



DCNCA

PROVIDING GREEN ENERGY SOLUTION



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## Introduction

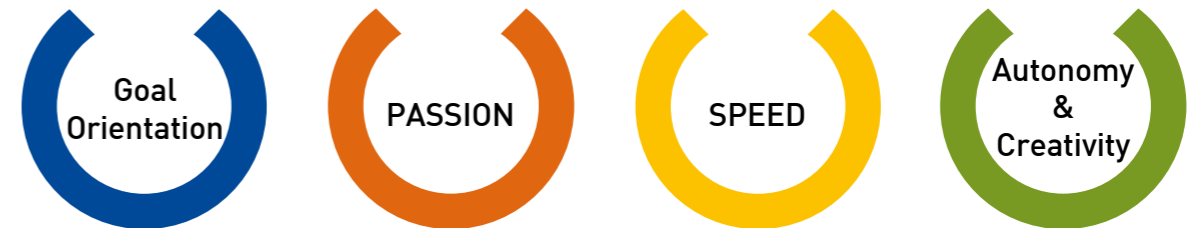
DCNCA Co Ltd when was established in October, 2007 is a leading manufacturer of movable Energy Storage System with in the providing NRE(New and Renewable Energy) System, PV Module, On/Off Grid Inverter, LED Lamp system, PV power plant system designing and Consulting,



We have a vision to become a global leader in renewable energy sector by providing the most value to our customer and maximizing corporate value though innovation and speedy execution of strategy.

We are confident in our ability to produce highest quality product at highly competitive price for our customers.

### Vision and Goal



Future Power for the Human  
Goal Orientation to Customer value Creation

### Product Differentiation

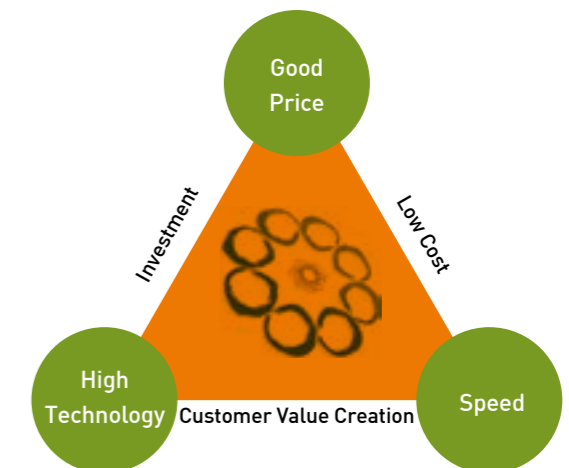
DCNCA will archive the highest level of performance and competitiveness in movable ESS and PV system Industry on the new technologies and process improvement. Our, DCNCA Product and system will enable high performance/ efficiency to your applications or device .

### Strategy Map

Valuing the integrity and partnership the most, DCNCA is trying its best to establish a solid long term relationships with Application designer, In/Out door Product Provider, and Customers. Our aims to lead the R&D of new technologies through close cooperation and communications with our partners to find more opportunities in the sustainable energy industry.

### Integrations

Valuing the integrity and partnership the most, DCNCA is trying its best to establish a solid long term relationships with Application designer, In/Out door Product Provider, and Customers. Our aims to lead the R&D of new technologies through close cooperation and communications with our partners to find more opportunities in the sustainable energy industry.





- ⏻ Energy Storage System
- ⏻ PV INVERTER
- ⏻ LED LIGHT (Tube, Bulb, Outdoor)
- ⏻ Standalone CDM Street Light System
- ⏻ Standalone LED Street Light System



Energy Storage System

Energy Storage System

LED Ball Lamp

Moveable/Outdoor PV Module

Outdoor / Industrial LED Bar Lamp

- ⏻ Solar Power Plant Design
- ⏻ Power Plant Installation
- ⏻ PV Module Providing
- ⏻ LED Street Light System Design Providing
- ⏻ On/Off Grid Solar home System
- ⏻ NRE, KS, TUV, ISO Certification Consulting
- ⏻ Industrial/Special Battery Providing



Energy Storage System



ESS POWERON DEP Series

PB

Max Power	300W/500W/1000W
Battery	PB (12V/40A, 42A, 45A)
AC Power Out	110V ~ 240V, 50/60Hz X 2
DC Power Out	DC 12V/2A 5.5Q X 1, Cigar Socket X 1 DC 5V/2A USB X 1, Banana Jack X 1
Display	LED, LCD
Dimension	247.5(W) X 216.6(H) X 345.0(D)
Weight	17Kg (With Battery)
Option	PV Module, LED Bar
PV Module	Max 100W (or 50W x 2), A/C Charge



ESS POWERON DEF Series

LiFePO4

Max Power	500W / 1000W
Battery	LiFePo4 (12V/42A)
AC Power Out	Not Support
DC Power Out	DC 12V/2A 5.5Q X 1, Cigar Socket X 1 DC 5V/2A USB X 1, Banana Jack X 1
Display	LED
Dimension	
Weight	5Kg (With Battery)
Option	500W Extension Battery PV Module, LED Bar
PV Module	Max 120W



ESS POWERON DEH Series

PB

Max Power	1000W / 2000W
Battery	PB (12V/250A)
AC Power Out	110V ~ 240V, 50/60Hz X 2
DC Power Out	DC 12V/2A 5.5Q X 1, Cigar Socket X 1 DC 5V/1A USB X 1
Display	LED
Dimension	123(W) X 330(H) X 237(D)
Weight	2Kg (Without Battery)
Option	PV Extension Lead/Cable PV Module, LED Lamp
PV Module	Max 330W



ESS POWERON DEH Series

PB

Max Power Out	3000W
Battery	PB (12V/250A X3) 48V Input
AC Power Out	110V ~ 240V, 50/60Hz X 2
DC Power Out	Not Support
Display	LED
Dimension	235(W) X 194(H) X 473(D)
Weight	9.5Kg(Without Battery)
Option	3KW Extend Battery PV Extension Lead/Cable PV Module, LED Lamp
PV Module	Max 1000W



ESS POWERON DEFP Series

PB

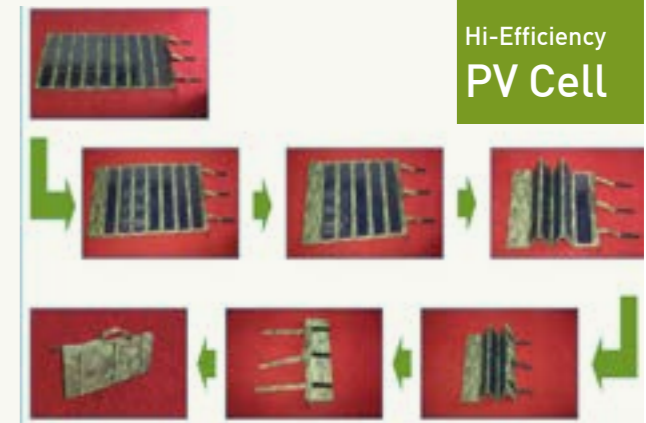
LiFePO4

Max Power	120W / DC
Battery	PB (12V/26A, SLA Type)
AC Power Out	Not Support
DC Power Out	DC 12V/2A 5.5Q X 1, Cigar Socket X 2 DC 5V2A USB X 2 DC 2.5~12V/2A Adjustable DC Socket X 2
Display	LED
Dimension	140(W) X 180(H) X 250(D)
Weight	11.4Kg (With Battery)
Option	PV Module, LED Bar
PV Module	Max 50W
Charge	INPUT : DC 8~15V/3.5A Adapter and Cigarjack

Out Door and Portable PV Module



Hi-Efficiency PV Cell



Model	PW	Voc(V)	Isc(A)	Isc(A)	Vmp(V)	Size(mm)	Size(mm)
DFD-30	30W	21.2	1.83	17.6	1.8	980*395-4	395*195*30
DFD-50	50W	21.2	3.05	17.6	2.84	910*560*4	560*190*30
DFD-60	60W	42.3	1.86	35.2	1.71	1495*443*4	443*190*40
DFD-100	100W	21.6	5.97	17.8	5.62	1760*557*6	557*185*48
DFD-130	130W	29.4	5.76	24.4	5.32	52385*557*6	557*185*66

ESS POWERON DPP series



Hi-Efficiency PV Cell

Max Power Out	60W, 80W, 100W, 120W
Dimension	664mm*668mm*70mm
Weight	5.0 Kg
Controller	Not include

ESS POWERON P-PV series



Battery Direct Charge

Max Power Out	100W
Dimension	664mm*668mm*70mm
Weight	8.0 Kg
Controller	12V/10A (Direct Charge)

High Efficiency PV Module

Out Door and Portable PVHigh Efficiency

PV Module (Back Contact Type)

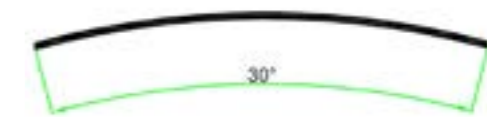
High Efficiency Type	DHE-018W	DHE-030W	DHE-050W/18	DHE-050W/20	DHE-080W	DHE-100W	DHE-120W	DHE-130W
Power (Pmax : W)	18 W	30W	50W	50W	80W	100W	120W	130W
Rated open circuit voltage(Voc : V)	23.4	21.1	21.6	23.4	18.5	21.1	26.4	29.4
Rated short circuit current (Isc : A)	0.98	1.83	3.05	2.71	5.28	6.07	5.85	5.76
Maximum power voltage (Vmax : V)	19.8	17.6	17.6	19.8	15.4	17.8	22.1	24.4
Maximum power current(Imax : A)	0.91	1.70	2.84	2.53	5.20	5.62	5.42	5.32
Power Tolerance	±3%	±3%	±3%	±3%	±3%	±3%	±3%	±3%
Size of module	434 x 277 x 25	535 x 378 x 30	545 x 535 x 30	610 x 535 x 30	922 x 540 x 35	1050 x 540 x 35	1305x 540 x 35	1435 x 540 x 35
Weight(kg)	20.6 kg	3.25 kg	5.00 kg	5.00 kg	7.52 kg	8.45 kg	10.30 kg	11.50 kg



High Efficiency Bendable

PV Module (Back Contact Type)

High Efficiency Type	DHE-018W	DHE-030W	DHB-050W/18	DHB-050W/20	DHE-080W	DHE-100W	DHE-120W	DHE-130W
Power (Pmax : W)	18 W	30W	50W	50W	80W	100W	120W	130W
Rated open circuit voltage(Voc : V)	23.7	21.2	21.6	23.4	18.5	21.1	26.4	29.4
Rated short circuit current (Isc : A)	1.03	1.83	3.05	2.71	5.28	6.07	5.76	5.82
Maximum power voltage (Vmax : V)	19.4	17.6	17.6	19.8	15.4	17.8	22.1	24.4
Maximum power current(Imax : A)	0.93	1.70	2.84	2.53	5.20	5.62	5.42	5.32
Power Tolerance	±3%	±3%	±3%	±3%	±3%	±3%	±3%	±3%
Size of module	434 x 277 x 3	535 x 378 x 3	545 x 535 x 3	610 x 535 x 3	922 x 540 x 3	1050 x 540 x 3	1305x 540 x 3	1435 x 540 x 3
Weight(kg)	0.29 kg	0.49 kg	0.70 kg	0.70 kg	2.00 kg	2.20 kg	2.20 kg	2.67 kg

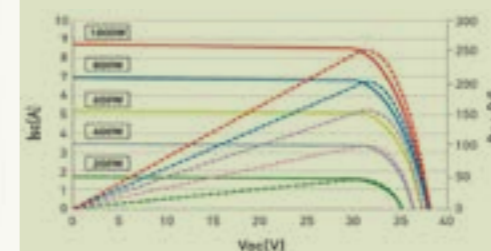


Silicon Crystalizing PV Module ( Front Contact Type)

High Efficiency Type	DEU-P250W	DEU-M250
Power (Pmax : W)	250 W	250 W
Rated open circuit voltage(Voc : V)	23.4	21.1
Rated short circuit current (Isc : A)	0.98	1.83
Maximum power voltage (Vmax : V)	19.8	17.6
Maximum power current(Imax : A)	0.91	1.70
Power Tolerance	±3%	±3%
Size of module	1640 x 996 x 45	1640 x 996 x 45
Weight(kg)	20.6 kg	3.25 kg



I-V Curve



Limited Warranty

10 years for product warranty  
 10 years for warranty of 90% power output  
 25 years for warranty of 80% power output

PV Inverter



**REFUsol**

REFUsol 008K-023K

- ⏻ Light & Compact
- ⏻ Highest efficiency (98.2%)
- ⏻ Easy Installation
- ⏻ Outdoor (Ip65)
- ⏻ Maintenance free

Factor	013K	017K	020K	023K
Recommended Max. PV power, kWp	13.6	18.1	21.2	25.8
MPPT range, V	420-850	445-850	480-850	575-850
Max. DC Voltage	1000V			
Max. DC Current	30A	38.5	41	41
Rated AC power, kVA	12.4	16.5	19.2	23.0
Max. AC Current, A	18A	18A	29	3X29.2
Max. Efficiency, %	98.0%	98.0	98.2	98.3
AC grid Connection	3 AC 400 V + N, 50-60 Hz			3 AC 460 V + N, 50-60 Hz
Interface	Ethernet, RS485			
Dimensions(mm), Weight (kg)	535mm(W) / 601mm(H) / 277mm(D), 41.5Kg			

PV Inverter



**REFUsol**

REFUsol 333K

- ⏻ Highest efficiency (98.5%)
- ⏻ Easy Installation
- ⏻ Outdoor (IP65)
- ⏻ DC up to 1500 V
- ⏻ AC 690 V

Factor	REFUsol 333K
Recommended Max. PV power, kWp	365Kw
MPPT range, V	650-1150V
Max. DC Voltage	1500V
Max. DC Current	610A
Rated AC power, kVA	333 kAV
Max. AC Current, A	280A
Max. Efficiency, %	98.5 %
AC grid Connection	3 AC 690 V + N, 50-60 Hz, use external transformer
Interface	
Dimensions(mm), Weight (kg)	1230mm(W)/ 1610mm(H)/810mm(D), 850Kg

## LED Light



POWERON LED BAR	DELBA-8	DELBA-15	DELBA-20	DELT-22 (T8)
Power Consume (Pmax : W)	8 W	15W	20W	22W
Input voltage (Vmax : V)	DC 12V	AC220V DC12	AC220V DC12V	DC36-42V
Size of Bar	41 x 350	41 x 550	41 x 740	1200 x 26
Lux (1m Height)	130	270 230	430 360	1950-2100



LED Ball Lamp	DEBL-5G	DEBL-5T	DEBL-8T
Power Consume (Pmax : W)	5 W (G type)	5 W (T type)	8W (T type)
Input voltage (Vmax : V)	AC95-245V	AC95-245V	AC95 - 245V
Size of Bar	111 (L) x 80(D), 69g	111 (L) x 80(D), 69g	111 (L) x 80(D), 69g
Weight(kg)	E26/27	E26/27	E26/27/B22
Replacement	20W	20W	40W-60W

## Ni-MH (GMH) BATTERY



GMH nickel metal hydride battery, Ni-MH battery, where maintenance free and complete air tightness are realized as product for industrial purpose for the first time in the world, is the environment-friendly product not only having the characteristics of high output, high capacity and long lifespan but also without using heavy metal such as cadmium or lead.

- Volume of 1/10 compared to the conventional product of the same capacity!
- Innovative weight density more than 6 times compared to the conventional product! (Compared to the conventional liquid type Ni-MH, or Ni-Cd battery)
- Possible to arrange vertically and horizontally freely!
- Convenience in maintenance and repair due to completely free of repair!

## PB SOLAR GEL BATTERY



The Feature of Solar Gel Battery

- Maintenance Free
- No leakage of liquid and gas
- Low in self-discharge rate
- Able to operate in a wide temperature range
- Economical and al long life
- Designed for high-discharging purpose
- Made in Korea

## LiFePO4 (Lithium iron phosphate) BATTERY

The LiFePO4 battery uses a lithium-ion-derived chemistry and shares many advantages and disadvantages with other Lithium-ion battery chemistries. However, there are significant differences.

LFP chemistry offers a longer cycle life than other lithium-ion approaches.



Section	The Normal Specifications of LiFePO4
Nominal capacity	20Ah
Nominal voltage	3.2V
Operation Voltage	Charge 3.65V
	Discharge 2.5V
Max Charge Current	≤0.5CA



## Standalone CDM Street Light System

### Charge Controller



System Voltage	12V
Max Charge Current	40A
Max Discharge Current	40A
Charge Off Voltage	14.5V
Low Voltage Directive	10.5V
Low Voltage Restore	13.2V
Light ON	1.3V
Light Off	3.8V
Ambient Temperature	-40 ~ 60°C
Certification	TUV
Country	Made in Korea

### DC Blaster

#### The World 1st CDM DC Digital Ballast



Min. Starting Voltage	9V ±0.5V
Max. Starting Voltage	16V ±0.5V
Min. Operation Voltage	9V ±0.5V
Max. Operation Voltage	21V ±0.5V
Max. Input Current	4A
Light Stabilization Time	2min( cold lamp)
Max. Lamp Current	2.5A
Min. Lamp Current	0.32A
Pulse repetition Rate	25~50Hz
Igniter Peak Out Volt	23kV Peak±2kV
Certification	CE
Country	Made in Korea

### CDM 35W



Solar Panel	120W*2 Serial Connection
Lamp Type	35W~72W CDM (Philips Energy Advantage CDM Lamps)
Ballast	DC 12 V Digital Type
Charge Control System	Low voltage Charge Control System
Battery	200A Pb or 12V / 120Ah x 2: Maintenance-free Solar Gel-Battery
Power out	35W ~ 72W
Lux	20Lux ~31Lux/ 8M
Color Temperature	CDM 35W 3,400lm(98lm/w),
Working Time/day	Over 13HR
Max. working day / charge (number of sunless days)	Over 7(seven) days
Lifetime of Lamp (hour)	12,000 HR

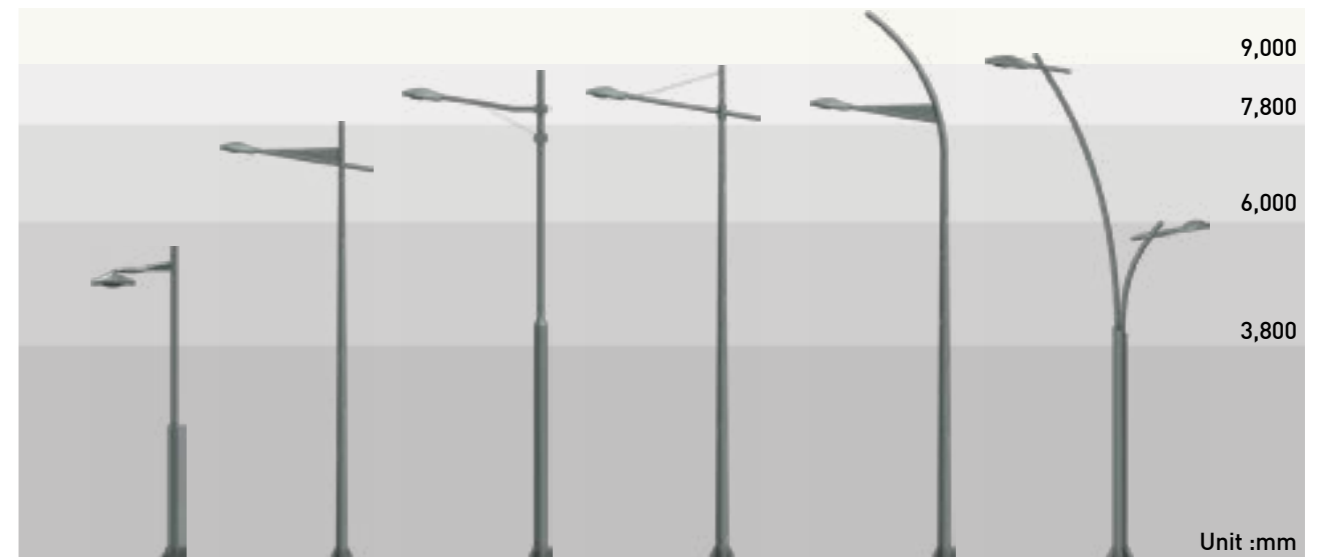
### Off-Grid CDM Street Light Spec.

## Street Light Head



### IP66 Woodam lighting Head

IP66 means the number of influence due to product dust and foreign substance. The former number means The degree of influence for foreign substance, the back number means the degree of waterproof. IP66 is one Of the highest grade which can be perfectly prevent water from any directions.










The Proposal road pole design is one of a sculpture not a simple road lamp.


Also, It is kind of harmony product with special territory to remove loss of Light. This products has a stability and durability by use of Aluminum AA6024-T6 and high corrosion resistance , save maintenance fee.



## System

		
		
4.6MW Tongeren, Germany	500KW HongSung SFC Co., Ltd. South Korea Roof Top Type	100KW Daegu ENG Co. Ltd. South Korea Roof Top Type

	90KW Busan Water Pressure Control Center South Korea Roof Top Type
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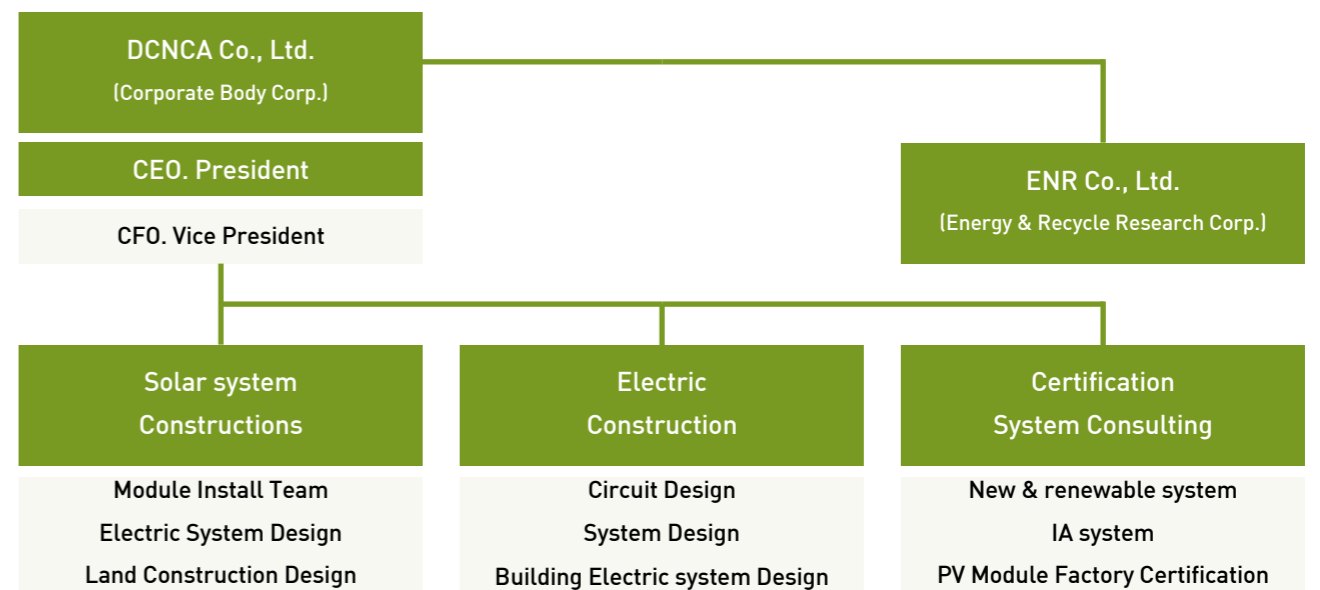
	90KW Busan Metropolitan City Office of Education South Korea Roof Top Type
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And Other 20 Site for Solar Plant and system service

## General Information of Corporation

<b>Name of Company</b>	DCNCA Co., Ltd.
<b>Business Resister No.</b>	119-86-02515
<b>Address</b>	Sangdaewon-dong, Seongnam Woolim Lions Valley 2Cha) A-806, 14, Sagimakgol-ro 45beon-gil, Jungwon-gu, Seongnam-si, Gyeonggi-do, 462-807, Korea
<b>Contact :</b>	<b>TEL :</b> +82-2-2051-1855 <b>FAX:</b> +82-31-703-1854
<b>CEO. President</b>	<b>Ma., Sung Jun</b>
<b>CFO. Vice President</b>	<b>Kim, Gun Jae (Managing/Coordinating Director)</b>
<b>Central Business</b>	Energy Storage system, Solar Charge Control System, Solar Module, System Consulting, Eco-energy ESCO Business, Electricity, Tele-communication, IT,
<b>The motto of the company</b>	<b>Leading technology, meaningful company</b> <b>With Goal Orientation, Passion, Speed, Autonomy &amp; Creativity</b>
<b>Date of Establishment</b>	25th/10/2007
<b>Capital</b>	KRW 100,000,000 (About USD 100,000)

## Organization of Corporation





The Best Choice for your Special Power system.  
In Anytime, Anywhere, Anyplace, Anyway.

DCNCA CO., LTD.

Tel : +82-2-2051-1855

Fax : +82-31-703-1854

Email : all@dcnca.com

HomePage : www.dcnca.com

Sangdaewon-dong, Seongnam Woolim Lions Valley 2Cha,  
A-806, 14, Sagimakgol-ro 45beon-gil, Jungwon-gu,  
Seongnam-si, Gyeonggi-do, 462-807, Korea



PROVIDING GREEN ENERGY SOLUTION  
**DCNCA CO LTD**

주식회사 디씨앤씨에이



신재생에너지 전문기업  
**DCNCA**  
(주) 디씨앤씨에이

GREEN ENERGY SOLUTION