

1 Q. Reference: Teshmont Report - Section 5 – HVDC Reliability Data (Part 5.2) Data  
2 Provided by Nalcor Energy (pg 21):  
3 ***5.2. Data Provided by Nalcor Energy***  
4 ***“The forced outage rates and availability of the HVDC systems are highly***  
5 ***dependent on their design, installation, and location (for example availability of a***  
6 ***spare converter transformers and/or submarine cables can significantly improve***  
7 ***the reliability of the overall system). Therefore, unless details of a specific system***  
8 ***are available, an accurate estimate of its forced outage rates and availability***  
9 ***cannot be calculated. For the purpose of this study, Teshmont is planning to use***  
10 ***the following values, which are based on the information that was provided to***  
11 ***Teshmont by Nalcor Energy.”***

12 Are there industry standards regarding the level of specificity required when  
13 providing an accurate probabilistic assessment? If so, what information is typically  
14 required to complete an assessment?  
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17 A. It is a typical approach to conduct a probabilistic reliability assessment for the  
18 addition of HVdc systems prior to finalizing all details associated with design and  
19 operation. Such systems do not have an operating history as a basis for predicting  
20 future outage rates and repair times. Reliability analysis is therefore performed  
21 through the use of assumed outage parameters that are assessed and benchmarked  
22 against industry statistics. This is the procedure that Teshmont performed in its  
23 analysis. Teshmont used its experience as an owner engineer and previous  
24 involvement in the design, specification and operation of HVdc systems to review  
25 the reliability study and data provided by Nalcor in the context of using CIGRE and  
26 CEA statistics. Such a methodology allows for a probabilistic reliability assessment

- 1 to be performed such that the availability of the HVdc system under review is based
- 2 on industry averages.