World Best Energy Conversion Efficiency
Solar ESS (Energy Storage System) Power Generation System

Smart Solar Generator with ESS

Solar Power Available for 24 Hours!

SAMDO
ELECTRIC
ENERGY

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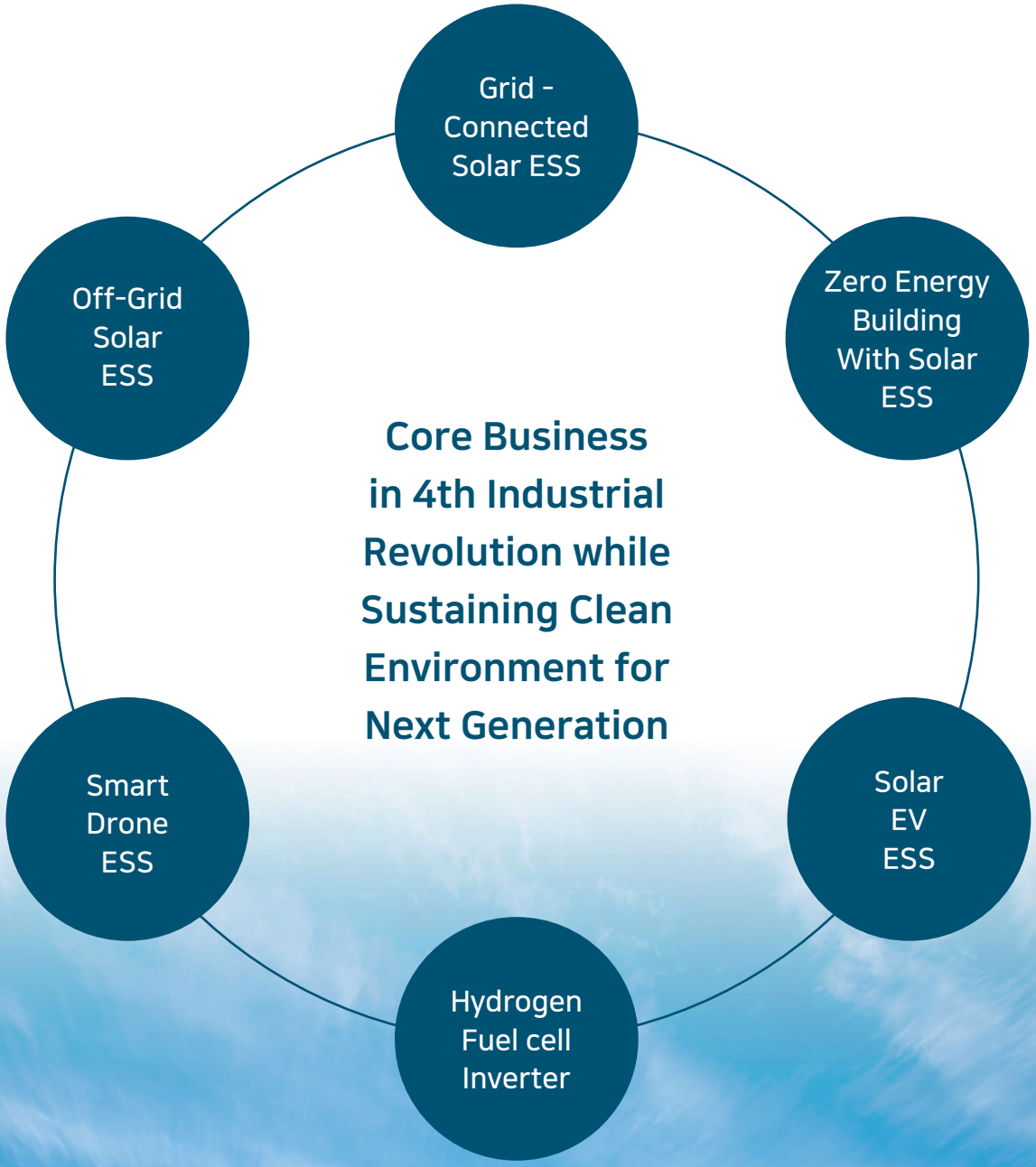
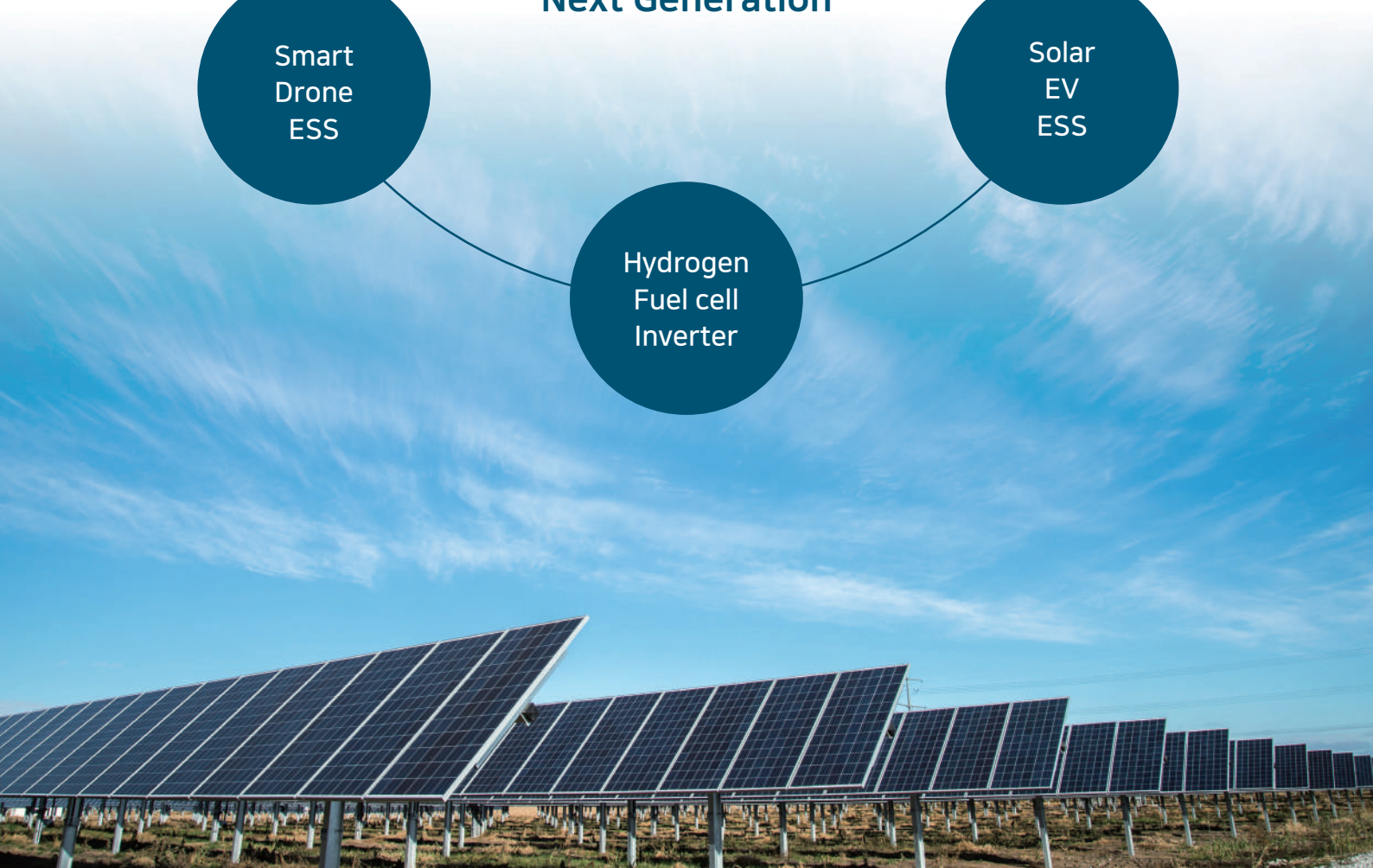

Grid - Connected Solar ESS
Zero Energy Building With Solar ESS
Solar EV ESS
Hydrogen Fuel cell Inverter
Smart Drone ESS
Off-Grid Solar ESS
Core Business in 4th Industrial Revolution while Sustaining Clean Environment for Next Generation

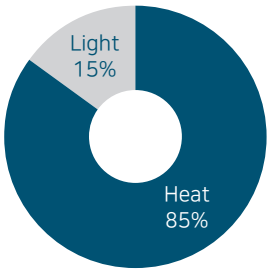


System Principles and Technology Introduction

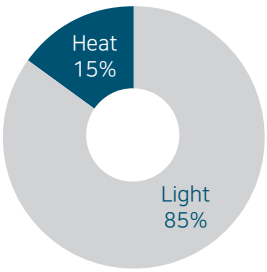
SAMDO ELECTRIC ENERGY Co., Ltd

Technology Concept

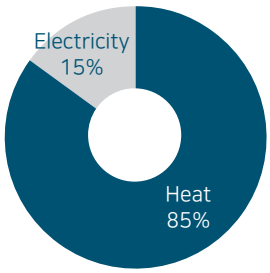
Incandescent lamps convert 15% light, 85% heat while LEDs are 85% light, 15% heat and Solar power utilize only 15% electricity and 85% wasted into Heat.
We got a hint here ; Converting 85% of the sunlight into electricity!
"Smart Solar Generator with & ESS" guarantees maximum energy conversion efficiency up to 90% from the total energy of solar radiation



Incandescent Lamps



LED Lighting

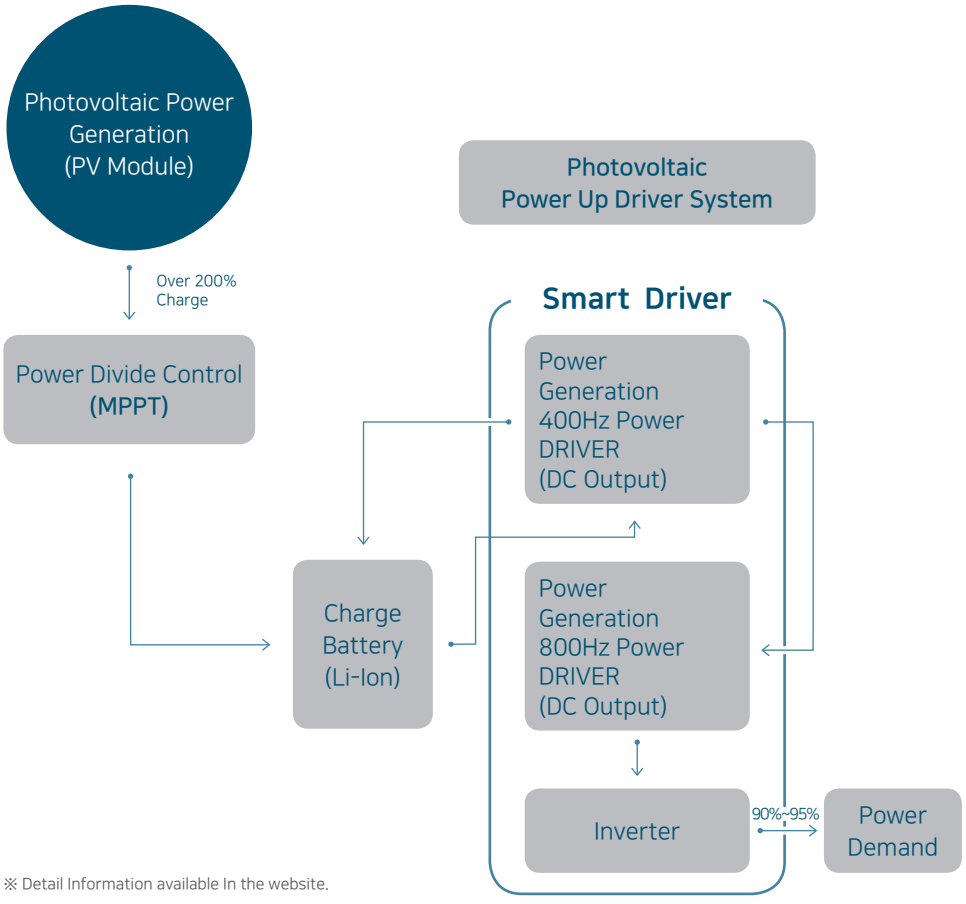


Solar Energy

Core Technology

- High frequency amplification Charging: 400㎐ (Solar charging)
- High frequency amplification Repeat charge: 400㎐ (battery power to charge battery)
- High frequency amplification discharge: 800㎐ (Utilization for hydrogen fuel cell output)
- **Circular coil type inverter: No Fuse, No heat sink, Nearly Zero electromagnetic wave**

System Configuration



※ Detail Information available In the website.

Mobile ESS
(AC -> DC charging)

SAMDO ELECTRIC ENERGY Co., Ltd

Model
TESS-250
(LiFePO4 250Wh)

Model
TESS-500
(LiFePO4 1,000Wh)

Characteristics

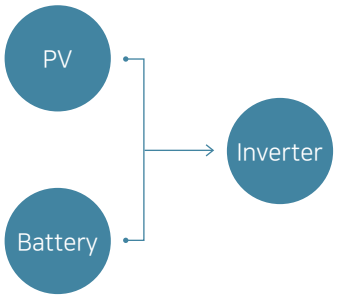
Item	Main Features
Operation Performnace	· Charge by converting AC power to DC · Overcharge protection circuit and over discharge protection · Overcurrent protection, and system voltage / current Meter indication · The display of output of the system (alternating current) · PCM temperature protection circuit · FET control: charge / discharge control according to protection operation status
Battery Inverter Information	· Battery charge / discharge power and discharge current
	· Inverter Operation Lamp, and inverter fault lamp
Etc.	· High power of 2C or higher (subject to discussion) · Battery capacity expansion and AC power variable (subject to discussion)
Application	Lighting, Mobile phone charging, Fan, TV, Laptop power supply

Item		250Wh Spec	1,000Wh Spec
Storage Capacity (Wh)		250	1,000
Rated Capacity (Wh)	Maximum power	250	1,000
	Rated power	125	250
System output voltage and frequency		220Vac, 60Hz	220Vac, 60Hz
Maximum voltage (Vdc)		28.8	28.8
Rated voltage(Vdc)		25.6	25.6
Battery charge voltage range (Vdc)		28.8	28.8
Battery discharge current (A)	Max.	10	40
	Rated	5	10
Optimum operating conditions		Charge : 25℃, 125W, Discharge : 25℃, 125W	
Size (width * length * height)		440x260x460 (mm)	555x443x242 (mm)
Weight (kg)		<6.0kg/1(ea)	<30.0kg/1(ea)
Charging method		CC/CV MODE	CC/CV MODE
Operating temperature (℃)	Charge	0℃ ~ 45℃	0℃ ~ 45℃
	Discharge	-20℃ ~60℃	-20℃ ~60℃
Efficiency (%)		> 80%	> 85%

Compact High Efficiency Inverter (DC -> AC)

SAMDO ELECTRIC ENERGY Co., Ltd

Model
SD-I250W/I500W
(Inverter 250W/500W,
Li-Ion Battery
3.1㎾h (12V, 210AH))



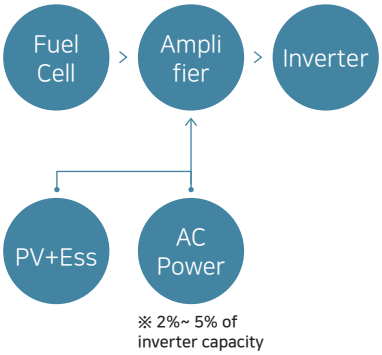
Features and Uses

Features	· No Heat Sink due to High frequency inverter · Nearly Zero electromagnetic waves · Automated Use between solar cell and battery DC power
Application	· Street lamp · Mobile, camping (lighting, mobile phone, TV, notebook)

High efficiency inverter for fuel cell (DC -> AC)

SAMDO ELECTRIC ENERGY Co., Ltd

Model
SD-I004/SD-I008



Features and Innovative Performance

Features	· No heat sink · Zero electromagnetic waves · Amplify DC or AC power to generate current (A) · Integration with Fuel cell · Amplifiers and inverters to provide single-phase or three-phase four-wire power to supply Industry power demand.
Capacity	· Small to medium size: 100㎾ · 100㎾ or more: connected in parallel
Innovation	· Most of the Fuel cells : Voltage is normal but Power current is weak. →Enhancing current by amplifying AC power · Help to complete high efficiency fuel cell system development

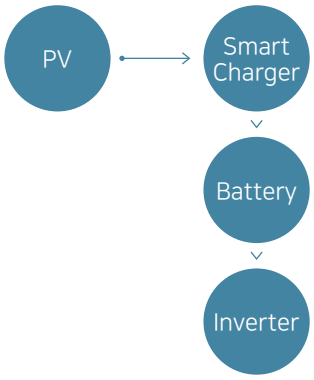
1 kW, 2 kW Solar ESS

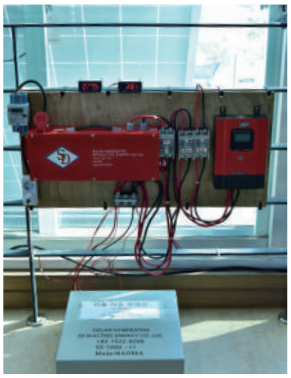
(Stand-alone, mobile type)

SAMDO ELECTRIC ENERGY Co., Ltd

Model SD-I01+SD-LI003

(Inverter 1kW,
Li-Ion Battery 3.2kWh)



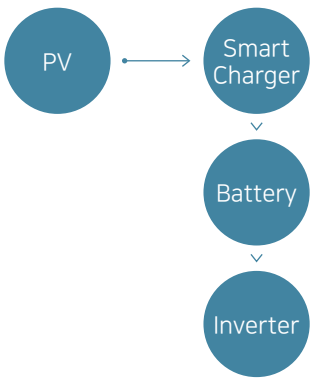


Model	PV Q'ty	PV Capacity	Smart Charger	Battery Capacity	Inverter
SD-I01+ SD-LI02	290W×2EA	580W	1kW Rate	3.2kWh (PV x 5.5)	1kW (PV x1.7 Times)
Fixed type	Estimated power =0.58kW×3.6h = 2.08kWh/day		Actual Power Available : 7.7 hours with PV Capacity / 580w×7.7h = 4.46 kWh/day (2.14 times of Estimated PV generation)		
Tracker : Bi-directional	Estimated power =0.58kW×3.6h ×1.3= 2.71kWh/day		Actual Power Available : 10 hours with PV Capacity / 580w×10h = 5.8 kWh/day (2.14 times of Estimated PV generation)		

※ Generation time : 3.6h/day × High frequency power charge 214% = 7.7 Hours

Model SD-I02+SD-LI05

(Inverter 2kW,
Li-Ion Battery 5.4kWh)



Model	PV Q'ty	PV Capacity	Smart Charger	Battery Capacity	Inverter
SD-I02+ SD-LI04	400W×2EA	800W	2kW Rate	5.4kWh (PV x 6.7)	2kW (PV x 2.5)
Fixed type	Estimated power = 0.8kW×3.6h = 2.88kWh/day		Actual Power Available : 7.7 hours with PV Capacity / 800w×7.7h = 6.16 kWh/day (2.14 times of Estimated PV generation)		
Tracker : Bi-directional	Estimated power =0.8kW×3.6h ×1.3= 3.74kWh/day		Actual Power Available : 10 hours with PV Capacity / 800w×10h = 8.0 kWh/day (2.14 times of Estimated PV generation)		

※ Generation time : 3.6h/day × High frequency power charge 214% x Tracker Factor 130% = 10 Hours

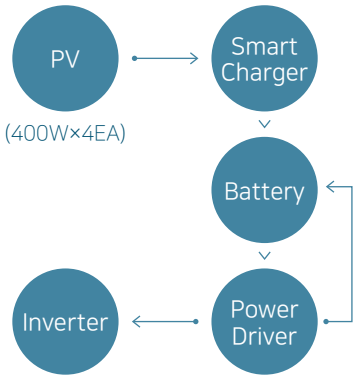
4 kW, 8 kW Solar ESS

(Stand-alone, for IPP business)

SAMDO ELECTRIC ENERGY Co., Ltd

Model SD-I04+SD-LI010

(Inverter 4kW,
Li-Ion Battery 10.8kWh),
Minimum Control system model

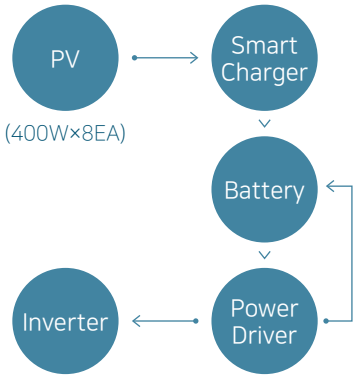


Model	PV Q'ty	PV Capacity	Smart Charger	Battery Capacity	Inverter
SD-I04+ SD-LI010	400W×4EA	1.6kW	4kW Rate	10.8kWh (PV X 6.7times)	4kW (PV x 2.5times)
Fixed type	Estimated Power = 1.6kW×3.6h = 5.76kWh/day		Actual Power Available : 10.78(7.7*1.4) Hours with PV Capacity / 1.6KW×10.78h=17.24 kWh/day (3 times of Estimated PV generation)		
Tracker : Bi-directional	Estimated Power =1.6kW×3.6h ×1.3= 7.48kWh/day		Actual Power Available :14(10*1.4) Hours With PV Capacity / 1.6kW×14h=22.4 kWh/day (3 times of Estimated PV generation)		

※ Generation times : 3.6 h/day × Driver Control 140% x Super Charger 217% x Tracker factor 130% = 14Hours

Model SD-I08+SD-LI020

(Inverter 8kW,
Li-Ion Battery 21.6kWh)



Model	PV Q'ty	PV Capacity	Smart Charger	Battery Capacity	Inverter
SD-I08+ SD-LI020	400W×8EA	3.2kW	8kW Rate	21.6kWh (PV x 6.7)	8kW (PV x 2.5)
Fixed type	Estimated Power = 3.2kW×3.6h = 11.52kWh/day		Actual Power Available 10.78(7.7*1.4) Hours With PV Capacity /3.2kW×10.78h = 34.49 kWh/day (3 times of Estimated PV generation)		
Tracker : Bi-directional	Estimated Power =3.2kW×3.6h ×1.3= 14.97kWh/day		Actual Power Available 14(10*1.4) Hours With PV Capacity / 3.2kW×14h = 44.8 kWh/day (3 times of Estimated PV generation)		

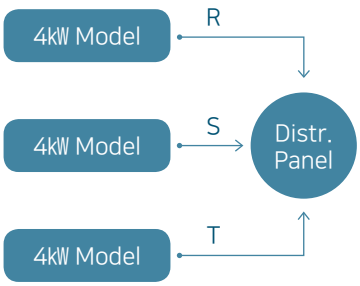
12kW, 16kW solar ESS

(Stand-alone, for IPP business)

SAMDO ELECTRIC ENERGY Co., Ltd

Model SD-I12+SD-LI030

(Inverter 4kW×3EA,
Li-Ion Battery 10.8kWh×EA)

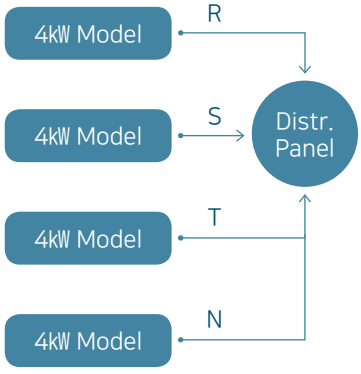


Model	PV Q'ty	PV Capacity	Smart Charger	Battery Capacity	Inverter
SD-I012+ SD-LI030	400W×12EA	4.8kW	4kW Rate × 3 Unit	32.4kWh (PV x 6.7)	4kW×3 Unit (PV x 2.5)
Fixed type	Estimated Power = 4.8kW×3.6h = 17.28kWh/day		Actual Power Available : 10.78(7.7*1.4) Hours with PV Capacity / 4.8KW×10.78h=51.74 kWh/day (3 times of Estimated PV generation)		
Tracker : Bi-directional	Estimated Power =4.8kW×3.6h×1.3 = 22.46kWh/day		Actual Power Available :14(10*1.4) Hours With PV Capacity / 4.8kW×14h=67.2 kWh/day (3 times of Estimated PV generation)		

※ Tracker System : 30% more power compared with fixed type
Smart Charger and Control System : About 40% Efficiency Enhancement

Model SD-I16+SD-LI040

(Inverter4kW×4EA,
Li-Ion Battery 10.8kWh×EA)



Model	PV Q'ty	PV Capacity	Smart Charger	Battery Capacity	Inverter
SD-I016+ SD-LI040	400W×4EA × 4 Unit	6.4kW	4kW Rate × 4 Unit	43.2kWh (PV x 6.7)	4kW×4 Unit (PV x 2.5)
Fixed type	Estimated Power = 6.4kW×3.6h = 23.04kWh/day		Actual Power Available : 10.78(7.7*1.4) Hours with PV Capacity / 6.4KW×10.78h=68.99 kWh/day (3 times of Estimated PV generation)		
Tracker : Bi-directional	Estimated Power =6.4kW×3.6h ×1.3= 29.95kWh/day		Actual Power Available :14(10*1.4) Hours With PV Capacity / 6.4kW×14h=89.60 kWh/day (3 times of Estimated PV generation)		

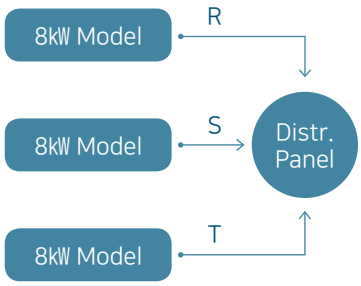
24kW, 32kW solar ESS

(Stand-alone, for IPP business)

SAMDO ELECTRIC ENERGY Co., Ltd

Model SD-I024+SD-LI060

(Inverter 8kW×3Unit,
Li-Ion Battery
21.6kWh×3Unit)

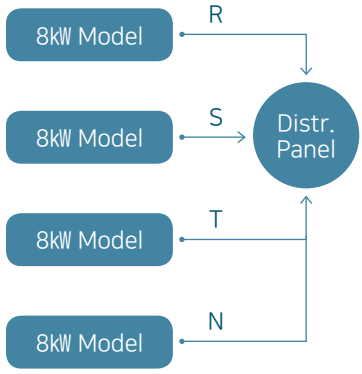


Model	PV Q'ty	PV Capacity	Smart Charger	Battery Capacity	Inverter
SD-I024+ SD-LI060	400W×8EA × 3 Unit	9.6kW	8kW Rate × 3 Unit	64.8kWh (PV x6.7)	8kW×3 Unit (PV x2.5)
Fixed type	Estimated Power = 9.6kW×3.6h = 34.58kWh/day		Actual Power Available : 10.78(7.7*1.4) Hours with PV Capacity / 9.6KW×10.78h=103.4 kWh/day (3 times of Estimated PV generation)		
Tracker : Bi-directional	Estimated Power =9.6kW×3.6h ×1.3= 44.92kWh/day		Actual Power Available :14(10*1.4) Hours With PV Capacity / 12.8kW×14h=179 kWh/day (3 times of Estimated PV generation)		

※ Tracker System : 30% more power compared with fixed type
Smart Charger and Control System : About 40% Efficiency Enhancement

Model SD-I032+SD-LI080

(Inverter 8kW×4Unit,
Li-Ion Battery
21.6kWh×4Unit)



Model	PV Q'ty	PV Capacity	Smart Charger	Battery Capacity	Inverter
SD-I032+ SD-LI080	400W×8EA × 4 Unit	12.8kW	8kW Rate × 4 Unit	86.4kWh (PVx 6.7)	8kW×4 Unit (PVx2.5)
Fixed type	Estimated Power =12.8kW×3.6h = 46.08kWh/day		Actual Power Available : 10.78(7.7*1.4) Hours with PV Capacity /12.8kW×10.78h=130.h/day (3 times of Estimated PV generation)		
Tracker : Bi-directional	Estimated Power =12.8kW×3.6h ×1.3= 59.90kWh/day		Actual Power Available :14(10*1.4) Hours With PV Capacity /12.8kW×14h = 179 kWh/day (3 times of Estimated PV generation)		

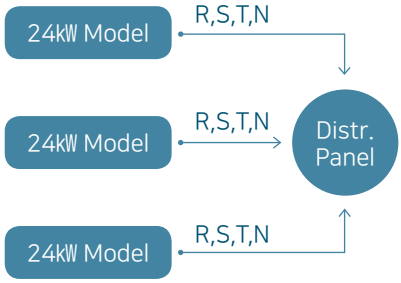
72kW (24kW×3 Unit) Solar ESS (for IPP business)

SAMDO ELECTRIC ENERGY Co., Ltd

Model

SD-I072+SD-LI180

(Inverter 24kW×3Unit,
Li_Ion Battery
64.8kWh×3 Unit)



Specification

Model	PV Q'ty	PV Capacity	Smart Charger	Battery Capacity	Inverter
SD-I024+ SD-LI060	400W×8EA × 3 Unit	9.6kW	8kW Rate × 3 Unit	64.8kWh (PV x6.7)	8kW×3 Unit (PV x2.5)
I72-LI180 I72-LI120	Model×3	Model×3	Model×3	Model×3 Model×2	Model×3
Fixed type	Estimated Power =28.8kW×3.6h = 103.6kWh/day		Actual Power Available : 10.78(7.7*1.4) Hours with PV Capacity /22.8kW×10.78h=310 kWh/day (3 times of Estimated PV generation)		
Tracker : Bi-directional	Estimated Power =28.8kW×3.6h ×1.3= 134.7kWh/day		Actual Power Available :14(10*1.4) Hours With PV Capacity / 22.8kW×14h=403 kWh/day (3 times of Estimated PV generation)		

※ Tracker System : 30% more power compared with fixed type
Smart Charger and Control System : About 40% Efficiency Enhancement

Features and Benefits

- Install the Power driver to recharge the battery and use it to maintain the battery voltage
- If installed with inclined fixed type, additional capacity of PV can be installed by 30%, the same amount of power can be secured at bi-directional tracking level
- No heat sink in Charger, battery, inverter (no heat dissipation function), Almost no electromagnetic wave
- Summer solar panel temperature is about 20 degrees lower. / Up to twice the capacity of the inverter for about 1 hour continuous use
- At night, about 76% of PV capacity can be available in urban areas
- High frequency charging method and simultaneous charging and discharging method are applied for 15 years of lithium battery life time.
- Real-time monitoring and display through Mobile phone Apps with the status of charger, battery and inverter control (small industrial PC)
- The system consists of Multiple units of 24 kW models (Nx24kW) such as 48 kW, 72 kW, 96 kW, 120 kW etc.

Application: 3 Phase 4Wire Grid-Connected Power Supply

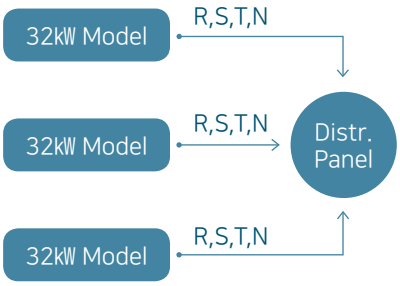
- Grid-connected office / factory, power generation business
- Domestic new and renewable energy sales price is higher than customer unit price, so it is suitable for power generation business.

96kW(32kW×3Unit) Solar ESS (For IPP Business)

SAMDO ELECTRIC ENERGY Co., Ltd

Model

SD-I100+SD-LI240
(32kW×3Unit,
Li-Ion Battery
86.4 kWh×3Unit)



Specification

Model	PV Q'ty	PV Capacity	Smart Charger	Battery Capacity	Inverter
SD-I032+ SD-LI080	400W×EA × 3 Unit	12.8kW	8kW Rate × 4 Unit	86.4kWh (PV x6.7)	8kW×4Unit (PV x 2.5)
I096-LI240 I096-LI160	Model×3	Model×3	Model×3	Model×3 Model×2	Model×3
Fixed type	Estimated Power =38.4kW×3.6h = 138.2kWh/day		Actual Power Available : 10.78(7.7*1.4) Hours with PV Capacity /38.4kW×10.78h=413 kWh/day (3 times of Estimated PV generation)		
Tracker : Bi-directional	Estimated Power =38.4kW×3.6h ×1.3= 179.7kWh/day		Actual Power Available :14(10*1.4) Hours With PV Capacity / 38.4kW×14h=537 kWh/day (3 times of Estimated PV generation)		

Features and Benefits

- Install the Power driver to recharge the battery and use it to maintain the battery voltage
- If installed with inclined fixed type, additional capacity of PV can be installed by 30%, the same amount of power can be secured at bi-directional tracking level
- No heat sink in Charger, battery, inverter (no heat dissipation function), Almost no electromagnetic wave
- Summer solar panel temperature is about 20 degrees lower. / Up to twice the capacity of the inverter for about 1 hour continuous use
- At night, about 76% of PV capacity can be available in urban areas
- High frequency charging method and simultaneous charging and discharging method are applied for 15 years of lithium battery life time.
- Real-time monitoring and display through Mobile phone Apps with the status of charger, battery and inverter control (small industrial PC)
- The system consists of Multiple units of 32 kW models (Nx32kW) such as 64 kW, 96 kW, 128 kW, 160 kW etc.

Application: 3 Phase 4Wire Grid-Connected Power Supply

- Grid-connected office / factory, power generation business
- Domestic new and renewable energy sales price is higher than customer unit price, so it is suitable for power generation business.

Module, Battery & Inverter capacity table

Inverter: 1~2kW

Model	PV Q'ty	PV Capacity	Smart Charger	Battery Capacity	Inverter
SD-I01+ SD-LI02	290W×2EA	580W	1kW Rate	3.2kWh (PV x 5.5)	1kW (PV x1.7)
SD-I02+ SD-LI04	400W×2EA	800W	2kW Rate	5.4kWh (PV x 6.7)	2kW (PV x 2.5)

Inverter: 4kW, 8kW (Base Model)

Model	PV Q'ty	PV Capacity	Smart Charger	Battery Capacity	Inverter
SD-I04+ SD-LI010	400W×4EA	1.6kW	4kW ×1EA	10.8kWh	4kW (4kW×1EA)
SD-I08+ SD-LI020	400W×8EA	3.2kW	8kW ×1EA	21.6kWh	8kW (8kW×1EA)
SD-I012+ SD-LI030	400W×12EA	4.8kW	4kW ×3EA	32.4kWh	12kW (4kW×3EA)
SD-I016+ SD-LI040	400W×16EA	6.4kW	4kW ×4EA	43.2kWh	16kW (4kW×4EA)
SD-I024+ SD-LI060	400W×24EA	9.6kW	8kW ×3EA	64.8kWh	24kW (8kW×3EA)
SD-I032+ SD-LI080	400W×32EA	12.8kW	8kW ×4EA	86.4kWh	32kW (8kW×4EA)

Battery capacity: 6.7 times of PV capacity
Inverter capacity: 2.5 times of PV capacity

Applied Model

3Phase 3Wire
(12kW×N, 24kW×N),
3Phase 4Wire
(16kW×N, 32kW×N)

Capacity(kW)	Model (kW)	Unit	Capacity(kW)	Model (kW)	Unit
24	12	2	32	16	2
36	12	3	48	16	3
48	12	4	64	16	4
60	12	5	80	16	5
32	16	2	64	32	2
48	16	3	96	32	3
64	16	4	128	32	4
80	16	5	160	32	5

Main Features Of Key Components

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Item	Specification	Function	Features
Solar PV	· 400W× n Nos · Volt : 48V	· Solar Power Generation · DC Power Securing	· Modules directed to MPPT · MPPT Enhances the efficiency
Li-Ion Battery	· 12V200A · 4Nos in Serial · 2Pairs in Parallel	· Charging from MPPT · Charging Driver in Operation · Discharging to Output Driver	· Charging & Discharging in same time · Keeping 40% of Battery power level · Battery lifetime in 15years
MPPT	· Direct connection to Power Driver (1:1)	· Power to Battery · High Frequency Enhance · Condenser in use	· Charging Volt DC/DC Installed · Low volt Power function (rainy, cloudy)
Smart Charger	· Direct connection to Battery (1:1)	· DC 400㎐ Enhancing Charge · Charging Voltage Control	· Minimum 140% of power by high frequency amplification charge · Feedback charge by battery power · Keeping same level of impedance with Battery
Power Driver	· Direct connection to Batter (1:/1)	· DC 800㎐ HI frequency Charge · Voltage Control of Inverter	· High-frequency amplified power generation · After amplification power generation and connection with inverter
Inverter	· 4㎾ · 8㎾	· Converting DC to AC · Frequency : 60㎐ · Single/3Phase 4Wire	· Test Certificate · NO heat and long life time · Power available more then rated power
Controller	· CPU Installed · Storage HD · 9 PORTs available	· Real time date storing · External Communication · Control Function	· 1Month data storage · Control from remote area through web. · Real time monitoring available
Monitoring System	· PC Server · OS & DB & ICT Tech.	· Real time monitoring · Remote Controlling · Big data generation	· Real time efficiency & Generation data · Generation Analysis (Hourly, Daily, Monthly) · Saving/ Revenue analysis

New Business Sector

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Electric Vehicle, E-Bike/Scooter & Charging Solutions

Battery Inverter in Drone Industry

Benefits from Technology & Innovation

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Feature

- At least three times more power generation than conventional solar power (compared to module capacity)
- 100% Power available of maximum load inverter capacity and Stable operation with module capacity level (40% of inverter capacity)
- Over 15 years of battery life by simultaneously charging and discharging
- Parallel connection of basic modules enables single-phase and three-phase power supply
- 100% automatic problem-preventive system with battery DOD setting
  (Enable to restart after 5 ~ 10 minutes from insufficient battery power level)
- Engine stop when the vehicle stops and restart when the vehicle starts
  (Inverter in operation only at the time of load)
- No heat and little EMR (little electromagnetic radiation) on Solar cells, batteries, and inverter equipment.
- Easy operation with automatic design, very low repair works and low A / S cost
- Ideal for use in independent power grid (easy to follow up power load)
- Reduced site requirement by 40 ~ 50% compared to the same power generation, easy to install, and easy expansion.

ESS Integrated Business Concept

Item		Smart Solar ESS Power	Conventional
PV Only		· Only in ESS Integrated Biz	· Most of company can do Biz
ESS Integrated Business	Off-Grid	· Inverter capacity: 2kW ~ (For maximum load- 2.5 times of PV capacity) · Battery capacity : 5kWh ~ (5~6 times of PV for No-sun) · Installation : Fixed or Tacker	· Very few successful cases · Battery discharge problem unsolved
		· Price : Not comparable	
	Grid-Connected	· Inverter capacity: 16kW ~ (3-phase 4-wire type) · Battery: Three times the capacity of PV · Users select capacity (at least 3 times) · Installation : Fixed or Tacker	· Installation Capacity: Small to Large · Battery: 3 times of PV capacity · Installation method: Mostly fixed
		· Price: Depends on battery capacity and installation method	

Contributions

- Sustainable business growth of ESS market to be expected.
- Sustaining New and renewable power generation market even without government subsidies
- Contributing to the achievement of a 37% GHG emission reduction target in 2030
- Contributing to the fundamental energy conversion technology innovation of related academia and industry and international standards and especially in renewable energy industry.
- Open the new era to make use of High Frequency Electric Charging and Amplifying power generation technology with smart controls to the energy industry, accelerating the 4th Industrial Revolution ranging including smart renewable energy, smart mobility(EV ,Drone) and many others.

References

Global Market

Countries & Capacity				Features
Global	Japan	2013.06	99kW	· Single Phase (Early version) · 27kW, 75kW installed · For In-house energy (Hotel hot water) · Capacity expansion in discussion
	Philippine	2016.01	4kW	· 4kW model installed · 126kW Shipping completed - 4kW, 12kW, 40kW, 70kW
	Cambodia	2015.09	56kW	· 8kW, 12kW x2ea, 24kW installed by local JV company ※ Large scale installation expected by 2020
	Fiji	2016.04	84kW	· 4kW, 8kW, 12kW, 24kW installed · 32kW x 2 unit Shipping

※ Existing Installation : High density Lead Acid Battery in use

● Japan : 2013.06.03



● Philippine : 2015.01.27



● Cambodia : 2015.09.11




● Fiji : 2016.04.01




Korea

Item				Features
Korea	Eumseong	2016.09	12kW	· In house use (dormitory building)
	Gwangju	2016.12	12kW	· In house use (commercial estate) · Roof top fixed installation
	Ulsan	2016.12	12kW	· In house use (commercial estate)
	Daegu	2016.12	32kW	· In house use (Temple building)
	NamYangju	2017.03	12kW	· In house use (commercial estate)
	Chuncheon	2017.03	12kW	· In house use (commercial estate)
	Gangneung	2017.03	12kW	· In house use (commercial estate)

※ Existing Installation : High density Lead Acid Battery in use

Patents & Certificate

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CERTIFICATE OF PATENT


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International Industrial Certification

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ISO 9001 : 2015


International Industrial Certification

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