Hasegawa Electric Industries Co.,Ltd.

Patent Number: 4699285

U.S. Patent: US 8,019,480B2

eco VISION®

TOP Energy-efficiency system for central air conditioning Reduction in Industry*

* As of December 2012. Monthly reduction rate according to our own research.

Achieved **98.3%** low power per month

Top in industry*

* As of December 2012. Monthly reduction rate according to our own research.

Full-blown system & human support

ECO VISION - energy-efficiency system demonstrating a wonderful effect in air conditioning facilities in such as a hospital, Elderly nursing home, and large-scale commercial facilities. Unique technology for approaching two needs: reduction in CO_2 and power cost, and for maximizing comfort for environment and human.

Surprising Reduction — Achieved 98.3% power reduction per month, 96.6% per year

Elderly nursing home Iwakusu No Sato
Mitsuru Takahashi, former head of Yurihanaen

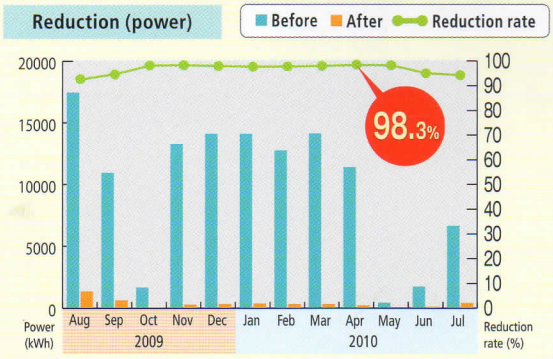
System Running Since
August, 2006

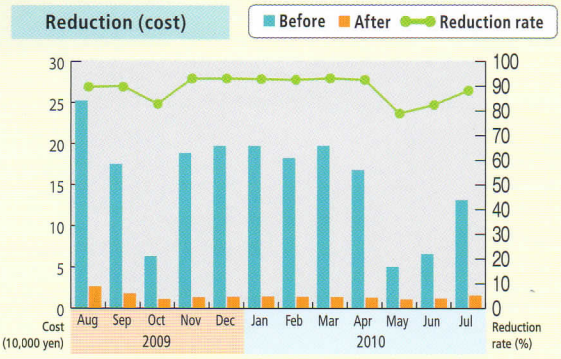
When management of institutions was tough and we were tackling reduction in electric cost for such as lighting, Mr. Ogawa made a proposal.
Not to mention the detail of the proposal, we were impressed by sincere attitude and technical capability, so we decided to consider the introduction by all personnel.
Shortly, the president visited us and said "We will recover original state if it doesn't work. We will pay all the costs." His confidence and enthusiasm made us decide to introduce Eco Vision.
The reduction was seen in only a month after introduction and we realized the excellence of this system.
As a result, we decided to introduce ECO VISION to all five facilities of Murakami Iwafune Welfare Association. In total, it has been providing very big amount of reduction.
We appreciate very much. "Power reduction is incredible."

Developer
Hiroshi Ogawa

Although we knew the effect by experiment, we worked very carefully since it was the first time for us to install the equipment on customer's site.
Things didn't work as expected first and we performed trial and error, but we are happy we could finally achieved good result.
Moreover, it was the highest joy that we received a word of appreciation from the customer.

Case study of annual reduction in power consumption and cost by ECO VISION in Elderly nursing home Yurihanaen





Annual record

Power reduction — Yearly average **96.6%**
Cost reduction — Yearly average **90.7%**

28.7% of the cost in entire institution was achieved

Pumps run with significantly low power Incredible energy-efficiency and CO_2 reduction

energy-saving No.1

Significant power reduction by controlling pump flow rate

CONTROL

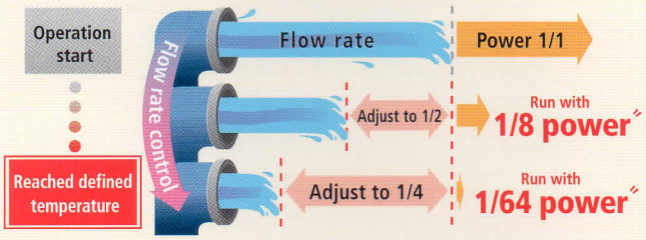
By operating warm/cold or cooling water pump, that was operated in constant rate before, with our unique load-aware flow rate control system, we achieved 65 to 98.3% reduction in otherwise-wasted power.

* Reduction rate varies depending on institutions.

Adjust to the required flow rate to achieve significant reduction

Power consumption decreases in proportion to the cube of control ratio of the flow rate. By reducing the flow rate to 1/2, the power required for water supply pressure becomes 1/8 (=12.5%), similarly, when the flow rate is 1/4, the power becomes 1/64 (=1.5%). Significant energy-efficiency is achieved by controlling the flow rate when not so much heat exchange is required, such as after the system has reached the defined temperature.

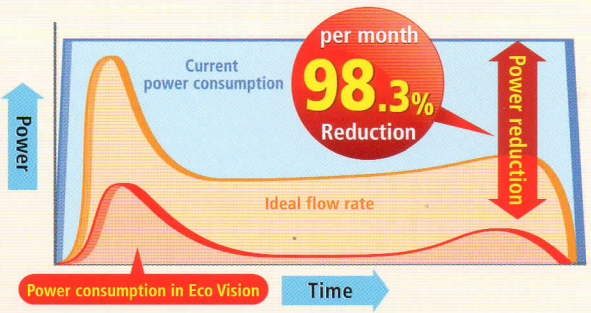
■ Simulation of flow control/power reduction



Reduced 98.3% power per month.

Unlike general flow rate control system, ECO VISION combines unique inverter control technology with remote control support to cut waste to the limit, resulting in 98.3% reduction per month.

■ Ideal power consumption in circulating pumps



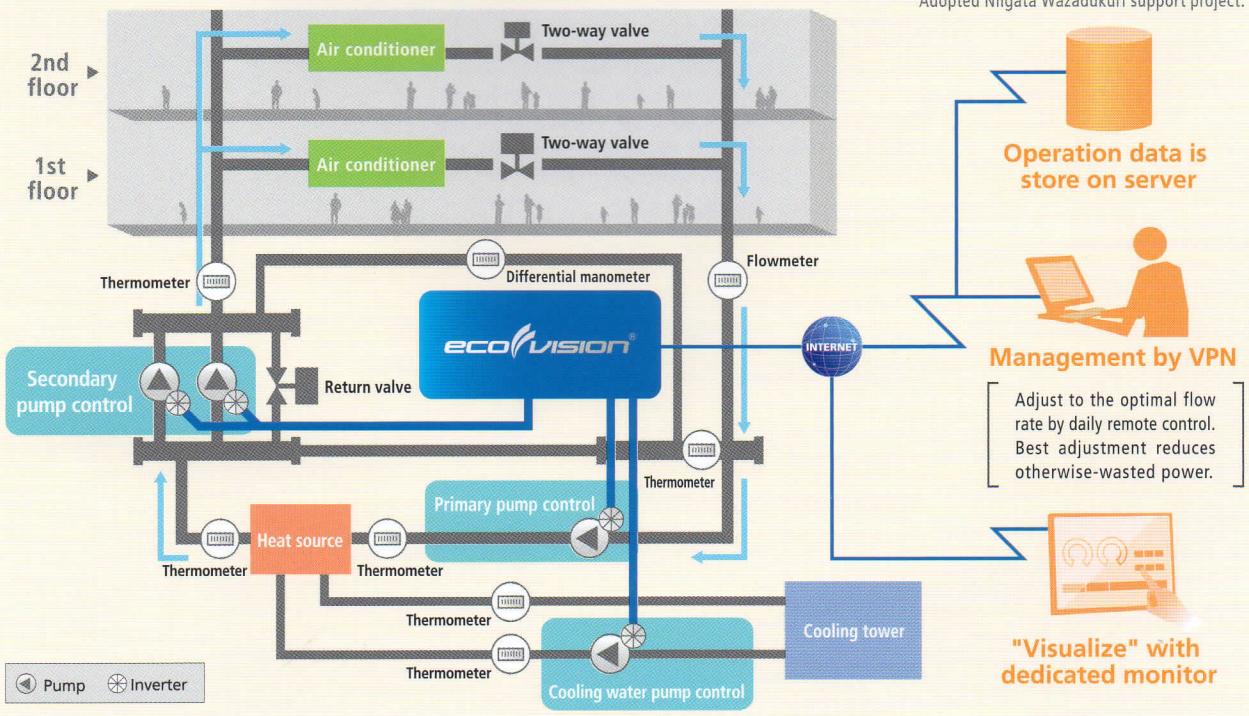
System diagram

Although return valve or pressure inverter control is used in general, ECO VISION controls flow rate at primary, secondary, and cooling water pumps. We acquired domestic patent for this unique load-aware technology.

Patent Number: 4699285

U.S. Patent: US 8,019,480B2

July, 2006:
Adopted Niigata Wazadukuri support project.



Perfect maintenance and serviceability
24-hour support in emergency

Support No.1*

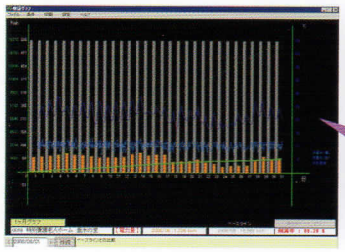
Clearly realize the effect by visualization

MEASURE

Realize clear effect with visual management. Eco Vision constantly monitors operating condition and power consumption, accumulates that data. Since the data can be summarized per day, month, or year, you can visually and clearly recognize the effect of reduction.

Verify reduction at a glance with charts

You can visually recognize the effect by summarizing data as charts by day, month, year, or any interval.



Data collected per day/month/year

Check the effect in real time

Operating condition can be checked at any time using dedicated monitor.

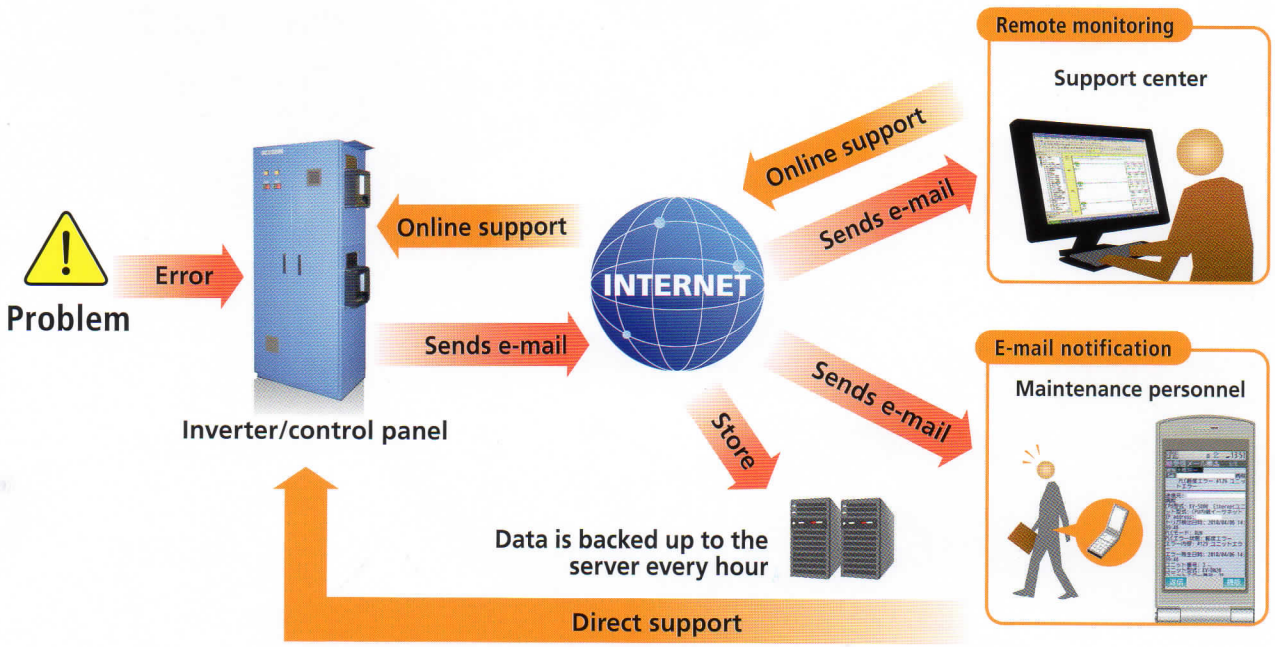
Monitor screen

* Screen design may change system by system.

Peace and safety with 24-hour support system

SUPPORT

By using management via VPN on the Internet, we provide well-appointed service 24 hours a day including remote monitoring and maintenance. By sending urgent mail to our support center and maintenance personnel, we provide prompt support for your peace of mind even in the system failure.



* As of December 2012. According to our own research.

ECO VISION

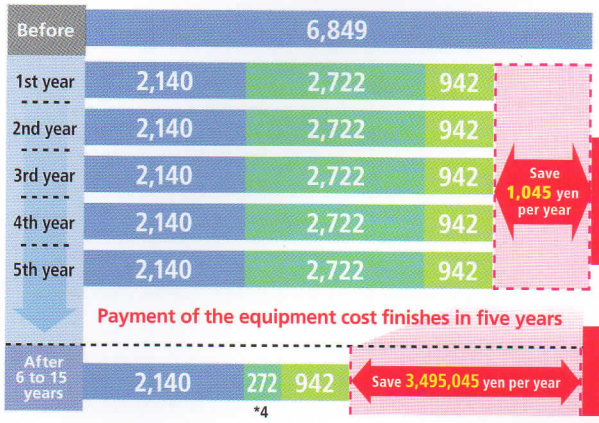
achieved 98.3% power reduction per month

Return on Investment No.1*

Save significant power cost immediately after introduction

COSTDOWN

■ **Example of Return on Investment** [Unit: 1000 yen (excluding tax)]



By leasing the system when introducing it, cost reduction exceeds monthly payment. Furthermore, since cash flow occurs from the following month, there is no need to secure a new budget.

Save 5.225 million yen in five years after introduction

For 6th and subsequent years, save 3,495,000 yen every year

Tax not included

Customer's net profit during statutory useful life *1	40,177,000 yen
Equipment cost	12,000,000 yen
Annual saving *2	4,708,850 yen
Annual maintenance fee	*3
Rate of performance fee to the saving	20.0%

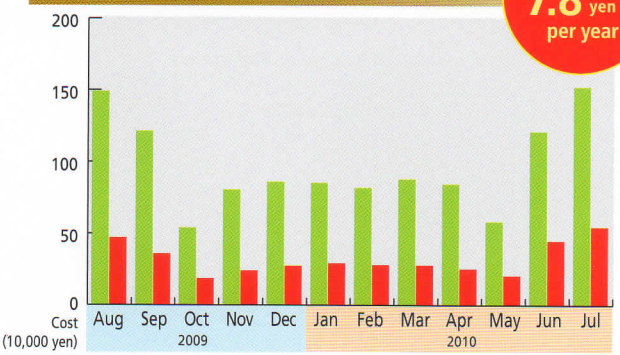
*1 Calculated for 15 years
*2 Only for usage-based charge
*3 Included in performance fee
*4 After lease expiration, re-lease fee (ex. 10%) is required

Power cost
Equipment cost
Performance fee

PICK UP! Case Study: Incredible reductions by ECO VISION

Annual reduced cost

Achieved 7.8 million yen per year



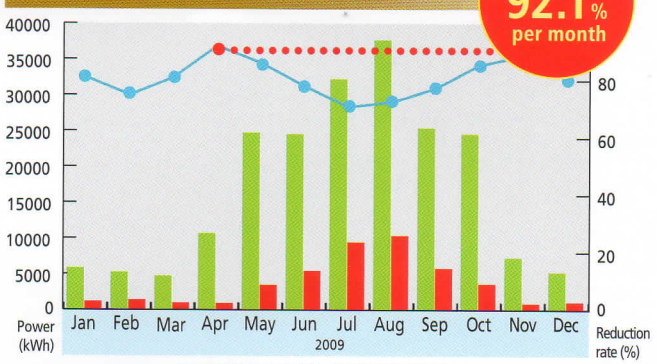
Saiseikai Niigata Daini Hospital

Reduced Power 507,364kWh | Reduced CO_2 281.6t

Pumps controlled ○Primary pump ○Secondary pump ○Cooling water pump

Power consumption reduction rate

Achieved 92.1% per month



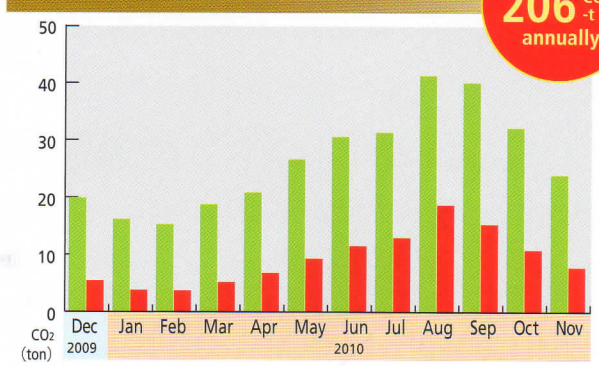
Social Insurance Kamata General Hospital

Cost saving 3.917 million yen | Reduced Power 163,889kWh | Reduced CO_2 91.0t

Pumps controlled ○Primary pump ○Cooling water pump

Annual reduction in CO_2 emission

Achieved 206 CO_2-t annually



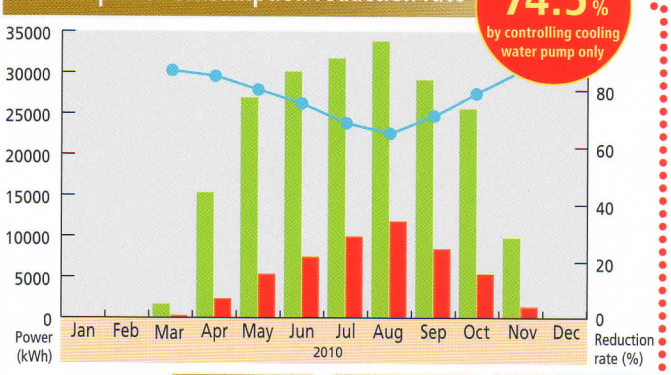
Hotel Nikko Niigata

Cost saving 5.749 million yen | Reduced Power 371,212kWh

Pumps controlled ○Primary pump ○Secondary pump ○Cooling water pump

Annual power consumption reduction rate

Achieved 74.5% by controlling cooling water pump only



APITA Niigata Nishi Store

Cost saving 1.973 million yen | Reduced Power 151.763kWh | Reduced CO_2 84.2t

Pumps controlled ○Cooling water pump

Before ■ After ●— Reduction rate

ECO VISION Adopted

As of December, 2012

Category	Institution Name	Place	Controlled Equipment				Power Reduction (kWh)	Power cost before reduction (1000 yen)	Cost reduction (1000 yen)	Reduction rate		CO_2*2 Reduction (co2-ton)	Beds/ Rooms
			C/W Water Pri. P	C/W Water Sec. P	Cooling Water P	Total equipment capacity (kW)				Power (%)	Cost *1 (%)		
Welfare facilities	Elderly nursing home Yurihanaen	Murakami-shi, Niigata	○	—	○	26.0	114,646	1,871	1,697	96.6	90.7	63.6	50
	Elderly nursing home Hasagi No Sato	Akiha-ku, Niigata-shi, Niigata	○	—	—	7.5	65,633	1,020	644	71.2	63.1	36.4	80
	Elderly nursing home Satsukien	Murakami-shi, Niigata	○	○	○	87.0	302,451	5,454	4,697	87.4	86.1	167.9	100
	Elderly nursing home Tarumi No Sato	Sekikawa-mura, Iwafune-gun, Niigata	○	—	○	26.0	118,603	1,867	1,651	90.3	88.4	65.8	50
	Elderly nursing home Iwakusu No Sato	Murakami-shi, Niigata	○	—	○	30.0	148,795	2,365	2,050	88.6	86.7	82.6	80
	Elderly nursing home Takatsubo	Murakami-shi, Niigata	○	—	○	26.0	148,116	2,279	2,033	91.4	89.2	82.2	70
	Elderly nursing home Miyuki En	Uonuma-shi, Niigata	○	—	○	18.5	69,413	1,092	924	89.0	84.6	38.5	70
	Elderly nursing home Hagoromo En	Murakami-shi, Niigata	○	—	○	30.0	106,534	1,890	1,633	88.8	86.4	59.1	70
	Elderly nursing home Hamayuu	Nishi-ku, Niigata-shi, Niigata	○	—	○	45.0	201,489	3,214	2,731	88.4	85.0	111.8	100
	Elderly nursing home Shiunji	Shibata-shi, Niigata	○	—	○	18.5	88,617	1,478	1,130	86.4	76.5	49.2	50
	Elderly nursing home Suzuran No Sono	Mitsuke-shi, Niigata	○	—	—	11.0	75,433	1,123	902	84.7	80.3	41.9	50
	Long-term care facility Kamedaen	Konan-ku, Niigata-shi, Niigata	○	—	○	15.0	67,916	1,471	1,112	81.8	75.6	37.7	136
Hospital	Saiseikai Niigata Daini Hospital	Nishi-ku, Niigata-shi, Niigata	○	○	○	275.0	507,364	11,596	7,801	72.1	67.3	281.6	415
	Medical Corporation Shadan Kyouseikai Nakajo Chuo Hospital	Tainai-shi, Niigata	○	○	○	63.0	147,734	3,076	2,633	89.9	85.6	82.0	122
	Agano-shi Suibaragou Hospital	Agano-shi, Niigata	○	—	○	82.0	217,369	4,479	3,719	85.0	83.0	120.6	321
	Mitsuke City Hospital	Mitsuke-shi, Niigata	—	○	○	37.0	143,292	2,359	1,877	85.1	79.6	79.5	99
	Social Insurance Kamata General Hospital	Ota-ku, Tokyo	○	—	○	140.0	163,889	5,636	3,917	79.0	69.5	91.0	238
	Niigata Accident Hospital	Joetsu-shi, Niigata	○	○	—	137.5	308,954	5,366	4,263	79.4	79.4	171.5	361
	Niigata Rehabilitation Hospital	Kita-ku, Niigata-shi, Niigata	○	—	○	44.0	210,377	3,712	2,947	83.3	79.4	116.8	168
	Fukushima Accident Hospital	Iwaki-shi, Fukushima	—	○	—	44.5	114,322	2,296	2,012	87.6	87.6	63.4	406
	Joto Social Insurance Hospital	Koto-ku, Tokyo	○	○	—	140.0	325,319	6,551	5,331	85.6	81.4	180.6	140
Store	APITA Niigata Kameda Store	Konan-ku, Niigata-shi, Niigata	—	—	○	112.0	167,655	3,188	2,386	74.8	74.8	93.0	—
	APITA Ichihara Store	Ichihara-shi, Chiba	—	○	○	130.0	290,870	4,683	3,923	83.8	83.8	161.4	—
	APITA Niigata Nishi Store	Nishi-ku, Niigata-shi, Niigata	—	—	○	74.0	151,763	2,647	1,973	74.5	74.5	84.2	—
	APITA Utsunomiya Store	Utsunomiya-shi, Tochigi	—	○	○	170.0	281,928	5,167	3,786	73.3	73.3	156.5	—
Hotel	Nakajo Grand Hotel	Tainai-shi, Niigata	—	○	○	51.2	67,478	1,030	861	90.9	83.6	37.5	76
	Hotel Nikko Niigata	Chuo-ku, Niigata-shi, Niigata	○	○	○	285.0	371,212	8,797	5,749	65.2	65.4	206.0	203
Building	A certain office building	Minato-ku, Tokyo	○	○	○	392.0	775,434	11,210	7,916	70.8	70.8	430.4	—
Other	Ota Market (office building)	Ota-ku, Tokyo	○	○	○	254.0	343,379	4,960	4,601	92.8	92.8	191.0	—

*1 Cost reduction does not match with power consumption reduction since reduction in basic charge (demand) is reflected in the cost reduction. *2 1kWh=0.000555 CO_2-t

Corporate Profile

Establishment: June, 1946
Incorporated: June, 1951
Capital: 48 million yen
President: Yuichi Hasegawa

[Business Area]

Electric work:
electric power generation/transformation facilities, power transmission and distribution facilities, indoor electrical facilities, outdoor electrical facilities, telecommunication facilities, instrumentation facilities

Piping work:
plumbing, water and sewage, gas facilities

Facility work:
air conditioning, heating, ventilation equipment, machine

Others:
sale of electric equipment, liability insurance agency business, ESCO business

Correspondent bank:
THE DAISHI BANK Sakamachi Branch,
THE DAISHI BANK South Niigata Branch, Niigata Credit Union Arakawa Branch

Construction License

Specific construction:
electric, tubing, machinery and equipment installation

General construction:
civil engineering, telecommunication, well drilling, water facilities, fire fighting facilities

Branch/Office

Niigata branch
〒950-0915
2-1-1, Abumi Nishi, Chuo-ku, Niigata-shi, Niigata
TEL +81-25-243-9561(main number)
FAX +81-25-243-9563

Higashiko office
〒957-0101
7-5989-9, Higashiko, Seiro-machi, Kitakanbara-gun, Niigata
TEL +81+25-256-1305
FAX +81-25-256-1306

Tainai office
〒959-2643
10-51, Higashihoncho, Tainai-shi, Niigata
TEL +81-254-43-3096
FAX +81-254-43-3038

Tokyo office
〒104-0031
Kyobashi SK building 4F, 2-5-17, Kyobashi, Chuo-ku, Tokyo
TEL +81-3-5579-9075
FAX +81-3-5579-9076

History

June, 1946
Established Hasegawa electric industry as private business.

June, 1951
Reorganized to Hasegawa Electric Industries Ltd.

April, 1964
Established Niigata office in Niigata-shi.

February, 1967
Reorganized to Hasegawa Electric Industries Co.,Ltd.

December, 1967
Obtained Niigata governor registration.

April, 1988
Increased capital to 48 million yen.

April, 1989
Established Nakajo office in Nakajo-cho (currently in Tainai-shi).

July, 1993
Established Higashiko office in Kitakanbara-gun Seiro-machi.

March, 1996
Established Niigata branch.

December, 1998
Incorporated Hasegawa Engineering Service Co.Ltd.

April, 2004
Incorporated Ability Support Center Co., Ltd.
Moved the head office of Hasegawa Engineering Service Co.Ltd.

July, 2006
Adopted Niigata Wazadukuri support project.

July, 2007
Established Tokyo office.

April, 2010
Incorporated Sustainable Economics Research, Inc.

Contact

Supporting member of General Incorporated Association ESCO Promotion Council / Incorporated Foundation The Energy Conservation Center

Hasegawa Electric Industries Co.,Ltd.

●Head Office
1760-1, Sakamachi, Murakami-shi, Niigata, Japan, 〒959-3132
TEL: +81-254-62-3161(main number) FAX: +81-254-62-5518

●Tokyo Office
Kyobashi SK building 4F, 2-5-17, Kyobashi, Chuo-ku, Tokyo, 〒104-0031
TEL: +81-3-5579-9075 FAX: +81-3-5579-9076

ECO VISION Search

- Please note that specification, data, and parts are subject to change without notice.
- Information contained in this brochure is current as of December 2012.

VEGETABLE OIL INK
Environment-friendly vegetable oil ink is used for this brochure.

PAMPHLET 2013.1.5000