BC Hydro
Power smart

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October 25, 2017

Mr. Patrick Wruck
Commission Secretary and Manager
Regulatory Support
British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Dear Mr. Wruck:

RE: Project No. 1598922
British Columbia Utilities Commission (BCUC or Commission)
British Columbia Hydro and Power Authority (BC Hydro)
Site C Inquiry – Supplemental Round 2 Information Response

BC Hydro is writing in response to the BCUC's request of October 22, 2017 for an update to information provided in response to BCUC IR 2.21.0.

For further information, please contact Fred James at 604-623-4317 or by email at bchydroregulatorygroup@bchydro.com.

Yours sincerely,

Fred James
Chief Regulatory Officer

fj/ma

Enclosure

21.0 Reference: BC Hydro Response to BCUC IR 2.21.0

2.21.1 In response to IR 21, BC Hydro confirmed that other than Revelstoke Unit 6 and Site C there are no other currently planned resources that have not been included in the tables. Please provide updated functioning spreadsheets including Revelstoke 6 as a planned resource and provide an explanation as to why the existing and committed IPP resources, the IPP renewals and the standing offer program resources are different than from the RRA. If any other changes are made, please describe those changes.

RESPONSE:

Attachment 1 to this response provides a working excel file containing the updated load resource balance tables filed in our response to BCUC Site C IR 1.4.1 and now with the addition of the planned Revelstoke Unit 6 project in fiscal 2027.

The values for (1) Existing and Committed IPP Resources; (2) IPP Renewals; and (3) Standing Offer Program from the response to BCUC Site C IR 1.4.1 are identical to the updated tables in the F2017-F2019 Revenue Requirements Application (RRA) proceeding with one exception for the energy from Existing and Committed IPP Resources in fiscal 2036. The fiscal 2036 value was corrected in our response to BCUC Site C IR 1.4.1. BC Hydro also notes that the high and low peak loads were also revised slightly (for fiscal 2035 and fiscal 2036) in our response to BCUC Site C IR 1.4.1 – these changes impact the "Small Gap Surplus/(Deficit)" and the "Large Gap Surplus/(Deficit)" amounts shown. We have highlighted the affected numbers in yellow in Attachment 1.

The original RRA load resource balances (provided in F2017 – F2019 RRA Exhibit B-1-1, Tables 3-6, 3-7, 3-8 and 3-9) were revised during the RRA proceeding in our response to BCUC RRA IR 1.11.1 (Exhibit B-9). In order to assist the Commission, we have provided a copy of that RRA response as Attachment 2 because it provides a useful explanation and accounting of the changes from the original RRA tables.

Attachment 1 to this response contains four worksheets (or tabs), as follows:

1. **"Table K-1a Energy - NoSiteC ": Table K-1: Energy Load Resource Balance after Planned Resources without Site C;**

2. **"Table K-2a Capacity - NoSiteC": Table K-2: Capacity Load Resource Balance after Planned Resources without Site C;**

3. **"Table K-3a Energy – wSiteC": Table K-3: Energy Load Resource Balance after Planned Resources with Site C;**

4. **"Table K-4a Capacity – wSiteC": Table K-4: Capacity Load Resource Balance after Planned Resources with Site C;**

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11.0 Topic: Chapter 3 – Load and Revenue Forecast

Reference: LOAD AND REVENUE FORECAST
Exhibit B-1-1, p. 3-32, Table 3-9, Appendix V, p. 35
Load resource balance

Table 3-9 on page 3-32 shows that, after considering planned resources, there is a peak capacity deficit of 96MW in F2023 and 236MW in F2024, a capacity surplus in F2025 to F2028, and a forecasted capacity deficit from F2029 onwards.

BC Hydro requests on Page 35 of Appendix V to the Application $38.6 million in funding for capacity focused pilots to understand the dependability of the capacity savings for inclusion in BC Hydro's planning.

1.11.1 Please explain BC Hydro's assumptions that result in a capacity deficit in F2023 and F2024.

RESPONSE:

In the course of responding to information requests, BC Hydro noticed inconsistencies between the Load Resource Balance Tables 3-6, 3-7, 3-8 and 3-9, and IPP Table 4-9 in the Application. As such, BC Hydro has revised the Load Resource Balance tables to address the inconsistency as well as a couple of minor corrections. These revisions are included at the end of this response.

The load resource balance in Table 3-9 shows the assumptions and is repeated below for ease of reference for fiscal 2023 and fiscal 2024, with additional details on existing and committed IPP resources. The load resource balance includes capacity contributions from existing and committed resources, as well as planned resource additions. Please note that we are also assuming no North Coast capacity additions will take place before the end of the fiscal 2024.

The resulting capacity is not sufficient to meet the forecasted load growth in fiscal 2023 and fiscal 2024. BC Hydro plans to rely on the market as a cost effective resource for a short period of time until the Site C Clean Energy Project is fully in service in fiscal 2025 consistent with Recommended Action 7 in the 2013 Integrated Resource Plan. This short period of time (i.e., fiscal 2023, fiscal 2024) is shown as a deficit in Table 3-9 in the Application to reflect planned market reliance or possible alternatives such as load curtailment.

(MW)		F2023	F2024
Existing and Committed Heritage Resources			
Heritage Resources (including Site C)	(a)	11,480	11,480
Existing and Committed IPP Resources			
Pre-F2006 Call		311	300
F2006 Call		132	132
2008 Clean Power Call		204	204
Bioenergy Calls		123	123
Standing Offer Program (signed EPAs)		35	35
Other		361	337
Sub-total	(b)	1,167	1,132
Future Supply-Side Resources			
IPP Renewals		419	441
Standing Offer Program		53	61
Revolstoke 6			
Sub-total	(c)	472	502
Total Supply	(d) = a + b + c	13,120	13,113
14% of Supply Requiring Reserves***	(e)	-1,808	-1,807
Effective Load Carrying Capability	(f) = d + e	11,311	11,306
Demand - Integrated System Peak			
2016 May Mid Load Forecast Before DSM*		-11,930	-12,119
Expected LNG Load		-361	-361
Sub-total	(g)	-12,291	-12,480
Existing and Committed Demand Side Management & Others Measures			
SMI Theft Reduction		11	11
Voltage and VAR Optimization		0	0
2016 DSM Plan F16 savings		204	201
Planned Demand Side Management Measures			
2016 DSM Plan F17 to F19 savings		311	305
2016 DSM Plan F20+ savings		358	421
Sub-total	(h)	884	938
		F2023	**F2024**
Surplus / (Deficit) **	(i) = f + g + h	**(96)**	**(236)**

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As noted above, in the course of responding to information requests, BC Hydro noticed inconsistencies between the Load Resource Balance Tables 3-6, 3-7, 3-8 and 3-9, and IPP Table 4-9 in the Application. As such, BC Hydro has revised the Load Resource Balance tables to address the inconsistency as well as a couple of minor corrections. The revision only affects the presentation in these tables and has no other impacts on the Application. There is no change to the overall surplus/deficit after planned resources during the test period, but an increase of 30 GWh in F2020 growing to 100 GWh in F2024.

The revision included: re-allocating an IPP project from "existing and committed" to "future resources"; revising the future Standing Offer Program energy from planned energy reliance to operating energy; re-allocating IPP turndown energy between IPP line items; the "Surplus/Deficit as % of Net Load (Planning View)" was corrected to be based on planning estimates during the test period; and adding capacity contributions from several small IPP projects in the fiscal 2034 to fiscal 2036 period.

The revised tables are below and a set of tables that shows the changes from the original are also shown.

Table 3-6 Energy Load Resource Balance with Existing and Committed Resources

	(GWh)		F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025	F2026	F2027	F2028	F2029	F2030	F2031	F2032	F2033	F2034	F2035	F2036
	Existing and Committed Heritage Resources																					
1	Heritage Resources (including Site C)	(a)	48,445	46,895	46,014	48,491	48,491	48,491	48,491	48,857	52,383	53,777	53,777	53,777	53,777	53,777	53,777	53,777	53,777	53,777	53,777	53,777
2	***Existing and Committed IPP Resources***	(b)	13,198	14,592	14,337	14,364	14,097	13,782	13,547	13,210	12,814	12,414	12,307	11,983	11,467	10,720	10,259	10,203	10,163	10,015	9,476	8,110
3	**Total Supply (Operating View**)**	(c) = a + b	61,643	61,487	60,351	62,856	62,588	62,274	62,038	62,067	65,197	66,191	66,084	65,761	65,244	64,497	64,037	63,981	63,941	63,792	63,253	61,887
	Demand - Integrated System Total Gross Requirements																					
4	2016 May Mid Load Forecast Before DSM*		-58,334	-59,013	-60,413	-61,371	-62,309	-63,675	-64,836	-66,008	-67,109	-68,310	-69,267	-70,256	-71,222	-72,296	-73,374	-74,535	-75,462	-76,393	-77,215	-78,089
5	Expected LNG Load		-61	-148	-148	-252	-1,265	-2,299	-2,721	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848
6	Sub-total	(d)	-58,395	-59,162	-60,561	-61,624	-63,574	-65,974	-67,557	-68,856	-69,957	-71,158	-72,115	-73,104	-74,070	-75,144	-76,222	-77,383	-78,310	-79,241	-80,063	-80,937
	Existing and Committed Demand Side Management & Others Measures																					
7	SMI Theft Reduction		83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83
8	Voltage and VAR Optimization		67	152	171	188	219	240	254	259	263	268	285	290	295	300	305	310	315	320	325	331
9	2016 DSM Plan F16 savings		982	970	939	940	935	926	923	917	912	885	863	855	848	844	807	770	760	758	757	736
10	Sub-total	(e)	1,131	1,204	1,193	1,211	1,237	1,249	1,260	1,258	1,258	1,235	1,231	1,228	1,226	1,227	1,195	1,163	1,157	1,161	1,165	1,150
			F2017	**F2018**	**F2019**	**F2020**	**F2021**	**F2022**	**F2023**	**F2024**	**F2025**	**F2026**	**F2027**	**F2028**	**F2029**	**F2030**	**F2031**	**F2032**	**F2033**	**F2034**	**F2035**	**F2036**
11	**Surplus/(Deficit) (Operational View) ****	(f) = c + d + e	**4,379**	**3,529**	**983**	**2,443**	**251**	**(2,451)**	**(4,259)**	**(5,531)**	**(3,502)**	**(3,732)**	**(4,800)**	**(6,115)**	**(7,600)**	**(9,420)**	**(10,990)**	**(12,239)**	**(13,212)**	**(14,288)**	**(15,644)**	**(17,900)**
12	**Surplus / Deficit as % of Net Load (Planning View) ****		**112%**	**113%**	**110%**	**108%**	**104%**	**99%**	**94%**	**92%**	**95%**	**94%**	**93%**	**91%**	**89%**	**87%**	**85%**	**84%**	**83%**	**81%**	**80%**	**78%**
13	Low Load Forecast Surplus/(Deficit) (Operational View) **		6,700	6,089	3,995	5,833	4,118	1,935	506	(492)	1,839	1,904	1,045	(24)	(1,248)	(2,802)	(4,146)	(5,057)	(5,772)	(6,670)	(7,973)	(10,099)
14	High Load Forecast Surplus/(Deficit) (Operational View) **		1,992	638	(2,612)	(1,962)	(4,761)	(8,203)	(10,899)	(12,534)	(10,879)	(11,495)	(12,726)	(14,368)	(16,235)	(18,524)	(20,367)	(21,911)	(23,150)	(24,509)	(26,282)	(28,887)

* 2016 Integrated System Load Forecast with losses

** See section 3.4.2 for description of Operational versus Planning View

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Table 3-7 Peak Capacity Load Resource Balance with Existing and Committed Resources

	(MW)		F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025	F2026	F2027	F2028	F2029	F2030	F2031	F2032	F2033	F2034	F2035	F2036
	Existing and Committed Heritage Resources																					
1	Heritage Resources (including Site C)	(a)	11,372	11,410	11,416	11,416	11,416	11,480	11,480	11,480	12,020	12,211	12,211	12,211	12,211	12,211	12,625	12,625	12,625	12,625	12,625	12,625
2	***Existing and Committed IPP Resources***	(b)	1,593	1,673	1,621	1,572	1,490	1,461	1,167	1,132	1,069	1,025	1,025	975	938	806	806	802	796	771	747	683
3	14% of Supply Requiring Reserves***	(c)	-1,787	-1,803	-1,797	-1,790	-1,778	-1,783	-1,742	-1,737	-1,811	-1,832	-1,832	-1,825	-1,819	-1,801	-1,859	-1,858	-1,857	-1,854	-1,851	-1,842
4	**Effective Load Carrying Capability**	(d) = a + b + c	11,178	11,280	11,240	11,198	11,128	11,157	10,905	10,874	11,279	11,404	11,404	11,362	11,330	11,216	11,572	11,568	11,563	11,542	11,521	11,466
	Demand - Integrated System Peak																					
5	2016 May Mid Load Forecast Before DSM*		-10,776	-11,021	-11,209	-11,374	-11,541	-11,737	-11,930	-12,119	-12,313	-12,515	-12,708	-12,943	-13,155	-13,386	-13,614	-13,840	-14,074	-14,303	-14,542	-14,774
6	Expected LNG Load		-19	-19	-19	-72	-222	-329	-361	-361	-361	-361	-361	-361	-361	-361	-361	-361	-361	-361	-361	-361
7	Sub-total	(e)	-10,795	-11,039	-11,228	-11,447	-11,763	-12,066	-12,291	-12,480	-12,674	-12,876	-13,069	-13,304	-13,516	-13,747	-13,975	-14,201	-14,435	-14,664	-14,903	-15,135
	Existing and Committed Demand Side Management & Others Measures																					
8	SMI Theft Reduction		11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
9	Voltage and VAR Optimization		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	2016 DSM Plan F16 savings		216	214	210	211	210	207	204	201	198	193	189	185	183	180	174	168	165	165	165	162
11	Sub-total	(f)	227	226	222	222	221	218	215	212	209	204	200	197	194	192	186	179	176	176	176	173
			F2017	**F2018**	**F2019**	**F2020**	**F2021**	**F2022**	**F2023**	**F2024**	**F2025**	**F2026**	**F2027**	**F2028**	**F2029**	**F2030**	**F2031**	**F2032**	**F2033**	**F2034**	**F2035**	**F2036**
12	**Surplus / (Deficit) ****	(g) = d + e + f	**610**	**466**	**234**	**(27)**	**(414)**	**(691)**	**(1,170)**	**(1,393)**	**(1,186)**	**(1,268)**	**(1,465)**	**(1,745)**	**(1,993)**	**(2,340)**	**(2,218)**	**(2,454)**	**(2,695)**	**(2,946)**	**(3,206)**	**(3,495)**
13	Low Load Forecast Surplus / (Deficit) **		1,030	934	782	590	287	100	(310)	(482)	(218)	(245)	(400)	(627)	(821)	(1,113)	(943)	(1,113)	(1,297)	(1,508)	(1,750)	(1,997)
14	High Load Forecast Surplus / (Deficit) **		160	(84)	(444)	(855)	(1,358)	(1,769)	(2,408)	(2,693)	(2,552)	(2,700)	(2,926)	(3,270)	(3,589)	(4,024)	(3,953)	(4,242)	(4,538)	(4,848)	(5,198)	(5,552)

* 2016 Integrated System Load Forecast with losses

** Planning View is shown in this table. Capacity load resource balances are only shown in Planning View. See section 3.4.2.

*** This is also referred to as the Planning Reserve - the system generating capacity beyond that required to meet peak demand that is necessary to meet reliability criteria. See section 1.2.2 of the IRP for more details on the criteria.

Table 3-8 Energy Load Resource Balance after Planned Resources

	(GWh)		F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025	F2026	F2027	F2028	F2029	F2030	F2031	F2032	F2033	F2034	F2035	F2036
	Existing and Committed Heritage Resources																					
1	Heritage Resources (including Site C)	(a)	48,445	46,895	46,014	48,491	48,491	48,491	48,491	48,857	52,383	53,777	53,777	53,777	53,777	53,777	53,777	53,777	53,777	53,777	53,777	53,777
2	***Existing and Committed IPP Resources***	(b)	13,198	14,592	14,337	14,364	14,097	13,782	13,547	13,210	12,814	12,414	12,307	11,983	11,467	10,720	10,259	10,203	10,163	10,015	9,476	8,110
	Future Supply-Side Resources																					
3	IPP Renewals		106	280	571	647	779	936	1,114	1,349	1,628	1,951	2,032	2,223	2,617	3,328	3,788	3,828	3,863	4,011	4,549	5,515
4	Standing Offer Program		71	130	291	419	546	674	801	929	1,056	1,184	1,311	1,439	1,566	1,694	1,821	1,949	2,076	2,204	2,320	2,448
5	Revelstoke 6												26	26	26	26	26	26	26	26	26	26
6	Sub-total	(c)	177	410	862	1,066	1,325	1,609	1,916	2,278	2,684	3,135	3,370	3,688	4,209	5,048	5,635	5,803	5,966	6,241	6,895	7,988
7	**Total Supply (Operational View) ****	(d) = a + b + c	61,820	61,897	61,213	63,922	63,913	63,883	63,954	64,345	67,881	69,327	69,454	69,449	69,453	69,545	69,672	69,783	69,906	70,033	70,149	69,875
	Demand - Integrated System Total Gross Requirements																					
8	2016 May Mid Load Forecast Before DSM*		-58,334	-59,013	-60,413	-61,371	-62,309	-63,675	-64,836	-66,008	-67,109	-68,310	-69,267	-70,256	-71,222	-72,296	-73,374	-74,535	-75,462	-76,393	-77,215	-78,089
9	Expected LNG Load		-61	-148	-148	-252	-1,265	-2,299	-2,721	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848	-2,848
10	Sub-total	(e)	-58,395	-59,162	-60,561	-61,624	-63,574	-65,974	-67,557	-68,856	-69,957	-71,158	-72,115	-73,104	-74,070	-75,144	-76,222	-77,383	-78,310	-79,241	-80,063	-80,937
	Existing and Committed Demand Side Management & Others Measures																					
11	SMI Theft Reduction		83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83	83
12	Voltage and VAR Optimization		67	152	171	188	219	240	254	259	263	268	285	290	295	300	305	310	315	320	325	331
13	2016 DSM Plan F16 savings		982	970	939	940	935	926	923	917	912	885	863	855	848	844	807	770	760	758	757	736
	Planned Demand Side Management Measures																					
14	2016 DSM Plan F17 to F19 savings		389	988	1,679	1,896	1,931	1,969	1,956	1,935	1,917	1,908	1,896	1,853	1,787	1,694	1,613	1,547	1,462	1,300	1,224	1,190
15	2016 DSM Plan F20+ savings		0	0	0	292	904	1,454	1,897	2,310	2,637	2,946	3,229	3,500	3,758	4,006	4,248	4,473	4,690	4,908	5,116	4,976
16	Sub-total	(f)	1,521	2,192	2,873	3,399	4,072	4,672	5,112	5,502	5,811	6,089	6,356	6,581	6,770	6,927	7,055	7,183	7,310	7,368	7,505	7,317
			F2017	**F2018**	**F2019**	**F2020**	**F2021**	**F2022**	**F2023**	**F2024**	**F2025**	**F2026**	**F2027**	**F2028**	**F2029**	**F2030**	**F2031**	**F2032**	**F2033**	**F2034**	**F2035**	**F2036**
17	**Surplus / (Deficit) (Operational View) ****	(g) = d + e + f	**4,945**	**4,928**	**3,524**	**5,697**	**4,411**	**2,582**	**1,509**	**991**	**3,735**	**4,257**	**3,695**	**2,926**	**2,154**	**1,328**	**506**	**(417)**	**(1,093)**	**(1,840)**	**(2,410)**	**(3,745)**
18	**Surplus / Deficit as % of Net Load (Planning View) ****		**113%**	**115%**	**115%**	**114%**	**111%**	**108%**	**106%**	**105%**	**109%**	**110%**	**109%**	**107%**	**106%**	**105%**	**103%**	**102%**	**101%**	**99.97%**	**99%**	**97%**
19	Small Gap Surplus/(Deficit) (Operational View) **		7,266	7,487	6,536	9,087	8,279	6,967	6,275	6,030	9,076	9,893	9,540	9,017	8,506	7,946	7,350	6,766	6,346	5,779	5,262	4,056
20	Large Gap Surplus/(Deficit) (Operational View) **		2,559	2,036	*(70)*	1,293	*(601)*	*(3,171)*	*(5,130)*	*(6,012)*	*(3,641)*	*(3,506)*	*(4,231)*	*(5,328)*	*(6,482)*	*(7,776)*	*(8,872)*	*(10,089)*	*(11,032)*	*(12,060)*	*(13,047)*	*(14,732)*

* 2016 Integrated System Load Forecast with losses

** See section 3.4.2 for description of Operational versus Planning view

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Table 3-9 Peak Capacity Load Resource Balance after Planned Resources

	(MW)		F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025	F2026	F2027	F2028	F2029	F2030	F2031	F2032	F2033	F2034	F2035	F2036
	Existing and Committed Heritage Resources																					
1	Heritage Resources (including Site C)	(a)	11,372	11,410	11,416	11,416	11,416	11,480	11,480	11,480	12,020	12,211	12,211	12,211	12,211	12,211	12,625	12,625	12,625	12,625	12,625	12,625
2	***Existing and Committed IPP Resources***	(b)	1,593	1,673	1,621	1,572	1,490	1,461	1,167	1,132	1,069	1,025	1,025	975	938	806	806	802	796	771	747	683
3	***Future Supply-Side Resources***																					
3	IPP Renewals		9	23	55	79	120	135	419	441	450	486	486	514	538	671	671	674	680	705	862	901
4	Standing Offer Program		4	18	24	31	39	46	53	61	68	76	83	91	98	106	113	120	128	135	142	150
5	Revelstoke 6												488	488	488	488	488	488	488	488	488	488
6	Sub-total	(c)	13	41	78	110	159	181	472	502	519	562	1,057	1,092	1,124	1,264	1,272	1,283	1,296	1,328	1,492	1,539
7	Total Supply	(d) = a + b + c	12,978	13,124	13,115	13,098	13,065	13,122	13,120	13,113	13,608	13,797	14,293	14,279	14,273	14,281	14,702	14,709	14,717	14,724	14,864	14,847
8	14% of Supply Requiring Reserves***	(e)	-1,788	-1,809	-1,808	-1,805	-1,801	-1,809	-1,808	-1,807	-1,884	-1,910	-1,980	-1,978	-1,977	-1,978	-2,037	-2,038	-2,039	-2,040	-2,060	-2,057
9	**Effective Load Carrying Capability**	(f) = d + e	11,189	11,315	11,307	11,293	11,264	11,313	11,311	11,306	11,725	11,887	12,313	12,301	12,296	12,303	12,665	12,671	12,678	12,684	12,804	12,790
	Demand - Integrated System Peak																					
10	2016 May Mid Load Forecast Before DSM*		-10,776	-11,021	-11,209	-11,374	-11,541	-11,737	-11,930	-12,119	-12,313	-12,515	-12,708	-12,943	-13,155	-13,386	-13,614	-13,840	-14,074	-14,303	-14,542	-14,774
11	Expected LNG Load		-19	-19	-19	-72	-222	-329	-361	-361	-361	-361	-361	-361	-361	-361	-361	-361	-361	-361	-361	-361
12	Sub-total	(g)	-10,795	-11,039	-11,228	-11,447	-11,763	-12,066	-12,291	-12,480	-12,674	-12,876	-13,069	-13,304	-13,516	-13,747	-13,975	-14,201	-14,435	-14,664	-14,903	-15,135
	Existing and Committed Demand Side Management & Others Measures																					
13	SMI Theft Reduction		11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
14	Voltage and VAR Optimization		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	2016 DSM Plan F16 savings		216	214	210	211	210	207	204	201	198	193	189	185	183	180	174	168	165	165	165	162
	Planned Demand Side Management Measures																					
16	2016 DSM Plan F17 to F19 savings		66	167	272	310	314	316	311	305	299	295	290	282	272	259	247	237	225	207	198	195
17	2016 DSM Plan F20+ savings		0	0	0	47	170	285	358	421	468	514	554	593	629	663	696	725	753	788	822	808
18	Sub-total	(h)	293	392	494	578	706	818	884	938	977	1,013	1,045	1,072	1,095	1,114	1,128	1,142	1,154	1,171	1,196	1,176
			F2017	**F2018**	**F2019**	**F2020**	**F2021**	**F2022**	**F2023**	**F2024**	**F2025**	**F2026**	**F2027**	**F2028**	**F2029**	**F2030**	**F2031**	**F2032**	**F2033**	**F2034**	**F2035**	**F2036**
19	**Surplus / (Deficit) ****	(i) = f + g + h	**687**	**668**	**573**	**424**	**206**	**65**	**(96)**	**(236)**	**27**	**23**	**289**	**70**	**(124)**	**(330)**	**(182)**	**(389)**	**(603)**	**(808)**	**(903)**	**(1,169)**
20	Small Gap Surplus / (Deficit) **		1,107	1,136	1,121	1,041	908	856	765	675	995	1,046	1,354	1,188	1,048	897	1,093	953	796	629	554	328
21	Large Gap Surplus / (Deficit) **		237	118	(105)	(403)	(737)	(1,013)	(1,334)	(1,536)	(1,339)	(1,409)	(1,172)	(1,455)	(1,721)	(2,014)	(1,917)	(2,177)	(2,445)	(2,711)	(2,894)	(3,226)

* 2016 Integrated System Load Forecast with losses

** Planning View is shown in this table. Capacity load resource balances are only shown in Planning View. See section 3.4.2.

*** This is also referred to as the Planning Reserve - the system generating capacity beyond that required to meet peak demand that is necessary to meet reliability criteria. See section 1.2.2 of the IRP for more details on the criteria.

The following four tables show the differences between Tables 3-6, 3-7, 3-8 and 3-9 in the Application as compared to the revised tables above.

Table 3-6 Energy Load Resource Balance with Existing and Committed Resources Difference from Table in Application

	(GWh)		F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025	F2026	F2027	F2028	F2029	F2030	F2031	F2032	F2033	F2034	F2035	F2036
	Existing and Committed Heritage Resources																					
1	Heritage Resources (including Site C)	(a)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	***Existing and Committed IPP Resources***	(b)	-54	-89	-120	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92
3	**Total Supply (Operating View**)**	(c) = a + b	-54	-89	-120	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92
	Demand - Integrated System Total Gross Requirements																					
4	2016 May Mid Load Forecast Before DSM*		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Expected LNG Load		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Sub-total	(d)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Existing and Committed Demand Side Management & Others Measures																					
7	SMI Theft Reduction		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Voltage and VAR Optimization		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	2016 DSM Plan F16 savings		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Sub-total	(e)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			F2017	**F2018**	**F2019**	**F2020**	**F2021**	**F2022**	**F2023**	**F2024**	**F2025**	**F2026**	**F2027**	**F2028**	**F2029**	**F2030**	**F2031**	**F2032**	**F2033**	**F2034**	**F2035**	**F2036**
11	**Surplus/(Deficit) (Operational View) ****	(f) = c + d + e	(54)	(89)	(120)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)
12	**Surplus / Deficit as % of Net Load (Planning View) ****		5%	7%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
13	Low Load Forecast Surplus/(Deficit) (Operational View) **		(54)	(89)	(120)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)
14	High Load Forecast Surplus/(Deficit) (Operational View) **		(54)	(89)	(120)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)	(92)

* 2016 Integrated System Load Forecast with losses

** See section 3.4.2 for description of Operational versus Planning View

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Table 3-7 Peak Capacity Load Resource Balance with Existing and Committed Resources Difference from Application Table

	(MW)		F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025	F2026	F2027	F2028	F2029	F2030	F2031	F2032	F2033	F2034	F2035	F2036
	Existing and Committed Heritage Resources																					
1	Heritage Resources (including Site C)	(a)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	***Existing and Committed IPP Resources***	(b)	0	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	17	17	8
3	14% of Supply Requiring Reserves***	(c)	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-2	-2	-1
4	**Effective Load Carrying Capability**	(d) = a + b + c	0	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	15	15	7
	Demand - Integrated System Peak																					
5	2016 May Mid Load Forecast Before DSM*		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Expected LNG Load		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Sub-total	(e)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Existing and Committed Demand Side Management & Others Measures																					
8	SMI Theft Reduction		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Voltage and VAR Optimization		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	2016 DSM Plan F16 savings		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Sub-total	(f)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			F2017	**F2018**	**F2019**	**F2020**	**F2021**	**F2022**	**F2023**	**F2024**	**F2025**	**F2026**	**F2027**	**F2028**	**F2029**	**F2030**	**F2031**	**F2032**	**F2033**	**F2034**	**F2035**	**F2036**
12	**Surplus / (Deficit) ****	(g) = d + e + f	**0**	**(10)**	**(10)**	**(10)**	**(10)**	**(10)**	**(10)**	**(10)**	**(10)**	**(10)**	**(10)**	**(10)**	**(10)**	**(10)**	**(10)**	**(10)**	**(10)**	**15**	**15**	**7**
13	Low Load Forecast Surplus / (Deficit) **		0	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	15	15	7
14	High Load Forecast Surplus / (Deficit) **		0	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	15	15	7

* 2016 Integrated System Load Forecast with losses
** Planning View is shown in this table. Capacity load resource balances are only shown in Planning View. See section 3.4.2.
*** This is also referred to as the Planning Reserve - the system generating capacity beyond that required to meet peak demand that is necessary to meet reliability criteria. See section 1.2.2 of the IRP for more details on the criteria.

Table 3-8 Energy Load Resource Balance after Planned Resources Difference from Application Table

	(GWh)		F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025	F2026	F2027	F2028	F2029	F2030	F2031	F2032	F2033	F2034	F2035	F2036
	Existing and Committed Heritage Resources																					
1	Heritage Resources (including Site C)	(a)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	***Existing and Committed IPP Resources***	(b)	-54	-89	-120	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92	-92
	Future Supply-Side Resources																					
3	IPP Renewals		45	46	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Standing Offer Program		9	44	118	135	152	169	186	202	219	236	253	270	286	303	320	337	354	371	386	403
5	Revelstoke 6												0	0	0	0	0	0	0	0	0	0
6	Sub-total	(c)	54	89	120	135	152	169	186	202	219	236	253	270	286	303	320	337	354	371	386	403
7	**Total Supply (Operational View) ****	(d) = a + b + c	0	0	0	43	60	77	94	110	127	144	161	178	195	211	228	245	262	279	294	311
	Demand - Integrated System Total Gross Requirements																					
8	2016 May Mid Load Forecast Before DSM*		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Expected LNG Load		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Sub-total	(e)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Existing and Committed Demand Side Management & Others Measures																					
11	SMI Theft Reduction		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Voltage and VAR Optimization		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	2016 DSM Plan F16 savings		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Planned Demand Side Management Measures																					
14	2016 DSM Plan F17 to F19 savings		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	2016 DSM Plan F20+ savings		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Sub-total	(f)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			F2017	**F2018**	**F2019**	**F2020**	**F2021**	**F2022**	**F2023**	**F2024**	**F2025**	**F2026**	**F2027**	**F2028**	**F2029**	**F2030**	**F2031**	**F2032**	**F2033**	**F2034**	**F2035**	**F2036**
17	**Surplus / (Deficit) (Operational View) ****	(g) = d + e + f	**0**	**0**	**0**	**43**	**60**	**77**	**94**	**110**	**127**	**144**	**161**	**178**	**195**	**211**	**228**	**245**	**262**	**279**	**294**	**311**
18	**Surplus / Deficit as % of Net Load (Planning View) ****		**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**
19	Small Gap Surplus/(Deficit) (Operational View) **		0	0	0	43	60	77	94	110	127	144	161	178	195	211	228	245	262	279	294	311
20	Large Gap Surplus/(Deficit) (Operational View) **		0	0	0	43	60	77	94	110	127	144	161	178	195	211	228	245	262	279	294	311

* 2016 Integrated System Load Forecast with losses
** See section 3.4.2 for description of Operational versus Planning view

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Table 3-9 Peak Capacity Load Resource Balance after Planned Resources Difference from Application Table

	(MW)		F2017	F2018	F2019	F2020	F2021	F2022	F2023	F2024	F2025	F2026	F2027	F2028	F2029	F2030	F2031	F2032	F2033	F2034	F2035	F2036
	Existing and Committed Heritage Resources																					
1	Heritage Resources (including Site C)	(a)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	***Existing and Committed IPP Resources***	(b)	0	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	-12	17	17	8
3	***Future Supply-Side Resources***																					
3	IPP Renewals		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Standing Offer Program		0	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	5	5
5	Revelstoke 6																					
6	Sub-total	(c)	0	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	5	5
7	Total Supply	(d) = a + b + c	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	21	13
8	14% of Supply Requiring Reserves***	(e)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-4	-3	-2
9	**Effective Load Carrying Capability**	(f) = d + e	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	18	11
	Demand - Integrated System Peak																					
10	2016 May Mid Load Forecast Before DSM*		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Expected LNG Load		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Sub-total	(g)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Existing and Committed Demand Side Management & Others Measures																					
13	SMI Theft Reduction		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Voltage and VAR Optimization		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	2016 DSM Plan F16 savings		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Planned Demand Side Management Measures																					
16	2016 DSM Plan F17 to F19 savings		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	2016 DSM Plan F20+ savings		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Sub-total	(h)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			F2017	**F2018**	**F2019**	**F2020**	**F2021**	**F2022**	**F2023**	**F2024**	**F2025**	**F2026**	**F2027**	**F2028**	**F2029**	**F2030**	**F2031**	**F2032**	**F2033**	**F2034**	**F2035**	**F2036**
19	**Surplus / (Deficit) ****	(i) = f + g + h	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**25**	**18**	**11**
20	Small Gap Surplus / (Deficit) **		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	18	11
21	Large Gap Surplus / (Deficit) **		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	18	11

* 2016 Integrated System Load Forecast with losses

** Planning View is shown in this table. Capacity load resource balances are only shown in Planning View. See section 3.4.2.

*** This is also referred to as the Planning Reserve - the system generating capacity beyond that required to meet peak demand that is necessary to meet reliability criteria. See section 1.2.2 of the IRP for more details on the criteria.