### **O** Inverter Specifications

Hybrid Inverter (Hi-1015)								
Class	ification	Details						
	Rated (Continuous) Power	5kW						
AC Input	Voltage & Frequency	1 ph AC 170-280V -10%/+15%, 50/60Hz ±5%						
(Power Supply / Grid Side)	Max. Input Current	40 A						
	Power Factor	>0.99 (@Nominal)						
	Rated (Continuous) Power	5 kW						
AC Output	Voltage & Frequency	1P AC 220/230/240V ±5%, 50/60Hz ±0.1%						
(Load Side)	Rated Output Current	21 A						
	DC-AC Conversion Efficiency	95%						
Battery	Energy Capacity	9.2kWh/13.8kWh(10~15kWh)						
	Cell Type	Lithium-ion						
	Input Voltage Range	DC 44.96 ~ 55.4V (DC 51.1V nom)						
	Overcharge Protection	DC 62V						
	DC-AC Conversion Efficiency	93%						
PV Input (MPPT)	Max. Input Power	5kW						
	MPPT Voltage Range	DC 120~430V						
	Maximum / PV Open-ckt Voltage	DC 450V						
	Max. Input Current	40 Adc						
Common Chrs	Man-machine Interface	7" full color display panel with touch screen						
	Remote Control Interface	modbus/TCP						
		Overcurrent, Output Short, Overload, Over temperature, Output voltage abnormal						
	Protective Functions	Battery voltage high/low, Battery Disconnection						
		PV overcurrent, PV overvoltage						
Mechanic Chrs	Dimension (W xH xD) / Weight (Approx.)	700x1312x298mm/150kg(10kWh)						
En inc. i	Enclosure Protection Rating	IP21 (Indoor Installation)						
Environment	Operating Ambient Temperatures	-10 ~ +50 dec C						
Commetible Cr. J. J.	EMC	IEC/KN 61000-6-2, CISPR/KN 11						
Compatible Standards	Safety	IEC/K 62477-1(2011-12)						



### **Expected Benefits**

• Addressing the drawbacks of renewable energy generation with built-in batteries

- Cost reduction / Contribution to NET ZERO through renewable energy generation rate
- · Safe and efficient power control through real-time monitoring and remote control
- Reducing operation · management costs with inverter and integrated-battery



#### Utilization of V2L (Vehicle to Load)

• Emergency power supply system for buildings using V2L function % In case of a power emergency, power can be supplied from an electric vehicle to homes or facilities

### **G** Energy Management System (EMS) (IoT\_Energy Management System v1.0)



#### Function

- Provides various statistical functions to support the formulation of
- efficient energy policies.
- Detailed control of battery charging and discharging
- Remote demand response (DR) control available

#### **Expected Benefits**

- EMS Screen

## **O** Configuration Diagram



### **O** Patents & Certifications





### 2 IOT PLUS

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• Real-time microgrid power monitoring

- Supporting efficient power usage through real-time data analysis
- Possible to forecast energy demand and optimize control
- Contributing to reduce electricity usage costs
- Contributing to carbon neutrality and achieving RE100
- Contributing to reduce carbon emissions through the use of renewable energy



# **Energy Solution** (Microgrid-EMS)

### **G** Hi-1015 Hybrid Inverter (All-in-one)







Our Hybrid Inverter, Hi-1015, is an integrated system that stores electricity generated from renewable energy sources (photovoltaic and wind power) and grid power in the Energy Storage System (ESS) for later use.

#### Wireless Temperature-and-Humidity Safety Sensor

- A wireless temperature-and-humidity sensor that operates without power using energy harvesting technology.
- Prevents electrical safety accidents caused by overheating and moisture
- Enables real-time monitoring and remote power control

#### Smart Electrical Safety Switch

- Automatically cuts off power in case of overheating or leakage
- Allows real-time monitoring and on/off control remotely
- Supports remote control through IoT switches
- Prevents electric shocks and fire accidents
- Provides remote support for regular leakage tests

#### Microgrid using the Hybrid Inverter (Hybrid Inverter + ESS + EMS)



#### Configuration

- PCS(Power Conversion System)
- ESS(Energy Storage System)
- PMS(Power Management System)

- EMS(Energy Management System)
- V2L(Vehicle to Load)
- Safety Sensor & Safety Switch

### **O** Building an Energy-Self-Sufficient Village





Self-sufficient energy for self-consumption using renewable energy sources (Solar & Wind)

### Dae-sil Village, Bonghwang-myeon, Naju - Energy Self-Sufficiency Status



#### **Expected Benefits**





Reduction in electricity energy costs

#### Various free power support for village members





Emergency power support using electric vehicles (V2L)



Income generation by selling remaining power after use

## **O** Constructing Energy Welfare System

A system that realizes rural energy welfare using renewable energy and Hybrid Inverter (Hi-1015)



#### Dae-sil Village, Bonghwang-myeon, Naju - Energy Self-Sufficiency Status

02



#### System Configuration

Standard Model (Independent Type)	PV	5kW	General Type	PV	10kW		PV	15kW
	Energy Storage System (ESS)	10kWh		Energy Storage System (ESS)	20kWh		Energy Storage System (ESS)	50kWh
	Charger	Senior's Vehicles: 6		Charger	Senior's Vehicles: 6	Dromium		Senior's Vehicles: 6
		Agricultural Electric Vehicles: 2			Agricultural Electric Vehicles: 2	Туре	Charger	Agricultural Electric Vehicles: 2
	Indoor power	Community Center		Indoor power	Community Center		Indoor power	Community Center
	Operating Software	EMS, PMS, PCS, APP		Operating Software	EMS, PMS, PCS, APP		Operating Software	EMS, PMS, PCS, APP

#### Installation options: Electric vehicle chargers (7kW, 15kW, 25kW). Additional options are applicable only to the general and premium types.

#### **Expected Benefits**





• Free charging for rural e-mobility

- Contributing to efficient power usage • Providing mobility convenience for the
- transportation disadvantaged
- Reducing power costs for village public facilities
- · Contributing to closing the gap in electricvehicle charging infrastructure





- Supporting the use of local currency
- Developing various tourism contents through incentives for electric vehicles



- Contributing to the expansion of electric vehicle adoption in rural areas
- · Contributing to the reduction of old diesel vehicles in rural areas
- Preparing to address carbon trading schemes
- Contributing to NET ZERO in rural areas