



# KEPS

KOREA ENGINEERING & POWER SERVICE



# At KEPS, we create value in sustainable ways.

Our involvement and participation in the Power Industry contributes to the well-being of society.



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OVERVIEW



BUSINESS FIELD



FUTURE GROWTH



OTHER DETAILS

A message from our CEO

# Health and Safety is a part of every operation at KEPS



**“KEPS drives towards continuous improvement, with our focus on innovation to become a global leader in the plant facilities of commissioning, operation and maintenance market.”**

We strive to achieve customer satisfaction through continuous improvement with a focus on innovation.

The start of our journey towards being recognized as a capable and trustworthy power plant O&M company began when we provided commissioning services to the Yeosu community energy cogeneration project. Through the tireless efforts of our employees we successfully completed this task.

Health and Safety in KEPS must be part of every operation. Management accepts the responsibility of providing a safe working environment, and employees are expected to take the responsibility of performing work in accordance with safe standards and practices.

We appreciate the trust that our existing customers show in us, and we will continue to exceed their expectations. We have continuously expanded our capabilities, and now stand ready to enter the global market.

By supplying competitive, capable, and well-managed services we will continue to meet our customers' needs, and thereby providing great customer satisfaction.

Sincerely,

Seungwon Lee, Namho Baek

CEO

Korea Engineering & Power Service Co., Ltd





- 02 Company launched
- 04 Commissioning for Yeosu Community Energy System

2011



- 01 Start Operation for Yeongheung #5,6 Environmental facility
- Start Operation for Samcheonpo Environmental facility
- Bundang #1 block maintenance
- Samcheonpo #6 Boiler maintenance
- Saudi Jeddah PJT Technical assistance services
- Yeongheung #1~4 Bottom ash facility design advice
- Yeongheung wind power O&M
- 03 Yeongam wind power O&M
- 05 Best solar O&M
- Q one solar O&M
- 06 Yeonan solar O&M
- 07 Acquisition of Comprehensive Design / Supervision license

2013

2012

- 01 Start O & M for Samcheonpo thermal ash refinement facility
- 06 Start O & M for Yeosu Community Energy System
- Acquisition of Engineering license
- 07 Ansan CCPP construction management support
- Acquisition of Electrical Construction Business license
- 09 O&M of Solar Power Highway
- 11 Design review of Ansan CCPP
- Relocation of HQ to Seongnam-si, Gyeonggi-do Province



2014

- 01 Announce 'KEPS Leap year'
- "Power Plant Life Cycle Management Leader"
- 04 Signed agreement with KPLI(Korea Power Learning Institute) for
- Maintenance personnel training project development
- 06 KOSHA18001 certification— Yeosu, Bundang, Yeongheung, Samcheonpo
- 07 New CEO Lee, Seung Won appointed
- 09 Relocation of HQ to Seoul
- Acquisition of Overseas Construction license
- 11 Establish R&D center
- Signed contract of commissioning for
- Turkey Tufanbeyli Thermal Power Plant



2015

- 01 Start Operation for Yeongdong coal-fired power plant on coal-handling,
- ash disposal, and desulfurization unit operation
- 03 Acquisition of ISO 9001 certification
- Establish Technology Training Institute
- 04 Acquisition of 5 Patents
- Signed MOU with the Vietnam Government-owned service company, EVN-NPS
- (North Power Service)
- Signed agreement with Korea Southern Power for National Human Resource
- Development Consortium
- 06 Designated the Technology Training Institute as a vocational training
- facility (System Control)
- 07 Signed MOU for cooperation with Korea South-East Power company
- Signed operation contract for Taeae #9, 10 and IGCC fuel environment
- facilities
- Signed technical cooperation MOU with Emerson Process Management
- 08 Signed contract of commissioning and tuning for Colombia TT2 coal-fired
- Power Plant
- 10 Signed MOU with KEPCO Engineering & Construction
- Signed commissioning contract for Prai CCGT, Malaysia
- 11 Signed overall commissioning contract for Pocheon CCPP
- Signed overall commissioning contract for Jangmun CCPP
- Signed contract of commissioning for Seokmun Community Energy System

2016

- 01 Signed routine maintenance contract for boiler #3,4 of Samcheonpo
- 02 Acquisition certification of environmental management(ISO 14001)
- 03 Signed routine maintenance contract for boiler #9,10 of Taeae and IGCC
- Signed O&M contract for Geumseong wind power, Yeosu
- Signed MOU for cooperation with India VOLTECH
- 06 Signed MOU with OMS and DESEIN
- 08 Signed contract of commissioning for Saudi Arabia SSPP Project
- Signed contract of commissioning for UAE Mirfa IWPP
- Signed The Overhaul of Heat Production Facilities at Yongin Branch of
- KDHC
- 09 Selected as cooperation company by KEPCO KPS (machinery, electricity)
- Signed O&M contract for Hajang II wind power, Samcheok
- 11 Signed contract of commissioning for Ras Laffan C IWPP HRSG #5
- Signed contract of maintenance support for Goyang Branch of KDHC
- 12 Start O&M support for Philippines Puting Bato 270MW coal-fired power
- plant



- 04 Signed O&M contract for Hajang III
- wind power, Samcheok
- 05 Received a credit rating upgrade to A+
- 11 Signed contract of commissioning for UAE
- SARB Project
- Signed contract of commissioning for
- Algeria Biskra SCPP F.O
- 12 Seungwon Lee & Namho Baek inaugurated
- as Presidents

2017

2018

- 02 Signed ESS O&M contract for Best
- solar
- 03 Signed operation contract for Poseung
- Green Power fuel & ash handling
- facilities



## Company Organization Overview

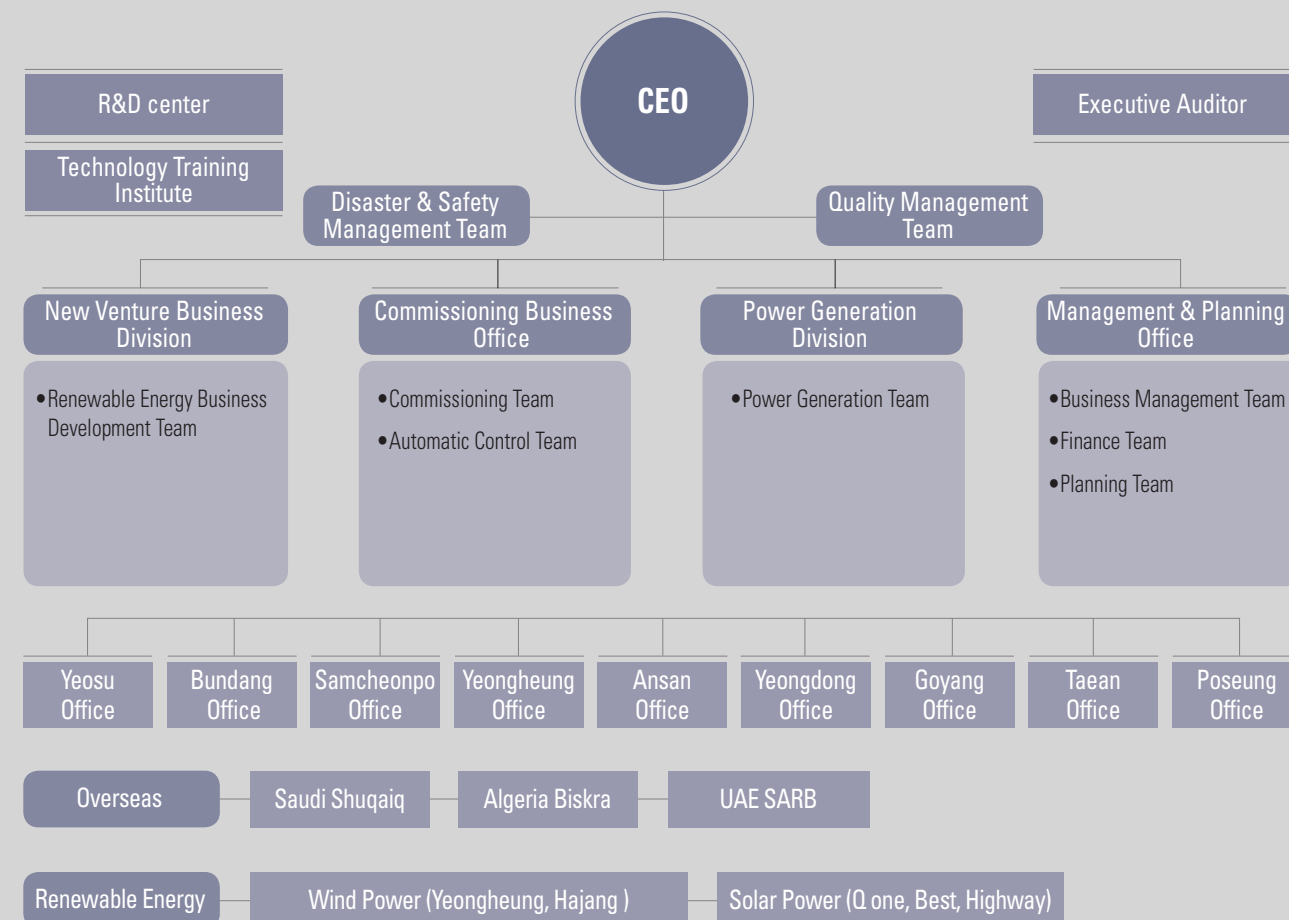
## Mission & Vision

KEPS was established in 2011, and is now able to offer a full range of O&M expertise on a global basis, often carrying the South Korean flag to projects around the world. We can provide technical advisory services, and/or assume responsibilities for any portion of a project's life cycle, as well as commissioning services.

Domestically we have been taking the duties of O&M, both for conventional and renewable energy facilities.

Established on	Feb.10, 2011
Head office	111, Yeouigongwon-ro, Yeongdeungpo-gu, Seoul, Korea
Branch offices	Yeosu, Bundang, Yeongheung, Samcheonpo, Ansan, Yeongdong, Taeon, Poseung
Number of Employees	800
Business area	O&M for Domestic and international power facilities Comprehensive Design / Supervision Environmental specialist work Engineering Electrical Construction Works Mechanical Works Commissioning

■ Head office : 2 divisions, 2 office ■ Branch offices : 14 offices



Our mission is to contribute to the global energy industry by operating power plants safely and efficiently while also engineering innovative technology. The long-term vision we wish to achieve by 2020 is for all of our employees to share the core values of talent management, to promote creative technology, and to have a challenging spirit.

### Mission



To contribute to the global energy industry by operating its power plants in a stable and efficient manner, using our innovative tools and techniques.

### Talent Management (Structured Training and Nourishment)

Talent management will be executed together with the following:  
**First** the premise that the organization's human resources are essential and are of utmost importance.  
**Second** the commitment that one's self-development and improvement will be an ongoing and maintained task until retirement.  
**Third** the responsibility that human resources will be developed in a systematic way.

### Challenging Spirit

We do not settle for the status quo. We continuously absorb new generations of advanced technology by actively challenging ourselves and by pioneering innovative changes.

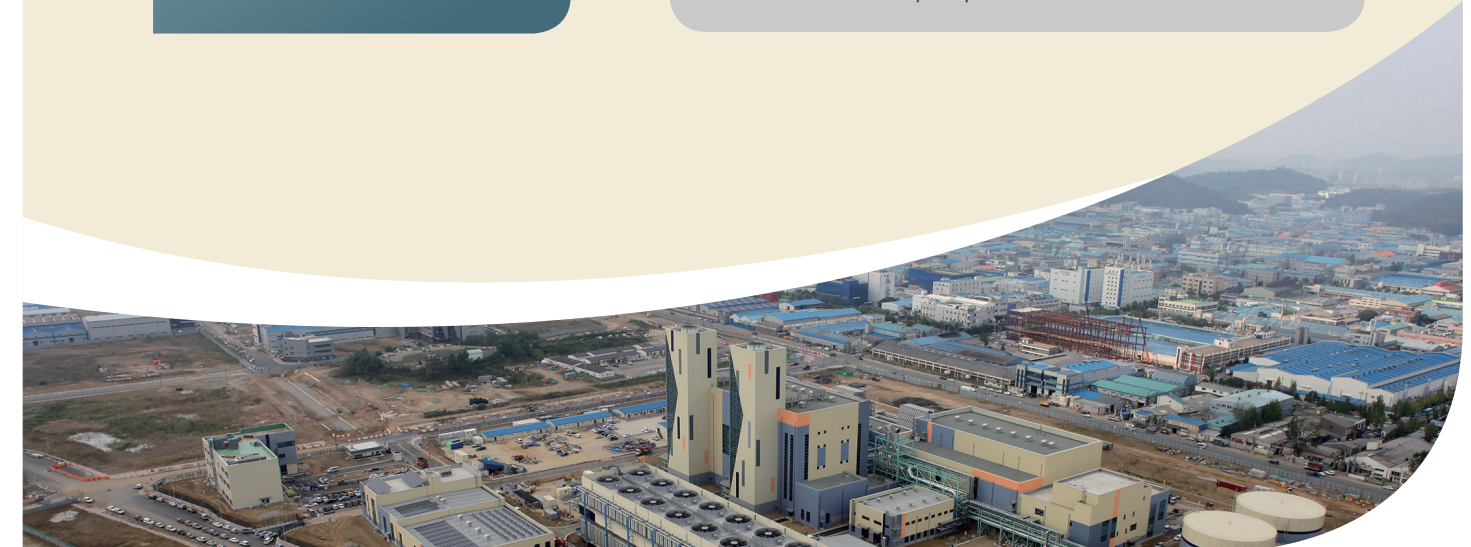
### Vision



To be a global leader in power plant Operation and Maintenance, encompassing the entire life cycle of the plants.

### Creative Technology

We will achieve the best quality, by promoting continuous improvement through technical advancement, with a view to enhance the reliability of operation and maintenance.





## Business Field



### Engineering

- ▶ IPP Development Support
- ▶ Design Review
- ▶ Construction Inspection & Audit
- ▶ Plant Performance Review

### Commissioning

- ▶ Create Punch List
- ▶ Review of as-built Drawings & Documents
- ▶ Commissioning and Tuning Service
- ▶ Establish and/or Review Commissioning Procedures
- ▶ Establish Q&M Policy and/or Procedures

### Power Plant O&M

- ▶ Main Equipment
  - Boiler: Pulverized Coal Boiler  
Fluidized Bed Boiler  
HRSG Boiler
  - Turbine / Generator : Steam Turbine / Generator  
Gas Turbine / Generator
- ▶ Fuel Environmental Facility (waste water treatment, coal handling, ash handling)

### Renewable Energy Facilities O&M

- ▶ Wind Power
- ▶ Solar Power
- ▶ ESS
- ▶ Small Hydro Power





## Engineering

## Engineering Experience

We provide an optimized power plant life cycle management system derived from our combined knowledge that has been picked up over years of field experience. Such services include step-by-step business task analysis, focused management by discipline, and an associated project management system.



### IPP Development Support

We will offer project optimization and service, considering the initial investment cost, and cost of facilities. We will meet our customers' needs by developing the power plant business, extending the life of aging facilities, and improving and altering the overall performance of the power plants.

### Design Review

Given that more than 80% of any project's quality and cost are determined during the design phase, we introduce the ERRRC(Eliminate, Reduce, Raise, Create) and VE(Value Engineering) concepts in order to establish a solution that reflects O&M considerations. Our solutions allow O&M of the plant to be efficient and effective while minimizing the capital cost of the plant.

### Construction Inspection & Audit

To achieve the most economically beneficial construction, we systematically plan, adjust, and manage all aspects of the construction of each facility. We accomplish this by optimizing the construction interface, by studying the constructability of the delivered equipment, and thereby being able to minimize the personnel and construction equipment needed. We utilize a skilled workforce that matches each individual facility's needs.

### Plant performance Review

By carefully studying the current operation of our plants, we are able to establish and implement appropriate improvements to our facilities, thereby ensuring that our plants can continue to operate reliably and safely, extending the lifetime of the equipment. As part of this process, we document all the factors that have caused interruptions in the past and that might cause the equipment to fail in the future.



### Yeosu Thermal Power Plant # 1 (Basic design)

- **Capacity of plant** : 350MW
- **Period of business** : 2013. 3. 27 ~ 2016. 5. 31
- **Performing business** : #1 Yeosu CFBC Basic design
  - Design: design standard, basic review report, technical specification report, etc
  - Technical support: equipment purchase, quality inspection, technical support for commissioning
- **Client** : Korea South-East Power Co., LTD.(KOEN)



### Design review of Ansan CCPP

- **Capacity of plant** : 834.3MW
- **Period of business** : 2012. 11 ~ 2014. 10
- **Performing business** : Review of documentation (Design, Manuals, Vendor prints, Dwg., etc)
- **Client** : Korea South-East Power Co., LTD.(KOEN)

### Ansan CCPP construction management support

- **Period of business** : 2012. 8. 1 ~ 2014. 3. 31
- **Performing business** : Construction management support (management of processes, construction, materials and data. operation of construction management system, etc.)
- **Client** : Korea South-East Power Co., LTD.(KOEN)



### Saudi Arabia, Jeddah PJT

- **Capacity of plant** : 2,640MW
- **Period of business** : 2013. 1. 16 ~ 2014. 1. 31
- **Performing business** : Saudi Jeddah PJT Consulting (Boiler, Elec', Control, Piping, Heater, etc)
- **Client** : Hyundai Heavy Industries(HHI)





## Commissioning



**Based on the proven results of our commissioning efforts at both the Yeosu Community Energy project and the Ansan CCPP project, KEPS plans on expanding our business by providing commissioning services to both domestic and international power plant projects.**

### Commissioning

We participate in commissioning services that occur towards the end phase of power plant construction. These tests include trial runs, performance tests and reliability runs.

#### Major commissioning services

- Unit Equipment Commissioning, Comprehensive Commissioning(TA, CCR agent)
- Commissioning and Tuning works for power plant facilities
- Review of commissioning contract terms
- Detailed commissioning plan and procedure development
- Punch list creation and management
- Site diagnostic support facilities
- Equipment improvement suggestions
- Local staff training



### Domestic Power Plant Commissioning

KEPS provides domestic private generating clientele with high quality services based on expert knowledge that has been obtained in commissioning services at Yeosu Community Energy project and the Ansan CCPP project.

We have contributed to the enhancement of Korean EPC business's competitiveness by participating in responsible commissioning service at Pocheon, Seokmun, Jangmun projects.

### Overseas Power Plant Commissioning

KEPS has accumulated diverse experiences in the international commissioning services by performing commissioning services in Vietnam, Malaysia, Colombia.

After the first overseas commissioning service for Vietnam Mongdung II in 2014, KEPS has been continuously expanding overseas commissioning businesses by performing commissioning services in Tufanbeyli, Termotasajero II.

KEPS has actively extended to various business opportunities in India, Middle East as well as Africa based on the partnership with O&M companies in Vietnam and India.

### Commissioning Maintenance

Up to start of commercial operation, to ensure that the equipment can operate efficiently, KEPS carries out various commissioning works such as preventive inspection, testing of equipment and facilities, and immediate failure recovery work to any accidents.



## Commissioning Experience (Domestic)

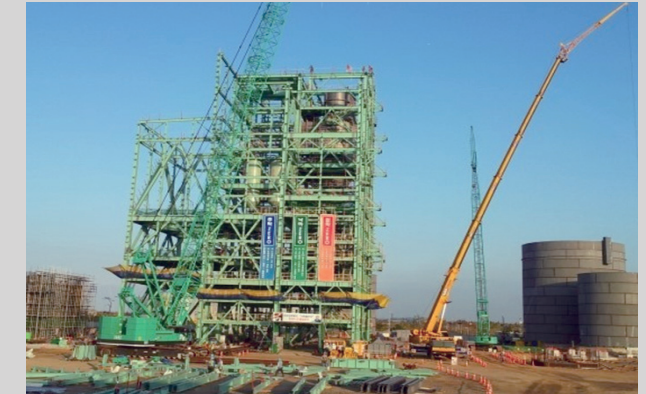
### Yeosu Community Energy System (Fluidized Bed)

- **Capacity of plant :**
  - Main Boiler : Steam 350T/h × 2, Electricity 24.2MW × 2
  - Assistance Boiler : Steam 160T/h x 1, 60T/h x 1
- **Period of business :** 2011. 4. 25 ~ 2012. 7. 31
- **Performing business :** Commissioning services
- **Client :** Korea South-East Power Co., LTD.(KOEN)



### Seokmun Community Energy System (Biomass)

- **Capacity of plant :** 38.9MW
- **Period of business :** 2015. 11. 6~2017. 1. 14
- **Performing business :** Commissioning services
- **Client :** POSCO E&C



### Pocheon Combined Cycle Power Plant (CCPP)

- **Capacity of plant :** 947.2MW
- **Period of business :** 2015. 11. 17~2017. 3. 31
- **Performing business :** Commissioning services
- **Client :** Daewoo E&C



### Ansan Combined Cycle Power Plant (CCPP)

- **Capacity of plant :**
  - GT : 275.6MW x 2
  - ST : 283.1MW x 1
- **Period of business :** 2013. 7. 15 ~ 2014. 11. 14
- **Performing business :** Commissioning services
- **Client :** Korea South-East Power Co., LTD.(KOEN)



### Jangmun Combined Cycle Power Plant (CCPP)

- **Capacity of plant :** 1,823MW
- **Period of business :** 2015. 12. 1~2017. 4. 30
- **Performing business :** Commissioning services
- **Client :** SK E&C





## Commissioning Experience (Overseas)

### Turkey, Tufanbeyli Thermal Power Plant (Fluidized Bed)

- **Capacity of plant** : 450MW (150MW x 3), CFBC
- **Performing business** : Commissioning services
- **Period of business** : 2014. 12. 1 ~ 2016. 12. 17
- **Remarks** : The world's first low-calorie lignite power plant
- **Client** : SK E&C



### Qatar, Ras Laffan C Independent Water and Power Project (IWPP)

- **Capacity of plant** : 2,730MW
- **Period of business** : 2016. 11. 27~2016. 12. 31
- **Performing business** : #5 HRSG commissioning
- **Client** : Hyundai E&C



### Vietnam, Mong Duong II Thermal Power Plant (Pulverized Coal)

- **Capacity of plant** : 1,120MW (560MW x 2)
- **Performing business** : Commissioning services
- **Period of business** : 2014. 11. 10 ~ 2015. 3. 31
- **Remarks** : Vietnamese first coal-fired IPP project
- **Client** : Doosan Heavy I&C



### Saudi Arabia, Shuqaiq Steam Power Plant

- **Capacity of plant** : 2,640MW
- **Period of business** : 2016. 7. 27~Present
- **Performing business** : Commissioning services
- **Client** : KEPCO KPS



### Colombia, Termotasajero II Thermal Power Plant (Pulverized Coal)

- **Capacity of plant** : 161.6 MW
- **Performing business** :  
- Commissioning services / TA(Technical Advisor)  
- Tuning
- **Period of business** : 2015. 8. 21 ~ 2016. 7. 15
- **Client** : Hyundai ENG



### UAE, SARB Refinery Project

- **Period of business** : 2017. 10. 1 ~ 2018. 8. 30
- **Performing business** : Commissioning services
- **Client** : Hyundai E&C



### Malaysia, Prai CCGT Power Plant

- **Capacity of plant** : 1,071MW
- **Performing business** : TA(Technical Advisor)
- **Period of business** : 2015. 10. 6 ~ 2015. 11. 5
- **Client** : Samsung C&T



### Algeria, Biskra SCPP (Fuel Oil)

- **Capacity of plant** : 450MW
- **Period of business** : 2017. 11. 5 ~ 2018. 6. 30
- **Performing business** : Commissioning services
- **Client** : Hanwha E&C



### UAE, Mirfa Independent Water and Power Project (IWPP)

- **Capacity of plant** : 1,600MW
- **Period of business** : 2016. 7. 1 ~ 2017. 11. 8
- **Performing business** : Commissioning services
- **Client** : Hyundai E&C



### Bangladesh, Siddhirganj CCGP

- **Capacity of plant** : 335MW
- **Period of business** : 2017. 11. 22 ~ 2018. 2. 21
- **Performing business** : Commissioning services
- **Client** : Samsung C&T





## Power Plant Operation and Maintenance

**KEPS specializes in power plant Operation and Maintenance (O&M) Services.**

### Power Plant Operation

KEPS provides operation services at Yeosu Community Energy System a cogeneration plant that supplies steam to the tenants of the Industrial Park, as well as selling electricity. We also provide operation services at the Yeongheung thermal power plant, the Samcheonpo thermal power plant, Taean Thermal Power Plant, and the Ansan thermal power plant.

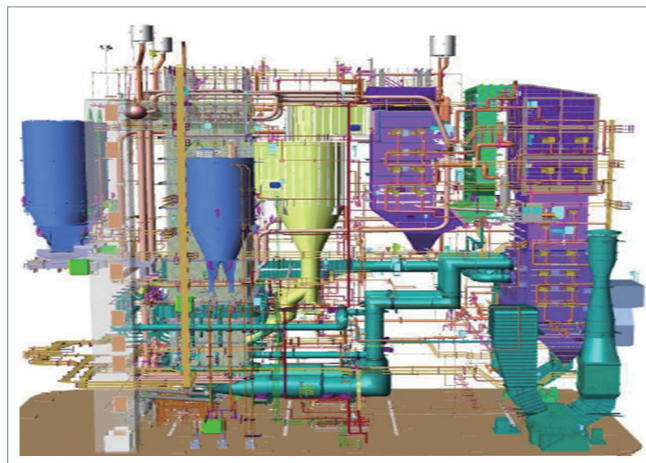
**KEPS is an expert in CFB based power plants.**

### Fluidized bed power plant operation

KEPS has been operating a CFBC power plant since 2011. From this experience we are knowledgeable regarding a number of operating procedures and related techniques.

### Circulating Fluidized Bed Combustion

By simultaneously injecting air and calcium carbonate, emissions of environmental pollutants including nitrogen oxides and sulfur oxides are significantly reduced during the combustion cycle.



Yeosu CFB Power Plant(350 T/h CFBC BOILER)



Tufanbeyli CFB Power Plant (450MW)



### Daily Maintenance

To ensure that the equipment can operate reliably, we perform daily checks to make sure that there are no abnormalities. Any abnormalities are dealt with immediately.

### Scheduled Maintenance

We implement disassembling, inspection, and testing of equipment and facilities under the "shut down" status in accordance with long term maintenance schedules and associated regulations. We provide high quality maintenance services by systematically engaging planning specialists, tools, and facilities. KEPS endeavors to optimize plant operation in order to satisfy their client's needs.



## Power Plant O&M Experience

### Yeosu Community Energy System

- **Capacity of plant**
  - Main Boiler : Steam 350T/h × 2, Electricity 24.2MW × 2
  - Assistance Boiler : Steam 160T/h x 1, 60T/h x 1
- **Period of business** : 2012. 8. 1 ~ Present
- **Performing business** : Operation / Maintenance
- **Client** : Korea South-East Power Co., LTD.(KOEN)



### Ansan Combined Cycle Power Plant

- **Capacity of plant** : 834.3MW
  - GT : 275.6MW x 2
  - ST : 283.1MW x 1
- **Period of business** : Start ~ 4 years
- **Performing business** : Operation / Maintenance
- **Client** : S-POWER



### Bundang Combined Cycle Power Plant

- **Capacity of plant** : 560MW
  - GT : 75MW x 5
  - ST : 185MW x 1
- **Period of business** : 2013. 1. 1 ~ 2018. 6. 30
- **Performing business** : Maintenance of GT, ST units (1 Block)
  - HRSG and Electric facility planned preventive maintenance
- **Client** : Korea South-East Power Co., LTD.(KOEN)



### Yeongdong Thermal Power Plant

- **Capacity of plant** : 325MW (125MW x 1, 200MW x 1)
- **Period of business** : 2015. 1. 1 ~ 2018. 12. 31
- **Performing business** : Operation
  - Coal, Ash refinement, Desulfurization facility
- **Client** : Korea South-East Power Co., LTD.(KOEN)



### Samcheonpo Thermal Power Plant

- **Capacity of plant** :
  - #3, 4 : 1,120MW (560MW × 2)
  - #6 : 500MW x 1
- **Period of business** : 2013. 1. 1 ~ 2019. 1. 14
- **Performing business** :
  - O&M of ash refinement facility, operation of disaster control center
  - Routine maintenance and planned preventive maintenance for boiler #3, 4, 6
- **Client** : Korea South-East Power Co., LTD.(KOEN)



### Taeon Thermal Power Plant

- **Capacity of plant** :
  - Unit 9&10 : 2,100MW (1,050MW × 2)
  - IGCC : 380MW (GT : 230MW / ST : 150MW)
- **Period of business** :
  - Operation : 2015. 07. 23 ~ 2018. 12. 31
  - Maintenance : 2016. 4. 1 ~ 2019. 3. 31
- **Performing business** :
  - Operation : coal handling facility, ash disposal facility, waste water treatment facility for #9, 10, IGCC
  - Maintenance : boiler #9, 10
- **Client** : Korea Western Power Co., LTD.(KOWEPO)



### Yeongheung Thermal Power Plant

- **Capacity of plant** : 870MW x 2 (#5,6)
- **Period of business** : 2013. 1. 1 ~ 2018. 6. 30
- **Performing business** :
  - Operation of coal handling facility and ash refinement facility
  - Operation of ash disposal facility and waste water treatment facility
- **Client** : Korea South-East Power Co., LTD.(KOEN)



### Poseung Community Energy System (Biomass)

- **Capacity of plant** : 43.2MW
- **Period of business** : 2018. 3. 14 ~ 2021. 3. 13
- **Performing business** : Operation
  - fuel & ash handling facilities
- **Client** : Poseung Green Power



### Philippines , Puting Bato Coal-fired Power Plant

- **Capacity of plant** : 270MW
- **Period of business** : 2016. 12. 1~2017. 4. 23
- **Performing business** : O&M support
- **Client** : KEPCO KPS





## Operation and Maintenance of Renewable energy facilities

## Renewable energy facilities Experience

**KEPS is one of the leading company in green energy. Since its establishment it has been operating and maintaining Wind Power, Solar Power, ESS and small Hydro Power facilities across Korea.**

**In addition to the ability of business development of new renewable energy sector, KEPS also provides world class O&M services for customer and its own business.**

### Wind Power

KEPS has accumulated knowledge of wind power technologies based on the operation and maintenance services it has provided to the Samcheok and Yeongheung, Yeosu regions.

KEPS is steadily pushing ahead wind power complex development and O&M services at home and abroad as well as providing high quality of O&M technology in wind power to meet customer's needs for creating stable profits.



### Solar Power

KEPS have scientific and systematic performance procedures for all areas of management and maintenance of solar power plant. KEPS provides reliable technical services by complying with its own & owners standard technical documents for efficient diagnosis, O&M, and improvement of the facility.

### ESS(Energy Storage System)

KEPS started the maintenance services for the first offshore facility of Yeongheung Wind ESS, linked to wind power development in Korea. KEPS is expanding its business area in the field of development, construction and O&M of ESS linked with Solar PV projects.

### Small Hydro Power

KEPS operates small hydro power facilities such as a 3MW small hydro power facility located at the Samcheonpo thermal power plant that utilizes water discharges, and a 12.6MW small hydro power facility located at the Yeongheung thermal power plant.



### Wind Power O&M

- **Capacity of plant :**  
Yeongheung(46MW) - Unison 2MW×3, Samsung Heavy Industries 2.5MW×4, Doosan Heavy Industries 3MW×10  
Yeongam(40MW) - Hyundai Heavy Industries 2MW×20  
Yeosu (3.05MW) - Unison 2.3MW×1, 750kW×1  
Samcheok Hajang II , III (7.65MW) - Unison 2.3MW×3, 750kW×1
- **Period of business :**  
Yeongam(2013. 9. 1 ~ 2016. 8. 31), Yeongheung(2013. 3. 1 ~ 2018. 6. 30)  
Yeosu(2016. 4. 1 ~ 2018. 3. 31), Samcheok(2016. 12. 5 ~ 2027. 12. 4)
- **Performing business :** Operation & Maintenance



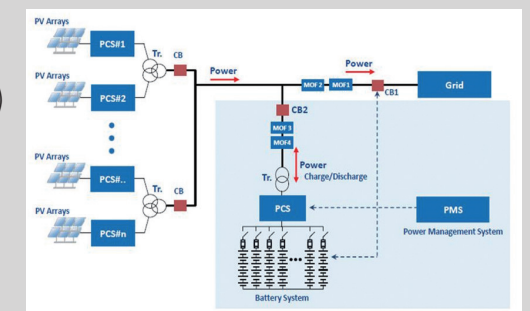
### Solar Power O&M

- **Capacity of plant :** Solar power in highway (8MW)  
Q one solar (8.8MW), Yeonan solar (3.1MW)  
Best solar (10.9MW), Yeongheung solar I , II (2MW)
- **Period of business :**  
Solar power in highway (2012. 12. 15 ~ 2032. 12. 14.)  
Q one solar (2013. 7. 1 ~ 2028. 6. 30.), Yeonan solar (2013. 8. 1 ~ 2015. 8. 31)  
Best solar (2013. 11. 15 ~ 2033. 11. 14.)  
Yeongheung solar I , II (2014. 9. 1 ~ 2018. 6. 30)
- **Performing business :** Operation & Maintenance



### ESS O&M

- **Capacity of plant :** Yeongheung Wind Link ESS (PCS 8MW/Battery 28MWh)  
Best solar Link ESS (PCS 7.5MW/Battery 30MWh)
- **Period of business :**  
Yeongheung Wind 1 step (2015. 9. 11 ~ 2018. 6. 30)  
Yeongheung Wind 2 step (2017. 2. 10 ~ 2018. 6. 30)  
Best solar (2018. 6. 1. ~ 2033. 11. 30)
- **Performing business :** Operation & Maintenance



### Small Hydro Power O&M

- **Capacity of plant :** Samcheonpo (3MW)  
Yeongheung I , II , III (12.6MW)
- **Period of business :** Samcheonpo (2013. 1. 1 ~ 2018. 6. 30)  
Yeongheung I , II , III (2014. 9. 1 ~ 2018. 6. 30)
- **Performing business :** Operation & Maintenance





## Total Service Provider

### We promote 3 key Growth Strategies



Since its establishment, KEPS has focused on strengthening their ability to provide a total solution service in order to proactively respond to changes in market environment. KEPS has differentiated itself from their competition in the O&M market. Especially when it comes to providing overall technical advisory services which include commissioning and power plant O&M services.

KEPS is developing maintenance programs such as RBI(risk based inspection) and RCM(reliability centered maintenance) which can assist in discovering and preventing operational problems. KEPS continues to invest in technology of specialized IT system including CMMS.

KEPS has positioned itself as Korea's leading power plant operation and maintenance company. With this status, KEPS will look to expand its business to Asia and the rest of the world. KEPS will endeavor in the development of overseas business, especially with regards to ROT(Rehabilitate, Operate, Transfer) contracts and O&M turn-key packages.

KEPS is based on a business philosophy that encourages Talent Management, Creative Technology, and Challenging Spirits. Pursuing safe operation and optimum maintenance of power equipment, KEPS has differentiated itself to be a Total Service provider in the O&M market.

### KEPS Total Service

#### Engineering

KEPS offers optimal engineering services such as design, and construction management based on experience from our past power plant construction projects.

#### Commissioning

We participate in commissioning services that occur towards the end phase of power plant construction, testing the performance of the equipment and the overall installation.

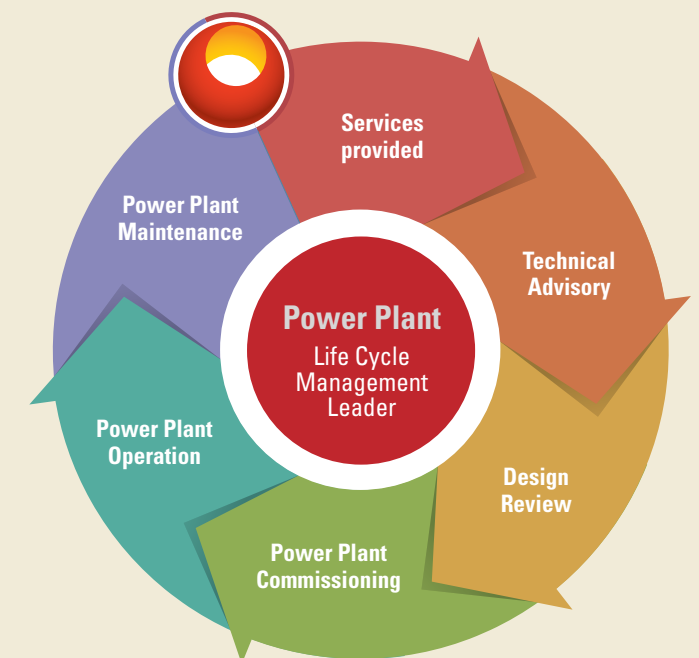
#### Operation & Management

When it comes to the specialty of operating power plants, the level of technical competency differentiates KEPS from its competition. This competence is due to the accumulated experience from operating various power plants, beginning with the operation of Yeosu Community Energy, to the commissioning & operation of CCPPs (combined cycle power plant), and the operation of auxiliary equipment in thermal power plants.

#### Maintenance

We offer world class O&M services. We are able to offer and perform various power plant equipment diagnostics and maintenance work, such as adjusting turbine vibration and alignment, precisely diagnosing gas turbines, working on boilers, improving electrical equipment longevity etc.

KEPS offers every possible service that has to do with the power plant field, and is going forth as a Leader in **Power Plant Life Cycle Management.**





## Total Service Provider

We have established a firm cooperative relationship with experts in various fields in order to provide the comprehensive technical solution across the board.



## Comprehensive Technical Capabilities

### Design / Supervision

Provide optimal solution in the Combined Cycle Power and Renewable Energy fields in cooperation with KDHEC. Improve reliability in commissioning field through technical cooperation with engineering and O&M companies.

### Technical Consultation for Power Plant Maintenance

Provide diverse knowledge database supported by top-notch technical consulting companies.

### Power Plant Operation & Maintenance

Provides service personnel and expertise for overseas businesses based on the partnership with OES, HPS in Korea, Voltech, OMS & Desein in India, EVN-NPS in Vietnam, a government-owned service company.

### Power Plant Operation / Operational Procedure Management

Provide customized O&M services in cooperation with the KOEN.

### Control

Provide technical professionals together with the control equipment manufacturer, EMERSON.

### Power Equipment Production / Maintenance / Training

KEPS is in the process of Establishing a firm cooperative relationship with original equipment manufacturers(OEM), Doosan, GE & Siemens.

## Health and Safety are the core ingredients of KEPS' philosophy.

### Safety Management

#### Occupational Health and Safety Management System (Joint Certification of KOSHA + OHSAS)

KEPS, in advance, predict any safety risks that may present themselves at project sites through health and safety programs in which top management, employees, and other interested parties all attend. In order to protect the health and safety of every person involved, KEPS has obtained the joint certification of KOSHA 18001 and OHSAS 18001. We are proud to report that we have not had a single accident since these certifications.



### Responding to a Changing Business Environment

In order to keep up with increasing safety standards and business management globalization, KEPS is putting emphasis on values such as environment and safety in order to implement "risk free societies" and "economic growth". We enforce systematic safety management methods in order to create a self-governing safety system.

### Establishing a Health and Safety Management System

Through KEPS' continuous investments towards health and safety precautions, we have built an occupational health and safety management system. We enhance the intrinsic values of our company and our customers, through the seamless and thorough implementation of such systems.



### Quality Management

**KEPS practices an integrated management system by using quality management systems and environmental management systems in accordance with the requirements of the international organization of standardization.**

#### ISO9001:2008 Quality Management

- Range : Power Plant O&M
- Subject : Head office & Branch offices

### Environmental Management

**KEPS meets all the specified requirements of ISO9001:2008 / ISO14001:2004. By establishing, maintaining, and developing an effective quality/ environmental management system, KEPS will do everything to satisfy our clients.**

#### ISO4001:2004 Environmental Management

- Range : Power Plant O&M
- Subject : Head office & Branch offices



## Research and Development

**KEPS will contribute stable operation to the national infrastructure to the nation's power industry by developing a program and system that will predict potential failures of essential equipment, thereby allowing preventive measures to be taken.**

### Operation of R&D center

Since 2014, when KEPS began operation of its newly founded R&D center, we have steadily acquired the skills that allow us to provide world class O&M services through the use of excellent staff, laboratories, and systems.

We have secured a competitive future for KEPS in the power plant maintenance field. We have a vast number of researchers analyzing plant failures, and predictive diagnostics, as well as experimental facilities for mechanical engineering, metallurgical engineering, electric engineering, control engineering, and thermodynamics etc.

### 기업부설연구소 RESEARCH & DEVELOPMENT CENTER



### Technology Training

With the establishment of KEPS Technology Training Institute, KEPS is continuously teaching both the theories and the practices that are required in the field to create an excellently trained work force.

In addition, the institute was designated in Jun. 2015 as a vocational training facility (system control), which enables us to provide highly professional and systematic training programs.

### 발전기술교육원 TECHNOLOGY TRAINING INSTITUTE



### Specialized Research Areas

Development of a surveillance system that will be able to analyze a thermal power plant's performance efficiency.

### Vibration Diagnosis

KEPS develops innovative technology in power plant inspection and diagnosis. KEPS owns the latest analytical equipment and uses it to inspect vibration issues of core rotating equipment of power plants.

### Maintenance Technology Research and Development

KEPS is focused on creating practical patents and draft development by deriving and analyzing data to improve problems within the facility.

### Technology Development

With a ceaseless effort for development of special equipment and instruments since 2014, KEPS has successfully obtained 20 patents and maintenance techniques.





## Global Operation

Since its founding in 2011, KEPS has accumulated the nation's best development facilities using O&M technology as its base. KEPS is expanding to the rest of Asia, and the world.

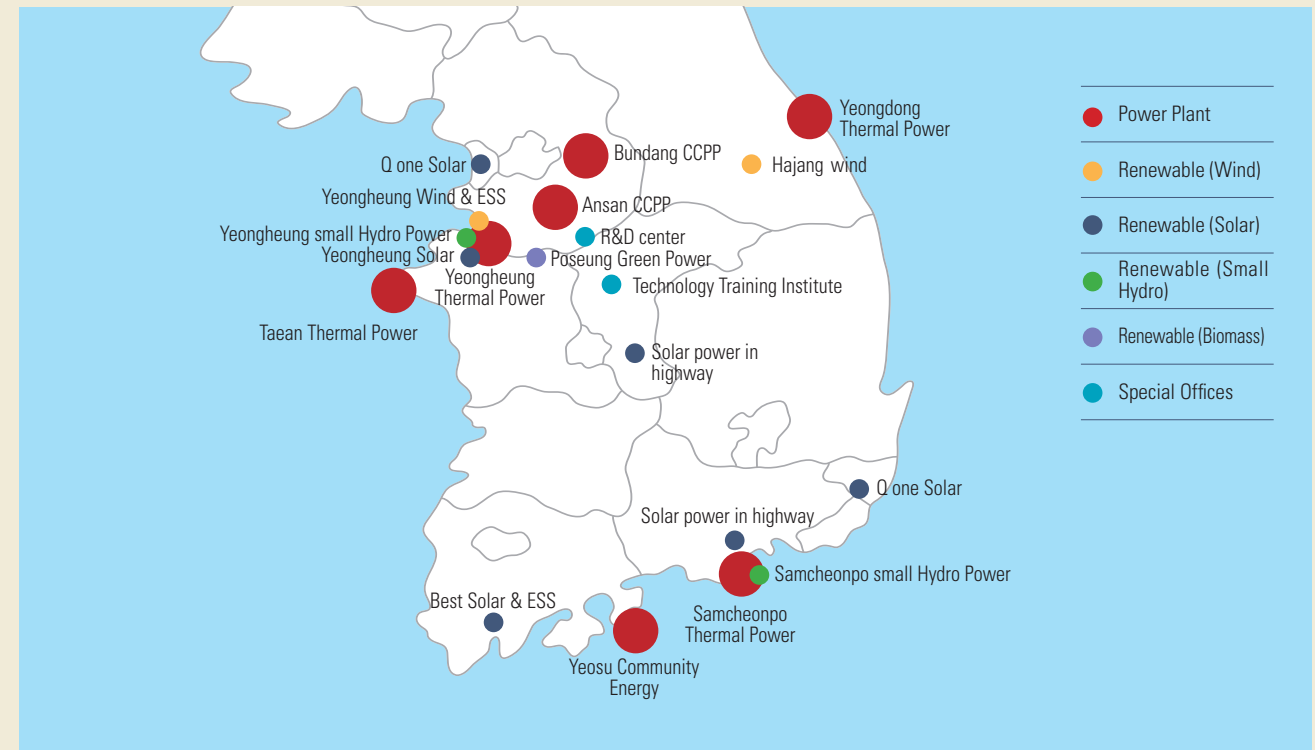
## History of Global Projects





## Branch Offices

Since KEPS had obtained its first license for “Electrical Works” in 2012, we had completed the registration of licenses for “Engineering & Design”, “Supervisory & Auditing Services”, “Mechanical facility works”, “Environmental specialist work” and “Overseas Construction”. KEPS was awarded “Safety and health management system” certificate by the Korean Occupational Safety and Health Agency in 2014. In addition, KEPS obtained “Quality and Environmental Management System” certificate from Korean Standards Association and also acquired “Occupational capacity development training facility” certificate from Ministry of Employment and Labor in Korea, respectively.



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