The Nipron Story, Kanoe Ne says. hoping and believing that it will be a good turning point as the historical origin of the year of

This year is going to be a good year since the whole country will enjoy the boom created by the Tokyo Olympic Games. I'd like to start the new year with you and promote export of DC input equipment again. I believe Japan should aim to become a DC-oriented country. implementing DC conversion as a national strategy earlier than any other countries to the government of Japan,

in EV, China began to lead the world as EV gained momentum. Following this example, I'd like to recommend thinking to map out a drastic national strategy. Turning into action its national plans and policies to come out on top the developed countries such as Europe, the United States and Japan, for engine-powered vehicles, used reverse on CO2 reduction. Japan thought that the era of EV would be far off. Meanwhile, China, which cannot catch up with will enhance the resilience to disasters thanks to its easiness of power storage. Also, it will have a profound effect to DC internally. If conversion to DC is adopted as a national policy, demand for DC conversion will vitalize the progress of the conversion. Actually, converting to DC input is not so difficult, because most loads are converted DC, it will bring benefits, including improvement of efficiency, in terms of power utilization. Nevertheless, AC specifications of devices and equipment (loads) hinder

At present, AC electricity supply accounts for nearly 100% of worldwide electricity supply. It is widely recognized that if the electricity supply is converted from AC to Energy)

To achieve the SDGs, environmentally friendly corporate activities are required. Please make Nipron's products and technologies useful for initiatives to protect the global environment!

It can be said that Japan's sophisticated industrial economic system and monetary system (banknotes, money exchange equipment, distribution mechanism) are one of the developed countries. When pondering a measure for Japan's first turnaround after the "lost 30 years" since the government has not been able to delay digital transformation in the country. If this situation continues, I fear that Japan's advantages and strengths may allow greater control of the United States and China over its monetary system and distribution system, and undermine its industrial competitiveness, ending up in Japan's falling from the position as

It is true that the monetary system and distribution system are the pillars of the Japanese economy. As for the digital invasion, it is urgent to make Japan more digital. I hope that Japan can make a turnaround from its "lost 30 years". We need to adopt protectionism - at least temporarily - to protect the Japanese characteristic and government which lack a sense of crisis and are vulnerable to the US-China battle for the digital hegemony accompanying the trade war. If this situation continues, I feel restless about our national economy and businesses from the digital invasion. We may stand at the dawn of a new digital colonialism of the 21st century. That's exactly what China's Belt and Road Initiative is aiming at.

In order to avoid such a scenario of failure, I think Japan needs to adopt protectionism at least temporarily to protect the Japanese economy and businesses from the digital invasion. We may stand at the dawn of a new digital colonialism of the 21st century. That's exactly what China's Belt and Road Initiative is aiming at.

Since the US-China trade war and the spread of unilateralism in developed countries of Europe and the United States, as well as the economic instability that the Brexit poses a risk that the Amazon effect will ripple through various fields. In all industries in Japan, progress of information acquisition for 2020. We are indeed facing the stark reality of the world economy in deepening stagnation amid the US-China trade war, the delay in shift to the digital economy will drive the transformation of all market economies, bringing about.

According to the Chinese zodiac, 2020 is the year of the rat! Don't fall into a digital colony! This is a good year for career change, and is a year in which Kanoe Ne is a year in which

This is the highlight

1 Special Feature on GP Power Supply (Power Supply for Renewable Energy)
   To achieve the SDGs, environmentally friendly corporate activities are required. Please make Nipron's products and technologies useful for initiatives to protect the global environment!

2 Special feature on new product GP1U-1000 series
   Introducing high-reliability and long service life power supply, 1008W rated & 1440W peak power & 1U size.
Please make Nipron's products and technologies useful for initiatives to protect the global environment!

Environmentally friendly managements are required.

Today, efforts have been started in the global scale to solve various environmental issues with the goals, such as SDGs, having been defined. For example, the dissemination of electric vehicles, which do not emit CO2, has accelerated.

This is an international association of corporates operated by a British nonprofit organization focusing on obtaining 100% of electric power required to run offices and plants by renewable energy sources, such as solar power, by 2050. While most corporations aim to achieve the target in between 2030 to 2050, several dozens of European members have taken a lead by achieving the target already. Among Big Four tech companies (GAFA), Google has achieved the target in 2017 and Apple has announced that its progress was 99% as of 2018. There are 221 members globally as of December 2019, with a total of 30 Japanese corporations, after the addition of 17 in 2019.

Large corporations undertaking to achieve SDGs are using the response to SDGs as a criterion for selecting their partners.

Undertakings of SDGs, RE100 and ESG will create a variety of advantages (better corporate reputation, increased sales, long-term cost reduction, new business opportunities, etc.) and this is why medium to small companies, in addition to large corporations, should undertake them even by spending time and money.

On the other hand, companies that neglect those activities are taking risks of being left out as a partner by large corporations who are actively involved in such activities and being regarded as undesirable workplaces by people, making it difficult to recruit excellent workforces.

Optimum in the age of environment-aware business management

Four major solutions for photovoltaic power generation offered by Nipron

SDGs
RE100
ESG Investment

Affordable and Clean Energy
Climate Action

SDGs (sustainable development goals) refer to 17 goals and 169 targets set to solve issues held by the world to build a sustainable society. Undertakings to achieve SDGs can increase the likelihood of corporations to survive and create a variety of advantages, such as opportunities to gain new markets. On the other hand, failure to undertake SDGs gives rise to risks such as poor corporate reputation and consumers holding off the purchase. Hence, the SDGs can be considered as opportunities for the businesses to grow. It is believed that renewable energies are essential to achieve the goal of "Affordable and Clean Energy," which is one of the 17 goals.

The ESG investment refers to investments made on corporates giving considerations for environment, society and governance, while the sustainable investment refers to corporates that give considerations for ESG, in addition to financial analysis. The amount of such investments is increasing globally and, from 2016 to 2018, that of Japan has increased approximately 4.3 times. As evidenced in the move of Financial Services Agency to amend the guidelines for institutional investors, such as insurance and trust companies in spring, 2020, adding a clause to focus on ESG for the first time and demanding them to declare if they give a consideration to the viewpoints of ESG in their investment decisions, these concepts are spreading as guidelines for determining the corporate value.

The ESG Investment, Sustainable Investment

Transition in the sustainable investment (J japan)

About 4.3 times

About 55 trillion yen


Transition in the number of Japanese corporate members

30 companies

2017(year)
2018
2019

* As of December 19, 2019, when the column was written

Reference: RE100 JAPAN, RENEWABLE 2019 RE100 PROGRESS AND INSIGHTS ANNUAL REPORT

Please make Nipron's products and technologies useful for environment management.

http://www.nipron.com
Expectations for DC power supply is in the rise

Renewable Energy and dispersed power source

Vision in the future
drawn by Nipron (Conceptual image)

For realizing a sustainable society, helping renewable energy to become “main power supply” through “DC power supply”.

We suggest optimum products for sustainable society.

http://www.nipron.com

Envisioning a microgrid composed of DC power supplies

http://www.nipron.com
Today, consuming the photovoltaic power is more advantageous

The in-house consumption of PV power stored in battery (PV Oasis)

The advantage of in-house power consumption is not only reducing the electric bills. In addition to large corporations, there is a trend to demand small and medium companies to undertake the reduction of CO2 by investors and business partners with the backgrounds of SDGs and ESG investment. On the part of small and medium companies, this also means an opportunity to expand the business with large corporations who are actively involved in the use of renewable energies and decarbonization and enhance their social values.

The power generated shall be “used” rather than “sold” http://www.nipron.com

If you introduce in-house power consumption, PV Oasis is good value!

Common in-house power consumption

For the in-house power consumption with a grid connection, it is necessary to take actions to prevent “inverse current,” a flow of power generated to the power company. Typically, following measures are used.

I. Introduce a device to prevent the inverse current (RPR).

While the introduction of a device preventing the inverse current (RPR) will prevent the inverse current, the PCS will stop if the power generation becomes excessive and it will take time to restore it. Also, the cost of RPR installation is expensive.

II. Limit the PV power generation at or below the base power consumption of the building.

If the power generation is limited at or below the base power consumption to prevent the inverse current, it will be impossible to install solar power panels with a capacity sufficient to make the user appreciate the economic advantage and the power generation system will not be utilized effectively.

Highly efficient system can be constructed

It is optimal for BCP support. In an event of a disaster, the power can be supplied from the photovoltaic power generation system and the battery. In addition, the system can be used for BCP support by setting aside a part of the battery power for emergencies.

Because the grid connection is not provided there is no inverse current… RPR is not necessary and economical.

An elaborate discussion on the grid connection is also unnecessary.

‘PV power + Battery’ will enable a stable operation without the influence of weather. Moreover, the power will be backed up with no interruption in an event of a blackout.

The use of a stand-alone inverter will make the PCS unnecessary and economical.

The in-house consumption of PV power stored in battery (PV Oasis) have many advantage of introduction http://www.nipron.com
We suggest PV Oasis according to an application.

Effective use of surplus power & blackout backup system

By storing the surplus power of a power station that sells power in the battery, it is possible to use the battery as a backup power supply in case of a blackout, leading to an effective use of power in the station. In the example shown below, the backup power is supplied only to the lighting and emergency power outlets during a blackout.

**An in-house power consumption system with a battery is offered as a package. Introduction is easier now.**

PV Maximizer (6 string)
- Size (mm): W2,000×D2,000×H2,507
- Output capacity: 5kVA
- Maximum charge power: 5kW
- Maximum discharge power: 5kW
- Battery type: Lithium-ion battery
- Nominal power storage capacity: 7.44 kWh
- Size (mm): W800×D800×H1,900
- Total number of panels: 48
- Total capacity of panels: 15.6kW
- Construction: 8 series connection×6 circuit
- Construction: 8 series connection

Outdoor board for power storage system rack

Power storage system rack

PCS (1Φ2W 100 VAC)

Distribution board

Electric outlet for emergency (1Φ2W 100 VAC)

A.C. switching unit

Electric outlet for emergency (1Φ3W 200 VAC)

Commercial AC

Conference AC

Meeting a variety of customer needs with PV Oasis http://www.nipron.com

Off-grid type in-house power consumption system

By combining an LP gas generator and the in-house power consumption of PV power stored in battery system (PV Oasis), the system can be run without using commercial power supply at all. During the day, while using the photovoltaic power, surplus power is stored in a battery. At night and under an inclement weather, the system is operated with the power from the battery and, if there is a shortage of power, the LP gas generator is used to provide an assistance.

In-house power consumption & blackout backup system

The in-house power consumption of PV power stored in battery system (PV Oasis) is connected only to critical loads. During the day, while using the photovoltaic power, surplus power is stored in a battery. At night, the power is supplied from the battery with an assistance of commercial AC power in case of a shortage. Also, because a large-scale installation of cubicle is not required for this system, it is possible to reduce the cost and time of installation.

**Build a system that will not stop even with a blackout in a disaster** http://www.nipron.com
High-precision remote monitoring system  **PV Guardmyan**  Enables the remote monitoring & control of power storage system

PV Guardmyan manage and analyze big data, including the power generation for each string measured by the PV Maximizer and characteristics curve (I-V characteristics curve) reflecting the health of each string, detect problems and their signs remotely and report them.

The system now offers additional features of monitoring power storage systems, cloud-based diagnosis and remote control of charging/discharging operations. This makes it possible to save the burden of performing works and addressing problems on site, in addition to reducing the power generation loss by detecting problems at an early stage.

### PV Guardmyan — enabling remote monitoring of both PV power and power storage systems

**Function of monitoring battery**
- Display electric power information
- Display error information of the device
- Supports a device diagnosis
- Notify the abnormality settings
- Remote control
- Configuration adjustments
- Error detection

**Power storage cloud-based diagnosis features**
- Detect errors of charging/discharging
- Detect the error of charging/discharging control
- Mismatch in the bus voltage
- Detection of device error

### PV Guardmyan power storage system monitoring screen

At a power station at which surplus power is stored in a battery by overloading the PCS at a level significantly higher than its rating and the stored power is sold at night, the operation of power storage system monitoring by the PV Guardmyan was verified.

**Remote cloud-based diagnosis of battery abnormalities**

http://www.nipron.com
GP1U-1000 SERIES
Large capacity 1008W low height 1U size PSU

A long service life and high power density offered in one unit

Continuous: 1008W
Peak: 1440W
Output voltage: 24V/48V

100% output with ambient temperature of 50°C available
100% output at 90VAC input available

1U 40.5mm Rack mounting available

Supports parallel operation
With a built-in current balance circuit, supports parallel operation of up to three units

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>GP1U-1000-24P</th>
<th>GP1U-1000-48P</th>
<th>Common output</th>
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</thead>
<tbody>
<tr>
<td>Output voltage</td>
<td>+24 V</td>
<td>+48 V</td>
<td>+12VSB</td>
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<tr>
<td>Continuous maximum current / power</td>
<td>42A/1008W</td>
<td>21A/1008W</td>
<td>0.5A/6W</td>
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<tr>
<td>Peak current/power (within 5s)</td>
<td>60A/1008W</td>
<td>30A/1008W</td>
<td>0.5A/6W</td>
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<tr>
<td>Minimum current</td>
<td>0A/0W</td>
<td>0A/0W</td>
<td>0A/0W</td>
</tr>
<tr>
<td>Input voltage</td>
<td>85-264 VAC with PFC, global input</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Low noise
A conducted emission of even a single power supply unit clears VCCI Class B due to enhanced noise filter circuit and optimized arrangement of parts. Since it is not necessary to provide a noise filter on the outside, it contributes to cost reduction and workload reduction.

High efficiency by limiting temperature rise
A high efficiency of 91% achieved with 240VAC input. Because the heat generation due to switching loss has been reduced drastically by attaining the high efficiency, the series makes it possible to reduce the man-hour and cost in addressing the heat in control panels.

Long service life and highly reliable
10 years life expected in case of continuous running with ambient temperature of 35°C. Highly reliable because of designing and manufacturing products in Japan

Supports various signals
Remote sensing signal supported
By connecting at the end of the load, corrects the voltage drop on the positive line of power output cable.

PWR_OK signal equipped
"H" signal is delivered when the output is normal.

Remote ON/OFF function equipped
Output ON/OFF control is available with Remote ON/OFF signal (PS_ON#).

Blackout detection signal
The blackout detection signal is provided as a standard feature and the customer can save the cost of preparing a detection board.

Potentiometer equipped
More stable operation will be achieved by correcting line drop.

Output terminal block
Input terminal block

Realize large capacity with 1U size continuous 1008W peak 1440W

Realize large capacity with 1U size continuous 1008W peak 1440W

http://www.nipron.com

0A
85-264 VAC with PFC, global input

* Since the product is under development, the specifications and appearance shown here may change without notice.

0A
85-264 VAC with PFC, global input

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Invitation to exhibition

10th INT’L SMART GRID EXPO

Nipron will participate in the 10th INT’L SMART GRID EXPO, which will be held at Tokyo Big Sight for three days from 26th to 28th of February. It is an international exhibition that introduces every product and technology required for the construction of a smart grid.

As it became more advantageous to “consume” the generated power than “sell” it, and after observing recent large scale blackouts caused by earthquakes and typhoons, the spotlight is on the in-house consumption of power. For this reason, Nipron plans to feature the PV Oasis, the in-house power consumption of PV power system that does not connect to the grid, eliminating the concern for inverse current, and makes the electric power available even in blackouts, and the Neo eXpander, a system that does not connect to the grid, eliminating the concern for inverse current, and makes the electric power available even in blackouts, and the Neo eXpander, a charging/discharging rack for medium to large-scale power storage systems that is also applicable for surplus power storage and emergency responses. In addition, presentations that were popular in the past exhibitions will be given. If you are planning to see the show, please come visit Nipron booth by all means.

On October 25, 2019, the 16th Management Policy Presentation was held at Miyako Hotel Amagasaki after a private exhibition and factory tours held at the Nipron head office inviting the guests. We would like to thank everybody who spared their time to attend the meeting.

Private exhibition and factory tour

At the permanent exhibition space, which opened anew in autumn last year on the 5th floor of Head Office, the space and the number of exhibited products have exceeded ordinary exhibitions Nipron usually participates in. Besides exhibition of products, the Nipron History Corner, where the history of Nipron since its incorporation to the present day is shown, and Nipron Wave Corner have attracted many visitors. The presentation of solutions for in-house consumption, which was given at the presentation corner, turned out to be a huge success with no empty seat.

The quality and confidence available only with a "made in Japan" system

Ever since its incorporation, Nipron has been working hard to develop and produce power supply units that will not "break, collapse or stop" in Japan to protect valuable devices and data of its customers and will continue to do so in the future.

A wide range of power supply units is available. Call us to find out more. http://www.nipron.com

* We are pleased to send invitation to the exhibition to customers who are interested in it. Please do not hesitate to contact us.

Our contact: Global Sales Division, Nipron Co., Ltd.
(TEL) +81-6-7220-3687 (FAX) +81-6-6487-2212
(E-MAIL) support1@nipron.com

http://www.nipron.com

Nipron Recognized as a Valuable Partner on the Supplier Day of Keysight, a Leader in the world’s Electronic Measuring Instruments

On 5th of December, Vice President Matsubara (responsible for the sales, research and Engineering Headquarters) and Yoshimura of Global Sales attended the awading ceremony of Keysight Technologies for recognized supplier.

Keysight Technologies is one of the largest manufacturers of electric & electronic measuring instruments having its head office in Santa Rosa, California, U.S.A. Ever since its inception as Hewlett-Packard in 1939, it has always led the measuring instrument market and, currently, offers the highest level of solutions in the information & communication, aerospace & defense, semiconductor and other industries.

Nipron was invited to the Supplier Day ceremony held in Penang, Malaysia, being recognized for its long business relationship with Keysight Technologies, with a plan for continued purchase of our ATX power supply units in the future.

During the ceremony, we were given an opportunity to attend seminars in a variety of fields, including IoT, Industry 4.0 and big data, automotive and energy sharing, and differentiation of supply chains.

Keysight Technologies plays a role of the market leading in the 5G technology, which improves the speed and reliability of communication drastically, and Nipron is determined to play its part to contribute to the establishment of secure networks by offering products focusing on the quality and reliability.

A scene of supplier award ceremony by Keysight Technologies

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HPCSA-3500P-E25
Peak:1500W
Continuous:1200W

HPCSA-1000P-E25
Peak:1000W
Continuous:822W

HPCSA-700P series
Peak:700W
Continuous:6000W

HPCSA-570P series
Peak:570W
Continuous:400W

“When you are in trouble with power supply,” please consult with Nipron. http://www.nipron.com
On the first day of the second year of Reiwa
Happy New Year everyone.

According to the Chinese zodiac, 2020 is the year of Kanoe Ne. Kanoe is a good year for career change, and Ne is a year in which we can start wisely: by divine design, it’s an auspicious year for the “New beginnings of growth and prosperity” that comes once every 60 years. I wish all of you a great start to the new year. Many of economic critics have taken a harsh view on the economy for 2020. We are indeed facing the stark reality of the world economy in deepening stagnation amid the US-China trade war, the spread of unilateralism in developed countries of Europe and the United States, as well as the economic instability that the Brexit brings about.

On the other hand, our country Japan is expected to become preoccupied with more severe environmental changes. In addition to the impact of the US-China trade war, the delay in shift to the digital economy will drive the transformation of all market economies, posing a risk that the Amazon effect will ripple through various fields. In all industries in Japan, progress of information acquisition and market domination by oligopolistic IT giants, such as GAFA of the United States, combined with the delay in responding to electronic money and virtual currencies, may accelerate the erosion of the Japanese market by Chinese IT companies. While lagging behind in accommodating cashless payment, I’m afraid that the leading Chinese payment system may penetrate and occupy the Japanese market by undermining the competitiveness of the Japanese economy as a whole, including all the industries and distribution system. I feel restless about our national characteristic and government which lack a sense of crisis and are vulnerable to the US-China battle for the digital hegemony accompanying the trade war between the two countries. In order to avoid such a scenario of failure, I think Japan needs to adopt protectionism at least temporarily to protect the Japanese economy and businesses from the digital invasion. We may stand at the dawn of a new digital colonialism of the 21st century. That’s exactly what China’s Belt and Road Initiative is aiming at.

It can be said that Japan’s sophisticated industrial economic system and monetary system (banknotes, money exchange equipment, distribution mechanism) are delaying digital transformation in the country. If this situation continues, I fear that Japan’s advantages and strengths may allow greater control of the United States and China over its monetary system and distribution system, and undermine its industrial competitiveness, ending up in Japan’s falling from the position as one of the developed countries. When pondering a measure for Japan’s first turnaround after the “lost 30 years” since the government has not been able to devise any such measures, I came up with an interesting idea.

At present, AC electricity supply accounts for nearly 100% of worldwide electricity supply. It is widely recognized that if the electricity supply is converted from AC to DC, it will bring benefits, including improvement of efficiency, in terms of power utilization. Nevertheless, AC specifications of devices and equipment (loads) hinder the progress of the conversion. Actually, converting to DC input is not so difficult, because most loads are converted to DC internally. If conversion to DC is adopted as a national policy, demand for DC conversion will vitalize the industry and help prevent the inflow of foreign goods, and promote the use of renewable energies. Furthermore, it will enhance the resilience to disasters thanks to its easiness of power storage. Also, it will have a profound effect on CO2 reduction. Japan thought that the era of EV would be far off. Meanwhile, China, which cannot catch up with the developed countries such as Europe, the United States and Japan, for engine-powered vehicles, used reverse thinking to map out a drastic national strategy. Turning into action its national plans and policies to come out on top in EV, China began to lead the world as EV gained momentum. Following this example, I’d like to recommend implementing DC conversion as a national strategy earlier than any other countries to the government of Japan, which is struggling with nuclear power and thermal power. Doing so will possibly lead to the revival of the industry and promote export of DC input equipment again. I believe Japan should aim to become a DC-oriented country.

This year is going to be a good year since the whole country will enjoy the boom created by the Tokyo Olympic Games. I’d like to start the new year with you hoping and believing that it will be a good turning point as the historical origin of the year of Kanoe Ne says.

Setsuo Sakai
January 2020