

Introduction of Eco-Prana's Technology

Eco Prana Co.,Ltd

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Eco Prana Co.,Ltd

【About Super Nano Oil (SN OIL)】

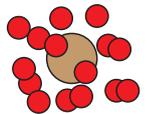
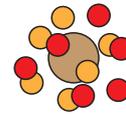
SN OIL is the completely new fuel which made synthetic combination of petroleum and water succeed. SN OIL is the technology which makes combine scientifically by a molecular level of petroleum and water. SN OIL makes them reduce waste of carbon dioxide and PM2.5 substantially, and it's useful for global warming prevention.

【About mechanism of burning】

We made them combine a petroleum molecule and a water molecule scientifically in the equipment, and it was produced safely as synthetic oil.

【The difference between the emulsified fuel and SN OIL】

【The usual type emulsified fuel】



The emulsified fuel in which oil wrapped water is put in. (Water in Oil)

The outside oil is to be burned, and the inner water is heated.

Water boils and causes a minute explosion suddenly.

Oil becomes a particle with an explosion of water, and the surface area increases at conventional about 3200 times.

The surface area is to be increased and area of contact with air can be increased on leaps and bounds and burn sufficiently by a little air and fuel.

Emulsion fuel is a limited range of emulsified fuel making use of the micro explosion principle of foam. It is a heteromolecular fusion product which mixes oil and water only and stirs it and it separates into original molecular structure even under normal environmental conditions. The function drops due to the change in the temperature below zero.

The usual type emulsified fuel

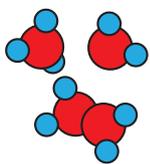


New fuel SN OIL

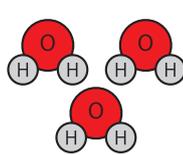
Eco Prana succeeds in development of fuel of the new molecule structure which made perfect elements combine.

That our SN OIL fuel does uniformity with an other company depends on following technology. There isn't an introduction example besides us for putting it in Japan and having large enormous volume production of new fuel and the technology which can be supplied.

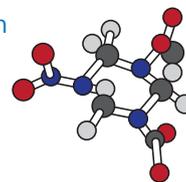
【SN OIL • Our international patent technology】 international patent PCT applied No, WO 2014/171406 A 2



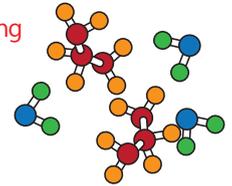
Pre mix



Molecule fusion



Molecular binding



Hydrocarbon molecule

Water molecule

Additive

New fuel molecule

SN OIL is the synthetic petroleum product to which the molecule structure was changed. SN OIL is a petroleum product of the new molecule structure we made do molecule combination of by science and technology. The molecule structure doesn't also change with all temperature change of anything but an explosion in SN OIL. It's the petroleum system molecule structure, so I have no worried elements to the petroleum system equipment in SN OIL. The molecule structure doesn't change SN OIL, so the quality becomes stable in the long run.



Eco Prana Co.,Ltd



[Comparison of quality of new fuel super nano oil (SN OIL)]

Comparison of base oil and SN OIL quality



Manufacturing factory (in Japan)



SN OIL System Container



Oil sample check

BASE OIL Quality analysis table

SN OIL (Water addition rate 35%) Quality analysis table

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Authorised by Food Safety & Standards Authority of India Under FSS Act
Approved by Bureau of Indian Standards (BIS)

TEST REPORT

Test Report No. : ALPL/31032018/15-1 dated 31.03.2018 Page 1 of 1

Issued To :	Sample Inward No. 1718/H-2195-1	Analysis Start 27.03.2018
Attention :	Inward Date 27.03.2018	Analysis End 31.03.2018
Contact No. :	Reference ALPL/2017-18/B-2255	
	Reference Date 26.03.2018	Sample Category General

Sample Name Furnace Oil	Sample Particulars / Details Furnace Oil (Base Oil)	Quantity Received 500 ml
Sample Collected By M/s Joy Petrochemical	Description / Physical condition / Packaging Dark coloured liquid / Satisfactory / In plastic bottle	

Tests Required : Density at 15°C, Flash Point, Pour Point, Gross Calorific Value, Sediment, Total Sulphur, Water Content, Ash, Acidity, Kinematic Viscosity

S.N.	Test Parameter	Measurement Unit	Test Method	IS 1593:1982 Specification for Grade MV1	Test Result
1.	Density at 15°C	g/cm ³	IS 1448 Part 32	-	0.965
2.	Flash Point	°C	IS 1448 Part 21	Min. 66	138
3.	Pour Point	°C	IS 1448 Part 10	-	6
4.	Gross Calorific Value	Kcal/Kg	IS 1448 Part 7	-	10392.19
5.	Sediment	g/100g	IS 1448 Part 30	Max 0.25	<0.1
6.	Total Sulphur (as S)	g/100g	IS 1448 Part 33	Max 4.0	0.02
7.	Water Content	g/100g	IS 1448 Part 40	Max 1	< 0.1
8.	Ash	g/100g	IS 1448 Part 4	Max 0.1	Nil
9.	Acidity				
a.	Total acidity	Mg/KOH/g	IS 1448 Part 20	-	0.97
b.	Inorganic acidity	Mg/KOH/g	IS 1448 Part 20	Nil	Nil
10.	Kinematic Viscosity	cst	IS 1448 Part 25	Max 125	91.39

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • g/100 g is equivalent to %w/w. • °C indicates detection limit of instrument/method and shall be considered as "absent".

REMARKS: As requested by the client, sample was tested for above parameters only. The submitted sample complies with IS 1593:1982 Specification for Grade MV1, for the tested Parameters.

Verified By

Mangesh Fande Technical Manager
Kavita Saygaonkar Technical Manager
Swati Shrivastava Technical Manager

Authorized Signatory

Dr. (Mrs.) S.D. Garway Director - Labs

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Authorised by Food Safety & Standards Authority of India Under FSS Act
Approved by Bureau of Indian Standards (BIS)

TEST REPORT

Test Report No. : ALPL/31032018/15-2 dated 31.03.2018 Page 1 of 1

Issued To :	Sample Inward No. 1718/H-2195-2	Analysis Start 27.03.2018
Attention :	Inward Date 27.03.2018	Analysis End 31.03.2018
Contact No. :	Reference ALPL/2017-18/B-2255	
	Reference Date 26.03.2018	Sample Category General

Sample Name Furnace Oil	Sample Particulars / Details Furnace Oil (SN oil)	Quantity Received 500 ml
Sample Collected By M/s Joy Petrochemical	Description / Physical condition / Packaging Dark coloured liquid / Satisfactory / In plastic bottle	

Tests Required : Density at 15°C, Flash Point, Pour Point, Gross Calorific Value, Sediment, Total Sulphur, Water Content, Ash, Acidity, Kinematic Viscosity

S.N.	Test Parameter	Measurement Unit	Test Method	IS 1593:1982 Specification for Grade MV2	Test Result
1.	Density at 15°C	g/cm ³	IS 1448 Part 32	-	0.974
2.	Flash Point	°C	IS 1448 Part 21	Min. 66	110
3.	Pour Point	°C	IS 1448 Part 10	-	4
4.	Gross Calorific Value	Kcal/Kg	IS 1448 Part 7	-	10635.42
5.	Sediment	g/100g	IS 1448 Part 30	Max 0.25	<0.1
6.	Total Sulphur (as S)	g/100g	IS 1448 Part 33	Max 4.0	0.03
7.	Water Content	g/100g	IS 1448 Part 40	Max 1	< 0.1
8.	Ash	g/100g	IS 1448 Part 4	Max 0.1	0.06
9.	Acidity				
a.	Total acidity	Mg/KOH/g	IS 1448 Part 20	-	0.98
b.	Inorganic acidity	Mg/KOH/g	IS 1448 Part 20	Nil	Nil
10.	Kinematic Viscosity	cst	IS 1448 Part 25	Max 180	176.24

NOTES: • Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only. • Test report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to invoiced amount only. • Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • g/100 g is equivalent to %w/w. • °C indicates detection limit of instrument/method and shall be considered as "absent".

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Analysis	Base oil (C heavy oil)	SN OIL	Base oil comparison
March 24, 2018			
Japan domestic contract factory			
Sampling			
Water addition rate 35.0% SN OIL			
Gross calorific value	10392.19Kcal/Kg	10635.42Kcal/Kg	2.34%Up
Flash point	138°C	110°C	20.28%Down
Kinetic viscosity	cst 91.39	cst 176.24	92.84%Up

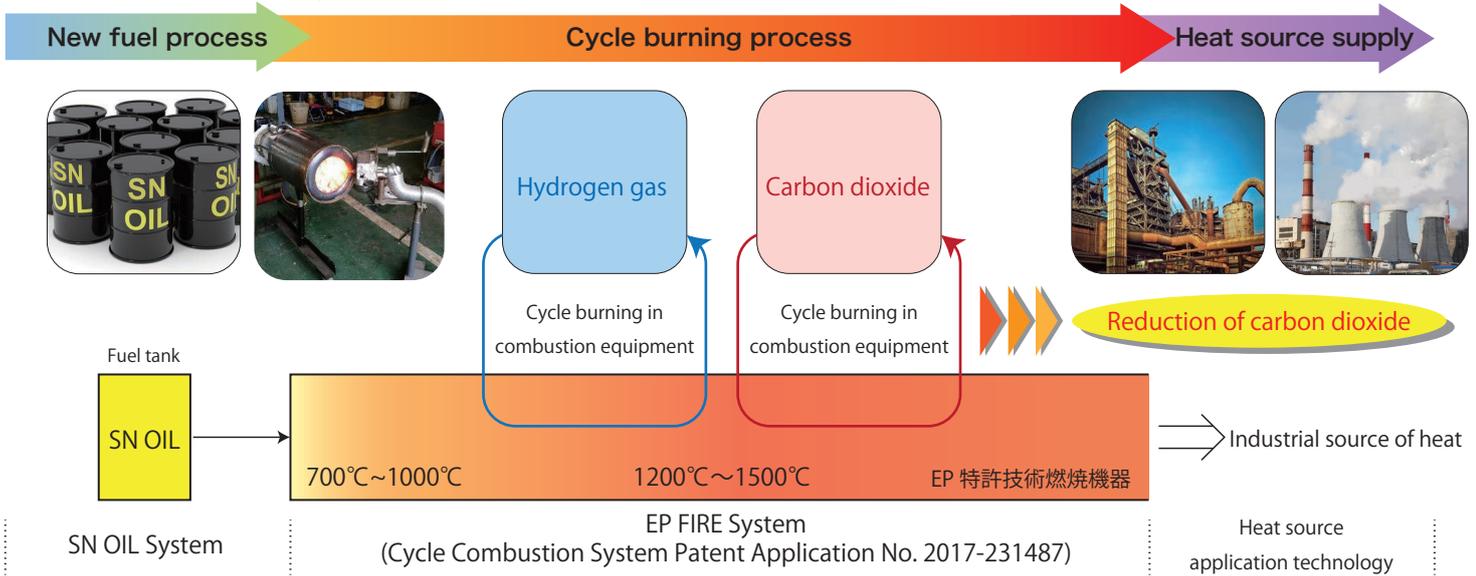


【About EP FIRE SYSTEM and STOKER INCINERATOR SYSTEM】

EP FIRE SYSTEM • Hydrogen gas & carbon dioxide reuse technology and system

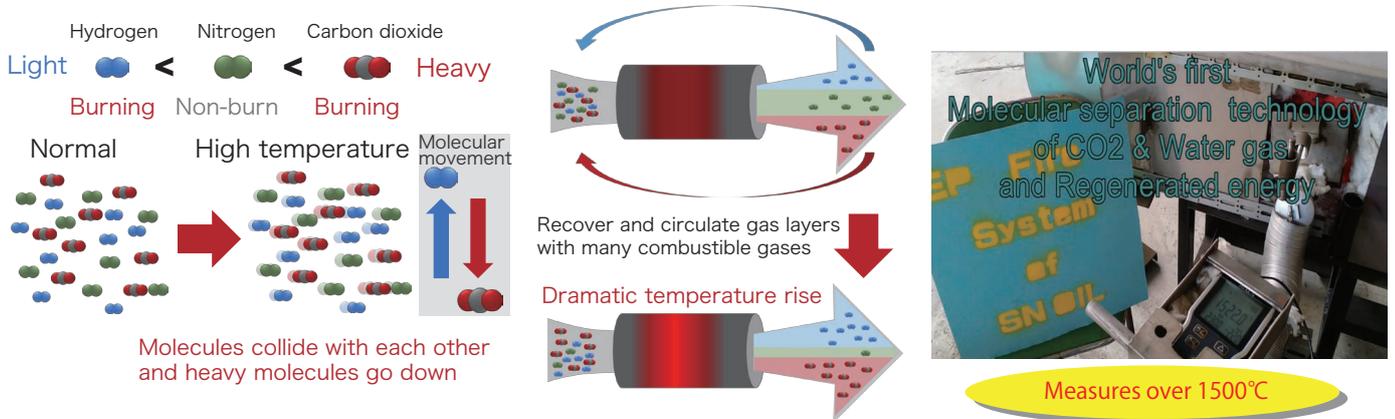
We achieved high-temperature combustion beyond 1500 °C by fuel of a little amount by hydrogen gas making recycling technology.

【Technological summary】



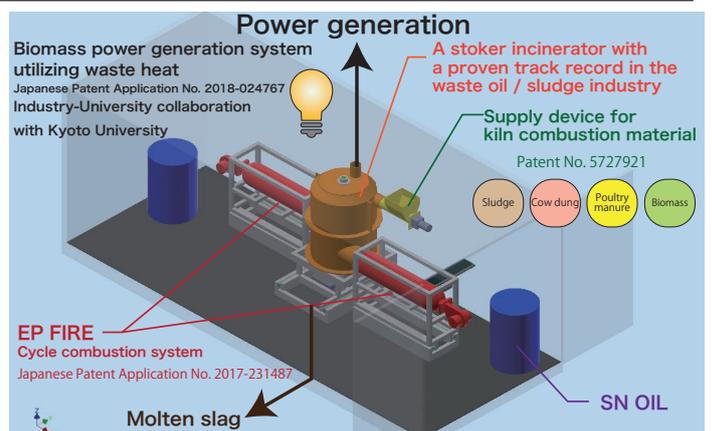
EP FIRE SYATEM • Mechanism of high temperature combustion

By using this combustion mechanism it was possible to obtain a drastic temperature rise effect.



ストーカ式焼却炉システム

"New fuel SN OIL system" developed by our company with high environmental effect and "Stoker type incinerator" with experience in the waste oil / sludge industry. It is a compact high-temperature incinerator system combining "EP FIRE Cycle Combustion System" capable of high-temperature supply at low cost (over 1500 °C). It is an effective combustion furnace for waste oil / sludge treatment and cow manure / poultry manure processing, and it is a single treatment system with a view to the process from melted slag treatment to electricity generation.



Low carbon · regenerative biomass energy generation system

Proposal of a power generation system using our SN OIL and EP FIRE system, which consumes less fuel than conventional methods and has a new business opportunity using regenerated biomass energy with low carbon.



SN OIL SYSTEM

New fuel supply



EP FIRE SYSTEM

Renewable energy supply



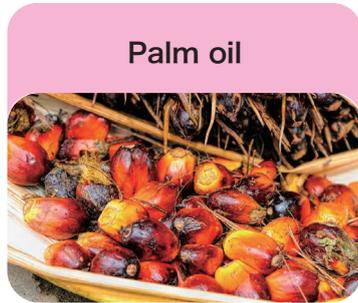
Biomass

Utilization of regenerated biomass energy



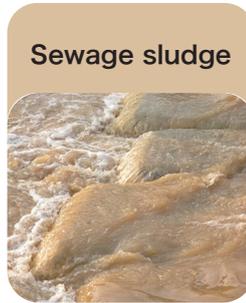
Power generation

High efficiency power generation



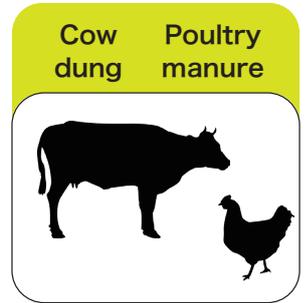
Palm oil

Palm oil



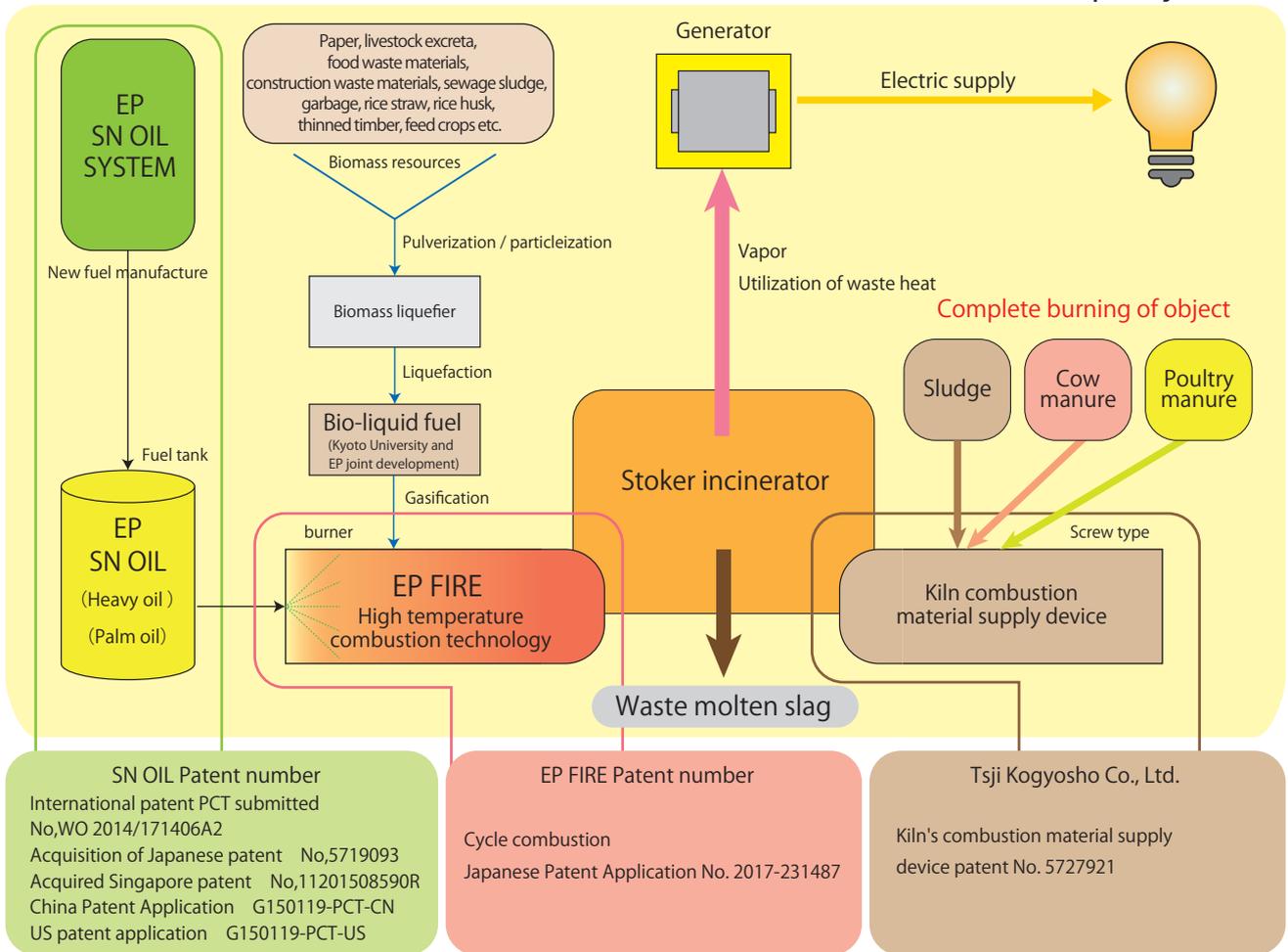
Sewage sludge

Sewage sludge



Cow dung Poultry manure

Cow manure poultry manure



Eco Prana's environmental technology

- Total Produce from New Fuel Production to High Temperature Combustion
- Saving technology of environmental burden and energy
- CO2 emissions are suppressed by about 30%.
- Fuel cost reduction of various industries About 50%



(※Percentage varies depending on country, oil type, environmental conditions, etc.)



The current Japanese technology has high thermal efficiency, and the amount of energy used is kept lower than the countries of the world.

By introducing EP technology, we can further reduce energy consumption by 20%. (Graph 1)

CO₂ emissions are reduced by about 30% as an environmental effect of a combination of SN OIL System and EP Fire System. (Graph 2)

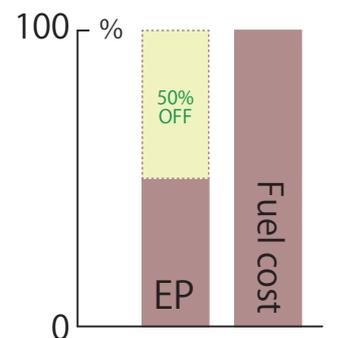
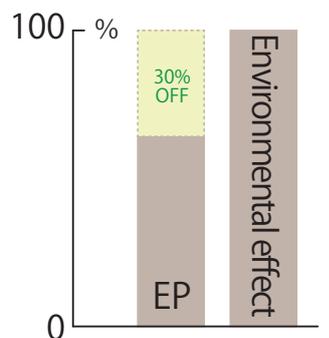
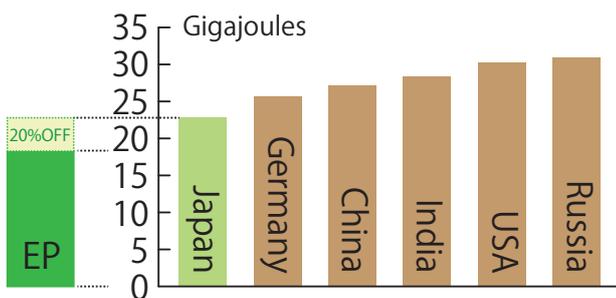
The running cost of various industries can be reduced by about 50%. (Graph3)

【Graph1 • Energy index of each country】

【Graph2 • Environmental effect】

【Graph3 • Fuel cost】

【Refer to the article on the Nihon Keizai Shimbun April 13, 2017】



(Attention) Energy used to produce 1 ton of steel, Global Environment Industry Research Organization Summary, 2010

Eco Prana "aims to be a pioneer of cycle energy."

We will propose part of the regeneration combustion process from the creation of renewable energy. Based on the new fuel SN OIL we will help you from new bio fuel to high efficiency creation of renewable fuel. We combine the new fuel [SN OIL SYSTEM] + combustion system [FP FIRE SYSTEM] and supply [thermal energy] for each industry on the basis of the following three cases.

SN OIL SYSTEM



New fuel system
 International patent PCT submitted No,WO 2014/171406A2
 Acquisition of Japanese patent No,5719093
 Acquired Singapore patent No,11201508590R
 China Patent Application G150119-PCT-CN
 US patent application G150119-PCT-US



EP FIRE SYSTEM



Combustion system
 Cycle combustion
 Japanese Patent Application No. 2017-231487

case1

Sludge · Biomass



Reuse energy
 Supplies thermal energy burned by combining sludge and biomass recycling energy into new fuel [SN OIL SYSTEM] + combustion system [FP FIRE SYSTEM] to the environmental industry and others.

Heat energy supply

case2 **Supply of thermal energy to boilers, incinerators, etc.**

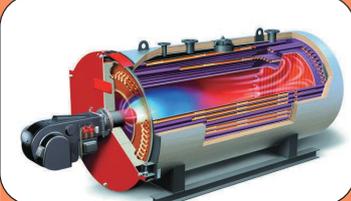
case3 **Supply of thermal energy to the firing furnace industry such as glass, industrial waste etc.**

Power generation



Environmental industry and power generation business etc.
case1
 Heat energy supply model to the environmental industry by mixing combustion of combustion system with sludge and regeneration energy.

Boiler



Boilers and incinerators
case2
 Heat energy supply from combustion system to steam boiler industry etc.

Firing furnace



Firing furnace industry such as glass, industrial waste etc.
case3
 Supply of thermal energy from the combustion system to the baking furnace industry such as glass and industrial waste

EKREC
 Eco Prana Kyoto University renewable energy creation joint research

We launched a joint R & D project to develop core technologies from new fuels to biomass treatment and cycle combustion systems. Biotechnology · Power generation · High temperature treatment incineration · Rare metal extraction · We are helping to provide energy efficiency necessary for the environment and creation of new technology.

Kyoto University Faculty of Agriculture Department of Agriculture
 Dr. Haruhiko Toyohara Associate Professor <http://www.kyoto-u.ac.jp>