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Community energy and emissions planning for tidal current turbines: A case study of the municipalities of the Southern Gulf Islands region, British Columbia

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Society's dependence on fossil fuels to meet energy demands proliferated during the Industrial Revolution has resulted in an enormous release of greenhouse gas (GHG) emissions into the atmosphere, thereby perpetuating global climate change and the adverse implications on society associated with it. The consequences of climate change have prompted progressive governments such as British Columbia to establish legislative GHG emission reductions targets, which have led to energy conscience municipalities within the province voluntarily committing to helping achieve such targets. Best practices examined from European municipalities share a common theme of renewable energy adoption and municipally-owned utilities. This paper examines the feasibility of the municipalities of North Pender Island, South Pender Island, and Saturna of the Southern Gulf Islands Region, British Columbia, to help meet established GHG emissions reduction targets through the implementation of tidal current turbines (TCTs) with the intent of generating carbon-free electricity. The paper then examines a case study in the Shetland Islands and Pentland Firth and Orkney Waters, Scotland, suggesting that jurisdictional regulatory powers over TCT installation and operation be devolved from the British Columbia government to the municipal governments of North Pender Island, South Pender Island, and Saturna, so that such communities can reap the benefits associated with a municipally-owned utility.

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