

Geothermal Development in Saint Lucia

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Location of St. Lucia



Country Profile

Small island-616 Km²

Population-175,000

Installed Capacity -88 MW

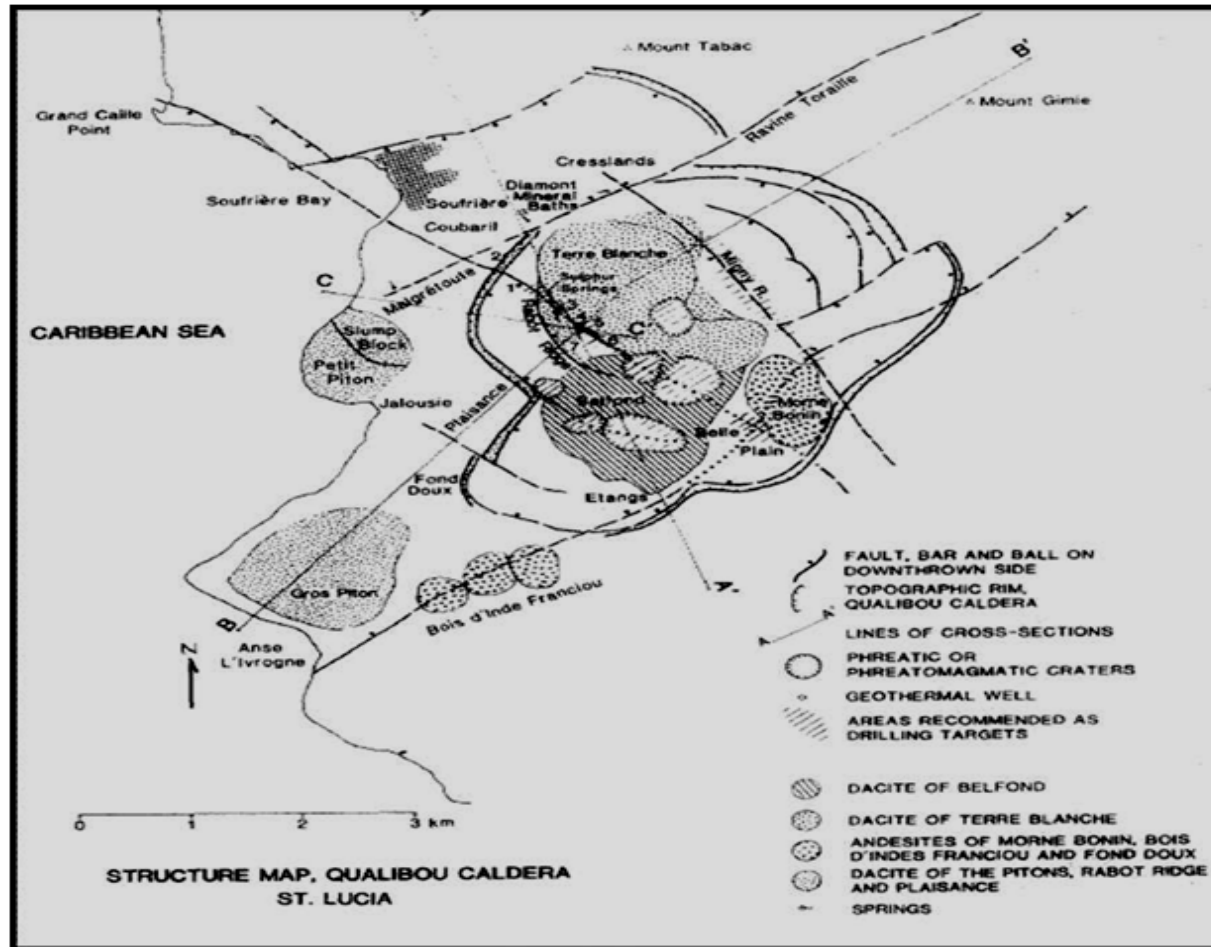
Peak Demand -60MW

Target of 20% renewable Energy by 2020

Volcanic Activity in St.Lucia

- Recent volcanic activity is in the Qualibou Depression near the south-western town of Soufriere
- Last major activity was a phreatic eruption in 1766
- Manifestation of fumaroles evident

Geology of Qualibou Depression

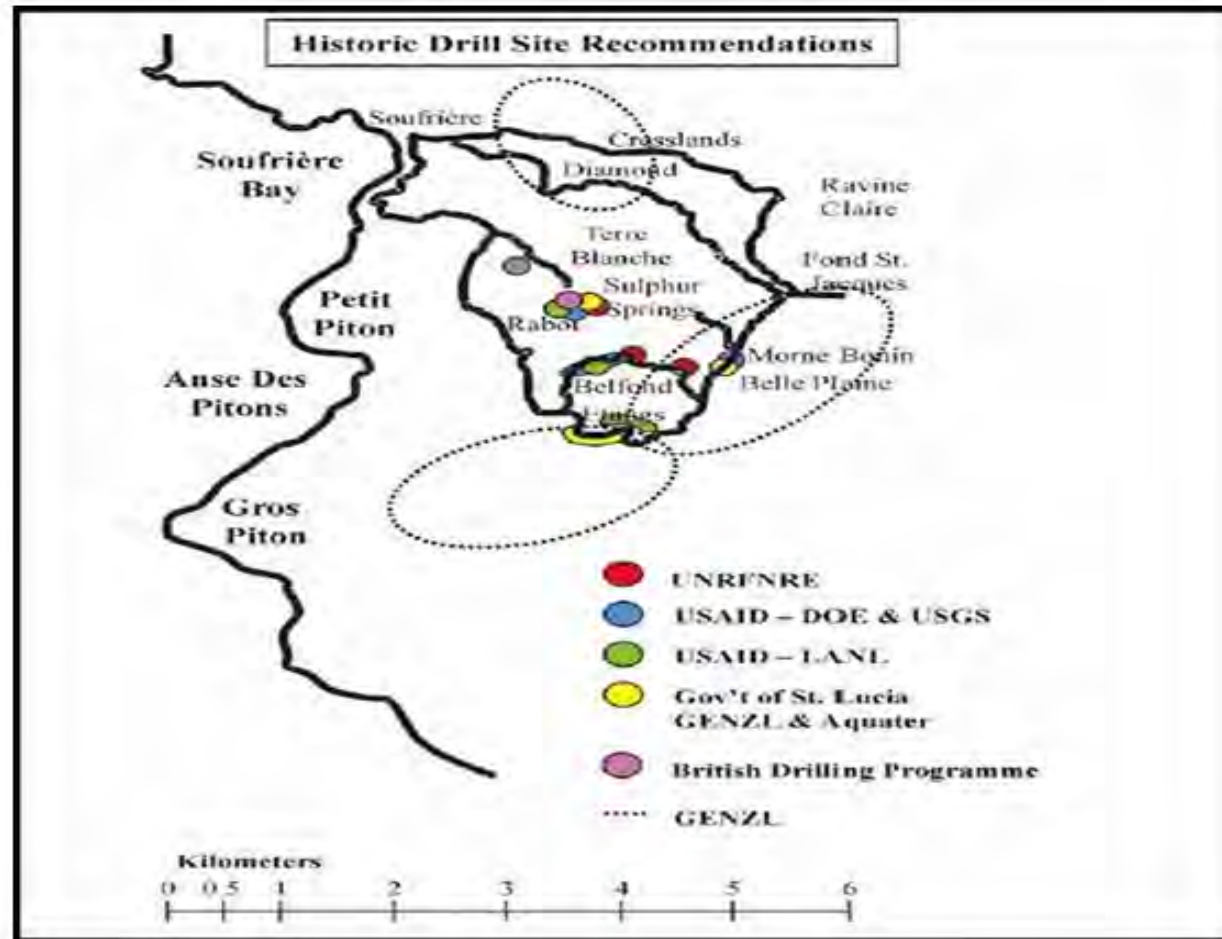


Geologic Map of the Qualibou Structure
(Source: **Wohletz et al. 1986**)

History of Geothermal Development

- Long and complex history
- Began in 1950's with involvement of various international organizations
- 9 exploratory wells drilled
- Challenges with geology and geochemistry

Historical Geothermal Drilling in Saint Lucia



Historical Geothermal Drilling locations in Saint Lucia
(Coles *et al.*, 2004)

Deep Geothermal Drilling in St.Lucia

2 deep wells in 1980's

❖ SL1(2, 213 m)

- Drilled in crater near Belfond Dome, Soufriere
- Not productive suggesting poor permeability and convective movement

❖ SL2(1413 m)

- located in the Sulphur Springs
- A gas-rich fluid and the well produced steam
- Gas with very low pH hence testing was discontinued

Geothermal Energy in Saint Lucia



Recent Geothermal Energy Developments

- 2004, 2010, Memorandum of Understanding with UNEC
- 2004 Geocaraibes Initiative
- 2013 Entry of established geothermal developer

Main Development Challenges

- Quantifying the resource
- Addressing the low pH
- Maintaining World Heritage Status-The World Heritage Committee advises “that power generation not be developed in the Sulphur Springs” (UNESCO, 2004)

The Way Forward

Need for finalisation of appropriate policy and regulatory framework

Decoupling of exploration and exploitation?

Need for expert skills and advice in geothermal development

An aerial photograph of a tropical coastline. In the foreground, a small, crescent-shaped beach with white sand is visible, surrounded by clear, shallow turquoise water. The water transitions to a deep, dark blue as it extends into a large bay. In the background, a range of rugged, forested mountains rises, with two prominent, sharp peaks. The sky is a clear, pale blue. The text "Thank you" is overlaid in the center of the image.

Thank you