



THAILAND'S **FIRST AND LEADING EXPERT IN** PRIVATE DISTRICT UTILITY DESIGN AND IMPLEMENTATION



Powering Our Planet with
Green Energy for a Sustainable Future



Powering Our Planet with Green Energy

The climate emergency has rapidly escalated in recent years. The world urgently needs smart solutions and better working models to build a sustainable future for the next generations.

We have the capacity to build much better living conditions for our children. We still have time to act but no time to waste. Our plan for climate action focuses on the areas where we can make the most difference: better water, waste, and energy management. We need to champion and speed up innovative solutions to the climate crisis.

**TOGETHER WE CAN LEAD THE WORLD
TOWARDS A BRIGHTER, GREENER FUTURE**





About Unisus Green Energy

WE INNOVATIVELY PROVIDE EFFICIENT DISTRICT UTILITY SOLUTIONS FOR BETTER LIVING AND ENVIRONMENT

Unisus Green Energy Company Limited is a joint venture company between MQDC (Magnolia Quality Development Corporation), EEC engineering network company limited, and B.Grimm as developer of “Sustainovation” or sustainable and innovative utility systems.



MQDC

MQDC is the international property development arm of DT Group of Companies (DTGO), a business and philanthropic organization dedicated to enhancing society's well-being by researching human behavior and developing integrated living ecosystems.



EEC

EEC, established in 1976 is leading engineering company that expertise in mechanical and electrical engineering including environment, energy and co-generation system with vast project profile both local and international.



B.GRIMM

B.Grimm, founded in 1878, evolving into a multinational conglomerate active in energy, building and industrial solutions, healthcare, digital and lifestyle businesses. B.Grimm's philosophy is “Doing business with compassion for the development of civilisation in harmony with nature” with a firm belief in achieving sustainable growth.



OUR MISSION



INNOVATION AND SUSTAINABILITY

Develop innovative green energy system for sustainable and resilient development projects at the national and global levels.



BEST-IN-CLASS

Create innovative sustainable energy solutions that not only meet, but exceed our stakeholders' expectations.



GREEN CORPORATE CULTURE

Foster a strong, green corporate culture by inspiring our members to embrace the idea of building a greener world together.



COLLABORATION AND SUSTAINABILITY

Drive climate action through collaboration and knowledge sharing for accelerated discovery and learning.



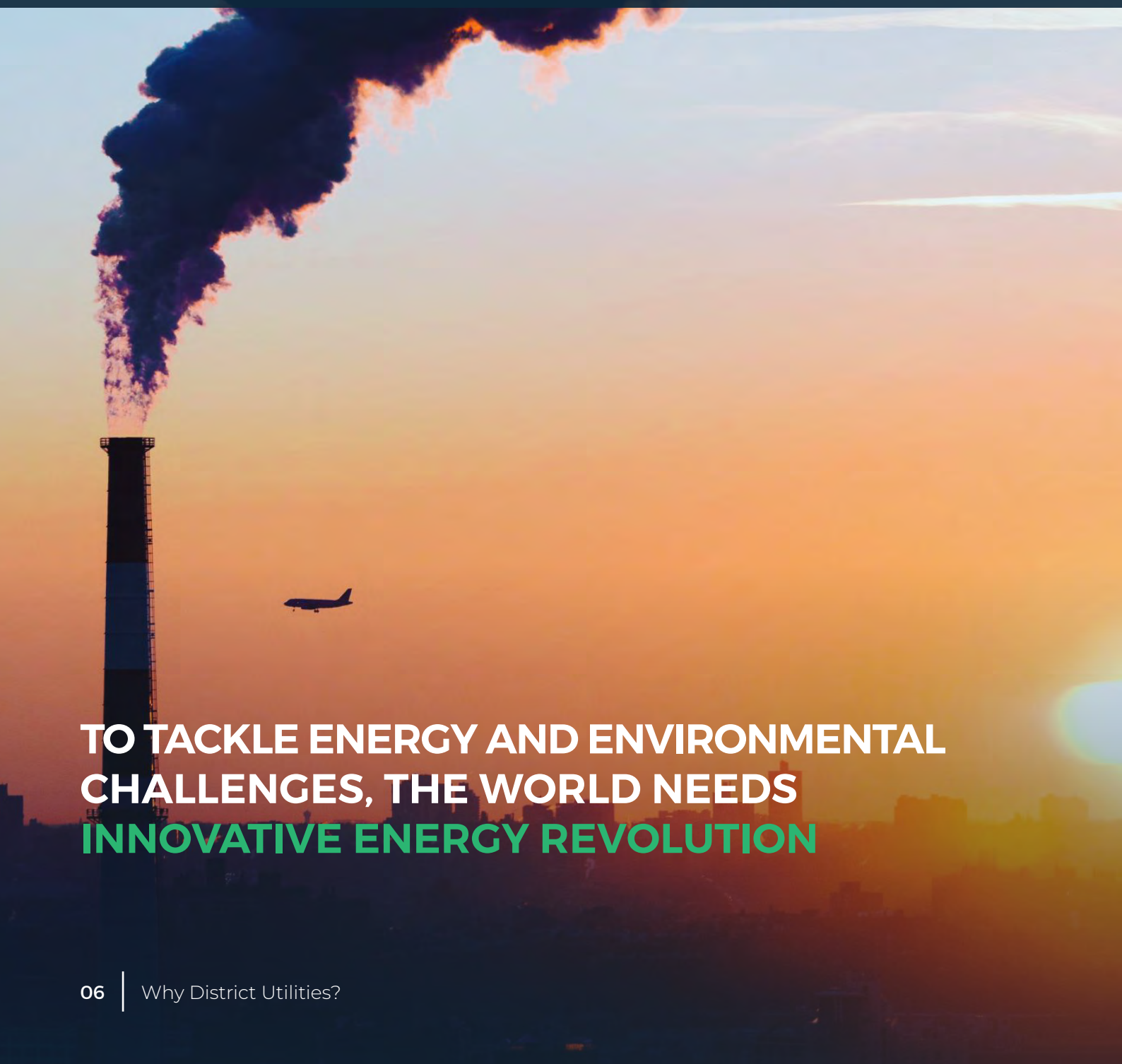
INSPIRATION AND SUSTAINABILITY

Inspire people to take daily step-by-step climate actions, adding up to make a big difference, and to share sustainable future.

WHY DISTRICT UTILITIES?

Our planet is in the state of climate emergency. We are on the brink of dangerous climate tipping point, caused by higher emission of CO₂ around the world. We must immediately act and tackle the major sources contributing to the current environment crisis. We can address the inefficient use of energy, challenges created by an air conditioner with high GWP (Global Warming Potential) refrigerant, plastic waste created by drinking water bottles.

District Utilities focuses on our commitment to create a positive impact to our planet through better water and energy management, and lower the waste of resources. Sustainability is at the heart of everything we do.



TO TACKLE ENERGY AND ENVIRONMENTAL
CHALLENGES, THE WORLD NEEDS
INNOVATIVE ENERGY REVOLUTION

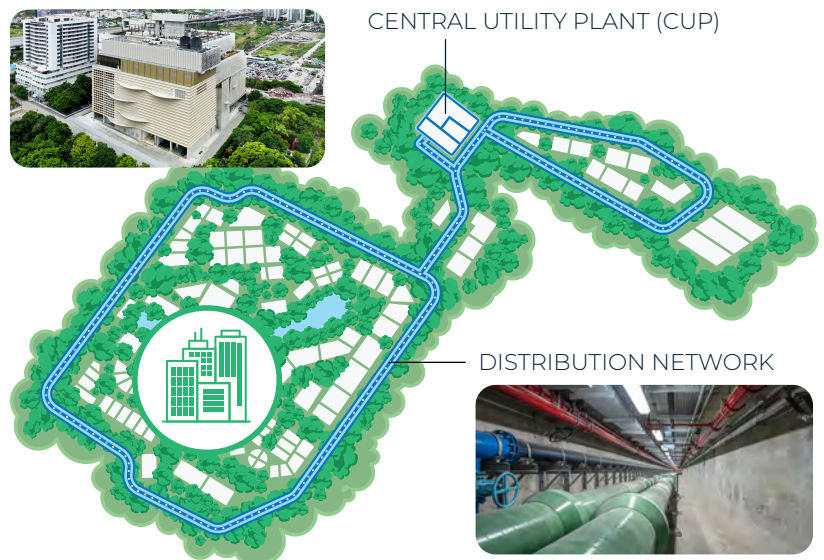
DISTRICT UTILITY SOLUTIONS AND SERVICES

Different than the conventional cooling or drinking water system where each building must install its own air conditioners or water purifiers, district utilities aggregate the needs of utilities from a network of buildings and provide cooling and drinking water via Central Utility Plant (CUP).

The cooling and drinking water will be supplied through distribution network to each building. The residents can purchase chilled water for cooling in their area without the needs to install their own chiller or air conditioners and they can drink purified water straight from a dedicated tap. Our CUP creates an economy of scale that drives efficiency, manages cooling loads, and reduces running costs.

OUR SOLUTIONS AND SERVICES

- District Cooling System
- District Drinking Water System
- District Waste Management:
Solid waste and water
- District Power Generation and
District Heating
- Water Management and Recycling
- EV Station
- Solar Energy



OUR SERVICES AND CAPABILITIES

CONCEPT

- Concept Development
- Feasibility Study (Technical and Financial)
- Business Model Development
- Licensing

DESIGN

- Conceptual and Detailed Design
- Detail Feasibility Study (Technical and Financial)

BUILD

- Funding
- Engineering, Procurement, Construction and Installation
- Testing and Commissioning

OPERATE

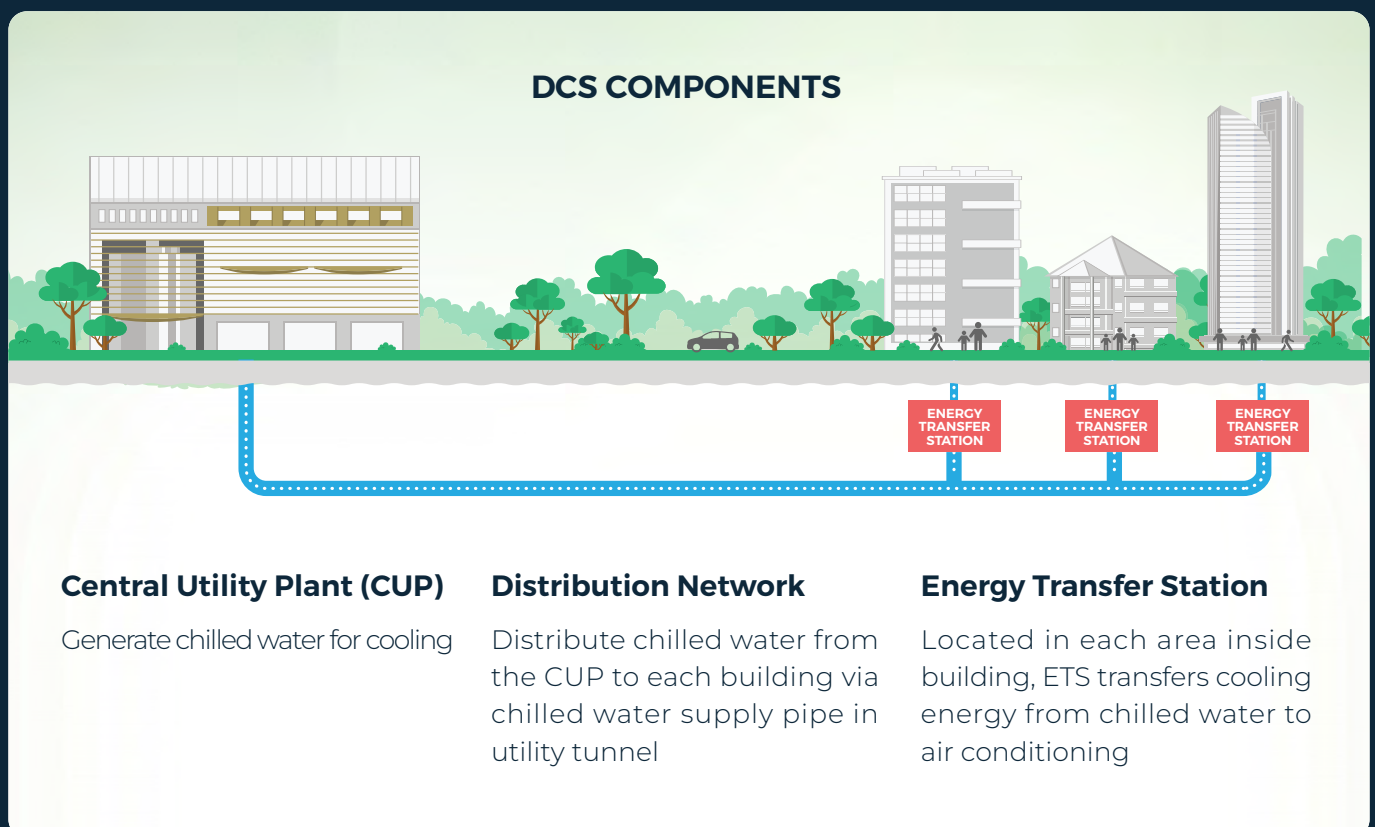
- Selling Agreement
- Operation and Maintenance
- Billing System
- Customer Services



DISTRICT COOLING SYSTEM (DCS)

DCS distributes cooling to multiple buildings by producing chilled water at a central utility plant (CUP) and passing it through distribution network for air conditioning use. Each resident purchases chilled water for cooling in their area without the needs to install their own chillers or air conditioners.

DCS has proven to be a major contributor to greenhouse gas reduction and is suitable to apply for downtown business districts and institutional settings such as college campuses.



USER'S EXPENSES

Utility fee will be measured by the energy meter, installed in each air conditioned area. It measures the actual cooling consumption by using chilled water and sends a signal back to the CUP to record real time consumption. The fee is expected to reduce 5-10% compared to conventional air conditioner due to higher efficiency.

Maintenance fee is lower and faster as users do not need to clean outdoor units. Only air-side unit is required for maintenance.



COMPARISON WITH TRADITIONAL SYSTEM

MORE LIVING SPACE

No need to install condensing unit in each area. More space at balcony.

NO NOISE AND HEAT

No noise and heat from exhaust air. Lower temperature around the building.

LESS MAINTENANCE

Reduce cost of maintenance. Only need to clean indoor unit.

LONG-LASTING RELIABILITY

CUP operator guarantees performance and ensure high reliability and service.

SAVE UTILITY FEE

5-10% lower utility fee compared to conventional system due to high efficiency.

UNINTERRUPTED COOLING

Ensure coolness 24 hours with standby backup system and generators.

HIGH FLEXIBILITY

Can partially block valve for maintenance or relocation.

LESS INITIAL INVESTMENT

Benefit from cooling loads sharing, resulting in smaller installed cooling capacity.

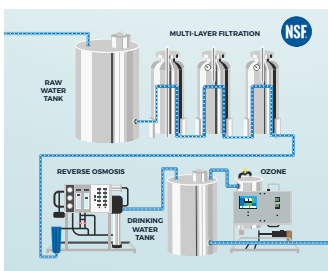
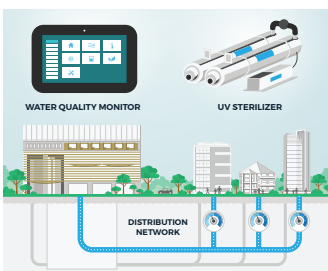
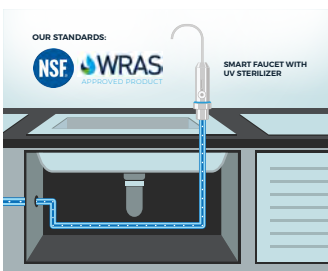


DISTRICT DRINKING WATER SYSTEM (DDWS)

Tap water is not considered safe to drink in many countries as it could be contaminated with microorganisms or other impurities at the water sources or in the water distribution network. This forces people to purchase bottled water or install water purifiers for sourcing their daily drinking water.

With Unisus's design capability and infrastructure development, we can provide district drinking water plant that allows residents to drink water straight from a dedicated tap, separated from standard water system. Utilizing reverse osmosis (RO) and UV sterilizer, our drinking water is fresh and pure.

DDWS COMPONENTS

	 Drinking Water Plant Multi-layer water purification process and water quality control	 Distribution Network Distribute drinking water to buildings via water distribution network	 In-Room Smart Faucet Provide automatic UV disinfection for safe and clean drinking water
Water Purification	Filter, RO, Ozone		
UV Disinfection		✓	✓
Water Quality Monitoring	✓	✓	

STANDARDS AND CERTIFICATIONS

We bring you the highest drinking water quality through the best purification technology, and our production process complies with the highest international standards available. You can be assured that the quality will be the same as the high quality bottled water, but at cheaper price and without the plastic waste.



NSF International

An American certification organization for food and water quality standards



Water Regulations Approval Scheme

A UK certification body for plumbing products and materials that keep water safe

COMPARISON WITH BOTTLED WATER AND WATER PURIFIER

	 District Drinking Water	 Bottled / Gallon Water	 Water Purifier
Convenience	Drinking water straight from the tap	Waste time and effort for grocery shopping and logistics	Drinking water straight from the tap
Quality	Fresh and clean (Technology: Filters, RO, Ozone, and UV)	Similar technology as district drinking water	Only RO type with UV has similar quality. UF or lower type has lower quality
Maintenance	Less maintenance. No need to maintain filters	Less maintenance. No need to maintain filters	Need to replace filters
Privacy	No outsider to visit if no issue	Subscription: Deliveryman visits to deliver gallons of water frequently	Deliveryman delivers filters every 3-6 months
Cost	Lower total cost	Medium cost	Double cost (cost of water + cost of purifiers/filters)
Reliability	Ensuring drinking water 24 hours with water tank and power generators	No issue	Cannot operate during power outage
Environment	No plastic waste. Less waste of filters	Plastic waste	Wastes from filters, packaging, and electronics parts

Benefits of District Utility System

EASY, ENERGY-EFFICIENT, AND ENVIRONMENTAL-FRIENDLY





COMMUNITY

- **Smart city development**

Central utility systems are the key component of smart city infrastructure.

- **High security and safety**

Central utility plant has high safety standard with high pressure fire hydrant around the site.



END-USERS

- Lower utility cost
- No downtime (equipped with backup generators)
- Low maintenance of air conditioners
- 24/7 customer services
- More living space at balcony
- 30-year warranty for infrastructure
- Smart and healthy living
- Real-time energy monitoring on application



ENVIRONMENT

- **Lower environmental impact**

Proper design of CUP prevents the pollution from noise, vibration, exhaust air, odor, or cooling tower mist that contain bacteria.

- **Climate change mitigation**

Reduces the impact on climate change or global warming due to energy saving and carbon reduction.

- **Microclimate control**

Reduces heat island effect by allocation of CUP remotely with proper orientation and removing condensing units at balcony.



DEVELOPERS

- **Financial aspect**

Provides opportunity for BOI and low cost of funding.

- **Net lettable area (NLA)**

Master plan with CUP requires less total mechanical room by 20% since spare space and common space can be reduced.

- **Freedom of design**

Provides opportunity for "Freedom architectural design" and better space utilization such as roof, balcony, and basement.

- **Premium image**

Provides premium and environmental-friendly image as smart city for the project.



Project Reference

THE FORESTIAS, THE LAND OF EVERLASTING HAPPINESS

CLIENT
MQDC

LOCATION
BANGKOK, THAILAND

THE SMART GREEN CITY IN BANGKOK

The Forestias is more than just an inspired and ambitious dream; it's about imagination, vision, and seeing the big picture from the smallest details. It is about creating a sense of wonder and joy through an ingenious blend of nature, architecture, and leading-edge technology to build an innovative, multi-generation community that brings endless happiness.

UNISUS SCOPE OF SERVICE

Design, build, and operate district utilities system

- **District cooling system:**
20,000 RT
- **District drinking water:**
All commercial and residential units

COMPLETION DATE:

November 2023

AWARDS:

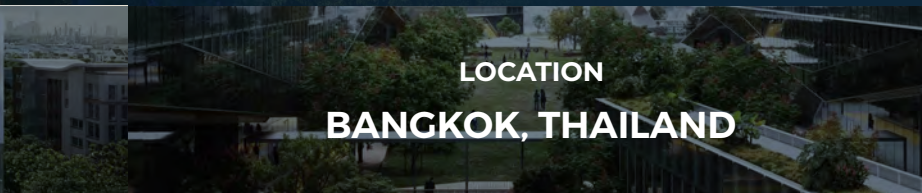
The project is aiming for a LEED V4 for BD+C: Core and shell development at GOLD level and well V2 Core at platinum level.

Project Reference

CLOUD11, **A NEW CREATIVE PLAYGROUND**



CLIENT
MQDC



LOCATION
BANGKOK, THAILAND

THE LEADING CREATOR ECONOMY HUB

As a new creative playground, Cloud11 will bridge Southeast Asia's creative industry with the future of entertainment technology and become a community for creators in gaming, music, and content creation with a mission to empower the creator through labs, studios, and creator fund.

UNISUS SCOPE OF SERVICE

Design, build, and operate district utilities system

COMPLETION DATE:

November 2024

- **District cooling system:**
5,600 RT



UNISUS GREEN ENERGY COMPANY LIMITED
Part of MQDC, EEC, and B.Grimm

No.42, EEC Academy Building, Soi Ramintra 97, Ramintra Rd.,
Kannayao Subdistrict, Kannayao District, Bangkok 10230
T: +66 2130 4590 E: contact@unisusgreenenergy.com
www.unisusgreenenergy.com



UNISUS Green Energy



UNISUS Green Energy