

Cooperative Association PROD

21-13-3 Shimoejiri-cho, Fukui City, Fukui Prefecture, 918-8173 Japan
Inter national +81-776-38-6166 +81-776-38-0023

Member companies of the association

Nishimura Gokin Kogyosyo Co., Ltd.
Nakagawa Tekkosyo Inc.
Doden Setsubi Co., Ltd.
Nankai Denki Co., Ltd.
Mitsuru Co., Ltd.
Higeuchi Kenchiku Co., Ltd.
Itoh Kigata Seisakusyo Co., Ltd.
Katoh Jidosya Sangyo Co., Ltd.
Artes Trastos Co., Ltd.

Outline of the association

Business type	Association for exchange of different types of business
Establishment	March 11, 1994
Capital	1,100,000 yen
Number of member companies	9
Main products	Park facilities : Playground equipment, wooden playing equipment, roller slide Scenery facilities : Monument, sculptures, fences, fountains, solar battery (ratchet, foot light, outdoor light, road signs), monument type wind power generator
History	< Establishment > March 11, 1994 : Established as an association for exchange of different types of business < Applied law > (Order No. 88 by Fukui Prefecture) April 7, 1997 : Approved by the Governor of Fukui Prefecture (Tentative law concerning promotion of creative activities by small and medium enterprises) < Merging development promotion business > July 30, 1997 : Determination of support by Fukui Prefecture Center Group of Small and Medium Enterprise Association

Design : Yoriyasu MASUDA
Layout : Naoko OHTANI
Construction : Tomoyuki MASUDA
CAD drawing : Hiroshi DODEN, Shinya KOIDO, Yoriyasu MASUDA

PROD Members : Takuma NISHIMURA (Chief director),
Itsumo ITOH, Yuichi NAKAGAWA, Yasuyuki HIGEUCHI
Hiroshi DODEN, Isao KATOH, Hirokazu YOSHIDA
Yoriyasu MASUDA, Mitsuru URUSHIZAKI, Maki SATTOH

Publication : PROD

1999.6.1000

Professional Professional
Revolution Revolution
Originality Originality
Development Development

PROD is a group of specialists. We are trying various things. We are involved in development in a wide range of fields which we can not do individually.

PROD is aiming to educate children about the importance of natural energy. We are developing brand new wind energy systems for arrangement for the environment and education. To improve technique and create new ideas, we are holding meetings and lectures. One more aim is to reform society.

PROD supplies our intellectual products in harmony with your environment and history in the 21st century.

Cooperative Association PROD

Professional

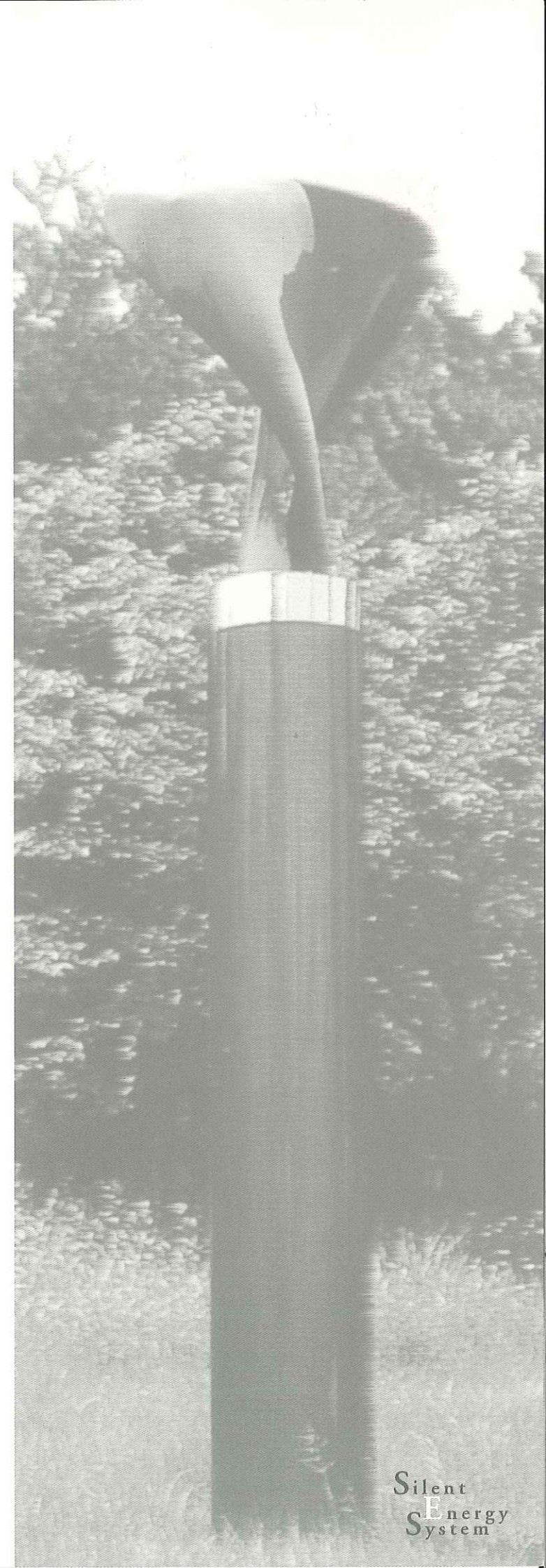
Revolution

Originality

Development

Wind power generater

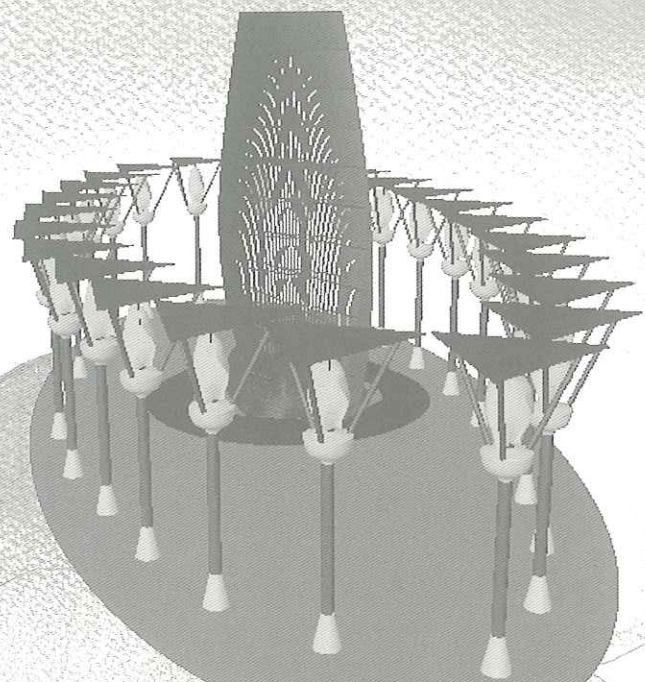
Silent
SEnergy
System



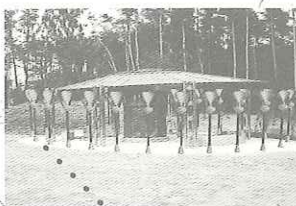
Silent
SEnergy
System

Mar 1999 © Copyright by PROD

Silent Energy System

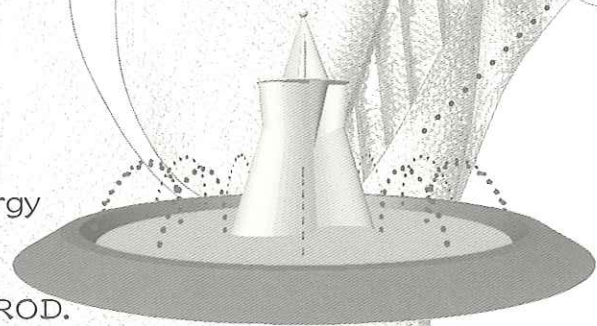


PROD's
is earth
a new
values
with the

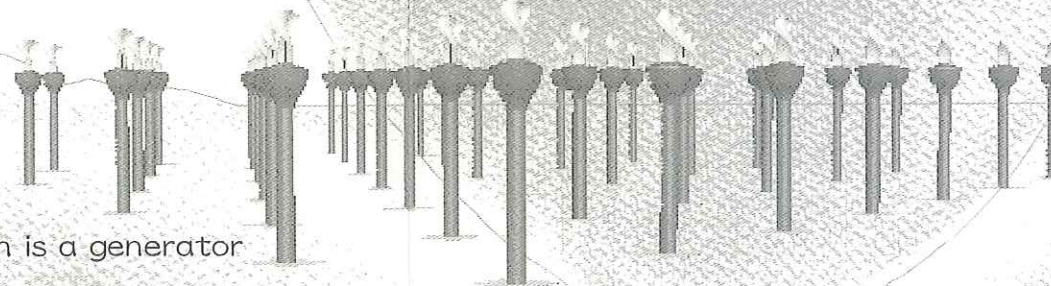


Earth art for a breath of fresh air

You can enjoy new aspects of energy
with our Silent Energy System,
used with the devices supplied by PROD.



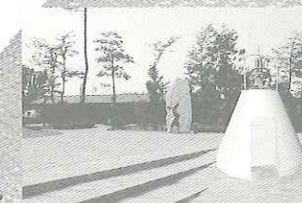
The Silent Energy System is a generator
that can be installed in towns
because it rotates smoothly,
and generates no noise.



Wind Farm
art with
sense of
in harmony
global
environment.

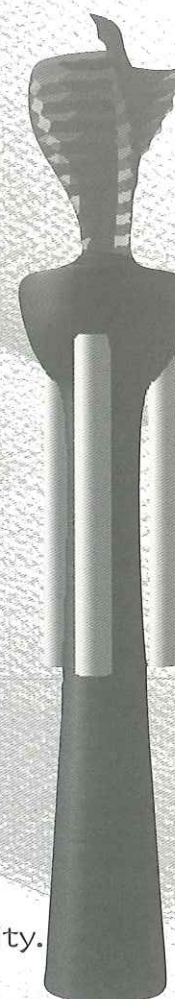


As the Silent Energy System
has established a method
to improve generation efficiency,
various shapes of blade can be realized.



Even when no wind blows,
leaving the Silent Energy System at a standstill,
it sets our minds at ease as a monument.
It generates electricity by a hybrid system using solar panels.

We feel comfortable
with wind at a speed of
2 meters per second.
It is said that no electricity
can be generated at
such a low speed of wind. However,
the Silent Energy System can generate electricity.



Silent Energy System

EOLICA

The Silent Energy System is a surprisingly quiet wind power generation system and generates power even from a soft breeze at a speed of 2 meters per second.

We research and develop our systems based on generation data (voltage, wind velocity, wind direction, sunshine, magnetic brake temperature, etc.) from trial products.



-SILENT ENERGY- Flyingkids

Just right for schools and community centers!
Form : Cross-flow type blades + Sabonius type blades + Solar battery panel



-SILENT ENERGY- Babe

Just right for parks!
Form : Cross-flow type blades + Sabonius type blades + Solar battery panel



-SILENT ENERGY- Hiphot

Just right for cultural facilities!
Form : Sabonius type blades + Solar battery panel



-SILENT ENERGY- Phoenix

Just right for plants!
Form : Sabonius type blades + Solar battery panel

-SILENT ENERGY- Cafépot

Just right for shopping malls and stations!
Form : Sabonius type blades + Solar battery panel



PROD aims to create products in harmony with the global environment.

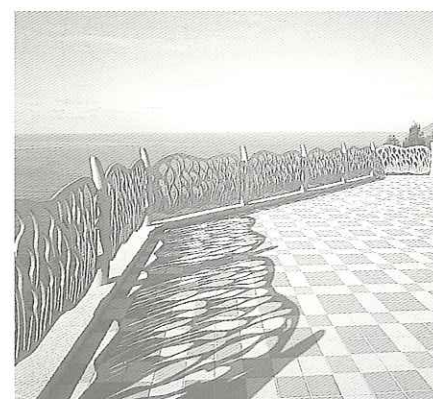
Track records

Our system produces situations where communication and enjoyment of nature for young and old can take place.

Production of fences

『SWELLING FENCE SYSTEM』

-SWELLING FENCE SYSTEM-
Made of cast aluminum alloy



Ministry of Construction Michi-no-eki Kohno
(Kohno Village, Nyu-gun, Fukui Prefecture)

Bronze relief

Made of bronze

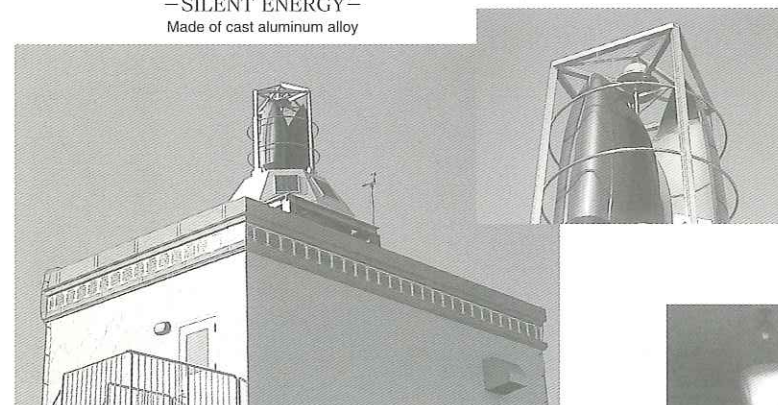


The third term education facility of Syusseyama Ancient Tomb Park in Mikuni-cho
(Mikuni-cho, Sakai-gun, Fukui Prefecture)

Trial product of monument type wind power generator

『SILENT ENERGY』

-SILENT ENERGY-
Made of cast aluminum alloy



Roof of Nagasaki Food Cultural Museum (Nagasaki City)

Nagasaki is located at the center of a large conical landform. Electricity generated by the wind supplied to the Babe type blades is used for the illuminations at night.

National Fukui Industrial Technical College
(Sabae City, Fukui Prefecture)

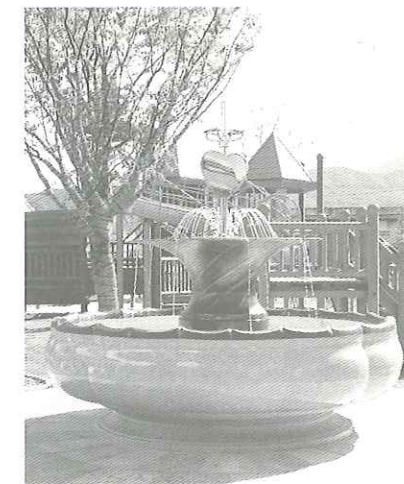
"Power of Wind" has an electric light panel inside.

Production of fountains

『SPIRAL TURN』

-SPIRAL TURN-

Made of bronze (Partially cast aluminum and black granite)



Samidori Kindergarten (Tsuruga City, Fukui Prefecture)

No underground tanks are provided because water used for the fountain is clarified and circulated.

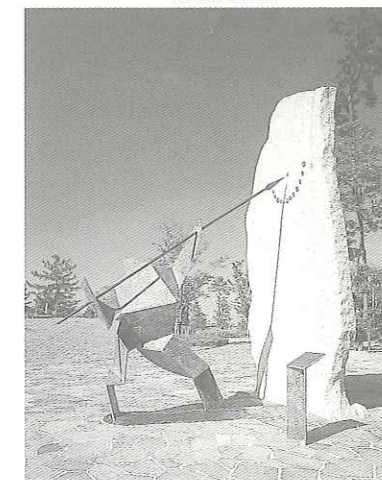
The shadow of a statue of an ancient plays the role of sundial needle. The monument fits the ancient tomb park that conjures up an ancient image of the earth.

Production of sculptures

Human communication series

『Takamagahara』

Made of Bronze



The third term education facility of Syuseyama Ancient Tomb Park in Mikuni-cho
(Mikuni-cho, Sakai-gun, Fukui Prefecture)

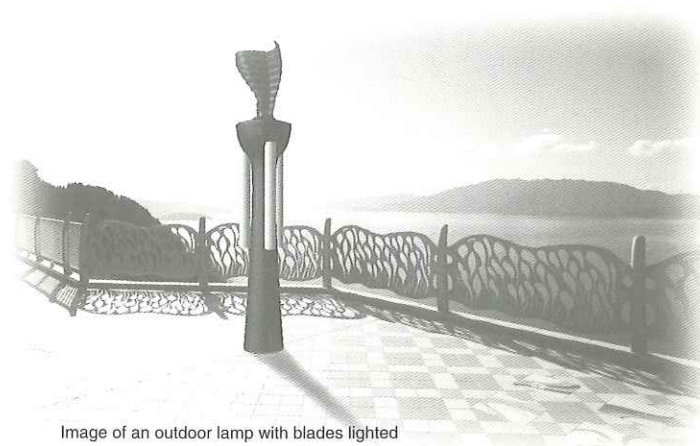
Production of bronze bell-shaped vessels

Made of bronze



The third term education facility of Syuseyama Ancient Tomb Park in Mikuni-cho
(Mikuni-cho, Sakai-gun, Fukui Prefecture)

Silent Energy System EOLICA



Examples of application of EOLICA (Monument type wind power generation)

① Outdoor lamp

No wires need to be laid because the lamp is the stand-alone type. It is used as an outdoor lamp, and the blades can be lighted. Light Emitting Diode is used for energy saving.

② Illuminated display

Regional news and real-time road information can be shown on the display with lights and optical fibers.

③ Fountain

Wind power energy can be used for circulation of water and mixing by aeration. The fountain pump is worked by the generated power, and used as playground equipment for water play.

④ Education system

By using the education system, the data loaded from windmills can be displayed in a graph on a touch panel display. Even small children can input data and study the details of wind power easily. Materials on wind power energy are supplied.

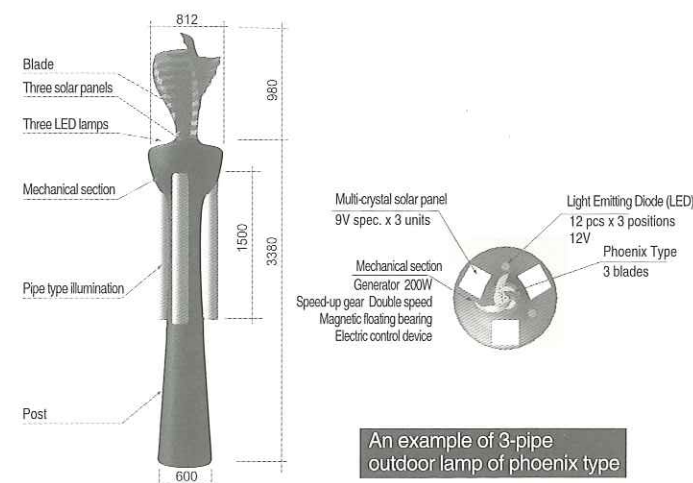
⑤ Increasing temperature in hothouses

The thermal conversion device using wind power and sunlight increases temperature and stores heat in hothouses. (By our trial calculation, when the velocity of wind is 3 meters per second on a sunny day in winter, if a solar panel of 1 m² with a reflection mirror of 5 m² and a windmill with a wind receiving area of 1 m² are used, the temperature of water of a flow rate of 1 liter per minute at 20 °C can be increased to 30.7 °C, and power of 340 W can be expected to be generated.)

⑥ Rest rooms and power source facilities at places of refuge and parks in an emergency

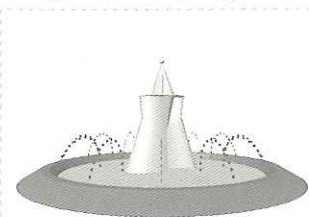
If the EOLICA is installed as a monument at parks, shopping districts, public halls, schools, and the like, people can usually think much of natural energy. We are also developing facilities to feel the work of natural energy.

▼ Structure of Silent Energy System

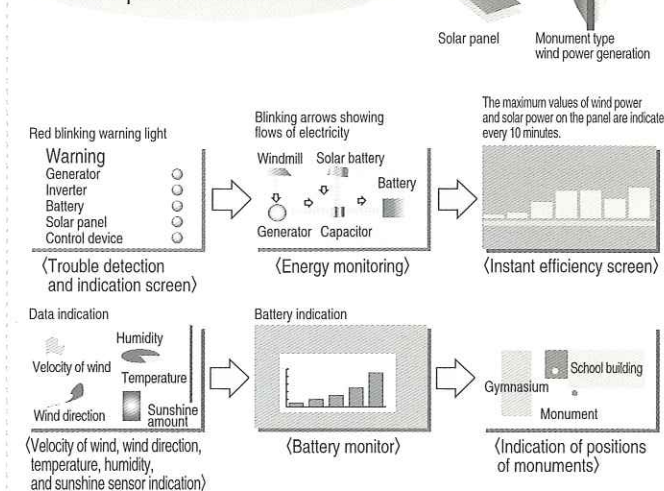


An example of 3-pipe outdoor lamp of phoenix type

An image of the Cafépot type fountain

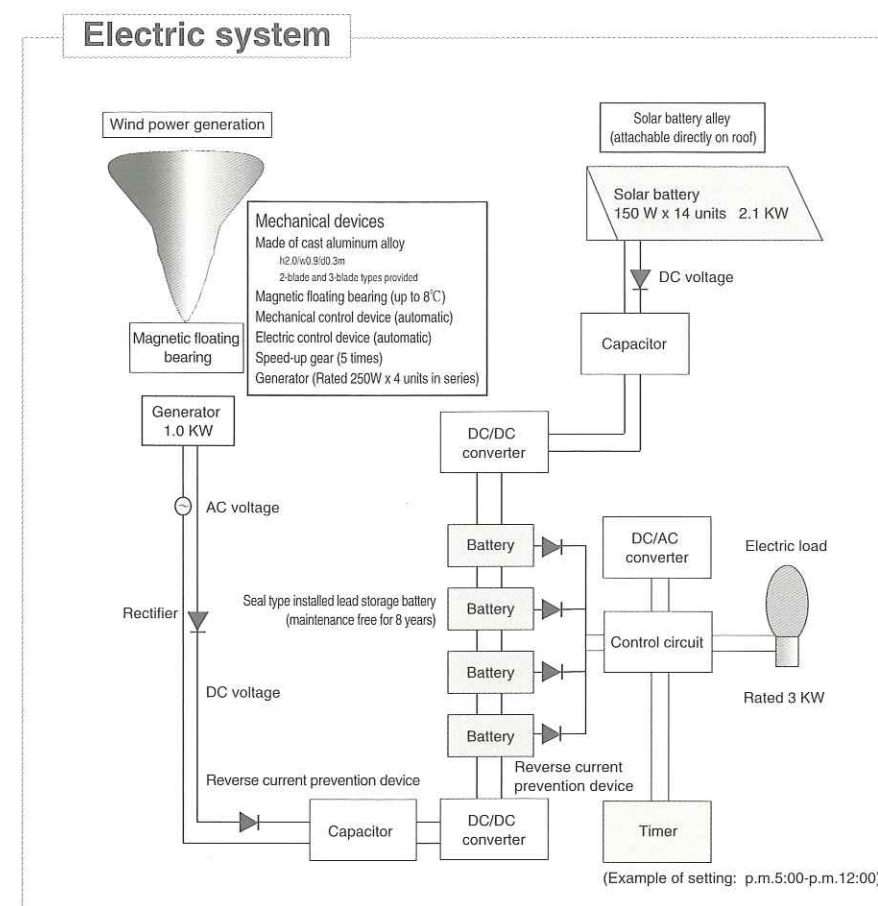


Examples of monitor screens



■ PROD has applied for the patent of the new wind energy system.

▼ Fundamental circuit structure of Silent Energy System



Hybrid wind power and solar power from the panel can be relied on to produce a steady supply of electricity.

■ Aiming to improve generation efficiency and based on accumulated technique, we are researching, developing, remodeling generators, speed-up gears, bearings, and control devices, and trying to decrease the weight of metals.

Safety

The safety of the system is secured by an electric control device and mechanical control device of a magnetic brake. As it is dangerous if the system is totally stopped when the wind is very strong, the system only decreases rpm in such a case.

Good design

Organic curves to receive wind efficiently are considered in the design of blades. The design is in harmony with the scenery.

Durability

Our original magnetic floating thrust bearing does not wear due to the weight.

Recycling

For good use of resources, all main parts are made of recyclable iron, stainless steel, and aluminum alloy.

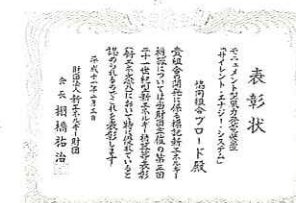
Easy maintenance

All systems are designed for automatic operation, and no special maintenance is required. The cycle of periodical inspection is 2 or 3 years. (It depends on the contract terms.)

Easy installation

The system is the independent type (stand-alone type), and only foundation work is required.

February 3, 1999 "The third new energy award"
President Award of New Energy Foundation



We can plan, design, and manufacture any windmills you like.