

# McCULLOUGH RESEARCH

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PRINCIPAL

Date: October 10, 2017  
To: British Columbia Utilities Commission  
From: Robert McCullough  
Subject: Problems with British Columbia Hydro's F1.11 Response

o Wind projects are typically considered at their end of life after 25 years and as each facility approaches its end of life, the owner must decide whether to decommission or repower. The decision whether or not to repower a site will depend on factors such as market conditions for equipment and construction, and environmental and wind resource assessments.

o Repowering will require significant refurbishment costs to decommission and replace existing wind turbines and towers. In addition, continued technology evolution that drives efficiency gains is expected to increase the size of the wind turbines, which likely changes the number and siting of turbines and creates the need to decommission and replace the existing foundations.

o Repowering a wind generation site requires the decommissioning of a significant portion of the original infrastructure (turbines, towers, and possibly foundations) and may result in a significant period of time when the facility is out of service.<sup>1</sup>

The National Renewable Energy Laboratory has undertaken a very detailed study of repowering wind with significantly more favorable conclusions:

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<sup>1</sup> British Columbia Utilities Commission  
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British Columbia Hydro & Power Authority  
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Both financial analyses concluded that repowering tends to become financially attractive, relative to investing in a nearby greenfield site, after approximately 20–25 years of service. Plants less than 20 years old are expected to be capable of generating a favorable revenue stream for several more years.<sup>2</sup>

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<sup>2</sup> Wind Power Project Repowering: Financial Feasibility, Decision Drivers, and Supply Chain Effects Eric Lantz, Michael Leventhal, and Ian Baring-Gould. December 2013, page vi.