



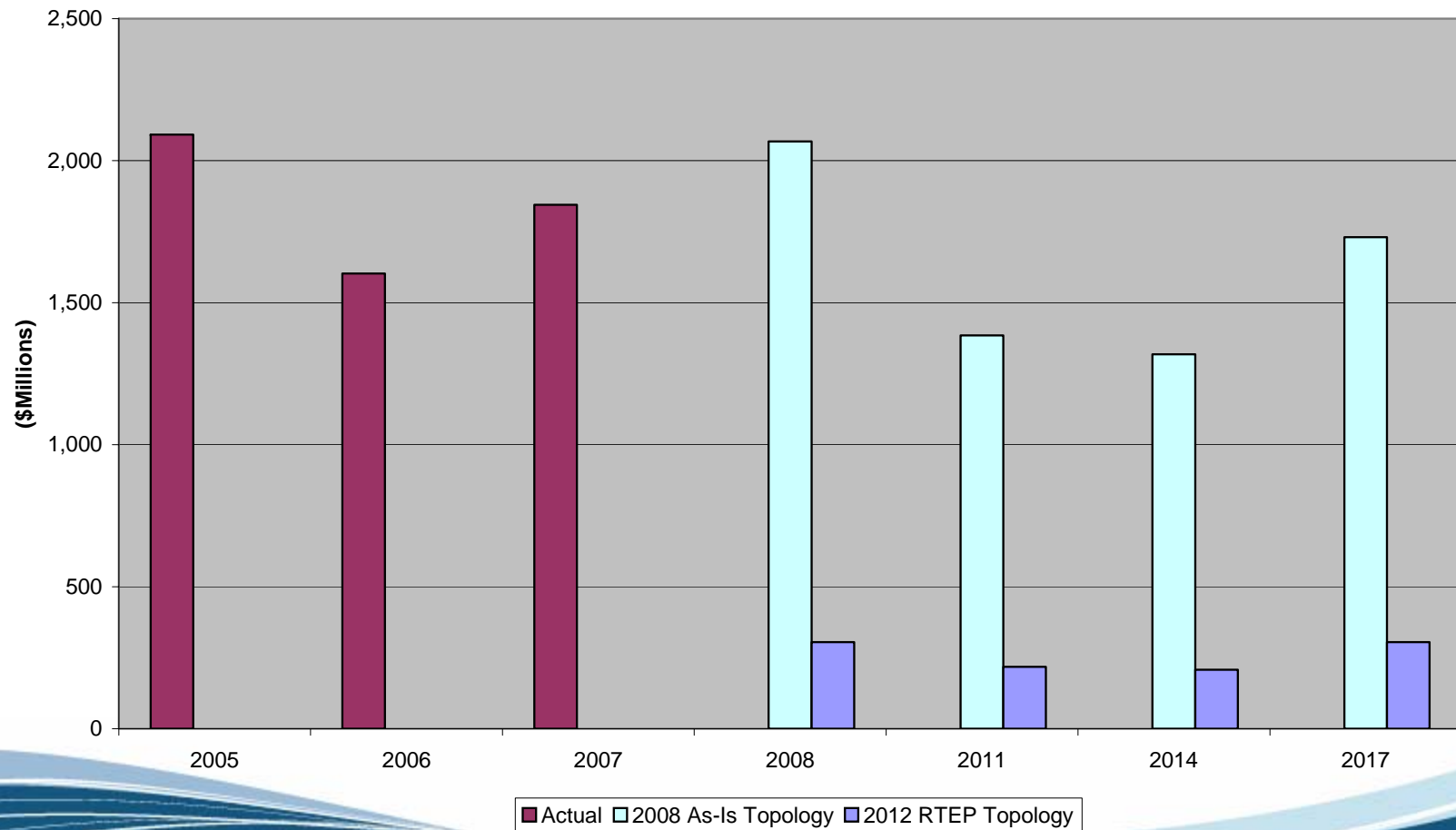
# **Transmission Expansion Advisory Committee Meeting**

## **2008 Market Efficiency Analysis**

October 15, 2008

- Annual market simulations for 4 study years made against 2 different transmission models
- Study years: 2008, 2011, 2014 and 2017
  - input assumptions as per 5/21/08 TEAC
- 2 different transmission models
  - 2008 power flow case to represent today's "as-is" system
  - 2012 RTEP power flow case to represent future system
- Comparison of simulations show impact of all planned transmission upgrades contained in the 2012 RTEP

**Annual Congestion Costs  
Actual and Simulated  
(\$Millions)**





# Impact of 2012 RTEP Upgrades on Congestion by Constraint 2008 Load and Generation Scenario

Constraint	2008 As-Is Topology		2012 RTEP Topology		Delta Congestion (\$millions)
	Frequency (hours)	Congestion (\$millions)	Frequency (hours)	Congestion (\$millions)	
AP-South Interface	3244	1,138.8	39	35.2	-1,103.6
05CLOVRD - 8LEXNGTN	3854	317.3	947	59.3	-258.1
01DOUBS - 01DOUBS	142	163.2	0	0.0	-163.2
Western Interface	715	88.3	8	3.2	-85.1
01BLACKO - 01BEDNGT	554	73.0	0	0.0	-73.0
Central Interface	475	45.7	1423	178.8	133.2
01BEDNGT - 01BEDNGT	30	33.0	0	0.0	-33.0
05KAMMER - 01KAMMER	1006	33.0	0	0.0	-33.0
Eastern Interface	173	31.9	11	2.2	-29.7
01PRNTY - 8MT STM	244	30.8	0	0.0	-30.8
01AQUEDT - 01DOUBS	110	23.5	0	0.0	-23.5
50045005 Interface	193	20.7	0	0.0	-20.7
02SAMMIS - 01WR SAM	682	19.0	0	0.0	-19.0
8CLOVER - 6CLOVER	188	12.9	206	6.8	-6.1
6DOOMS - 8DOOMS	80	12.1	0	0.0	-12.1
01MITCHL - 01SHEPLR	519	6.6	359	7.0	0.4
KEENEY - KEEN_230	73	4.7	0	0.0	-4.7
GRACETON - RAPHAEL	53	3.2	0	0.0	-3.2
ATHENIA - SADDLBRK	1247	2.6	0	0.0	-2.6
PONTI; B - WILTO; B	4	1.6	0	0.0	-1.6
15ELRM 5 - 01MITCHL	213	1.6	406	6.0	4.5
HOMER CT - SHELOCTA	145	1.5	51	0.2	-1.3
01CHARLR - 01MITCHL	79	0.7	289	3.9	3.1
E FRA; B - GOODI;3B	7	0.7	1	0.0	-0.7
ELWOO; R - GOODI;1R	6	0.4	0	0.0	-0.4
BURT2334 - SANDY34T	2	0.2	22	1.8	1.6
01MAHNSL - 05TIDD	16	0.2	0	0.0	-0.2
ELROY - HOSENSAK	1	0.2	0	0.0	-0.2
MCKLTON - MICK #4	3	0.1	0	0.0	-0.1
CDR GV F - CLIFTN K	40	0.0	161	0.1	0.0
ALTOONA - RAYSTOWN	0	0.0	15	0.8	0.8
		2,067.5		305.2	-1,762.2



# Impact of 2012 RTEP Upgrades on Congestion by Constraint 2011 Load and Generation Scenario

Constraint	2008 As-Is Topology		2012 RTEP Topology		Delta Congestion (\$millions)
	Frequency (hours)	Congestion (\$millions)	Frequency (hours)	Congestion (\$millions)	
AP-South Interface	2672	649.5	42	17.3	-632.2
05CLOVRD - 8LEXNGTN	3490	252.9	1089	60.9	-192.0
01DOUBS - 01DOUBS	153	152.9	0	0.0	-152.9
01BEDNGT - 01BEDNGT	76	63.7	0	0.0	-63.7
Eastern Interface	459	62.3	41	12.3	-49.9
Western Interface	545	39.0	0	0.0	-39.0
01BLACKO - 01BEDNGT	445	37.7	0	0.0	-37.7
Central Interface	503	21.4	1369	103.4	82.0
01PRNTY - 8MT STM	265	20.5	0	0.0	-20.5
05KAMMER - 01KAMMER	424	16.9	0	0.0	-16.9
01CABOT - 01CABOT	39	13.6	19	3.3	-10.2
01AQUEDT - 01DOUBS	89	11.7	0	0.0	-11.7
6DOOMS - 8DOOMS	106	7.7	0	0.0	-7.7
02SAMMIS - 01WR SAM	250	6.1	104	2.1	-3.9
8CLOVER - 6CLOVER	57	3.4	104	5.6	2.1
50045005 Interface	75	3.1	0	0.0	-3.1
MCKLTON - MICK #4	71	2.6	26	0.1	-2.5
E FRA; B - GOODI;3B	39	2.3	5	0.1	-2.2
GRACETON - RAPHAEL	42	2.2	0	0.0	-2.2
ATHENIA - SADDLBRK	640	2.2	0	0.0	-2.2
PONTI; B - WILTO; B	21	2.1	6	0.0	-2.0
ELROY - HOSENSAK	24	2.0	0	0.0	-2.0
DICKERSN - 6PL VIEW	21	1.9	0	0.0	-1.9
01MITCHL - 01SHEPLR	206	1.9	101	1.6	-0.3
HOMER CT - SHELOCTA	129	1.1	48	0.1	-1.0
15ELRM 5 - 01MITCHL	89	0.9	218	3.0	2.1
KEENEY - KEEN_230	24	0.8	0	0.0	-0.8
EDISON 3 - MDW RD R	29	0.6	0	0.0	-0.6
ELWOO; R - GOODI;1R	5	0.5	0	0.0	-0.5
BURT2334 - SANDY34T	4	0.4	51	5.3	4.9
BRADFRD2 - PLANBRK1	8	0.4	13	1.2	0.9
ATLANTIC - LARRABEE	24	0.3	4	0.0	-0.3
CDR GV F - CLIFTN K	142	0.1	153	0.1	0.0
01CHARLR - 01MITCHL	5	0.1	84	1.1	1.1
WESTFALL - TYRONE N	0	0.0	7	0.1	0.1
		1,384.4		217.7	-1,166.8



# Congestion by Constraint for Study Years 2011, 2014 and 2017 2012 RTEP System Topology

Constraint	2011 Study Year		2014 Study Year		2017 Study Year	
	Frequency (hours)	Congestion (\$millions)	Frequency (hours)	Congestion (\$millions)	Frequency (hours)	Congestion (\$millions)
Central Interface	1369	103.4	1644	108.5	1872	116.6
05CLOVRD - 8LEXNGTN	1089	60.9	560	27.0	299	17.1
AP-South Interface	42	17.3	19	5.1	68	33.0
Eastern Interface	41	12.3	99	40.6	93	30.2
8CLOVER - 6CLOVER	104	5.6	74	4.3	148	7.4
BURT2334 - SANDY34T	51	5.3	103	14.1	143	20.8
01CABOT - 01CABOT	19	3.3	4	0.0	19	0.1
15ELRM 5 - 01MITCHL	218	3.0	22	0.3	13	0.1
02SAMMIS - 01WR SAM	104	2.1	27	0.3	7	0.1
01MITCHL - 01SHEPLR	101	1.6	61	0.8	32	0.3
BRADFRD2 - PLANBRK1	13	1.2	30	0.9	114	3.2
01CHARLR - 01MITCHL	84	1.1	1	0.0	3	0.0
HOMER CT - SHELOCTA	48	0.1	45	0.1	124	1.4
CDR GV F - CLIFTN K	153	0.1	134	0.2	192	0.1
MCKLTON - MICK #4	26	0.1	65	0.1	105	1.0
E FRA; B - GOODI;3B	5	0.1	21	0.5	56	1.9
WESTFALL - TYRONE N	7	0.1	1	0.0	0	0.0
PONTI; B - WILTO; B	6	0.0	46	4.4	504	69.3
01AQUEDT - 01DOUBS	0	0.0	0	0.0	6	0.4
FLAGTWN2 - SOMRVLE	0	0.0	0	0.0	14	0.8
BYRON; R - CHERR; R	0	0.0	0	0.0	2	0.4
BURNH;0R - 17MUNSTR	0	0.0	0	0.0	5	0.2
E FRA; R - GOODI;1R	0	0.0	1	0.0	7	0.2
GOODI;2R - LOCKP; R	0	0.0	0	0.0	4	0.2
GLASGOW - MT PLSNT	0	0.0	0	0.0	4	0.1
		217.7		207.3		305.1

- Identify potential acceleration candidates
- Identify future transmission bottlenecks and develop economic upgrades or economic enhancements to relieve
- Conduct cost-benefit analysis of any identified acceleration candidate or economic upgrade
- Conduct additional contingency analysis to ensure that monitor/contingency files are complete