CNR Korea Co., Ltd.

Practical Technologies for Water, Energy, and the Environment

About CNR Korea

CNR Korea Co., Ltd., founded on **November 11, 1999**, has been continuously engaged in the development of environmental technologies for over two decades.

We develop and deliver practical, scalable solutions for water treatment, renewable energy generation, and environmental restoration.

Vision

To deliver practical environmental and energy technologies that enable carbon neutrality, water security, and resilient infrastructure worldwide.

Mission

We design and deploy low-energy, high-efficiency systems that solve real-world environmental and energy challenges through scalable, field-proven solutions.

Core Technologies

- Eco-Friendly Marine Intake Systems
- Waste Oil Refining & Industrial Wastewater Treatment
- Marine Pollution Cleanup & Soil Remediation
- Non-Entry / Unmanned Storage Tank Cleaning
- Incinerator-Based Seawater Desalination
- Gravity-Driven Multi-Layer Desalination
- Multi-Stage Compressed Dual-Flow Wind Turbines
- Hydropower & Tidal Power Generation
- Thermal & Waste-to-Energy Power Systems

- 해양 생태계를 보호하는 친환경 취수 시스템
- 폐유 정제 및 산업 폐수 처리 기술
- 해양 오염 정화 및 토양 복원 기술
- 무인·비진입 저장탱크 세정 시스템
- 소각 기반 해수 담수화 기술
- 자연압 기반 다층 담수화 기술
- 다단 공기압축 이중기류 풍력 발전 기술
- 수력·조력 발전 기술
- 소형 열·폐기물 에너지 발전 시스템

Key Strengths

- Low-energy, high-efficiency system architecture
- Non-entry, unmanned, safety-oriented designs
- Integrated water, energy, and environmental solutions
- Field-validated, scalable modular deployment

- 저에너지·고효율 시스템 구조
- 비진입·무인·안전 중심 설계
- 물·에너지·환경 통합 솔루션
- 현장 검증 완료 및 확장 가능한 모듈형 구조

Integrated Solutions for Waste, Energy, and Water Sustainability

Why CNR Korea?

- **Integrated Environmental Solutions**
  A unified platform integrating waste treatment, complete-combustion incineration, desalination, power generation, and water reuse.

- **Future-Oriented Technology**
  Advanced infrastructure designed to reduce carbon emissions, remove particulate matter, and enable resource circularity.

- **Non-Selective Waste Processing**
  Processes all waste types without pre-sorting, leaving only recyclable inorganic residues.

- **Simultaneous Energy and Water Production**
  Generates electricity and produces freshwater via seawater desalination using recovered thermal energy.

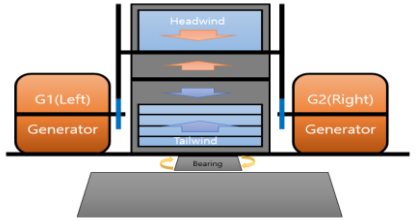
- **Scalable for Global Reconstruction and New Cities**
  Modular systems suitable for post-war reconstruction, smart cities, industrial zones, and coastal or island regions.

- **Practical Commercial Readiness**
  Engineered for real-world deployment, scalability, and economic viability.

From Waste to Energy, Water, and the Future

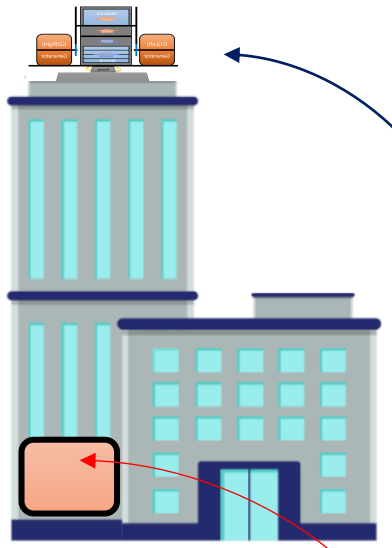
Wind energy scales with the cube of wind speed, and when efficiently harnessed,
It can enable a future of mobility that requires no external charging beyond self-generation.

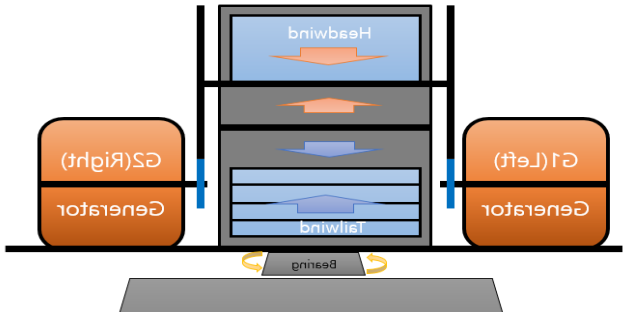
Multi-Stage Compressed Dual-Flow
Wind Turbine Generator
(Single-Turbine Dual-Generator System)

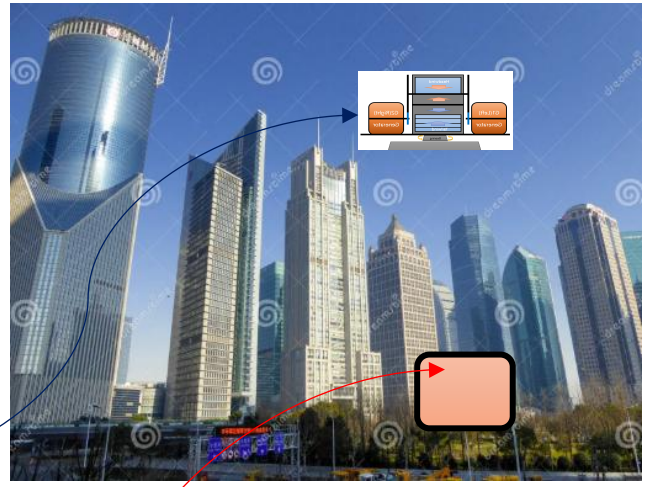


The system captures frontal airflow for centrifugal power generation and controlled exhaust to minimize drag, with a single central turbine and Symmetrically positioned side generators provide stable, tip-free operation.

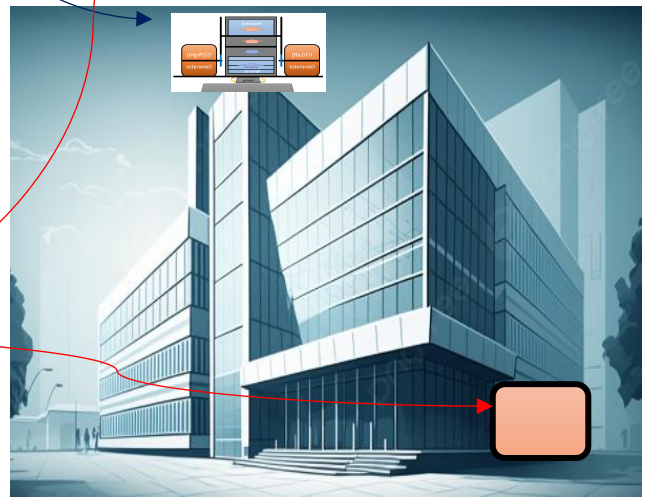
It can be installed on the roof of a building as it eliminates vibration and noise. Roadsides will no longer require utility poles or overhead power lines.







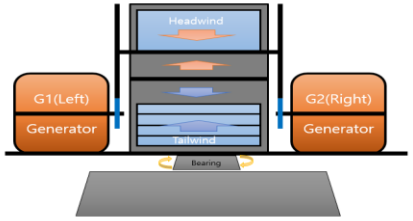
Battery charging delivery station.
(Rechargeable Battery Delivery)



Thermal power plant

All-purpose turbine generator for wind, hydropower, and thermal power applications.

The universal turbine generator enables a new era of water reuse.



Incineration plant

This is a multi-purpose turbine generator applicable to wind, in-stream hydropower, tidal energy, and thermal steam systems, enabling simultaneous power generation, seawater desalination, waste-heat utilization, and wastewater treatment with water reuse.

Wastewater treatment plant

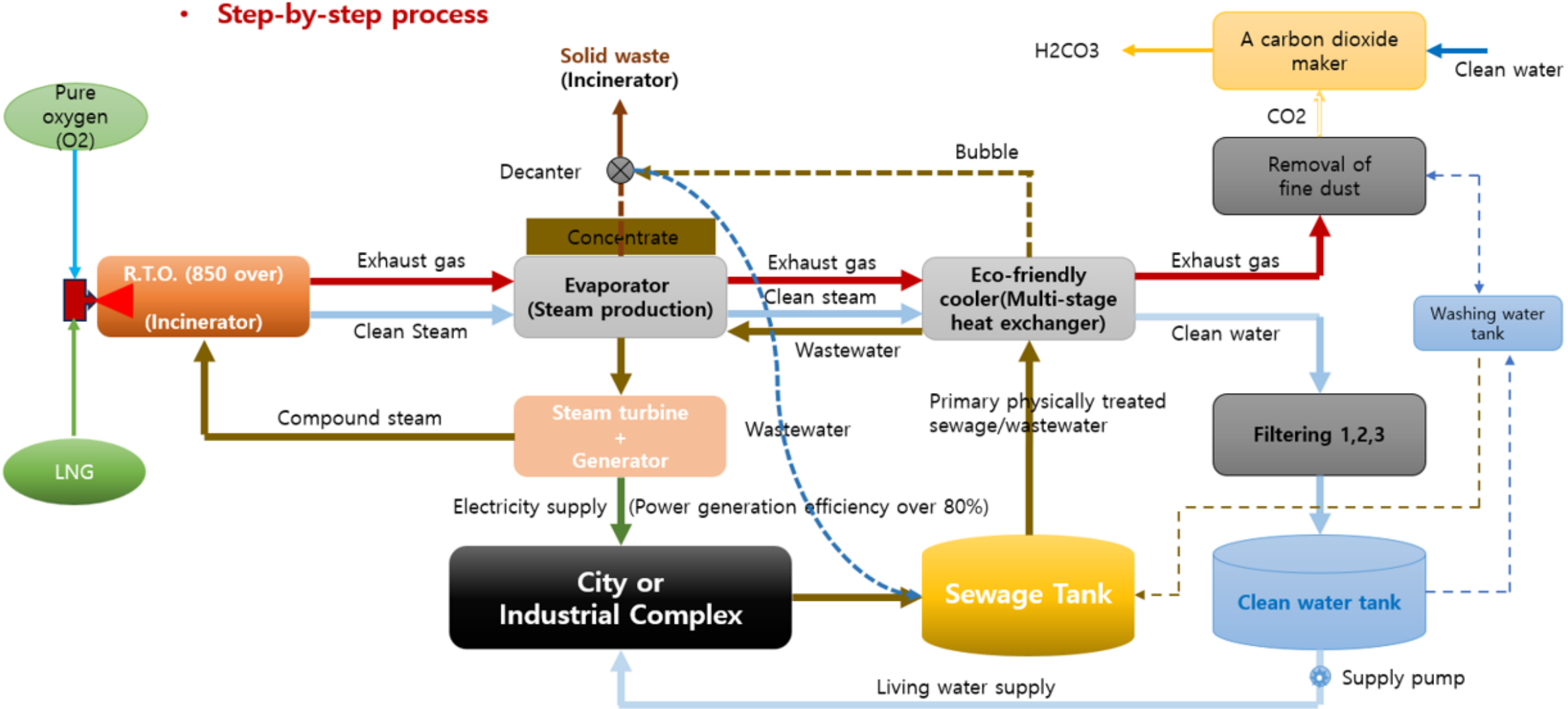
The Mississippi River

WWTP(Wastewater Treatment Plant)Treated Effluent Reuse System

Sewage treatment and electricity production process diagram

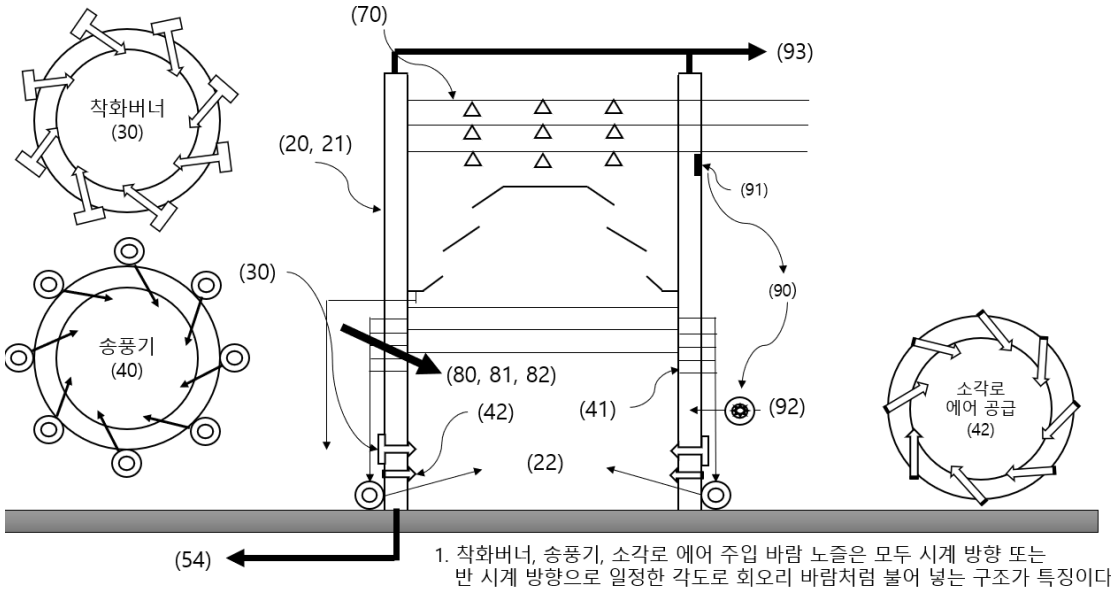
Water Recycling System

- **Step-by-step process**

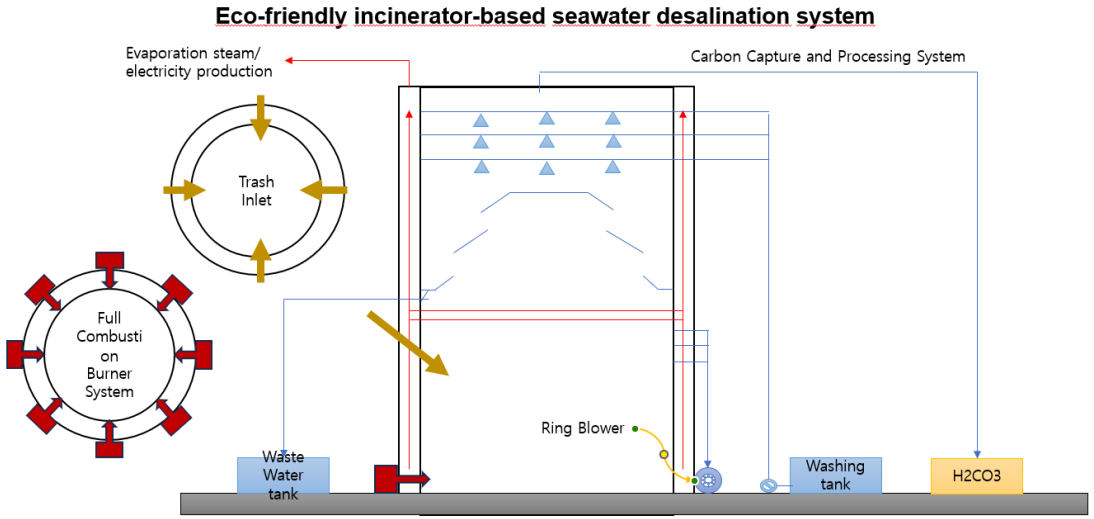


Complete Combustion Incinerator

A future-oriented, complete combustion incinerator that processes all types of waste without separation, incinerating them at temperatures above 2,500 °C. After combustion, only inorganic materials such as iron, glass, and stone remain for recycling, while the system simultaneously generates electricity and desalinated freshwater from seawater.

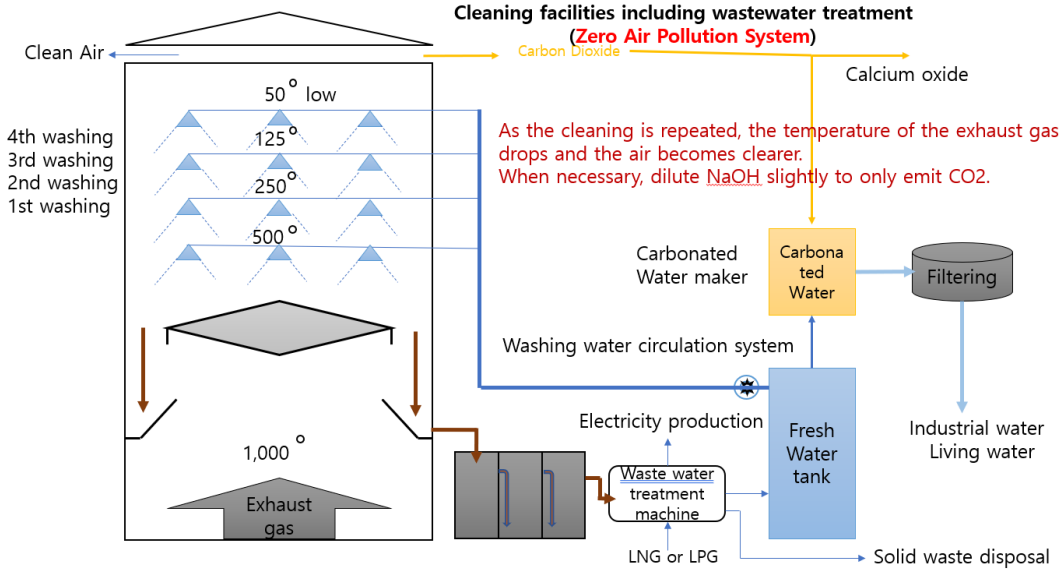


1. 착화버너, 송풍기, 소각로 에어 주입 바람 노즐은 모두 시계 방향 또는 반 시계 방향으로 일정한 각도로 회오리 바람처럼 불어 넣는 구조가 특징이다.



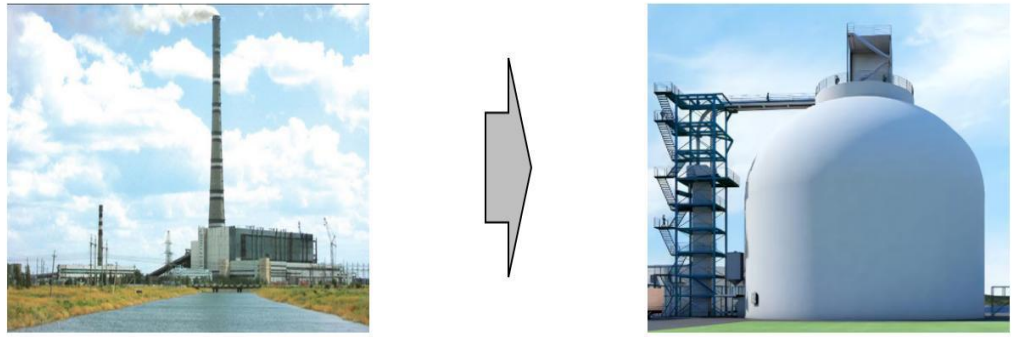
Future-Oriented Carbon Emission Reduction System

A carbon emission reduction system in which chimneys are designed to be low and wide to enhance particulate matter removal. After fine dust is removed, only carbon dioxide is released. The CO_2 is then captured, diluted with water to produce carbonated water, and reused according to to application needs, such as those in agricultural water management.



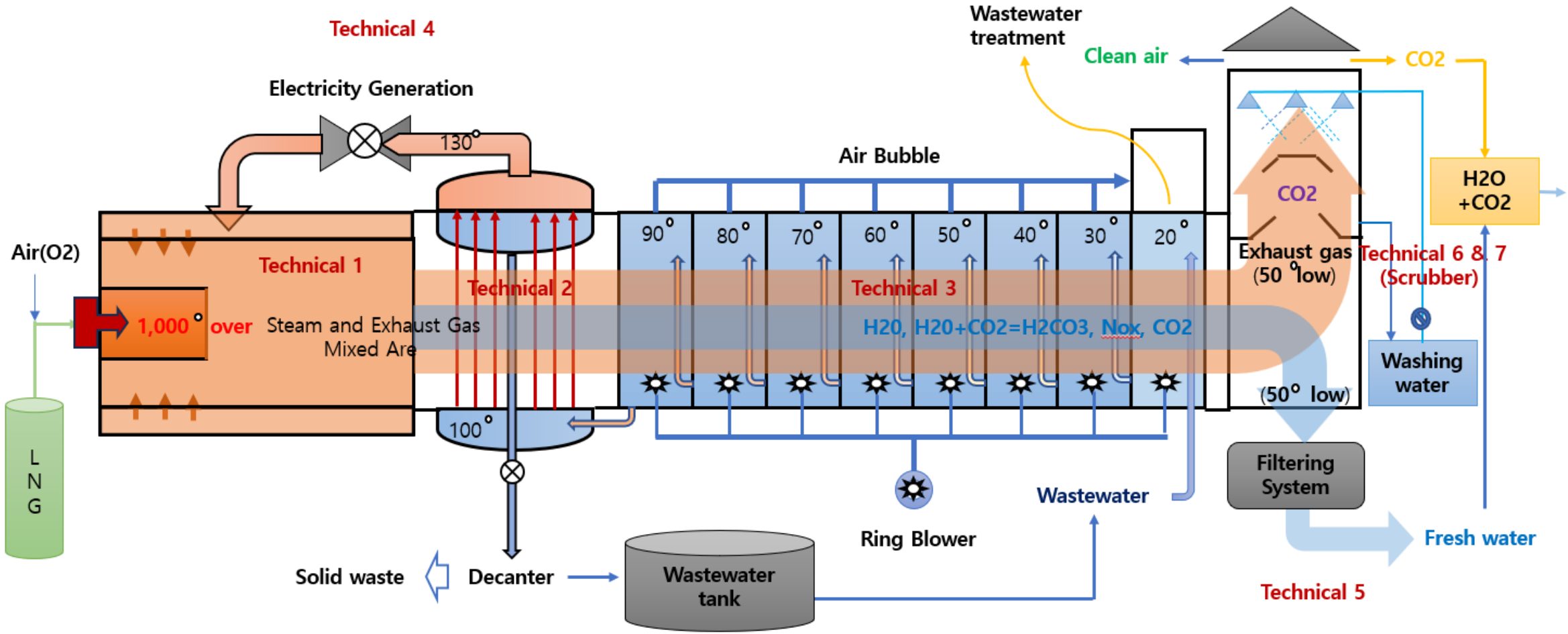
Lower the height of the chimney

(Eco-friendly chimney)



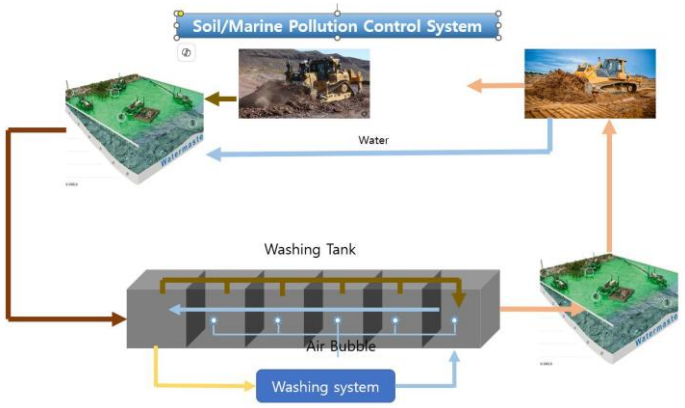
By lowering the height of the chimney, we can solve the problem of fine dust emissions and achieve carbon neutrality.

Wastewater Treatment Device Using Small-Scale Thermal Power Generation

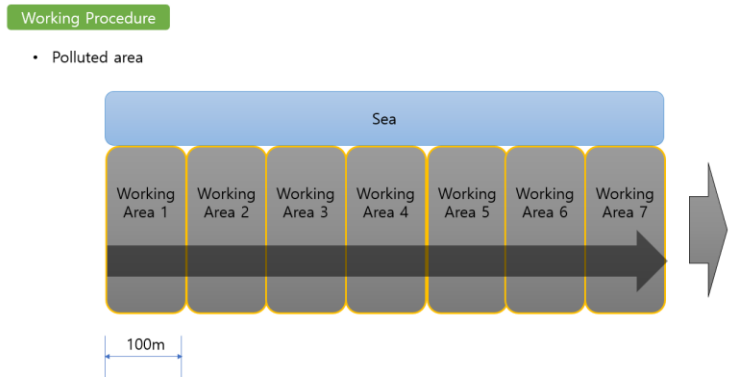


Soil and Marine Pollution Remediation System

A New Method



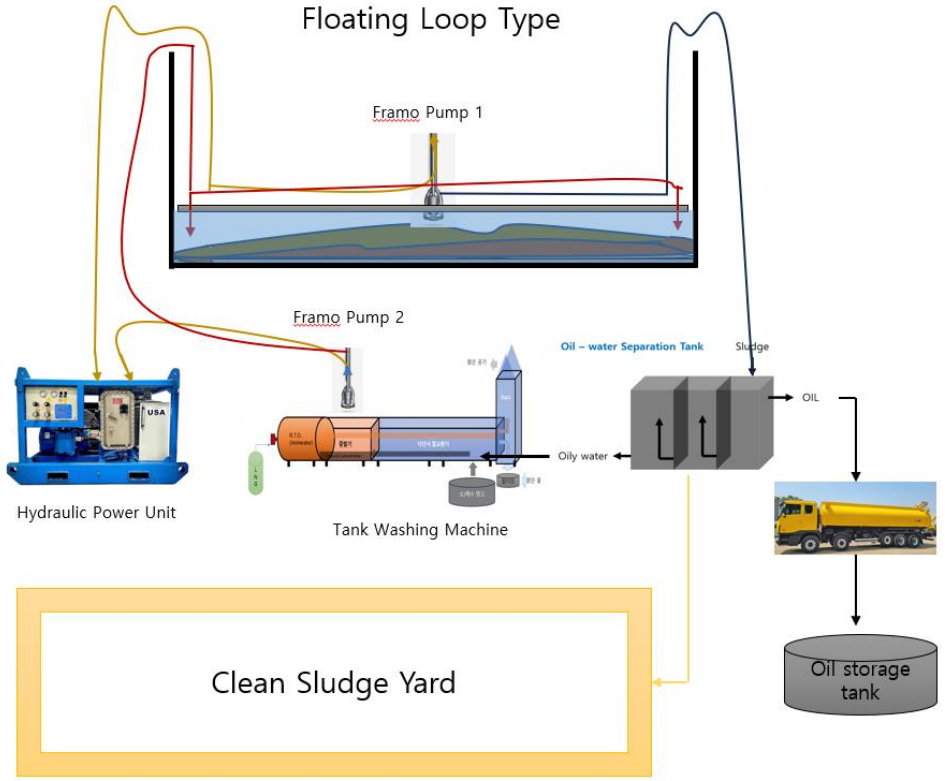
Process Flow



A Old Method

This project proposes the remediation of large-scale soil and marine contamination using equipment-operated hot-water circulation systems, without direct human involvement.

Non-entry crude oil storage tank cleaning

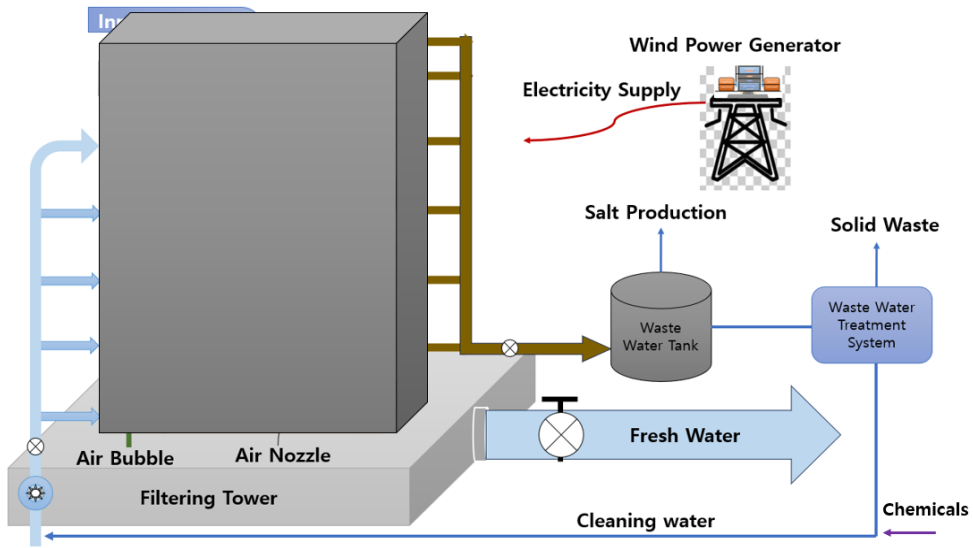


A non-entry, automated cleaning process for crude oil storage tanks using a hot-water recycling system, without the use of robotic equipment, thereby eliminating the need for human access to confined spaces.

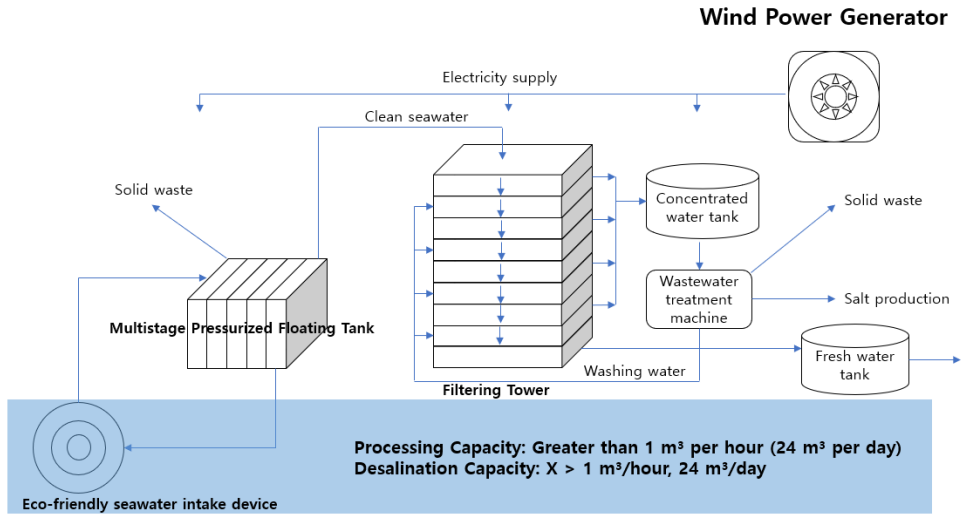
Seawater Desalination System Using a Gravity-Driven Natural Filtration Tower

(XPRIZE Water Scarcity Competition – Track B Qualified Team)

Seawater Desalination System Utilizing a Multi-Layer Filtering Tower



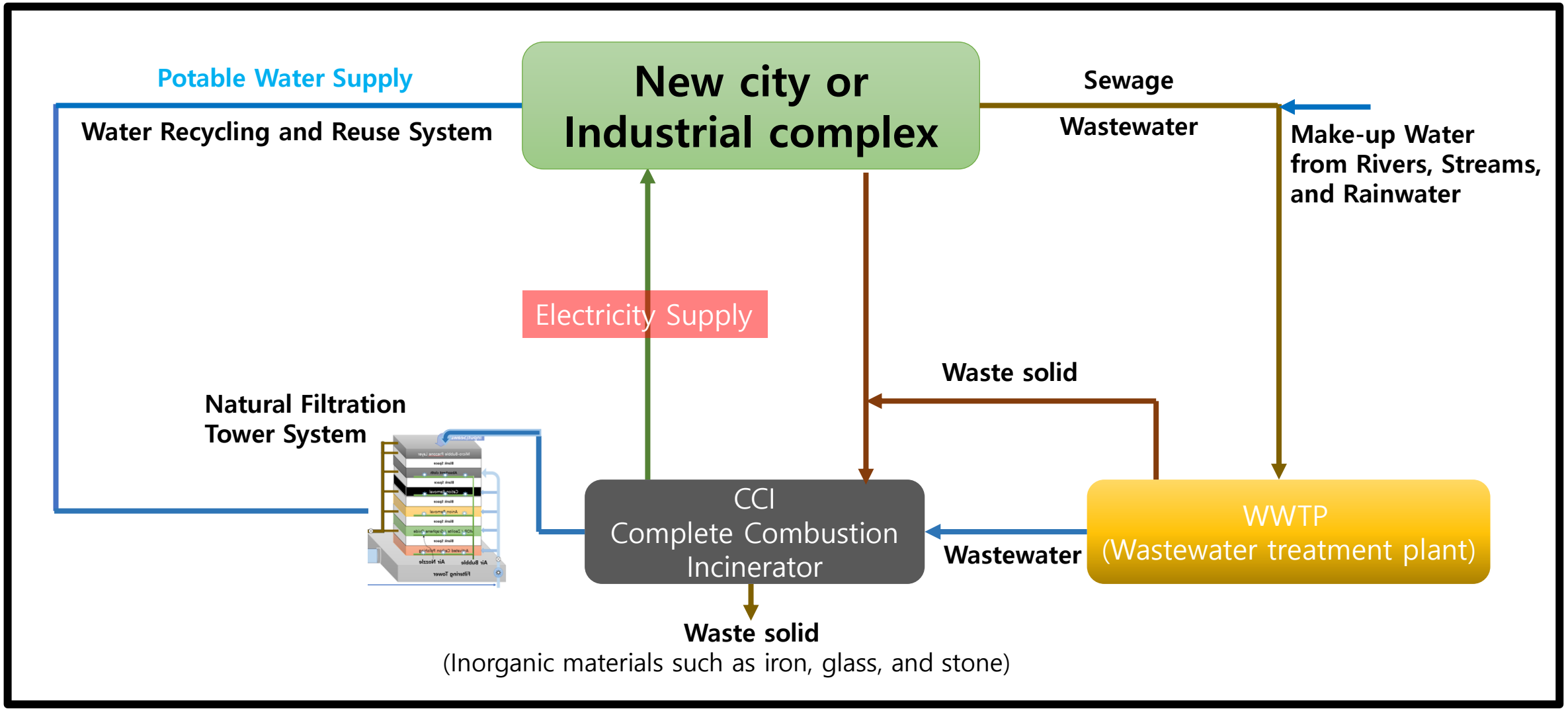
Seawater Desalination System Using Natural Pressure (Filtering Tower)



Seawater is converted into freshwater by passing it through an artificially engineered material layer that absorbs salinity, and the material layer is continuously regenerated through periodic washing for repeated use.

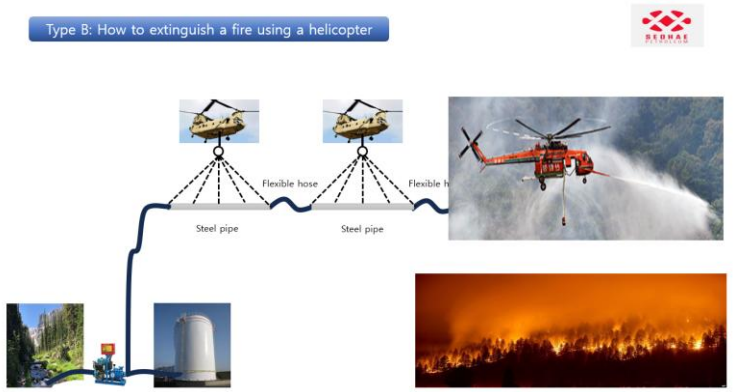
Post-War and Post-Disaster Reconstruction and Future-Oriented New City Development Project

- A power generation and supply system based on incineration heat and waste-heat recovery with reclaimed wastewater reuse
- An integrated system utilizing incineration heat, waste-heat recovery, and reclaimed wastewater for power generation



Helicopter-Based Large-Scale Wildfire Suppression Operations

CNR Korea



- Some of our technologies are fully developed, while others are still under development.
- We warmly welcome anyone who is willing to share and advance our technologies in the pursuit of improving the global environment.
- Please feel free to contact us at any time. Thank you.

CNR Korea

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