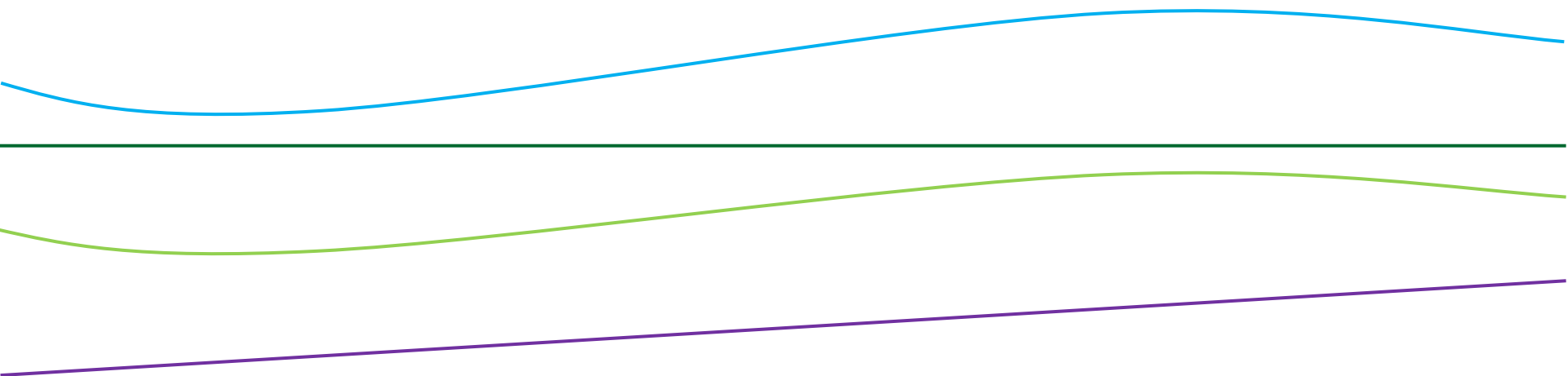


A Fast-Growing Company with Green industry

KC Solar Energy



CONTENTS

Introduction & Solar business

O&M Reference

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Introduction & Solar business

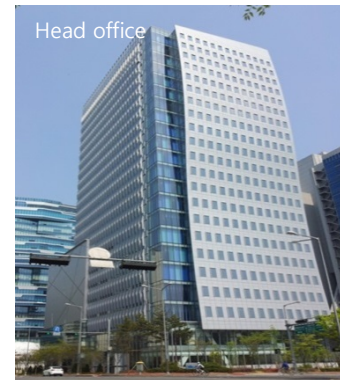
01 | Company Summary

“Trusted and Reliable Customer Relationship for 40 years”

“With Major Power Generation Companies in the world”

KC SolarEnergy 

Founded	1973. 11. 27 (KC Green Holdings) 2005. 11. 7 (KC Solar Energy)
Business area	Solarpower project Development, Financing, EPC, O&M, ESS+PV
Location	11F DigitalCube, (Sangam-dong) 34, Sangamsan-ro, Mapo-gu. Seoul, Republic of Korea
Website	www.kc-solarenergy.com
Sales account (2015)	US\$ 338million (KC Green Holdings) US\$ 13million (KC Solar Energy)
Credit Rating	A- (KC Green Holdings) BBB- (KC Solar Energy)
Employees	1,119(KC Group) 33(KC Solar Energy)



02 | Company Organization – KC Green Holdings



APC & EPC

KC Cottrell (Korea)

KC Air Filtertech
KC Energy Technology
KC Africa
KC Cottrell Taiwan

Changchun KC Envirotech

Lodge Cottrell (UK)

KC Cottrell Vietnam

KC Cottrell India

NOL-TEC Systems

NOL-TEC ASIA
NOL-TEC KOREA



Environmental Service

KC Enviro Services

KC Landfill Service
KC Enviro Construction
KC Catalyst Services

KC Hanmi Environment

Changwon Enertech

KC Eco Energy

KC Eco Logistics



Eco-friendly Manufacturing

KC Glass & Materials

KC Thermal

Clestra Hauserman

Clestra Ltd.
Clestra Hauserman KK.
Clestra Architectural Products
CLESTRA Hauserman
Architecture Product.
Clestra Hauserman.

KC Envirotech E&C

NWL Pacific



New & Renewable Energy

KC Solar Energy

KC Green Energy

Our growth, Green growth, & Sustainable future of global society

03 | Business Area



EPC of utility scale PV system



Operation and maintenance services for PV



ESS[Energy Storage System] business with PV



Project consulting & Solar power plant Trading

04 | Business Area



EPC(Engineering & Procurement & Construction)

DESIGN and CONSTRUCTION

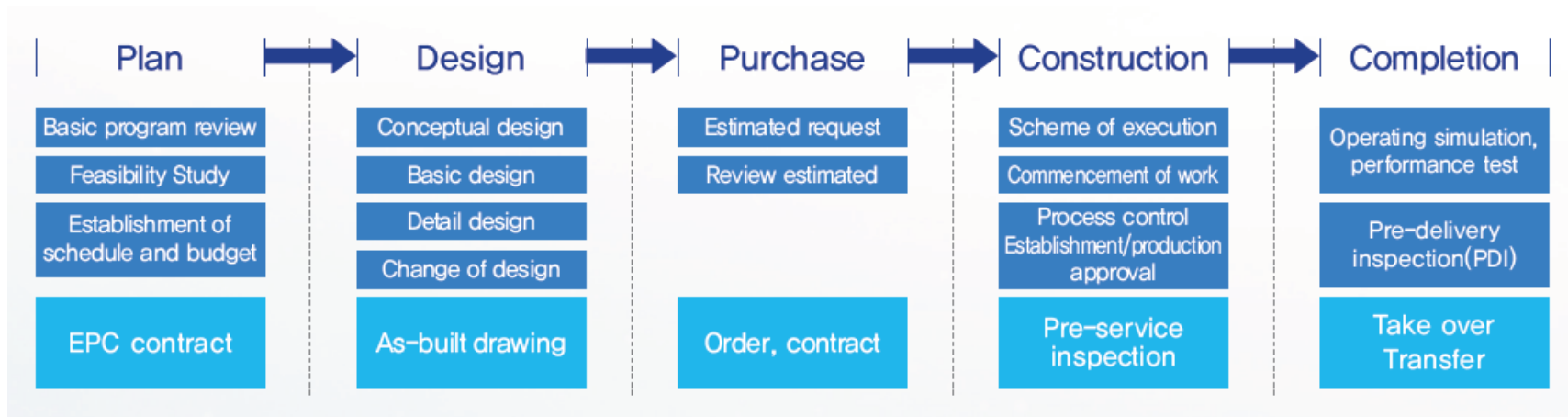
Construction using detailed analysis and suitable design

- Expected Generation analysis
- Design for the best solar power plants
- Responsible construction and test operation

PROCUREMENT

Procurement ability : Low price but high efficient equipment

- PV module
- Inverter
- Electric equipment
- Structure system
- Monitoring system



O&M(Operation & Maintenance)



Pre-Inspection



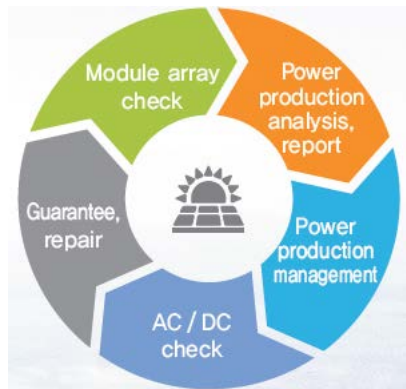
Check



Monitoring



Guarantee



■ KC Monitoring on Supervision Center(KC-MOS)



System Analysis



System O&M



PV Power Plant Manager



Management operation

- Electricity generation analysis
- Power plant maintenance
- Guarantee for Power generation amount
- Monitoring system
- Safety, Insurance, Internet
- Agency business to pay for electricity bill

R&R Solution[Revamping & Renewal]

- Development of solar power plant for M&A
- NPL or Acceptance of stocks
- Refinancing or New investment
- Reconstruction, Remodeling or Revamping



06 | Business Area

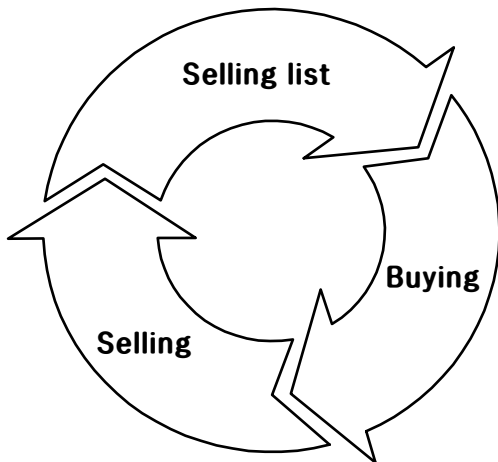


Trading and Consulting

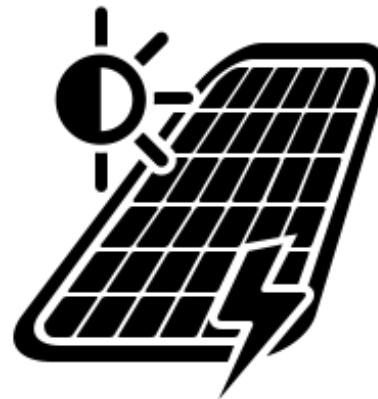
▣ Solar power plant Trading



www.kc-solarenergy.com



▣ Consulting service



Feasibility study

- Site suitability research
- Project validity analysis
- Profitability study

Trading consulting

- Profit optimization
- Realistic consulting to make customer satisfied
- Financing consulting
- Personalized business proposal

O&M

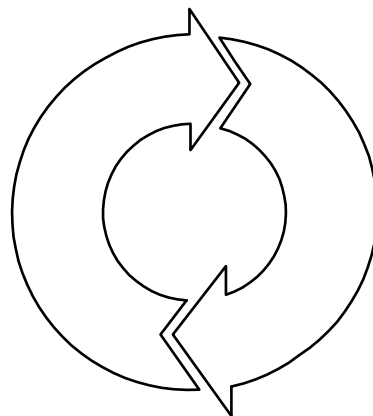
- Expected generation analysis
- Part of R&R Solution
- Monitoring system for guarantee



Combined energy business with ESS(Energy Storage System)

Decentralized power supply system

- On-grid system
- Load control system
- Efficient electric distribution control through expected generation analysis
- Energy cost down analysis through Energy demand check



Independent power supply system

- ESS support business with Solar power plant
- Generation analysis to supply each village
- Site suitability analysis for ESS
- Transmission & Distribution control system

■ ESS business application

❖ Effective utilization of Power

ESS with Solar power is able to change Unstable renewable energy in the part of generating point and power amount to Stable energy

❖ Stable supplying power

Contributing stable supplying power with load control system for peak time between daytime and night

❖ Alternative means

In case of application to Plant and structure, ESS with Solar power is able to be used for alternative means instead of emergency generator and electric cost saving during power peak time

08 | Resources and Advantages

100MW

Cumulative capacity 100MW EPC/
Operation & Maintenance Services Knowhow

EXPERTISE

Proven engineering expertise
and references in Solar PV

**Global
Network**

Established network of
world-wide business operations

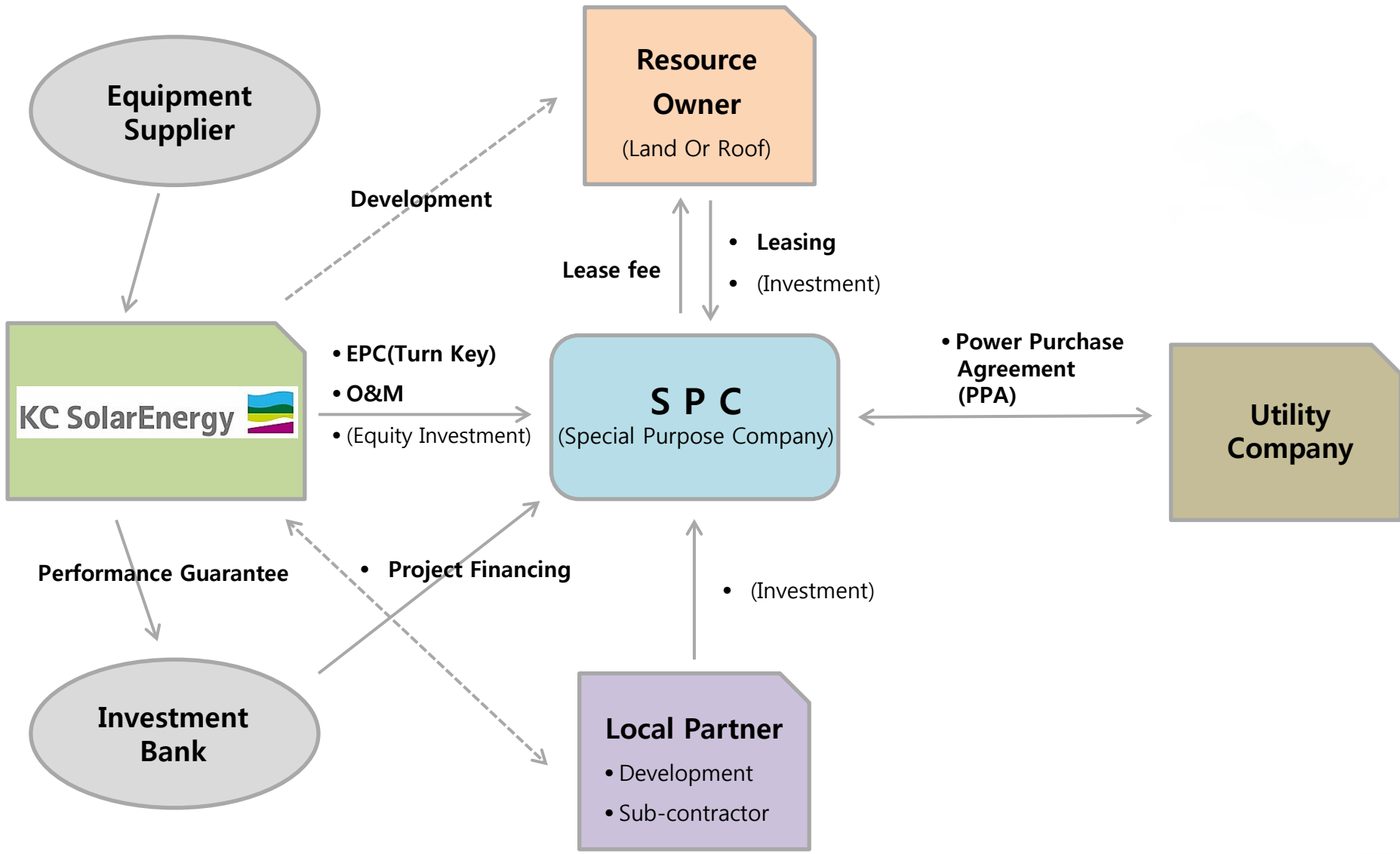
SOLID

Solid financial performances
And market credibility

Relationship

Established business relationships
With power generation companies

09 | Business Structure



10 | Solar R&D

- Filed feature evaluation method development about performance, life and cause of declined efficiency of solar power module on the spot
- Standardization and performance evaluation method of solar power module on the spot



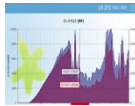
Site data supply



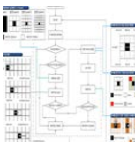
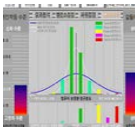
Site evaluation through site test development



Site evaluation method guide line development



Transmission of operation efficiency of real-time generation quantity



Site performance evaluation method development

- Site real-time trouble check evaluation method
 - ↓
- Solar power generation test execution to be adapted on the spot
 - Busan renault solar power factory 26MWp,
 - Yeong-gwang deserted saltern 11MWp,
 - General Motors Korea etc.
 - Cause about declined efficiency, evaluation of performance and life
 - Trouble check method development through galvanometry and voltage measurement on solar power module array



11 | Certificate



■ KS Q ISO 9001 : 2015

■ 해외건설촉진법 시행규칙 [별지 제3호서시] <개정 2014. 2. 14> (발목)

제 1409 호
No.1409

해외건설업 신고확인증
(Certification of International Contractor)

상 호 : 케이씨솔라에너지(주)
(Name of Company) (KC Solar Energy)

대 표 자 : 이태영
(Name of Company Representative) (Lee Tae Young)

법인 등록 번호 (생년월일) : [134811-0113837]
[Corperation registration number(date of Birth)]

신고업종 : 전기공사업
(Type of Business) (Electrical Works)

주된 사무소의 소재지 : 서울특별시 마포구 상암산로 34, 11층
(Address of Company) (11F, 34 Sangamsan-ro, Mapo-gu, Seoul, Korea)

「해외건설촉진법」 제6조 제1항에 따라 해외건설업의 신고를 하였음을 증명합니다.
This is to certify that the above mentioned company is an enrolled international contractor in compliance with Clause 1 under Article 6 of Overseas Construction Promotion Act.

2011년 11월 02일

해외건설협회장
(Chairman of International Contractors Association of Korea)

해외건설업신고사항(상호, 대표자, 영업소소재지)이 변경된 경우 사유발생일로부터 30일 이내 반드시 변경신고를 하시기 바랍니다. 210mmx297mm [포문용지(15) 120g/㎡]

■ Certification of International Contractor

등록번호 서비스제공 제 212 호

지능형전력망 사업자 등록증

- 성명(대표자) : 이태영 (생년월일: 1959년 03월 09일)
- 상호 : 케이씨솔라에너지(주)
- 주소 : 서울특별시 마포구 상암산로34, 11층 (상암동, 디엠씨디지털큐브)
- 영업소의 소재지 : 서울특별시 마포구 상암산로34, 11층 (상암동, 디엠씨디지털큐브)
- 등록구분 : 지능형전력망 서비스제공 사업 (전기차 충전 / 기타 서비스)
- 등록연월일 : 2016년 2월 24일

「지능형전력망의 구축 및 이용촉진에 관한 법률」 제12조제1항, 같은 법 시행령 제8조 및 같은 법 시행규칙 제3조에 따라 위와 같이 등록하였음을 증명합니다.

2016년 2월 24일

산업통상자원부장관

■ License of Smart-grid

O&M Reference

12 | O&M Reference of KC Solar Energy

Operation & Maintenance Services Knowhow.



13 | Solar Power Plant O&M

Myeong -dong, Gim hae purification plant

- 1.5MW Solar Power Plant
- Completion date: 2008
- 20year O&M



Hwa seong Waste landfill

- 1MW Solar Power Plant
- Completion date: 2007
- 20year O&M



Renault Samsung, Busan factory

- 26MW Solar Power Plant
- Completion date: 2012,2014
- 20year O&M



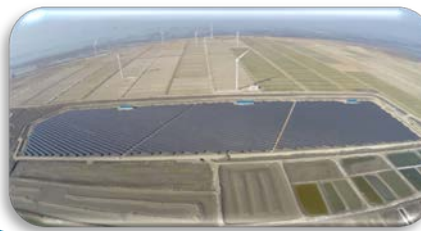
General Motors Korea Chang- won factory

- 11.5MW Solar Power Plant
- Completion date: 2013,2014
- 15 year O&M



Yeong gwang Saltern

- 11MW Solar Power Plant
- Completion date:2013
- 20year O&M



Busan Solar (West Busan distribution complex)

- 3MW Solar Power Plant
- Completion date: 2013
- 15year O&M



EPC Reference

Uzbekistan PV Test bed Project

Item	Expatriation
Business owner	<ul style="list-style-type: none"> Ministry Of Trade, Industry and Energy
Business Purpose	<ul style="list-style-type: none"> PV Project Development Central Asia on the basis of empirical results
Project Participate	<ul style="list-style-type: none"> KOPIA(Korea Photovoltaic Association) / KC Cottrell. Co., Ltd.
site	<ul style="list-style-type: none"> Uzbekistan Namangan Pap
System capacity	<ul style="list-style-type: none"> 130kW
PV module	<ul style="list-style-type: none"> Hanwha Q Cells, JSPV, S-energy, Topsun
Completion date	<ul style="list-style-type: none"> Dec. 31th, 2014



Modular Hybrid Energy power system with ESS Development & Test

Item	Expatiation	Item	Expatiation
Companies	<ul style="list-style-type: none"> KC Cottrell, Samsung SDI,S–Energy, Intech FA, Korea Electrotechnology Research Institute 	System capacity	<ul style="list-style-type: none"> 100kWp
Subject purpose	<ul style="list-style-type: none"> Modular package Engineering , Manufacture and Test site constriction 	PV module	<ul style="list-style-type: none"> Crystalline
Location	<ul style="list-style-type: none"> Republic of Djibouti 	Completion date	<ul style="list-style-type: none"> Oct. 2015





This is Solar project is one of the largest solar power built in a single factory in the world

Item	expatiation
Business owner	▫ Busan Sinho PV Generation
Business Purpose	▫ RPS enforcement
Project Participate	▫ Korea EAST–WEST Power, KC Cottrell, KB Asset Management
site	▫ 185, Sinho–dong, Gangseo–gu, Busan, Korea
System capacity	▫ 20MW(1 step) , 6MW(2 step)
PV module	▫ Crystalline (hanwha–solarone & STX solar)
Completion date	▫ Dec. 31 th , 2012 (1 step), June 30 th , 2014 (2 step)
CO ₂ reduction	▫ about 23,400 ton/yr



Guest Parking 1.7MW



Motorpool 11MW



Rooftop 13.3MW

Complete parking lot



Complete parking lot



Factory roof



Customer parking lot



General Motors Korea 11.5MW Solar Power plant

Solar Project Constructed at the factory roof – top of GMK

Item	expatiation	Item	expatiation
Business owner	<ul style="list-style-type: none"> KS Solar Co., Ltd. 	System capacity	<ul style="list-style-type: none"> 3MW(1 step) , 3.5MW(2 step), 5MW(3 step)
Business Purpose	<ul style="list-style-type: none"> RPS enforcement 	PV module	<ul style="list-style-type: none"> 310Wp Crystalline (shinsung Solar)
Project Participate	<ul style="list-style-type: none"> Korea Southern Power Co., Ltd., KC Solar Energy Co., Ltd., Korea Asset investment securities Co., Ltd. 	Completion date	<ul style="list-style-type: none"> Oct. 31th, 2013 (1 step), Apr. 30th, 2014 (2 step) Mar. 10th, 2015 (3 step)
Site	<ul style="list-style-type: none"> GMK Changwon, Seongju–dong, seongsan–gu, Changwon–si 	CO ₂ reduction	<ul style="list-style-type: none"> about 5,850 ton/yr



11MW Solar Project constructed on deserted salt field

Item	expatiation
Business owner	▫ De Solar Co., LTD
Construction & manage	▫ KC Solar Energy Co., Ltd
Project Participate	Korea Midland Power Co., Ltd., JS Power, KB Asset Management
site	▫ 1881, Hasa-ri, Baeksu-eup, yeonggwang-gun, jeollanam-do, Korea
System capacity	▫ 11MW
PV module	▫ 310Wp Crystalline (shinsung Solar)
Completion date	▫ Dec. 17th, 2013
CO ₂ reduction	▫ about 9,900 ton/yr



Young-Heung Solar Power Plant No. 3

Item	Expatriation	Item	Expatriation
Owner	▣ Korea South-East Power Co., Ltd.	Capacity	▣ 6,153.84kWp (Total of 3 sites)
Constructor	▣ KC Solar Energy Co., Ltd.	Module	▣ 330Wp(Hyundai Heavy Industries)
Site	▣ Young-Heung Thermal Power Plant in Incheon City	Period	▣ 2016. 06. 29 ~ 2016. 10. 31





N.	Project name	Capacity	Year
1	National forestry cooperative federation Solar project	918.54kW	2015
2	Modular Hybrid Energy(PV+ESS+Diesel) Power supply system	50kW	2015
3	Car-Components Complex Solar project	3,000kW	2013
4	Thermoelectric Solar project	672kW	2012
5	Incheon Complex 3 rd Solar project	300kW	2011
6	Incheon Water-purification Solar project	1,000kW	2011
7	Seoul Water-purification Solar project	1,300kW	2011
8	Guang-yang CFS Roof-top Solar project	2,300kW	2011
9	Africa Senegal education Solar project	4kW	2011
10	Jordan Bedouin village Solar project	2kW	2011
11	Glass MFG Factory Solar power project	180kW	2008
12	Posco Roof-top Solar power project	1,000kW	2008
13	Ha-Dong Solar project	1,000kW	2008
14	Gimhae Myung dong Solar project	1,500kW	2008
15	Miryang Solar power project	200kW	2008
16	KCSP Hwaseoung Solar project	1,000kW	2007
17	Youngheung Solar project	1,000kW	2006

Social contribution

Senegal CDEPS Youth education center Solar Power plant installation

Item	expatiation	Item	expatiation
Donor	<ul style="list-style-type: none"> ▫ Korea Southern power Co., Ltd. & KC Cottrell Co., Ltd. & Hyundai Heavy Industries Co., Ltd. 	System capacity	<ul style="list-style-type: none"> ▫ 4 kWp
Business Purpose	<ul style="list-style-type: none"> ▫ Subdivision Business 	PV module	<ul style="list-style-type: none"> ▫ Crystalline
Location	<ul style="list-style-type: none"> ▫ Africa Senegal Umbr area CDEPS Youth Education Center 	Completion date	<ul style="list-style-type: none"> ▫ July, 2011



Jordan a neglected class of people Bedouin 『a beam of hope subdivision Business』

Item	expatiation	Item	expatiation
Donor	<ul style="list-style-type: none"> ▫ Korea Southern power Co., Ltd. & KC Cottrell Co., Ltd. & Hyundai Heavy Industries Co., Ltd. 	System capacity	<ul style="list-style-type: none"> ▫ 2 kWp(200Wp * 10set)
Business Purpose	<ul style="list-style-type: none"> ▫ Subdivision Business 	PV module	<ul style="list-style-type: none"> ▫ Crystalline
Location	<ul style="list-style-type: none"> ▫ Jordan 	Completion date	<ul style="list-style-type: none"> ▫ February 2011



Vietnam Nham Son kindergarten Solar power plant installation

Item	Expatiation	Item	Expatiation
Donor	<ul style="list-style-type: none"> KC Solar Energy 	System capacity	<ul style="list-style-type: none"> 3 kWp
Business purpose	<ul style="list-style-type: none"> Subdivision business 	PV module	<ul style="list-style-type: none"> Crystalline
Location	<ul style="list-style-type: none"> Vietnam Dong Huong, Nham Son kindergarten 	Completion date	<ul style="list-style-type: none"> Nov. 2015



Lễ trao tặng hệ thống năng lượng mặt trời và bình nước nóng cho trường mầm non xã Nham Sơn

[Bản để in](#) [Gửi bài này qua Email](#)

Sáng 4/11, Công ty KC Hàn Quốc phối hợp với Công ty xử lý chất thải công nghiệp Hòa Bình tổ chức lễ trao tặng hệ thống năng lượng mặt trời và bình nước nóng cho khu Đông Hương, trường mầm non xã Nham Sơn. Dự buổi lễ ở huyện có đồng chí Nguyễn Việt Tuấn tỉnh ủy viên bí thư huyện ủy, đồng chí Nguyễn Hữu Hưng phó chủ tịch UBND huyện, lãnh đạo công ty KC Hàn Quốc công ty xử lý chất thải công nghiệp Hòa Bình.

Khu Đông Hương trường mầm non xã Nham Sơn có 4 lớp và 100 cháu học sinh. Hệ thống pin năng lượng mặt trời do công ty KC của Hàn Quốc tài trợ lắp ứng được hệ thống đèn sáng, quạt mát và nước nóng phục vụ sinh hoạt cho các cháu học sinh.



Độc Bí thư huyện ủy phát biểu tại buổi lễ

Phát biểu tại buổi lễ trao tặng đồng chí Nguyễn Việt Tuấn tỉnh ủy viên bí thư huyện ủy nhấn mạnh: Trong những năm qua vấn đề môi trường luôn được các cấp, cả ngành của huyện quan tâm. Trường mầm non xã Nham Sơn đã được công ty KC dành một phần quỹ phúc lợi tài trợ cho địa phương. Đây là phần có có ý nghĩa đối với các em học sinh và các thầy cô giáo nơi đây. Qua đó tạo điều kiện cho các cháu học sinh có hệ thống điện thấp sáng, quạt mát nước nóng nhờ năng lượng mặt trời. Đồng chí cũng mong muốn các thầy cô giáo sử dụng có hiệu quả các thiết bị được trao tặng, giữ gìn để các thiết bị được lâu bền góp phần chung tay xây dựng môi trường xanh. Nhân dịp này công ty có phần xử lý chất thải công nghiệp Hòa Bình tặng khu trường Mầm non Đông Hương một chiếc tivi, công ty có phần Máy Bắc Giang tặng các cháu quần áo.

Hạnh Liên

Tags: Văn hoá - Xã hội



Thank You!

happy@kc-cottrell.com

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