Energy transition basseterre

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St. Kitts and Nevis (WINN): At COP 28 on Tuesday, November 05, 2023, St. Kitts and Nevis put forward a National Technical Presentation under the theme Strategising Sustainability.

The Federation is on par to be the first Small Island State to transition to renewable energy. St. Kitts and Nevis will likely see a complete execution of its renewable energy plans by 2028, well ahead of the 2030 target year. Nevis is believed to have the best geothermal resource in the world, which can produce approximately 1,000 megawatts of power at 98% capacity. Four geothermal sites were explored in Nevis; the first three were dug in 2007, and the fourth was dug in 2018. The four wells produced similar results in terms of temperature. The temperature of the resource ranged from 250 to 290 degrees Celsius. The resource is said to be on the island’s west coast and spans from approximately 18 square kilometres up to 36 square kilometres.

At COP28, Ian Ward, Chief Engineer at the Nevis Electricity Company (NEVLEC), was tasked with the responsibility of providing a roadmap presentation for the St. Kitts and Nevis renewable energy transition project, specifically, the transition from imported fossil fuel to geothermal energy. The plan is to implement 66-kilovolt transmission systems on each island and interconnect them through submarine cables.

Phase 1A is expected to be achieved between the period 2024 to 2025. This includes drilling five wells at Hamilton Estate Nevis and constructing the first 66-kilovolt submarine cable from Cades Bay, Nevis, to Majors Bay, St. Kitts. The cable will serve as an initial link for power exchange between the islands. Phase 1A has an estimated total cost of US $42.6 million.

Phase 1B is expected to be achieved by the end of 2025. This will include the construction of a second 66-kilovolt cable transmission link consisting of an underground cable from Hamilton Estate to Prospect Estate Nevis, a submarine cable from Charlestown Nevis to Port Zante St. Kitts and an underground cable from Port Zante to Needsmust Estate St. Kitts. Five substations will also be constructed in Phase 1B. The total cost for Phase 1B is US $45.7 million.

Phase 1 C is expected to be achieved by the end of 2026. It will include installing a third 66-kilovolt transmission link between other areas in St. Kitts and Nevis. This will be the second first leg of the line that will link all power stations in St. Kitts and Nevis together. Seven other substations will also be constructed in areas such as Hamilton Estate Plant Site, Spring Hill, Cades Bay and Maddens in Nevis and Frigate Bay, Needsmust and Majors Bay in St. Kitts. Phase 1C has an estimated cost of US $55 million; as such, the estimated total cost for Phase 1 is US $143.3 million.

Phase 2, also by the end of 2026, should see two new geothermal wells at Prospect and Long Point Nevis. The estimated total cost for Phase 2 is US $28.8 million.

Phase 3 will include the construction of a 50-megawatt geothermal plant at Hamilton Estate, Nevis, and 66-kilovolt lines from Prospect to Long Point, from Charlestown to Long Point and from Charlestown to Cades Bay in Nevis. The total estimated cost for Phase 3 is US $162.9 million.

Phase 4 should be completed at the end of 2028. It will include a 20-megawatt Power to X facility at Long Point, a 66-kilovolt ring of cables, and construction of substations in Nevis and St. Kitts. Substations are expected to be built in major towns: Saddlers, Newtown Ground/ Fig Tree, Cayon/ Ottleys, New Road, Trinity and New Guinea. Phase 4 has a total estimated cost of US $170 million. The cumulative cost for the entire Geothermal Project in St. Kitts and Nevis is US $505 million.

In the presentation, Mr Ward outlined some key benefits of the green energy transition, including energy security and independence, Economic development and growth, Environmental Protection and Climate Mitigation and Social Welfare and equity.

Ward added that the process has begun, and the general public will continually be engaged about the project.

“We’ve already begun that process, we’ve had town hall meetings, and we’ll continue to have town hall meetings when we go into the transmission lines, but that will impact persons living in certain neighbourhoods, and so then we want to make sure that in part of that process that they be included in the process and obviously whatever questions they ask, we’ll be able to answer those questions. I think most people are very excited, I know in Nevis about the potential. It will be life-transforming. It is a game changer, and we believe that, with partners, we can make this into a real success story.”

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