NEWSLETTER

WEDNESDAY 03/01/2024

INDUSTRIAL VISIT TO INDAH WATER KONSORTIUM RESEARCH CENTER

SUMMARY

ON JANUARY 3, 2024, SOFTWARE ENGINEERING STUDENTS FROM SECTIONS 15 AND 16 EMBARKED ON A TECHNOLOGY AND INFORMATION SYSTEM-FOCUSED INDUSTRIAL VISIT TO THE INDAH WATER RESEARCH CENTRE SITUATED IN TITIWANGSA. THE INSIGHTFUL SESSION, GUIDED BY AQIL AZMI KHAIR, SHED LIGHT ON THE OPERATIONS OF INDAH WATER KONSORTIUM SDN BHD (IWK), MALAYSIA'S NATIONAL SEWERAGE COMPANY UNDER THE OWNERSHIP OF THE MINISTER OF FINANCE INCORPORATED.

INDAH WATER EVOLUTION

FOUNDED IN 1994, IWK UNDERTOOK THE NATIONWIDE SEWERAGE SERVICES CONCESSION PREVIOUSLY MANAGED BY LOCAL AUTHORITIES. TODAY, WITH OVER 7000 WATER TREATMENT FACILITIES, IT OPERATES WITH A WORKFORCE OF 3000 EMPLOYEES AND MAINTAINS A VAST UNDERGROUND SEWER PIPELINE SPANNING OVER 19,000 KM

SEWAGE TREATMENT PROCESS

THE ELABORATE PROCESS OF SEWAGE TREATMENT INVOLVES MECHANICAL PLANTS UTILIZING INNOVATIVE TECHNOLOGIES. FROM INITIAL SCREENING TO AERATION TANKS AND SEDIMENTATION, THE CAREFUL ORCHESTRATION ENSURES EFFICIENT TREATMENT. MONITORING PARAMETERS LIKE BIOLOGICAL OXYGEN DEMAND (BOD) AND SUSPENDED SOLIDS (SS) GUARANTEE ADHERENCE TO EFFLUENT QUALITY STANDARDS.

EFFLUENT QUALITY STANDARDS

THE DISTINCTION BETWEEN STANDARD A AND STANDARD B EFFLUENTS, EMPHASIZING THE TREATED WATER'S DESTINATION, REVEALS THE COMMITMENT TO ENVIRONMENTAL RESPONSIBILITY. STANDARD A CONTRIBUTES TO WATER CATCHMENT AREAS, WHILE STANDARD B SUPPORTS RIVERS WITHOUT WATER TREATMENT PLANTS.

SUSTAINABLE WASTE MANAGEMENT

IWK'S OPERATIONS YIELD THREE VALUABLE BY-PRODUCTS – BIOEFFLUENT, BIOSOLIDS, AND BIOGAS. THESE ARE RECYCLED FOR INDUSTRIAL AND LANDSCAPE USE, FOSTERING SUSTAINABLE PRACTICES. THE PRODUCTION OF RENEWABLE ENERGY THROUGH BIOGAS AND BIOMASS ALIGNS WITH GLOBAL SUSTAINABILITY GOALS.

GREENTECH TARGETS BY 2030

IWK ENVISIONS A GREENER FUTURE, TARGETING 33% RECYCLING OF BIOEFFLUENT, UTILIZING 50% OF BIOSOLIDS AS FERTILIZERS, AND THE REMAINING 50% AS RENEWABLE ENERGY. THIS AMBITIOUS INITIATIVE ALIGNS WITH THE BROADER CONTEXT OF SUSTAINABLE DEVELOPMENT GOALS.

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The Technologies

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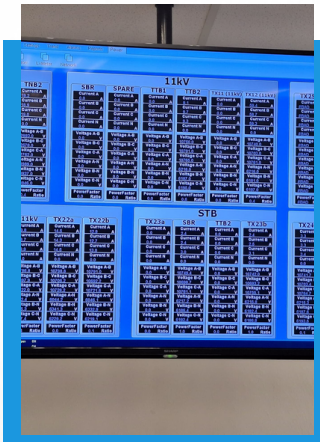
Renewable Energy

IWK's sewage treatment plants use an Anaerobic Digester technology to generate biogas. Biogas is a renewable energy source that may be used to create power. IWK now has 6 sewage treatment facilities capable of producing 10,000 m3/day and with the capacity to generate 20 MW hour/day. This supply energy to the whole production activities in Indah Water

SCADA

[Supervisory Control and Data Acquisition]

A software programme for regulating industrial processes that gathers data in real time from remote places to regulate equipment and conditions. It manages the treatment process in real-time, keeping their facility compliant while ensuring efficient plant operation 24/7. Every operating part will go through fibre optic into the server. They have a backup batery in case the system shut down.



Bio Fertilizer

They convert its biosolids into commercial bio fertiliser for non-food crop and landscape plants; and feeding biosolids mixed with other organic waste to Black Soldier fly larvae to produce a full-fat protein meal; a sought-after feed meal for aquaculture industries, particularly ornamental fish farming.

Reflection

The industrial visit to Indah Water Research Centre was an illuminating experience, providing a comprehensive understanding of wastewater management, sustainable practices, and the intricate processes involved in transforming waste into renewable resources. This firsthand exposure has not only deepened our appreciation for the practical aspects of our studies but has also instilled a sense of responsibility towards contributing to sustainable development in our future endeavors.

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