

Title : Non explosion Boiler in Factory

Subtitle : No accident

moreover reduce CO<sub>2</sub> 1,000,000 ton!



O T A G A I

OTAGAI Forum Association

Company name : MIURA INDUSTRIES (THAILAND) CO.,LTD.

Samurai Name : Hiroaki MITSUMUNE

23 Sep. 2015

# 1. Contribution to Thailand

## ◆ Many explosion accident of large boiler

Explosion accident of boiler occur every year.  
Enormous damage occurred.

The number of accident and casualties year 2013~2015

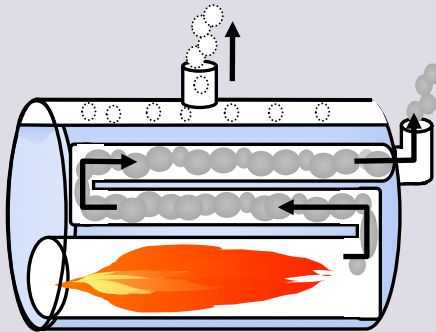
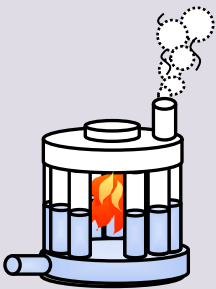
	Large Boiler		Once-Through Boiler	
	Accident	Casualty	Accident	Casualty
Thailand	7	56 (6)	0	0
Japan	2	1 (0)	0	0

( ) Number of casualty



Boiler explosion accident site which occurred in 2014

## ◆ Large boiler has large volume of possessed water

	Large Boiler	Once -Through Boiler
Structure		
Possessed water volume	much 30 : 1 few	

Large boiler has  
**Explosion power 30 times**



## ◆ Reducing CO<sub>2</sub> contribute to once through boiler

Energy saving example with the Once-through boiler  
Compare with large boiler , efficiency up drastically.



Change to  
once through boiler  
in Thailand

**Reduce  
1,000,000 ton**

Moreover combine  
with Natural Gas  
**Reduce  
14,000,000 ton**

Installation space  
**45%  
Save**

Low NOx  
**25ppm**  
(O<sub>2</sub>=0% conversion)

	Large boiler	Once-through boiler	Advantage
Efficiency (%)	76.0	95.6	<b>19.6% up</b>
Fuel cost (×1,000THB/year)	83,041	66,016	<b>17,025,000THB Reduction</b>
CO <sub>2</sub> Output (ton-CO <sub>2</sub> /year)	13,717	10,905	<b>2,812 ton Reduction</b>

- ★ The boiler use situation
- Operation time:  
24hour/day, 300days/year
  - Steam consumption(Average)  
10.2ton/hour
  - Fuel  
NG (13.5THB/Nm<sup>3</sup>)

Note : It is a Japanese example



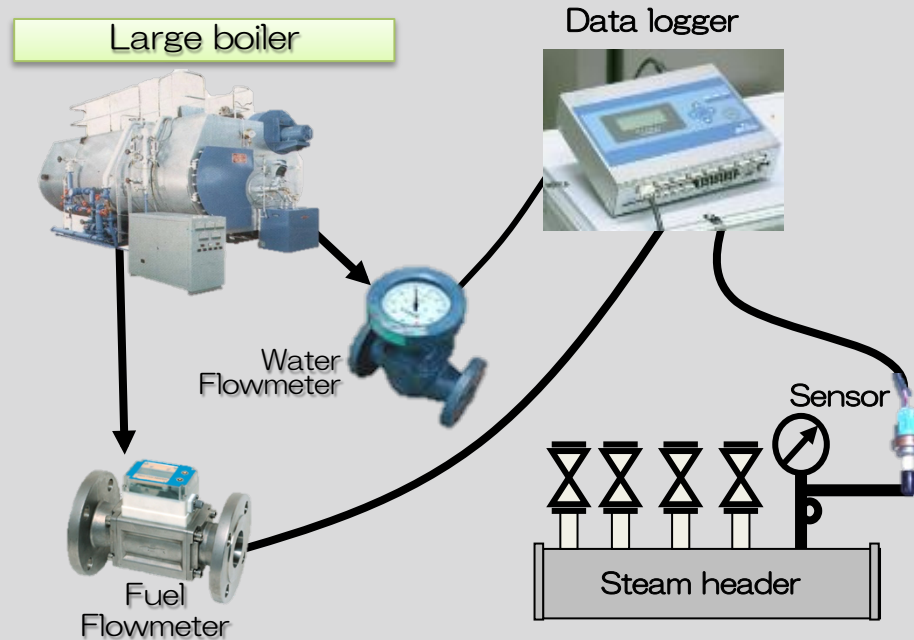
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## 2. Selling point

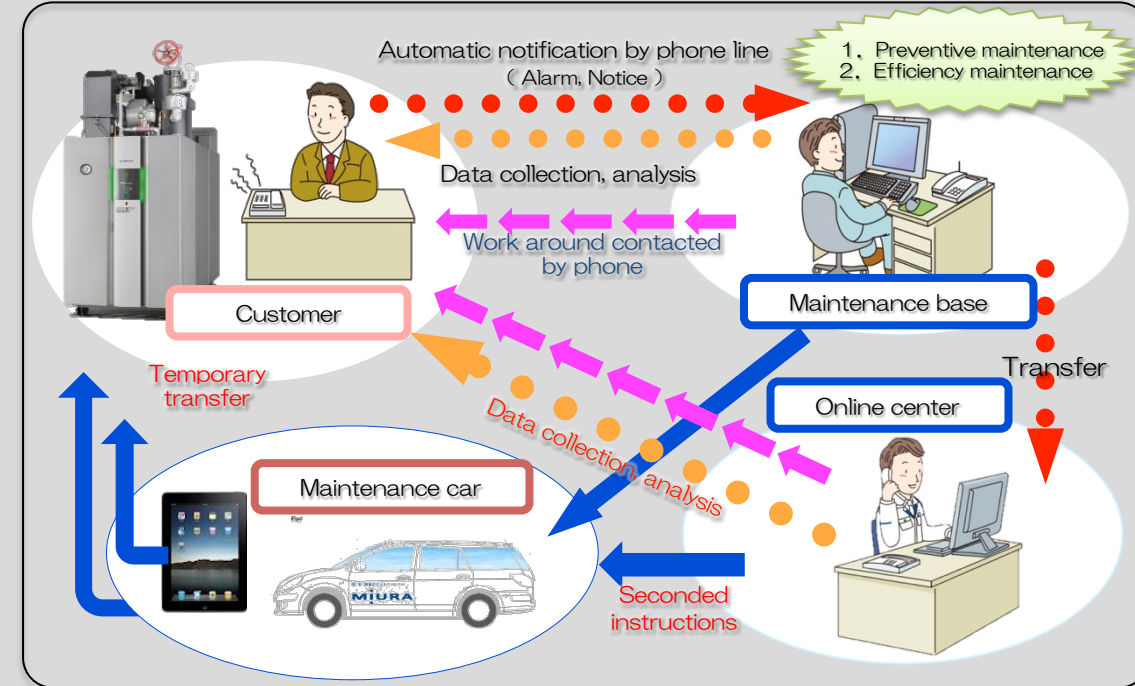
### ◆ Free Energy Check

Simulating for reducing Boiler CO<sub>2</sub> volume by free of charge



### ◆ Online maintenance

Tendency data management from early period performance for preventing low efficiency.



## 3. Spirit of OTAGAI

Once through is excellent safety from Japan Operate by non-license, non inspection  
Reducing CO<sub>2</sub> which assist to system, excellent energy saving which in Japan is 90% of once through boiler.

Requirement for Thai government Boiler Regulation revision and reinforcement of environment regulation.



## 4. Summarize

Inspect energy-check and maintenance online provide for once-through boiler to be spread.

1. Explosion accident in Thailand have lost.
2. Reducing CO2 1,000,000 ton

## 5. Company Information

### ◆ Company Name

MIURA INDUSTRIES (THAILAND) CO.,LTD.

### ◆ Business Contents

Sales Once-through boiler, Thermal Boiler, Food Equipment, Sterilizer Equipment, Water Treatment, Manufacture and sales chemical for boiler, Maintenance

### ◆ Telephone number

038-134-400

### ◆ E-mail

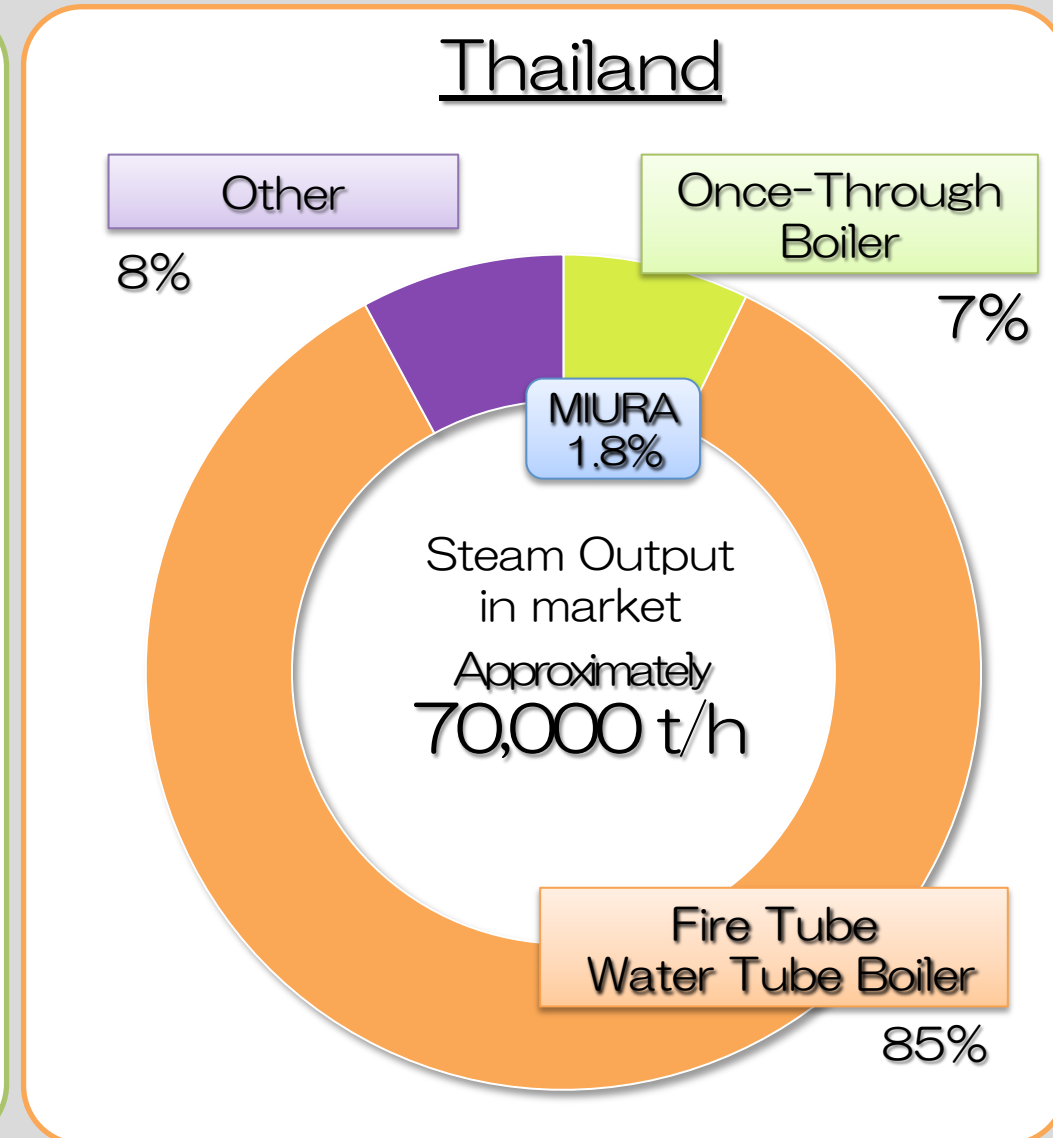
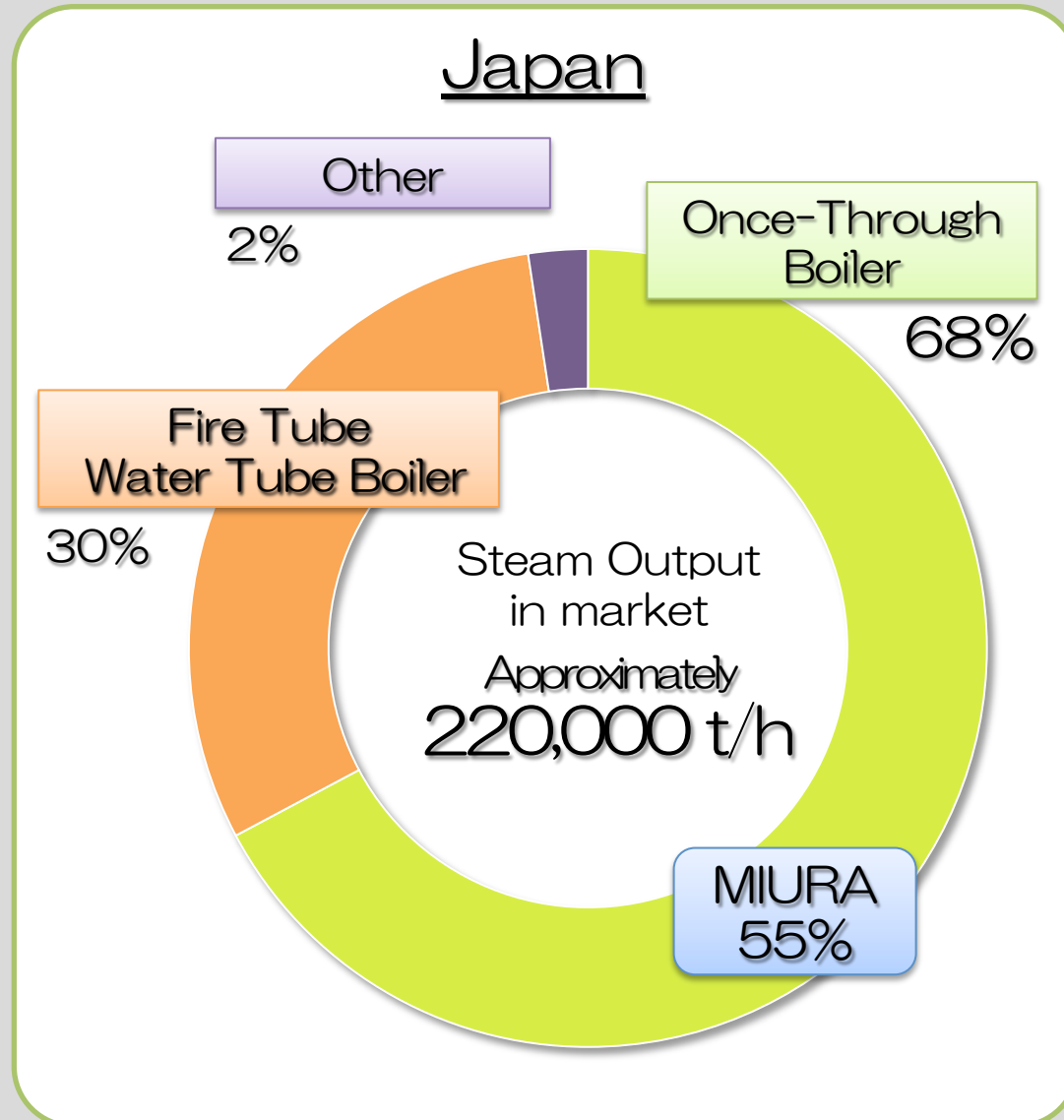
miura-thai@miuraz.com

### ◆ URL

<http://www.miuraz.co.jp/>



# Attach ① : Japan and Thailand Market Share



(Remark) Once-Through Boiler share is our company survey estimate value.



# Boiler Energy Saving start from checking

Using our measuring instrument, analysis more than 50,000 units over 30 years!!  
Specialized in technique that contribute to help our customer save energy.



OTAGAI

Energy Saving

Energy Saving



Fire Tube Boiler 6t/h×1set

Reduce space  
About 40%



High Efficiency Once Through Boiler  
2t/h×3 set

Merit UP

	Fire Tube Boiler	Once Through Boiler	Advantage
Efficiency (%)	78	96	18 % UP
Fuel Expense (yen/year)	43,020	34,950	8,070,000 yen Reduce
CO <sub>2</sub> emission (t-CO <sub>2</sub> /year)	1,371	1,114	257t Reduce

Operating Hour : 10h/day, 300 day/year  
Work Load : 30%  
Fuel : Natural Gas (70 yen/m<sup>3</sup>)