

# ENERGY SOLUTION

New & Renewable Energy / Energy Efficiency / Environment



# BEYOND YOUR IMAGINATION, SOOSUNG!

## VISANG 2021

Global TOP "200"  
No accident and zero "0"  
2-gether "  
Customer Satisfaction  
"1st place"

## MISSION

We contribute to the  
happiness of society and  
humanity by providing the  
best technology with human  
and technical defect.

## CORE VALUE

Pure passion  
Professional pride  
Creative Collaboration  
Challenges for the best

## SLOGAN

Beyond Your Imagination,  
SOOSUNG!

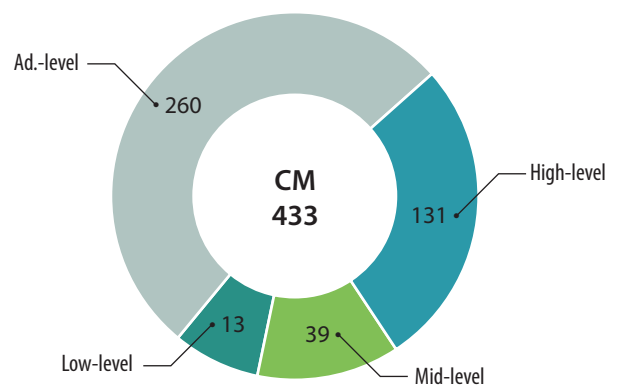
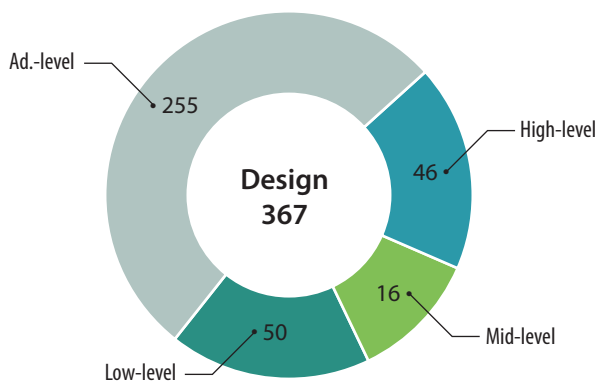
## INTRODUCE

<b>Date of establishment</b>	January 25, 1991
<b>CEO &amp; Chairperson</b>	Park, MiRye
<b>Total Workforce</b>	810

<b>Address</b>	Soo-sung winners B/D, 13, Jeongui-ro 8gil, Songpa-gu, Seoul, Republic of Korea
<b>Homepage</b>	<a href="http://www.soosungeng.com">http://www.soosungeng.com</a>

<b>Business Area</b>	<b>High Technology Industry</b>	<b>Knowledge-based Industry</b>
	<ul style="list-style-type: none"> <li>• <b>Renewable Energy</b> Photovoltaic, Solar Thermal, Bio, Geo Thermal, Wind Power, Fuel cell, Ocean Energy, Hydro Power, Waste Energy, Heat Recovery, etc.</li> <li>• <b>Energy Service Company(ESCO)</b></li> <li>• <b>Green Remodeling Business</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Engineering activity service</b> Industry / Environment / Electric</li> </ul>

## TOTAL WORK FORCE : 810



## COMPANY HISTORY

- 2018 ○ Mar. Institution specializing in Underground Safety Impact Assessment (Reg. No. Gyeongnam-10)
- 2015 ● Oct. Construction Business for Development and Utilization of Groundwater (Reg. No. 2015-5)
- 2015 ● Oct. Registered to Green Remodeling Business (Reg. No. 02-5-0012)
- 2013 ● July. Registered to Electric Works (Reg. No. Gyeonggi-04170)
- 2011 ● July. Registered to Mechanical & Equipment construction (Reg. No. Anyang-11-10-08)
- 2011 ○ June. Registered to Energy Service Company (ESCO)
- 2006 ● June. Registered to Anyang City Government for facility management & maintenance service (Reg. No. Anyang-06-29-03)
- 2005 ● Feb. Acquired overseas construction license from Ministry of Construction & Transportation (License. No. 253)
- 2002 ● Jan. Registered to Gyeonggi Provincial Government as a construction supervision of electric facilities (Reg. No. Gyeonggi2-154)
- 2001 ● Oct. Merged with Doosan Engineering Consultants Co., Ltd.
- 2001 ○ Mar. Changed the firm name (SoosungTechnology Group Co., Ltd.) to SoosungEngineering Co., Ltd.
- 1996 ● Mar. Changed the firm name (SebangTechnology Group Co., Ltd.) to SoosungTechnology Group Co., Ltd.
- 1995 ● Mar. Registered construction management & supervision to Ministry of Construction & Transportation (Reg. No. 13)
- 1993 ● July. Registered engineering activity service to Korea Engineering & Consulting Association (Reg. No. 10-079)
- 1992 ● Oct. Registered public topographical survey to Ministry of Construction & Transportation (Reg. No. 06-1006)
- 1991 ● Jan. Registered specialized technology consulting service to Ministry of Science & Technology
- 1991 ○ Jan. Founded SebangTechnology Group Co., Ltd.

## BUSINESS AREA

### New & Renewable Energy

Photovoltaic, Wind Power, Geo Thermal, Sewage, Fuel cell, etc.

### Energy Efficiency

Factory (Electric, Heat, Process Improvement)  
Building (Envelop, air-conditioning, LED)

### Environment

Waste Recycling (SRF, Biomas)



Road & Highway



Railway & Metro



Airport



Port



Traffic Planning



Bridges & Structures



Tunnel



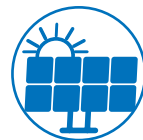
Water Resources



Water Supply & Sewerage



Environment

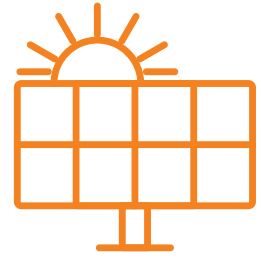


Renewable Energy



Urban Development

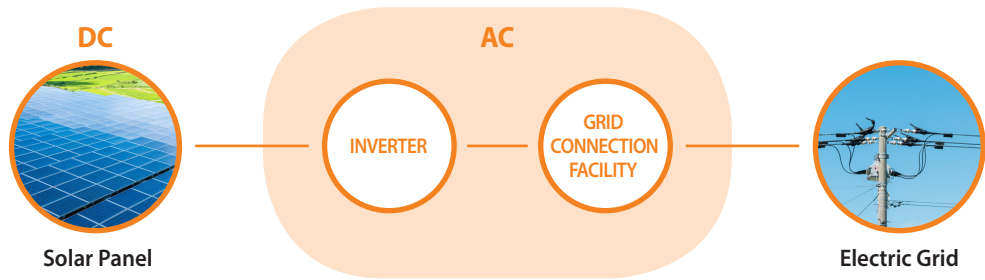
# PHOTOVOLTAIC



## Photovoltaic?

- Photovoltaic is energy generation method to convert solar radiation into direct current electricity using semiconductors that exhibit photovoltaic effects.

## TECHNOLOGY INTRODUCTION



## APPLICATION



Forest

Rural

Building & Factory

Sea & Lake

## SCOPE OF WORKS

- Project Management Consultancy
- Technical Assistance
- Funding and Consulting
- EPC(Engineering Procurement Construction)

## MAJOR PROJECT

Year	Client	Information
2014 ~ 2017	Private House (88 Sites)	NRE Home Subsidy Business(Solar), 3kW (88 Sites)
2014	Garak Jeil Gas Station	NRE Building Subsidy Business(Solar), 12kW
2015	Global Ministry Network	NRE Building Subsidy Business(Solar), 13kW
2015	Togokri Outdoor Fishing	NRE Building Subsidy Business(Solar), 12kW
2016	Evergreen Jingun Church	NRE Building Subsidy Business(Solar), 30kW
2017	Comas solar	Comas Solar photovoltaic power plant, 286kW
2018	Power Hx	JHG Power photovoltaic power plant, 372kW



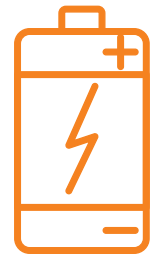
Comas Solar photovoltaic power plant (286kW)



JHG Power photovoltaic power plant (372kW)

- NRE Home/Building Subsidy Business  
The government provides subsidies for the installation of new and renewable facilities to residential buildings

# ESS | Energy Storage System

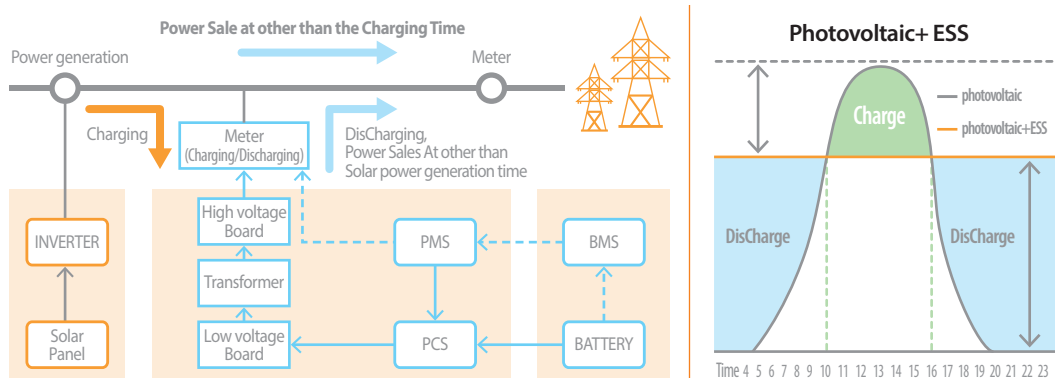


## ESS?

- A system improves the quality of the energy supply by storing energy and supplying stored energy in required situations such as lowering power rates or responding to blackout.

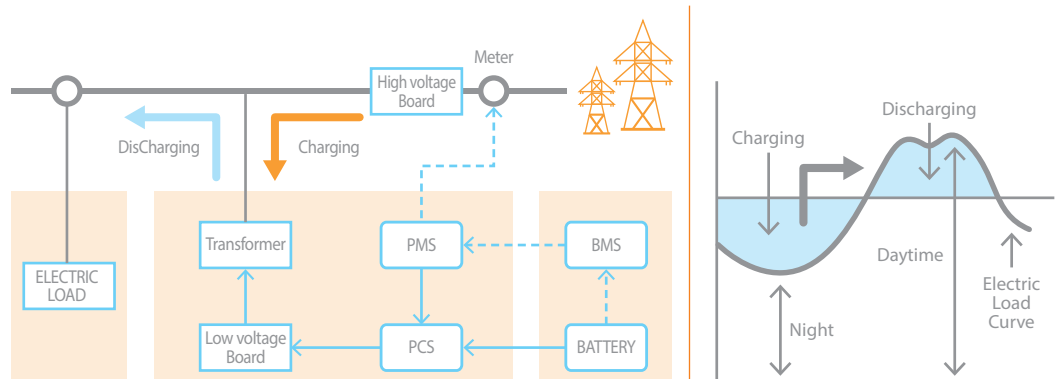
## ESS FOR PHOTOVOLTAIC

- ESS is installed in photovoltaic power plant and is charged with power generated during daytime

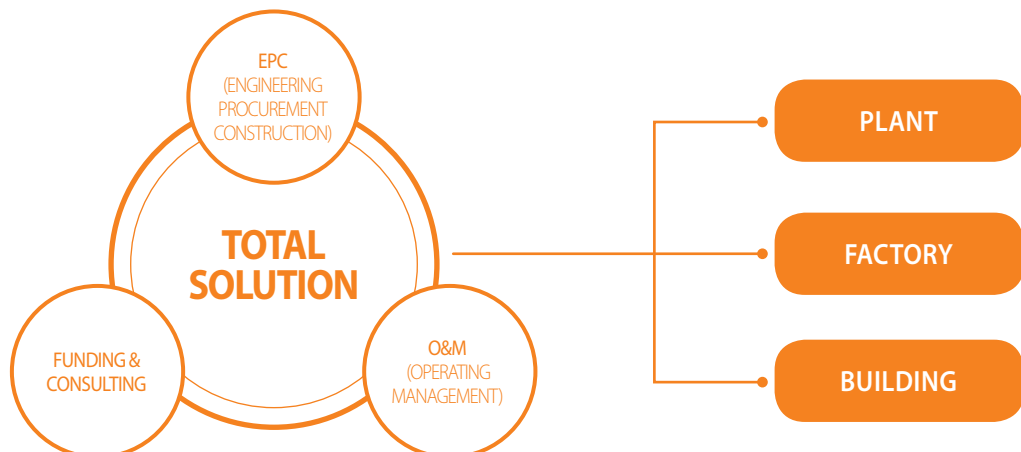


## PEAK SHIFT ESS

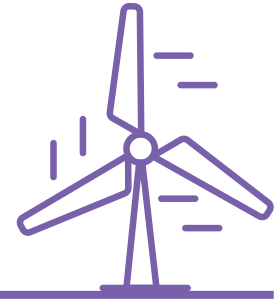
- To shift the power peak, the power is stored at midnight through an ESS(Energy Storage System) and then discharged at a time when the power demand is rapidly increasing



## SCOPE OF WORKS



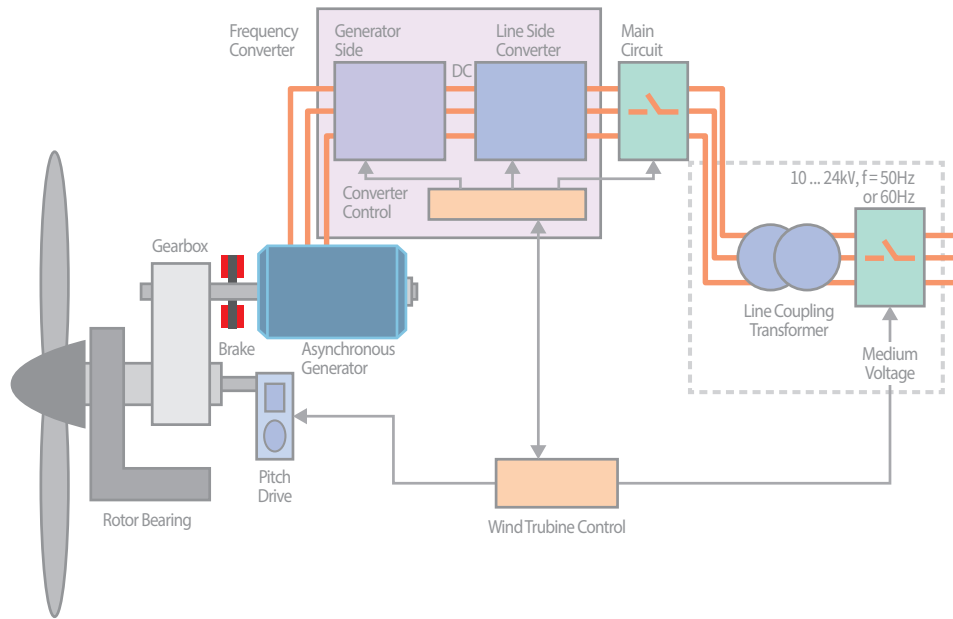
# WIND POWER GENERATION



## Wind Power Generation?

- Technology to produce electricity by converting wind energy
- A clean renewable energy without any pollutants

## TECHNOLOGY INTRODUCTION



## APPLICATION



Mountain



On Shore



Off Shore

## SCOPE OF WORKS

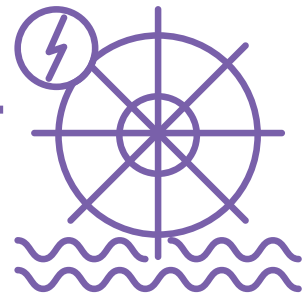
- Project Management Consultancy
- Technical Assistance
- Funding and Consulting
- EPC(Engineering Procurement Construction)

## MAJOR PROJECT

Project	Feasibility Study for Wind Farm Project in Kazakhstan
Location	Kazakhstan, Korday
Capacity	21 MW



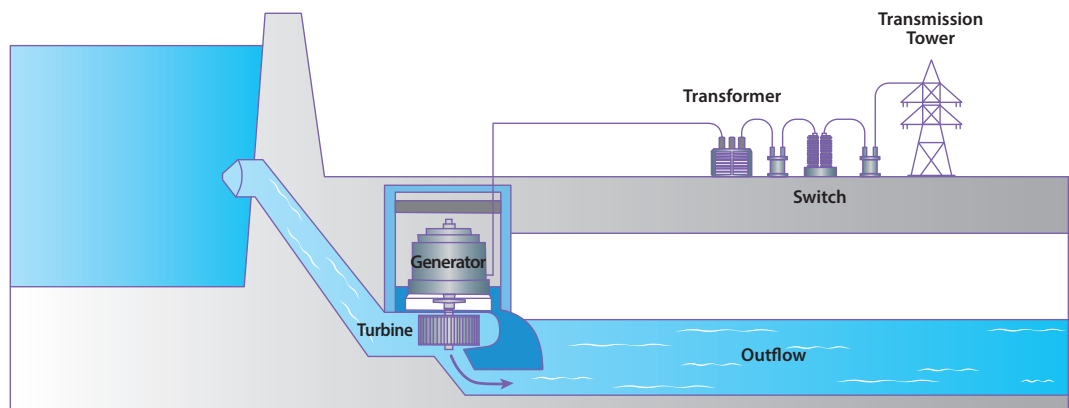
# HYDROPOWER GENERATION



## Hydropower Generation?

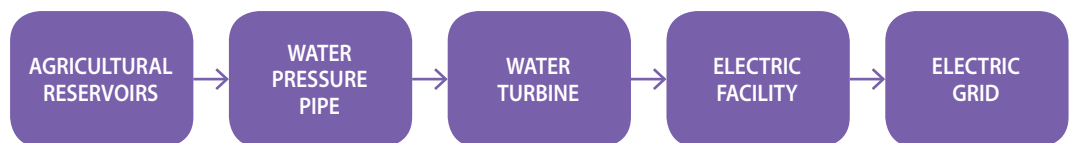
- Technology to produce equal or less than 10,000kW electricity by using the force generated by water drop or pressure
- Clean energy sources applicable to agricultural reservoirs, sewage treatment plants and multi-purpose reservoirs

## TECHNOLOGY INTRODUCTION

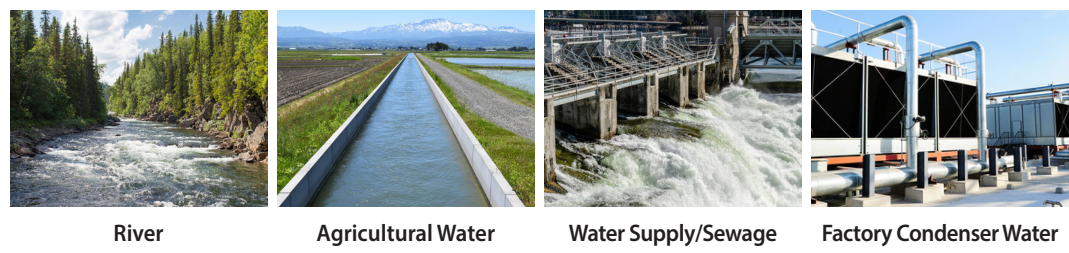


Division	Division	Characteristic
Impulse Water Turbine	<ul style="list-style-type: none"> <li>• Pelton</li> <li>• Turgo</li> <li>• Ossberger</li> </ul>	<ul style="list-style-type: none"> <li>• All of the potential energy of water to the nozzle by changing the speed as energy, impulsive force of its wings into the spinning turbine impeller</li> </ul>
	<ul style="list-style-type: none"> <li>• Francis</li> </ul>	<ul style="list-style-type: none"> <li>• Low(2~20m) and medium head(20~150m)</li> </ul>
Reaction Water Turbine	<ul style="list-style-type: none"> <li>• Propeller</li> <li>• Kaplan</li> <li>• Tubular</li> <li>• Bulb</li> <li>• Ring</li> </ul>	<ul style="list-style-type: none"> <li>• Water pressure and velocity potential energy is converted into energy using turbine</li> <li>• Low head(2~20m), High flow</li> </ul>

## CONFIGURATION



## APPLICATION



River

Agricultural Water

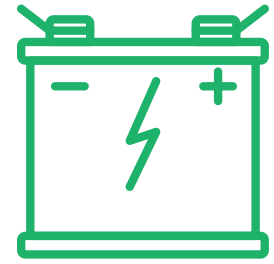
Water Supply/Sewage

Factory Condenser Water

## SCOPE OF WORKS

- Project Management Consultancy
- Technical Assistance
- Funding and Consulting
- EPC(Engineering Procurement Construction)

# FUEL CELL

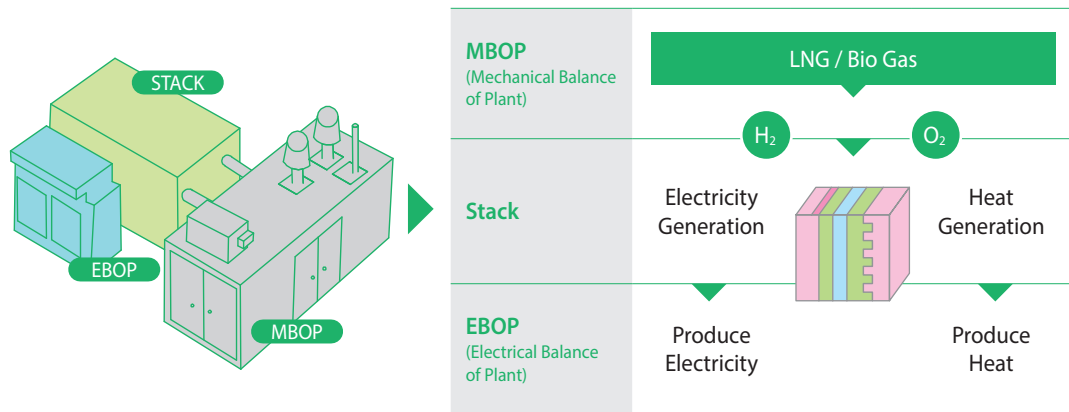


## Fuel Cell?

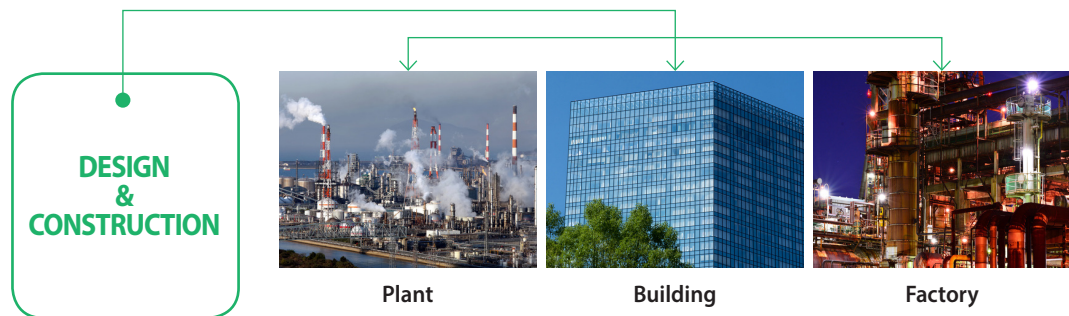
- New High-efficiency and Eco-friendly energy system that produces electricity and heat energy

## TECHNOLOGY INTRODUCTION

- Overall efficiency of fuel cell is 90% (power generation efficiency: 47 ~ 60%, thermal efficiency: 30 ~ 43%)
- Since the installation area is small, it is possible to distribute fuel cell appropriately
- It can be used fuels as LNG, biogas, and hydrogen



## SCOPE OF WORKS



## MAJOR PROJECT

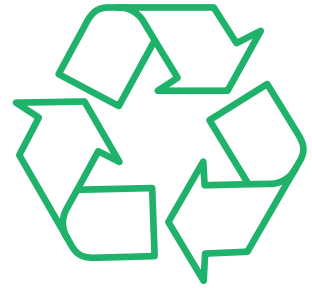
Year	Client	Information
2014 ~ 2016	Private House (66 Sites)	NRE Home Subsidy Business(Fuel Cell), 1kW (66 Sites)
2015	SEJONG	NRE Building Subsidy Business(Fuel Cell), 5kW
2015	PYUNG HWA OIL SEAL	NRE Building Subsidy Business(Fuel Cell), 5kW
2015	HYUNDAI BNGSTEEL	NRE Building Subsidy Business(Fuel Cell), 5kW
2015	GUMI GANG DONG HOSPITAL	NRE Building Subsidy Business(Fuel Cell), 30kW
2017	Chungnam Bathhouse	NRE Building Subsidy Business(Fuel Cell), 10kW

### • NRE Home/Building Subsidy Business

The government provides subsidies for the installation of new and renewable facilities to residential buildings



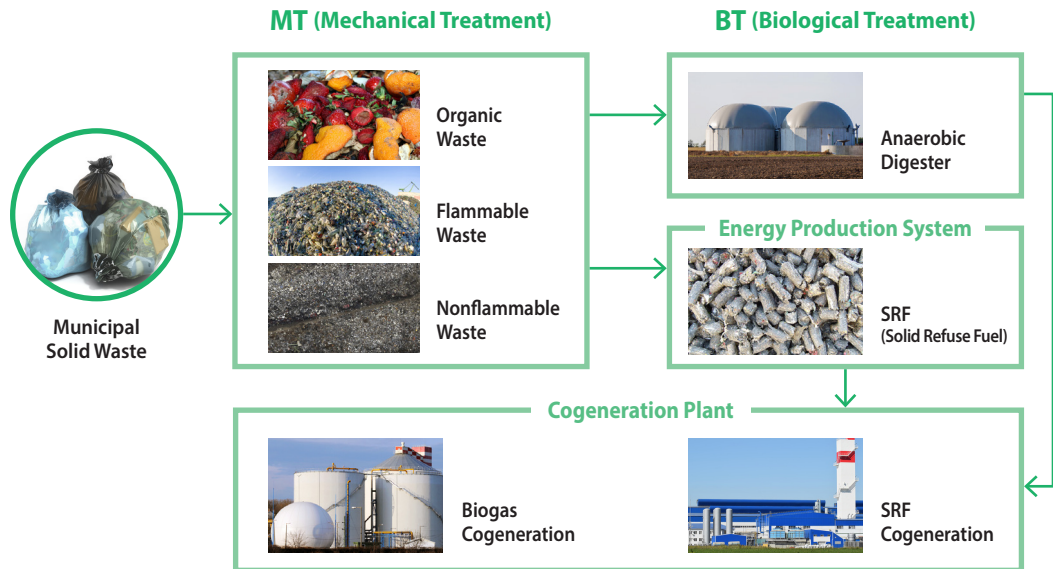
# WASTE ENERGY



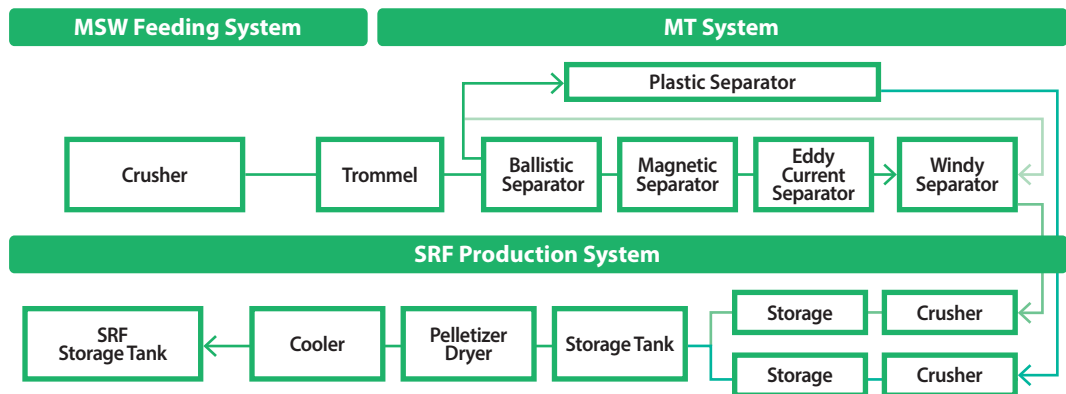
## Waste Energy?

- Technology to produce electricity and heat through incineration of Flammable waste
- Mechanical / Biological treatment system (MBT) ensures the uniformity of input as well as stability of incineration facilities and improves both incineration and power generation efficiency

## TECHNOLOGY INTRODUCTION



## CONFIGURATION



## SCOPE OF WORKS

- Project Management Consultancy
- Technical Assistance
- Funding and Consulting
- EPC(Engineering Procurement Construction)

## MAJOR PROJECT

Project	Feasibility Study of Waste energy Project in Kazakhstan
Location	Kazakhstan, Almaty
The annual waste throughput	573,849 Ton/day
Capacity	72,000 MWh/year



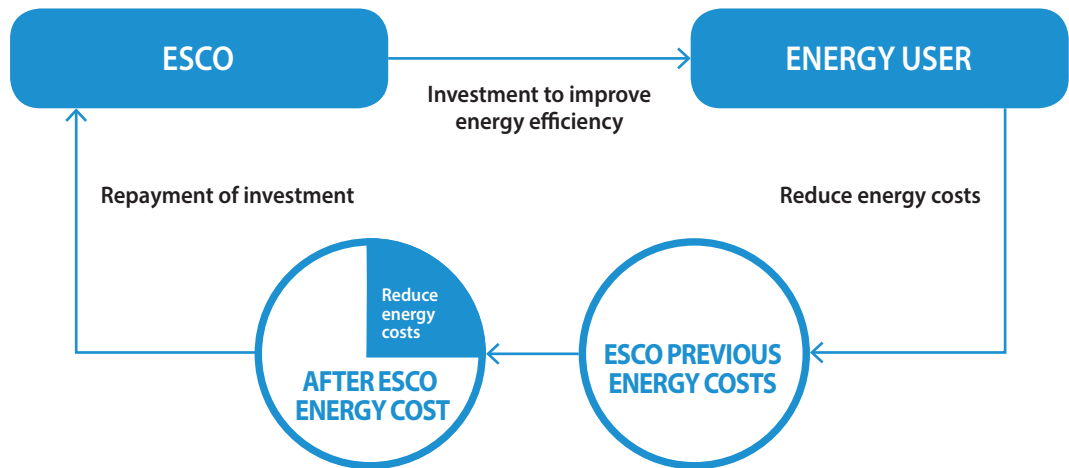
# ESCO | ENERGY SERVICE COMPANY



## ESCO?

- It is a business which can be substituted for energy-saving facilities without any technical & economical burden to users

## BUSINESS INTRODUCTION



## CHARACTERISTIC

- **Decrease energy expenses by installing energy saving facilities without advanced investment cost**
  - Saving energy consumption cost without investment
  - Saving prepared investment budget for energy reduction
- **Free from technical and financial risks caused by investment for energy saving facilities**
  - ESCO Consultants cover technical and financial risk for investment for energy saving facilities
- **ESCO Consultants provide professional service for energy saving**
  - Energy consumer can reduce time, manpower and expenses by providing One-stop Professional services including design, purchase, construction, auditing and maintenance

## APPLICATION



Process improvement



Waste heat recovery



High efficiency equipment



LED

## MAJOR PROJECT

Project	Installation of waste heat recovery boiler of ESCO business
Client	GAON CABLE
Annual energy cost savings	\$ 58,216 USD
Annual energy savings	85.9 TOE



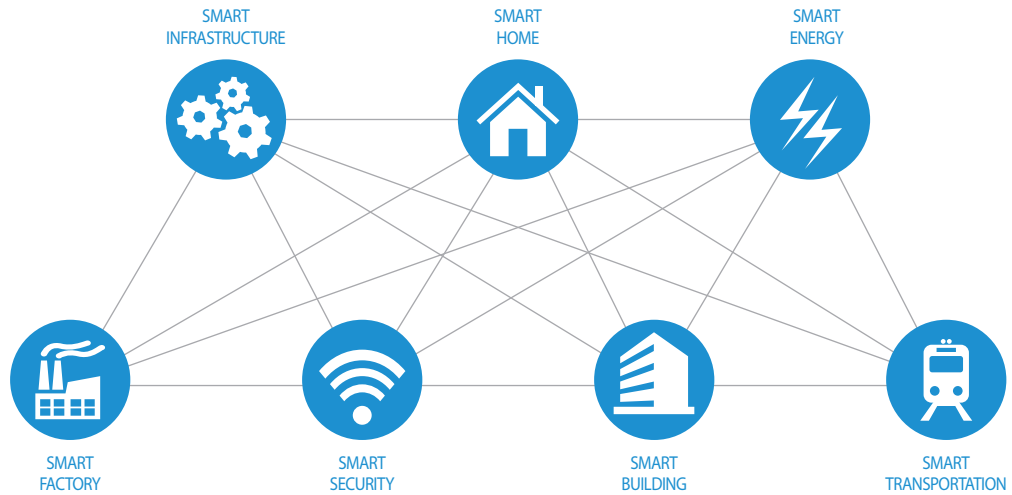
# SMART CITY



## Smart City?

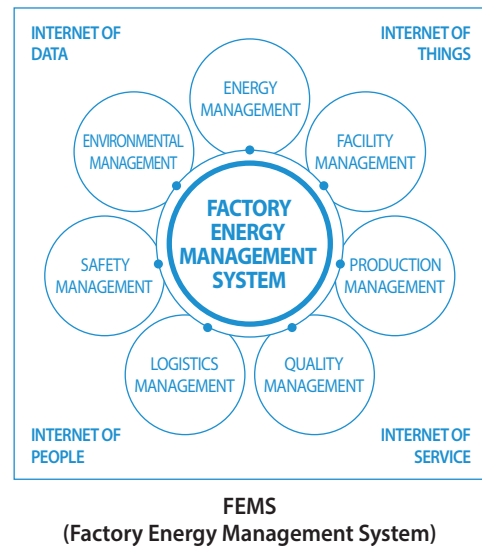
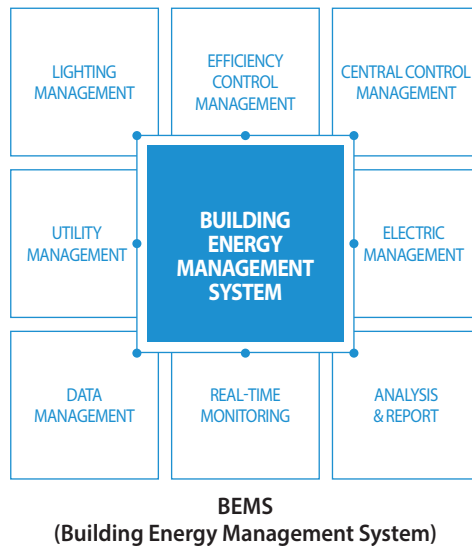
- Smart City efficiently manage assets and resources by using various types of electronic data collection sensors of the city.
- Smart City proposes improvement plans by collecting and analyzing energy usage information for buildings, industries and transportation.

## TECHNOLOGY INTRODUCTION



## BEMS&FEMS

- A 'BEMS&FEMS' maximizes energy consumption efficiency by collecting and analyzing the energy consumption information of a building and Factory
- Reduce energy consumption, energy optimized operation and carbon emissions through more efficient production activities



## SCOPE OF WORKS

- BEMS, FEMS Consulting
- BEMS, FEMS Construction

