

GCC Management™ Analysis Report: Abalance Co., Ltd.

Tokyo Stock Exchange Second Section Ticker Code:3856

January 9, 2020

A global renewable energy company, focused in Asia

This report analyzes corporate value from the perspective of **GCC management^a** which emphasizes three elements of **Growth** (in sales), **Connection** (of people and businesses, leading to improve Return on Invested Capital), and **Confidence** (enhanced credibility to reduce business risks).

Abalance's main business: The Green Energy Business

Abalance Co., Ltd. was established to develop and sell software for corporate customers in 2000. Then in 2001 Abalance acquired WWB Co., Ltd., which was engaged in construction machinery sales and solar power generation (green energy) business and made it a subsidiary. At present, the Green Energy Business represents most of sales and profit of Abalance, with its strength being in one-stop provision of a solar power generation value chain. The top executives of Abalance have made use of their network of contacts in globalization, acquisitions, and a reorganization drive to change its business portfolio within a short period.

A "global renewable energy company, focused in Asia"

To become a global renewable energy company, at least initially focused in Asia, Abalance is undertaking a three-step business development program. The first step is to expand owned FIT-certified solar power generation facilities to secure stable profit flows. Abalance currently owns around 10MW of solar power generation capacity and has development projects, including those aimed for sale, with potential capacity of 50MW, up to FY6/2021. These projects will be eligible for about 20-year Feed-in tariff (FIT)^b program in Japan, suggesting upside potential for corporate value. The combined 60MW power generation capacity in FY6/2022 will be equivalent to about 75% of the capacity of EF-ON, a well-known biomass power generating company (Tokyo Stock Exchange First Section 9514; market cap at end-2019 of ¥16.2 billion). The second step is to strengthen comprehensive power from the long-term viewpoint. This includes expansion of capacity to provide storage batteries and solar panels, as well as growth of wind power and biomass businesses. The third step is to accelerate entry into the renewable energy market in Asia.

Shareholder value from the GCC Management™ perspective: 2.6X upside

Growth: Almost definite profit contribution from 50MW solar power stations under development by FY6/2020 and growth especially in regional Asian markets. **Connection:** Strong outlook for advance in solution capability, reduction in purchasing cost, and increase in efficiency in capital management and operation. **Confidence:** Prospect of higher credibility of performance, driven from expansion of owned solar power stations that are FIT-certified. Based on the excess return analysis, using these assumptions, and the peer analysis, potential shareholder value of Abalance is calculated to be ¥7.7 billion, which is about 2.6 times higher than the current market cap of ¥3.0 billion, suggesting an attractive upside potential if the gap of ¥4.7 billion will be narrowed.

Basic report

Written and Edited by
J-Phoenix Research Inc.

Corporate Profile

Headquarters	Shinagawa-ku Tokyo
President & CEO	Mitsuyuki Yasuaki
Established	April 2000
Capital	700.63 million yen
Listed	Sept. 2007
URL	www.abalance.jp
Industry	Electrical equipment

Key Indicators (as of Jan. 23, 2020)

Stock price	909
Highest in 52 weeks	1090
Lowest in 52 weeks	443
Outstanding Shares	5,189,511 stocks
Trading Units	100 stocks
Market Capitalization	4,717 million yen
Prospective Dividend	-
Established Profit Base EPS	51.4yen
Estimated PER	17.7 times
Actual BPS (March 2019)	403.09 yen
Actual PBR	2.26 times

Operating results	Sales	Y-O-Y	Operating profit	Y-O-Y	Ordinary profit	Y-O-Y	Net profit	Y-O-Y	EPS	Diluted EPS	Share price (Yen)	
	Million yen	%	Million yen	%	Million yen	%	Million yen	%	Yen	Yen	High	Low
FY6/2017	6,495	43.1%	115	-71.0%	48	-88.7%	-175	Into red	-33.9	-	1,489	310
FY6/2018	7,300	12.4%	926	705.2%	874	1720.8%	756	Into black	145.9	145.4	1,437	765
FY6/2019	5,984	-18.0%	608	-34.3%	566	-35.2%	316	-58.2%	61.2	61.1	990	394
FY6/2020 (forecast)	7,200	20.3%	430	-29.3%	410	-27.6%	267	-15.5%	51.7	-	-	-
1Q of FY6/2019	2,138	183.9%	282	Into black	276	Into black	177	Into black	34.3	34.2	990	521
1Q of FY6/2020	1,828	-14.5%	253	-10.3%	183	-33.7%	106	-40.1%	20.6	20.6	651	443

a: A trademark registered by J-Phoenix Research in Japan. A systematic term to describe the concept of corporate value. See "What is an analytical framework of the GCC management™?" in this report.

b: A feed-in tariff (FIT) program in Japan is a policy mechanism that the government guarantees that electric utility companies purchase renewable energy produced at a fixed tariff for a fixed period. Projects for either solar power, wind power, hydro power, geothermal, or biomass must satisfy requirements set by the government and the entire generated electricity can be purchased. However, in case of residential solar power setups of less than 10kW, excess portion after own consumption can be purchased.

c: Details in "Reference material: Corporate value evaluation method using ROIC and Excess return".

1. Corporate summary

Core business shift from IT to green energy

Abalance manages and controls its group

IT business spun off

Corporate data

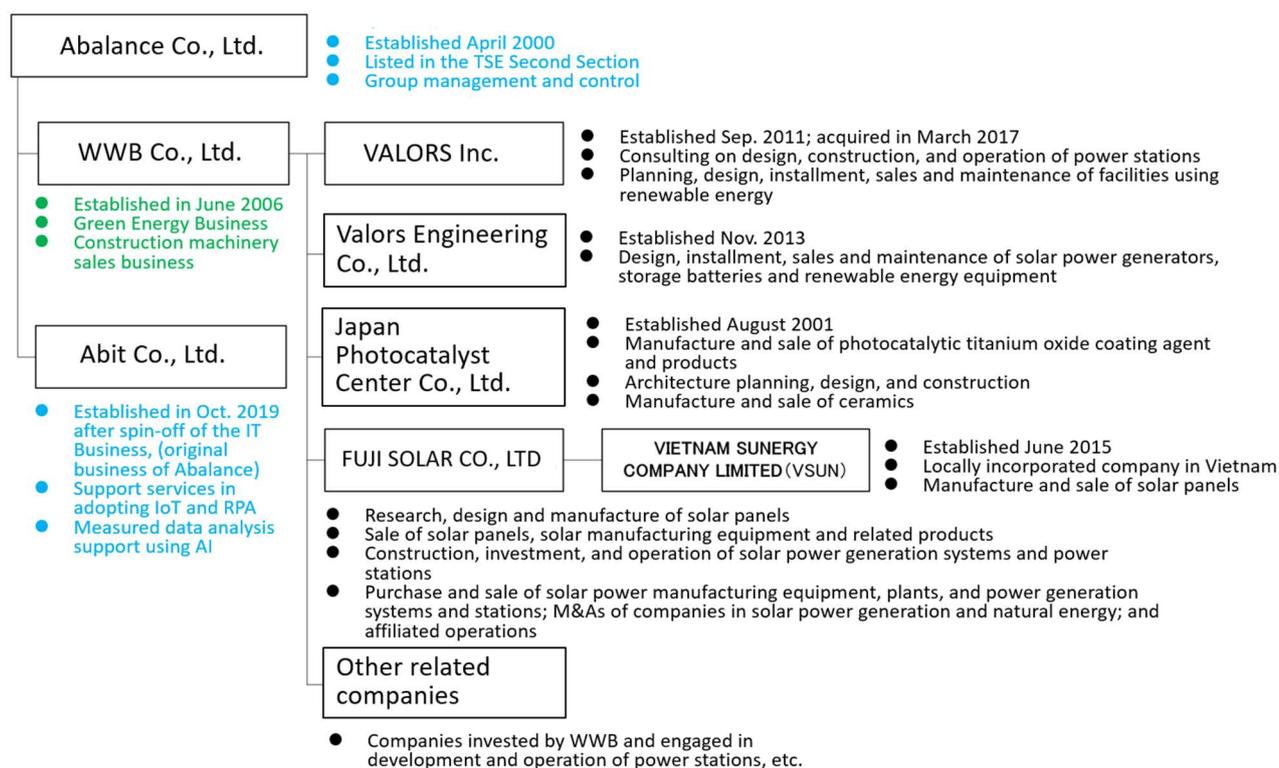
Corporate name	Abalance Co., Ltd.
Established	April 17, 2000
Representative	Mitsuyuki Yasuaki
Location	Tennozu First Tower 5F, 2-2-4 Higashi-Shinagawa, Shinagawa-ku, Tokyo, 140-0002 JAPAN
Capital	700.63 million yen (as of June 30, 2019)
Employees	76 (as of June 30, 2019; consolidated basis)
Fiscal year end	June
Main business	Green energy business (solar panel power generation); Construction machinery sales business; IT business
Listing	The Tokyo Stock Exchange, Second Section [Ticker code: 3856]

Source: JPR, based on the Abalance website

Group structure: Management control by Abalance

Most recently, the IT business, conducted since the company's founding, was spun off as an independent company, Abit Co. As a result, Abalance has become the management and controlling company of the group, while Abit, a dedicated IT business company, will further expand the IT business. Abalance's group structure and major subsidiaries are shown below.

Major subsidiaries and group structure



Source: JPR, based on the IR material of the first quarter of FY6/2020, "Growth strategy of the Abalance Group"

Abalance evolved from an IT company to a green energy company by an acquisition of WWB

Acquired an equity stake in a panel manufacture and sale company in Vietnam in March 2018

IT Business

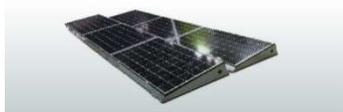


Construction Machinery Sales Business



Pumps provided by the Abalance Group is in use at the Fukushima nuclear power accident sites

Green Energy Business (advanced solar modules)



Green Energy Business representing a majority: Plan to aggressively expand overseas

Abalance was established in 2000 as an IT company that would engage in development and sale of corporate software. Then in 2011, the company acquired WWB, a construction machinery seller that was also in the solar power generation (green energy) business and made it a subsidiary. At present, a majority of sales and profit is generated from the Green Energy Business, which does planning and sale of solar power generation equipment, operation of power stations, and solar power generation at its own stations. Abalance has also invested overseas, including acquisition of an equity stake of a solar panel manufacturing and sale company in Vietnam in March 2018, via a group company.

WWB provided construction machinery used for water injection at the disabled nuclear power plant in Fukushima after the 2011 earthquake; the machinery is still in use today as a part of maintenance work by WWB. This is one evidence demonstrating superiority in WWB's construction machinery products.

History

April 2000	Real Communications, Ltd. was established (renamed "Real Com Inc." in February 2001)
Sep. 2007	Listed on the Tokyo Stock Exchange Mothers
Nov., 2011	Conducted a stock exchange with Abalance Corporation as a wholly-owned parent company and WWB Co., Ltd. as a wholly-owned subsidiary
March 2017	WWB established a SPC (VW Limited Liability Company) and made VALORS Inc. a subsidiary
March 2017	Changed corporate name to Abalance Corporation
Jan. 2018	Established Win Power Limited in Bangladesh
Feb. 2018	Established FUJI SOLAR Co., Ltd. (34% owned by WWB)
March 2018	FUJI SOLAR acquired the entire equity stake of VSUN, engaged in manufacturing and sales of solar panels in Vietnam
Nov. 2018	Changed from the Tokyo Stock Exchange Mothers Market to the Tokyo Stock Exchange, Second Section
Jan. 2019	WWB made Con Corporation, engaged in manufacturing and sale of photocatalytic titanium oxide coating agent and products that use it, a subsidiary (renamed Japan Photocatalyst Center Co., Ltd.)
March 2019	WWB established VSUN JAPAN Co., Ltd. as domestic sales offices of solar panels manufactured by VSUN

Source: JPR, based on the IR material of the first quarter of FY6/2020, "Growth strategy of the Abalance Group"

Business activities and FY6/2019 sales composition

Business Sales amount (% of total sales)	Business activities
IT ¥172mn (2.9%)	Sale of KnowledgeMarket®, an information sharing and knowledge management tool; licensee sales in the Microsoft-related business; SI; operation and maintenance, etc.
Construction Machinery Sales ¥596mn (10.0%)	Sale of construction machinery in Japan and abroad by WWB
Green Energy ¥5,178mn (86.5%)	Sale of solar panels and related products; construction of power stations; and electricity sales business by solar power generation and others, performed by WWB, VALORS, VALORS Engineering Corporation, Sanyo Power Limited Liability Company (subsidiaries of Abalance) as well as by Joyo Power Co., Ltd., Toyo Power Co., Ltd., and Yojo Power Co., Ltd. (related companies of Abalance)
Other ¥39mn (0.6%)	Manufacturing and sale of photocatalytic titanium oxide coating agent and products that use it by Japan Photocatalyst Center Co., Ltd. (68.4% equity stake)

Source: JPR, based on the FY6/2020 Securities Report

Long-term growth trend

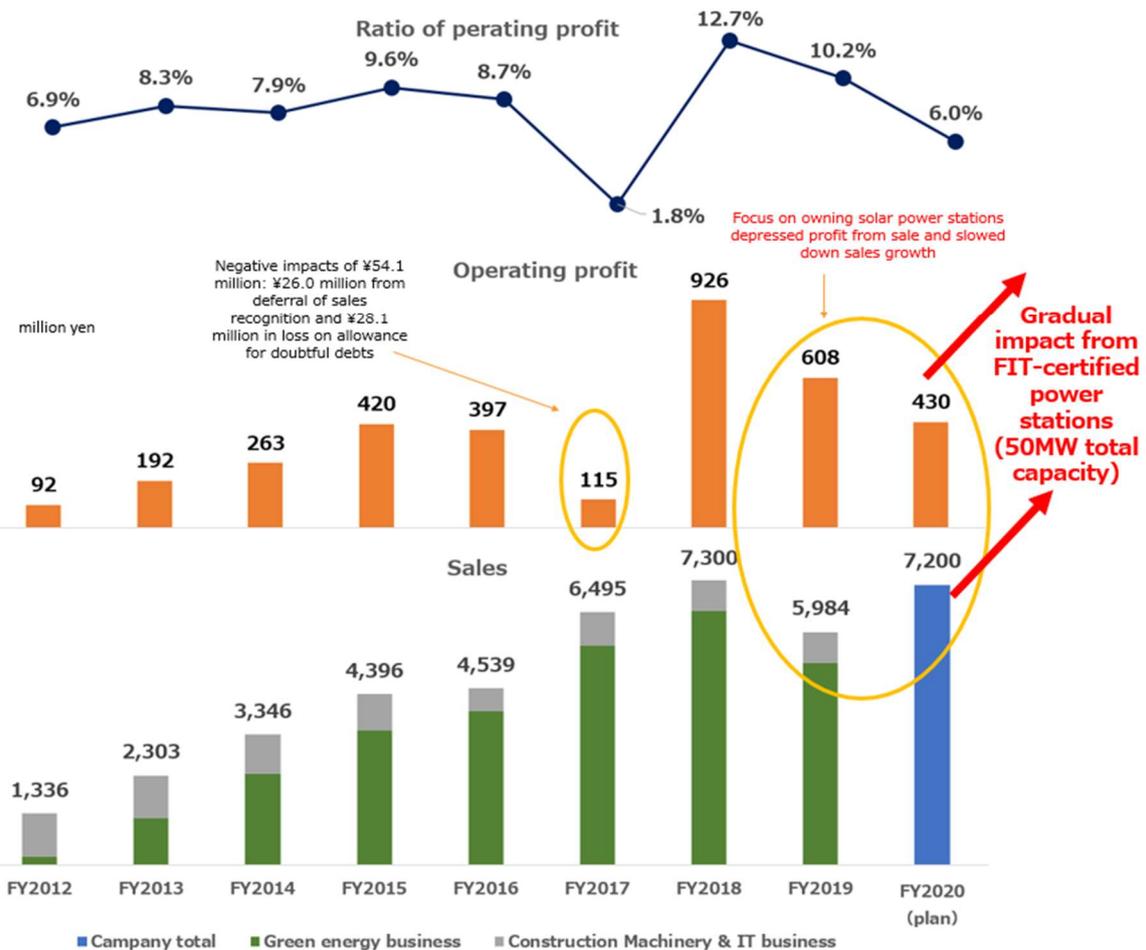
Definite upside potential in the near term from 50MW solar power stations under development

The Green Energy Business is a main driver of growth

Sales since FY6/2012 when WWB became a subsidiary through stock exchange, are shown in the following graph. Green bars, representing the Green Energy Business, show a main driver of growth. Growth in sales and profit has slowed down since FY6/2019 due to a transitional impact from adopting a policy to promote owned facilities instead of selling them and to focus more on future cash flow growth rather than near-term growth in sales and profit. By FY6/2021 Abalance plans to complete construction of FIT-certified solar power stations which bring additional generation capacity of 50MW in total and to own or sell them one by one, which is expected to result in growth in sales and profit.

Long-term growth trend and future direction

Growth mainly driven by the Green Energy Business			Owned power stations to build a base for future cash flow growth		
2011	Sep.	Relocated the head office to Shinagawa-ku, Tokyo (current location)	2018	Nov.	Changed the listing exchange from the TSE Mothers to the Second Section
2011	Nov.	Abalance became a parent company and WWB a subsidiary through stock transfer	2019	Jan.	Acquired 68.4% of equity of the present Japan Photocatalyst Center; made it a subsidiary
2015	May	Established Tohoku Science Co., Ltd.	2019	Jan.	Invested in an anonymous association Kakuda Denen Development
2017	March	Made VALORS a subsidiary	2019	March	Established VSUN Japan Co., Ltd.
2017	March	Renamed Abalance Co., Ltd.	2019	Sep.	The IT Business was spun off as Abit Co., Ltd. (simplified corporate separation)
2017	June	Established Sanyo Power Limited Liability Company			
2018	Jan.	Established Win Power Limited			
2018	Feb.	Established FUJI SOLAR Co., Ltd.			
2018	March	FUJI SOLAR acquired all shares of VSUM			



Source: JPR, based on the Securities Report and the Financial Summary Report of Abalance

2. Overall business summary and mid-term strategies

Overall business portfolio

The Green Energy Business represents a majority of sales and profit, while the IT Business represents a small part

Construction equipment and IT sales backup mainstay Green Energy

Concentrated on the Green Energy Business after the East Japan earthquakes and tsunami of March 2011

Abalance started in the IT Business but made a major shift into the Green Energy Business after the acquisition of WWB in 2011, which coincidentally occurred at about the same time as the Great East Japan Earthquake, which led the management of Abalance to become more conscious of making its value-creating contribution by materializing its corporate philosophy. In 2011, a shift into green energy was planned, and FIT policy was enacted in Japan, which expanded business opportunities for Abalance. At present, Abalance generates about 90% of sales from the Green Energy Business and, in preparation for a post-FIT¹ phase, is promoting the strategy of owning solar power generation facilities and growing in business in storage batteries and wind power generation, as well as expanding through overseas investment.

FY6/2019 segment sales and profit

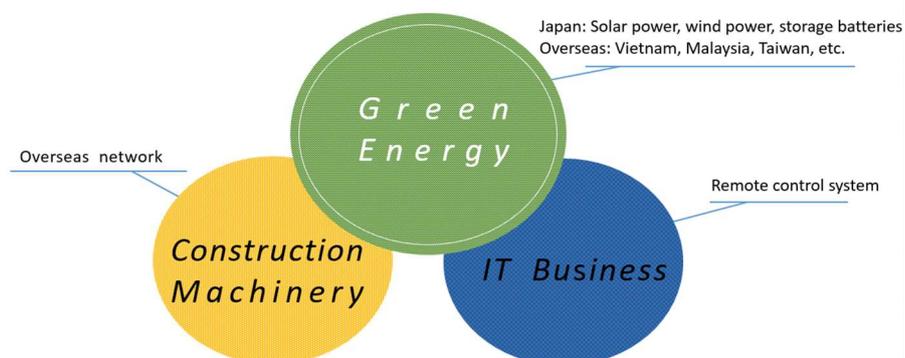
(Million yen)	Green Energy	Construction Machinery Sale	IT	All segments	Other	Total	Adjustment	Consolidated
Sales to outside customers	5,178	596	172	5,946	39	5,985	-	5,985
Segment profit	932	3	63	997	△20	977	△369	608

Source: Materials from Abalance IR briefing, held on September 3, 2020

Synergy and complementarity of the three businesses

While Abalance currently focuses on the Green Energy Business, its three business domains have synergies such as use of construction machinery in construction of solar power stations, the overseas network in construction machinery being useful for overseas expansion of the Green Energy Business, and use of remote control systems of the IT Business in monitoring the power generation status and in maintenance. There is also a currency hedge impact as the Green Energy Business imports materials while the Construction Machinery Sales Business mainly exports products.

Features of the three businesses and their potential synergies



Source: IR material of the first quarter of FY6/2020, "Growth strategy of the Abalance Group"

¹ "Post-FIT" means that an expiry of a period to sell electricity generated from solar power and other renewable energy at FIT prices. For example, the FIT program for residential solar power setups lasts for 10 years and began to end from November 2019.

Outline of the medium-term management plan

Major shift in the Green Energy Business strategy: from sale to facility ownership

Accelerating overseas expansion in the Green Energy Business and the Construction Machinery Sales Business

Focus on assisting workstyle innovation in the IT Business

Priority on building a base for long-term growth

In August 2018, Abalance adopted a medium-term management plan [2019-2021], aimed at further growth and becoming a renewable energy company active in Asian markets, through a three-step business development program. The three steps are 1) to expand owned FIT-certified solar power generation facilities to secure stable profit; 2) to enhance diverse business activities in the general power industry, including storage battery and biomass, from a long-term viewpoint; and 3) to accelerate entry into the renewable energy market in Asia. In order to realize these steps, Abalance will carry out the following measures and priority strategies.

The medium-term management plan [2019-2021]

Theme	Context
Corporate philosophy and vision	<ul style="list-style-type: none"> See the supplementary information: Corporate philosophy and vision
Green Energy Business' shift in business model	<ul style="list-style-type: none"> Redefine the green energy business, develop owned solar power stations, and evolve into a global renewable energy company. Develop FIT-certified, owned solar power stations in Japan and abroad, and engage in sale of storage battery to tackle the 2019 problem². Enter into the Asian market as a renewable energy solution-first
Entry into the overseas renewable energy market	<ul style="list-style-type: none"> Use its powerful business network in China and Southeast Asia and evolve as a renewable energy solution-first company.
Construction Machinery Sales Business	<ul style="list-style-type: none"> Sell competitive products in the used machinery market. Continue to develop leasing/rental services as an agent of a top-class, global maker in China. Strengthen overseas expansion.
IT Business	<ul style="list-style-type: none"> Support companies that promote workstyle innovation. Measures include to respond to the working population decline in Japan. Automate low-value-additive tasks by a combined use of various tools, depending on objectives, and help customers improve productivity at corporate and each individual level.
Business synergies	<ul style="list-style-type: none"> The Construction Machinery Sales Business contributes to foundation construction of solar power station installation projects of the Green Energy Business. The IT Business develops and then sells a power generation monitoring system, which provides automatic data collection, data analysis, and result distribution of the Green Energy Business power stations in operation.

Source: Extracted from the Abalance Medium-Term Management Plan [2019-2021] by JPR

Priority measures of the medium-term management plan [2019-2021]

1	Reduce procurement cost, rationalize a subcontracting work structure, and raise efficiency in other operations so as to realize cost reduction, which will more than offset impacts from lower electricity sales prices.
2	Secure diversity in financial strategy and fully rationalize operations so as to speedily execute certified facility projects, which will be owned and operated as a premise.
3	Promptly share customer feedback and information, and produce optimal answers so as to provide customers solutions concerning profit model of power generation business, tax planning, etc., rather than simple product sale or services.
4	Increase capable bilingual talents, who work on raising the Abalance Group's brand recognition in the renewable energy market in Asia.

Source: Extracted from the Abalance Medium-Term Management Plan [2019-2021]

Three-year growth targets: 20% in sales and 30% in operating profit vs. the average of FY6/2017 and FY6/2018

Growth appears to slow down due to a shift in business model

Abalance's targets for the medium-term management plan [2019-2021] are to achieve ¥8.2 billion in sales and ¥610 million in operating profit in FY6/2021. These targets mean a 20% increase in sales and a 30% increase in operating profit compared to the average of the FY6/2018 and FY6/2017 (FY6/2018 results were boosted by a deferred recognition of some sales made in FY6/2017). The pace of growth may appear slowing down, compared to growth of 60% in sales and 2.2 times in operating profit during three years up to FY6/2018, which however were partly boosted by a one-off factor.

Moreover, the company's forecasts for FY6/2020 announced in 2018 – sales of ¥7,200 million and operating profit of ¥430 million – were lower than their initial forecasts. This slowdown in forecasts was due to a shift in the business model to promote owned solar power stations, rather than sell them, a change made in order to establish a long-term growth base.

Sales, operating profit, and other targets of the medium-term management plan [2019-2021]

(Unconsolidated; million yen)	FY6/2017	FY6/2018	Average of FY6/2017 and FY6/2018	FY6/2019 (plan)	FY6/2020 (plan)	FY6/2021 (plan)
Sales	6,495	7,300	6,873	7,323	7,483	8,231
Gross profit	1,488	2,106	1,798	1,618	1,779	1,957
SG&A expenses	1,373	1,251	1,313	1,105	1,216	1,337
Operating profit	115	855	487	512	563	619
(Operating margin)	1.8%	11.7%	7.1%	7.0%	7.5%	7.5%
Net profit attributable to a	▲175	709	266	377	420	465
(Net margin)	▲2.7%	9.7%	3.9%	5.1%	5.6%	5.6%

↑
The company's forecasts for FY6/2020 announced in 2018 – sales of ¥7,200 million and operating profit of ¥430 million – were lower than their initial forecasts.

Source: Extracted from the Abalance Medium-Term Management Plan [2019-2021]

² The 2019 problem: Japan's FIT program for residential solar power setups lasts began in 2009 and and began to end its 10-year period from 2019. Under the program, electric utility companies purchase electricity generated by private homeowner producers at the fixed tariff set by the government. The tariff was higher than the market price as the government wanted to promote installation of residential solar power setups. It is yet known whether private homeowner producers can continue sell electricity to electric utility companies at what price, and whether the price may substantially decline or not.

Long-term measures to raise shareholder value with emphasis on ROIC

Growth strategy with emphasis on SDGs

Payout ratio of about 30% will be maintained while internal reserves will be secured for growth

Measures to enhance shareholder value

ROIC³-focused policy to raise corporate value

Although Abalance's growth rate may appear to slow down for the near term, the company made it clear in its latest disclosed materials that it will focus on ROIC and cost of capital in managing the company and seek to create corporate value that satisfies shareholders over the long term. The IR document for the first quarter of FY6/2020, "Growth strategy of the Abalance Group," disclosed on November 18, 2019, is important and useful in order to understand the long-term shareholder value of Abalance. The growth strategy includes achievement of the Sustainable Development Goals (SDGs), which were 17 goals adopted by the United Nations Summit meeting in September 2015 to be achieved in 2016 to 2030 (see details in the supplementary information at the end of the report). This is particularly relevant to investors who focus on companies that pursue sustainable growth.

Outline of growth strategies

Management focused on cost of capital (ROIC) to further raise corporate value

Main measure: Enhancement of the Green Energy Business

1. Secure stable profit from owned power stations (boosting its ratio of sales)
2. Use a fund structure in large development projects
3. Expand overseas investment (strengthen cooperation with VSUN; promote JVs in Vietnam, Malaysia, and Taiwan)
4. Enter into the wind power business (land, small scale) and the storage battery business.
5. Also focus on M&A activities.
6. Strengthen IR and disclosure (SDGs measures; power generation information, etc.)

* The Construction Machinery Sales Business and the IT Business support the Green Energy Business and expand their respective operations.

Source: Extracted from the IR material of the first quarter of FY6/2020, "Growth strategy of the Abalance Group"

Shareholder return policy

Abalance has a dividend policy of continuing stable dividend payments, with the premise of securing internal reserves needed for its business expansion and financial enhancement. In FY6/2019, the company paid an interim dividend of ¥7 per share and a year-end dividend of ¥10, and its consolidated payout ratio was 27.8%. The company is expected to keep a similar level of payout ratio in the future.

Most recent dividend payment

	Net profit attributable to a parent company	Per-share interim dividend	Per-share year-end dividend	Per-share annual dividend	Payout ratio (consolidated)
FY6/2019	316 million yen	7 yen	10 yen	17 yen	27.8%
FY6/2018	756 million yen	7 yen	10 yen	17 yen	11.7%

Source: Extracted from the IR document for the first quarter of FY6/2020, "Growth strategy of the Abalance Group"

³ ROIC is explained in detail in "Reference material: Corporate value evaluation method using ROIC and Excess return".

Green Energy Business

Acquisition of VALORS, which is strong in solar power generation in West Japan, expanded geographic coverage

Provide on-stop solution, including procurement of solar power panels

One-stop solution

Nationwide expansion of the solar power generation business by acquisition of VALORS

In 2017 the Abalance Group acquired VALORS, which has strong presence in West Japan in solar power generation development, and particularly in Kyushu. Development of solar power generation requires information on land sites, projects, and other local insights. While Abalance had expanded mainly in East Japan, the acquisition of VALORS has enabled it to expand business all over Japan.

Outline of the Green Energy Business

The Green Energy Business, conducted by WWB and VALORS, is summarized below.

Outline of the Green Energy Business

	
	
<ul style="list-style-type: none"> • Management of owned power stations • Sale of solar battery modules 	<ul style="list-style-type: none"> • Management of owned power stations • Sale of low-voltage lot type & high-voltage solar power stations • Acquisition and sale of power stations in operation • Maintenance & repair
<ul style="list-style-type: none"> ✓ Promote a 200-300MW solar power station development project, seek to sell solar battery modules, and develop owned power stations in Cambodia. ✓ Vietnam Sunergy Company Limited, a solar battery module maker, joined the Abalance Group in April 2018, and strives to globally sell solar battery modules. ✓ Have broad business contacts in China, a rapidly-growing energy market (including solar power, nuclear power, and a grid network). Develop new renewable energy projects. 	

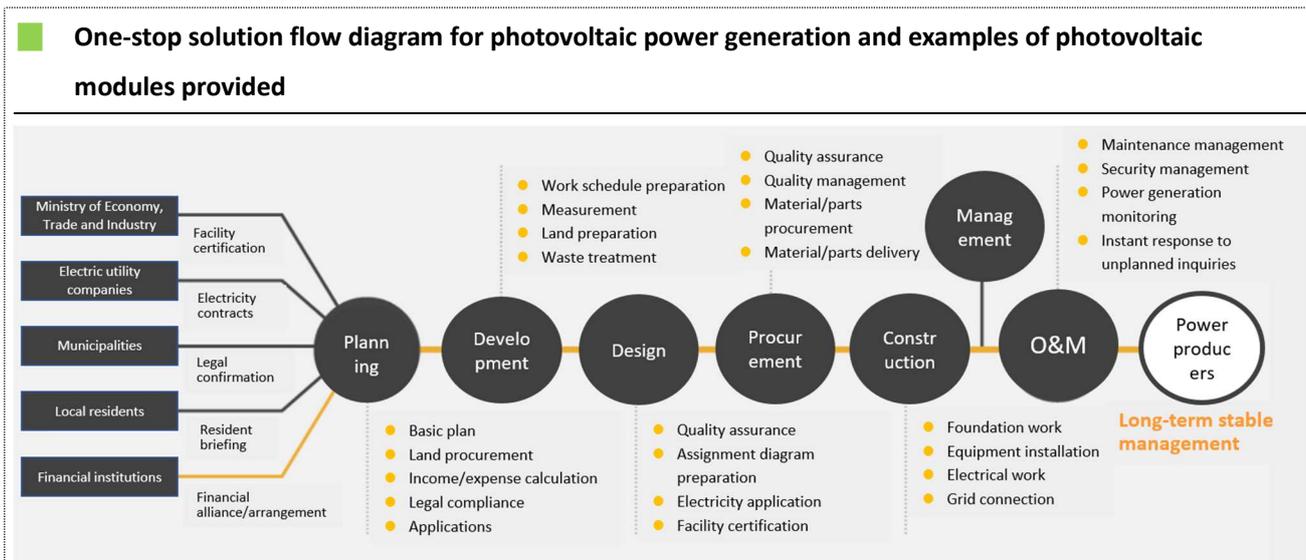
Source: Abalance Medium-Term Management Plan [2019-2021]

In Japan, WWB and VALORS operate business in the form of management of owned power stations; sale of low-voltage lot type and high-voltage type solar power, and power stations; acquisition and sale of power stations currently in operation; and maintenance and repair. The Abalance Group is also engaged in management of owned power stations and sale of solar battery modules in Southeast Asia.

Sell, and then operate and maintain developed solar power generation projects

Utilizing the organization mentioned above, the Green Energy Business can provide one-stop solutions to power producers – from planning of solar power generation to procurement, design, module manufacturing, installment work, and operation and maintenance of a generation system. The Abalance Group is a one-stop solution provider in the true sense, as solar panels are manufactured by its group company in Vietnam, and post-installment O&M⁴ can also be handled by the group.

⁴ Operation & Maintenance (O&M) of solar power generation facilities includes day-to-day monitoring of the generation status, including data analysis, maintenance of systems and equipment through regular check-ups, early detection of an accident, and replacement of components and equipment.



Source: Abalance corporate website

Making a major shift in business model

Outlook of the Green Energy Business

Abalance is currently making a major shift in its business model, as presented in its medium-term management plan [2019-2021], in which the company re-defines green energy business and seeks to evolve into a renewable energy company that is not limited by geopolitical borders. Anticipating a slowdown in development and sale of solar power stations, in light of a review of fixed purchase pricing, difficulty in securing land, and municipalities’ stricter authorization standards for power station development, Abalance started to focus on developing self-managing solar power stations in Japan and abroad and to build more owned stations in order to secure stable profit; this began in FY6/2019 (see supplementary material: Shift in business model of the Green Energy Business).

The major shift in business model is likely to fully boost corporate value in FY6/2022 and after

Additional 50MW capacity operation by June 2021

According to the FY6/2019 Securities Report, Abalance plans to increase new solar power stations for its own use or for sale by June 2021 and raise generation capacity by 50MW in total (see supplementary material: Power station development plan). As the company currently generates about 10MW from its own facilities, its total capacity will amount to almost 60MW, which is equivalent to about 75% of the expected biomass power generation capacity of EF-ON (Tokyo Stock Exchange First Section 9514) in FY6/2023 (source: EF-ON Group medium-term management plan for 2020/2022). As reference, EF-ON’s market cap was ¥16.2 billion as of December 30, 2019.

Estimated to additional bring close to ¥700 million in operating profit and close to ¥1.5 billion in EBITDA in FY6/2022 and after

While biomass power generation and solar power generation cannot be directly compared, the case of EF-ON is a useful reference to some extent in considering upside potential of the shareholder value of Abalance. As these new facilities are FIT-certified, Abalance is estimated to benefit from the FIT program for additional about ¥30 per share over the next nearly 20 years.

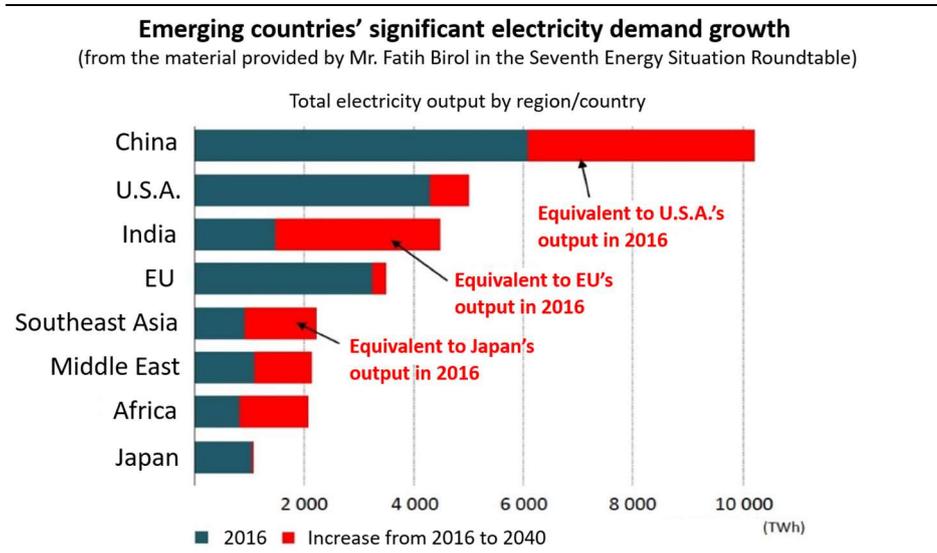
The start of generation of additional 50MW is estimated to bring close to ¥700 million in operating profit and close to ¥1.5 billion in EBITDA to Abalance. These upside potentials can be expected to more than offset the immediate slowdown in growth of sales and operating profit.

Business expansion overseas, mainly in Asia

Exploiting management’s network for overseas expansion

Energy demand in emerging countries, including China, India, and Southeast Asia, is expected to be closer to a total demand of the U.S., Europe, and Japan in the future, according to some estimates (see below). Abalance aims at capturing this business opportunity by business expansion in Asia, a region where Abalance can leverage its management’s excellent cross-border network of contacts (see supplementary information at the end of the report). The company began sale of electricity generated by solar power in Vietnam and exchanged an agreement on a solar power generation project with the government in Cambodia. It is thus becoming a frontrunner in this field among Japanese companies in Asia. The company is moreover expected to evolve into a renewable energy “solution-first” company in Asia, by drawing fully upon the strength of its technologies and credibility as a Japanese company and leveraging its executives’ powerful business contacts in China and Southeast Asia.

Overseas renewable energy demand potential



India’s additional electricity output up to 2040 is equivalent to the EU’s present electricity output. China’s additional electricity output up to 2040 is equivalent to the U.S.A.’s present electricity output.

Source: Extracted from the Abalance Medium-Term Management Plan [2019-2021]. Quoted from the proposal of the Energy situation roundtable on the initiatives on energy shift, dated April 10, 2018 (Agency for Natural Resources and Energy)

Abalance’s moves to enter the overseas renewable energy market

Have broad business contacts in China, a rapidly-growing energy market (including solar power, nuclear power, and a grid network). Develop new renewable energy projects.

Vietnam Sunergy Company Limited (VSUN), a solar panel maker in Vietnam, joined the Abalance Group in April 2018.

Signed a contract for a 200-300MW solar panel power station development project with Cambodian government officials in March 2018.

Source: Extracted from the Abalance Medium-Term Management Plan [2019-2021]

Solar panel production in Vietnam

Solar panel production in Vietnam

In Vietnam, FUJI SOLAR (34% equity owned by WWB) in the Abalance Group acquired an entire equity stake in VSUN, a solar panel manufacturer. VSUN is certified as an IT company by the Ministry of Science and Technology in Vietnam, and its solar panel production capacity has expanded equivalent from 600MW to 1,000MW per year, after the start of operation of its new plant. By owning VSUN, the Abalance Group is able to procure own panels, obtain cost information, and make more accurate cost estimates. Although VSUN is not consolidated at present, its sales were about ¥7.4 billion in 2018, according to data provided by Abalance. Profit generated by VSUN is currently used for overseas re-investment, providing a de-facto currency hedge function in overseas investment. VSUN is also considering an IPO in Vietnam. Fund procurement through it can potentially accelerate overseas business expansion of the Abalance Group.

Outline of VSUN, a production base for solar panels in Vietnam

Vietnam Sunergy Company Limited (VSUN) joined the Abalance Group

- Engaged in solar module manufacture and sale
- Recorded sales in the U.S.A., Europe, and Southeast Asian countries
- Annual production capacity of 600MW + a new plant's capacity of 400MW = 1GW
- Began considering an IPO in Vietnam
- Not incorporated in Abalance's consolidated results



Source: Extracted from the IR material of the first quarter of FY6/2020, "Growth strategy of the Abalance Group"

VSUN is highly regarded as one of top 40 solar module manufacturers

VSUN was successful in being selected, from among hundreds of solar module manufacturers, in the Q3 2019 Bloomberg New Energy Finance (BNEF) Tier 1 Solar Module Manufacturers list (of 40 manufacturers) in September 2019. The BNEF's quarterly list, based on bankability and financial stability of the solar modules manufacturers, is public announced and is widely used as an indicator of non-recourse bank debt financing ability of solar projects. This is a good example demonstrating VSUN being evaluated as a global standard brand.

Entry to the wind power generation business, aimed at boosting total power generation capacity

Use of storage battery to expand in residential solar power setups

Entry into a photocatalytic area is expected to generate synergy with the Green Energy Business

Ways to secure more sources of profit

(1) Wind power generation

Abalance is planning to enter into wind power generation and storage battery businesses. Wind power generation falls behind solar power generation in terms of installment conditions and costs in Japan but there remains room to enter this field as the ratio of installed capacity is below the certified level, the current FIT program continues up to 2020, and the FIT price is at a level that enables a sustainable business (see supplementary material: Shift in business model of the Green Energy Business).

(2) Residential solar power generation

The FIT program for residential solar power setups lasts for 10 years and began to be phased out in November 2019. Such post-FIT setups are facing a significant challenge but the residential solar power generation capacity, 5,828,000KW in total, has great potential. If owners of a residence with an installed solar power setup install a storage battery, the dead time between when solar power generation takes place and the peak in electricity sales can be reduced and the electricity sale can become more effective.

Foreseeing potential in residential solar power generation, Abalance has already secured a supplier of storage batteries. The company is likely to expand in this area as it is one of few which can propose and actually provide an integrated service from component procurement to operation and maintenance of electricity for sale. For example, sale of the stored electricity at the time of power peak should definitely generate profit (see supplementary material: Shift in business model of the Green Energy; Organization to obtain profit by incorporating residential solar power generation).

(3) Entry into a photocatalytic area

In January 2019 Con Corporation, engaged in manufacturing and sale of a photocatalytic titanium oxide coating agent and products that use it, became a subsidiary (renamed Japan Photocatalyst Center Co., Ltd.) Photocatalyst is a technology that breaks down organic dirt which sticks to outer walls and window glass. Prevention of dirt on the solar panel surface will reduce cleaning costs and this business is expected to generate great synergies with the Green Energy Business and differentiate Abalance's business from that of competitors in the domestic and overseas market (see supplementary material: Shift in business model of the Green Energy Business; Japan Photocatalyst Center's technology).

Construction Machinery Sales Business

Construction machinery of Sany Heavy Industry, a leading company in the industry

Provision of support at the time of the Great East Japan Earthquake

Tapped the market in Bangladesh with competitive construction machinery

Becoming a bridge linking Asia and Japan, in infrastructure development

Subsidiary WWB's founding business

General agent of SANY, one of the global top three construction machinery makers

Abalance's construction machinery business consists of sale of new machinery, sale and purchase of used machinery, and rental of machinery. Regarding new machinery sale, Abalance is a general agent of China's Sany Heavy Industry in Japan with its strength lying in handling Sany's mainstay mobile concrete pumps, helping make it one of Japan's top exporters of the concrete pumps. Sany is the top construction machinery maker in China, and has rapidly grown to be the world's third maker after Caterpillar and Komatsu in terms of market cap.

Construction machinery provided by WWB

 <p>Truck</p> <p>A wide range of special-purpose vehicles, such as self-loaders, concrete mixers, and refrigerator cars</p>	 <p>Heavy Equipment</p> <p>Excavators, pile construction machines, crane trucks, and other machinery used in civil engineering work00</p>	 <p>Road Equipment</p> <p>Road rollers, bulldozers, and other construction machinery used in road construction</p>	 <p>Generator</p> <p>Generators, compressors, and other equipment used in foundation work</p>
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Pumping vehicles provided to Tokyo Electric Power for water injection after the Fukushima nuclear power plant accident

Source: Abalance materials from its corporate website and others

As mentioned above, Abalance has provided construction machinery to support the water injection work after the Fukushima nuclear power plant accident.

Overseas expansion and becoming a bridge across Asia

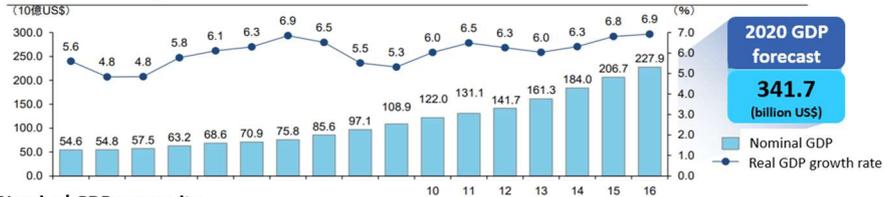
Abalance has established its own overseas network by making use of its executives' contacts in China and with overseas Chinese. As an example, Abalance established a company in Bangladesh to engage in sales and rental of construction machinery for building infrastructure, including Japan's ODA projects for road construction. In the case of supplying construction machinery for a railway bridge construction project in Bangladesh, construction delay and other problems occurred due to lack of progress in cooperation between Japanese companies in charge of a bridge and Chinese companies in charge of bridge abutments. Abalance then was involved in binding the relationship of both parties and contributed to smoother progress of construction. As in this case, Abalance, being a Japanese company and having a network in China and with overseas Chinese, is relied upon by others in many other overseas cases. This can be another strong point of Abalance in obtaining more business opportunities.

High growth potential of Bangladesh

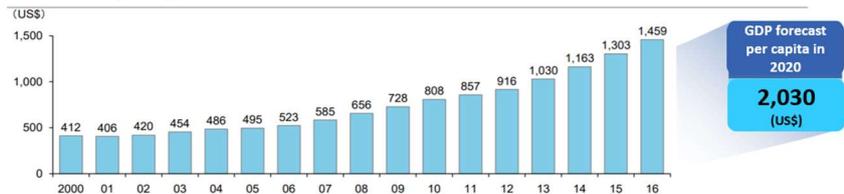
Bangladesh GDP, GDP growth rate, and GDP per capita

- Nominal GDP exceeded US\$227.9 billion in 2016. The growth rate of real GDP has been around 6% in recent years.
- Nominal GDP per capita is on an uptrend and is projected to approach US\$2,030 by 2020.

Nominal GDP and growth rate of real GDP



Nominal GDP per capita



Source: Medical and International Development Country Report for Bangladesh, by METI

IT Business

IoT and AI related services, adopted by municipalities

Use of IoT and AI, and contribution in labor productivity

Business spin-off aimed at further boosting growth

The IT business, the original business of Abalance, was spun off and has been conducted by an independent company, Abit Co., since October 1, 2019. This gives the company resiliency in responding to the changing IT market. Abit is a made-up word combining “A” (standing for pride in belonging to the Abalance Group) and “bit” (meaning a minimum unit of digital information and each person). Abit particularly focuses on people in its business development as it strives to help improve issues related to labor productivity enhancement, know-how transfer into younger generations, and the tight labor market.

Make machines do simple repetitive tasks and shift to higher-value-added work

Services provided by the IT Business include KnowledgeMarket®, an information sharing and knowledge management tool; Nintex workflow-related service; Robowiser Framework (RBF), a RPA⁵ tool for a broad range of operations; and services using of IoT and AI to reduce work burden. The services related to IoT and AI have already begun to be adopted by local municipalities, and steady accumulation of such achievements may allow Abit to further expand business.

⁵ Robotic Process Automation (RPA) is a form of business process automation technology to automate desk works of white collar workers by use of Rules Engine, AI, or other software robots. These software robots are sometimes called digital labor or digital workers.

Synergy

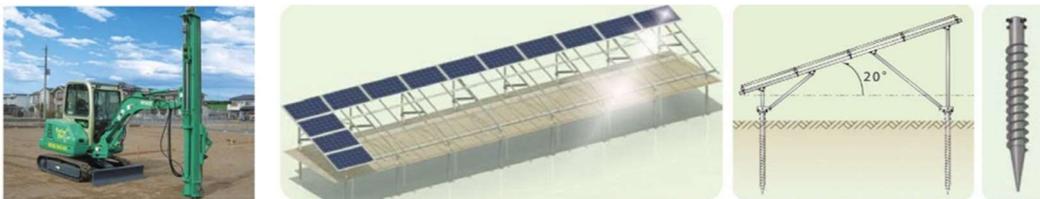
Diverse synergy potentials

Synergies among the three businesses of Abalance can be realized in various ways. The company has so far dedicated management resources in the Green Energy Business but plans to also deploy resources in the Construction Machinery Sales Business and the IT Business, in order to promote synergies, such as shown below in two examples.

Synergies among the three businesses

Example of business synergy: [Green Energy X Construction Machinery] Solar driller

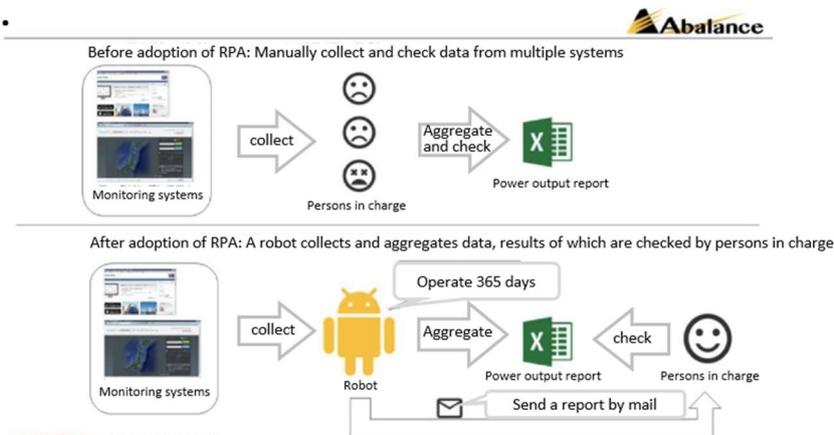
Adoption of WWB's "solar driller" in pile driving, foundation work for a vast area for a mega solar power station installment, has reduced the work period to one-eighth, realizing significant cost savings.



- 1) After a drilling mast is grounded, a drive shaft is inserted for a pile and fixed by tenpins.
- 2) Use a level gauge to check the level of the pile, make adjustment, and begin pile driving.
- 3) When the pile driving reaches a midpoint, check the level again.
- 4) Complete pile driving. Remove the fixed pin and pull the drive shaft.

Example of business synergy: [Green Energy X IT] Systems using RPA

A power generation monitoring system was developed and will be for sale. The system, using RPA, automatically collects data during operation and makes analysis of the data, results of which are then distributed.



* Robotic Process Automation (RPA) is a form of process automation and efficiency enhancement of conventional manual works, by combined use of face recognition, Rules Engine, and other technologies.

Source: Extracted from the Abalance Medium-Term Management Plan [2019-2021]

3. Shareholder value estimates

Estimates based on the excess return method

Estimated shareholder value of ¥7.7 billion (share price of ¥1,500), including the value of 50MW solar power generation to be developed by June 2021

Current market cap of ¥3.0 billion does not incorporate potential value to be generated from additional 50MW capacity

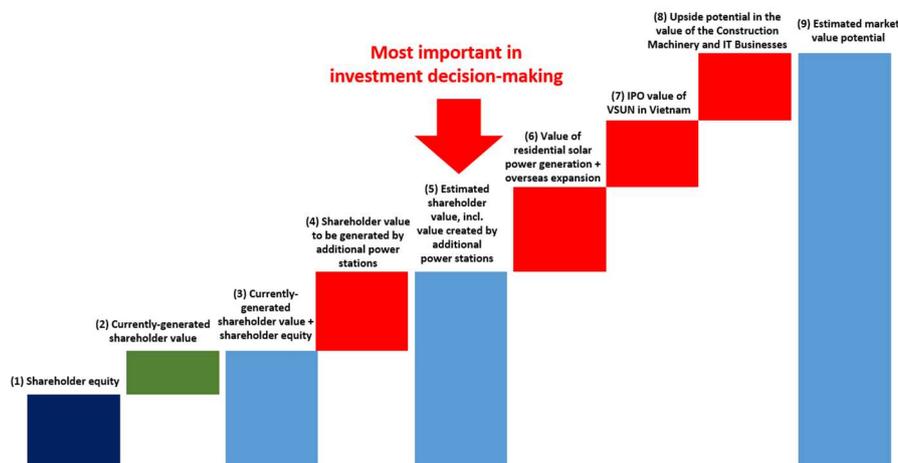
Use of the excess return method⁶ in estimating shareholder value

Framework for estimates

In consideration of what we described so far, JPR estimated the shareholder value of Abalance, using the excess return method, as shown below. The most important factor here is **⑤ Estimated shareholder value, including value created by power stations that are scheduled to start**. The value of this factor will become clear in FY6/2022 and should be most critical in making an investment decision on Abalance for a 2-3 year holding period.

Abalance's shareholder value structure

- ① Shareholder equity
- ② Currently-generated shareholder value
- ③ **Currently-generated shareholder value + Shareholder equity = (1) + (2)**
- ④ Shareholder value to be generated by power stations that are scheduled to start
- ⑤ **Estimated shareholder value, including value created by power stations that are scheduled to start = (3) + (4) (Value to become clear in FY6/2022)**
- ⑥ Incorporating the value in residential solar power generation + overseas expansion
- ⑦ Potential IPO value of VSUN in Vietnam
- ⑧ Upside potential in the value of the Construction Machinery Sales and IT Businesses
- ⑨ **Estimated market value including upside potential in value = (5) + (6) + (8)**



Source: JPR

Result of the estimates

⑤ Estimated shareholder value, including value created by power stations that are scheduled to start = ③ + ④ is estimated to be ¥7.7 billion (see details in the supplementary information at the end of the report). The current shareholder value of ① + ②, excluding the value of power stations to be started, is calculated to be around ¥2.7 billion, which is roughly equal to the current market cap of Abalance.

⁶ The Excess Return Method is explained in detail in "Reference material: Corporate value evaluation method using ROIC and Excess return".

Long-term potential market cap to ¥10-20 billion (share price of ¥2,000 - 4,000)

Full picture

JPR also made more bullish estimates, incorporating the factors ⑥, ⑦, and ⑧.

Example of incorporating upside potential

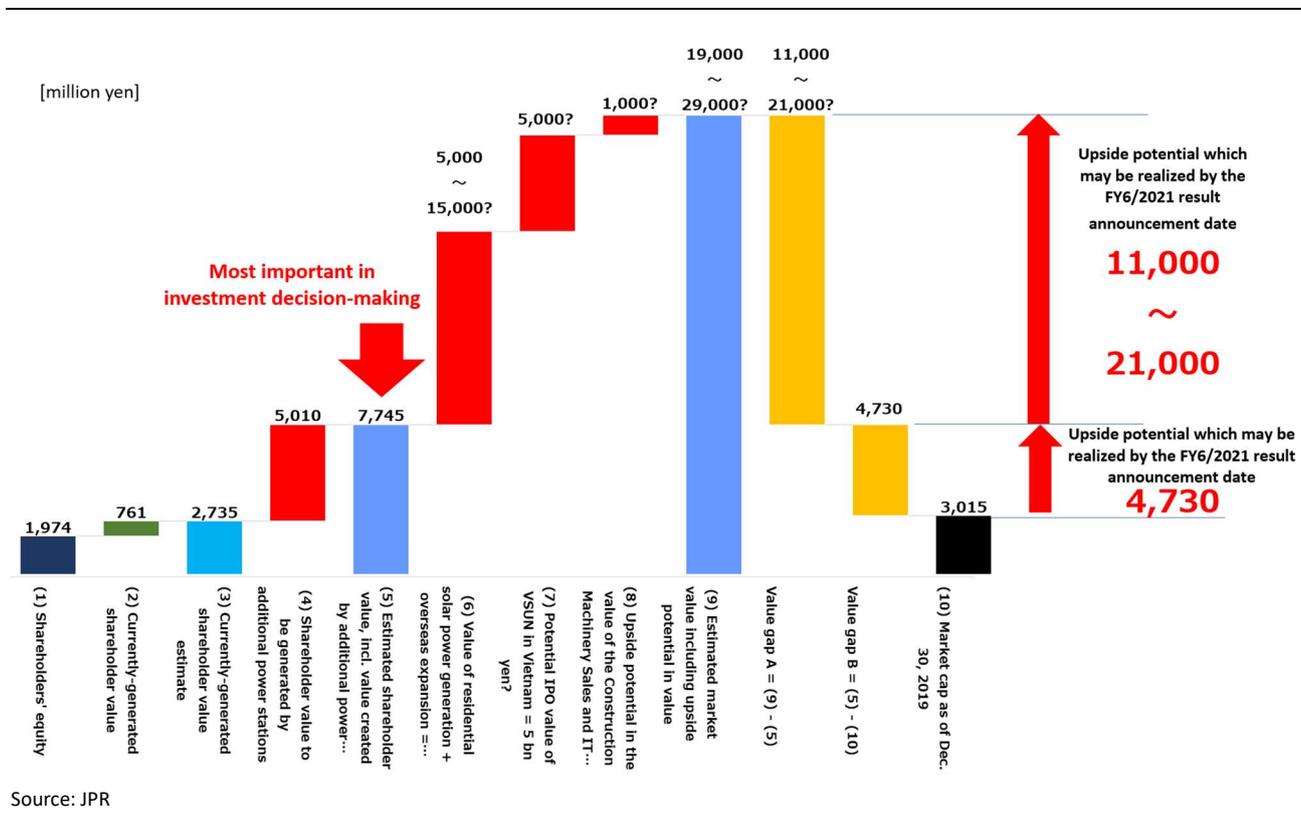
- ⑥ Incorporating the value in residential solar power generation + overseas expansion = ¥5-15 billion
- ⑦ Potential IPO value of VSUN in Vietnam = ¥5 billion (assuming a 50% equity stake)
- ⑧ Upside potential in the value of the Construction Machinery Sales and IT Businesses = ¥1 billion

Source: JPR

The above projections assume success of Abalance's strategies, in consideration of the market size ⑥; estimated IPO value based on over ¥7.4 billion in VSUN's sales ⑦; and upside potential of about ¥100 million in operating profit of the Construction Machinery Sales and IT Businesses.

As shown in the figure below, when incorporating the value of 50MW solar power generation, that is currently under development; the value of the new strategies – solar power generation for residence that uses storage batteries and overseas expansion ⑥; the IPO value of VSUN ⑦; and the value of the Construction Machinery Sales and IT Businesses, the market cap of Abalance can realistically be estimated to be about ¥20 billion. This is a similar level to upside potential in shareholder value of companies comparative to Abalance (see next page). In short, if the upside potential value from 50MW solar power generation, which becomes clear by FY6/2021, is incorporated, the fair market cap of Abalance can be boosted to about ¥7.7 billion (share price of ¥1,500, at the present number of outstanding shares). If other upside potential from ⑥, ⑦, and ⑧ is also incorporated, the market cap can be augmented to about ¥10-20 billion (share price of ¥2,000 - 4,000).

Upside potential estimates in market cap of Abalance



Source: JPR

The peer analysis results were consistent with the results of the excess return analysis

Analysis of comparative companies

Peer comparison suggests market cap potential up to ¥20 billion

JPR made comparisons and projections of corporate value of some listed companies in the green energy business sector, with a particular focus on the relationship of their own sales volume of generated electricity and their corporate value.

The companies compared, RENOVA, Inc. (9519), EREX Co., Ltd. (9517), and EF-ON INC. (9514), are also in the green energy business. RENOVA is mainly engaged in solar power generation but recently started biomass power generation and expanded to offshore wind power business, while EREX and EF-ON mainly conduct biomass power generation. Using each peer's disclosed information, JPR estimated EBITDA from its equity stake worth of electricity sales from the power stations in operation as of December 2019 and from new stations, which are scheduled to start operation by 2023. Valuation multiples to market cap and ratios of market cap to the total power generation capacity (equity portion) in MW were also calculated for Alsace and each peer company. Based on the calculation, the estimated market cap of Abalance can be about ¥7.6 billion, using the peer average EBITDA multiple, and about ¥20.0 billion, using the peer total power generation capacity (equity portion) multiple (see the right column, the third line from the last and the last line on the table below.)

Difference in the market cap estimates reflect the fact that the value using the EBITDA multiple, is based on highly certain cash flows, while the value using the total power generation capacity, is incorporating less certain longer-term upside potential. The results can be said to be consistent with the results from the analysis on the previous page.

As Abalance, which is smaller in scale than its peers, grows and benefits from the economies of scale in the infrastructure industry, it is expected to be valued similar to its peers.

Estimating shareholder value from comparable companies

Time point	Item	Unit	9519	9517	9514	3836
			RENOVA	EREX	EF-ON	Abalance
			March	March	June	June
As of Dec. 2019	I: Power generating capacity (ratio to equity stake)	MW	185	70	42	10
	EBITDA from power output	Million yen	9,600	3,290	3,739	285
	EBITDA from other business	Million yen	1,200	5,262	408	425
FY2019 plan	Total	Million yen	10,800	8,552	8,552	710
Start of operation by 2023	Incremental capacity (ratio to equity stake)	MW	113	149	36	52
	II: EBITDA from incremental power output	Million yen	5,900	7,003	N/A	1,485
FY2023	A: Total EBITDA	Million yen	16,700	15,555	4,469	2,195
FY2023	EBITDA from renewable energy power generation/A	%	92.8	66.2	90.9	80.6
As of Sep. 30, 2019	B: Cash & deposits	Million yen	23,034	21,595	4,495	871
	C: Short-term debt + fixed liability + Minority shareholders' equity	Million yen	95,440	57,541	18,673	11,405
	D: Net Debts = C - A	Million yen	72,406	35,946	14,178	10,534
Closing price of Dec. 30, 2019	E: Market cap	Million yen	89,852	92,636	16,186	3,015
	F: Corporate value = D+E	Million yen	162,258	128,582	30,364	13,549
	(1) Corporate value/EBITDA = F/A	Times	9.7	8.3	6.8	6.2
	(2) Corporate value/MW = F/(I+II)	Million yen	544	587	389	219
			Abalance value estimation when evaluated at the same level as RENOVA	Abalance value estimation when evaluated at the same level as EREX	Abalance value estimation when evaluated at the same level as EF-ON	average of a,b,c
			a	b	c	
	(1)-based corporate value estimate	Million yen	21,327	18,144	14,913	18,128
	(1)-based market cap estimate	Million yen	10,792	7,610	4,379	7,594
	(2)-based corporate value estimate	Million yen	33,715	36,367	24,112	31,398
	(2)-based market cap estimate	Million yen	23,181	25,833	13,578	20,864

Source: JPR