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Sent: April-30-10 4:20 PM
To: Living Water Smart ENV:EX
Subject: Water Act Modernization: IPPBC's Submission
Attachments: Water Act Modernization Survey IPPBC Survey FINAL 100430.pdf; Water Act Modernization cover letter FINAL 100430.pdf; Water Act Modernization Instream Flow Requirements FINAL 100430.pdf; Water Act Modernization Submission First In Line FINAL 100430.pdf; Water Act Modernization Submission License Harmonization FINAL 100430.pdf

To: Water Act Modernization Review Team:

Please find attached IPPBC's submission that includes a cover letter and detailed submissions on:

1. Harmonization of Water Licenses
2. Instream Flow Requirements
3. First In Line Priority
4. Survey

We welcome your comments and questions.

Thank you,

Loch McJannett

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**Harmonization of Water Licence Terms with BC Hydro, BC Utilities Commission,
and Integrated Land Management Bureau Terms**

**Submission by the Independent Power Producers of British Columbia
to the
Province of British Columbia
Water Act Modernization Review, 2010**

Issue

The 40 year term for water licences for power purposes, set in the *Water Act* , has been interpreted by MOE to include the construction period which may vary from two to five years – prior to beneficial use of the water for commercial power production. This interpretation conflicts with all other key government agencies that approve a maximum 40 year term concurrent with commercial operation: BC Hydro, the Utilities Commission, and the Integrated Land Management Bureau. This remaining inconsistency creates uncertainty for the industry and for the financing community, and interferes with achieving the lowest possible costs for ratepayers.

IPPBC proposes that the *Water Act* harmonize the term of Water Licenses with the term of BC Hydro Electricity Purchase Agreements by starting them on the same date, to allow beneficial use of water for power purposes for 40 years.

History

Section 12 (2) of the *Water Act* , amended in 2003, states that the maximum term of a water licence that is issued for a power purpose is 40 years. Prior to that, water power licences were issued in perpetuity, as continues to be the case with all other water licences in the Province. The 40 year maximum term was adopted in response to public concerns about the notion of issuing perpetual rights for public assets. In 2005, in response to IPPBC's request, BC Hydro increased the maximum term for Electricity Purchase Agreements (EPA) to 40 years (from their previous 25 year standard).

Since then, BC Hydro and the Utilities Commission have consistently approved 40 year terms for EPAs, on the basis that longer terms provide a greater level of certainty, maintain competitive power rates, and are beneficial to ratepayers. In response to the approval of several EPAs of 40 years, the Integrated Land Management Bureau, in 2004, issued a policy to provide a construction period land tenure for waterpower projects for up to five years, followed by an operating land tenure which matches the term of the Electricity Purchase Agreement, for up to 40 years from the latest contracted Commercial



Operation Date. The ILMB tenure – as most projects are located on Crown Land – is a prior condition of issuing a water licence, without which the water licence cannot be issued.

While the *Water Act* allows for a conditional licence to be issued for construction purposes and a final licence issued when beneficial use has commenced, the Ministry of Environment's (MOE) long-standing practice is to only issue a conditional licence which includes both the construction period and any beneficial use period. In combination with this practice, the 2003 change to the *Act* resulted in a guaranteed inability of any waterpower licence to reach the maximum term of 40 years of power production allowed by BC Hydro, BC Utilities Commission (BCUC) and the Integrated Land Management Bureau (ILMB). The resulting few to several years of shortfall for the construction period, means that financiers will be more risk averse and this puts pressure on the bid price of electricity.

Consequently, water licenses issued in this manner are not harmonized with the Energy Plan objective to maintain our competitive electricity rate advantage. All other key Provincial approving bodies are already harmonized: the offers by BC Hydro, the approvals of the BCUC and the tenures of the key government department providing the land on which the projects are located.

Discussion

The construction of a renewable energy project represents a significant financial investment for an independent power producer (IPP). The competitive nature of BC Hydro's acquisition process incents bidders to be as cost competitive as possible - consistent with the Energy Plan's objective of providing cost-effective power. Since 2006, BC Hydro began offering 40-year EPA contracts, enabling IPP's to amortize debt costs over the full 40-year period of the EPA and therefore to provide lower cost power to ratepayers.

However, the current lack of alignment between the Water License term and the EPA term creates major financial uncertainty for lenders. Lenders interpret this mismatch as a very real risk that IPPs may be unable to fulfill their electricity delivery and loan obligations during the last few years of an EPA that extends beyond the end of the water license. This, in turn will cause lenders to reduce the terms of their loans to match the expiry date of the water licenses, placing a project at risk. Also, this lack of internal alignment in government creates ongoing uncertainty to BC Hydro and the Province as to whether the IPP can meet its' contractual EPA commitment.



Several water power license holders from the 2006 Power Call are in this position with their water licenses that will expire prior to their 40 year EPA term due to the construction period interpretation by MOE, and several others are in this position with the 2008 Power Call. While proponents could choose to bid EPA terms that are shorter than the term of the water license, speculating on how long financing and construction would take, the shorter EPA terms translate into higher bid prices and costs for BC Hydro ratepayers as project development costs must be recovered over shorter periods. Given the positive, firm direction taken by ILMB several years ago, and the continuing offers and approvals of 40 year EPAs by BC Hydro and the Utilities Commission, it is reasonable to expect that this remaining inconsistency would be addressed, either by a change in practice or by a change in legislation or regulation, in order to further the interests of the Energy Plan and harmonize within government.

However, repeated requests by affected proponents and by the IPPBC to address this issue have been rejected by MOE staff on the basis that a change to the *Water Act* could be necessary. Now that a *Water Act* Modernization initiative is underway, if a change to the Act is required to address this issue, IPPBC is requesting that the appropriate change be undertaken and we offer to work with MOE on the wording that would most effectively address this issue.

This change would not affect MOE's current and ongoing ability to require adjustments to the water licences if environmental or social requirements warrant it, since the Comptroller has the ability to issue Orders under the *Water Act* for any reason, and has done so in the past for many types of water licences including hydro power.

Recommendation

IPPBC believes the Province is committed to removing major internal roadblocks to effectively achieve existing and future approved 40 year Electricity Purchase Agreements.

IPPBC recommends that the *Water Act* harmonize the term of Water Licenses with the term of BC Hydro EPAs by starting them on the same date.

IPPBC would work with MOE to develop the wording for legislation or a clarifying regulation that would remove the construction period from water power licences issued since 2003, and enable an effective date of operation for the 40 years consistent with the interpretation of other key agencies in BC.

Sections 12 (2) and 14 of the *Water Act* could be reworded as follows:



I.I.I.I Licenses for power purposes

12.2 (1) This section applies to

- a) all conditional water licences for power purposes issued after January 1, 2003.
- (b) if the water power licence was issued for a specified term and the holder of the licence applies to renew or amend the licence or the licence is renewed or amended to extend its term, and
- (c) a licence issued for a purpose other than a power purpose, if the holder of the licence applies to amend the licence, or if the licence is amended, to authorize the use of water for a power purpose
 - (2) The term of a conditional construction license that is issued for a power purpose after this section comes into force, or is issued for a power purpose and renewed or amended to extend its term after this section comes into force, is up to 5 years. This may be extended for up to an additional five years if, in the opinion on of the Regional Water Manager, the facility can reasonably be expected to complete construction during the extension, and the facility is not making beneficial use of the water as defined by achieving either of: the completion of construction, for non-commercial plants, or the “Commercial Operation Date” as defined by a power contract with an operating utility. Upon the respective condition being met, a final operations water license will be issued for a period of 40 years from the completion of construction, for non-commercial plants, or the “Commercial Operation Date” as defined by a power contract.
 - (3) The term of a license issued for another purpose and amended to authorize the use of water for a power purpose after this section comes into force is 40 years in respect of the use of water for a power purpose, consistent with section 12 (2) and Section 14.
 - (4) The holder of a license may apply to renew the license before the expiry of the term of that license.
 - (5) This Act and the regulations apply to the application to renew the license as if the application were for a new license.
 - (6) The rights exercisable under a renewed license have the same precedence as under the original license.
 - (7) Despite subsection (2), (3), or (8), if an application is made under subsection (4), the license does not expire until the comptroller or the regional water manager makes a decision respecting the application.
 - (8) If the holder of a license fails to apply to renew the license before the expiry of the term of the license and the failure is, in the opinion of the comptroller or regional water manager, not the fault of the holder of the license, the comptroller or regional water manager may extend the expiry date for not more than six months from the original expiry date.

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(9) Subsection (8) does not apply to a licence for which the expiry date has been extended under that subsection.

(10) Despite section 40, a decision of the comptroller or regional water manager under subsection (8) may not be appealed.

I.I.I.II Issue of final licenses

- 14** (1) For all waterpower licenses issued after June 1, 2003, when the time for completing the works authorized under a conditional license expires or the licensee completes the works, the Comptroller or the Regional Manager will issue to the licensee, a final license authorizing the diversion and use of the quantity of water that the comptroller or the regional water manager finds to have been used beneficially for the purpose authorized under the conditional license. The term for the final license shall be 40 years from the date of completion of the works or where there is an Electricity Purchase Agreement, from the date of proof of production of commercial electricity.
- (2) On the issue of a final license, the conditional license is of no further effect.



Water Licence Applications – First In Line Priority

Submission by the Independent Power Producers of British Columbia to the Province of British Columbia Water Act Modernization Review, 2010

Issue

Provincial hydroelectric resource development is constrained by “warehousing” of first-in-line applications. This paper proposes mechanisms to the Provincial Government that would result in a more publicly transparent approach to accepting and managing hydroelectric power applications, consistent with other resource development application processes and recognizing the market constraints peculiar to this sector in BC.

History

Securing/maintaining first-in-line (or any) waterpower applications has a relatively low one-time cost (\$5,000 for projects with a proposed capacity up to 20 MW or \$10,000 for projects with a proposed capacity greater than 20 MW plus an additional fee for the corresponding land tenure application(s)).

This one-time cost has resulted in a large number of applications, some of which the holders have no intention of developing for years, if at all or may be hoping to sell/trade applications for profit).

This can stagnate development and remove opportunities for active and capable developers, particularly as Waterpower Applications do not have an expiry date.

Discussion

IPPBC understands the importance and sensitivity of water allocation discussions – particularly in areas where scarcity of water resource creates allocation challenges. Fortunately, as a non-consumptive user of water with strong regulatory provisions to protect habitat through instream flow requirements, waterpower applications are quite compatible with most other domestic and agricultural uses. In order to appropriately and effectively develop water power projects, it is important that certainty is accorded to applications when they are made. An allocation framework that provided consumptive water applications to have priority over non-consumptive waterpower applications would be problematic and would cover only rare instances of such conflict. IPPBC does however, support the ability of regulatory bodies to allocate water based on highest and best use in rare situations of conflict.

Under the current regime where only waterpower applications are on a stream, IPPBC has a number of comments as follows.



Currently there is no open market for electricity development in BC – that is, independent hydro developers are only able to sell electricity if they are successful in bidding into calls for Electricity by BC Hydro¹. The calls that have included hydro power, have been held sporadically with differing capacity requirements, and there is no certainty about when future calls will be issued, or the size of those calls. In order to have a long term development strategy to respond when electricity requirements are announced, and for business continuity purposes, most developers hold a group of water licence applications. To reduce risk in this environment, active development work generally occurs only on the projects that have the highest likelihood (lowest price) of proceeding in the next call for electricity.

At the same time, the Comptroller accepts second-in-line and third-in-line applications for waterpower, sometimes directly overlapping the first-in-line application. The current situation leads to generally unsuccessful attempts by second and third in line developers to apply pressure to remove the first in line applicant, whether warranted or not. The pressure from next in line developers is such that first in line developers are sometimes limited in being able to optimize the location of project components on the stream or increase the amount of water in the application to maximize beneficial use, which runs counter to the principles of beneficial use of water resources underlying the Water Act.

While some criteria for keeping first in line applications in good standing have been issued, there is no strong regulatory regime in place to ensure that first-in-line developers are keeping their applications in good standing. If not, the system should be open to beneficial use by other applicants.

A proposal similar to the current mineral tenure system has been considered and advocated by IPPBC for some time, in that applicants must pay a fee each year and in every five year period must demonstrate that certain types of work to advance the project have been completed. However, the mineral tenure system is based on staking of Crown land, on a per hectare basis supported by a complex infrastructure to administer it. IPPBC has considered a simpler approach based on the proposed use of the water, which addresses concerns among both the industry sector and the public about orderly development of water resources.

Conclusions

A more structured system for applications along the lines proposed by IPPBC will:

- generate additional revenue to the Provincial Government
- encourage companies to continue to work to develop the resource
- discourage “nuisance” and/or “speculative” applications

¹ BC Hydro's *Standing Offer Program* is currently available to developers proposing projects up to 10 MW in capacity. While *SOP* does not involve a competitive bidding process, and offers a somewhat greater degree of commercial certainty, the other risks inherent to developing these smaller projects (ex. technical, financial, socioeconomic) are fundamentally similar to those experienced by larger projects.



- provide government agencies with a mechanism for verifying diligent use at a specific site by a waterpower applicant and thus encourage responsible, sustained development by the private sector

Recommendations

IPPBC proposes a mechanism that would impose a carrying cost for waterpower applications. The proposal is similar to the current mineral tenure system, in that first in line applicants, commencing in the second year after the application being accepted², must pay an annual fee, and within every five year period of holding a first in line application, must provide proof of conducting a minimum amount of work to advance the project to maintain their first-in-line application in good standing.

The proposal is as follows:

1. For projects under 1 MW, there would be a fixed annual fee of \$500/year to maintain a licence application until a licence is issued.
2. For projects of 1-20 MW, there would be a requirement to pay an annual fee either fixed or on a sliding scale based on capacity. IPPBC recommends the annual fee of up to \$1750 per year for projects with proposed capacities from 1 - 20 MW, and up to \$3500 for projects with proposed capacities above 20 MW. Furthermore, and similar to mineral claims, in one of every five years, in lieu of payment, the applicant must demonstrate that there was beneficial work equivalent to the total of the annual fees over the five year period. Such work could be self-performed, but would be well documented or verified by a professional or qualified person, and would include work which advances a project and may lead to an increase in the value of the resource. This work could include one or more of the following:
 1. Installation of hydrology monitoring station and commencement of data collection
 2. Detailed planning and timing for retaining professionals for completing baseline environmental work (e.g. fisheries, wildlife, archaeology, socio-economic, etc).
 3. Detailed planning and timing for retaining professionals for completing baseline technical investigations (e.g. engineering, surveying, mapping, geotechnical, etc).
 4. Initiation of the Environmental Assessment process (for projects which would meet the EAO “reviewable project” threshold criteria or those that have opted in to the process that are below that threshold)
 5. Initiation of the Development Plan preparation and submission process with the Regional Clean Energy Project Team (for projects which fall beneath the EAO “reviewable project” threshold)
 6. Completion of a regional hydrology assessment

² initial fees are already applied on application acceptance



7. Initiation or securing an Electricity Purchase Agreement Application or similar commercial agreement for sale of the electricity
8. Demonstrated First Nations and community/stakeholder consultation activities

IPPBC recommends that if a company does not pay the annual fee or provide proof that eligible work has been done, before the anniversary of the priority date, then the first-in-line water licence application is cancelled.

With respect to next in line applicants, IPPBC recommends that:

- Any lower existing (e.g. second or third in line) priority filings for applications would cost \$1,000 per year per application to maintain in good standing.
- Second in line applicants would not be expected to conduct work, in order to avoid raising expectations and unnecessary conflict or duplication of effort.

IPPBC recommends that the current priority dates for applications, whether first, second or third in line be grandfathered – that is, that these applications and priorities be maintained as long as they are in good standing according to the fees/work requirements.

Going forward, IPPBC recommends that new waterpower applications with secondary priority dates should not be accepted. If another application on the same watershed is submitted which could overlap the diversion reach or impact the ability of first in line applicant to optimize a project, such a secondary application should not be accepted. If a new system is in place, the Province can then consider whether it wishes to allow secondary applications at all, or to reserve those creeks for another development procedure (e.g. auction) if the first-in-line application is forfeited.

Please note that the actual cut off points for the above noted project sizes could be amended depending on the input of government and others. IPPBC also recommends that a policy be developed to accompany a new system such as outlined above, that would address the following key issues:

- Confirm fee schedules and eligible work
- Whether payment of fees and work must continue if there is a ‘force majeure’ situation, such as a moratorium on IPPs or very long periods between acquisition initiatives by government
- Specific language allowing first in line applicants to move project components or increase water licence application amounts when project optimization is complete, in order to make maximum beneficial use of the resource on each stream

IPPBC would be pleased to discuss the details of how such a system would work, and discuss potential alternatives that would meet both the interests of the industry and of government. A structured procedure, if implemented, is in the interests of our industry as well as the public to implement, to ensure that the water applications process is fair and orderly.



Water Act Modernisation: Instream Flow Requirements

Submission by the Independent Power Producers of British Columbia to the Province of British Columbia Water Act Modernization Review, 2010

The British Columbia Water Act Modernization Discussion Paper presents two objectives that relate to Instream Flow Requirements (IFRs):

1. Environmental flow needs are considered in all water allocation decisions.
2. Watershed or aquifer-based water allocation plans include environmental flows and the water available for consumptive use.

IPPBC and its members are committed to developing sustainable projects that maintain the ecological values of the watersheds they develop. The British Columbia Water Act Modernization Discussion paper presents two options for determining environmental flows: guidelines, and standards. It is unlikely that standards could be developed that are sufficiently versatile to provide suitable conservation of ecological values over the wide range of hydrologic and fluvial geomorphic conditions present throughout the province, and which consider the wide range of potential water uses, without being overly conservative such that they are prohibitive to development.

History

Current provincial guidelines for assessing hydropower projects (e.g. Hatfield et. al., 2007; Lewis et. al., 2004) promote the Instream Flow Incremental Methodology (IFIM). This approach has a long and successful history in North America and worldwide for assessing water allocation decisions. Despite this, the process in BC has not always provided consistent results between projects, which leads to uncertainty for investors and developers.

It is understood that these guidelines were developed with limited input from the numerous practicing professionals (hydrologists, fluvial geomorphologists, and biologists) that carry out assessments for small hydro projects.

Discussion

The determination of IFRs during the permitting process is a significant cost during the development phase of a project, and the IFRs that are determined have a significant bearing on the economic viability of the operating project. The following list highlights some of the issues with



the existing process and guidelines currently being applied for assessing run-of-river hydropower projects in British Columbia:

1. The IFIM approach is a habitat based approach that does not explicitly reflect the productive capacity of the stream (e.g. habitat may be reduced without a concurrent reduction in aquatic productivity). Diligent professional practice as well as additional scientific studies are needed to refine the link between the IFIM approach and the impacts to habitat.
2. The IFIM approach supports consideration of multiple "water users" (e.g. developers, aquatic species and recreationalists), however the current BC process does not include a method for balancing alternative uses and most beneficial use water resources.
3. To verify the predicted impacts of a specific project, compliance and impact monitoring is a necessary tool for improving future projects and adaptive management. However, the ability of regulators to temporarily or permanently change permit conditions following monitoring results reduces certainty for developers and investors.

As the IPP industry has developed in British Columbia over the last 10 years, the expertise of government reviewers and industry practitioners in assessing Instream Flow Requirements has also developed. There is now a depth of knowledge, which, when combined with monitoring data from operational facilities, would allow the preparation of BC specific IFR assessment methods to guide the analysis and assessment of specific projects. These guidelines should build on the existing assessment methods but should be reviewed and modified by professionals (including both government agency professionals and consulting professionals), industry and academic researchers. Similarly, monitoring guidelines should be developed in conjunction by government, industry and practicing professionals.

Recommendation

IPPBC would support environmental flow guidelines that include science-based, workable assessment methods. We believe that the current BC guidelines are an appropriate starting point, but that they should be reviewed and indorsed by a wider audience (e.g. Association of Professional Engineers and Geoscientists of British Columbia, Association of Professional Biologists of British Columbia, academic researchers, and the IPP Industry). Assessment methods and guidelines should provide enough direction that developers and investors can have appropriate certainty and confidence in the process and enough flexibility so professionals can carry out studies of appropriate depth (based on site specific characteristics and values) for a specific project. IPPBC is opposed to environmental flow standards, as there are too many complex site specific factors (environmental, social and economic) that should be considered to ensure the most beneficial use of the Province's water resources. Reliance on the professionals carrying out project-specific studies is fundamental to meeting both government's and industry's



objectives for small hydro project development. Compliance and impact monitoring is an important tool to avoid impacts and improve knowledge within the industry. As above, IPPBC recommends that monitoring guidelines be developed in conjunction by government, industry and practicing professionals to ensure they meet the objectives of all parties.

Water allocation plans are an excellent tool for determining environmental, social and economic values associated with a watershed, but site specific consideration is required to ensure the most beneficial use of a watershed's water resources. IPPBC would support water allocation plans developed by government with input from stakeholders. However, the development of water allocation plans should be optional and the decision maker assessing water license applications should consider the plans, but should not be bound by them. IPPBC notes that considerable information already exists regarding values in specific watersheds (through existing LRMP's and higher level plans carried out related to the forest industry). As such, it is expected that any water allocation plans will consider available information as a starting point in any planning process.



Friday April 30th 2010

Water Act Modernization Submission
Ministry of Environment, Water Stewardship Division
PO Box 9362, Stn Prov Govt
Victoria, B.C. V8W 9M2

Dear sir/Madam:

The Independent Power Producers of BC thank you for the opportunity to provide this submission in support of the Water Act Modernization review initiated by the Province of BC.

As BC continues to issue power contracts to run-of-river hydro projects to help meet the Provinces' Energy Plan objectives, IPPBC believes that the Water Act regulatory regime should continue to be refined to ensure orderly and consistent development of this temporary and non-consumptive use of water – water which is recycled without alteration and placed back in full measure into the stream from which it came, usually in relatively remote locations. This significant difference in use of water, compared to consumptive uses that never return the water and are the source of another set of conflicts, is often overlooked in the debate about run of river energy. IPPBC provides its comments on the Water Act Modernization in the context of where there may be multiple run of river projects or proposals, or where consumptive uses might interact with the non-consumptive run of river projects.

This letter provides a general context and comments on the four basic goals and six principles identified in the Water Act Discussion Paper. Following this discussion, specific submissions are included on the following topics:

- IPPBC Response on the Water Act Modernization Survey
- Harmonization of Water Licence and EPA_ILMB_BCUC terms
- First In Line Priority
- Instream Flow Requirements

Water Act Discussion Paper – Goals

1. Protect Stream Health and Aquatic Environments

A specific submission is included makes recommendations on how stream health should be protected. Currently, run of river projects are already provided with a 'cap' on water use, to protect key physical, biological, and chemical processes in the aquatic ecosystem, however, this cap is tailored to the particular stream and the specific variations of seasonal activity. In addition, extensive monitoring is required, after which, adaptive management is built into existing licences which can specifically involve changing stream flow requirements or operating regimes to further protect the stream. For this reason, IPPBC supports the continuance of flexibility in setting such 'caps' on a site-specific and stream-specific basis. A standardized cap for temporary and non-consumptive diversions would preclude the use of some streams and possibly over or under-



utilize others. Science-based assessments on a case-by-case basis should continue to be an important tool for decision makers.

2. Improve Water Governance Arrangements

Consumptive uses of water in some regions of the province may require the development of watershed plans to address conflicts. IPPBC supports the development of such plans in areas of exceptional consumptive use scarcity, with involvement of all interested parties and the public. However, there is a strong need for flexibility in interpreting such plans, because, over time, circumstances and unforeseen conditions can change, and therefore we would strongly recommend that there be sufficient flexibility to adapt to change. In most cases, Provincial authority to resolve conflicts should not be delegated, especially where Provincial policy objectives have been set and all users cannot be reasonably expected to be able to resolve such issues in the Provincial interest.

3. Introduce More Flexibility And Efficiency In The Water Allocation System

IPPBC supports the need for improvements in management of consumptive uses of water, e.g. conservation, efficiency and monitoring. Achieving a system of equitable sharing of all consumptive users – i.e. replacing the first in time, first in right system has numerous difficulties which may not lend itself to a simple or short term solution. For run of river projects, although the use is non-consumptive, some ordering among first and next in line applicants is the subject of an attached submission by IPPBC.

4. Regulate Groundwater Extraction And Use

IPPBC recognizes that groundwater and surface water systems can be linked, however, groundwater movement is highly complex, and technologically and financially challenging to monitor for smaller licences. Some consideration of groundwater, especially in areas of heavy consumptive use of water (surface or groundwater) should be considered by the Province.

Water Act Discussion Paper - Principles

1. BC's water resources are used within sustainable limits.

IPPBC is proposing a more systematic and transparent process for the Province to manage water power applications. While run-of-river projects are a non-consumptive use, there are concerns about the number of applications, and the need for a clear process for orderly management of applications. In the coming months, we will also be working on proposing systems that will assist with addressing concerns about insufficient regional planning and cumulative effects assessment for this sector.

2. First Nations social and cultural practices associated with water are respected and accommodated.



Our industry has led the way with accommodating First Nations in whose traditional territories a renewable energy project may be sited. In order to be approved, projects must extensively involve local First Nations in consultation and assessments of traditional, cultural and heritage use. Impact Benefits Agreements are common practice among our industry proponents, and IPPBC views that our industry provides an important source of economic and social opportunity to meet not only First Nations objectives but provincial rural development objectives. Nonetheless, we continue to seek improvements in respecting and accommodating First Nations in their traditional territories. While revenue sharing by the Provincial government is not the subject of the Water Act Modernization review, IPPBC suggests that Provincial revenue sharing could be examined as one means of accommodation.

3. Science informs water resource management and decision making.

IPPBC supports this principle and suggests that the current scientific basis for assessing and monitoring run of river projects be regularly reviewed by professional associations, practicing professionals, and academicians, in collaboration with our industry and other interested parties, to achieve an effective regulatory regime.

4. Water resource legislation, policy and decision making processes as well as management tools are integrated across all levels of government.

IPPBC has attached a submission which points out the need for integration with other levels of government on the specific issue of beneficial water use for the full term of a water licence. IPPBC is aware of the need for integration with the federal government on several important fronts, which we wish to assist with, and for including local government in consultations regarding Provincial approvals.

However, while integration with other levels of government is important, provincial responsibility for decisions should not be fully delegated where there is a Provincial policy such as the Energy Plan or where certain policies for water management would override such integration.

5. Rules and standards for water management are clearly defined, providing a predictable investment climate across the province.

As a newly developed industry in BC, IPPBC wishes to assist with clearly defining rules related to our sector. The attached submissions are aimed at assisting with that process. We look forward to further collaborative discussions with government and interested groups in order to continually improve the investment climate.

6. Flexibility is provided to adapt to extreme conditions or unexpected events on a provincial, regional or issue-specific level.

IPPBC supports this principle and suggests that the Province review its provisions with respect to such conditions, including adaptation to climate change effects.



7. Incentives are created for water conservation that consider the needs of users and investors.

While run of river hydro is not a consumptive use of water, IPPBC is aware that in rare cases there may be conflicts in a region of high consumptive use. IPPBC wishes to point out that our sector is in fixed price and long term contracts with the Province (BC Hydro), and infringement of consumptive uses on the ability to deliver on the run of river hydro contracts with the Province should not be considered. Doing so would affect the predictability of the investment climate in BC.

8. Rights to use water come with responsibilities to be efficient and help protect stream health.

IPPBC wishes to continue to work with government to ensure that stream health is protected throughout the life cycle of water use for run of river projects, through clear and professionally developed and conducted programs for monitoring, compliance, and ongoing adaptive management.

IPPBC wishes to continue to participate in the Water Act Modernization dialogue with government and the public, as the review progresses.

Thank you.

Sincerely,

'Original signed by:'

Paul Kariya
Executive Director

Responses by IPPBC on the Water Act Modernization Survey, April 2010

Goal 1: Protecting Stream Health and Aquatic Environments

In order to better protect stream health and aquatic environments the following objectives are proposed for a modernized *Water Act*:

1. Environmental flow needs are considered in all water allocation decisions to protect stream health
2. Watershed or aquifer-based water allocation plans include environmental flows and the water available for consumptive use
3. Habitat and riparian area protection provisions are enhanced

Please indicate your level of support for the objectives proposed.

- Strongly support
- Support
- Neutral
- Disagree
- Strongly Disagree

Stream health is a fundamental consideration in the water licensing process. As watersheds are dynamic environments, and proposals for water use by run of river projects are often unique based on the needs and site/environmental constraints, detailed studies are always required to assess stream health as part of the Water Licence process. Thus, environmental flow needs, water allocation plans, and habitat/riparian protection measures all need to consider both the dynamic nature of watersheds as well as anticipated changes due to a hydropower project and not restrict or limit the possibilities that will be considered under a detailed planning process.

Regarding Objective 3, it is important to appreciate that legislation and policy in various other Acts provides protection for fish and fish habitat. It could well be simpler to review, and revise as necessary, these other pieces of legislation. In addition, there appears to be some overlap with Federal legislation governing fish habitat and thus it will be important to coordinate any proposed legislation to limit overlap and potential contradictions.

Stream health should not be protected on the basis of requiring prohibitively expensive studies on a watershed basis. Some sectors or activities, such as run of river energy are by their nature located in riparian areas and are required to fully compensate for riparian or fish habitat impacts by the Department of Fisheries and Oceans. Setting more stringent requirements provincially would preclude the development of this industry which already has a low footprint and stringent requirements for riparian/habitat replacement and enhancement.

Additionally, the background information on this section refers to Water Management Plans as a means of consolidating watershed information and providing a framework for stakeholder discussions. While IPPBC endorses the concept of Water Use Plans for large hydropower projects that use water storage, or areas where numerous (consumptive) users have an interest in water allocation, the remote and non-consumptive nature of run of river (small hydro) projects renders Water Use Plans unnecessary in most instances..

Options for how environmental flow is to be considered in decisions



- A. **Environmental Flow Guidelines** – In this option the environmental flow recommendations are guidelines, from which the decision maker may deviate in certain circumstances.

OR



- B. **Environmental Flow Standards** – In this option the environmental flow recommendations become standards that the decision maker must adhere to with no exceptions.

IPPBC has provided a separate submission on instream flow requirements. Setting rigid standards would likely not recognize the differing values and conditions between streams. Two example applications, with very differing conditions might be 1) a non-consumptive use on a non-fish bearing mountain stream with a flashy hydrograph, compared to, 2) a consumptive use from a large low gradient river system. Guidelines would allow the government the flexibility to achieve the most beneficial use of the water resource under consideration, given the specific environmental values, conditions, and constraints. Also, run of river hydro licences are approved after considerable scientific study of the site and potential impacts, and the licences are issued with specific conditions for construction and monitoring during operations. A flexible system will make the most beneficial use of the water resource while ensuring that projects are located, constructed, and operated in a manner to maintain stream health.

Options for including water allocation plans in the Water Act



- A. The development of water allocation plans is **optional** – Developed at the discretion of the Regional Water Manager and could be based on increasing water demands

and decreasing water supplies, changing environmental conditions, conflicts among users, or at the request of a water user community.

OR

- B. The development of water allocation plans is **required** – Plans may be developed province-wide, or criteria to determine priority areas may be developed, with priority areas requiring a plan, or plans may be ordered by the Comptroller of Water Rights.

– AND –

- C. The decision maker **must consider** the water allocation plan – Once adopted, decision makers must consider plans. Although the decision maker is not bound by the plan they would be required to explain reasons for any decisions that do not follow the plan's recommendations.

OR

- D. The decision maker **must follow** the water allocation plan – Once adopted, the plan must be followed with no exceptions by the decision maker.

Are there other options? If so, what are they?

In the absence of a water allocation plan, it is important for the government to be explicit about the process of assigning water allocation to existing and potential water users using First-In-Time, First-In-Right (FITFIR).

Under what conditions should a water allocation plan be developed and how should it be applied?

Regarding A) above, it is onerous and of little incremental benefit to develop water allocation plans in all areas of the Province. Areas where there is little or no consumptive use (such as many coastal watersheds), or areas where water allocation is straightforward (very limited number of users, large amount of unallocated water, etc). should not require an allocation plan. From a hydropower perspective, water allocation plans may be important in areas with substantial storage projects (or where storage projects are planned) but are less important in areas where small hydro projects (with no significant storage) are planned – particularly since the need for minimum instream flows for ecosystems is considered explicitly as part of the Water Licence process.

Giving the Regional Water Managers the discretion to develop plans also allows for government and others to focus in areas of highest priority, and allocate staff and resources to developing a plan of the appropriate scope and depth. This is particularly important since watersheds are diverse and characterized by the ecological functions, land uses, water users, and other trends

(climate change) and allocation plans can be complex to develop and implement. Plans should only be developed where there is clear benefit to both the government and water users (existing and potential) due to relatively complex conditions and heavily allocated systems. Further, watershed allocation plans require considerable resources to develop, given the need for data and multi-disciplinary nature of the studies that are needed. As such, government agencies will need to prioritize the development of any watershed allocation plans to ensure that the necessary quality is obtained.

Options for protecting habitat and riparian areas



- A. **Maintain** the requirement for an engineer's order to prohibit dumping of material into streams (reflects current situation).

OR



- B. **Amend** the *Water Act* to include a prohibition against dumping of a wider range of debris and materials into streams, with a requirement for the person responsible for dumping to restore stream health.

Are there other options? If so, what are they?

A prevalent consideration for waterpower projects during construction in particular, is the protection of habitat from the introduction of silt into watercourses, and restoring vegetation in areas which are disturbed by construction. In both cases, it is important to recognize the dynamic nature of streams and have workable limits based on ecosystem function and proposed work activities. Accordingly, relying on professionals and the proven methods to limit or eliminate these impacts during construction and rehabilitation is appropriate and should continue. These are presently considered as part of the Water Licences for a hydropower project, and also considered as part of the Fisheries Act approvals for the project.

Goal 2: Improve Water Governance Arrangements

Objectives for improving water governance

In order to improve BC's water governance arrangements the following objectives are proposed for a modernized *Water Act*:

1. Governance roles and accountabilities are clarified in relation to the allocation of water and the protection of stream health. *This includes roles for First Nations, industry, local communities and non-government organizations in planning and decision making*
2. Governance arrangements are flexible and responsive to future needs and values

3. Management is coordinated with neighbouring jurisdictions across all levels of government and those with a major interest in the watershed

Please indicate your level of support for the objectives proposed.

- Strongly support
- Support
- Neutral
- Disagree
- Strongly Disagree

Comments:

It is understandable that water governance consider and reflect the values of First Nations, industry, local communities, and non-government organizations. It is also important that water governance be informed by science and also integrate local land use planning information and restrictions. However, these needs must be balanced by the overall use of the resource for the benefit of all British Columbians. To this end, the above objectives must balance local values with provincial needs for the beneficial use of the water resource, including hydropower developments. As clean energy and hydropower are a provincial jurisdiction, it is appropriate that decisions regarding water licences be made at the Provincial level, with consultation carried out with local communities and stakeholders.

Options for improving water governance

-
- A. **Centralized** Approach – provincial planning and decision making, few delegated responsibilities
-
- B. **Shared** Approach – Provincial government and partner-led planning and decision making within a provincial framework
-
- C. **Delegated** Approach – Watershed Agency planning and most decision making within a provincial framework

From a hydropower perspective, a centralized approach is the most suitable means for water governance. This is appropriate, given that clean energy is a provincial priority and local issues are incorporated through the project permitting process. Also, given that hydropower projects can involve complex decisions and significant coordination among numerous regulatory agencies, it may not be possible for partners (Regional Districts, Municipalities, First Nations) to effectively take on a leading role for hydropower projects.

Also, the creation of Watershed Agencies could well duplicate efforts carried out under other accepted land use planning processes, such as LRMPs, unless the terms of reference and management of such an agency is carefully defined. In particular, the certainty resulting from the creation of these higher level plans could be set back if a Watershed Agency raises previously-resolved issues and renders decisions which conflict with previously-approved and accepted land uses.

What scale of watershed is most appropriate for water planning and management (see Discussion Paper – Resource 10.6)?

The most suitable scale of watershed for planning and management will be determined by the desired outcomes of all planning processes (land use, community development, water allocation (particularly consumptive allocation), as well as project-specific and development-specific EA processes). As such, relatively broad scale watersheds may be appropriate for regional planning considerations, knowing that specific project impacts will be evaluated during detailed and formal environmental assessments for specific projects as part of the Water Licence process.

What funding solutions might help to implement the approaches?

Funding solutions need to be developed from provincial and local sources. The split between provincial and local sources will depend on the nature of the governance selected. A centralized approach would be more appropriately funded through provincial or federal approaches. Lastly, projects that are seeking licences can seldom afford a heavy burden of cost or process to explore issues that are well outside the affected project area or operational timeline.

What are the important considerations for accountability, transparency and dispute resolution processes in any delegated or shared approach?

Conflicts could well develop as multistakeholder values are incorporated into the review process for waterpower projects, particularly projects that are large and represent the broader public good. As such, a dispute resolution or decision making process must incorporate mechanisms to effectively and consistently resolve such differences.

What are the benefits and implications of sharing roles for water stewardship?

Benefits of a shared or delegated approach include the increased representation of local stakeholders and First Nations, suggesting a greater social licence for any decisions or project approvals. The implications of shared roles for water stewardship are potential conflicts on issues or projects that face local opposition but are recognized as serving the greater public good.

Goal 3: Introducing More Flexibility and Efficiency in the Water Allocation System

Objectives for introducing more flexibility and efficiency in the water allocation system

In order to introduce more flexibility and efficiency in the water allocation system the following objectives are proposed for a modernized *Water Act*:

1. The water allocation system emphasizes and encourages efficiencies in both water use and the administration of water as a natural resource.
2. Water users and decision makers have flexibility to quickly adapt to changing environmental, economic and social conditions
3. The water allocation system integrates the management of groundwater and surface water resources where required in problem areas
4. Water users conserve water during drought or when stream health is threatened

Comments:

It is important to consider the difference between consumptive and non-consumptive uses for water allocation and any possible efficiencies in the system. In particular, most small hydro projects have limited storage and do not consume water. As such, the water licences for small hydro projects may not impact the water allocation of other users to the same extent as licences for consumptive use or storage hydro projects.

Options to encourage water use efficiency:



- A. **Government determines actual needs** in relation to a proposed undertaking on the basis of efficient practices and works.

OR



- B. **Codes for efficient infrastructure and practices** in different sectors are developed, in partnership with the sector, and the modernized *Water Act* requires compliance with these codes.

– AND –



- C. **The use of incentives and economic instruments** is enabled in a modernized *Water Act* to encourage water efficiency.

OR



- D. **Review rules for the transfer and apportionments** of existing water rights. This includes improving the ability for users to transfer from one appurtenance to another, and for the extension of rights to other purposes.

Are there other options? If so, what are they?

Regarding A) above, it may be appropriate to consider consumptive and non-consumptive needs differently if government decides to determine needs in specific areas or as part of a water allocation plan. However, non-consumptive run of river projects are often locked into fixed delivery contracts with BC Hydro and therefore the water allocated for that purpose and in that location should not be altered.

Options to encourage administrative efficiency



- E. Permitted uses would be defined and allowed under the Act in accordance with regulations applied in a **consistent** manner throughout the province.

OR



- F. Permitted uses would be defined and allowed under the Act in accordance with regulations. Regulations might apply **differently** throughout the province based on risk or, if considered acceptable, defined and applied through a water allocation plan.

AND



- G. **Voluntary** self registration of the permitted use withdrawal.

OR



- H. **Required** self registration of the permitted use withdrawal.

Are there other options? If so, what are they?

While Option E above may encourage efficiency in the administration of water resources, it is important to emphasize that many hydropower projects carry out many detailed studies as part of the Environmental Assessment and Development Planning process. As a result, Option F is more appropriate where the additional information that is available for hydropower projects is available for the Statutory Decision Maker(s) in granting Water Licences. This flexibility is particularly for the varying combinations of ecosystem function, land use(s), water user(s), and waterpower operations such that the Regional Water Manager (or suitable Statutory Decision Maker) can incorporate Conditions in the Water Licence to meet all legislation and other regulatory requirements.

In terms of registration, G) is suitable for hydropower projects as projects carry out monitoring as part of permit or other requirements.

What considerations would help determine which water uses and extraction rates could qualify as a permitted use (no water licence required)? What controls are needed? How should permitted use status be protected?

It would be appropriate to convene a team of government and industry representatives to define conditions that would be suitable for an abbreviated Water Licence Process (for example, less than 1MW in size along with specific IFR standards and other limiting criteria for project works). The purpose of this abbreviated process would be to allow low risk sites, likely in remote areas, to move through the permitting system quickly and allow government agencies to focus their review times on larger, less straightforward projects.

Options to encourage administrative and water use efficiencies

- I. Providing more detailed information about the proposed use and efficiency measures for licence applications or changes;

- J. Documenting potential environmental impacts and effects on other users in licence applications or changes;

- K. Seeking consent from, or undertaking consultation with, affected parties for licence applications or changes;

- L. Measuring and reporting actual water use when demonstrating compliance with licence conditions;
- M. Reporting well levels for regulated groundwater users;
- N. Self-registering wells, especially where groundwater is in direct hydraulic connection with surface water or in areas of known quantity concern; or
- O. **ANY** combination of the above.

Are there other options? If so, what are they?

All of the items above have specific technical and permitting implications for hydropower projects, generally, hydropower projects are already required to report actual water use.

Option to provide water users and decision makers the flexibility to adapt

- A. Provide decision makers and licence holders with the ability to seek amendment of water licence terms and conditions based on:
- New information about watershed issues, priorities or changes in supply (watershed, aquifer based) including addressing over-allocation and climate change impacts;
 - The ability to use water differently e.g. bring more land into productivity, change land appurtenance or use, or to use water for a higher economic purpose;
 - Incentives to consolidate licences within a community/watershed to inspire collaborative or shared management of the resource;
 - Adverse impacts on aquifers or groundwater recharge zones; or
 - Monitoring information that shows stream health is deteriorating because of lack of water.

Please indicate your level of support for seeking amendment of licence terms and conditions.

- Strongly support

- Support
- Neutral
- Disagree
- Strongly Disagree

The ability of the Comptroller to change licence conditions for run of river power producers, e.g. based on monitoring results, is already a part of the water licence. Compliance and impact monitoring is an important tool to avoid impacts and improve knowledge within the industry. However, monitoring guidelines should be developed in conjunction with government, industry and practicing professionals to ensure they meet the objectives of all parties.

Options for the water allocation system:

-
- A. **First-in-time first-in-right – FITFIR** – New uses of surface water and groundwater, where it is regulated, are allocated based on a modified FITFIR approach.
-
- B. **Priority of use** – New uses of surface water in streams and groundwater, where it is regulated, are allocated based on priority of use determined either in the *Water Act* or with community involvement in the water allocation plan process.

Are there other options? If so, what are they?

The FITFIR approach has been used in BC and other jurisdictions for many decades. IPPBC has a separate submission on the issue of FITFIR and first priority licences.

Options to address temporary water scarcity

-

- A. **Discretionary** – The decision-maker determines the approach on a case-by-case basis, balancing the effects on water users with the required environmental outcome.
-
- B. **Sharing** – All water users would reduce use on a proportional basis depending on the water supply forecast.
-
- C. **Hierarchy of uses** – A hierarchy of uses guide how water use is reduced.
-
- D. **Priority date** – This approach follows FITFIR, as contemplated by the current requirements of the *Water Act* but could be expanded to include the protection of ecosystem values.

Are there other options? If so, what are they?

The current Water Licence system for hydropower projects includes studies and statutory decisions regarding minimum instream flows and the protection of ecosystem values. Given this existing policy as well as the fact that hydropower projects are non-consumptive in their use, setting the priority date is the best means to allocate water. IPPBC has comments on the hierarchy of uses in its submission on FITFIR.

Options to address long-term scarcity

-
- E. **Through a mandatory Water Management Planning process**, such as a Water Management Plan provided for in Part 4 of the *Water Act*.
-
- D. **At the request of water users or communities** – Water licensees and other interested parties may develop a plan that addresses long term scarcity on a watershed basis and provides recommendations for supply and demand side changes to be made.

Are there other options? If so, what are they?

Long-term scarcity will affect different regions of the province in different ways. As such, it may be more effective to have the development of plans carried out according to a defined framework

to ensure the inputs and outputs of the planning process meet the both local and provincial needs. Note that land use plans may also contain information regarding long-term scarcity or land use activities that affect the long-term availability of water and these may be a good starting point for any consideration of long-term scarcity.

Goal 4: Regulate Groundwater Extraction and Use

Objective for regulating groundwater extraction and use

1. Groundwater extraction and use is regulated in priority (critical) areas and for all large withdrawals.

Please indicate your level of support for the objective proposed.

- Strongly support
- Support
- Neutral
- Disagree
- Strongly Disagree

Options for determining the thresholds for large groundwater withdrawals

A. **The threshold for large could be:**

- 500 m³/day for wells drilled in unconsolidated, sand and gravel aquifers or if otherwise determined to be large by a Water Management Plan.
- 100 m³/day for wells drilled into consolidated bedrock aquifers or if otherwise determined to be large by a Water Management Plan.

OR

B. **The threshold for large could be:**

- 250 m³/day for wells drilled in unconsolidated, sand and gravel aquifers or if otherwise determined to be large by a Water Management Plan.
- 100 m³/day for wells drilled into consolidated bedrock aquifers or if otherwise determined by a Water Management Plan.

Are there other threshold options? If so, what are they?

As these groundwater aspects very seldom affect hydropower projects, and thus either option may be workable.

Options for determining priority areas to regulate groundwater extraction and use

A. **Heavy groundwater extraction and use** (rely on BC Aquifer Classification System).

B. **Area of known quantity concern** e.g., declining groundwater level, conflicts with other groundwater users, aquifers or water resources impacted by salt water intrusion.

C. **Groundwater in direct hydraulic connection** with surface water in areas of known quantity concern.

D. **Significant population that is reliant on groundwater** for drinking water.

E. **Trans-boundary aquifers.**

F. **Basins where surface water is at or near the allocation limit.**

G. **ANY** combination of the above.

Are there other options? If so, what are they?

As these groundwater aspects very seldom affect hydropower projects, and thus either option may be workable.

Your Thoughts

Are there additional opportunities for the modernization of the *Water Act* to integrate with other federal and provincial legislation?

IPPBC has provided separate submissions on the following topics:

Harmonizing the Water Act requirements with Land Act maximum terms, Electricity Purchase Agreement maximum terms, and BC Utilities Commission approved maximum terms, where the 40 year term does not include the construction period.

Instream Flow Requirements – maintaining a site-specific assessment of streams for non-consumptive water power purposes is appropriate, rather than a standard cap which does not reflect the variation in stream ecology.

First in Line Priority – IPPBC proposes a method for more transparent management of applications for hydropower projects, consistent with systems used for other resource industries.