

2017 IRP Update Summer Capacity Load and Resource Balance (EV2020 Projects and FOTs Removed)

Calendar Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>East</b>											
Thermal	6,403	6,403	6,123	6,123	5,736	5,736	5,736	5,736	5,736	5,654	5,654
Hydroelectric	103	107	114	114	114	114	114	93	93	93	93
Renewable	198	196	194	197	196	188	188	188	188	178	178
Purchases	249	249	249	249	221	221	221	221	121	121	121
Qualifying Facilities	656	648	691	743	735	738	734	679	674	670	666
Class 1 DSM	323	323	323	323	323	323	323	323	323	323	323
Sales	(651)	(655)	(655)	(655)	(175)	(175)	(175)	(148)	(148)	(66)	(66)
Non-Owned Reserves	(35)	(35)	(35)	(35)	(35)	(35)	(35)	(35)	(35)	(35)	(35)
Transfers	125	62	231	142	(90)	(77)	(71)	(1)	108	56	38
<b>East Existing Resources</b>	<b>7,372</b>	<b>7,298</b>	<b>7,235</b>	<b>7,201</b>	<b>7,026</b>	<b>7,033</b>	<b>7,035</b>	<b>7,058</b>	<b>7,061</b>	<b>6,995</b>	<b>6,973</b>
Front Office Transactions	0	0	0	0	0	0	0	0	0	0	0
Gas	0	0	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	0	0	0	0	0	0	0
Solar	0	0	0	0	0	0	0	0	0	0	0
Class 1 DSM	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0
<b>East Planned Resources</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>East Total Resources</b>	<b>7,372</b>	<b>7,298</b>	<b>7,235</b>	<b>7,201</b>	<b>7,026</b>	<b>7,033</b>	<b>7,035</b>	<b>7,058</b>	<b>7,061</b>	<b>6,995</b>	<b>6,973</b>
Load	6,810	6,853	6,911	6,972	7,030	7,104	7,172	7,248	7,309	7,310	7,354
Private Generation	(50)	(108)	(166)	(202)	(213)	(220)	(226)	(234)	(242)	(252)	(269)
Existing Resources:	0	0	0	0	0	0	0	0	0	0	0
Interruptible	(195)	(195)	(195)	(195)	(195)	(195)	(195)	(195)	(195)	(195)	(195)
Class 2 DSM	0	0	0	0	0	0	0	0	0	0	0
New Resources:	0	0	0	0	0	0	0	0	0	0	0
Class 2 DSM	(67)	(118)	(172)	(226)	(273)	(319)	(365)	(410)	(460)	(509)	(555)
<b>East obligation</b>	<b>6,498</b>	<b>6,432</b>	<b>6,378</b>	<b>6,349</b>	<b>6,348</b>	<b>6,370</b>	<b>6,386</b>	<b>6,409</b>	<b>6,412</b>	<b>6,354</b>	<b>6,334</b>
Planning Reserves (13%)	870	862	855	851	851	853	856	859	859	851	849
<b>East Reserves</b>	<b>870</b>	<b>862</b>	<b>855</b>	<b>851</b>	<b>851</b>	<b>853</b>	<b>856</b>	<b>859</b>	<b>859</b>	<b>851</b>	<b>849</b>
<b>East Obligation + Reserves</b>	<b>7,368</b>	<b>7,294</b>	<b>7,233</b>	<b>7,200</b>	<b>7,199</b>	<b>7,223</b>	<b>7,241</b>	<b>7,268</b>	<b>7,271</b>	<b>7,205</b>	<b>7,183</b>
<b>East Position</b>	<b>4</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>(174)</b>	<b>(190)</b>	<b>(206)</b>	<b>(210)</b>	<b>(210)</b>	<b>(210)</b>	<b>(210)</b>
<b>East Reserve Margin</b>	<b>13%</b>	<b>13%</b>	<b>13%</b>	<b>13%</b>	<b>11%</b>	<b>10%</b>	<b>10%</b>	<b>10%</b>	<b>10%</b>	<b>10%</b>	<b>10%</b>



Calendar Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>West</b>											
Thermal	2,254	2,254	2,254	2,254	2,254	2,254	2,254	2,254	2,254	2,254	2,254
Hydroelectric	855	861	747	790	643	587	624	655	655	645	658
Renewable	92	90	88	91	91	61	61	56	56	55	54
Purchases	18	18	1	1	1	1	1	1	1	1	1
Qualifying Facilities	213	235	220	227	203	194	187	185	184	182	150
Class 1 DSM	3	3	3	3	0	0	0	0	0	0	0
Sales	(165)	(165)	(165)	(165)	(161)	(110)	(110)	(80)	(80)	(80)	(80)
Non-Owned Reserves	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Transfers	(126)	(63)	(232)	(143)	88	76	70	(0)	(109)	(57)	(40)
<b>West Existing Resources</b>	<b>3,141</b>	<b>3,231</b>	<b>2,913</b>	<b>3,056</b>	<b>3,118</b>	<b>3,060</b>	<b>3,084</b>	<b>3,068</b>	<b>2,959</b>	<b>2,997</b>	<b>2,995</b>
Front Office Transactions	0	0	0	0	0	0	0	0	0	0	0
Gas	0	0	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	0	0	0	0	0	0	0
Solar	0	0	0	0	0	0	0	0	0	0	0
Class 1 DSM	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0
<b>West Planned Resources</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>West Total Resources</b>	<b>3,141</b>	<b>3,231</b>	<b>2,913</b>	<b>3,056</b>	<b>3,118</b>	<b>3,060</b>	<b>3,084</b>	<b>3,068</b>	<b>2,959</b>	<b>2,997</b>	<b>2,995</b>
Load	3,202	3,238	3,279	3,293	3,312	3,331	3,351	3,366	3,395	3,415	3,436
Private Generation	(7)	(13)	(19)	(25)	(31)	(37)	(42)	(48)	(55)	(63)	(71)
Existing Resources:	0	0	0	0	0	0	0	0	0	0	0
Interruptible	0	0	0	0	0	0	0	0	0	0	0
Class 2 DSM	0	0	0	0	0	0	0	0	0	0	0
New Resources:	0	0	0	0	0	0	0	0	0	0	0
Class 2 DSM	(35)	(64)	(94)	(122)	(144)	(163)	(181)	(198)	(214)	(228)	(242)
<b>West obligation</b>	<b>3,160</b>	<b>3,161</b>	<b>3,166</b>	<b>3,146</b>	<b>3,137</b>	<b>3,132</b>	<b>3,129</b>	<b>3,120</b>	<b>3,126</b>	<b>3,124</b>	<b>3,123</b>
Planning Reserves (13%)	411	411	412	409	408	407	407	406	406	406	406
<b>West Reserves</b>	<b>411</b>	<b>411</b>	<b>412</b>	<b>409</b>	<b>408</b>	<b>407</b>	<b>407</b>	<b>406</b>	<b>406</b>	<b>406</b>	<b>406</b>
<b>West Obligation + Reserves</b>	<b>3,571</b>	<b>3,572</b>	<b>3,578</b>	<b>3,554</b>	<b>3,545</b>	<b>3,539</b>	<b>3,535</b>	<b>3,526</b>	<b>3,533</b>	<b>3,530</b>	<b>3,529</b>
<b>West Position</b>	<b>(429)</b>	<b>(342)</b>	<b>(665)</b>	<b>(498)</b>	<b>(426)</b>	<b>(479)</b>	<b>(452)</b>	<b>(458)</b>	<b>(574)</b>	<b>(533)</b>	<b>(534)</b>
<b>West Reserve Margin</b>	<b>(1%)</b>	<b>2%</b>	<b>(8%)</b>	<b>(3%)</b>	<b>(1%)</b>	<b>(2%)</b>	<b>(1%)</b>	<b>(2%)</b>	<b>(5%)</b>	<b>(4%)</b>	<b>(4%)</b>

Calendar Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<b>System</b>											
<b>Total Resources</b>	10,513	10,529	10,149	10,257	10,144	10,093	10,119	10,126	10,020	9,992	9,968
<b>Obligation</b>	9,658	9,594	9,544	9,495	9,485	9,502	9,515	9,529	9,539	9,478	9,457
<b>Reserves</b>	1,281	1,273	1,266	1,260	1,258	1,261	1,262	1,264	1,265	1,257	1,255
<b>Obligation + Reserves</b>	10,939	10,867	10,811	10,755	10,744	10,762	10,777	10,793	10,804	10,735	10,712
<b>System Position</b>	(426)	(338)	(662)	(498)	(600)	(669)	(658)	(668)	(784)	(743)	(744)
<b>Reserve Margin</b>	9%	10%	6%	8%	7%	6%	6%	6%	5%	5%	5%

Source: Attachment WRA 5.2-2 and WRA 6.1

**2017 IRP Update Summer Capacity Load and Resource Balance (EV 2020 Projects and FOTs Removed)**

Calendar Year	2028	2029	2030	2031	2032	2033	2034	2035	2036
<b>East</b>									
Thermal	4,892	4,892	4,535	4,459	4,459	4,102	4,102	4,021	4,021
Hydroelectric	93	93	93	93	93	93	93	93	93
Renewable	178	178	156	124	124	124	124	124	124
Purchases	121	121	121	121	121	121	121	121	121
Qualifying Facilities	662	655	652	648	637	605	589	584	532
Class 1 DSM	323	323	323	323	323	323	323	323	323
Sales	(66)	(66)	(66)	0	0	0	0	0	0
Non-Owned Reserves	(35)	(35)	(35)	(35)	(35)	(35)	(35)	(35)	(35)
Transfers	670	457	837	866	917	692	691	703	753
<b>East Existing Resources</b>	<b>6,839</b>	<b>6,619</b>	<b>6,616</b>	<b>6,600</b>	<b>6,640</b>	<b>6,027</b>	<b>6,010</b>	<b>5,935</b>	<b>5,933</b>
Front Office Transactions	0	0	0	0	0	0	0	0	0
Gas	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	0	0	0	0	0
Solar	0	0	0	0	0	0	0	0	0
Class 1 DSM	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0
<b>East Planned Resources</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>East Total Resources</b>	<b>6,839</b>	<b>6,619</b>	<b>6,616</b>	<b>6,600</b>	<b>6,640</b>	<b>6,027</b>	<b>6,010</b>	<b>5,935</b>	<b>5,933</b>
Load	7,433	7,510	7,590	7,531	7,628	7,705	7,778	7,861	7,941
Private Generation	(288)	(303)	(324)	(236)	(261)	(284)	(308)	(333)	(354)
Existing Resources:	0	0	0	0	0	0	0	0	0
Interruptible	(195)	(195)	(195)	(195)	(195)	(195)	(195)	(195)	(195)
Class 2 DSM	0	0	0	0	0	0	0	0	0
New Resources:	0	0	0	0	0	0	0	0	0
Class 2 DSM	(602)	(645)	(690)	(734)	(771)	(805)	(835)	(863)	(892)
<b>East obligation</b>	<b>6,349</b>	<b>6,367</b>	<b>6,381</b>	<b>6,366</b>	<b>6,402</b>	<b>6,421</b>	<b>6,440</b>	<b>6,470</b>	<b>6,501</b>
Planning Reserves (13%)	851	853	855	853	858	860	862	866	870
<b>East Reserves</b>	<b>851</b>	<b>853</b>	<b>855</b>	<b>853</b>	<b>858</b>	<b>860</b>	<b>862</b>	<b>866</b>	<b>870</b>
<b>East Obligation + Reserves</b>	<b>7,199</b>	<b>7,220</b>	<b>7,236</b>	<b>7,219</b>	<b>7,259</b>	<b>7,281</b>	<b>7,302</b>	<b>7,336</b>	<b>7,371</b>
<b>East Position</b>	<b>(361)</b>	<b>(601)</b>	<b>(620)</b>	<b>(619)</b>	<b>(620)</b>	<b>(1,254)</b>	<b>(1,292)</b>	<b>(1,401)</b>	<b>(1,438)</b>
<b>East Reserve Margin</b>	<b>8%</b>	<b>4%</b>	<b>4%</b>	<b>4%</b>	<b>4%</b>	<b>(6%)</b>	<b>(7%)</b>	<b>(8%)</b>	<b>(9%)</b>

Calendar Year	2028	2029	2030	2031	2032	2033	2034	2035	2036
<b>West</b>									
Thermal	2,254	1,900	1,900	1,900	1,900	1,541	1,541	1,541	1,541
Hydroelectric	653	653	653	653	653	653	653	653	653
Renewable	51	50	50	49	49	49	49	49	49
Purchases	1	1	1	1	1	1	1	1	1
Qualifying Facilities	149	138	133	132	99	97	97	96	94
Class 1 DSM	0	0	0	0	0	0	0	0	0
Sales	(80)	(78)	(78)	(78)	(78)	(78)	(78)	(78)	(24)
Non-Owned Reserves	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Transfers	(671)	(458)	(837)	(866)	(917)	(693)	(692)	(704)	(754)
<b>West Existing Resources</b>	<b>2,355</b>	<b>2,204</b>	<b>1,819</b>	<b>1,789</b>	<b>1,704</b>	<b>1,568</b>	<b>1,568</b>	<b>1,556</b>	<b>1,557</b>
Front Office Transactions	0	0	0	0	0	0	0	0	0
Gas	0	0	0	0	0	0	0	0	0
Wind	0	0	0	0	0	0	0	0	0
Solar	0	0	0	0	0	0	0	0	0
Class 1 DSM	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0
<b>West Planned Resources</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>West Total Resources</b>	<b>2,355</b>	<b>2,204</b>	<b>1,819</b>	<b>1,789</b>	<b>1,704</b>	<b>1,568</b>	<b>1,568</b>	<b>1,556</b>	<b>1,557</b>
Load	3,457	3,503	3,495	3,513	3,532	3,554	3,575	3,620	3,612
Private Generation	(78)	(86)	(93)	(72)	(80)	(89)	(100)	(111)	(122)
Existing Resources:	0	0	0	0	0	0	0	0	0
Interruptible	0	0	0	0	0	0	0	0	0
Class 2 DSM	0	0	0	0	0	0	0	0	0
New Resources:	0	0	0	0	0	0	0	0	0
Class 2 DSM	(255)	(268)	(280)	(291)	(303)	(313)	(322)	(332)	(342)
<b>West obligation</b>	<b>3,124</b>	<b>3,150</b>	<b>3,122</b>	<b>3,150</b>	<b>3,149</b>	<b>3,152</b>	<b>3,152</b>	<b>3,176</b>	<b>3,149</b>
Planning Reserves (13%)	406	410	406	409	409	410	410	413	409
<b>West Reserves</b>	<b>406</b>	<b>410</b>	<b>406</b>	<b>409</b>	<b>409</b>	<b>410</b>	<b>410</b>	<b>413</b>	<b>409</b>
<b>West Obligation + Reserves</b>	<b>3,530</b>	<b>3,560</b>	<b>3,528</b>	<b>3,559</b>	<b>3,559</b>	<b>3,562</b>	<b>3,562</b>	<b>3,589</b>	<b>3,558</b>
<b>West Position</b>	<b>(1,175)</b>	<b>(1,355)</b>	<b>(1,709)</b>	<b>(1,770)</b>	<b>(1,854)</b>	<b>(1,994)</b>	<b>(1,994)</b>	<b>(2,033)</b>	<b>(2,001)</b>
<b>West Reserve Margin</b>	<b>(25%)</b>	<b>(30%)</b>	<b>(42%)</b>	<b>(43%)</b>	<b>(46%)</b>	<b>(50%)</b>	<b>(50%)</b>	<b>(51%)</b>	<b>(51%)</b>

Calendar Year	2028	2029	2030	2031	2032	2033	2034	2035	2036
<b>System</b>									
<b>Total Resources</b>	9,194	8,823	8,435	8,389	8,344	7,595	7,578	7,491	7,491
<b>Obligation</b>	9,473	9,517	9,503	9,516	9,551	9,573	9,592	9,646	9,650
<b>Reserves</b>	1,257	1,263	1,261	1,262	1,267	1,270	1,272	1,279	1,280
<b>Obligation + Reserves</b>	10,729	10,779	10,763	10,778	10,818	10,843	10,864	10,925	10,929
<b>System Position</b>	(1,535)	(1,956)	(2,328)	(2,389)	(2,474)	(3,248)	(3,286)	(3,435)	(3,439)
<b>Reserve Margin</b>	(3%)	(7%)	(11%)	(12%)	(13%)	(21%)	(21%)	(22%)	(22%)

Source: Attachment WRA 5.2-2 and WRA 6.1