

Overview of WCATF Materials Prepared for DOE

Identification of Congestion in the
Western Interconnection

Materials for DOE

- Template Report
- Power Point presentation by PAC on 2008 Hydro Sensitivity Study
- Power Point presentation on 2008, 2015 and Historical Usage Studies – includes gas price and loss sensitivity study results
- Tables 1 and 2 – (DOE Tasks 1, 3 and 4)
- Table 3 and 4 – Identified Congestion Areas for the W.I.
- Map (for Table 3)

Congestion Areas

- Studies monitored usage and economics on WECC paths
- WECC paths were ranked (See Table 4). Top 10 paths were used to identify congested WECC paths
- Congested WECC paths were grouped geographically into Congested Areas (within a state, or state to state)
- Many Congested Areas include multiple WECC paths (CO to Utah – TOT 1A and Bonanza West)
- Identification of a Congested Area DOES NOT indicate it is necessary or economical to build facilities to relieve the constraint

Template Report

- Includes ALL templates submitted to WCATF

Table 1

- Includes ALL congested areas identified in existing studies submitted to WCATF as described in one of the Templates
- All information in Table 1 was taken from Templates
- Rocky Mtn. export congestion were grouped, to indicate sensitivity to Rocky Mtn. resource development.

Table 2

- Lists congestion areas identified in new studies (1999 to 2005 path usage, 2008 and 2015 SSG-WI/WECC model studies)
- Includes all paths/congestion areas in top 10 ranking in at least one of the following categories (See Table 4):
 - U75 or U90 from 1999 to 2005 path usage study
 - U75 or U90 or binding hours shadow price – 2008 study
 - U75 or U90 or Ulimit or Ave. Shadow Price or Congestion Rent – 2015 study
- Some non-WECC rated paths limiting flows on WECC paths were monitored in 2008 study (Ex. - - Malin - Round Mtn limiting COI)
- Considerable path overlap in applying above 10 criteria - - resulted in identification of 14 congestion areas

Table 3

- Summarizes all the Congestion Areas identified in Tables 1 and 2
- Represents the W.I. Identified Congestion Areas
- Are NOT in priority order
- Results are based upon applying Criteria shown in Table 4

Map

- Shows ALL congestion areas identified in Table 3, using criteria in Table 4

Table 4

Criteria for Identifying Final Set of W. I. Congestion Areas

(This table is a supplement to Table 3 defining how Table 3 and the Table 3 Map were derived.)

Category (refer to Table 3)	Criteria	Number of Identified WECC Paths or lines	Number of Identified Congestion Areas	Number of Identified Subregional Congestion Areas	Comments
1. Task 1 - Existing Studies	Includes all congestion areas identified in Task 1 Template Reports	16	11	6	A common Congestion Area criteria was not developed by the WCATF for Task 1 studies. Rather, Task 1 relied upon the criteria used in each individual study.
2. Task 3 - Historical Path Flow	Includes all top 10 ranked WECC paths, based on maximum seasonal U75 or U90 for the period 1999 to 2005. Corresponds to a U75 > 40% of time or U90 > 5% of time	13	10	0	Historical Path Flow analysis was completed for the Western Interconnect. It is planned to analyze ATC data when data is available.
3. Task 3 - 2008 Model Study	Includes all WECC paths/critical lines ranked in the top 10 in at least 1 of the following 9 categories (for \$5, \$7 and \$9 gas):	17	10	0	See Note 3
	U75 (>80% of time)				
	U90 (>50% of time)				
Shadow Price (Binding Hours)					
4. Task 3 - 2015 Model Study	Includes all WECC paths ranked in the top 10 in at least 1 of the 5 following categories (\$5 gas)	12	8	0	See Note 3
	U75 (>80% of time)				
	U90 (>60% of time)				
	Ulimit (>50% of time)				
	Shadow Price (Average)				
Congestion Rent					
Table 3	TOTAL WECC Paths	24			See Note 2
	TOTAL Congestion Areas		14		See Note 2
	TOTAL Subregional Congestion Areas			6	See Note 2

Notes:




1. All of the final identified W.I. congestion areas shown in Table 3 met at least one of the above 4 criteria. Table 3 therefore includes all of the W.I. congestion areas, as identified in Tasks 1 and 3.
2. Many W.I. Congestion Areas met more than one of the above criteria. Therefore the TOTALs do not equal the sum of the 4 criteria subtotals.
3. The Congestion Area criteria for the 2008 and the 2015 studies used different congestion metrics. This resulted since the views on preferred metrics evolved during the study. Additional work is needed to define preferred Congestion Area criteria and metrics.

Western Interconnect Transmission Congestion Areas/Paths

Identified by the WCATF
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NOTES:

1. See Table 4 for Congestion Area Criteria
2. Map identifies all Congestion Areas Identified in DOE Tasks 1 and 3
3. Many Congestion Areas are dependent upon location of future W.I. resources

-  Congested WECC Path
-  Congestion Area (See Table 3)
-  Direction of Congestion

