

SUMMARY Resource Options Update:  
 NOTES Run-of-River

July 6, 2015  
 10:30 – 11:30  
 BC Hydro Dunsmuir

TYPE OF MEETING	Technical Engagement – Run-of-River Characterization Meeting #2
ATTENDEES	Jack Buchanan (Ministry of Energy and Mines), Stuart Croft (Summit Power), Lucas de Haro (Sorgente Hydro), Ken Dextras, Mike Hopkins (FortisBC), Jamie Horner (Innergex Renewable), Paul Kariya (Clean Energy BC), Ron Monk (Kerr Wood Leidel – consultant for BC Hydro), Frankie Nash (Clean Energy BC), Nguyen Pham (FortisBC), Rebecca Putters (Sorgente Hydro), Matt Schuett (Clean Energy Consulting), Jay Sutton (Alterra Power), Ron Zeilstra (FortisBC)
BC HYDRO	Susan Burton, Edlira Gjoshe, Anne Wilson, Randy Reimann
OBJECTIVES	Review final Kerr Wood Leidel Run-of-River Hydroelectric potential report findings and considerations from March input
AGENDA	<ol style="list-style-type: none"> <li>1. Objectives and expectations of the meeting</li> <li>2. Addressing issues from March</li> <li>3. Summary of findings</li> </ol>
MATERIALS	Presentation Slides

MEETING SUMMARY
<p>The meeting was opened with BC Hydro welcoming people to the meeting and a round of introductions was undertaken. Susan Burton let people know the objectives of the session were to review the update results and respond to issues brought up during the March engagement, and then walked people through the presentation slides. The subsequent notes include questions and comments related to the associated slide number.</p> <p><b>Slide 4</b></p> <p>There was a question as to how the permitting costs were derived. The consultant for BC Hydro, Kerr Wood Leidel (KWL), explained that the costs were estimated based on experience of various projects and that the move to a tiered approach was thought to be better representative of the actual costs.</p> <p><b>Slide 5 – Issue #1</b></p> <p>A participant mentioned that there is a lot of resource potential that is being excluded because of this screening. An example of a project on a salmon bearing stream was raised, and that it was a successful project and most of the mitigation was included with river flow. It was wondered if those streams could be included with use of a relatively high ranking mechanism, e.g., stipulate a minimum in-stream flow of 50% mean annual discharge (MAD).</p> <p>It was clarified that although they have been excluded from the resource options inventory for planning, it is not excluded from the project not being developed. At this point, BC Hydro can recognize the comment in the report, but was not sure how any inclusion would be approached.</p> <p>It was clarified by the consultant that this current review is not a change from the methodology that was established in the original inventory from 2007.</p> <p>A participant questioned whether the potential of the 79 sites that have been removed could be included in the write up. It was clarified that 79 sites were screened out this year, but that there were a lot more sites screened out originally. The database currently includes over 7,000 sites.</p> <p>It was acknowledged that including these sites now would be a significant layer, and as a layer was never established for these sites, BC Hydro would not be able to easily say the amount of potential. For this update, BC Hydro will not be able to add the potential, however, will provide commentary in the write up and will consider how to approach this in the future.</p>

**Slide 5 – Issue #2**

It was clarified that BC Hydro will be looking at storage potential, particularly in the North Coast region. More generally, BC Hydro will be looking at future updates with storage potential for small hydro, and a participant suggested this could lead to a different definition of run-of-river. BC Hydro also noted that an alternative would be to look at changing existing facilities and how that would be assessed.

The idea of salmon-friendly power was raised by a participant, and that there needs to be some work done where storage capacity for power is considered as well as storage for fish. Combining first for fish and second for power, and it could be packaged for environmental benefits.

A participant raised that there is an issue with storage for different options – daily and seasonal storage. BC Hydro mentioned that generally the system needs is two weeks, and two weeks through December and January (16 hours a day 6 days a week) to meet the peak load.

It was commented that knowing what storage may be needed makes a huge difference on how the projects are developed. There was some discussion regarding various options for development, and that could have multiple solutions on the same creek.

The consultant mentioned the model uses coarse assumptions, such as assuming 1.5 times MAD for project design flow and 15% MAD for in-stream flows, and with storage it is quite a bit more complicated. Targeting the amount of storage that is needed would be helpful.

**Slide 5 – Issue #3**

It was clarified that in the absence of actual costs from projects, 2% of capital cost is being used for this update. There was a question as to when the next update would be. BC Hydro responded that the timing for the next update is not known and that BC Hydro is working towards an evergreen approach; however, refining the operations, maintenance and administration costs is something BC Hydro could add in for run-of-river this fall (as well as for the work being undertaken for storage).

**Slide 7**

Comment on capacity in the north coast that this transmission region is large and heavily influenced by inland projects and the shape is more comparable to the Vancouver island shape.

**Slide 8**

It was explained that this graph is showing how much costs can change depending on where you are building in remote locations. This figure shows the average capital cost for all potential resources in each location category. The figure illustrates a large part of the cost is transmission as resources become more remote.

It was clarified that a population of 25,000 constitutes a major town or city centre.

**Slide 9**

It was clarified that the unit energy cost (UEC) are real costs in 2015 dollars.

**Slide 13**

It was clarified that dependable generating capacity (DGC) is the capacity that can be generated 85% of the time through December and January.

There was a concern raised by a participant about the public perception of that number, e.g., people will say why are you building something when you only get a fraction of installed capacity from it. It was suggested that providing the definition would be helpful for public understanding. BC Hydro will add an explanatory note to the slide.

A question arose as to whether BC Hydro is looking at pumped storage and it was clarified that work has already been done with a number of studies on pumped storage. Now we are looking to storage potential for small hydro, and pointed to the work this fall.

Participants were thanked for participating and meeting close.