Treatment Solutions, Water Recycling Treatment Solutions





Electro Chlorination

Water Recycling Treatment Solutions, Water Treatment Solutions



Electrodeionization

Water Recycling Treatment Solutions, Water Treatment Solutions



Demineraliser Series

Water Recycling Treatment Solutions, Water Treatment Solutions

KEY PROJECT STATUS - TSEPC

CONSTRUCTION WASTE WATER TREATMENT PLANT - PALEMBANG PALEMBANG SEWERAGE TREATMENT – CAP ; 20,000MPD

WEEKLY PROGRESS : 95,8%

Performance Test Phase



KEY PROJECT STATUS - TSEPC

CONSTRUCTION WASTE WATER TREATMENT PLANT - JAMBI JAMBI WWTP B1 – CAP ; 7600MPD



WEEKLY PROGRESS : 85,4%

Preparation for T&C



KEY PROJECT STATUS - TSEPC

CONSTRUCTION WASTE WATER TREATMENT PLANT - MAKASAR MAKASAR WWTP B1 – CAP ; 16000MPD



Preparation for T&C



KEY PROJECT STATUS – RUOT

CONSTRUCTION WATER TREATMENT PLANT PEKAN BARU PEKAN BARU RUOT SPAM PKU – CAP ; 750 LPS



WEEKLY PROGRESS : 97,2%

Preparation for Handover

During Rehabilitation works
kept selling water to PDAM with cap.
up to **280 Lps**

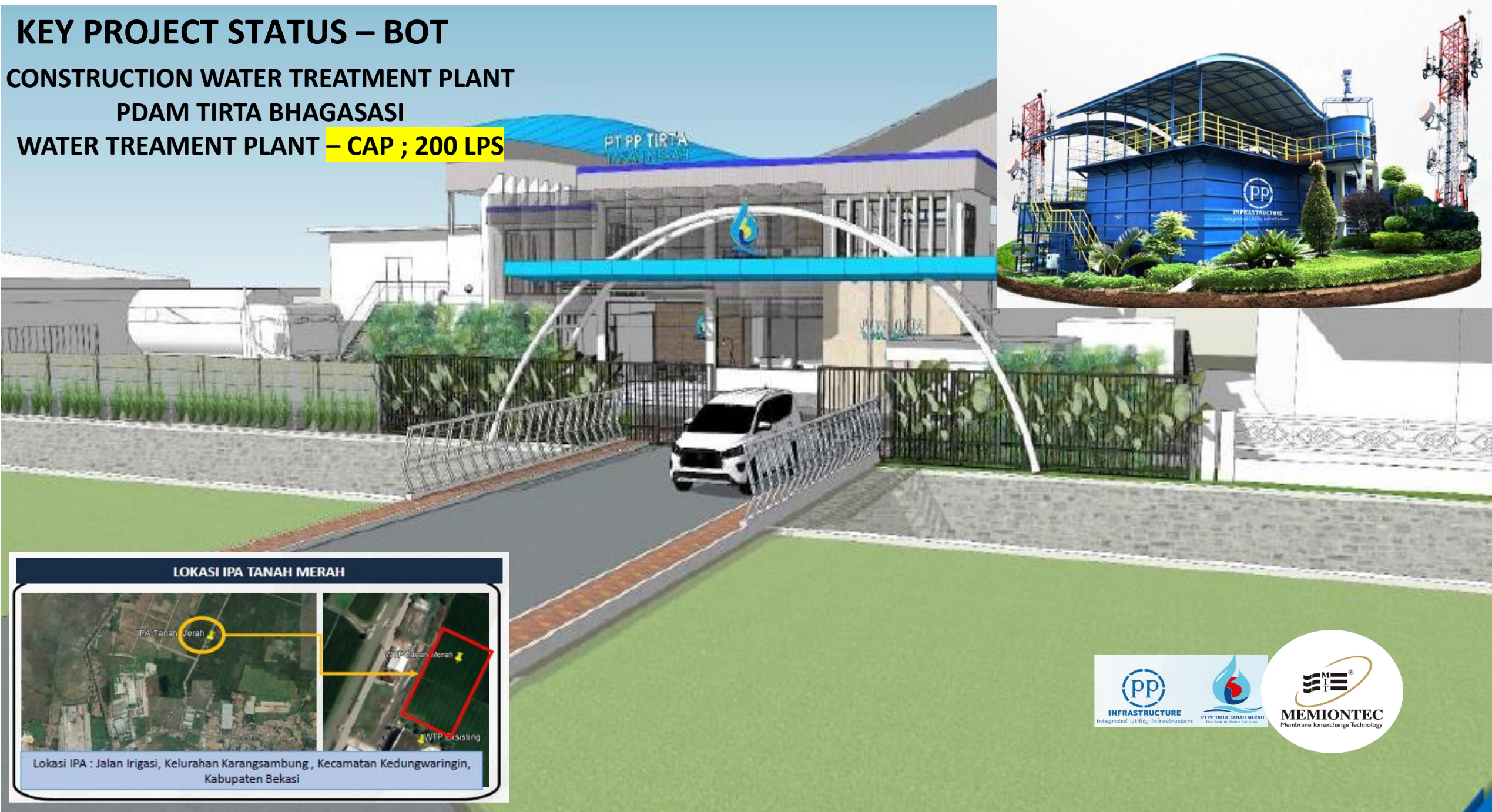


KEY PROJECT STATUS – BOT

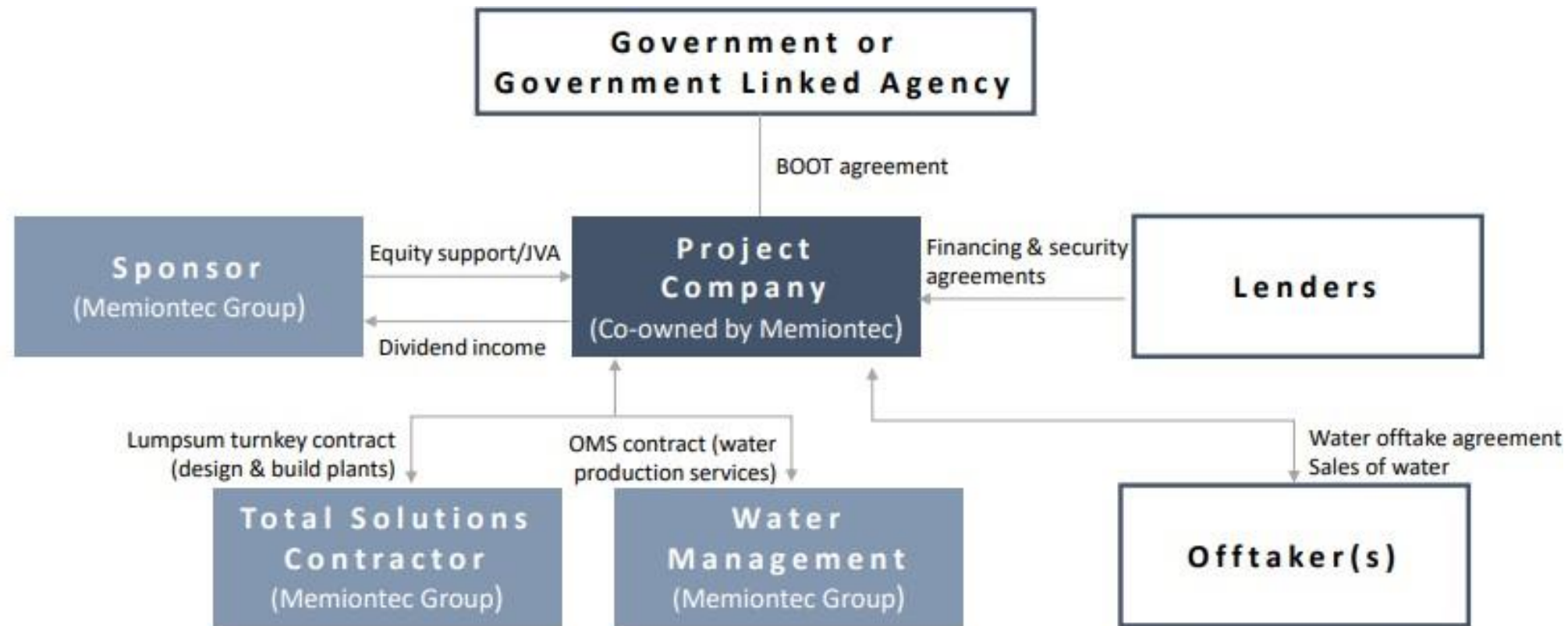
CONSTRUCTION WATER TREATMENT PLANT

PDAM TIRTA BHAGASASI

WATER TREATMENT PLANT – CAP ; 200 LPS



INVEST IN MORE TOOT & BOOT PROJECTS



PPP INFRASTRUCTURE PROJECTS: ALLOW VALUE CREATION VIA BOOT BUSINESS MODEL FOR SUSTAINABLE INCOMES

- **Design and Develop** water or wastewater treatment plants; **Own and Operate** assets through our subsidiaries
- **In partnership** with big corporations and municipal agencies for the entire concession period of long tenure
- **Sustainable income** through strategic role in key elements of the BOOT model

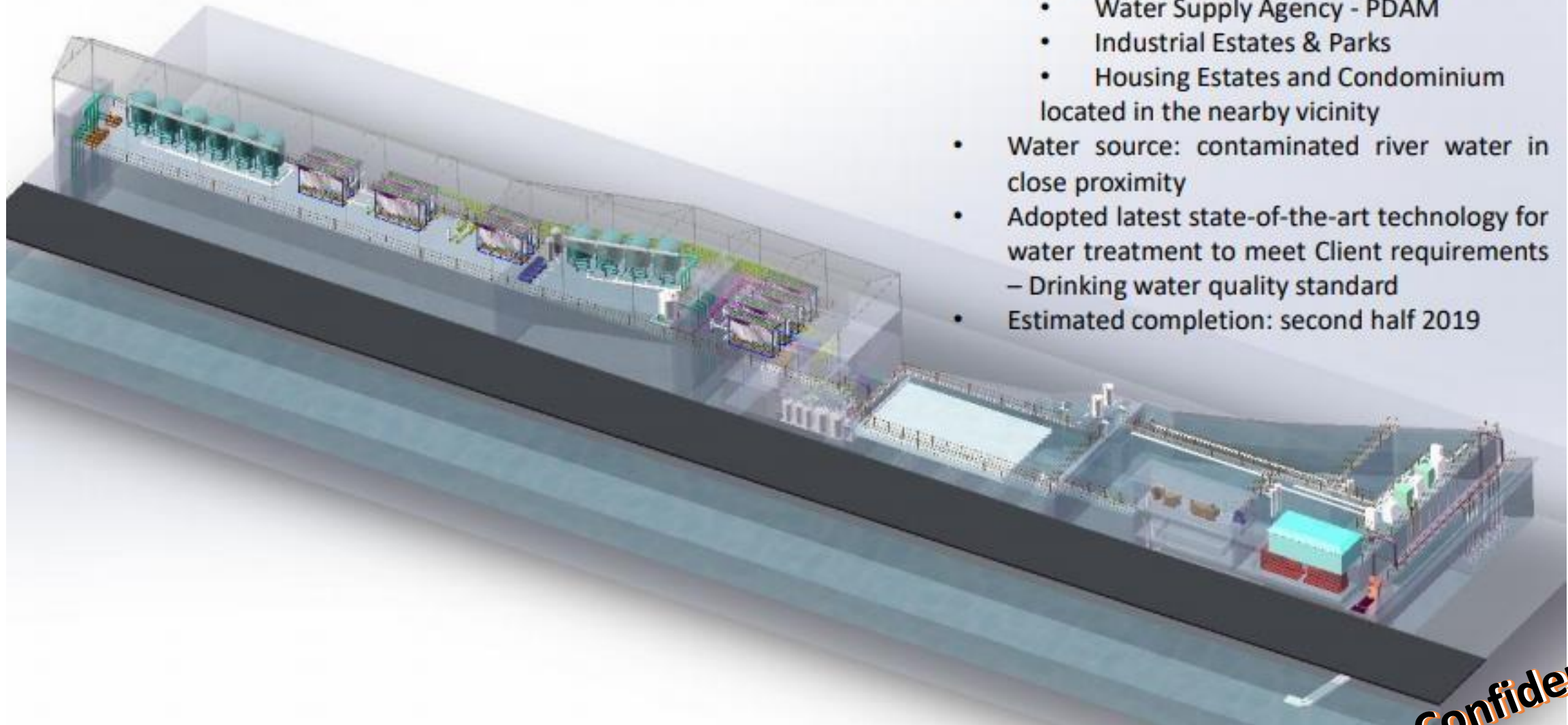
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OUR BOOT PROJECT, JAKARTA INDONESIA (BUILD-OWN-OPERATE-TRANSFER)



- Location: Hutan Kota, Jakarta
 - Construction completed: August 2019
 - Our Interest: 40% (PT JUP: 60%)
 - Concessionary period: 20 + 5 years from 2019
 - Water selling price: Subject to adjustment every 2 years
 - Sales of water: Since December 2019
-
- Capacity: 500 litres/second (43,200 m³/d)
 - Serves customers located in the nearby vicinity via Water Supply Agency, PDAM
 - Water source: Contaminated river water located in close proximity

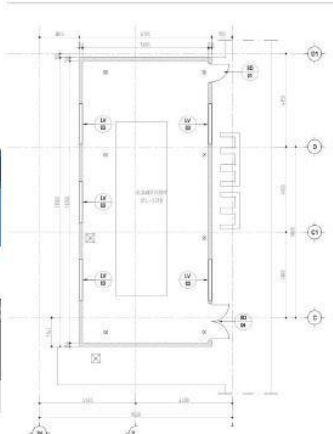
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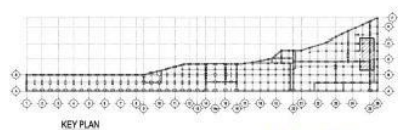
- Capacity: 500L/s
- Such plant can serve:
 - Water Supply Agency - PDAM
 - Industrial Estates & Parks
 - Housing Estates and Condominium located in the nearby vicinity
- Water source: contaminated river water in close proximity
- Adopted latest state-of-the-art technology for water treatment to meet Client requirements – Drinking water quality standard
- Estimated completion: second half 2019



EXTERIOR



BLOWER ROOM

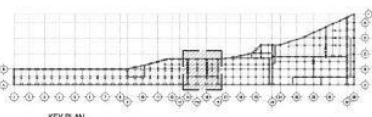


SCALE : NTS

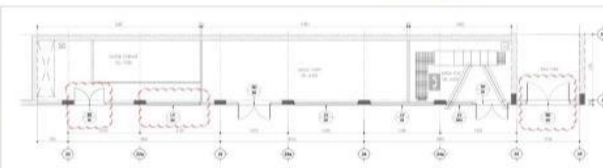
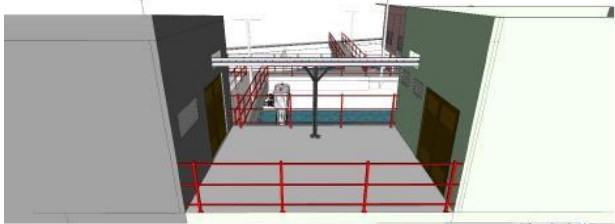
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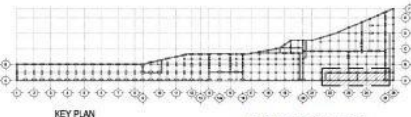
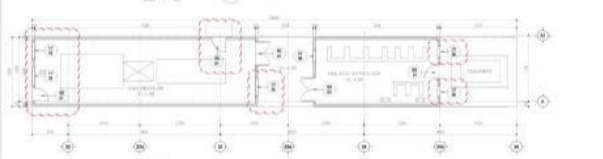
SECTION PLAN
OFFICE WTP



SCALE : NTS



DEWATERING/
GENSET



SCALE : NTS

4

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PHOTO PROJECT REFERENCE

PT JAKPRO MEMIONTEC AIR

Capacity : 500 LPS

System : Auto Screen + MBBR + Aeration + Clarifier + UF + ACF

Location : Jakarta



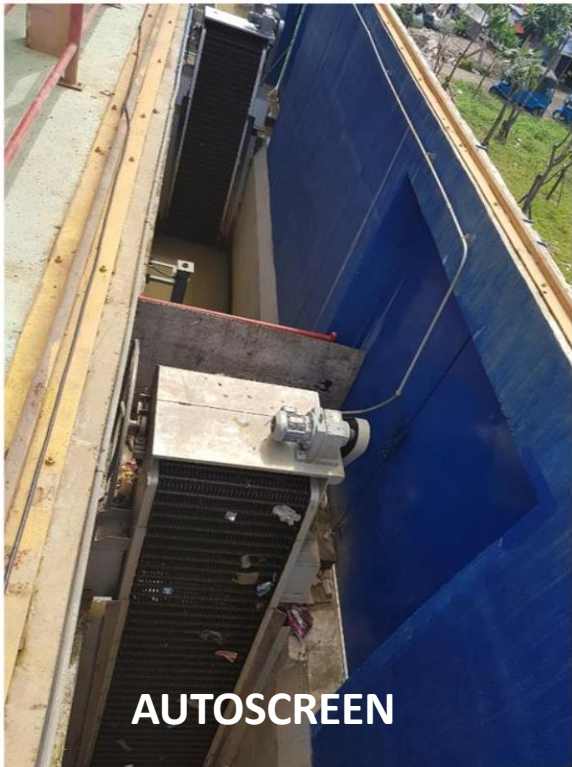
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PT JAKPRO MEMIONTEC AIR

Cap : 500 LPS

System : Auto Screen + MBBR + Aeration + Clarifier + UF + ACF

Location : Jakarta



AUTOSCREEN



MBBR



CHEMICALS REACTION TANK



CLARIFIER

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PT JAKPRO MEMIONTEC AIR

Capacity : 500 LPS

System : Auto Screen + MBBR + Aeration + Clarifier + UF + ACF

Location : Jakarta



UF - ULTRAFILTRASI



UF - ULTRAFILTRASI



MULTI MEDIA FILTER

Confidential



CLARIFIER

GRAVITY
SAND
FILTER

STORAGE TANK

Project : Taman Imam Bonjol
Lippo KARAWACI

Capacity : 50 LPS

System : Intake System + Piping distribution
(3km) + Clarifier + Gravity Sand Filter

Location : Tangerang



LIPPO GROUP

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**Project : Energi Mas Sejahtera
Sinarmas Group**

Cap : 600 LPS

System : Pre-Treatment + SWRO + Mixbed

Location : Dumai (Sumatra)



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Project : PT HINDOLI – Cargill Group

Cap : 10 m³/hour x 3 plant

System : Clarifier + Multi Media Filter + Storage Tank

Location : Jambi - Sumatra



STORAGE TANK



CLARIFIER



MULTI MEDIA FILTER

Cargill[®]
PT. Hindoli

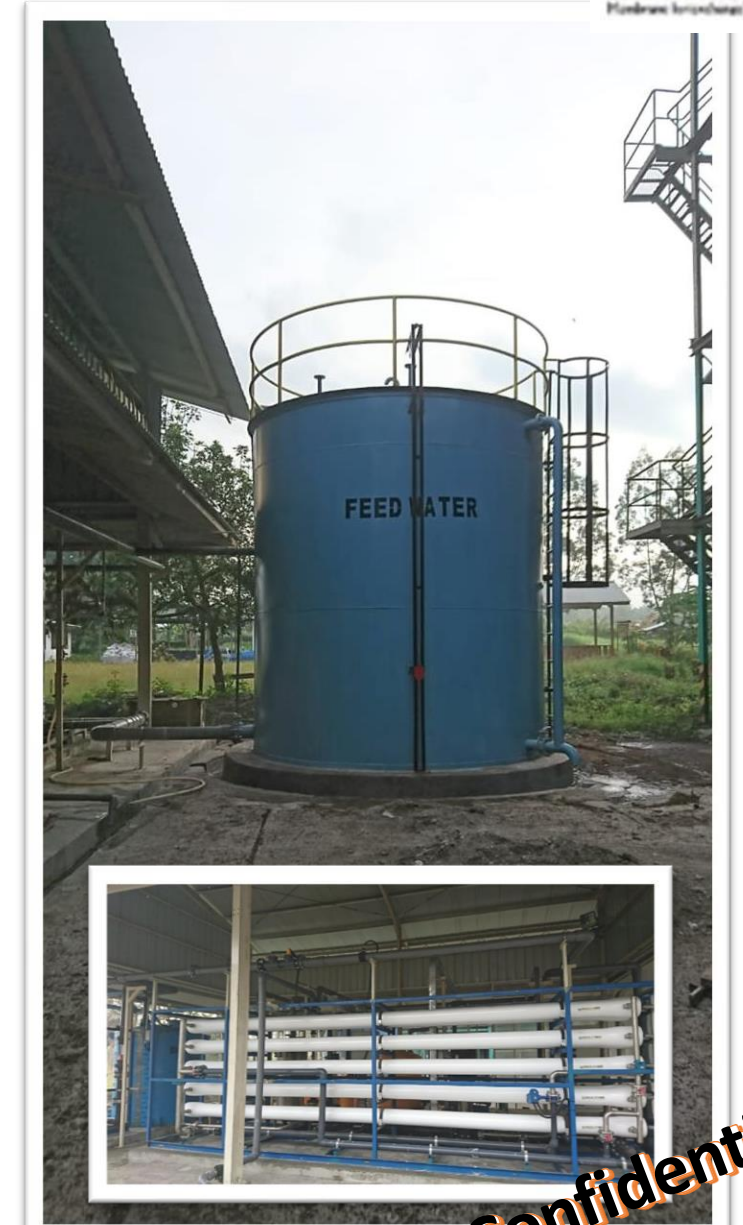
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Project : PT SINAR KENCANA INTI PERKASA – SINARMAS GROUP

Cap : 45 m³/Hours

System : Reverse Osmosis System

Location : Kasuari Mill - Papua



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Project : LOTTE TIRED

Cap : 2X50 m³/Hours

System : Reverse Osmosis System

Location : Cikarang



LOTTE
HOTELS & RESORTS



RO SYSTEM FOR BUILDING WATER UTILITY

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Project : PT AGRIJAYA PRIMA SUKSES (SLAUGHTERHOUSE)

Cap : WWTP 250 m³/Day

System : MBBR System (MixBed Bio Reactor)

Location : Subang



Confidential

Project : PT INDOLAKTO

Cap : WWTP 550 m³/Day

System : BIOLOGICAL
EXTENDED AERATION System

Location : Pandaan – East Java

PT. INDOLAKTO



Confidential

Project : POWER PLANT – TANJUNG SELOR

Cap : Pure Water 70LPS

System : Reverse Osmosis + Mix Bed

Location : North of Kalimantan



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Project : WTP Mookervart - Pesakih

WATER REUSE CLEAN WATER SUPPLY

Cap : Pure Water 10 LPS

System : MBBR system +

Ultrafiltration + Reverse Osmosis

Owner : PAM Jaya

Location : Daan Mogot - West Jakarta



Project : SPAM KSPN Mandalika

Cap : Drinking Water Cap. 50 Lps

System : High Rate Clarifier System

**Owner : Minister of Public Works &
Human Settlement**

**Location : Mandalika – West Nusa
Tenggara**



OUR TOOT PROJECT, JAKARTA INDONESIA (TRANSFER-OWN-OPERATE-TRANSFER)

Capacity 2500m³/day



- Location: Waduk Pluit, Jakarta
 - Upgrading completed: 2018
 - Our Interest: 40% (PT JUP: 60%)
 - Capacity: up to 2,500 m³/day
-
- Concession period: 25 yrs from 2018
 - Sales of water: Since November 2018

Confidential
Confidential

Published Project References



Confidential

TRACK RECORDS @ SINGAPORE

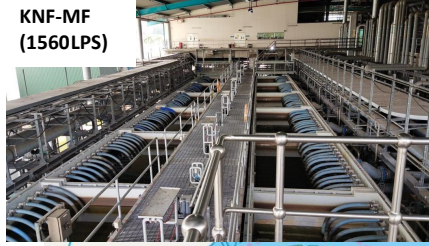
MEMIONTEC'S EXTENSIVE WORKS WITH PUB



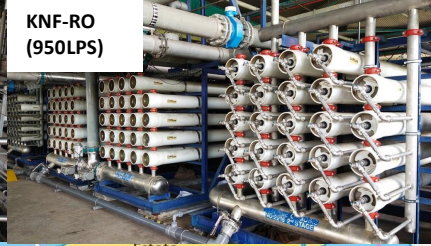
MEMIONTEC
Membrane Ionexchange Technology

KNF – Kranji NEWater Factory
 BWW – Bedok Water Work
 CCKWW – Choa Chu Kang Water Work
 WLWW – Woodleigh Water Work
 TSDP – Tuas South Desalination Plant
 CWRP – Changi Water Reclamation Plant
 JWRP – Jurong Water Reclamation Plant
 JISTP – Jurong Island Sewage Treatment Plant
 SL – Semakau Landfill
 DTSS2 – Deep Tunnel Sewerage System 2

KNF-MF
(1560LPS)



KNF-RO
(950LPS)



BWW-CCT
(1600LPS)



BWW-ECS
(1600LPS)



TSDP – UF
(8800LPS)



JWRP – MBR
(787 LPS)



WLWW-Post Treatment
(2300LPS)



CWRP-HRC
(2300LPS)



WRP – Water Reclamation Plant



WSP – Water Supply Plant



On-Going Project

TSDP – UF SYSTEM

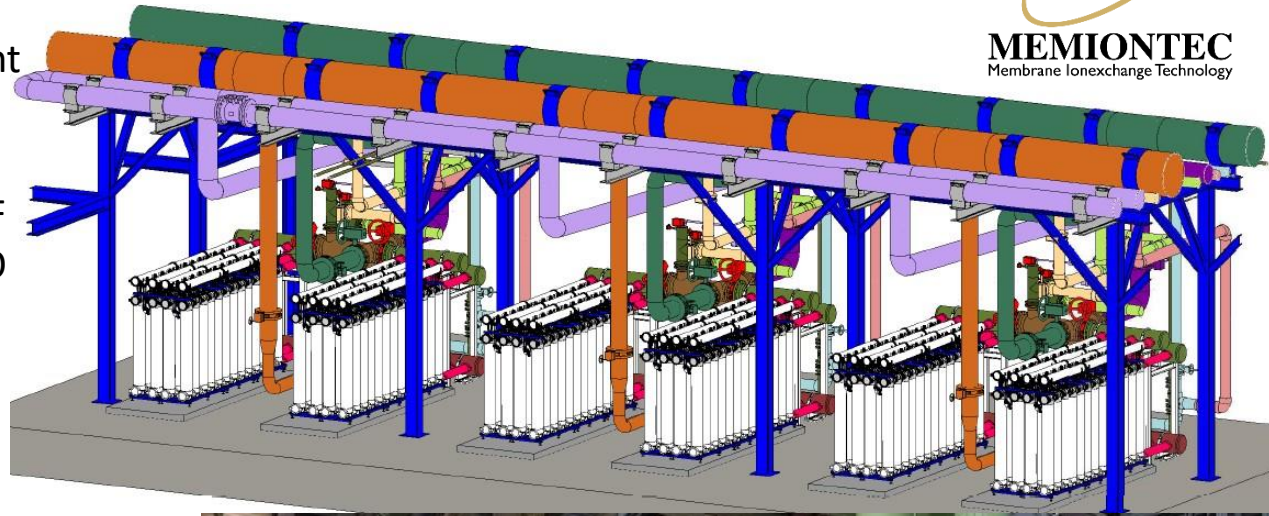
Title: Membranes Filtration System (MFS) at Tuas South Desalination Plant

Completion: 2021

Capacity: 760MLD (8800 LPS) – UF, 318MLD (3680LPS) – RO product

Technology: Screen – Intake Pump – Disc Filter – Ultrafiltration (UF) – UF filtrate tank – 1st Pass SWRO HP Pump – 1st Pass SWRO – 2nd Pass BWRO HP Pump – 2nd Pass BWRO – Mineralisation – Chlorination – RO product Tank – Distribution Pump

The biggest Desalination Plant in Asia



NEA – FLOATING WWTP, SEMAKAU LANDFILL

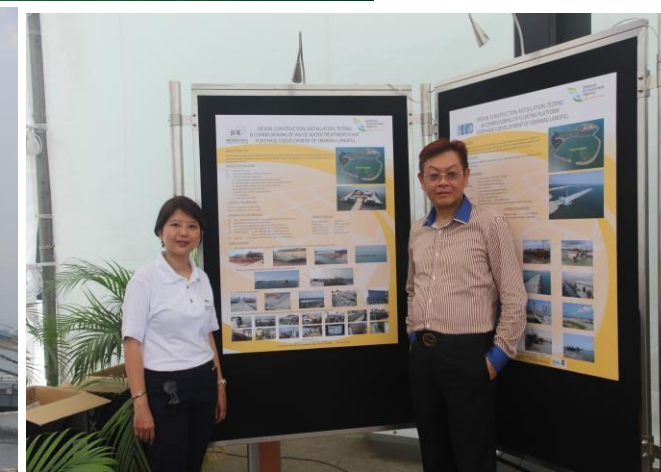
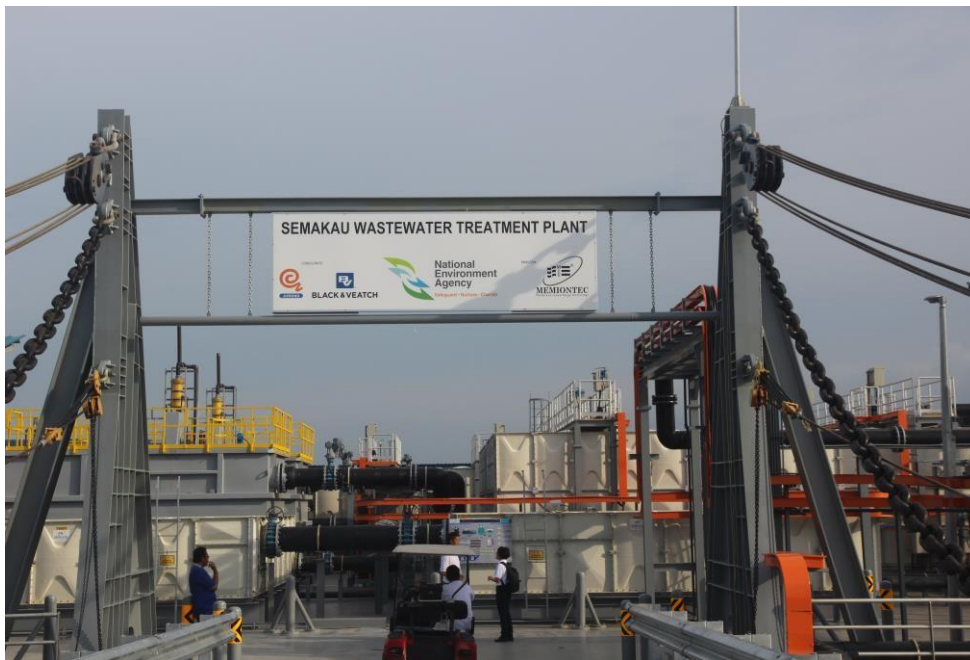
Title: Design & Build Floating WWTP at Semakau Landfill

Completion: 2015

Capacity: 18MLD (208LPS)

Technology: Intake Pump – Chemical & Physical Treatment– High Rate Contact Clarifier – Flocculation Tank – Disc Filter – Discharge Pump including Water Maker (SWRO) and Power Generation System.

- **This is a green and energy efficient system, there are only 2 sets of intake pumps and the treated water discharge pumps for the entire plant.**
- **Obtained International Engineering Award 2019 and IES-SG50 (Institution of Engineers Singapore) 2016.**



JWRP – MBR SYSTEM

Title: Membrane Bioreactor (MBR) System at Jurong Water Reclamation Plant

Completion: 2021

Capacity: 68MLD (787LPS)

Technology: Anoxic (denitrification) – Anaerobic – Oxic (Nitrification) –
MBR(Membrane Bioreactor) including Return Activated Sludge (RAS) & Waste
Activated Sludge (WAS)

Industrial Waste Water recycling



KNF –MF & RO SYSTEM

Title: Microfiltration (MF) & Reverse Osmosis (RO) System at Kranji NEWater Factory

Completion: 2020 & Mid 2023

Capacity: MF - 135MLD (1560 LPS), RO - 82MLD (950LPS)

Technology: Secondary Treated Influent – MF Feed Pump - Microfiltration (MF) – RO HP Pump – Reverse Osmosis (RO) – UV – Chlorination – Product Tank – Distribution Pump



CWRP – WET WEATHER FACILITIES

Title: D&B Wet Weather Facilities at Changi Water Reclamation Plant

Completion: 2019

Capacity: 200MLD (2300 LPS)

Technology: Screening System - Rapid Mixing Tank – High Rate Clarifier –
Sludge Return Microsand Ballast System – Sludge Thickening System –
Chemical Dosing System



BWW –ECS SYSTEM & CCT TANK

Title: Electrochlorination (ECS) System, Chlorine Contact Tank (CCT) & Re-lift Pumping Station at Bedok Water Work

Completion: 2017 & 2019

Capacity: 30MGD (1600 LPS)

Technology: Screening System – Intake Pumping Station – Flocculation & Coagulation – Clarification System – Rapid Sand Filter – Chlorine Contact Tank – Distribution Pumping Station including Chemical Dosing and Electrochlorination



WLWW – POST TREATMENT SYSTEM

Title: Post Treatment System - Sodium Hypochlorite and Ammonium Sulphate Dosing System at Woodleigh Water Work

Completion: 2019

Capacity: 200MLD (2300 LPS)

Technology: Screening system – Intake Pumping station – Flocculation & Coagulation – Clarification system – Rapid Sand Filter – Pumping Station including Chemical Dosing



DTSS2 – OCF & AJ FACILITIES



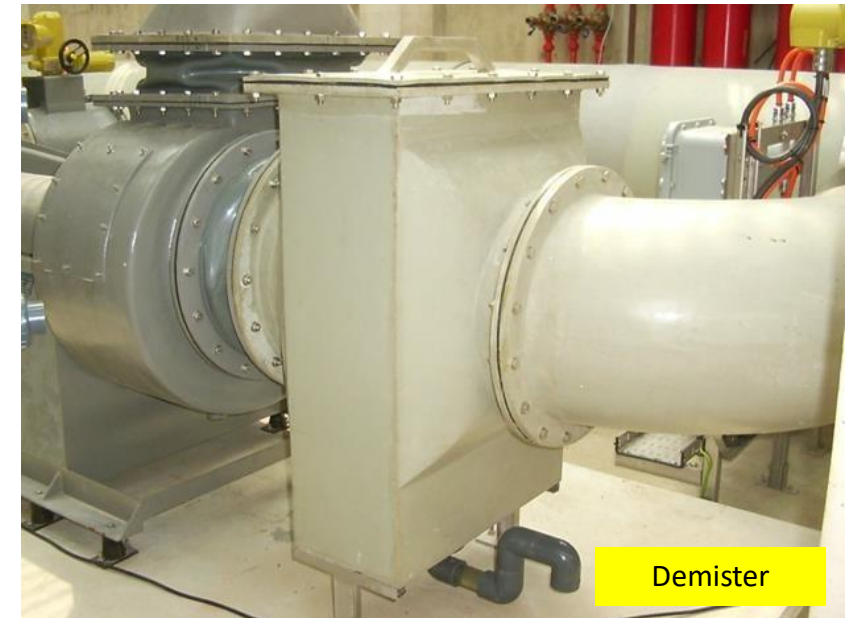
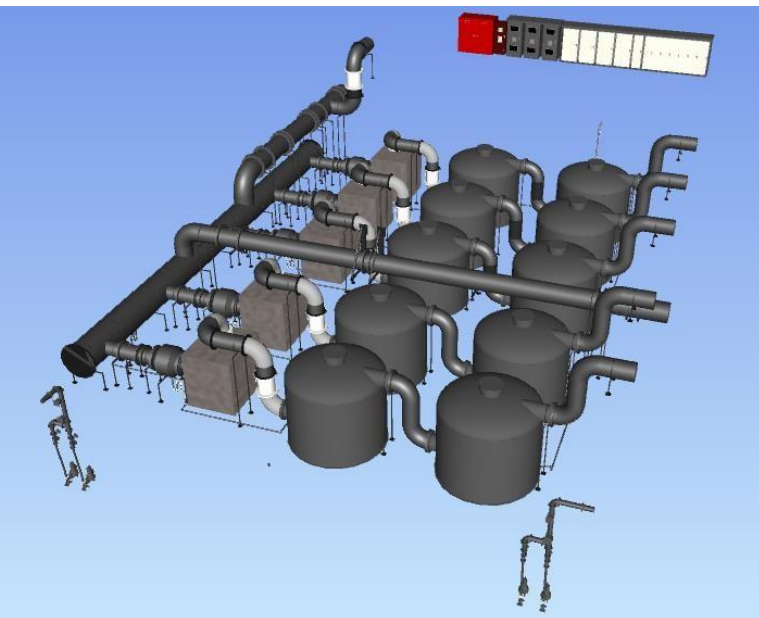
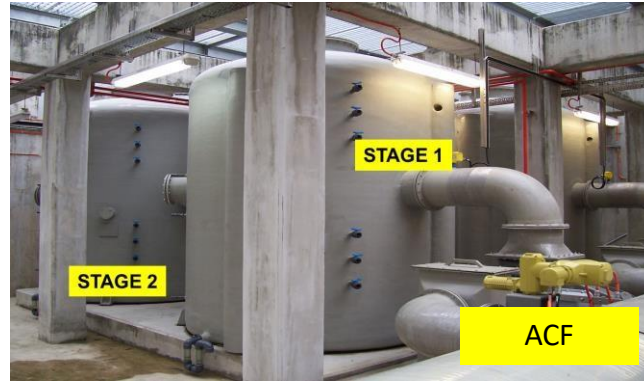
MEMIONTEC
Membrane Ionexchange Technology

Title: Odour Control & Air Jumpers Facilities at Deep Tunnel Sewerage System 2 (DTSS 2)

Completion: 2024 (on-going)

Capacity: 13 Chambers. Each from 1500m³/hr to 50,000m³/hr

Technology: Extraction Fan –Double Stage Activated Carbon Filter - Dampeners





MEMIONTEC
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