COMMENTARY **BC HYDRO**

A CLOSER LOOK AT BC HYDRO'S NEW RESOURCE PLAN FORECAST

On 21 December 2021, BC Hydro submitted its 2021 Integrated Resource Plan (IRP) for approval by the BC Utilities Commission (BCUC).[1] The plan forecast a surplus in domestic electricity until 2029/30, with additional generation required starting the following year.

After only some 18 months BC Hydro filed a new plan (labelled "Signposts Update") with the regulator which materially changed the outlook for electricity requirements in the near to mid-term. In particular, BC Hydro now forecasts the need under the base scenario to acquire 3,700 GWh in new power by 2028/29. The revised plan was announced by Premier Eby on 15 June 2023, together with an alert to independent power producers that BC Hydro would be seeking contracts for new generation again after a 15-year hiatus. The premier also suggested that a faster approval process would be required to respond to evolving needs for clean energy.

This paper will provide a closer look at what has changed in the forecast and how BC Hydro proposes to meet the new requirement.

1.0 Comparing the Two Plans

The 2021 plan spans 20 years to 2040/41 while the 2023 plan spans 18 years to 2040/41. While the earlier plan forecast surplus power until 2029/30 the new forecast has deficits beginning in 2028/29. The 2023 IRP anticipates new energy acquisitions beginning in 2023/24, and ramping up to 3.700 GWh by 2028/29.

Table 1 compares the two forecasts for the 2029/30 fiscal year.

TABLE 1—2023 IRP BASE PLAN 2029/30 COMPARISON TO 2021 (GWh)

		2023	2021	Change
1	Gross Required	70,386	68,127	2,259
2	Generation*	62,502	63,181	(679)
3	Initial Deficit	7,884	4,946	2,938

[1] The IRP is a key planning document which forecasts future electricity needs and the available supply, or measures to reduce the forecast demand (Demand-side Measures) for the next 20 years.

4	Less DSM**	4,040	4,511	(471)
5	Less IPP Renewals	1,671	895	776
6	Surplus/(Deficit)	(2,173)	460	2,633
	New Acquisition	3,700	--	3,700
	Net Surplus	1,527	460	1,067

Notes: * includes owed and committed IPP; owed GWh the same for both forecasts but committed IPP is lower for 2023 IRP.
** includes current and future DSM.
Source: 2021 IRP https://docs.bcuc.com/Documents/Proceedings/2021/DOC_65194_B-1-BCH-IntegratedResourcePlan-Public.pdf Appendix B Pdf 320/1674. The 2023 IRP from https://docs.bcuc.com/Documents/Proceedings/2023/DOC_71932_B39BCHSignpostsUpdate.pdf Table 1-6, Pdf 192/368.

1) Gross Requirement

The 2023 IRP forecasts almost 2,300 GWh in additional power being needed by 2029/30 due to greater electrification and new load requirements. The new plan reflects the government's emphasis on climate action to achieve lower GHG emissions through the encouragement of renewable energy to power the conversion from fossil fuels. BC Hydro forecasts that all of the increase in requirements for 2029/30 is due to growth in the Commercial/Light Industrial customer class (up approximately 815 GWh) and the Large Industrial customer class (up approximately 1,300 GWh).[2] The Residential class shows a slight decline as a 560 GWh decline in electric vehicle forecast negated any overall growth.[3]

Within the Large Industrial class, the growth in relation to the 2021 plan is primarily in the oil and gas (including LNG) sector (up 1,300 GWh), and the mining sector (up 845 GWh), partly offset by a 968 GWh decline in the forestry sector. It would appear that much of the oil and gas increase is due to the Cedar LNG project which gained provincial and federal environmental approval on 14 March 2023.[4]

2) Generation Including Committed IPP

The new plan for 2029/30 forecasts approximately 680 GWh less generation compared to the 2021 plan. This is the result of a more rapid decline in the IPP purchases through committed contracts compared to the 2021 plan.

[2] https://docs.bcuc.com/Documents/Proceedings/2023/DOC_71932_B39BCHSignpostsUpdate.pdf pdf 243/368.
[3] Ibid., pdf 247/368.
[4] https://www.theglobeandmail.com/canada/british-columbia/article-bc-approves-indigenous-led-cedar-lng-project-announces-new-energy/ A final investment decision is expected in a few months.

3) Initial Shortfall

The initial 2029/30 shortfall in the 2023 IRP is approximately 7,900 GWh, or approximately 3,000 GWh more than the 2021 shortfall.

4) Demand-side Management (DSM)

DSM offsets, both current and anticipated, were a key component of the 2021 plan. However, the 2023 plan shows the offsets by 2029/30 being almost 500 GWh less than the 2021 plan.

5) IPP Renewals

The new plan relies more heavily on the renewal of contracts with independent power producers, as the new renewal forecast is approximately 780 GWh more than the 2021 plan.

Combining the 2029/30 forecast for committed and renewed IPP power shows that the new plan is almost equivalent to the 2021 plan. The new plan shows less committed, and more renewal IPP power, compared to the 2021 plan, although the new plan has significantly less total IPP power in the period 2023/24 to 2027/28 compared to the 2021 plan.

6) Net Surplus/(Deficit)

Overall, the new plan forecasts a net shortfall of almost 2,200 GWh for domestic requirements by 2029/30 compared to the previous plan. BC Hydro states that it will add 700 GWh of "new clean or renewable energy from existing facilities prior to fiscal 2029."[5] It will also contract for 3,000 GWh of additional clean power from private power (IPP) producers. The additional 3,700 GWh will result in a surplus of approximately 1,500 GWh for 2029/30, but the surplus will be eliminated over the next four years.

A detailed review of the actions required to achieve the 700 GWh addition from existing resources is provided in BC Hydro's 15 April 2023 update to the BCUC commencing on page 64.[6] The requirement that the 3,000 GWh of additional IPP power be available by 2029 adds a major limitation, and suggests that intermittent wind generation will be the major source of the new power.

[5] https://docs.bcuc.com/Documents/Proceedings/2023/DOC_71932_B39BCHSignpostsUpdate.pdf p. 2; Pdf 9/368.
[6] Ibid., Pdf 71/368.

2.0 A New Approval Process?

Will the government's desire for a more rapid approval process for new IPP contracts, and for capital projects such as transmission lines, require a more circumscribed role for the BCUC?

As noted earlier, Premier Eby announced that the process to select new private power producers will be designed by the Crown corporation and the province following discussions with Indigenous groups, industry representatives, and stakeholders. Also, a new BC Hydro task force "will provide strategic advice on program design, focusing on Indigenous ownership opportunities, speed of permitting and delivery, electricity rates, climate priorities, and economic opportunity acceleration. The task force will consult Indigenous and other external energy experts."[7]

The emphasis on Indigenous participation and ownership potential is a new twist on the IPP contract process. As BC Hydro notes: "We also heard a strong interest from Indigenous Nations in participating in new clean energy opportunities.... BC Hydro will be engaging Indigenous Nations and stakeholders on the design of a competitive energy acquisition process with a particular focus on how we can include a role for First Nations ownership in all projects."[8]

One might question the role of the BCUC in the approval process of the new IPP contracts if they have already met the criteria designed by the task force. Will this government tolerate a lengthy delay, or a rejection of an application, by the nominally independent regulator?[9]

The same question might be asked of the role of the BCUC in approving the new IRP, and the related issue of the approval of major projects, such as new transmission lines. The regulator's slow review process would appear to be at odds with the government's desire for rapid decisions. The Commission's recently concluded review of the 2022 to 2024 rate changes took 22 months to complete. The 15 April 2023 IRP was filed while the BCUC was still mired in a lengthy review of the 2021 IRP. No doubt the new plan will extend the review for many more months.

---

[7] https://www.mccarthy.ca/en/insights/blogs/canadian-energy-perspectives/bc-government-announces-first-bc-hydro-power-call-15-years

[8] https://docs.bcuc.com/Documents/Proceedings/2023/DOC_71932_B39BCHSignpostsUpdate.pdf p. 80, pdf 78/368. The importance that this government places on Indigenous participation can be gaged by the premier's suggestion that the Burrard Thermal facility might be used to meet some of the power demands if there was Indigenous participation, even though it is powered by natural gas; see https://vancouversun.com/opinion/columnists/vaughn-palmer-hydro-not-on-track-to-fill-b-c-s-power-needs

[9] This government, as well as the previous Liberal government, often used cabinet directives to require the BCUC to approve rate changes and capital projects, see https://www.bcpolicyperspectives.com/media/attachments/view/doc/commentary_bcuc_independence_5_december_2022/pdf/commentary_bcuc_independence_5_december_2022.pdf

The premier also criticized the slow approval process for major developments.[10] Recent news stories have highlighted how BC Hydro is under pressure to provide more power and transmission links to electrify major capital projects.[11]

A key piece in the rush to switch to electricity from fossil fueled generation is the cost. This will require more clarification from BC Hydro, especially the cost of switching existing operations from fossil fuel power to clean hydroelectricity versus the cost of electrifying new projects or activities, such as LNG export terminals. Making the marginal cost explicit is most important where the electricity is being sold at less than the cost of production.

The writer is a retired senior BC government public servant whose paper describing the BC government's manipulation of the finances of BC Hydro from 2008 to 2014 was published by BC Studies in November 2016. BC Studies published his paper on the 40-year financial history of ICBC in 2013. He is an intervener in the BC Utilities Commission's reviews of ICBC's and BC Hydro's rate requests.

[10] https://vancouversun.com/opinion/columnists/vaughn-palmer-hydro-not-on-track-to-fill-b-c-s-power-needs
[11] See https://biv.com/article/2023/07/lng-canada-throws-down-gauntlet-bc-hydro and https://biv.com/article/2023/07/bc-hydros-distribution-grid-not-keeping-pace-development