

Day Ahead LMP Forecasting with Aurora OPF

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Stevenson, WA

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Short Term Forecasting

Involves:

Data Acquisition

Model Updates

Interpreting Results

Data Acquisition

- Oasis sites for transmission outages, load, and interface flows / limits.
- Third Party Subscriptions for load, generation outages (planned and real time), fuel pricing, and weather.
- Internal resources for load, fuel pricing, and weather.

Data Acquisition Example – Line Outages



MISO Transmission Planned Outage Hourly Posting

Publish Date: 08/27/2009 05:46AM EST

Outage Hour: 08/27/2009 06:00AM EST

Ticket Number	Company	KV	From Station	To Station	Equipment Name	Planned Start	Planned End	Status	Actual Start	Actual End	Outage Type
1885928	MHEB	230	DSY	ROWY	DORSEY 4 230.00 RIDGEWA 230.00 1	08/22/08 8:00AM	08/22/08 4:00PM	Accepted			Maintenance
1267627	MHEB	110	BUNG	BUS2_11b	BRANDON/ 110.00 BUS2-11/ 110.00 1	08/22/08 8:00AM	08/22/08 4:00PM	Submitted			Maintenance
1788079	WAUE	230	PICKRTWA	JAMESTH	PICKERT4 230.00 JAMESTH4 230.00 1	08/22/08 11:00AM	10/02/08 4:00PM	Study			Maintenance
2085263	NIPS	138	ROXANA	MITCH_YD	17ROXANA 138.00 17MITCHY 138.00 1	08/22/08 7:00AM	08/29/08 7:00AM	Submitted			Construction
2033132	ALTE	69	S2S	ERDMAN	ERD 69 69.000 S2S 69 69.000 1	08/22/08 7:00AM	08/28/08 4:00PM	Accepted			Maintenance
2033130	ALTE	69	ERDMAN		ERD_C-54	08/22/08 7:00AM	08/28/08 4:00PM	Accepted			Maintenance
2033133	ALTE	69	ERDMAN	RIVERSID	ERD 69 69.000 RIV 69 69.000 1	08/22/08 7:00AM	08/28/08 4:00PM	Accepted			Maintenance
2033135	ALTE	138	ERDMAN		ERD 69 69.000 ERD 138 138.00 1	08/22/08 7:00AM	08/28/08 4:00PM	Accepted			Maintenance
2065405	ALTE	138	TOWNELH	ROCKRIVE	TOWNLINE 138.00 ROR 138 138.00 2	08/22/08 8:00AM	08/27/08 1:00PM	Submitted			Maintenance
2043482	ALTW	69	FAIRFAX2	KRKALTW	FAIRFAX8 69.000 KRKWOOD 69.000 1	08/22/08 8:00AM	10/31/08 4:00PM	Submitted			Construction
1750463	ALTW	161	LIME_CK		CAP_1	08/22/08 12:00AM	10/17/08 4:00PM	Study			Construction
2083435	CIN	138	FOSTER	MCNTGCIN	08FOSTER 138.00 08MTCORY1 138.00 1	08/22/08 12:50AM	10/31/08 6:00PM	Submitted			Maintenance
1487070	CIN	138	08EDWRDS	08VIN	08EDWRDS 138.00 08VIN 138.00 1	08/22/08 5:00AM	10/31/08 8:00PM	Accepted			Maintenance
1852927	AMRN	138	LTVSTEEL	RCHLND	4LTV STL ETP138.00 4RCHLND JCT138.00	08/22/08 8:00AM	08/29/08 10:00AM	Accepted			Maintenance
1852914	AMRN	138	HEMNER	LTVSTEEL	4LTV STL ETP138.00 4HEMNER N 138.00	08/22/08 8:00AM	08/29/08 10:00AM	Accepted			Maintenance
1552232	WPS	115	ROCKYRLN	FLOVER	ROCKY RN 115.00 FLOVER 115.00 1	08/22/08 6:00AM	10/22/08 5:00PM	Submitted			Maintenance
1852924	AMRN	138	HALLOCK	RCHLND	4HALLOCK 138.00 4RCHLND JCT138.00	08/22/08 8:00AM	08/29/08 10:00AM	Accepted			Maintenance
2081908	NIPS	345	HIPLE	EELKHART	05EELKHA 345.00 17HIPLE 345.00 1	08/22/08 6:00AM	08/29/08 7:00AM	Submitted			Maintenance
1852925	AMRN	138	SPNG_BAY	RCHLND	4SPNG BAY 138.00 4RCHLND JCT138.00	08/22/08 8:00AM	08/29/08 10:00AM	Accepted			Maintenance
1681701	MOE	138	NMADISO1	YAR	NMA138-1 138.00 YAR 138 138.00 1	08/22/08 8:30AM	10/31/08 6:00PM	Submitted			Maintenance
2080600	NIPS		PLYMOUT2		Not in model	08/22/08 6:30AM	10/31/08 1:30PM	Submitted			Maintenance
1681477	ALTE	69	MAZOMAN	MAZOMAN	MAZ 69 69.000 MZ 69 69.000 1	08/22/08 7:00AM	10/7/08 4:00PM	Submitted			Maintenance
2086924	FE	138	SEVILL_R	STAR	02SEVILL 138.00 02STAR 138.00 1	08/22/08 7:00AM	10/7/08 3:00PM	Submitted			Maintenance
1921664	WPS	138	DYCKERM	HMLCK_R0	DYCK 138 138.00 BAYBRIDGE 138.00 1	08/22/08 7:00AM	08/22/08 8:00PM	Accepted			Maintenance
2093475	AMRN	138	CAHOXA		CAP_BANK_4	08/22/08 7:00AM	08/29/08 4:00PM	Submitted			Maintenance

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Data Acquisition Example – Generator Outages

OutageID	UnitName	UnitID	OwnerName	PlantID	PlantName	State	NERCRegi	PrimaryFuel	Count	OutputCap:	Power	StartDate	EndDate
28230	Hydro 03	1008773	US Army Cor	1033193	Webbers Falls Hydro Pow	OK	SPP	Hydro	U.S.A	20	Inter	6-Aug-04	11-Dec-09
71311	Unit 02 ST	1012487	Montgomery I	1017059	Lowell Power	MA	NPCC	Waste Hea	U.S.A	20	Inter	22-Sep-04	1-Sep-08
42707	Hydro 04	1009752	US Army Cor	1032541	Ozark Hydro Power Statio	AR	SPP	Hydro	U.S.A	20	Inter	12-Jun-05	16-Oct-08
44812	Unit 01	1005884	Entergy New	1005162	Michoud Power Station	LA	SERC	Natural Ga	U.S.A	115	Inter	28-Aug-05	27-Oct-08
48473	Hydro 01	1005428	AmerenUE	1508092	Taum Sauk Pumped-Store	MO	SERC	Hydro	U.S.A	204	Inter	12-Dec-05	31-Dec-09
48474	Hydro 02	1005427	AmerenUE	1508092	Taum Sauk Pumped-Store	MO	SERC	Hydro	U.S.A	204	Inter	14-Dec-05	31-Dec-09
70528	Mistersky 07	1004964	Detroit Public	1028354	Mistersky Power Station	MI	RFC ECAR	Natural Ga	U.S.A	60	Inter	18-May-07	5-Sep-08
70530	Mistersky 05	1004962	Detroit Public	1028354	Mistersky Power Station	MI	RFC ECAR	Natural Ga	U.S.A	44	Inter	8-Jun-07	1-Oct-08
47883	Walter F George 03	1007569	US Army Cor	1503257	Walter F George Hydro P	AL	SERC	Hydro	U.S.A	32.5	Inter	1-Oct-07	15-Oct-08
39015	Kenansville 01	1011740	Coastal Carol	1030800	Kenansville Cogen	NC	SERC	Wood	U.S.A	35	Inter	20-Oct-07	13-Dec-08
63820	Dallman 31	1006682	Springfield Ci	1000240	Dallman Power Station	IL	RFC MAIN	Coal Bitum	U.S.A	90.2	Base	10-Nov-07	1-Dec-08
67321	Unit 04	1011910	Minnesota Po	1017220	M L Hibbard Power Station	MN	MRO	Wood	U.S.A	37.5	Base	14-Dec-07	10-Jan-09
46521	Hamilton 08	1004030	City of Hamilt	1500636	Hamilton Power Station	OH	RFC ECAR	Coal Bitum	U.S.A	25	Inter	20-Jan-08	28-Sep-08
70225	Richard B Russell 07	1004928	US Army Cor	1031477	Richard B Russell Hydro FGA	GA	SERC	Hydro	U.S.A	82	Peak	24-Mar-08	4-Jan-09
70226	Richard B Russell 08	1004929	US Army Cor	1031477	Richard B Russell Hydro FGA	GA	SERC	Hydro	U.S.A	82	Peak	24-Mar-08	4-Jan-09
60562	Richard B Russell 06	1004927	US Army Cor	1031477	Richard B Russell Hydro FGA	GA	SERC	Hydro	U.S.A	82	Peak	24-Mar-08	4-Jan-09
70631	CT 05	1004110	Consumers E	1507111	Gaylord Power Station	MI	RFC ECAR	Natural Ga	U.S.A	20.6	Peak	4-Apr-08	6-Nov-09
40750	Hydro 05	1031057	Erie Boulevar	1061425	School Street Hydroelectri	NY	NPCC	Hydro	U.S.A	10	Inter	11-Apr-08	28-Aug-08
67739	Richard B Russell 05	1004926	US Army Cor	1031477	Richard B Russell Hydro FGA	GA	SERC	Hydro	U.S.A	82	Peak	29-Apr-08	4-Jan-09
67600	Hydro 06	1005981	Safe Harbor V	1505975	Safe Harbor Hydro Power PA	PA	RFC MAAC	Hydro	U.S.A	32	Inter	1-May-08	1-Feb-09
33391	Markham Hydro 04	1006106	Grand River C	1521965	Markham Ferry Hydro Pov	OK	SPP	Hydro	U.S.A	30	Inter	9-Jun-08	8-Jun-09
70930	CT 02	1016728	Cedar Falls U	1519883	Streeter Power Station	IA	MRO	Natural Ga	U.S.A	25	Peak	12-Jun-08	8-Oct-08
70891	Unit 07	1005631	Alliant-HES Ut	1016050	Sixth Street Power Station	IA	MRO	Coal Subbi	U.S.A	15	Inter	12-Jun-08	5-Dec-08
70934	Unit 01	1005122	Alliant-HES Ut	1012926	Prairie Creek Power Static	IA	MRO	Coal Subbi	U.S.A	14	Inter	12-Jun-08	5-Dec-08
70890	Unit 04	1005628	Alliant-HES Ut	1016050	Sixth Street Power Station	IA	MRO	Coal Subbi	U.S.A	15	Inter	12-Jun-08	5-Dec-08
70860	Unit 02	1005125	Alliant-HES Ut	1012926	Prairie Creek Power Static	IA	MRO	Coal Subbi	U.S.A	23	Inter	12-Jun-08	5-Dec-08
70859	Prairie Creek 03	1005126	Alliant-HES Ut	1012926	Prairie Creek Power Static	IA	MRO	Coal Subbi	U.S.A	50	Base	12-Jun-08	5-Dec-08
70927	Unit 06	1004919	Cedar Falls U	1519883	Streeter Power Station	IA	MRO	Coal Bitum	U.S.A	16.5	Peak	12-Jun-08	8-Oct-08
70928	CT 01	1004916	Cedar Falls U	1519883	Streeter Power Station	IA	MRO	Natural Ga	U.S.A	20	Peak	12-Jun-08	8-Oct-08
70858	Prairie Creek 04	1005127	Alliant-HES Ut	1012926	Prairie Creek Power Static	IA	MRO	Coal Subbi	U.S.A	148.8	Base	12-Jun-08	5-Dec-08
70973	CT 02	1015209	MidAmerican	1520642	Coralville Peaking Power	IA	MRO	Natural Ga	U.S.A	20	Peak	12-Jun-08	1-Sep-08
70976	CT 03	1015240	MidAmerican	1520642	Coralville Peaking Power	IA	MRO	Natural Ga	U.S.A	20	Peak	12-Jun-08	1-Sep-08
70979	CT 01	1015241	MidAmerican	1520642	Coralville Peaking Power	IA	MRO	Natural Ga	U.S.A	20	Peak	12-Jun-08	1-Sep-08
70981	CT 04	1015242	MidAmerican	1520642	Coralville Peaking Power	IA	MRO	Natural Ga	U.S.A	20	Peak	12-Jun-08	1-Sep-08
70850	Unit 08	1005633	Alliant-HES Ut	1016050	Sixth Street Power Station	IA	MRO	Coal Subbi	U.S.A	29	Inter	12-Jun-08	5-Dec-08
70889	Unit 02	1005627	Alliant-HES Ut	1016050	Sixth Street Power Station	IA	MRO	Coal Subbi	U.S.A	6	Inter	12-Jun-08	5-Dec-08
70929	Unit 07	1004921	Cedar Falls U	1519883	Streeter Power Station	IA	MRO	Coal Bitum	U.S.A	35	Inter	12-Jun-08	8-Oct-08
70983	IC 01	1015239	Vinton Munci	1049209	Vinton Power Station	IA	MRO	Fuel Oil No	U.S.A	1.4	Peak	14-Jun-08	30-Sep-08
70980	IC 06	1015248	Vinton Munci	1049209	Vinton Power Station	IA	MRO	Fuel Oil No	U.S.A	2.5	Peak	14-Jun-08	30-Sep-08
70978	IC 07	1015249	Vinton Munci	1049209	Vinton Power Station	IA	MRO	Fuel Oil No	U.S.A	3.7	Peak	14-Jun-08	30-Sep-08
70977	IC 08	1015250	Vinton Munci	1049209	Vinton Power Station	IA	MRO	Fuel Oil No	U.S.A	5.6	Peak	14-Jun-08	30-Sep-08
70975	IC 09	1015251	Vinton Munci	1049209	Vinton Power Station	IA	MRO	Fuel Oil No	U.S.A	3	Peak	14-Jun-08	30-Sep-08
70982	IC 05	1015247	Vinton Munci	1049209	Vinton Power Station	IA	MRO	Fuel Oil No	U.S.A	0.6	Peak	14-Jun-08	30-Sep-08
61588	Hydro 03	1009729	Allegheny En	1033211	Lake Lynn Hydro Power SPA	PA	RFC ECAR	Hydro	U.S.A	12.8	Inter	28-Jun-08	7-Sep-08
71815	Bluegrass Ridge (27 T)	1040127	Wind Capital	1068607	Bluegrass Ridge Windfarm	MO	SERC	Wind	U.S.A	56.7	Inter	1-Jul-08	1-Nov-08
64501	Palmer Hydro 01	1024035	Curtis Palmer	1032821	Curtis Palmer Hydro Elect	NY	NPCC	Hydro	U.S.A	24	Base	5-Jul-08	1-Sep-08
9290	John H Kerr 06	1006031	US Army Cor	1032179	John H Kerr Hydro Power	VA	SERC	Hydro	U.S.A	32	Inter	5-Jul-08	31-Dec-08

Data Acquisition - Load

PIRA ENERGY GROUP

August 27, 2008



ELECTRICITY

Daily Average Electricity Demand

This table shows PIRA's forecast of average demand (megawatts) based on temperatures in the National Center's for Environmental Prediction Medium Range Forecast Model. For more information, contact Morris Greenberg. For distribution requests, contact Client Services. Both can be reached at (212) 686-6808.

	Average Electricity Demand (MW)							Normal Daily Demand Aug 28-Sep 03 Thu - Wed
	28-Aug	29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	
	Thu	Fri	Sat	Sun	Mon	Tue	Wed	
ISO-NE	15,752	15,624	14,859	15,130	16,660	16,443	16,299	15,142
NY ISO	19,953	20,340	19,467	19,439	21,719	21,333	21,225	19,484
NY Zone F-I	3,956	4,097	3,922	4,090	4,237	4,161	4,225	3,842
NY Zone A-E	6,501	6,882	6,345	6,042	6,711	6,760	6,811	6,371
NY Zone J-K	9,486	9,761	9,197	9,304	10,769	10,412	10,190	9,271
PJM	84,662	88,920	86,087	83,657	90,362	89,691	87,958	84,294
PJM East	32,794	35,194	35,676	35,017	37,638	36,796	36,496	34,602
PJM West	5,403	5,734	5,518	5,351	5,782	5,861	5,799	5,486
PJM AEP	16,443	17,432	16,068	15,400	17,223	17,591	16,950	15,897
PJM DCM	10,912	11,591	12,224	12,129	11,841	11,536	11,572	11,387
PJM DUQ	1,931	2,007	1,879	1,784	2,023	2,037	2,035	1,903
PJM DAY	2,355	2,500	2,157	2,069	2,450	2,557	2,341	2,213
PJM NI	14,824	14,463	12,564	11,906	13,405	13,313	12,765	12,807
MISO	74,007	73,736	66,423	65,957	74,882	74,566	71,392	67,053
RFC	41,229	42,573	37,999	36,308	42,519	43,154	41,733	38,327
MRO	18,438	17,884	16,668	17,510	18,922	18,237	17,064	16,752
SERC	13,053	12,215	10,760	11,102	12,348	12,176	11,572	10,985
SPP	1,286	1,064	995	1,047	1,096	1,000	1,023	990
Non-MISO	157,733	157,626	148,196	144,425	149,403	147,043	143,426	141,906
RFC	899	1,008	936	919	965	987	956	875
MRO	9,947	9,623	9,043	9,056	9,619	9,114	8,786	8,801
SERC	118,572	117,781	111,381	108,449	111,514	110,244	107,570	105,961
Entergy	21,655	21,190	20,636	20,313	19,065	19,082	18,441	19,264
TVA	32,018	32,447	29,597	29,192	32,530	32,263	30,394	29,522
Southern	32,715	32,707	31,706	31,190	31,190	30,606	30,608	29,547
Carolinas	29,184	31,437	29,413	27,754	28,729	28,323	28,127	27,618
SPP	31,316	29,215	26,865	25,971	27,308	26,698	26,113	26,276
FRCC	33,076	33,050	31,184	28,872	29,429	29,408	29,885	30,258
Total East	385,193	389,497	366,216	357,489	382,454	378,484	370,184	358,138
ERCOT	43,848	43,305	40,317	39,090	42,277	42,876	41,693	40,448
CA ISO	34,231	34,302	30,552	28,268	30,560	30,893	31,162	30,335
CA ISO-N	15,297	15,211	13,492	12,103	13,098	13,227	13,232	12,666
CA ISO-S	18,934	19,091	17,061	16,165	17,463	17,667	17,931	17,660
Non-CA ISO CA-N	2,733	2,711	2,308	1,990	2,004	2,079	2,141	2,117
Non-CA ISO CA-S	3,811	3,838	3,361	3,199	3,619	3,675	3,730	3,543
AZ	13,110	13,314	12,899	11,896	11,895	12,017	12,420	11,757
NM	2,399	2,339	2,137	1,985	2,236	2,297	2,275	2,168
NEV	4,050	3,956	3,839	3,727	3,547	3,357	3,455	3,305
RMPA	8,327	8,343	7,946	7,957	8,081	7,743	7,937	7,865
Pacific NW	18,252	18,359	16,704	15,951	17,269	17,548	17,659	17,531
Inland NW	9,229	9,553	9,425	8,848	8,717	8,965	9,235	9,174
Total WECC	96,841	97,114	89,173	83,912	87,928	88,573	90,014	87,835

See last page for table legend.

Model Updates

- Updates to the model for load , generation, and fuel are done automatically through link tables.
- Updates for transmission outages and interface limits are done manually for now.
- Change sets are used for the updates.

Model Update Example – Aurora Zonal Input

Zonal Input Data Tables

ID	Type	Required	In Study	Database Table Name	Status	In DB	# of Record	Linked	LinkPath
1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Areas	Read	<input checked="" type="checkbox"/>	107	<input type="checkbox"/>	
2		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Areas Hourly Demand Example	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
3		<input type="checkbox"/>	<input type="checkbox"/>	Capacity Price_RMT MISO 2007_06_26	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4		<input type="checkbox"/>	<input type="checkbox"/>	Capacity Price_RMT ERCOT 2007_06_26	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
5		<input type="checkbox"/>	<input type="checkbox"/>	Capacity Price_RMT PJM_isoNE_NYiso LT 2007_06_26	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
6		<input type="checkbox"/>	<input type="checkbox"/>	Capacity Price_RMT WECC LT 2007_06_26	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
7		<input type="checkbox"/>	<input type="checkbox"/>	Capacity Price_RMT Alberta 2007_06_26	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
8		<input type="checkbox"/>	<input type="checkbox"/>	Capacity Price_RMT EastCanada 2007_06_26	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
9		<input type="checkbox"/>	<input type="checkbox"/>	Capacity Price_RMT EC North LT 2007_06_26	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
10		<input type="checkbox"/>	<input type="checkbox"/>	Capacity Price_RMT ECSouth 2007_06_26	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
11		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Conditions ICC ILLINOIS	Read	<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	
12		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Conditions	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
13		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Conditions EPA	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
14		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Conditions PJM	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
15		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Conditions CBOT	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
16		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Conditions WECC	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
17		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Conditions MICHIGAN PSC	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
18		<input type="checkbox"/>	<input checked="" type="checkbox"/>	Demand Link (Daily)	Read	<input checked="" type="checkbox"/>	55	<input checked="" type="checkbox"/>	Demand Link (Daily)C:\VAURORA\amp
19		<input type="checkbox"/>	<input type="checkbox"/>	Daily	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
20		<input type="checkbox"/>	<input type="checkbox"/>	Daily Ontario Example	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
21		<input type="checkbox"/>	<input type="checkbox"/>	Daily WECC Example	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
22	ation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Demand Escalation	Read	<input checked="" type="checkbox"/>	4	<input type="checkbox"/>	
23		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Demand	Read	<input checked="" type="checkbox"/>	8952	<input type="checkbox"/>	
24	ly	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Demand Moderate	Read	<input checked="" type="checkbox"/>	14	<input type="checkbox"/>	
25	ly Peak	<input type="checkbox"/>	<input type="checkbox"/>	Demand Monthly Peak Example	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
26		<input type="checkbox"/>	<input type="checkbox"/>	Electric Prices	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
27		<input type="checkbox"/>	<input type="checkbox"/>	Electric Prices Zone 1 Input Prices Example	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
28		<input type="checkbox"/>	<input checked="" type="checkbox"/>	Emission Price	Read	<input checked="" type="checkbox"/>	20	<input type="checkbox"/>	
29		<input type="checkbox"/>	<input checked="" type="checkbox"/>	Emission Rate	Read	<input checked="" type="checkbox"/>	19721	<input type="checkbox"/>	
30		<input type="checkbox"/>	<input type="checkbox"/>		Not Read	<input type="checkbox"/>		<input type="checkbox"/>	
31		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fuel Link (Realtime)	Not Read	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	Fuel Link (Realtime)C:\VAURORA\amp
32		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Fuel Moderate	Read	<input checked="" type="checkbox"/>	412	<input type="checkbox"/>	
33		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	General Information	Read	<input checked="" type="checkbox"/>	1	<input type="checkbox"/>	
34	itions	<input type="checkbox"/>	<input type="checkbox"/>	HR Functions Example	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
35		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Hubs	Read	<input checked="" type="checkbox"/>	23	<input type="checkbox"/>	
36		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Hydro Moderate	Read	<input checked="" type="checkbox"/>	13	<input type="checkbox"/>	
37		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Hydro/Vectors Moderate	Read	<input checked="" type="checkbox"/>	7	<input type="checkbox"/>	
38		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Link	Read	<input checked="" type="checkbox"/>	428	<input type="checkbox"/>	
39		<input type="checkbox"/>	<input checked="" type="checkbox"/>	Outage Link (Daily)	Read	<input checked="" type="checkbox"/>	159	<input checked="" type="checkbox"/>	Outage Link (Daily)C:\VAURORA\amp
40	chedule	<input type="checkbox"/>	<input type="checkbox"/>	MST_ERCOT	Not Read	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
41		<input type="checkbox"/>	<input type="checkbox"/>	Copy[1] of Outage Link (Monthly)	Not Read	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	Outage Link (Monthly)C:\VAURORA\amp

Recent Projects: MISO Default-Dyneyg RealtimeCombo7.apz, Dyneyg_Daily082008.apz, Dyneyg_2008Sept.apz, MISO Default-Dyneyg Sept08MonthlyCombo6.apz, Dvneav_2008Daily.apz, Dyneyg_2008DailyTemp.apz, Dyneyg_2008.apz, Dyneyg_2008.apz, East_Nodal_20080409.apz, MISO Default-Dyneyg July08MonthlyCombo6.apz, MISO Default-Dyneyg RealtimeCombo6.apz, More Files ...

Input Templates: [Dropdown]

Memory Templates: [Dropdown]

Output Templates: Ct ZoneDay, Maine ZoneDay, Mass ZoneDay, MISO ZoneDay, NYISO ZoneDay, PJM HubDay

Chart Templates: [Dropdown]

Report Templates: [Dropdown]

Compute Templates: [Dropdown]

Pivot Table Templates: [Dropdown]

Status Bar: Zipped XML DB is C:\VAURORA\amp\dyneyg\North_American_DB_2007-01.zip Project File CS | No active change set Input database read | Mem: 2271.91 | Avail Mem: 1127.4 C:\VAURORA\amp\dyneyg\MISO Default-Dyneyg RealtimeCombo7.apz

Model Update Example – Nodal Input

Change Sets

- Copy of Fuel Changes
- Pool
- Nodal Load Change
 - East LF Area Map
- Contingencies
 - Demand
 - Demand Moderate
 - Copy of East Contingency
 - Corridor Limits
 - Corridor Definition
- Fuel Changes for Dynegy
 - Monthly Shape Factor
- Unassigned Changes

Nodal Input Data Tables

AURORA Table Type	Required	In Study	Database Table Name	In DB	Status	# of Record	Linked	LinkPath	Use for Network ID
Aggregate Area	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ERCOT Aggregate 20071101	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WECC US Aggregate 20071101	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
AURORA Zone Map	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	East Aggregate 20080429	<input checked="" type="checkbox"/>	Read	13	<input type="checkbox"/>		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ERCOT Zone Map 20071101	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WECC US ZoneMap 20071101	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
Contingency	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	East ZoneMap 20080429	<input checked="" type="checkbox"/>	Read	31	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	ERCOT Contingency	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	East Contingency 500 Plus	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	East Contingency 345 Plus	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	East Contingency 230 Plus	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	East Contingency Selective	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Contingency Def	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
Corridor Def	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Copy of East Contingency Selective	<input checked="" type="checkbox"/>	Read	2474	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	East Corridor Definition	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	ERCOT Corridor Definition	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	WECC Corridor Definition	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
Corridor Limit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Corridor Definition	<input checked="" type="checkbox"/>	Read	408	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	East Corridor Limits	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	ERCOT Corridor Limits	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
FTR Reporting	<input type="checkbox"/>	<input type="checkbox"/>	WECC Corridor Limits	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Corridor Limits	<input checked="" type="checkbox"/>	Read	275	<input type="checkbox"/>		
Gen Map	<input type="checkbox"/>	<input checked="" type="checkbox"/>	FTR Reporting	<input checked="" type="checkbox"/>	Read	5	<input type="checkbox"/>		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	East Rollup Generator Map 20071101	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ERCOT Generator Map 20071101	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WECC Generator Map 20071101	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
Hub Definitions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ERCOT Generator Map 2007	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ERCOT Generator Map 2008	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	East Generator Map 20080404	<input checked="" type="checkbox"/>	Read	4356	<input type="checkbox"/>		
Individual Hours	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Hub Definitions	<input checked="" type="checkbox"/>	Read	2507	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	Copy of Individual Hours	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
LF Area Map	<input type="checkbox"/>	<input type="checkbox"/>	Individual Hours	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ERCOT LF Area Map 20071101	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	WECC Area Map 20071101	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	East LF Area Map 2008 test	<input checked="" type="checkbox"/>	Not Read		<input type="checkbox"/>		

Network Definition Datasets

Network Definition ID	Network Definition Dataset File	Start Date	PTDF File	PTDF Action	Save
East08	C:\AURORA\Amp\Base_Project_Files\Dynegy_Study_2008S.aic	1/1/2008	C:\AURORA\Amp\East2008.bin	Solve on Diff	

ADPF definition file is: C:\AURORA\Amp\Dynegy_Daily082008.aopf

Zippped XML DB is C:\AURORA\Amp\North_American_DB_2008-01-12.zip CS File C:\AURORA\Amp\Base_Project_Files\Dynegy.csf | No active change set

Input database read. | Mem: 2297.9 | Avail Mem: 1221.2 C:\AURORA\Amp\Dynegy_Daily082008.apz

Model Update Example – Load Flow Case

AURORA XMP [LoadFlow_Branch]

File View Tools Run Window Help

Open Save Run Step Pause Stop Scripting Status Input Data Run Setup Output Memory Compute System GIS Help

Add Row Delete Row Add Column Delete Column Sort Filter Remove Filter Save View Print Chart Report Script Undo Redo

FromBusNum	ToBusNum	CircuitID	Reactance	Closed	Limit	LimitA	LimitB	LimitC	Primary Key
	1	2 1	0.0119	<input checked="" type="checkbox"/>	2650	2650	3040	0	0
	1	8 1	0.00115	<input checked="" type="checkbox"/>	2660	2660	3145	0	1
	1	9 1	0.0214	<input type="checkbox"/>	2650	2650	3015	0	2
	1	23 1	0.0024	<input checked="" type="checkbox"/>	2650	2650	3015	0	3
	2	6 1	0.0049	<input checked="" type="checkbox"/>	2650	2650	3040	0	4
	2	7 1	0.0098	<input checked="" type="checkbox"/>	2650	2650	3040	0	5
	2	74300 1	0.01797	<input checked="" type="checkbox"/>	1221	1221	1494	0	6
	3	4 1	0.0155	<input checked="" type="checkbox"/>	2078	2078	2901	0	7
	3	25 1	0.00587	<input checked="" type="checkbox"/>	2349	2349	2588	0	8
	3	20105 1	0.0085	<input checked="" type="checkbox"/>	2571	2571	2977	0	9
	4	13 1	0.0039	<input type="checkbox"/>	2338	2338	2598	0	10
	4	26 1	0.01004	<input checked="" type="checkbox"/>	2338	2338	2901	0	11
	5	9 1	0.03038	<input checked="" type="checkbox"/>	2284	2284	3013	0	12
	5	11 1	0.00636	<input checked="" type="checkbox"/>	2649	2649	3013	0	13
	5	26 1	0.02814	<input checked="" type="checkbox"/>	2051	2051	3013	0	14
	6	17 1	0.0043	<input type="checkbox"/>	1011	1011	1329	0	15
	6	28 1	0.0036	<input type="checkbox"/>	2650	2650	3040	0	16
	7	8 1	0.0042	<input checked="" type="checkbox"/>	2660	2660	3015	0	17
	7	15 1	0.0023	<input checked="" type="checkbox"/>	2637	2637	3044	0	18
	8	16 1	0.01874	<input checked="" type="checkbox"/>	2650	2650	3015	0	19
	8	43 1	0.00494	<input checked="" type="checkbox"/>	3005	3005	3437	0	20
	9	11 1	0.02971	<input checked="" type="checkbox"/>	2381	2381	3013	0	21
	9	16 1	0.01105	<input checked="" type="checkbox"/>	2650	2650	3015	0	22
	9	21 1	0.0092	<input checked="" type="checkbox"/>	2650	2650	3015	0	23
	10	27 1	0.0019	<input checked="" type="checkbox"/>	2728	2728	3040	0	24
	10	51 1	0.0065	<input checked="" type="checkbox"/>	2660	2660	3040	3040	25
	11	20104 1	0.0064	<input checked="" type="checkbox"/>	2598	2598	2598	0	26
	11	20118 1	0.00029	<input checked="" type="checkbox"/>	2595	2595	2595	0	27
	12	14 1	0.012	<input checked="" type="checkbox"/>	2650	2650	3040	0	28
	12	29 1	0.0105	<input checked="" type="checkbox"/>	2650	2650	3040	0	29
	13	16 1	0.01016	<input type="checkbox"/>	2552	2552	2596	0	30
	13	24 1	0.0137	<input checked="" type="checkbox"/>	2831	2831	3221	0	31
	13	51 1	0.002	<input checked="" type="checkbox"/>	2707	2707	3112	3112	32
	14	28 1	0.0229	<input checked="" type="checkbox"/>	2650	2650	3040	0	33
	14	29 1	0.0001	<input checked="" type="checkbox"/>	2806	2806	3092	0	34
	15	24 1	0.0038	<input checked="" type="checkbox"/>	2727	2727	3117	0	35
	15	24 2	0.0037	<input checked="" type="checkbox"/>	2727	2727	3117	0	36
	18	19 1	0.004	<input checked="" type="checkbox"/>	2349	2349	2588	0	37
	18	20 1	0.00409	<input checked="" type="checkbox"/>	2250	2250	2250	0	38
	19	14922 1	0.0069	<input checked="" type="checkbox"/>	2988	2988	3014	0	39
	20	25 1	0.01149	<input checked="" type="checkbox"/>	2650	2650	3014	0	40
	20	25 2	0.01156	<input checked="" type="checkbox"/>	2650	2650	3014	0	41
	21	22 1	0.0105	<input checked="" type="checkbox"/>	2650	2650	3015	0	42
	--	--	--	--	--	--	--	--	--

Nodal Network Definition Dataset LoadFlow_Branch

Sum = 1 Edit on Typing

Input database read. | Mem: 2297.9 | Avail Mem: 1221.2 C:\AURORA\Amp\Dynergy_Daily082008.apz

Recent Projects

- Dynergy_Daily082008.apz
- MISO Default-Dynergy RealtimeCombo7.apz
- Dynergy_2008Sept.apz
- MISO Default-DynergySept08MonthlyCombo6.apz
- MISO Default-Dynergy Aug08MonthlyCombo6.apz
- Dynergy_2008Daily.apz
- Dynergy_2008DailyTemp.apz
- Dynergy_2008.apz
- Dynergy_2008.apz
- East_Nodal_20080409.apz
- MISO Default-Dynergy July08MonthlyCombo6.apz
- MISO Default-Dynergy RealtimeCombo6.apz
- More files ...

Input Templates

Memory Templates

Output Templates

- Henry Hub NG Report - Monthly
- Hub Report - Monthly Average
- IsoNE Zone Report - Monthly
- ResourceStack Report - Yearly
- Zone Report - Monthly Average
- ZoneMonth CMEEC

Chart Templates

Report Templates

Compute Templates

Pivot Table Templates

Model Update Example – Interface Limits

The screenshot displays the AURORA XMP software interface with two data tables side-by-side. The left table is titled 'Corridor Definition' and the right table is titled 'Corridor Limits'. Both tables have a toolbar with options like 'Add Row', 'Delete Row', 'Add Column', 'Delete Column', 'Sort', 'Filter', 'Remove Filter', and 'Save'.

Corridor Definition Table:

Active	Branch Set ID	From Bus Number	To Bus Number	Primary Key
<input checked="" type="checkbox"/>	Eastern Interface	13	51	44
<input checked="" type="checkbox"/>	FG 0012 - Warren - Falconer 11	281	76527	45
<input checked="" type="checkbox"/>	FG 0021 - ErieWest345/115 flo	302	339	46
<input checked="" type="checkbox"/>	FG 0022 - ErieW - Erie5345 flo	302	303	47
<input checked="" type="checkbox"/>	FG 0100 - KamerXfr#8 flo Belm	20111	20117	48
<input checked="" type="checkbox"/>	FG 0101 - Kamer765/500 flo Ka	20117	22587	49
<input checked="" type="checkbox"/>	FG 0143 Elrma-Mitch138 flo Hat	20124	27625	50
<input checked="" type="checkbox"/>	FG 0145- Seneca-Krendl138 flo	20205	21919	51
<input checked="" type="checkbox"/>	FG 0200 - Tidd-CanCentr1345 fl	22577	22598	52
<input checked="" type="checkbox"/>	FG 0230 - Breed-Wheat345 flo	22611	27823	53
<input checked="" type="checkbox"/>	FG 0240 MuskRvr - Ohio Centra	22591	22593	54
<input checked="" type="checkbox"/>	FG 0500 -Pont-Wilto flo Pont-D	36344	36414	55
<input checked="" type="checkbox"/>	FG 0505 -Cordva-Nelson flo Qua	36284	36362	56
<input checked="" type="checkbox"/>	FG 0507 -Nelson345/138 flo Ne	36362	36056	57
<input checked="" type="checkbox"/>	FG 0521 E Frank - Good Gr 345	36309	36337	58
<input checked="" type="checkbox"/>	FG 0532 -Lakevw-Zion 138 flo	37384	39362	59
<input checked="" type="checkbox"/>	FG 0540 PowtnJct-Powtrn138 f	32411	37135	60
<input checked="" type="checkbox"/>	FG 0545 Gardn-19518L138 flo	36773	37076	61
<input checked="" type="checkbox"/>	FG 0546 Wauk-Zion138 flo Zion	37326	37384	62
<input checked="" type="checkbox"/>	FG 1642 - Hendsn161/138 flo C	27617	27560	63
<input checked="" type="checkbox"/>	FG 1649 - Avon 345/138	21362	21363	64
<input checked="" type="checkbox"/>	FG 2004- Marysville 765/345	22590	22589	65
<input checked="" type="checkbox"/>	FG 2005- Mary-ELima345 flo M	22579	22589	66
<input checked="" type="checkbox"/>	FG 2006 - South Canton 765/3	22595	22594	67
<input checked="" type="checkbox"/>	FG 2026 - Newtonville - Colema	26857	27552	68
<input checked="" type="checkbox"/>	FG 2034 - Grntwn 765/230/13	22621	25463	69

Corridor Limits Table:

Report	Branch Set ID	Flow Limit	Counterflow Limit	Active	Primary Key
<input type="checkbox"/>	Eastern Interface	6200	6200	<input checked="" type="checkbox"/>	8
<input type="checkbox"/>	FG 0012 - Warren - Falconer 115	99	99	<input checked="" type="checkbox"/>	9
<input type="checkbox"/>	FG 0021 - ErieWest345/115 flo ErieWest	305	305	<input checked="" type="checkbox"/>	10
<input type="checkbox"/>	FG 0022 - ErieW - Erie5345 flo Homer-St	722	722	<input checked="" type="checkbox"/>	11
<input type="checkbox"/>	FG 0100 - KamerXfr#8 flo Belmt - Harris	1530	1530	<input checked="" type="checkbox"/>	12
<input type="checkbox"/>	FG 0101 - Kamer765/500 flo Kamer-SCar	1530	1530	<input checked="" type="checkbox"/>	13
<input type="checkbox"/>	FG 0143 Elrma-Mitch138 flo Hatfid-Roncc	630	630	<input checked="" type="checkbox"/>	14
<input type="checkbox"/>	FG 0145- Seneca-Krendl138 flo Keystrne	401	401	<input checked="" type="checkbox"/>	15
<input type="checkbox"/>	FG 0200 - Tidd-CanCentr1345 flo Kamer-S	1147	1147	<input checked="" type="checkbox"/>	16
<input type="checkbox"/>	FG 0230 - Breed-Wheat345 flo Jeff-Rock	956	956	<input checked="" type="checkbox"/>	17
<input type="checkbox"/>	FG 0240 MuskRvr - Ohio Central 345	971	971	<input checked="" type="checkbox"/>	18
<input type="checkbox"/>	FG 0500 -Pont-Wilto flo Pont-Dresdn & P	1362	1362	<input checked="" type="checkbox"/>	19
<input type="checkbox"/>	FG 0505 -Cordva-Nelson flo Quad-H471 3	1799	1799	<input checked="" type="checkbox"/>	20
<input type="checkbox"/>	FG 0507 -Nelson345/138 flo Nelson345/1	480	480	<input checked="" type="checkbox"/>	21
<input type="checkbox"/>	FG 0521 E Frank - Good Gr 345 R	1398	1398	<input checked="" type="checkbox"/>	22
<input type="checkbox"/>	FG 0532 -Lakevw-Zion 138 flo Zion-PlsPr	295	295	<input checked="" type="checkbox"/>	23
<input type="checkbox"/>	FG 0540 PowtnJct-Powtrn138 flo Hav-C	166	166	<input checked="" type="checkbox"/>	24
<input type="checkbox"/>	FG 0545 Gardn-15518L138 flo Cord-Nlso	204	204	<input checked="" type="checkbox"/>	25
<input type="checkbox"/>	FG 0546 Wauk-Zion138 flo Zion-PIPrarie	295	295	<input checked="" type="checkbox"/>	26
<input type="checkbox"/>	FG 1642 - Hendsn161/138 flo Culley-Grn	224	224	<input checked="" type="checkbox"/>	27
<input type="checkbox"/>	FG 1649 - Avon 345/138	574	574	<input checked="" type="checkbox"/>	28
<input type="checkbox"/>	FG 2004- Marysville 765/345	3550	3550	<input checked="" type="checkbox"/>	29
<input type="checkbox"/>	FG 2005- Mary-ELima345 flo Mary-SWLin	1375	1375	<input checked="" type="checkbox"/>	30
<input type="checkbox"/>	FG 2006 - South Canton 765/345	2410	2410	<input checked="" type="checkbox"/>	31
<input type="checkbox"/>	FG 2026 - Newtonville - Coleman 161	335	335	<input checked="" type="checkbox"/>	32
<input type="checkbox"/>	FG 2034 - Grntwn 765/230/138 flo Grntw	1826	1826	<input checked="" type="checkbox"/>	33

The status bar at the bottom indicates: 'Input Dataset Table Corridor Definition C:\AURORA\Xmp\North_American_DB_2008-01-12.zip' and 'Input Dataset Table Corridor Limits C:\AURORA\Xmp\North_American_DB_2008-01-12.zip'. The system tray shows: 'Input database read. | Mem: 2297.9 | Avail Mem: 1221.2 C:\AURORA\Xmp\Dynegy_Daily082008.apz'.

Model Update Example – Load

Microsoft Excel - zWest_Demand.xls

Reply with Changes... End Review...

C:\Documents and Settings\wlca\Local Settings\Temporary Interne

File Edit View Insert Format Tools Data Window MIM Help Adobe PDF

Type a question for help

		T-6 Load Demand Thu, 07/31/2008				T-5 Load Demand Fri, 08/01/2008				
		<input type="checkbox"/> Holiday?				<input type="checkbox"/> Holiday?				
		Thu PIRA				Fri PIRA				
PIRA Region		On-Peak		Off-Peak		On-Peak		Off-Peak		Dem
		Demand	Adj %	Demand	Adj %	Demand	Adj %	Demand	Adj %	
8	PIRA CAISO	32,182		15,923		32,062		16,572		
9	PIRA CAISO-N	13,436	92.36%	6,661	62.13%	13,467	92.36%	6,958	64.00%	
10	PIRA CAISO-S	18,745	91.77%	9,263	61.82%	18,595	91.77%	9,614	64.00%	
11	PIRA Non-CAISO CA-N	2,190	92.36%	1,003	62.13%	2,260	92.36%	1,067	64.00%	
12	PIRA Non-CAISO CA-S	3,795	91.77%	1,802	61.82%	3,758	91.77%	1,855	64.00%	
13	PIRA AZ	18,917	121.16%	10,719	97.24%	19,435	121.16%	11,013	97.24%	
14	PIRA NM	3,353	121.16%	1,911	97.24%	3,379	121.16%	1,979	97.24%	
15	PIRA NEV	5,330	121.16%	3,136	97.24%	5,412	121.16%	3,147	97.24%	
16	PIRA RMPA	11,982	113.61%	7,826	101.53%	11,955	113.61%	7,662	101.53%	
17	PIRA Pacific NW	18,172	90.95%	17,496	114.38%	19,150	96.00%	17,797	116.00%	
18	PIRA Inland NW	12,129	106.06%	9,301	105.81%	11,866	106.06%	9,094	105.81%	
20										
21	WECC_Arizona	16517	100.00%	9359	100.00%	17099	100.00%	9689	100.00%	On-P
22	WECC_AZ-Navajo	232	100.00%	132	100.00%	240	100.00%	136	100.00%	
23	WECC_AZ-Palo	246	100.00%	139	100.00%	254	100.00%	144	100.00%	
24	WECC_CA-IID	570	100.00%	282	100.00%	562	100.00%	291	100.00%	
25	WECC_CA-LADWP+	4031	100.00%	1914	100.00%	3816	100.00%	1883	100.00%	
26	WECC_Canada-Alberta	9429	100.00%	7231	100.00%	9379	100.00%	7188	100.00%	
27	WECC_Canada-BritishColumbia	6361	100.00%	6125	100.00%	6728	100.00%	6253	100.00%	
28	WECC_CA-PG&E-North+	12620	100.00%	6256	100.00%	11637	100.00%	6013	100.00%	
29	WECC_CA-PG&E-SanFrancisco	729	100.00%	362	100.00%	672	100.00%	347	100.00%	

Main Scaling Shapes DB Auto Populate Map Pira Average Pira Onpeak Pira Offpeak

Ready NUM SCRL

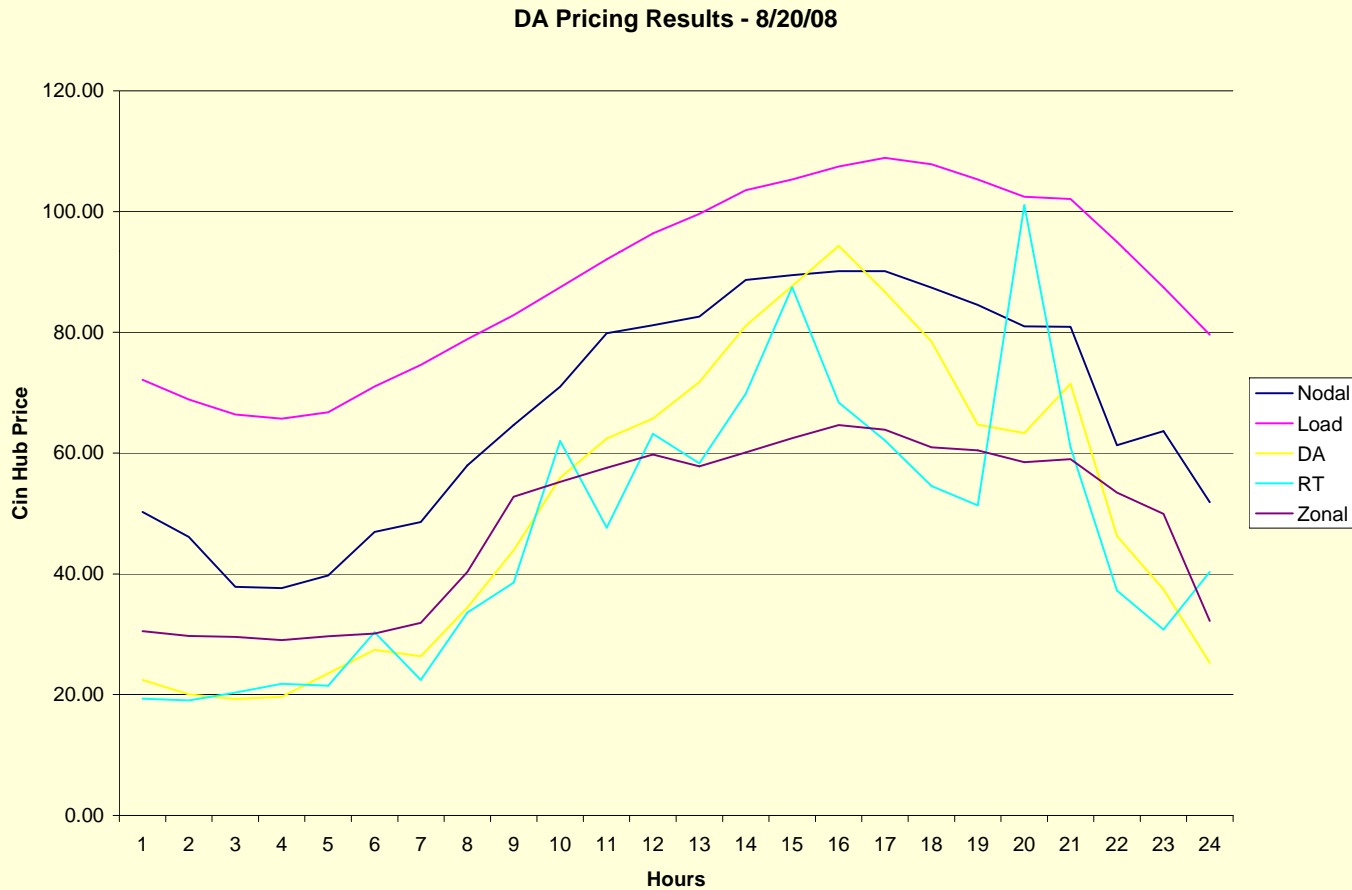
Interpreting the Results

- For most of the results we need we use the output templates feature of Aurora.
- DA & RT numbers are collected for the Major Trading Hubs – CIN, WHub, etc.
- The numbers are then given a “sanity” check review to ensure they make sense for the time period in question.

Interpreting the Results Example – Output Template

Record Number	Name	Condition	Time_Period	Price	Std_Dev	Demand	Net_Load	Hydro_Capability	Resource_Capability	Demand_Side_Capability	RPS_Capability
				\$/MWh	\$/MWh	MW	MW	MW	MW	MW	MW
1	ECAR-CINERGY	ICC ILLINOIS On	2008_08_28	62.33002	12.8654671	9400.057	10097.3691	33.13044	12726.6436		13600
103	ECAR-CINERGY	ICC ILLINOIS On	2008_08_29	59.0468445	11.7668571	9092.328	9926.276	33.00438	12698.3066		13600
307	ECAR-CINERGY	ICC ILLINOIS On	2008_09_01	45.9565659	12.0089463	8131.013	8791.312	32.91367	12978.68		13600
409	ECAR-CINERGY	ICC ILLINOIS On	2008_09_02	58.50237	12.9619465	9159.471	10084.6943	32.9673157	13124.4453		13600
511	ECAR-CINERGY	ICC ILLINOIS On	2008_09_03	58.2510757	12.4538555	9080.035	10095.3672	32.8105354	13124.4453		13600
613	ECAR-CINERGY	ICC ILLINOIS On	2008_09_04	47.8166	12.6165285	9207.437	9025.49	32.7634277	13039.9385		13600
2	ECAR-FirstEnergy	ICC ILLINOIS On	2008_08_28	79.09048	5.747564	10693.4	11460.5449	0.542626739	12606.7627	70206.49	
104	ECAR-FirstEnergy	ICC ILLINOIS On	2008_08_29	81.23043	7.318105	10617.2324	11581.9521	0.5422131	12570.958	70206.49	
308	ECAR-FirstEnergy	ICC ILLINOIS On	2008_09_01	70.08809	9.428263	8773.681	10721.7676	0.537674844	12747.9033	70206.49	
410	ECAR-FirstEnergy	ICC ILLINOIS On	2008_09_02	80.8076553	5.01853132	10498.2744	11812.2949	0.541045368	12835.1338	70206.49	
512	ECAR-FirstEnergy	ICC ILLINOIS On	2008_09_03	78.6402359	4.802713	10362.8174	11712.4893	0.5381249	12872.9561	70206.49	
614	ECAR-FirstEnergy	ICC ILLINOIS On	2008_09_04	83.7570953	6.993975	10665.1074	11036.8516	0.537477255	12606.2236	70206.49	
8	ECAR-Northern	ICC ILLINOIS On	2008_08_28	66.31959	12.0965872	4334.51074	3314.14746	7.09333849	3962.8335		13600
110	ECAR-Northern	ICC ILLINOIS On	2008_08_29	63.4560928	11.1180191	4145.087	3251.4397	7.01971	3962.8335		13600
314	ECAR-Northern	ICC ILLINOIS On	2008_09_01	50.8500366	12.4029322	3571.811	3121.01514	6.991867	4095.15527		13600
416	ECAR-Northern	ICC ILLINOIS On	2008_09_02	62.04497	12.1225185	4130.563	3292.98828	7.032421	4095.15527		13600
518	ECAR-Northern	ICC ILLINOIS On	2008_09_03	63.2927132	11.671876	4187.19531	3333.56085	7.00305176	4095.15527		13600
620	ECAR-Northern	ICC ILLINOIS On	2008_09_04	48.0503273	12.0517368	4295.102	3062.86914	6.994404	4095.15527		13600
13	MAIN-South	ICC ILLINOIS On	2008_08_28	63.9612579	11.82949	15316.1709	16754.3613	104.259491	20005.3535	69417.12	
115	MAIN-South	ICC ILLINOIS On	2008_08_29	60.9727669	10.9110346	14548.0752	16507.67	104.757416	19977.7168	69417.12	
319	MAIN-South	ICC ILLINOIS On	2008_09_01	50.45126	12.8788347	13575.1309	13871.1406	107.88768	19422.8047	69417.12	
421	MAIN-South	ICC ILLINOIS On	2008_09_02	60.0072746	12.08002	14772.499	15453.6777	108.982437	19610.1328	69417.12	
523	MAIN-South	ICC ILLINOIS On	2008_09_03	61.21003	11.555648	14791.52	15952.2275	109.72438	19960.5723	69417.12	
625	MAIN-South	ICC ILLINOIS On	2008_09_04	45.2665749	11.4926167	12283.627	13705.7432	110.617546	19803.21	69417.12	

Interpreting the Results Example – DA Pricing



Conclusions

- The average time to do a DA forecast takes about 2 hours for day ahead data assembly, 30 minutes for pre-market data updating and 30 minutes for the model to run and to review results.
- Our goal is to provide a +/- \$2 price range for each Hub we trade. To date we have averaged a 5 – 7% error overall.
- The same basic process is done for term forecasting . Set up times are longer due to data assembly and run times

Final Words

- The skill of forecasting is only as good as the data you can obtain.
- You have to understand that you will never have **all** of the data the RTO has so some level of “poetic license” will be needed to accurately forecast pricing.
- RTO markets don’t always act logical.
- Be “thick skinned” because your not going to be right all of the time.