

A Review of Caribbean Geothermal Energy Resource Potential

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(Received 11 March 2018; Revised 20 September 2019; Accepted 04 November 2019)

Abstract: *The Caribbean Community (CARICOM) is comprised of fifteen-member states each exhibiting geographic, cultural and economic diversity. Six of these CARICOM member states along the Eastern Caribbean chain of islands display high-enthalpy systems for geothermal energy exploitation. This paper aims to provide a review into the geothermal energy resource potential across the Caribbean and presents quantitative findings as to the potential power production, economic and environmental savings through which geothermal energy development can bring to each respective nation. Notable findings for a 2027 scenario project an estimated 184.49 MW of geothermal capacity that can be absorbed into the national energy mix, displacing 855,600 barrels of oil (bbls) importation, resulting in approximately 1.1 million tonnes of carbon dioxide (tCO₂) emissions being avoided per year. An inter-island grid connection approach is presented to tackle large-scale energy projects to attract financial investors in an effort to combat the upfront challenges associated with geothermal energy development.*

Keywords: *Geothermal energy; Eastern Caribbean islands; Inter-island grid connection; Caribbean geothermal landscape, renewable energy*