



# Status of Geothermal Energy Exploration in Fiji

National Consultation on Renewable Energy Readiness Assessment

NOVOTEL

13<sup>th</sup> March, 2014

# Geothermal Energy

- Geothermal resource – heat (thermal) obtained from the earth (geo)
- Renewable and sustainable heat energy found in rocks and fluids in the earth's crust
- Associated with volcanic activity
- Consists of 3 parts:
  - Heat source
  - Reservoir
  - Circulating system
- Geothermal energy:
  - Generate electricity
  - Space heating and cooling
  - Industrial processing
  - Agricultural applications



# Geothermal Surveys/Explorations

## PAST

- Surveys have been carried out since 1956 undergoing reconnaissance investigations of hot springs in Fiji to detailed studies up until 1994 to improve the understanding of geothermal potential.
- An intensive study on power generation options on Viti Levu was conducted in 2009 by the Japanese government.
- Findings from the survey included:
  - 2 potential sites identified for geothermal energy production being Tavua and Sabeto;
  - Estimated production of 6MW geothermal generation;
  - Further studies into the sub-surface was suggested (drilling) to confirm the definite geothermal energy generation;
  - 1MW saves 5,100 t of CO<sub>2</sub> emissions.

## PRESENT

- Exploration companies have shown interest in geothermal exploration and has resulted in the issuance of Special Prospecting Licenses (SPLs)

# Study Area

FUJI ISLANDS

Scale 1:1750,000

Total Prognosticated

70MW ??

Tabia Area

>2MW

Waiqele Area

6MW - 19MW

6MW - 16MW

Savusavu Area

Reva Beach Area

>2MW

4MW - 16MW

Tavua Area

Others >3MW

Viti Levu

Western

Division

Eastern

Division

HOT SPRING LOCATION

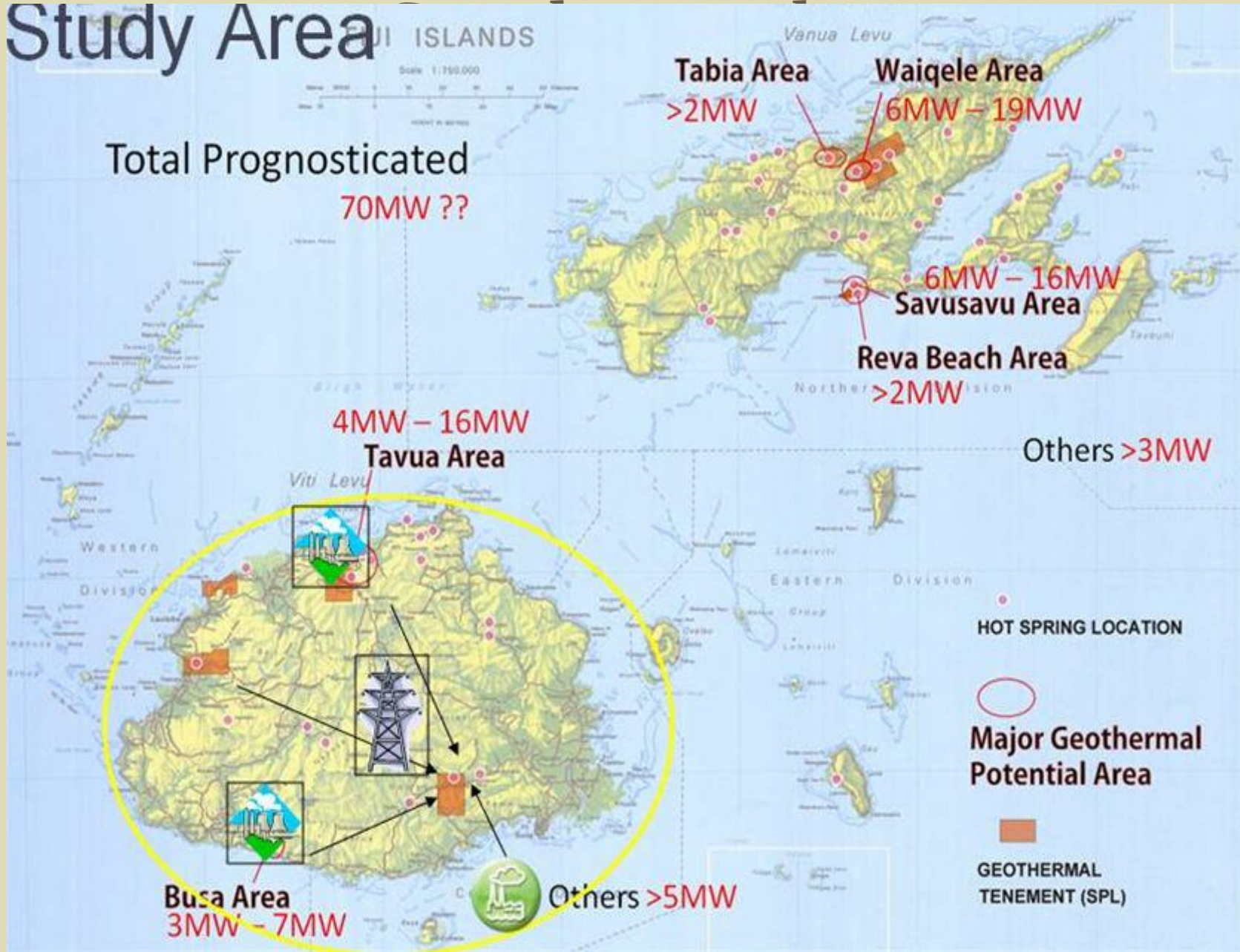
Major Geothermal Potential Area

GEOTHERMAL TENEMENT (SPL)

Busa Area

3MW - 7MW

Others >5MW



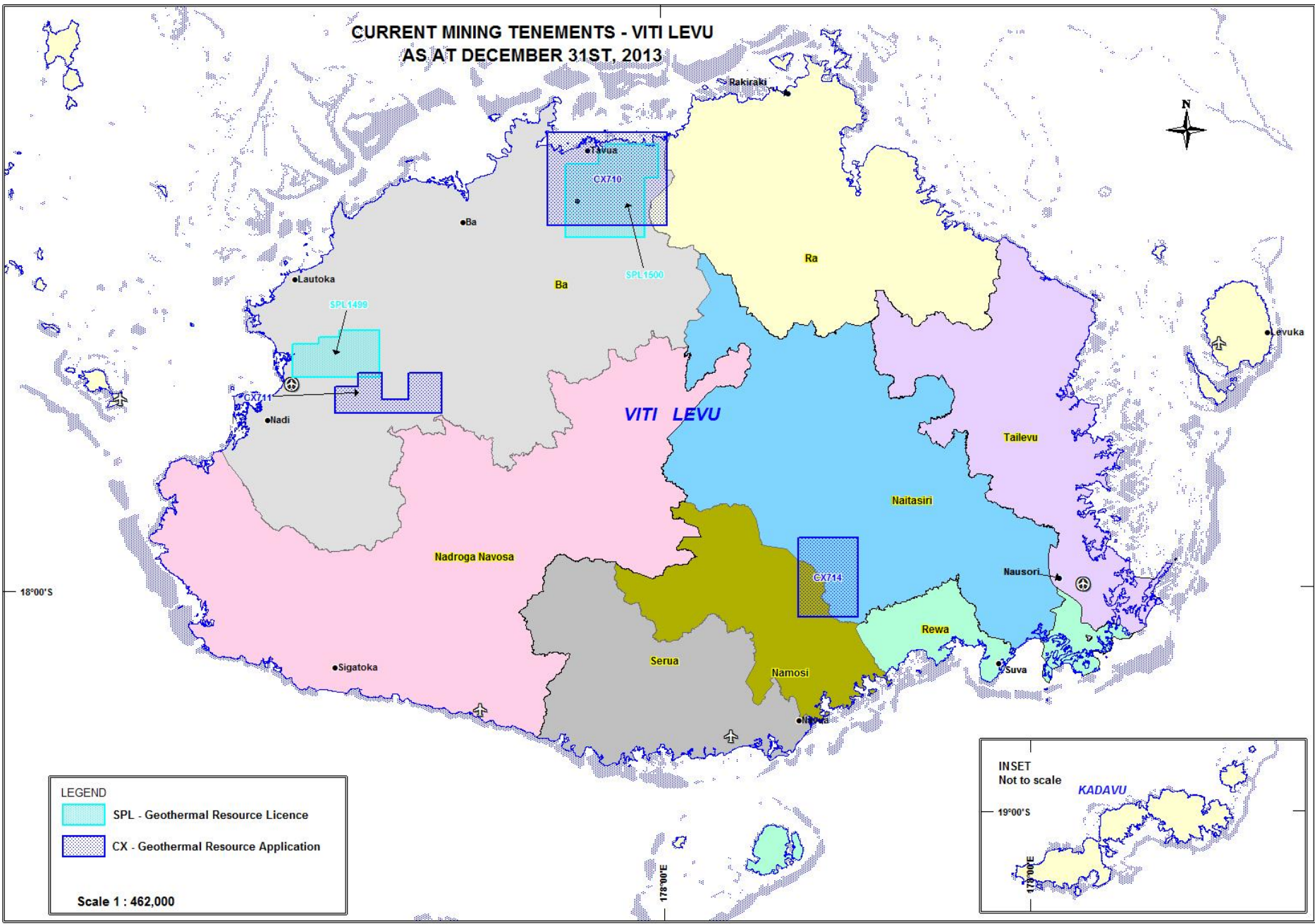
# Licensing

- Covered under the Mining Act (1978) as Geothermal Heat and its resources is classified as a Mineral
- 4 Special Prospecting Licenses (SPL) for geothermal exploration
  - (Savusavu, Labasa, Vatukoula, Nadi)
  - 2 active SPLs and 2 SPLs have lapsed
  - 4 applications on hold due to pending legal matters
  - Other prospective site – Namosi, Busa (Sigatoka)



# Licensing (cnt'd)

Location	Remarks
Labasa	Active license
Savusavu	Active license
Sabeto	Lapsed license
Tavua	Lapsed license
Ba, Tavua and Rakiraki	Pending application
Ba, Nawaka and Vuda	Pending application
Namosi and Waimaro	Pending application
Wailevu and Vaturova	Pending application

**CURRENT MINING TENEMENTS - VITI LEVU  
AS AT DECEMBER 31ST, 2013**



**LEGEND**

-  SPL - Geothermal Resource Licence
-  CX - Geothermal Resource Application

Scale 1 : 462,000

**INSET**  
Not to scale

**KADAVU**

19°00'S

178°00'E

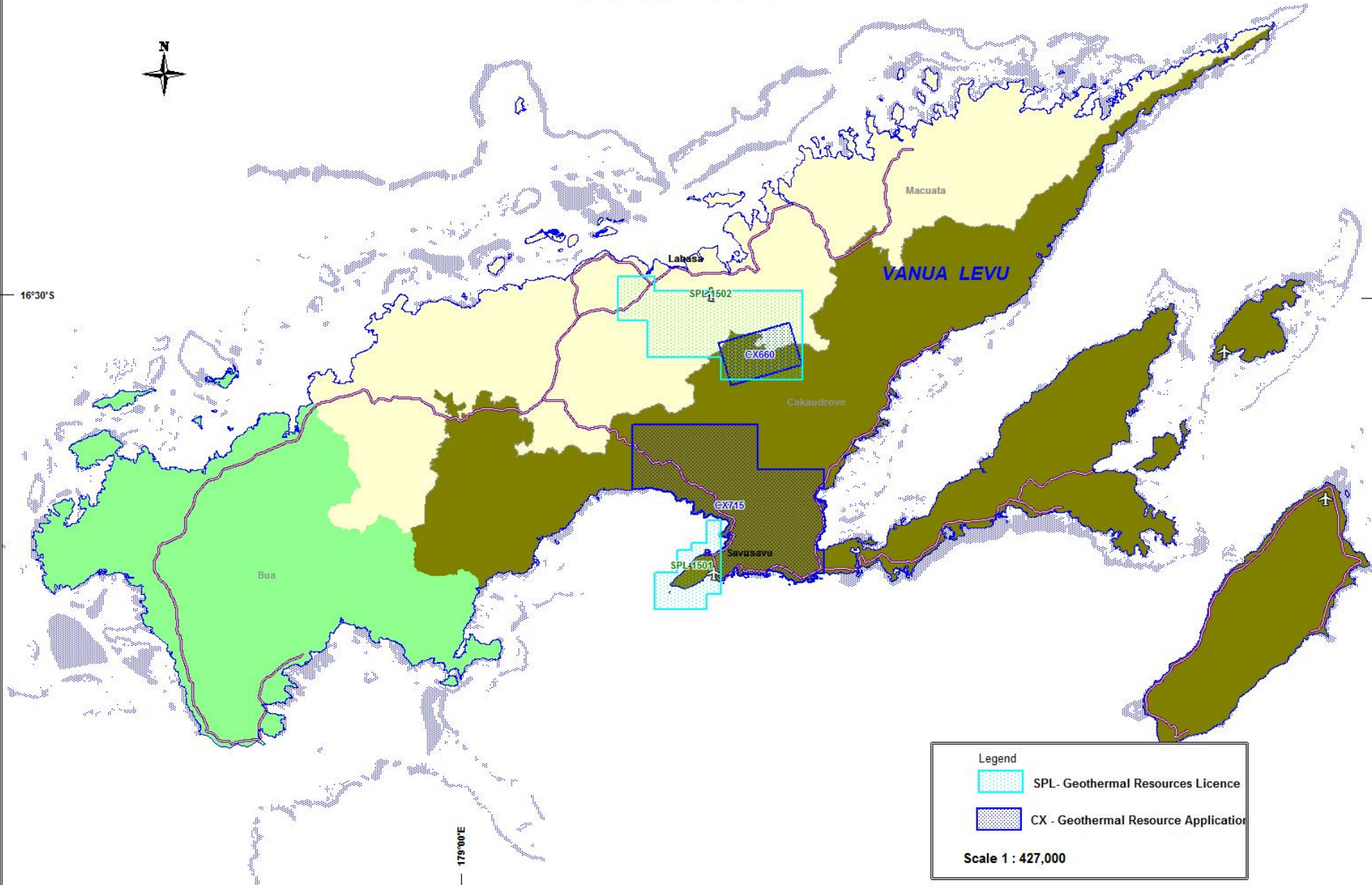


CURRENT MINING TENEMENTS - VANUA LEVU  
AS AT DECEMBER 31ST, 2013



16°30'S

178°00'E



Legend

 SPL - Geothermal Resources Licence

 CX - Geothermal Resource Applicator

Scale 1 : 427,000

# Legal Framework

- No specific legislation on geothermal resource.

Mining Act 1978 Section 2:

- *“The following mineral substances are declared to be mineral substances included in paragraph (f) of the definition of “minerals” in section 2 of the Act*

*Geothermal resources and their heat*

# Technology



Drill Rig