## SDN Investor Relations 2024



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# OVERVIEW Company Introduction

SDN Co. Ltd. contributes to the sustainable future and human society through sound management and profit-making with a challenging and pioneering spirit in compliance with global climate change and agreements.

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ABOUT SDN		
Company	SDN Company Ltd.,	_
Date of Establishment	'94. 03. 18	
CEO(Each representative)	Hyeong-geun Baek, Sung-won Jeong	
Head Office Location	1281, Daewangpangyo-ro, Sujeong-gu, Seongnam-si, Gyeonggi-do, Republic of Korea	
Business Area	PV Construction, PV manufacturing, Outboard engine, Ship-building	
KOSDAQ Listing	'09. 05. 19	
Employees	79	
Revenue	75,600,000,000 KRW ('23) / 57,429,352.78 USD (*Exchangerate: 24/03/14)	
Capital	28,100,000,000 KRW ('23) / 21,346,195.41 USD (*Exchangerate: 24/03/14)	
		_

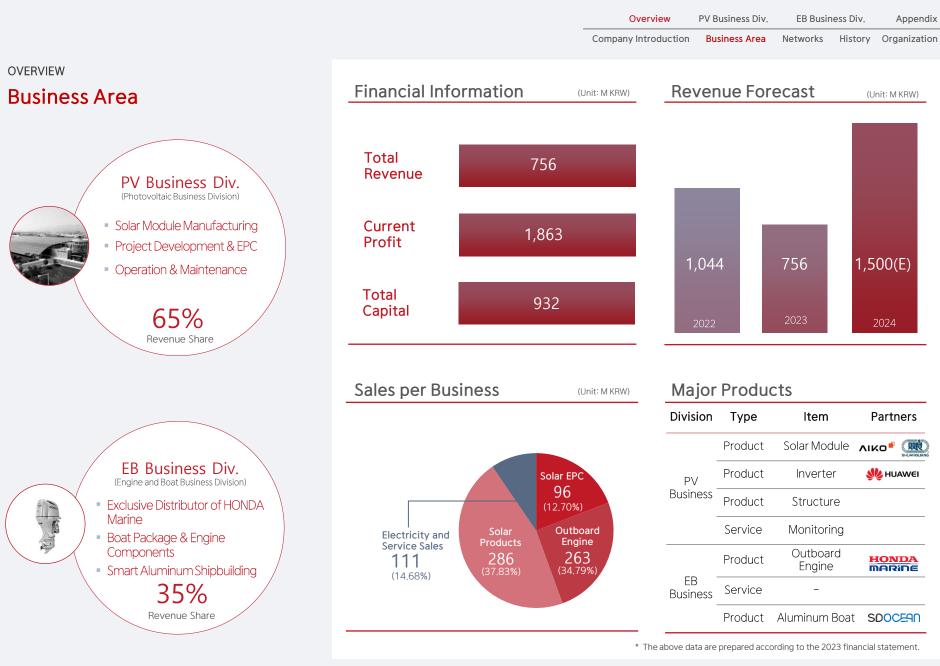
Overview

PV Business Div.

Company Introduction Business Area Networks History Organization

EB Business Div.

Appendix



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Company Introduction Business Area Networks History Organization

# overview Networks

"Leading Localization with Advanced Technology" With the HQ located in Seongnam, SDN assumes a true localization as one of its social responsibility and pursues achievement it with advanced technologies. People and technologies of SDN are spread over several local cities, including Gwangju, Gangjin, and Suncheon, attaining and sharing values and profits with communities.

Sunday EU team has successfully carried out EPC and O&M of a 60 MW power plant in Bulgaria with extraordinary level of technical, financial, and legal completion.





HQ : Seognam



Factory/ R&D Center : Gwangju



On Site R&D Complex : Suncheon



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SDN Energy Complex : Gangjin



Fishery Marina Complex : Gangjin



Sunday EU (60 MW) : Bulgaria

## overview History

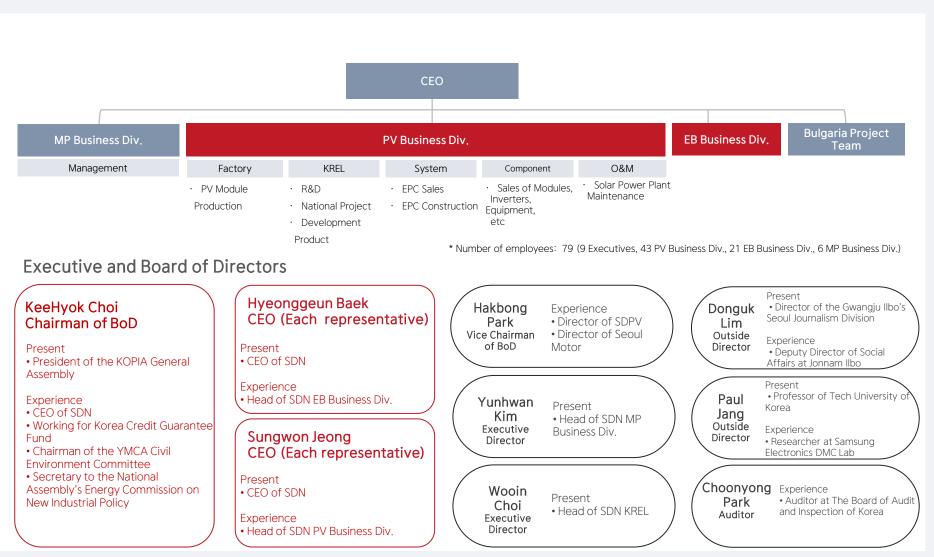
1994	~2004	~2006	~2009
Establishment Exclusive Contract with	Renewable Energy R&D center	Diversification of Solar System Design	Changing Name to SDN CO., Ltd
HONDA Marine	<b>Establishment</b> First Grid Connected Solar Plant in Korea Establishment of Energy Farm Co., Ltd.	34% Market Share and Achieving #1 in the Outboard Marketplace	Completion of the First Automated PV Module Production Line in Korea(Factory H1)
			Listed on KOSDAQ
~2012	~2013	~2016	~2018
Overseas Development · Design · Construction · Operation · O&M Completion of 60MW Power Plant in Bulgaria	RPS Roof-top Solar Plant System Design On-shore Floating Solar Plant System 99 kW	Dominate the Domestic RPS Market Huawei Inverter Sales Contract	Singing a Vale-Added Partnership with Huawei (Korea No.1)
			Construct POSCO 45 MW Solar Power Plant Project
2019	2020	~2022	~2024
Gangjin Energy Complex Project,	Expansion of Module Manufacturing Facility	450 W Module (Sunday6) Production	600 W Module (Sunday10+) Production
Marina Project Kick-off MOU Signed with Gangjin-gun and Jeonnam Development Corporation Gangjin Service Campaign & Expo Held	(Factory H2)	550 W Module (Sunday10) Production Relocation of the Headquarters Building	Floating Module(Sunday10+ Wave) Production
			KS Certification Completed
			N-Type module (SunDay S 1 SunDay A 10) KS Certificatio Completed
			·

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Company Introduction Business Area Networks History Organization

#### **OVERVIEW**

## Organization



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Overview PV Business Div. EB Business Div. Appendix Introduction Manufacturing Products EPC O&M R&D ODA

PV Business Div.

## ' Total Solusions for PV Plants'

Providing total solutions optimized for customer requirements





#### **PV Products**

PV module manufacturing with high-efficiency and highquality for the best customer experience Distributor of Huawei's world-best string inverters

#### Project Development, Construction and Operation

Domestic and global projects developments Renewable energy system design for PV, fuel-cell and bioenergy technologies



#### O&M

Technical due diligence Improving the performance of old power plants Real-time monitoring, long-term maintenance



#### R&D on Solar Product and System

Development of high-efficiency solar module production technology

BIPV, floating solar module and system development

Introduction Manufacturing Products EPC O&M R&D ODA

## PV Business Div. Manufacturing



## 1 SDN PV Module Production Facility



Area	26,654 m²
Date of Construction	2009.04.26
Address	30, Cheomdanventure-ro 16beon-gil, Buk-gu, Gwangju, Republic of Korea
Production Capacity	Max. 400 MW-yr
Flagship Product	~605 W Solar Module

SDN solar module manufacturing plant located in Gwangju Metropolitan City started producing 230W modules in 2009 and has to new facilities in 2021 and is currently producing high-power modules of 600W.



Domestic production of highoutput modules 640 MW-yr Establishment of R&D center, conducting research



 $\square^*$ 

Automated Production First automated PV module production line in Korea High productivity and flexibility

Roof-Top PV Generation (SDN Plant) 1 MW roof-top plant for on site validation 1 MWh of peak shaving ESS in operation

## 2 SDPV PV Module Production Facility

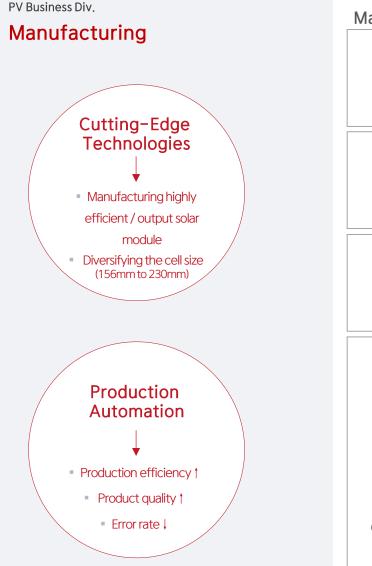


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Area	22,730 m <sup>2</sup>
Date of Construction	2020.09.09
Address	47, Gangjinsandan-ro 2-gil, Seongjeonmyeon, Gangjin-gun, Jeollanam-do, Republic of Korea
Production Capacity	Max. 240 MW-yr
Flagship Product	~600 W Solar Module

SDN

Overview PV Business Div. EB Business Div. Appendix

Introduction Manufacturing Products EPC O&M R&D ODA



## Manufacturing Equipment



#### **Cell Cutter and Stringer** Full-cell to half-cell and to String

- Specifications : M3 to M12 cells / 5BB to 12BB
- Speed : Max 6,000 Cell/hour (x 2)



#### Auto Bussing Automatic soldering of wires and busbars

- Specifications : 60/72/78 Cell Module

- Speed : Max 120 pieces/hour



#### Two-Stage Laminator EVA adhesion at high temperature/vacuum

Laminating Area : 2700 mm x 7800 mm
Speed : Max 30 pieces/hour (x 4)



Solar Simulator Check the power generation characteristics



Auto String Layup

Loading strings on

glass/EVA

- Auto Taping Machine String tape fixing
- Edge Sealing Machine Glass alignment
- JB Soldering Machine Automatic soldering
- Labelling Machine Automatic labeling
- Sorter Machine Module loading
- Paper Corner Machine Automatic insertion of module

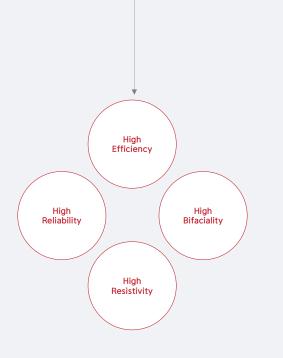
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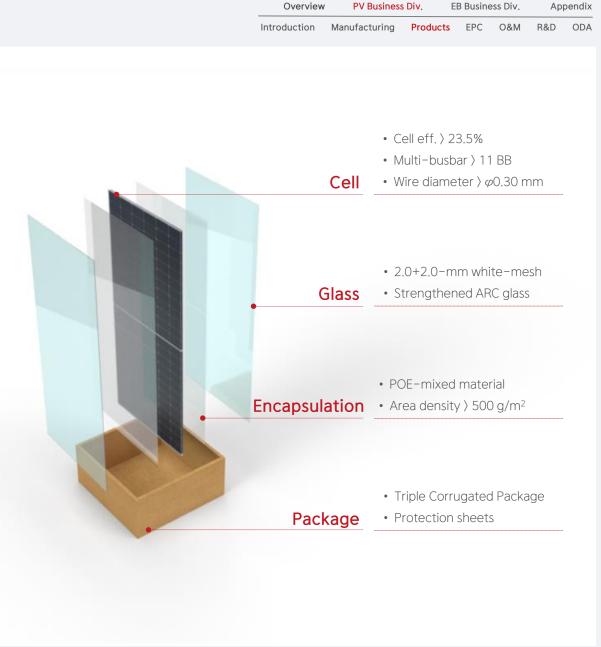
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## PV Business Div. Products - SunDay Series

"The key objective of SunDay Series is customer satisfaction through high performance and quality. Production process, specifications and materials are designed for a world-best class of PV modules."





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PV Business Div. Overview EB Business Div. Appendix Introduction Manufacturing Products EPC O&M R&D PV Business Div. Product line-up **Products - SunDay Series** Produced up to 605 W high-power modules Half-Cut, Bi-Facial, and G to G Technique Highest Efficiency up to 21.6% Floating Solar Panel TOPCon Diversified Product Line-up: 1st and 2nd CFP SunDay 10+ SunDay 10+ Wave SunDay 10+ N Grades and Floating Applications 2,465X1,134X35mm / 35.9kg 2,465X1,134X35mm / 35.9kg 2,465X1,134X35mm / 35.9kg 625 W 605 W 600 V Maximum Power Maximum Power Maximum Power 600 W 625 W 605 W Efficiency 22.4% Efficiency 21.5% Efficiency 21.6% M10 M10 Bifacial Bifacial Bifacial TOPCon M10 PERC M10 PERC M10 (156-cell) (156-cell) (156-cell) SDN Company Profile 2024

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ODA

PV Business Div.

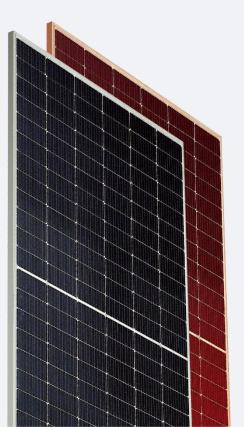
## Products - SunDay A & S Series

615 ~ 630 W range high-power module

Incorporation of the latest technologies such as ABC and TOPCon

Up to 23.9% effciency

Diversification of product line-up: Expansion of product line by launching ABC and TOPCon module



#### Product line-up



Manufactured by **AIKO** SunDay A10 2,323\*1,134\*35 mm / 29kg

- Using ABC cells => Highest efficiency 23.9% - Interannual change (0.35% (2 to 30 years)
- Up to 630 W high power module



Maximum Power

630 W

Overview

개요

Efficiency

23.9%

**PV Business Div.** 

Products

공장소개

N-Type ABC

Back Contact (144-cell)

EB Business Div.

0&M

EPC

Appendix R&D ODA

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Manufactured by **Shuangliang** SunDay S10+ 2,465\*1,134\*35 mm / 35.9kg

- Using TOPCon cells => Highest efficiency 22.5% - Application of PID minimization technology
- Up to 630 W high power module

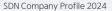


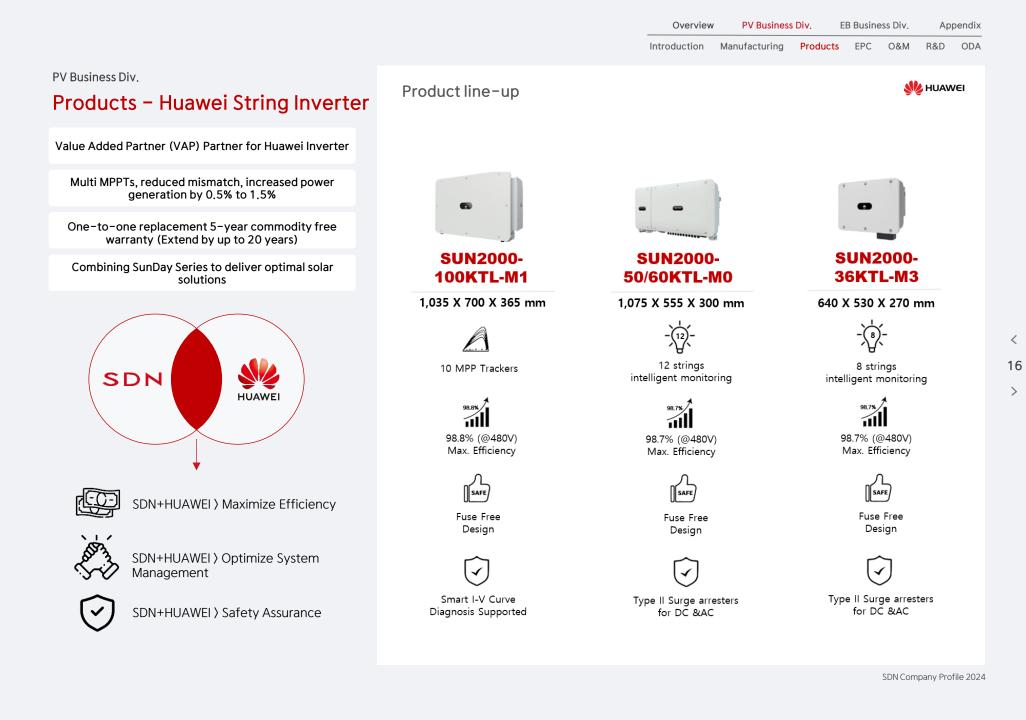
Maximum Power 630 W

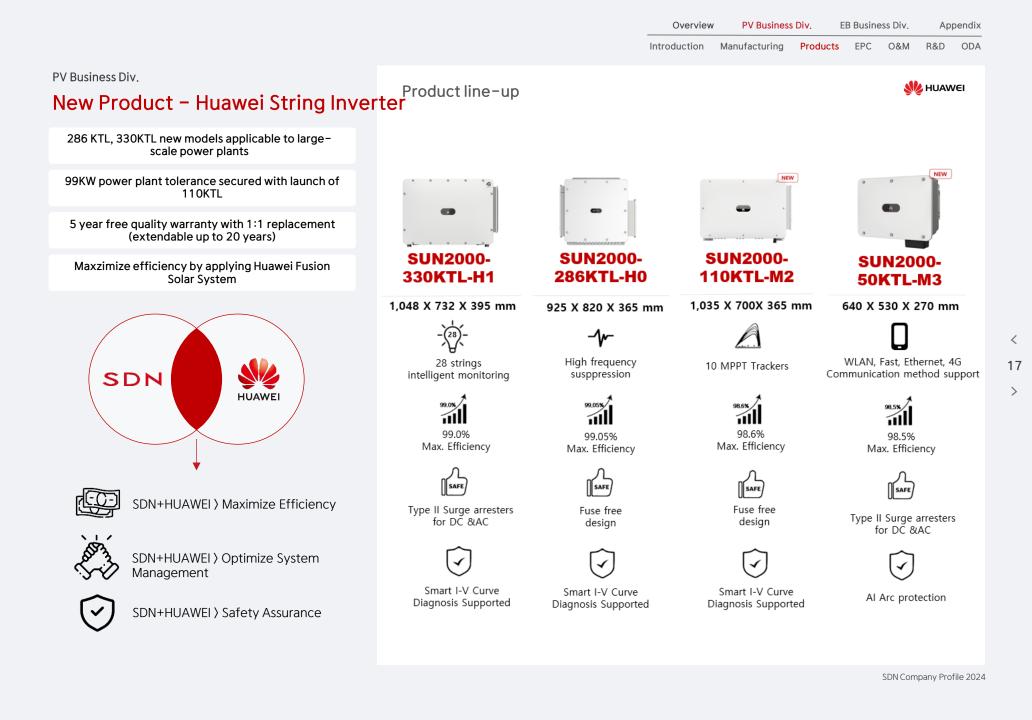
Efficiency 22.5%



Bifacial N-Type Topcon (156-cell)







#### PV Business Div.

## **EPC Domestic Projects**

✓ Partners



#### Major SDN EPC Sites







Korea Eng	gineering	Corporati	on 6MW Solar Plant
Capacity	6 MW	Туре	Roof





	Eocheon	-ri Solar Pla	int
Capacity	1.3 MW	Туре	Plantation
PARTY A		NE V	
	11		
Allin			

## PV Business Div. **EPC Global Projects**

## 42 MW PV Plant Constructed in Bulgaria

: Project Development, EPC, and O&M



Project	ASM 21 MW	RES 21 MW
Area	618,294m²	629,287 m²
Date of Construction	2010.08	2010.12
Date of Completion	2011.06	2012.01
Date of Operation	2011.12	2012.02

## Financing

SUNDAY	ØUniCredit Bank	<b>K</b> sure	
Annual Electricity Sales	About 21 billion won		
Financing	KDB →Unicredit bank Refinancing		
Equity	SDN 23.1 million € / Korea South-East Power Co., Ltd. 23.1 million €		
Total Investment Size	154 million € (approximately 220 billion won)		

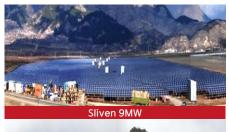






## Project Development, EPC and O&M : Sliven, Ostar Kamak, Katunitza, Shumen, Razlog Total 25 MW







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	Ostar Kamak	Sliven	Katunitsa
Capacity	5 MW	9 MW	4 MW
Project Scale	20 million €	30 million €	120 million €
Electricity Purchase	EVN	EVN	EVN
Annual Electricity Sales	2.5 million €	4.3 million €	1.9 million €
Date of Commercial Power Generation	2011.05	2012. 02	2012.06

SDN Company Profile 2024

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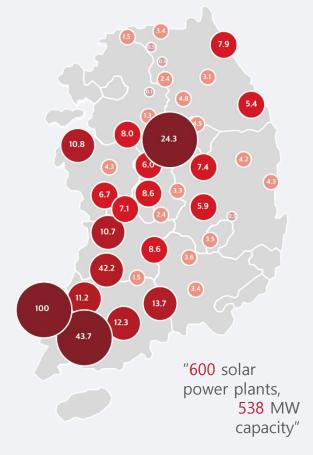
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PV Business Div.

## **0&M**

#### Provides a comprehensive maintenance solution optimized for business sites

We maintain approximately 600 solar power plants with 538 MW capacity and provide the best service.



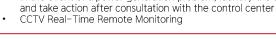
#### Service











Monitoring

#### **Emergency dispatch**



Inspection in case of Inverter shutdown or power
plant abnormality

Real-time power generation control through monitoring

• In the event of a power generation problem, identify the cause

#### **Regular inspection**

- Periodic inspection of the output status and monitoring of inverters, modules, and connection
- Inspection of facility operation status and site status at all times
- Support for statutory periodic inspection

#### **Technical inspection**

- Check the voltage and output of all instruments, such as the junction box and the electric meter.
- Cause Analysis of Inverter Power Drop

#### Office management

- SMP and REC Transactions
- Acting as an agent for comprehensive income tax and tax returns
- · Insurance contract, renewal, claim management





PV Business Div.

## R&D

Selected List	t of R&D F	Projects
Contents	Period	Agency
Development of next- generation high-efficiency solar smart system	2012	The Korean intellectual Property Office
Development of smart junction box with power optimizer and multi- channel smart combiner box with string monitoring	2013 2015	Small and Medium Business Administration
Development of lightweight solar module for roof solar power generation system using double jointed cover glass	2012 ~ 2015	Ministry of Trade, Industry and Energy
Low-cost/high-efficiency solar cells using nanostructures	2014 ~ 2016	Ministry of Trade, Industry and Energy
Demonstration of photovoltaic solar system for noise reduction and carbon reduction of railways	2022 ~ 2025	Ministry of Trade, Industry and Energy
Development of BIPV and smart power conversion devices for zero energy buildings	2023 ~ 2024	Ministry of Trade, Industry and Energy



### Process Technology

- → Process technology research and development for flexible manufacturing system
- → Development of automated manufacturing equipment for PV module production



#### Product Technology

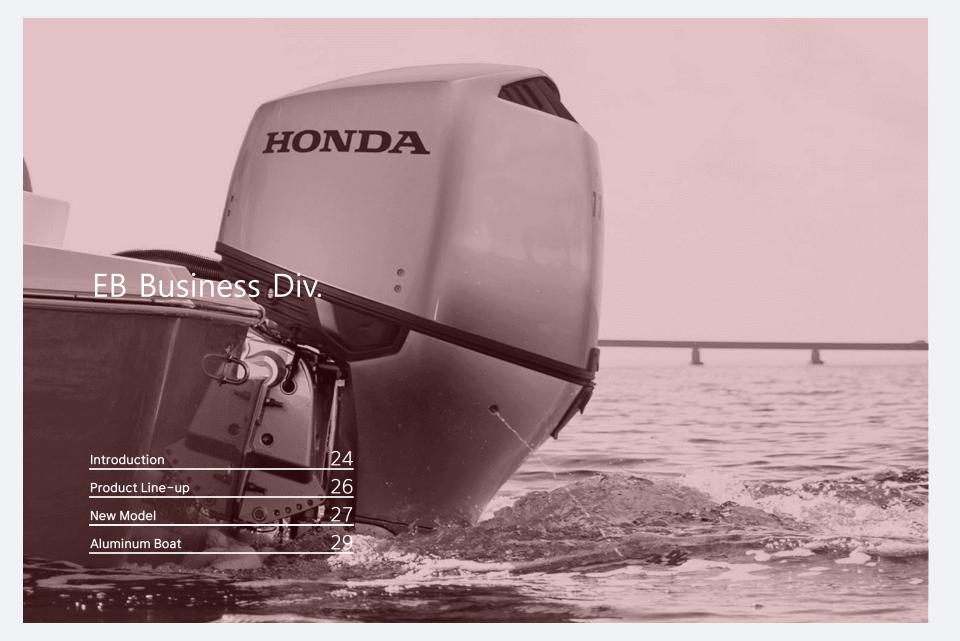
- → Next-generation PV module technology for highefficiency and high-reliability
   → Development of PV modules for various
- Development of PV modules for various applications including Building, Floating, Agro and Railway PV systems



#### System Techonolgy

- → Development of Balance-of-System (BOS) of renewable energy systems
- System engineering for next-generation energy system including VPP and gridforming systems

					Overview	PV Busines	s Div. E	B Busine	ss Div.	Ap	pendix
				I	ntroduction	Manufacturing	Products	EPC	O&M	R&D	ODA
PV Business Div.											
ODA Project						tion Systems in D power system co					ombia
Selected I	List of ODA	A Projects			F/S for	Caldas Solar Pow	er Generatio	n Plant			
Contents	Period	Agency									
F/S for Caldas Solar Power Generation Plant	2021.9 ~ 2021.12	Ministry of Trade, Industry and Energy	F/S for Fostering Colombia's transition from existing disel-powered mini-grids to lowcarbon min-grids in remote and rural off-grid areas of the country			Feasibility Studa Modules and Ins University	y on the Loc tallation of S	al Produc olar Pow	ction of s er in Uzt	Solar bekistan	1
F/S for Fostering Colombia's transition from existing disel- powered mini-grids to lowcarbon min- grids in remote and rural off-grid areas of the country	2022.8 2022.12	Ministry of Trade, Industry and Energy		E		or the of the PV Panel Infrastructure					
Feasibility Study on the Local Production of Solar Modules and Installation of Solar Power in Uzbekistan University	2022.10 2023.6	Korea Energy Agency						LOBAL TRAINING F	PROGRAM		
Basic Design for the Establishment of the PV Panel Manufacturing Infrastructure	2023.1 ~ 2023.8	Korea Export-Import Bank	Driving the 4 <sup>th</sup> industrial revolution in developing countries		sion of dor nies into ov markets		Contribu i	tion to nteres		nal	
Self-Generation Systems in Dispersed Rural Housing in Sucre, Colombia	2022.5 ~ 2025.12	Ministry of Trade, Industry and Energy	<ul> <li>→ Contributing to the industrial and energy development of developing countries</li> <li>→ Demonstration of smart energy infrastructure</li> </ul>	penetatic effects → Developn	ons for overs on and preer	seas market nptive verseas ODA	→ Enhance image cooper two co	and pro ation be	motion	of	



Overview	PV Business Div.	EB Business Div.	Appendix
Introduction	Product Line-up	New Model	Aluminum Boat

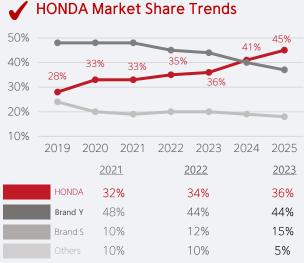
## Introduction



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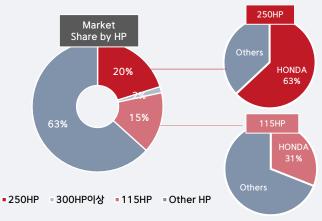
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## Introduction



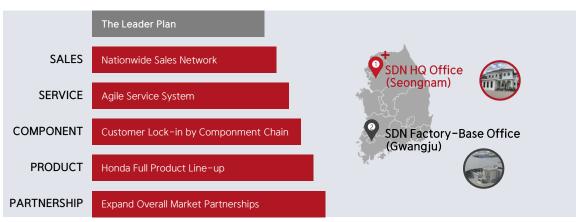
\* Brand Y: Total sales of multiple distributor

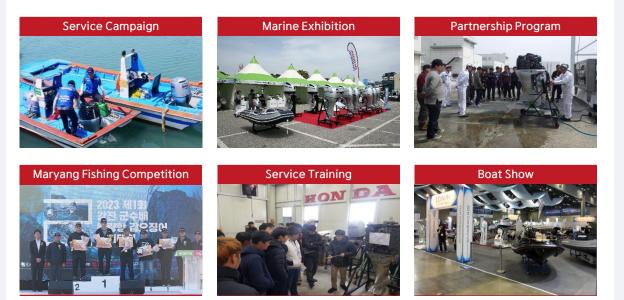
#### HONDA Market Shre Trends by HP



#### "For Shared Growth and Future Value Creation of Honda, partners, and SDN"

#### Our Vision : "No. 1 Brand Share in Overall OB Market"





Overview	PV Business Div.	EB Business Div.	Appendix
Introduction	Product Line-up	New Model	Aluminum Boat

## Product Line-up

High Power Outboard Next generation premium V8 mode Strong Power and durability		Middle Power Outboard Achieving minimum fuel consumption with advanced technology	Portable Outboard Combining safety and economic efficiency	Accessories Overall and broad
	250 225 200 175 HOND	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
BF 350A	BF 250D/BF 225D/BF200D/BF175D	BF 150D/BF 135D/BF 115J/BF 100AK1/ BF 900DK5/BF 80AK1/BF 50DK4	BF 130DK2/BF 20DK2/BF 15DK2/ BF 6AH/BF4.9DH/BF 2.3DH	
Mobility beyond limits	No.1 Sales Rate in NFFC Market	Fuel savings with BLAST technology	Lowest engine weight in class (BF20/15)	<b>SO</b>
Premium grade charge performance	Best fuel efficiency with lean-burn systems	Best-in-class electric charging system	Excellent power generation performance (BF6/4.9)	
Powerful driving	iean buni systems	charging system		Propeller / Handel / Fuel Tank / etc
performance	Durability enhanced with Honda's leading technology	Innovative noise reduction technology	Optimized for storage and movement	We are selling outboard
Best fuel efficiency compared to its class	Increased trust by increased gear ratio	Convenient trolling control fuction	High efficiency air cooling system (BF2.3)	engine-related parts with reasonable price range and good quality.

고중량 화물을 적재한 상태에서도 제동이 안정적이며

역추진력

고 rpm 구간

HONDA 350마력

타사B 350마력

5,000 엔진 속도 [r/min]

6000

타사A 350마력

EB Business Div.

UNDE

## **New Model**



## DBW method (electronic)

- Next generation premium model
- Powerful driving performance proven by maximum speed compared to its class
- High battery charging performance
- High economic efficiency

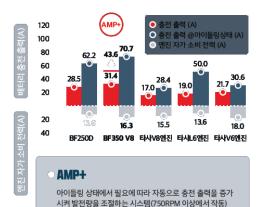
## ○ 최상의 연비

O2 피드백 컨트롤(Lean Burn)과 마찰 저감 기술이 적용 된 기어케이스를 통해 수중마찰력/진동을 최소화하여 동 급 최고의 연비



#### 뛰어난 충전성능 $\mathbf{O}$

최대 70A의 타사대비 높은 배터리 충전 출력과 더불어 아이들링 상태에서도 충분한 충전 출력을 통해 전자장비를 안심하고 사용



## ○ 조작 편이성 향상

2,000

아향상된 기동성

3,500

3,000

2,500

2,000

1,500

1,000

500

0 1,000

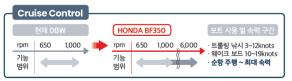
전·후진 변환 성능 향상

중 rpm 구간

3,000



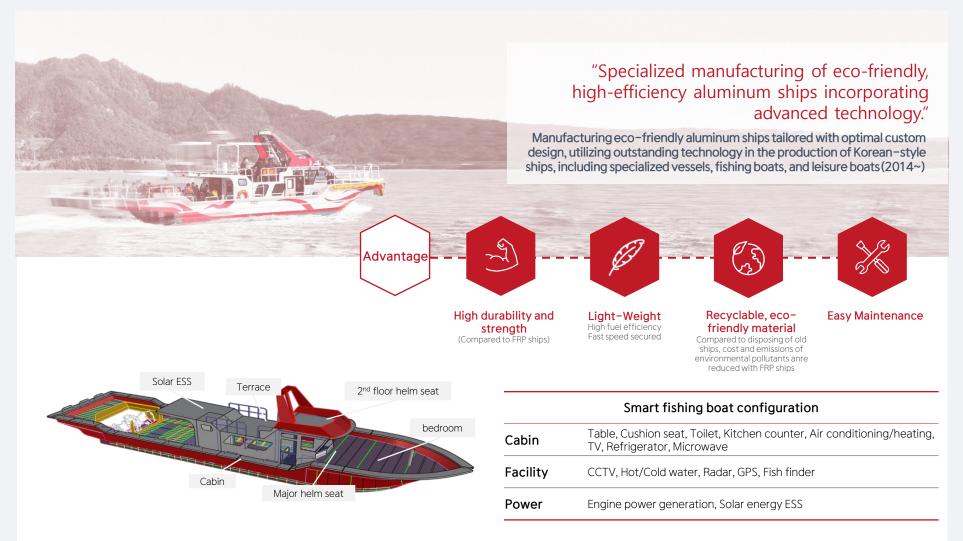
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Overview	PV Business Div.	EB Business Div.	Appendix
Introduction	Product Line-up	New Model	Aluminum Boat

## **Aluminum Boat**

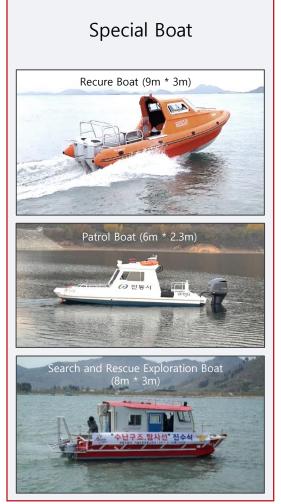


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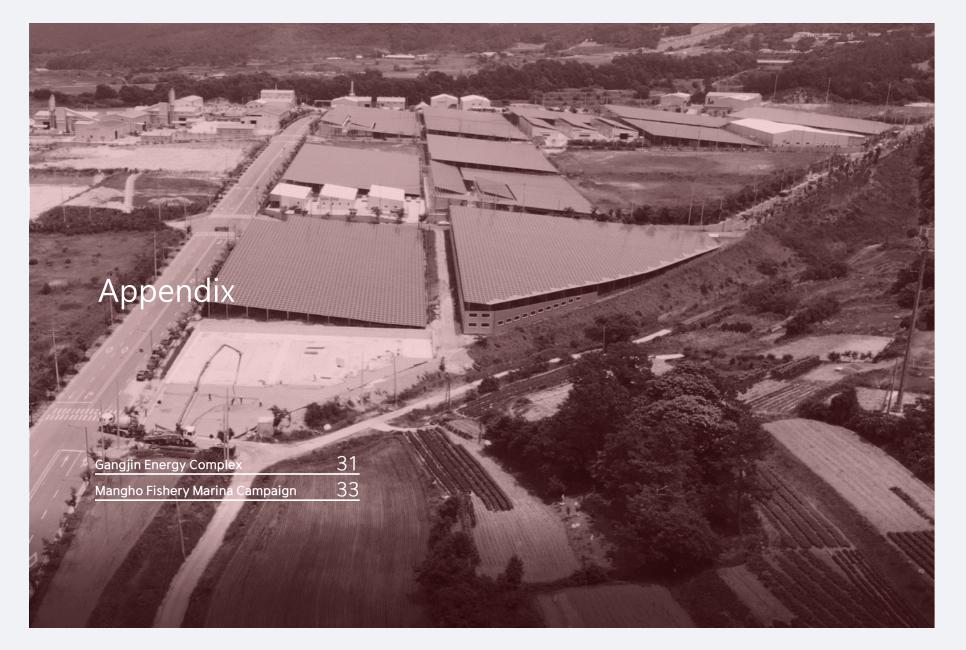
## Aluminum Boat







SDN Company Profile 2024



## Appendix Gangjin Energy Complex

## " Leading Localization with Advanced Technology"

SDN (14,934 m²) : Aluminum ship / R&D

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- **2 SDN ENG (8,242 m²)** : O&M
- **SD ESS (11,994 m²)** : ESS System
- SD FC (18,726 m<sup>2</sup>) : Hydrogen Power Generation
- **SD BIO (11,335 m²)** : Bio Farm
- SD 솔루션 (23,467 m²)

   Electronic Components
- SD PV (22,730 m²) Solar Module

SDN Logistic

Jeonnam Environment Industry Promotion Agency

## Appendix Gangjin Energy Complex

## "Dreaming of turning an industrial complex into an energy park"

Complex energy center: Manufacturing plant + Integrated solar power generation + Fuel cell power generation



#### Manufacturing

- Relocation and establishment of about 10 companies including solar modules and structures
- Manufacture of Aluminum ship and engine related products



#### A/S and Demonstration Center

- SDN solar power plant monitoring and A/S center
- Solar Inverter and fuel cell
   demonstration center



#### **Power Plant Operation**

- Solar Powr Plant 15MW
- Fuel Cell Power Plant 19.8MW x 3 = 59.4MW

## Appendix Mangho Fishery Marina Campaign

Period	2024.06 ~ 11 Gangjin-gun maryang port area
Organized	SDN/Gangjin-gun/MastersMGM
Host broadcaster	MBC sports+







www.sdn-i.com