



Membrane  
Bioreactor  
Technology

# Water For Human (WFH)

Potable Water











# Our Profile

TFE is a leading technology management company in Malaysia. TFE started its journey in 1994 by introducing innovative water technology for human, health and industries. At beginning the main focus was on demineralization (DMW) process with high requirement for food processing and pharmaceutical industries. TFE is well-known for its cost-effective, updated, patent protected and award winning high efficiency technologies. It has history of 100% success rate (Zero failure).

To stay ahead of changing times and fast paced technological development, TFE changed its name from Techno-Food group to TFE Global representing its more global outlook and presence. The primary operating subsidiary has been rebranded to TFE Water Systems to reflect industry specialization.

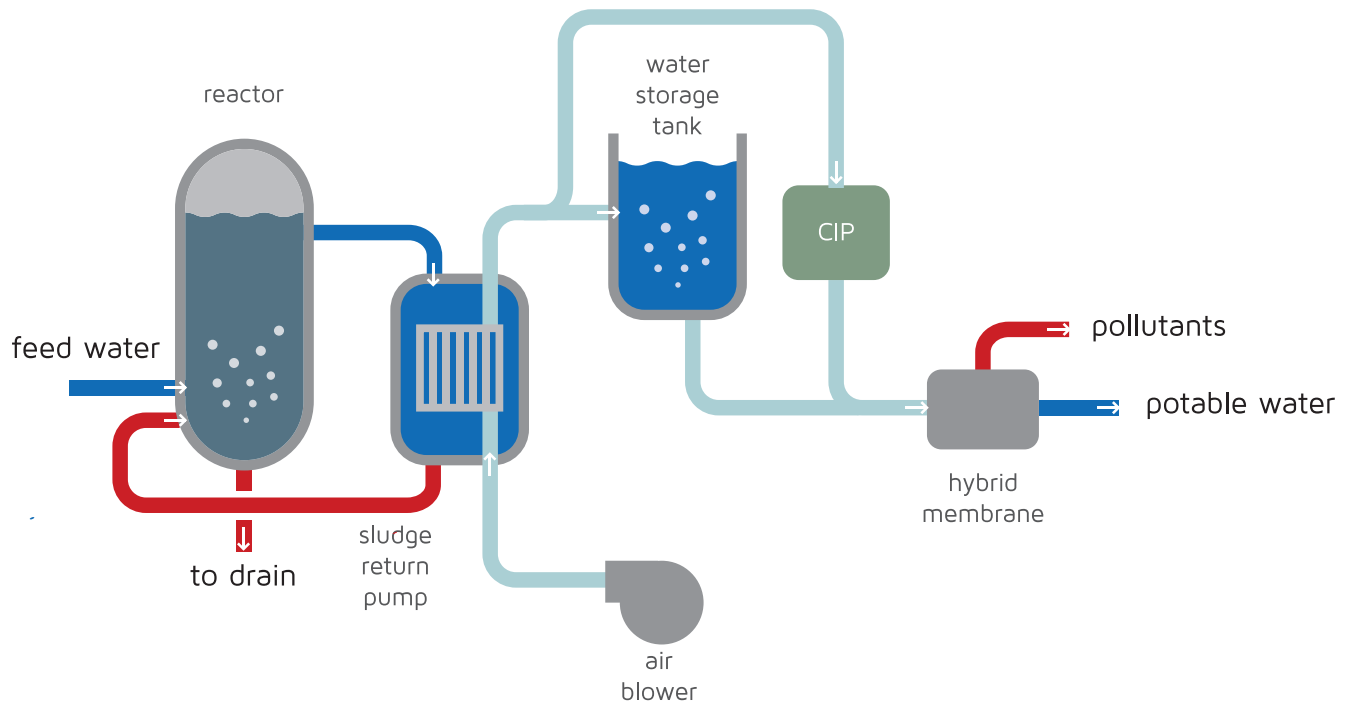
Over the past few years, TFE has advanced tremendously and successfully introduced new products like Desalination (DSW) and green technology for Industrial Waste Water Recycling (IWWR) by using TFE membrane technology. Membrane Bioreactors (MBR) are used for resource recovery from waste stream, membrane separation for fresh water and desalination of industrial and municipal waste water. To reduce energy consumption, TFE has developed technology for energy recovery and micro hydro turbine for operating small scale desalination plants.

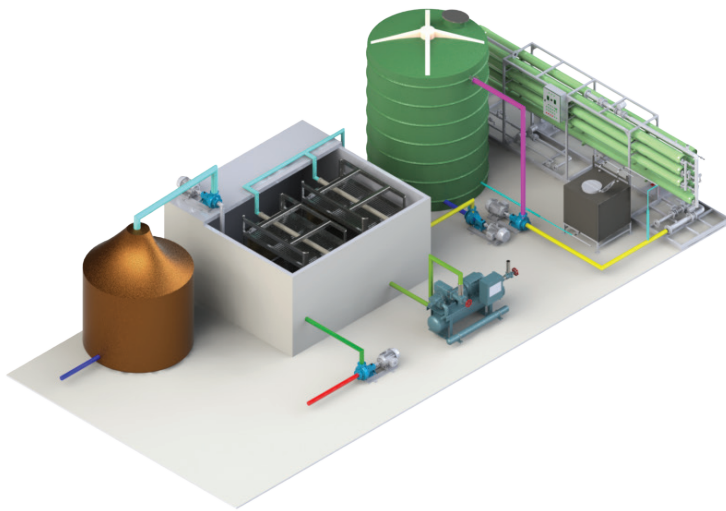
TFE Water Systems is dedicated to conducting research, product development, plant design, manufacturing and providing fully automatic custom made plants for industrial process water. TFE currently has research collaboration with a few universities and laboratories, aiming to develop and transfer technology. TFE is always at the forefront of technology with the ability to offer competitive services to contribute in achieving economic and environmental sustainability by mitigating the future global water and energy crisis.

/// Pioneering Cost-Effective Sustainable Water Technologies ///

# WFH Process

TFE introduced submersible membrane bioreactor process for producing quality potable water at an affordable cost. Membrane bioreactor based potable water production is highly energy efficient compared to conventional desalination process. TFE's potable water is proved to be economically and environmentally sustainable.





### Product Features

- Membrane bioreactor based process
- Site specific custom tailored solution for any size and capacity
- 96% recovery
- Iron & Arsenic free
- $6.5 < \text{pH} < 7.2$
- Energy Consumption 30% lower than conventional water treatment
- Operating Reliability > 95%
- Operation and Maintenance cost <10% of production cost
- Skid mounting saves space and installation cost.
- 24/7 Operation

### TFE potable water is free from microbes & hazardous chemicals:

- E. coli & other fecal born pathogens
- Legionella Pneumophila & other SRB
- Salmonella & Cyanobacteria
- Arsenic & other heavy metal
- Pesticides

### High fouling resistance

Plant is developed to operate at minimum membrane fouling of:

- Particle fouling
- Natural organic salt fouling
- Oxidant fouling
- Biofilm fouling
- Suspended solid fouling
- Sand Fouling

### Plant Capacity

Plant designed and built to meet project requirement.

Plant Scale	Capacity (m <sup>3</sup> /day)	Supports
Small	20 to 100	200 to 500 people.
Medium	100 to 500	500 to 5000 people.
Large	Up to any capacity	Up to any size

# Technical Feature of WFH Plant

Suitable for both sea and brackish water. Plants are skid mounted that save installation space, investment and installation time.

## Operations and Performance

- Designed and built to meet WHO standard water quality.
- MBR technology allows processing of highly turbid water.
- The output water is sanitized with approved chlorine dosing rate.
- Brine dilute system reduces ionic strength of brine before disposal.

## Operating Feature

- Operating pressure range 300 psi to 800 psi
- Completely Automated Machine
- Water recovery Range: 40% to 60%.
- Skid mounted plant that reduces installation space and time.

## Pretreatment

reactor to remove suspended solid and sand from water. TFE is experienced with bioreactor which needs small installation area and lower energy consumption. TFE's MBR is a proven equipment for reducing bio and particle founding.

## High pressure pump

to feed raw water into the potable process.

## Membrane pack

with pressure vessel.

## Cleaning in Place (CIP) and descaling

equipment for membrane cleaning.

## Fresh water

buffer tank.

## Control Panel

with instrumentation for operating production process. The main instruments are Flow meter, TDS meter for measuring salts, pressure safety valves, pressure gauges.



# The TFE Promise

Custom Tailored solution by leading expert  
Fully automated custom built machine  
Fast delivery & Installation  
After Sales Service\*  
Warranty 3 Years\*  
Machine life cycle 15 years\*

\*Terms and conditions apply



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