

Surplus Baseload Generation (SBG)

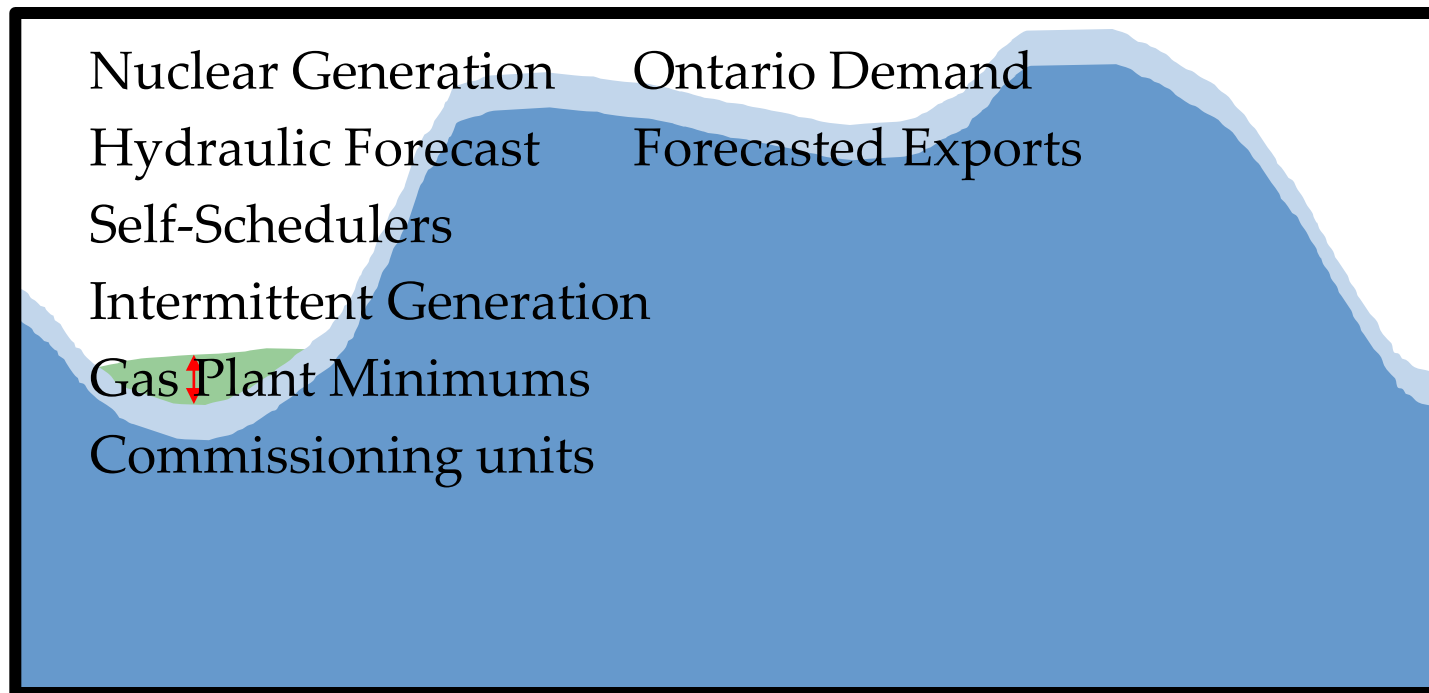
Near-Term Operational Planning – April 09, 2014



- Near-Term SBG Calculation
- Coordination performed ahead of Real Time
- Communication of the forecast

- The near-term SBG analysis:
 - Scope: Days 1-10
 - Emphasis: Days 1-4
 - Granularity: Hourly
 - Audience:
 - Market Participants (MP's) – bidding strategy, outage planning, early warning of potential impacts
 - Control Room – part of next days operating plan

Near-Term SBG Calculation



- Ontario Demand Forecast
 - Hourly forecast which considers:
 - Weather (less accurate further out), day of the week, significant events (Olympics), historical data
 - Adjusted by IESO, based upon recent history
- Variable Generation Forecast
 - Supplied by AWST
 - Hourly forecast which considers:
 - Wind speed forecast, wind ramps, weather fronts
- Export Forecast
 - Daily forecast which considers:
 - Recent export patterns, intertie limits/scheduled outages, holidays, market demand of neighbouring jurisdictions

- Hydroelectric Forecast
 - Supplied by MP's
 - Hourly forecast which considers
 - River flows, rainfall, snow melt
 - Adjusted by IESO based upon recent history
- Commissioning Units Forecast
 - Supplied by MP's
 - Hourly forecast.
- Embedded Generation Effect
 - Considered in demand forecast based on:
 - Recent history of visible generators (5MW or greater) and a estimate of the effect of other embedded generators.

The SGB Forecast Report shows the potential for:

- Nuclear unit manoeuvres
- Wind curtailments
- Nuclear unit shutdowns

We help to coordinate SBG activities with MP's that mimic the expected results of economic dispatch. We do this due to the plant limitations and or contractual requirements of these MP's. We help to coordinate:

- OEFC NUG curtailments
 - OEFC responsible for coordinating curtailments
 - Advise OEFC on Wednesday for possible weekend curtailment
 - Advise OEFC on alternative days as needed
- Nuclear maneuvers and shutdowns
 - Given unit characteristics (i.e. controlled shutdown, lengthy minimum downtime periods) the IESO tries to provide advance notice for nuclear operators to adjust output safely

Date	Surplus Baseload Generation for Hour																								Export Forecast	Min Generation Status
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Thu Feb 20, 2014		46	269	304	255																			866	2400	
Fri Feb 21, 2014	2140	2541	2779	2858	2884	2343	1911	1465	1474	1597	1650	1559	1528	1653	1688	1689	1683	948	291	80	376	907	1375	1755	2400	Alert
Sat Feb 22, 2014	1876	2386	2631	2712	2744	2689	2529	2507	2006	1732	1565	1527	1481	1682	1756	1730	1483	722			27	280	334	650	2400	Alert
Sun Feb 23, 2014	1004	1340	1472	1503	1539	1503	1470	1813	1526	1414	1299	1211	1095	1270	1297	1302	1148	458						180	2400	
Mon Feb 24, 2014	1060	1298	1252	1264	1114	676	41																		2400	
Tue Feb 25, 2014																									2400	
Wed Feb 26, 2014																									2400	
Thu Feb 27, 2014																									2400	
Fri Feb 28, 2014																									2400	
Sat Mar 01, 2014																									2400	

- Generation from baseload resources in excess of Ontario demand
- Alerts issued when this generation exceeds expected exports
- Signal to MPs to consider shifting generation
- Indication of possible economic dispatch of baseload resources

Anticipated Action to Manage Surplus Baseload Energy																									
Generated on Mar 31, 2014																									
Date	Hours																								Forecast Exports
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Tue April 01, 2014	3258	3520	3693	3704	3299	2166	1269	1315	1403	1550	1609	1627	1657	1798	1804	1397	1439	1392	1117	423	794	1502	2199	2683	2400
Wed April 02, 2014	2661	2964	3018	2928	2319	1131	409	513	1033	1227	1456	1451	1440	1616	1665	1418	1380	1336	932	366	742	1442	1895	2093	2400
Thu April 03, 2014	2662	2835	2924	2837	2289	1530	1080	1334	1578	1821	1906	2098	2104	2302	2272	2127	2153	2114	1772	1124	821	1632	1695	2108	2400
Fri April 04, 2014	2300	2523	2575	2461	1942	1348	510	552	663	852	893	1057	894	1165	1212	1161	1052	1053	841	153	646	1485	1643	2151	2400
Sat April 05, 2014	2600	2875	2938	2933	2761	2428	2304	2201	1700	1609	1520	1591	1603	1893	1936	1812	1647	1488	1280	709	904	1315	1765	2153	2400
Sun April 06, 2014	2592	2902	3065	3039	2930	2721	2804	2747	2329	2252	2077	2025	2053	2289	2280	2020	1793	1631	1331	521	920	1546	2168	2496	2400
Mon April 07, 2014	3098	3186	3144	2939	2351	1427	749	754	875	1052	1111	1288	1223	1407	1373	1144	1115	1303	1223			372	779	1186	2400
Tue April 08, 2014	2568	2758	2784	2664	2132	988	352	357	470	614	594	681	589	756	713	498	487	533	318			674	1495	1936	2400
Wed April 09, 2014	2564	2764	2784	2661	2122	1289	748	751	942	1095	1076	973	857	1003	1033	1020	1105	1180	1005	309	638	984	1394	1806	2400
Thu April 10, 2014	2385	2539	2569	2439	1892	1129	693	719	853	1030	1040	1140	1058	1204	1264	1115	1243	1302	1106	372	662	1005	1466	1970	2400

Legend

	No Surplus
	Surplus is expected to be managed with anticipated exports
	Potential Market Dispatch
	Potential to dispatch VGs to manage global SBG
	Potential to shutdown a nuclear unit

We will issue System Status Reports (SSR's) or Security and Adequacy Advisories (SAA's) to provide early warning of actions to manage SBG:

- For Day 1 and 2 (SSR's)
 - If $SBG > Exports$ for 2 or more consecutive hours we will issue a SSR with the advisory notice for the affected hours

- For Day 3 and 4 (SAA's)
 - If $SBG > Exports$ for 4 or more consecutive hours we will issue a SAA with the advisory notice for the affected hours

- <http://ieso.ca/Pages/Power-Data/default.aspx#report>
- IESO Public Site → Power Data → All Reports →
 - System Status Report

Normal SSR Report for 2014/02/21 generated on 2014/02/19 12:55

System Advisory/Summary

[System Advisory/Summary](#) [Hourly Details H1-12](#) [Hourly Details H13-24](#) [Transmission Interfaces](#) [SAA Notes](#)

Forecast Supply Energy(MW hr)	Forecast Demand Energy(MW hr)	Forecast Excess(Shortfall) Energy(MW hr)	Energy Shortfall Hours(Yes/No)
623534	404406	221720	No

System Advisory Notices-Title	Date/Time Issued	Start Date/Time	End Date/Time	Comment
Minimum Generation Alert	2014/02/19 12:43	2014/02/21 02:00	2014/02/21 04:59	Surplus Baseload Generation is expected to exceed forecasted exports of 2400 MW for HE 2 -HE 5. IESO may take actions to minimize the effect of SBG. These actions may include the curtailment of imports and reduction of generation units.

Hourly Details H1-12

[System Advisory/Summary](#) [Hourly Details H1-12](#) [Hourly Details H13-24](#) [Transmission Interfaces](#) [SAA Notes](#)

Forecast Supply	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12
Energy(MW hr)	25226	24741	24745	24782	24810	24891	25400	25510	25976	26099	26180	26123
Capacity(MW)	33432	33432	33432	33432	33432	33432	33432	33432	33432	33432	33432	33432
Intermittent (MW hr/hr)	588	588	588	588	588	588	588	588	588	588	588	588
Self Sched (MW hr/hr)	735	735	735	735	735	735	735	735	735	735	735	735

Questions?