



ERCOT's Responses to Questions and Comments on ERCOT's Switchable Generation Presentation

At the July 11, 2018 Wholesale Market Subcommittee (WMS) meeting, ERCOT solicited questions and comments regarding its presentation addressing ERCOT's authority to commit Switchable Generation Resources (SWGR) during Emergency Conditions. Subsequently, ERCOT received questions and comments from Shell Energy North America and Exelon Corporation. The questions and comments, as well as ERCOT's responses, are below.

Shell Energy North America

Shell Energy North America (Shell Energy) appreciates ERCOT's efforts in working with stakeholders on developing switchable generation resource (SWGR) processes. Shell Energy understands ERCOT's responsibility to maintain reliability and hence is committed to work with ERCOT and stakeholders to develop needed market-based solutions to manage reliability issues without relying on command/control actions to the maximum extent possible. Reliance on market-based solutions is a critical enabler to the quality of the ERCOT market. In the extreme case that market-based solutions cannot be developed, it is imperative to develop the appropriate compensation for affected entities and steps to mitigate the impacts on the ERCOT market outcomes. Based on the discussion on July 11, 2018, Shell Energy respectfully submits the following questions to seek clarification on the current ERCOT process for SWGR.

Need for improvements in market-based incentives: Does ERCOT believe that the current Energy-only market design will be ineffective in attracting the SWGRs to ERCOT during system wide emergency even with potential for prices at \$9,000?

Response:

No. ERCOT believes its energy-only market design can generally be expected to provide appropriate incentives to SWGRs in connection with system-wide Emergency Conditions. However, in certain uncommon situations, ERCOT prices may not reflect the reliability need. For example, voltage deficiencies are local conditions that are not reflected in ERCOT prices. Additionally, factors beyond ERCOT's control may create incentives that conflict with the incentives created by ERCOT prices. For example, incentives created by private contracts or the market designs of neighboring systems may discourage behavior that would be optimal

for ERCOT reliability. In these unusual cases, ERCOT may need to direct SWGRs to take action in order to satisfy reliability needs.

- Have there been scenarios in the past where SWGRs were needed for reliability but were not switched into ERCOT?

Response:

ERCOT has not conducted a comprehensive evaluation of all switching activity of SWGRs during all Emergency Conditions.

- If so, should there be changes to market design to ensure that prices reflect the need for the resource and create the correct market incentives for switching to ERCOT? Has ERCOT considered what potential changes are needed?

Response:

No. ERCOT believes that its energy market design, including scarcity pricing in particular, generally provides effective signals to encourage ERCOT generators to be online and available for dispatch during local or system-wide shortage conditions. However, with SWGRs, switching decisions are influenced not only by prices in ERCOT, but by other factors entirely beyond ERCOT's control, including the market design in the neighboring Control Area and, in some cases, the terms of private contracts with off-takers in another system. Modifying ERCOT's pricing construct with the sole aim of counteracting a potentially unlimited number of external factors, including unknown, private, contractual incentives, would be poor policy. With respect to voltage conditions, modifying ERCOT's systems and market design to incorporate voltage into SCED would be a major policy change and would require substantial system changes at a cost that would likely exceed any expected benefit related to incentivizing SWGR switching. Ultimately, ERCOT simply cannot be assured that Resources will voluntarily switch to ERCOT during an Emergency Condition even if prices in ERCOT always perfectly reflected all operating conditions in the ERCOT Region. In these rare cases, out-of-market actions may be necessary.

Change in allowed discretion for SWGR owners/operators: Until the end of May 2018, based on the following bullet points, SWGRs had the option to make market-based switching decisions. This was changed by ERCOT's change to Operating Procedure Manual for Shift Supervisor Desk change on May 31, 2018 and ERCOT's July 11, 2018 clarification that a generation owner must follow ERCOT procedures per PURA 39.151(j). Please explain how the need for this change out-weighs the concerns expressed by stakeholders and IMM in adopting command/control solutions and the steps

- that stakeholders/ERCOT need to take to work towards developing a market based alternative solution.
- Per zonal protocol 4.4.15 QSE Resource Plans, “A Resource may be listed as unavailable to ERCOT if the Resource’s capacity has been committed to markets in regions outside of ERCOT.”
 - Per nodal Protocol 3.9.1 Current Operating Plan (COP) Criteria, SWGRs can indicate a resource status of OUT to show that the resource is “offline and unavailable” to ERCOT grid.
 - On April 5th, 2017 WMS members voted on a motion that the Command and Control option for Switchable Generation is not the preferred option by WMS. The motion carried with two abstentions.
 - Until May 31, 2018, ERCOT’s Operating Procedure Manual for Shift Supervisor Desk stated the following “it is up to the QSE as to whether they want to switch”. On May 31, 2018, it was changed ([Bulletin No: 850](#)) to “Coordinate with the RC and the QSE for the SWGR to become available to the ERCOT Grid.”

Response:

ERCOT’s determination that ERCOT-registered SWGRs are subject to out-of-market commitment during Emergency Conditions follows from its conclusion that there is no defensible policy reason to exempt them from that control, and that reliability should always take precedence over financial benefit in the rare cases in which those principles are not aligned. Previously stated stakeholder concerns have been largely focused on potential uncertainty around which costs should be included in any make-whole solutions, which is irrelevant to the reliability need upon which ERCOT’s authority is premised.

With respect to the specific bullet points articulated by Shell Energy, ERCOT notes that ERCOT Zonal Protocol section 4.4.15 is no longer binding. ERCOT Nodal Protocol section 3.9.1 is currently under review in connection with Nodal Protocol Revision Request (NPRR) 901 because use of an “OUT” or “EMR” Resource status does not sufficiently indicate whether a Resource is available to be dispatched if necessary to ensure reliability. The mere existence of the “OUT” status in section 3.9.1 does not grant SWGRs an exemption from ERCOT’s broad reliability authority. Inferring such an exemption is inconsistent with the ERCOT Protocols, would elevate market interests over reliability, and could violate ERCOT’s duty to ensure non-discriminatory access to the ERCOT system. ERCOT

acknowledges the April 5, 2017 WMS vote that “Command and Control” is not the preferred option. For the reasons outlined in its July 11, 2018 presentation, ERCOT respectfully disagrees. Finally, ERCOT’s May 31, 2018 revision of its Operating Procedure Manual for Shift Supervisor Desk (“Operating Procedure Manual”)—which is not binding—was necessary because the former language was inconsistent with ERCOT’s more deliberate evaluation of the relevant legal and policy principles governing SWGR switching. While some ERCOT employees may have taken a different view in the past, ERCOT’s recent evaluation of the question has concluded that it has always had this authority, regardless of what language appeared in the Operating Procedure manual.

Like all other Generation Resources, SWGRs have been and continue to be subject to ERCOT’s Reliability Unit Commitment (RUC) instructions and broad reliability authority, which includes the authority to take all actions necessary to preserve the integrity of the ERCOT System.

Costs of switching SWGRs between grids: In the ERCOT’s [SWGR white paper](#), ERCOT recommended that SWGRs should be eligible for make whole payments as well as additional settlement treatment to cover contractual penalties, and penalties from market obligations. Listed below is the summary of the cost discussions in the stakeholder process. Please explain the process that ERCOT will use to pay the contractual penalties, and penalties (not lost opportunity) from market obligations if a SWGR is ordered to switch from non-ERCOT Reliability Coordinator region so that the generation operator will not lose money when switching to help maintain reliability of the ERCOT grid.

- Resource Cost Working Group (RCWG) worked with stakeholders to [estimate worse-case scenario costs](#) associated with forced switching of SWGR and presented [two options and corresponding costs](#) to WMS on September 7, 2016 WMS meeting. The costs associated with switching would vary by scenario and could include operating costs as well as penalties based on pipeline tariffs and non-ERCOT ISO rules. This could run into millions of dollars depending on the scenario that materialize.
- Different options and potentials costs were discussed the following months during which stakeholders expressed preference for optional switching because it would likely result in lower uplift cost to load. On [April 5, 2017 WMS meeting](#), based on the potential uplift cost and impact to the wholesale energy market, WMS members approved the conclusion that “Command and Control option for Switchable Generation is not the preferred option by WMS”.

- During the extensive discussions, ERCOT's IMM director and several stakeholders discussed the potential costs versus potential benefits and opined that that generation owners are in the best position to understand the costs and risks of moving a unit between grids, and that if Market Participants support ERCOT command/control of SWGR, then consideration should be given to the lost opportunity costs and appropriate compensation.

Response:

ERCOT notes that it is developing a proposal to appropriately compensate SWGRs that are required to switch to the ERCOT Region from another region in order to address Emergency Conditions. ERCOT's proposal will not include the universe of costs that appear to have been a source of concern for many at the September 7, 2016 WMS meeting.

Shell Energy appreciates the opportunity to submit questions/comments to ERCOT. We look forward to ERCOT's response to the questions and working with ERCOT on developing market-based solutions to maintain the grid reliability without adversely affecting the market outcomes.

Exelon Corporation

Exelon Corporation Questions and Comments on ERCOT's July 11, 2018 Switchable Generation (SWGR) Presentation

Exelon supports ERCOT's need and ability to coordinate with neighboring system operators to ensure reliability is maintained in each system. In fact, Exelon has worked with each region when reliability issues arise. Exelon agrees with ERCOT's contention that coordination agreements between ERCOT and its neighboring system operators ensure reliability-based switches are facilitated as reliably and expeditiously as possible. However, Exelon is concerned that under ERCOT's command and control position, make whole payments as structured today will not make SWGRs financially whole if forced to switch to the ERCOT system when those resources have a contractual obligation to supply capacity in the neighboring system. In addition, we are not aware of a mechanism today that waives a SWGR's FERC Enforced Capacity Resource obligations in the neighboring system. To seek clarity on ERCOT's plans with respect to SWGR, Exelon respectfully submits these questions.

1. It is our understanding that ERCOT believes it has the ability *today* to RUC a resource operating in a neighboring system that has a capacity obligation in that neighboring system.

- a. Please cite to specific authority that grants ERCOT the ability to RUC units that are not operating in ERCOT at the time of the RUC?

Response:

As articulated in ERCOT's July 11, 2018 presentation, owners of SWGRs must register as power generation companies with the Public Utility Commission of Texas ("PUC"). Tex. Util. Code § 39.351(a). Power generation companies must observe all operating and reliability "policies, rules, guidelines, and procedures established by [ERCOT]." Tex. Util. Code § 39.151(j); PUC Substantive Rule 25.503(f)(2).

The owner of a SWGR must also register as a Resource Entity under ERCOT Protocols and execute the ERCOT Standard Form Market Participant Agreement ("Standard Form Agreement"), as must the Qualified Scheduling Entity (QSE) for the Resource Entity. ERCOT Protocols §§ 16.2.1(1)(a), (b); 16.5(1). The Standard Form Agreement mandates all signatories "comply with, and be bound by, all ERCOT Protocols." ERCOT Protocols § 22A at § 5.A.

Under the ERCOT Protocols, ERCOT may issue RUC instructions to Generation Resources. ERCOT Protocols § 5.5.2(1). ERCOT is also authorized by the ERCOT Protocols to "[p]erform . . . actions required to prevent an imminent Emergency Condition or to restore the ERCOT Transmission Grid to a secure state in the event of an ERCOT Transmission Grid Emergency Condition." ERCOT Protocols § 6.5.1.1(1)(e). Furthermore, ERCOT may "tak[e] any action to preserve the integrity of the ERCOT System." ERCOT Protocols § 6.5.9.1(2). "[Each] QSE shall comply fully and promptly with a Dispatch Instruction issued to it, unless . . . such compliance would create an undue threat to safety, undue risk of bodily harm or undue damage to equipment" ERCOT Protocols § 6.5.7.9(1).

NERC Reliability Standard IRO-001-4 requires that ERCOT, as the Reliability Coordinator for the ERCOT Region, "act to address the reliability of its Reliability Coordinator Area via direct actions or by issuing Operating Instructions," and requires Generator Operators, including SWGR operators, to comply with those instructions, absent a physical or regulatory impediment. NERC Reliability Standard IRO-001-4.

ERCOT must also ensure open access to the grid to "buyers and sellers of electricity on nondiscriminatory terms." Tex. Util. Code § 39.351(a)(1).

2. Please describe, in detail, the calculation of the make whole payment SWGRs will receive when switched/RUCed into ERCOT?

Response:

RUC settlement rules are contained in section 5.7.1 of the ERCOT Protocols. Costs unrelated to a SWGR's operation and availability to ERCOT would not be compensated under current rules. ERCOT notes that it is developing a proposal designed to further compensate SWGRs that are required to switch to the ERCOT Region from another region in order to address Emergency Conditions.

3. Does ERCOT agree that the purpose of protocol sections 5.5.2 and 5.7.1 is to make QSEs for Resources that are RUCed whole? Does ERCOT claim that the protocols in fact provide cost recovery for non-SWGRs?

Response:

The purpose of section 5.5.2 is to articulate the RUC process, which is designed to match ERCOT's forecasted Load, subject to all transmission constraints and Resource performance characteristics and minimize costs based on Resource costs. The purpose of section 5.7.1 is to provide a RUC Make-Whole Payment, as defined, in order "[t]o make up the difference when the revenues that a [RUC]-committed Resource receives are less than its costs as described in paragraph (2) . . ." of the section. The cost recovery described therein applies to all Generation Resources. The amount of the make-whole payment may not equal the total amount of all conceivable costs that a generator may incur in association with its compliance with a RUC instruction. For example, gas storage charges are not presently compensable under RUC settlement.

4. Does ERCOT acknowledge that, to the extent obligations of a RUCed unit in another RTO are unfulfilled, the protocols as currently drafted do not provide full cost recovery?

Response:

ERCOT agrees that any costs unrelated to the SWGR's operation and availability to ERCOT would not be compensated under the ERCOT Protocols as currently drafted. However, ERCOT reiterates that the ERCOT Protocols do not guarantee full recovery of all conceivable costs for *any* Generation Resource.

5. If a SWGR operating in MISO is RUCed into ERCOT – how long will the resource be expected to continue to operate in ERCOT?

Response:

As with any other unit committed by RUC instruction, the unit would need to be available and online (in ERCOT) for the duration of the RUC instruction. For SWGRs, ERCOT would expect the RUC instruction to extend until the Emergency Condition that necessitated the switch is fully resolved.

- a. After MISO releases the unit to ERCOT and then MISO needs the unit back, who has the authority to commit/recall/RUC the unit, MISO or ERCOT?

Response:

Best utility practice would be utilized to determine post-switch authority given that the current coordination agreement between ERCOT and MISO is silent on this issue. ERCOT notes that it is engaged in dialog with MISO in order to address the unlikely scenario in which a second dual emergency arises after a switch occurs, but before the Emergency Condition necessitating the switch has been resolved.

- b. Does/will a waiver exist for the SWGR's Day Ahead must offer obligation in MISO? Where does the waiver come from? MISO, IMM, FERC?

Response:

ERCOT is unaware whether a waiver does or will exist in connection with a SWGR's Day Ahead obligation in MISO. ERCOT encourages Shell to raise these concerns with the appropriate system operator.

- c. If the resource, that has a MISO must offer obligation, does not offer into MISO's Day Ahead market, has ERCOT asked MISO and MISO's IMM, or received indication from MISO, FERC or the IMM, whether the MISO and its IMM will deem this to be withholding, subject to FERC enforcement?

Response:

No. ERCOT has not engaged MISO or MISO's IMM regarding whether or not refraining from offering into MISO's Day Ahead Market when a resource has a purported obligation to do so could be deemed withholding, subject to FERC enforcement. ERCOT encourages Shell to raise these concerns with the appropriate system operator.

6. Does ERCOT believe other regions, such as MISO, have the authority consistent with PURA, PUC Rule, and NERC Reliability Standards to remove a unit from ERCOT that is registered to meet ERCOT's system needs?

Response:

ERCOT's position is that its adjacent system operator's rights with respect to a SWGR are a function of the applicable tariffs and laws that govern operation of generators registered in that region, and to the extent those rights may overlap with ERCOT's asserted rights, a coordination agreement must assign control in the interest of clarity. Under current and proposed coordination agreements between ERCOT and its neighboring American system operators, those operators would be permitted to direct the SWGR to switch only in connection with an emergency and only if the SWGR were released by ERCOT.

7. ERCOT mentioned EOP-011-1 as support that ERCOT may RUC Off-Line Generation Resource. Does ERCOT interpret EOP-011-1 as referring to a physical unit(s) status?

Response:

ERCOT reads EOP-011-1 to mean that if a unit is physically capable of being online, it must be online.

- a. In the scenario in which all physical units are online but some operating in the neighboring system, does ERCOT believe it can RUC those units operating in the neighboring system?

Response:

ERCOT believes it has the authority to issue reliability directives to SWGRs operating in a neighboring system based on the SWGR owner's decision to register with ERCOT. There is no exception to RUC for units operating in a neighboring system. However, as a practical matter ERCOT would not RUC a unit operating in a

neighboring system without prior approval of the neighboring system operator.