



RUC for Congestion on 9/21/2021

Congestion Management Working Group

Market Analysis & Validation

10/18/2021

RUC Commitments for 9/21/2021

Resource	HRUC Commitment Time	Committed Block	Operator Reason
(1)	9/21/2021 8:03 AM	HE13-18	N_TO_H Constraint
(2)	9/21/2021 8:03 AM	HE15-19	N_TO_H Constraint
(3)	9/21/2021 8:03 AM	HE13-19	N_TO_H Constraint
(4)	9/21/2021 9:03 AM	HE16-21	WESTEX Constraint
(5)	9/21/2021 9:03 AM	HE16-21	WESTEX Constraint
(6)	9/21/2021 9:03 AM	HE16-18	WESTEX Constraint
(7)	9/21/2021 9:03 AM	HE15-22	WESTEX Constraint
(8)	9/21/2021 9:03 AM	HE15-22	WESTEX Constraint
(9)	9/21/2021 10:03 AM	HE14-19	WESTEX Constraint

- 9 unique Resources were committed by operators on OD 9/21/2021.
- 59 unique Resource were recommended for commitment at least one hour block by the HRUC engine for the 0800, 0900 and 1000 cases on 9/21/2021.
- ERCOT ran offline study for those HRUC cases for impact analysis by using methodology described on the next page.

Methodology used for HRUC offline study

Goal: Determine if committing Resources helped congestion.

For each HRUC case, alter the case by making the committed Resources unavailable for HRUC commitment.

Compare the binding or violated constraints from the altered case with the original case.

- Specifically, look at the violated MWs and shadow prices on constraints.

Please note that HRUC is one tool of many that operators uses to determine when to commit a Resource. The scope of the offline study is just to show what the clearing engine saw when HRUC executed.

Analysis of HRUC Case 9/21/21 08:00

Constraint	Binding/ Violated	Delta in MW Violation	Delta in Shadow Price	(1) Shift Factor x RUC HSL	(2) Shift Factor x RUC HSL	(3) Shift Factor x RUC HSL
BASECASE: N_TO_H	Binding	0 MW	\$8,998/MWh	-65.23 MW	-59.93 MW	-93.57 MW
BASECASE: WESTEX	Binding	0 MW	\$224/MWh	-14.55 MW	-13.37 MW	-20.83 MW
DWAPHLJ5: JCKSTP18_A	Binding	0 MW	\$32,328/MWh	-14.1 MW	-12.96 MW	-19.62 MW
DTHWADK8: WO_WT_73_A	Violated	21.9 MW	\$100,000/MWh	-6.4 MW	-5.88 MW	-9.16 MW
DWAP_BI5: WO_AT3H	Violated	31.7 MW	\$100,000/MWh	-11.04 MW	-10.14 MW	-15.8 MW

Note:

1. Binding or Violated in any of the RUC hour blocks.
2. Delta represents altered case minus original case.
3. Largest delta out of all hour blocks is used.
4. Shift factor x RUC HSL is from HE17.

Analysis of HRUC Cases 9/21/21 09:00 & 10:00

Constraint	Binding/ Violated	Delta in MW Violation	Delta in Shadow Price	(4) Shift Factor x RUC HSL	(5) Shift Factor x RUC HSL	(6) Shift Factor x RUC HSL	(7) Shift Factor x RUC HSL	(8) Shift Factor x RUC HSL
BASECASE: WESTEX	Binding	0 MW	\$828/MWh	-16.3 MW	-17.2 MW	-40.1 MW	-12.4 MW	-12.4 MW

Constraint	Binding/ Violated	Delta in MW Violation	Delta in Shadow Price	(9) Shift Factor x RUC HSL
BASECASE: WESTEX	Binding	0 MW	\$0/MWh	-27.11 MW

Note:

1. Binding or Violated in any of the RUC hour blocks.
2. Delta represents altered case minus original case.
3. Largest delta out of all hour blocks is used.
4. Shift factor x RUC HSL is from HE17.