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
Thank you