Fuji Electric

Introduction to Fuji Electric's Recent Experiences in Geothermal Power Plant Business

October 2013

FUJI ELECTRIC CO., LTD.

Fuji Electric

Contents

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Outline of Fuji Electric Co., Ltd.

PROFILE

- Head Office: Tokyo, Japan
- Employees: 24,956

FINANCIAL DATA

- Net Sales: 746 Billion Yen
  (Approx. US$ 7.9 Billion)
- Total Assets: 766 Billion Yen
  (Approx. US$ 7.1 Billion

(Fiscal Year 2012)

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Business Segment

Power Generation/ Social Infrastructure

Main Business
- Power Generation
- Nuclear Power / Radiation Sensing Instrument
- Transport Systems

Industrial Infrastructure

Main Business
- Industrial Plant Business
- Facility Business

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Power Electronics

Main Business
- Drive System
- Power Supply System
- Electric Distribution & Control Components

Food and Beverage Distribution

Main Business
- Vending Machines
- Retail Distribution Business

Electronic Devices

Main Business
- Semiconductors
- Magnetic Disks

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Milestones of Fuji Geothermal Power Business

1923 Company established

1957 Thermal power plant business established

1960 First geothermal unit of 30 kW operated (Japan)

1980 First overseas geothermal unit of 35,000 kW operated (Ahuachapan, El Salvador)

1983 First turn-key project completed (Philippines)

1997 3x77,500 kW units operated (Philippines)
(Fuji's largest single flash unit in 60Hz)

2008 95,720 kW unit operated (Kawerau, NZ)
(Fuji's largest double flash unit in 50Hz)

2010 139,000 kW unit operated (Nga Awa Purua, NZ)
(World's largest triple flash unit)

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Fuji Geothermal Steam Turbines Supply Record

USA	20 Units	721 MW
Indonesia	12 Units	662 MW
Philippines	14 Units	497 MW
New Zealand	3 Units	290 MW
Iceland	6 Units	219 MW
El Salvador	3 Units	91 MW
Nicaragua	2 Units	77 MW
Turkey	1 Unit	60 MW
Japan	5 Units	6 MW
China (Tibet)	1 Unit	3 MW
Total	67 Units	2,627 MW

As of August 2013

Fuji Geothermal Power Plants Worldwide

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U.S.A.

NCPA	2 x 55MW
Bottle Rock	1 x 55MW
CalEnergy, Salton Sea 1	1 x 10MW
Terra-Gen, Dixie Valley	1 x 60.5MW
CalEnergy, Del Ranch	1 x 35.8MW
CalEnergy, JJ Elmore	1 x 35.8MW
Terra-Gen, Coso	8 x 30MW
CalEnergy, JM Leathers	1 x 35.8MW
Calpine, Aidlin	2 x 12.5MW
CalEnergy, Salton Sea 5	1 x 58.32MW
Hudson Ranch	1 x 55MW

Iceland

HS Orka, Svartsengi 3	1 x 6MW
HS Orka, Svartsengi 5	1 x 30MW
HS Orka, Svartsengi 6	1 x 33MW
HS Orka, Reykjanes	3 x 50MW

Turkey

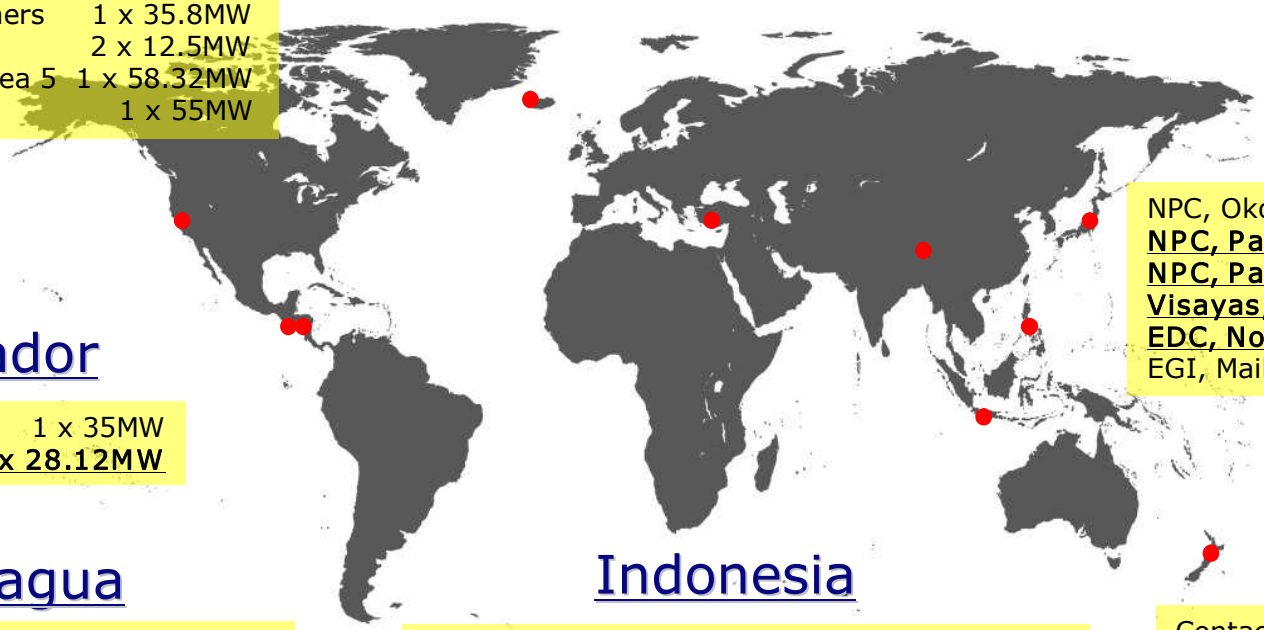
Kizildere II 1 x 60MW

Japan

Kirishima	1 x 100kW
NEDO, Ohgiri	1 x 300kW
Takenaka Corporation	1 x 45kW
TEPCO, Hachijo-jima	**1 x 3.3MW**
Suginoi Hotel	**1 x 1.9MW**

China

Yan Ba Jing 1 x 3.2MW



Philippines

NPC, Okoy	2 x 1.5MW
NPC, Palimpinon	**3 x 37.5MW**
NPC, Palimpinon-II	**4 x 20MW**
Visayas, Malitbog	**3 x 77.5MW**
EDC, Northern Negros	**1 x 49.37MW**
EGI, Maibarara I	1 x 20MW

El Salvador

LaGeo, Ahuachapan	1 x 35MW
LaGeo, Berlin	**2 x 28.12MW**

Nicaragua

Ram Power, San Jacinto U3	1 x 38.5MW
Ram Power, San Jacinto U4	1 x 38.5MW

Indonesia

Chevron, Salak	3 x 55MW
Star Energy, Wayang Windu 1	**1 x 110MW**
PLN, Lahendong II	**1 x 20MW**
PGE, Kamojang IV	1 x 63MW
PGE, Kamojang V	**1 x 37MW**
Star Energy, Wayang Windu 2	**1 x 117MW**
PLN, Lahendong III	**1 x 20MW**
PLN, Lahendong IV	**1 x 20MW**
PLN, Ulubelu	**2 x 55MW**

New Zealand

Contact Energy, Poihipi	1 x 55MW
MRP, Kawerau	**1 x 95.72MW**
MRP, Nga Awa Purua	**1 x 139MW**

Total 2,627 MW

*Underlined : EPC Contract

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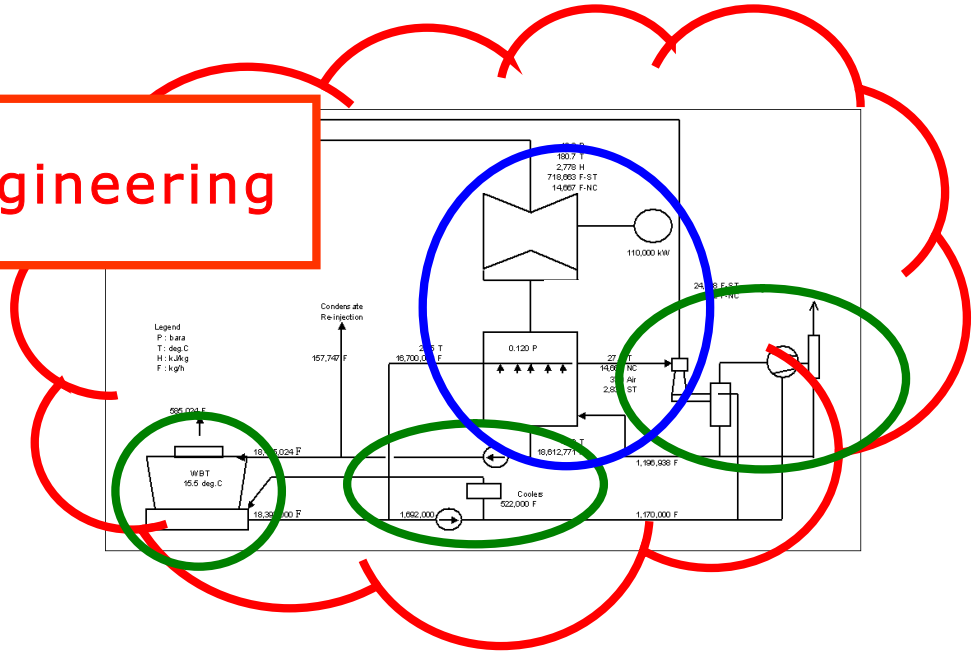
Fuji EPC Capability + Advantage

Manufacturing main equipment

Total plant engineering



Procuring appropriate BOP

Geothermal Power Plant Business

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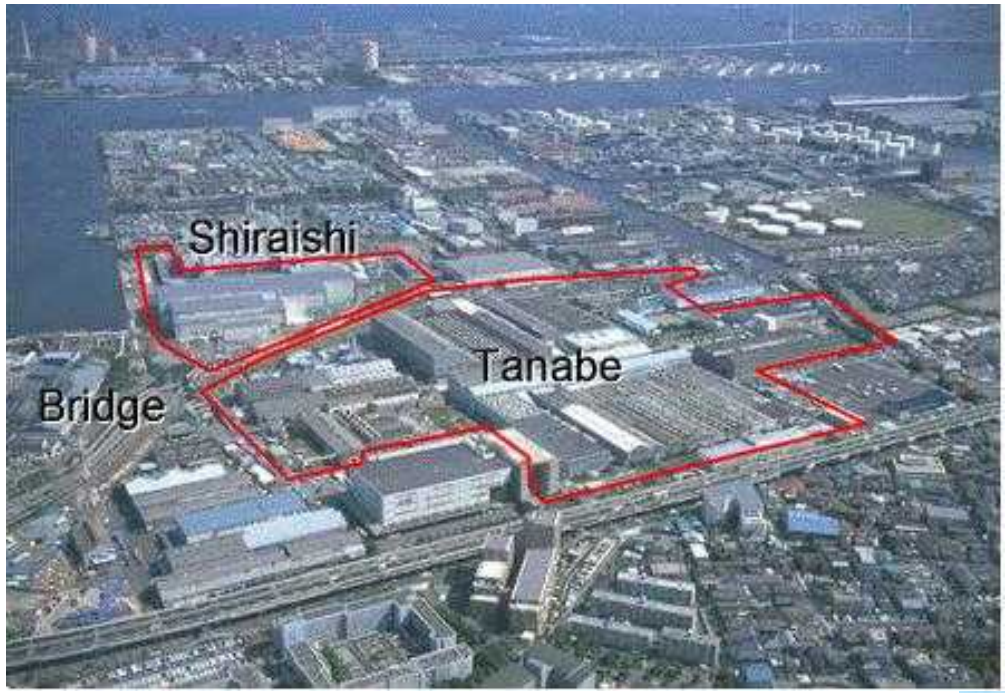
Fuji Electric Systems - Kawasaki Factory



Shiraishi Area for Steam Turbine and Generator Manufacturing

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Manufacturing Main Equipment at Fuji Factory

Steam Turbine

Generator

Condenser

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Total Plant Engineering

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Worldwide Procurement of BOPs

Procuring equipment from an appropriate vendors considering delivery, quality, performance, price, etc.

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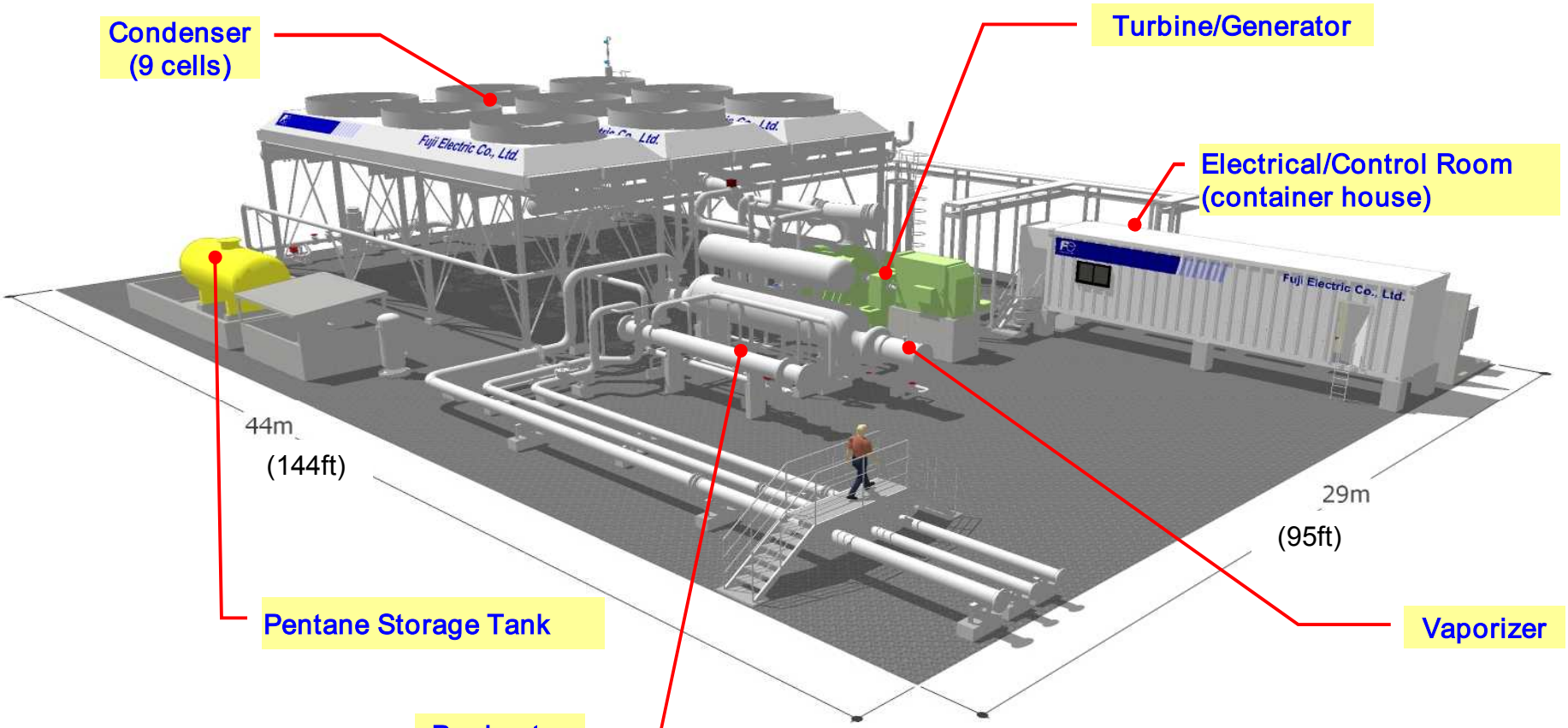
2MW Single Pressure with Air Cooled Condenser

- ✓Compact layout based on Fuji extensive geothermal experience
- ✓Sufficient space for operation and maintenance



Reference Plants

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Recent Geothermal Power Plant Supply Experiences

Client	Project	Country	Output	Status
EDC	Northern Negros *	Philippines	1 x 49.37MW	Jun 07 completed
PT PLN	Lahendong 2 *	Indonesia	1 x 20MW	Jun 07 completed
SRH	Svartsengi 6	Iceland	1 x 33MW	Feb 08 completed
Pertamina	Kamojang	Indonesia	1 x 63MW	Feb 08 completed
MRP	Kawerau *	New Zealand	1 x 95.72MW	Aug 08 completed
PT PLN	Lahendong 3 *	Indonesia	1 x 20MW	Mar 09 completed
MNL	Wayang Windu 2 *	Indonesia	1 x 117MW	Feb 09 completed
PENSA	San Jacinto 3	Nicaragua	1 x 38.5MW	Feb 12 completed
SRH	Reykjanes 3	Iceland	1 x 50MW	Mar 10 shipped out
MRP	NAP *	New Zealand	1 x 139MW	Apr 10 completed
PT PLN	Lahendong 4 *	Indonesia	1 x 20MW	Sep 11 completed
PENSA	San Jacinto 4	Nicaragua	1 x 38.5MW	Oct 11 completed
Hudson Ranch I	Hudson Ranch I	USA	1 x 55MW	Mar 12 completed
PT PLN	Ulubelu*	Indonesia	2 x 55MW	Oct 12 completed
Zorlu	Kizildere II	Turkey	1 x 60MW	Aug 12 shipped out
MGI	Maibarara I	Philippines	1 x 20MW	Mar 13 shipped out
Pertamina	Kamojang V	Indonesia	1 x 37MW	Jul 15 to be completed

Note: The projects with ”*” are under EPC contract with local partners.

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Nga Awa Purua (New Zealand) – Largest Unit

Location: Taupo, New Zealand
Rated Output: 139MW
Commercial Operation:
April 2010
Owner: Nga Awa Purua JV
(Mighty River Power Ltd.)

Steam Turbine Type:
Single Cylinder, Reaction,
Triple Pressure, Condensing
Scope:
EPC including Triple Flash
Steam Separation System

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Lahendong (Indonesia) – Recent EPC Experience

Location: Sulawesi, Indonesia
Rated Output:
Unit 2, 3, 4: 3 x 20MW
Commercial Operation:
Unit 2: June 2007
Unit 3: February 2009
Unit 4: September 2011

Owner: PT PLN (PERSERO)
Steam Turbine Type:
Single Cylinder, Reaction, Condensing
Scope: EPC

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Hudson Ranch I (USA) – Recent Experience

Location: Salton Sea, CA, USA
Rated Output: 55MW
Commercial Operation:
March 2012
Owner: Hudson Ranch Power I LLC

Steam Turbine Type:
Single Cylinder, Reaction,
Triple Pressure, Condensing
Scope:
Steam Turbine & Generator
Equipment Supply

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San Jacinto-Tizate (Nicaragua) – Recent Experience

Location: San Jacinto, Nicaragua
Rated Output:
- Unit 3: 38.5MW
- Unit 4: 38.5MW

Commercial Operation:
- Unit 3: February 2012
- Unit 4: January 2013

Owner: Polaris Energy Nicaragua
Steam Turbine Type:
- Single Cylinder, Reaction, Condensing

Scope:
- Steam Turbines & Generators Equipment Supply

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Ulubelu (Indonesia) – Recent EPC Experience

Location: Sumatera, Indonesia
Rated Output: 55MW
Commercial Operation:
October 2012
Owner: PLN

Steam Turbine Type:
Single Cylinder, Reaction,
Single Pressure, Condensing

Scope: EPC

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Innovating Energy Technology

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