



California Energy Commission
Docket Office, MS-4
RE: Docket No. 11-RPS-01
RPS Proceeding
1516 Ninth Street
Sacramento, CA 95814-5512

April 5, 2013

To whom it may concern,

RE: Docket No. 11-RPS-01-- Analysis of Regulatory Requirements for Including British Columbia Run-of-River Facilities in the California Renewables Portfolio Standard

The Clean Energy Association of BC (CEBC) represents the majority of run-of-river hydro operator/developers in BC and respectfully submits this review of the captioned consulting study on behalf of its members.

CEBC is a member driven industry association which exists to represent the clean energy sector to the general public, colleague industries, BC Hydro, senior governments and First Nations. Within our 225 members are developers, operators, equipment suppliers, contractors, consulting services and First Nations.

We represent all clean energy and renewable fuels such as small hydro, wind, bio-gas, bio-mass, natural gas and emerging technologies in BC such as solar, kinetic hydro, geo-thermal and storage.

Respectfully, we believe that sections of the consulting report need to be amended and re-worked and we provided examples of these in our review and commentary.

We believe that run-of-river hydroelectric generating facilities in British Columbia, should be included as renewable electrical generation facilities pursuant to Section 25741 or eligible renewable energy resources pursuant to Article 16 (commencing with Section 399.11) of Chapter 2.3 of part 1 of Division 1 of the Public Utilities Code.

We look forward to being involved with further dialogue and discussion as the California Energy Commission proceeds with its process to consider BC's run-of-river facilities for eligibility in California's RPS.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Kariya".

Paul Kariya
Executive Director

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Analysis of Regulatory Requirements for Including British Columbia Run-of-River Facilities in the California Renewables Portfolio Standard

The following is a chapter by chapter review, including the Executive Summary (below) of the captioned report prepared by consultants to the California Energy Commission (CEC).

Comments on Executive Summary

Under Stakeholder Issues, we ask the CEC to be mindful how political and politicized the subject of run-of-river hydro has become in BC. We believe that these negative views are not widely held but reflect an active minority who use every opportunity, including this CEC process to express their position (which they are entitled to do). These opponents of run-of-river hydro are against the involvement of the private sector in electricity development and operations in BC.

CEBC and its members have an active and robust dialogue with the environmental community in BC to try to find pathways forward on how best to power society today and in the future, ever mindful of the need to find balance between the environment and economy. All the leading environmental organizations are participating in this dialogue.

CEBC understand that there are environmental impacts associated with all natural resource developments, including run-of-river hydro, but we are confident that overall the regulatory and EA processes in BC are robust and protective of the environment. We believe the regulatory regimes between BC and California are compatible and comparable.

Where there may be differences of opinion on topics such as cumulative effects assessment, public involvement and process transparency we are actively working with government agencies and others to improve procedures, policies and standards.

Comments on Conclusions

Less than 30MW – the report provides no information why this ceiling should be applied or retained. In fact in certain sections the authors' logical conclusions appear to favour a higher threshold as potentially more acceptable from the perspective of the environment, i.e. provincial EAO threshold for EA cumulative effects, public outreach and lighter CO₂ and emissions (construction) foot print. With respect to environmental impacts, plant capacity is not necessarily a useful indicator.

Cumulative Effects (CE) Assessment – we argue that the regulatory process today in British Columbia through the BC Environmental Assessment Office, EAO or Ministry of Forest Lands

and Natural Resource Operations, MFLNRO, Development Plan process (smaller projects) require similar CE assessment, but agree with the report that this subject is complex and needs further effort – especially on how to and who to undertake assessments. The BC Business Council (Bulletin Vol. 4, Issue 6, November 2012) has published an excellent paper which in highlight states,

“ ... [Cumulative impacts assessment]CIA as more properly being the job of government given its broader economic, environmental and social responsibilities and its unique role to articulate the ‘public interest’....the main focus of CIA should be regional, with efforts directed to how best to deal with risk and uncertainty using clearly articulated and measureable objectives. Project proponents and the business community generally should be considered as partners in the CIA process; they can contribute data from project-specific monitoring programs (rather than being responsible for leading the definition of baselines) and collectively participate in the dialogue, along with other stakeholders, about the social choices surrounding economic development.”

In stream flow Requirements – run-of-river projects under go comprehensive site specific studies by qualified professionals to determine what are appropriate in stream flows. Additionally these projects once operational undertake comprehensive monitoring. In the last quarter of 2012, CEBC commissioned an independent review of run-of-river hydro and their impacts on salmonids in BC. This study, currently underway is being led by Dr. Brian Riddell and Pacific Salmon Foundation (PSF).

Ecologo Certification – as noted in the consulting report, most of the CEBC member run-of-river hydro projects are certified by this private 3rd party certifier of low impact hydro electricity. Since 2008/09 CEBC at the invitation of TerraChoice (certifying organization) has been participating in an advisory committee to try to update and improve the standard.

Documentation – comparability to California's Environmental Standard – with respect, we believe the BC's standard is comparable today. In fact in some respects it is clear that BC's standard is higher, i.e. consultation with First Nations, which involves strong environmental concerns. As an industry association we do our best to meet and improve standards where needed.

Transparency – we believe that the process in BC is transparent. Posting all monitoring information to public websites is a positive idea which CEBC has encouraged the BC government to act upon.

Chapter 1: Introduction

Run-of-river hydro is defined. However, since the comparator project from California is a small storage hydro project, storage hydro should also be defined and explained. The differences between these two types of technologies should also be explained.

California, British Columbia and Pacific Northwest have history and experience with traditional storage hydro electricity development projects. Despite considerable benefits to society and ratepayers it is highly unlikely that due to significant impacts (cumulative and otherwise) most of these projects would not be approved today under similar criteria set for the approval of run-of-river hydro:

- Emissions of carbon dioxide (CO₂) and other greenhouse gases
- Emissions of air Pollutants.
- Water quality, recreation, and fisheries.
- Any other environmental impacts caused.

As an example, BC Hydro has tabled its environmental assessment application for Site C, an 1100 MW storage hydro project on the Peace River, but this project is controversial and has been under development for over 25 years.

The last paragraph on page 6, 2nd line has the phrase, “...is not an eligible renewable energy resource if it would cause an adverse impact on in stream beneficial uses or cause a change in the volume or timing of stream flow,” however, one must point out that by their nature and definition, all hydro electric projects cause impacts. Isn’t the question one of, quantifying the adversity of the impact, - i.e. how significant impacts might be against a baseline of characteristic trends and whether impacts can be mitigated?

On page 7, the last line of the first paragraph is not true and simply repeats the messaging from a small number of environmental organizations (ENGOS) that IPPs are negatively impacting BC Hydro. If BC Hydro was prohibited from generating additional power, how could it be pursuing Site C (noted previously) with a projected capacity in excess of all IPPs in BC! Additionally, at considerable public expense, BC Hydro is renovating or upgrading major storage hydro facilities such as Revelstoke, John Hart, Ruskin to generate additional incremental power.

Page 10 includes a section titled, Run-of River Project Operations, however the text on page 12 speaks entirely about “locations for potential run-of-river hydro projects,” and includes Figure 4, the oft shown dot map of topographic potential sites. These are not operations, and the chance of most of them becoming operational in our lifetimes is near zero. Again, organizations like

Wilderness Committee have sensationalized this information by speaking of a “gold rush” and thousands of projects to be built when this is not true. For the CEC report to present this information without context is at best unfair to an industry working hard to be responsible with operations and new developments (note that there has not been a call for power by BC Hydro since 2008) and at worst plays into the sensationalism and rhetoric of opponents. Salient contextual points the consultants could add in this section:

- BC Hydro has the ability to manage its storage dams, to store freshet power which it utilizes or sells when convenient and profitable.
- BC Hydro pays less for power during freshet, when there is abundance.
- With development of Peace River wind and other intermittent power sources, and improved transmission capacity, there is improved possibility of balancing intermittent sources with other intermittents.
- To cite a range of “\$66 – 600”, even with the rider that “Table 3 does not distinguish what is economically viable to build,” serves what purpose, especially with Figures 3?

Chapter 2: Stakeholder Issues

While the CEC process has provided opportunities for public comment, it is a significant error and omission that First Nation voices have not been heard, nor has a process been established in the review to seek their input. It is inappropriate and perhaps morally wrong to implicitly suggest they have had an opportunity to participate in a public process like other stakeholders.

In British Columbia, where 2/3rds of the province is not covered by treaties, the largest and last area in North America not covered by treaties, governments have very specific responsibilities to consult with, accommodate and even compensate First Nations for natural resource developments that impact their potential rights and title. Similarly, private sector developers also have responsibilities to consult with and work with First Nations. The clean energy sector, which represents run-of-river hydro developers, has arguably demonstrated this, perhaps better than other industrial sectors in British Columbia.

Page 22, citing clean energy reports, notes that 125 First Nations have had dialogue and involvement with clean energy association members. However, far from token involvement, First Nations are developers, joint venture operators and recipients of significant benefits from clean energy projects, the largest sub-sector, being run-of-river hydro developments. Mindful of environmental impacts, First Nations are cautious about all developments on their traditional territories. They more than other interests or stakeholders, carefully weigh the balance that needs to be found between the environment and economy. They understand that well sited, a hydro plant could have a life on the landscape that can exceed 50 to 60 years.

If the sections, “Regulation”, “Public Outreach”, “Impact Analysis”, “Cumulative Effects Analysis”, “Fish and Other Habitat”, are opinions of various stakeholders, including those who are avowed opponents of run-of-river hydro based on ideological opposition to private sector involvement in clean electricity, then comments should be attributed to those organizations.

It is unfair and biased to let comments stand without attribution or additional authorship caveats; lines such as, “Environmental standards for run-of-river projects in BC are less stringent than for other industrial projects, even if the impact is comparable.”

If indeed this chapter is a place to express what has been heard from various stakeholders, clearly indicate the same, and place the statements in quotation marks and indicate the source. To do otherwise calls into question the unbiased and analytical basis of the whole study.

Chapter 3: Run-of-River Permitting

Why does this chapter begin with the controversy over Bill C-30, Miscellaneous Statutes Amendment Act, Amendment to the Utilities Commission Act unless it is to become embroiled in the public vs. private ideological political debate that remains an undercurrent to run-of-river power in BC. If this section is to remain, without editing, then additional commentary must be provided by the consultants to point out that, no other industrial sector, forestry, mining and oil and gas, in BC, faces a parallel situation to that of clean energy. Indeed, opponents of the clean energy sector have attempted to use all means at their disposal including local government zoning to block developments in certain jurisdictions. The provincial government’s response in Bill C-30 was to try to correct a loop hole to put all industrial developments on a similar and fair footing. These amendments had no material effect on environmental and regulatory review and oversight which rests appropriately under provincial and senior jurisdictions.

As a fair parallel commentary, the report does not cite the tremendous negative responses and various tools and tactics used by local opponents to the history of hydro power development in California. Why not, if the report is to provide comparative analysis?

Under the section, “British Columbia Run-of-River Hydro Project Permitting,” it would be helpful to the reader if similarities/differences in environmental assessment process for permitting sub 50MW and over 50MW project applications were presented in tabular form. If the differences are around public participation, this should be stated. As noted on page 24, sub 50 MW projects also must notify and involve the public in the project approval process.

p.24 - 2nd paragraph, and p. 25 – 3rd paragraph, Thielmann, 2010 is cited as an important resource but there is no bibliographic listing?

p. 25, 3rd bullet from the bottom, “occupant license to cut timber on Crown land,” is cited as lenient on potential environmental impacts and run-of-river applications; however, in broader context the opposite is true. What is missing from the analysis is knowledge of how forest tenures are held, managed and maintained in BC. A comparative analysis would show that for a forest company to cut trees or access gravel or place spoils from road building activities is a minor matter with no need to notify authorities versus separate applications and approvals required for the run-of-river project. While Thielmann 2010 may appropriately cite regulatory underdevelopment in some aspects of the clean energy project development process in BC, the opposite case can also be made for run-of-river and wind developments. Caution must be exercised in judgments based on limited empirical work or a cursory understanding of circumstances.

For Federal regulations, as a result of Bills C-38 and C-45 we are awaiting the full impact of changes to the Fisheries Act, Species at Risk Act and Navigable Waters Act – all which impact run-of-river hydro developments.

On page 28, reference is made to Ecologo certifications, which as correctly noted, most of the projects in BC are certified. What is erroneous and again perhaps indicates that the consultants have only heard from the anti-run-of-river minority in BC is the statement just before Table 6 that states, “Ecologo initiated a comprehensive revision to its low-impact hydro renewable electricity standards in 2012” In the preceding line, Larry Pynn, a Vancouver Sun reporter’s 2012 story is cited as if his reporting of fish kills had directional input to Ecologo’s decision to launch a “comprehensive revision.”

Ecologo (a federal government brand administered by TerraChoice which was bought by US based Underwriters Laboratory in 2010) initiated its routine review of electricity back in 2008/09. I say routine because, TerraChoice’s executive went to great pains back at that time to indicate that as part of their market responsibilities, they regularly update their standards whether they needed updating or not, to ensure that they set the bar to capture only the top 20% of any product/service suppliers. As responsible industry we asked if meeting governmental regulatory standards were enough and they indicated “no” despite our expressed concern that TerraChoice could not properly review and assess a higher standard in their audits.

In 2010, Ecologo implemented new standards for wind, solar and bio-mass. There was no concurrence amongst interest groups with the proposed new hydro standard. TerraChoice instituted a new round of consultations with industry starting in 2010; it appointed a new Advisory Council and a Technical Committee. By early 2012, anti-run-of-river forces had contacted Ecologo and shared with them information leaked from federal and provincial ministries and information also gleaned under provincial Freedom Of Information about fish kills



in 2010 which totaled less than 250 fry and juveniles from all 42 operating projects in BC. Larry Pynn wrote the exposé article.

Incidents of fish kill – 167 fish, especially during ramping calibrating problems with one new project happened in 2010. What Mr. Pynn, Terra Choice and consultants to this report have not indicated is what operational adaptations were made at the project in question and the dearth of incidents of subsequent fish killed in 2011 and 2012?

Our point in reviewing this case is to illustrate an unfair network and campaign of bias against run-of-river hydro from a number of collaborating sources – ENGO, gov't employees and media (Mr. Pynn). Run-of-river hydro has had an impact on fish in BC—as have all hydro developments – but comparatively and in perspective it is minor. Why does BC Hydro annually spend millions of dollars on fish compensation programs? What is the comparable record of fish kills from storage hydro?

To further attempt to improve and minimize our impacts on fish, the clean energy sector has commissioned an independent impact study of small hydro (run-of-river) projects on BC salmonids. The study is led by Dr. Brian Riddell, Pacific Salmon Foundation. The principal investigator is Dr David Marmorek, ESSA Technologies. ESSA recently completed work for Justice Cohen and his Judicial Inquiry into Missing Fraser River Sockeye Salmon.

A review and commentary of Table 10, pp 38 – 39, “Public Outreach”; we dispute that in BC and Canada the regulations are less stringent than in US and California. Just the onerous (and necessary) responsibilities with First Nations in BC alone indicate far greater attention required in BC to outreach. Under “Mitigation”, we dispute the assessment of “less stringent” when the current Federal Fisheries Act has had a “no net loss policy” and been the driver of mitigation and offsetting that has seen most of the newer run-of-river projects become involved in fish stewardship or habitat enhancement/restoration projects (the PSF study will examine efficacy and effectiveness).

On “Cumulative Effects”, our understanding is that the provincial EA process and parallel development plan process both require Cumulative Effects assessments.

Clean Energy BC is participating on the advisory panel of a study examining opportunities to minimize trade-off conflicts between run-of-river hydro projects and cumulative impacts to ecosystems and species. This project is lead by Simon Fraser University Professor Dr. Wendy Palen. This study is an example of where applied research, mathematical modeling, empirical ground truthing and consideration of human values (societal) could bear significant advancement in finding balance with energy project development and protecting the environment.



Given the information cited in the consulting report and the background provided, my overall assessment from Table 10 would be that LORS regulating run-of-river hydro in Canada and California are generally comparable.

Chapter 4: Comparison of BC project Environmental Documentation with California Project Environmental Documentation

From the information and analysis provided for the 3 cases studied, Upper Harrison, Bear Creek and El Dorado Relicensing, we agree with the summary that the projects all complied with appropriate regulations and required similar data collection. But we would add that as one reads about the history of the El Dorado example, it is quite a different case – perhaps not a fair comparator. El Dorado is an old project with established history – it's a relicensing project. It has had a history of impacts from when society was less concerned with natural resource development projects.

On "Public Outreach", our understanding is that for the Harrison and Bear projects there were extensive consultations with the First Nations (over a period of years), leading to formal Impact Benefit Agreements being signed. No mention of these are made on page 56 where the conclusion is that Upper Harrison and Ed Dorado had similar scope and duration public meetings and Bear did not include public meetings. In Table 11 for El Dorado, reference is made to "scoping meetings and release of the EIS" but no mention is made of public meetings or open houses that were held.

Chapter 5: Effect of Inclusion of BC Run-of-River Projects in the RPS Program

Carbon Dioxide and Greenhouse Gas Emissions

Clean Energy BC which represents most of the run-of-river operator/developers in BC, is pleased with the conclusion summarized at the bottom of page 58, "... run-of-river hydroelectricity generate fewer CO₂-equivalent emissions per kWh than the majority of energy projects currently permitted in California." We feel the same way about all of the clean energy fuels we represent – they can be part of the clean energy cost-effective solution for BC, California and Pacific Northwest.

Wherever possible, all of our members' projects try to utilize existing roads, rights of-way and access to transmission – to minimize environmental impact keeps costs down too.

Air Pollutants

Clean Energy BC is also pleased with the conclusion summarized in the middle of page 59, "...run-of-river hydroelectricity projects would have minimal air quality impacts except during

project construction and when associated with the construction of the ancillary facilities such as transmission interconnections.”

Water Quality and Fisheries

Run-of-river hydro projects under-go comprehensive site specific studies by qualified professionals to determine impacts to fish, fisheries and aquatic habitat. Additionally these projects once operational undertake comprehensive monitoring.

At the bottom of page 60, Bech, 2011 is cited as a reference for concern about fish migration, entrainment or delay as they might pertain to run-of-river in stream infrastructure. These are of course concerns with fish migration, but citation of a “letter to the editor” of a newspaper as if it is authoritative is bad science and bad report writing. Are there empirical results? Can the authors cite results from studies instead of including polemical writing from activists with agendas? If one needs a reference for summer and winter steelhead in the Upper Georgia Straits, then look up Lill, A. et al. and others.

Mitigation Measures

Recreation

This section does not mention the effort made by run-of-river developers to accommodate the safety and interests of recreational canoeists and whitewater paddlers. Timed flow requirements, timed water releases, access to sites and safety alarms are some of the features which have enhanced recreational uses on a system like the Ashlu River. In the resort town of Whistler, which is built around access to recreation and natural environment attributes, tourism marketing includes that the town is indeed powered (equivalent) by run-of-river clean and renewable energy. The zip line operation, along with the Peak to Peak chair permits visitors to see the Fitzsimmons Creek project in environmental context.

Cumulative Effects

CE assessments cannot be undertaken on a project by project basis. This must be a government led function with support and participation from private sector developers completed on a regional landscape basis. Citing from the excellent paper on the subject by the BC Business Council, Bulletin Vol.4 Issue 6 November 2012,

“... CIA is not a grand action or “magic bullet” that can solve the kinds of natural resource development problems that we now face. It is really an exercise in incremental understanding, constant learning and adaptation. It means conducting transparent risk assessment within a structured and deliberate trade-off analysis framework that clearly

talks about uncertainty, and that considers projects within descriptions of realistic future scenarios covering a geographic place that extends beyond the footprint of a single project. The above approach is antithetical to the current model, which puts the responsibility for the CIA primarily on businesses inside a narrow project-oriented environmental assessment and impact process. The Business Council sees CIA as more properly being the job of government given its broader economic, environmental and social responsibilities and its unique role to articulate the ‘public interest’.”

Chapter 6: Conclusions

For California RPS eligibility,

Less than 30MW – the report provides no information why this ceiling should be applied or retained. In fact in certain sections the authors’ logical conclusions appear to favour a higher threshold as potentially more acceptable from the perspective of the environment, i.e. provincial EAO threshold for EA cumulative effects, public outreach and lighter CO₂ and emissions (construction) foot print. With respect to environmental impacts, plant capacity is not necessarily a useful indicator.

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