

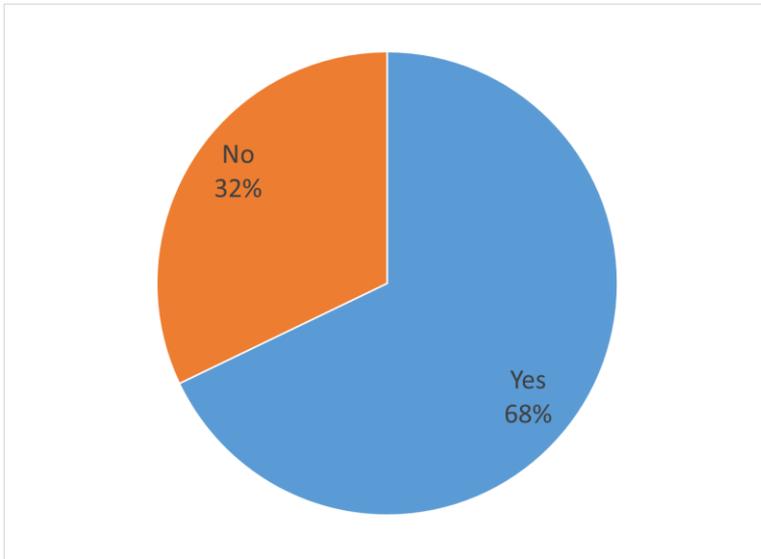


# Utility Microgrid Poll Results

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DER Subcommittee  
October 10, 2019

- Voting Members: 42
- Affiliate Members: 67
- Total: 109

- When a distribution microgrid is operating in island mode, should the generation and load be settled through the PJM energy market (design components 2 & 3)?



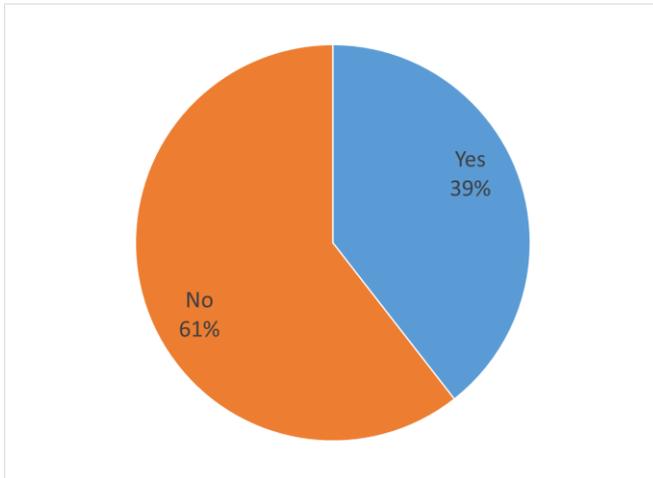
Response	%	#
Yes	68%	74
No	32%	35

- “...I can’t support either proposal without knowing several items not discussed or in proposals. My responses to yes/no questions here are not necessarily indicative of my position since there was box to indicate "no position“ .... clarify: (1) how DR customers (participating in LM, Econ, A/S) that are grid connected and within the microgrid would be treated under islanded/non-islanded scenarios, (2) Why these rules should apply to utility microgrids, but not private microgrids (especially asking PJM)? ... it may be discriminatory to apply these rules to utility microgrids but not other microgrids. For instance, a private microgrid with a FoM Generator with a "pig tail" among members of the microgrid (not using Distribution infrastructure) seems like it also should fall into whatever rules are developed for microgrids using distribution wires. The difference may be that there are several connection points to the grid but this should be a minor issue so long as all switches are opened.”

- “In this way, generation and load would be settled through PJM. Both should be settled as normal.”
- “In the example the assumption is that the generator and load are normally participants in the PJM market. While there may need to be special rules for how costs are assessed if the microgrid is islanded, the generator is still subject to market and reliability rules even if the microgrid switch is open, so it’s hard to imagine how to take those out of the market just because the switch has opened.”
- “the EDC would prefer PJM to settle as appropriate.”

- “It is difficult to answer this question because no aspect of a microgrid has been defined – i.e. operations, capabilities, contractual obligations, etc. PJM assumes uses of microgrids will be ‘rare’, however islanding could be for a long duration or more frequent than expected.”
- “When a distribution microgrid is operating in island mode it is providing a reliability service directly to the load on the microgrid. If islanded and serving the microgrid load, that is a non-wholesale service and should not be treated as a resource providing a wholesale service under PJM settlements. The generation and load should be settled locally as contracted between the parties within the microgrid configuration.”

- When a utility chooses to island a microgrid, should the generation and load within the microgrid be removed from the PJM system, and therefore should not be included in PJM energy settlements?

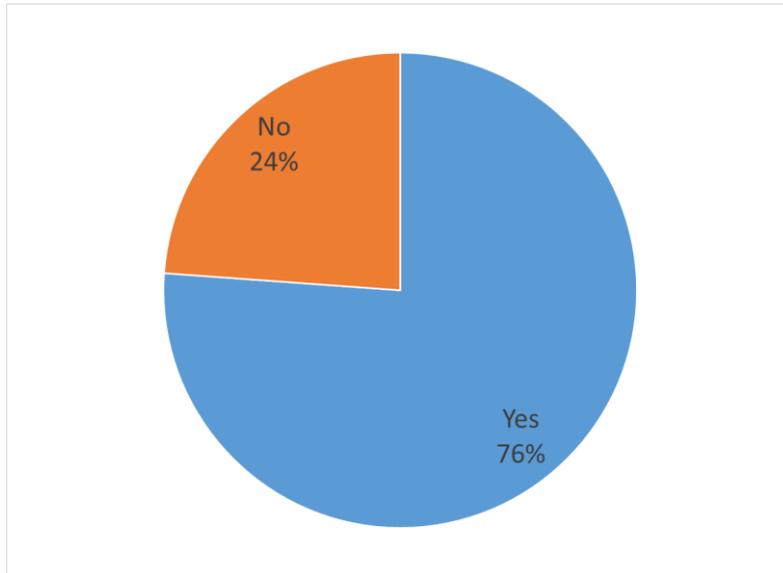


Response	%	#
Yes	39%	43
No	61%	66

- “The generation and load should not be removed from PJM. Settlement should be as normal as possible.”
- ““Chooses” should not apply – islanding should be subject to clear rules regarding emergency conditions. A “yes” on this would imply that the microgrid could join and leave the PJM markets at will for economic reasons, which PJM has said is not their intent in discussing this example.”
- “Although it is not served by the transmission system, a sub-section should account for load served by islanded microgrids. This is still part of the PJM load area.”
- “the EDC would prefer the option to have PJM to settle as appropriate.”

- “...this question assumes the utility removes the microgrid. What if PJM or the microgrid itself does? What does “not included in settlements” mean? Not included in annual PLC calculations. Removed from RPM planning parameters?”
- “When a utility chooses to island or a utility has an outage and the microgrid automatically islands, the meter at the utility point-of-interconnection reflects that there is no longer load at that POI. The breaker is open and the generation-load balancing is handled on the microgrid. The load is removed from the PJM system by physical configuration and therefore PJM settlements should not treat that as PJM load.”

- When a Utility Microgrid is islanded, do you agree that the output of the generator should not be considered 'online' or 'available to PJM'?

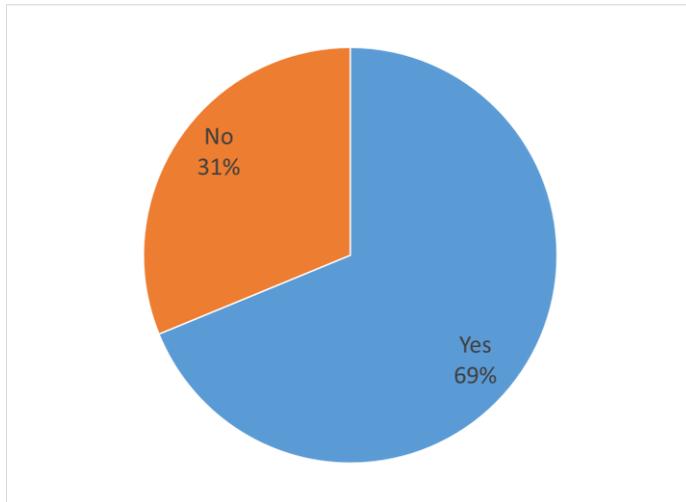


Response	%	#
Yes	76%	83
No	24%	26

- “Disagree, a generation resources islanded to serve the island load should be considered by PJM as online or available if it is performing and is not physically de-rated. PJM will need to ensure reserves and reactive support are accounted for correctly when these units are in islanded mode, as neither will be available to PJM from the microgrid generator when islanded.”
- “The phrasing of this question is confusing. Our position is that the resource should be considered online if it is physically capable of exporting energy, regardless of whether the Utility Microgrid is islanded.”
- “Difficult to maintain load correlations”

- “... Just because the microgrid islanded, who says it can’t sync? (Isn’t the microgrid declaring itself as available whether connected or not to PJM?)”
- “When utility microgrid is islanded, the breaker is open and the generator is not available to PJM. The generator is offline to the wholesale market and serving reliability services directly to the microgrid - a retail reliability service.”

- Should there be special provisions for islanding in PJM governing documents or manuals that stipulate acceptable reasons for a Utility Microgrid Operator to island (design component 9)?



Response	%	#
Yes	69%	75
No	31%	34

- “Acceptable reasons should be clearly defined and included those mentioned in the PJM package, Component 9 on matrix (e.g. emergency situation on the distribution and or transmission system, or situation impacting system restoration; 2)An emergency situation on the transmission system, as defined by the PJM Emergency Procedures, in which load shedding action is directed by PJM, 3) Emergency declaration by appropriate local, state, or federal authority; 4) Testing; 5) distribution maintenance.”
- “While there should be no governing agreement/manual language that stipulates acceptable reasons for a micro-grid operator to island nor should there be any requirement that the micro-grid operator reconnect to the grid as soon as possible, microgrid operators should subjected to notification requirements similar to other participants.”

- “Micro-grid operator should be permitted to operate in island mode at his discretion. PJM governing documents should not attempt to define acceptable reasons for island operation or restrict periods when a micro-grid can operate in an islanded condition.”
- “If the microgrids are normally relying on the PJM market, the reasons for their operating in any other way need to be clearly documented.”
- “N-1 conditions”
- “Why does PJM believe they have jurisdiction over the microgrid no matter the definition?”

- “Stipulating acceptable reasons for islanding could be overly restrictive and inadvertently not document a reasonable trigger. It would be more helpful to stipulate in PJM governing documents/manuals reasons that would not be acceptable to island such as economic considerations, given assumption that the generator is PJM generating resource with WMPA/ISA.”

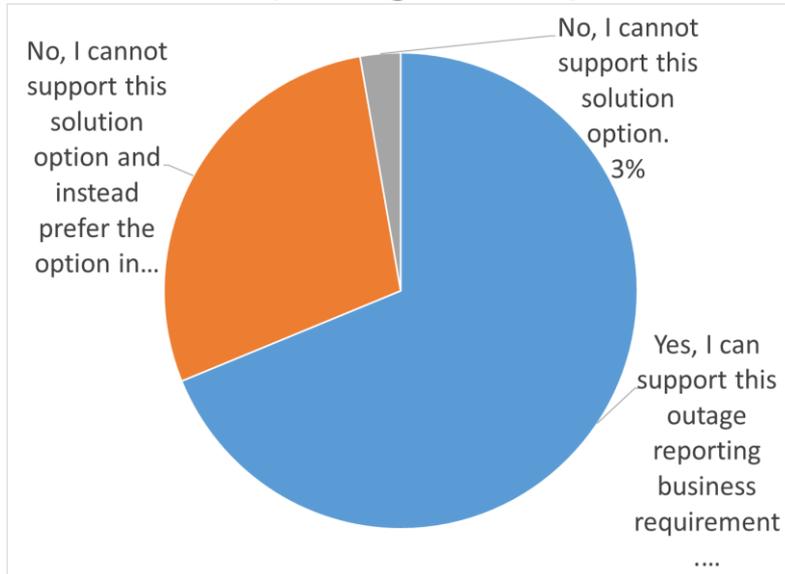


## Question 4a: Would you modify the solution option for design component 9 in any way?

- “Rules, particularly settlements rules, need to be developed around testing.”
- “PJM Manuals should not include anything distribution related.”
- “Yes. As noted above, we would (i) remove the restriction that an operator may not economically island; (ii) remove the phrase "only acceptable"; (iii) remove the requirement that micro grid operators must reconnect to the grid as soon as possible.”
- “Yes. Remove restriction that operator may not economically island; remove "only acceptable" phrase, and remove requirement that micro-grid operator must reconnect to the grid as soon as possible.”
- “Yes - I would remove the list of "only acceptable reasons".”
- “Yes, Option A component 9 should not be included in any intended solution. Status Quo (NA) should apply here. PJM manuals should not stipulate distribution grid activities in this way.”

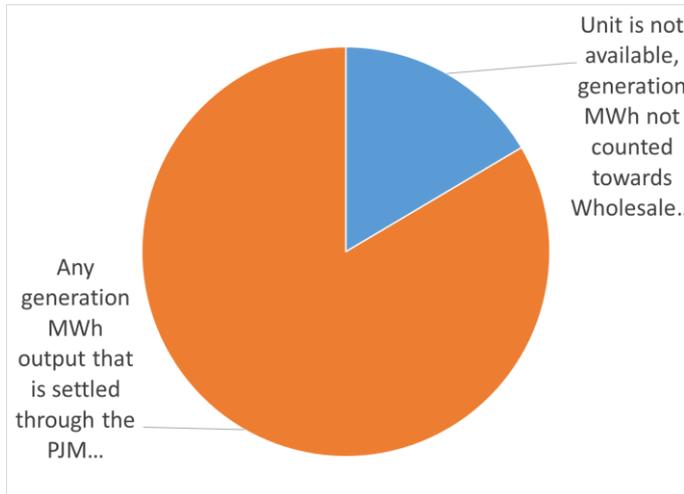
- “EDC would be concerned this list is very prescriptive – there may be reasons we are not thinking about currently that would be valid. Seems like there should be a provision to consult with PJM on making that determination based upon other conditions.”
- “(1) distribution utilities must preemptively file their procedures for determining a distribution system emergency (and a transmission system emergency if not directed by PJM) in a FERC-filed document, as this could potentially jeopardize the supply of wholesale power into the PJM market. Any incident where a Utility Microgrid Operator must island due to an emergency on the distribution system or a self-identified transmission system emergency must be accompanied by a report identifying the procedures used to identify the emergency situation. (2) Any planned distribution facility maintenance must be communicated in advance to Utility Microgrid Generators per PJM outage scheduling requirements.”

- Can you support the solution option in Package A regarding outage reporting of Utility Microgrid Generation when in island mode (design component 10)?



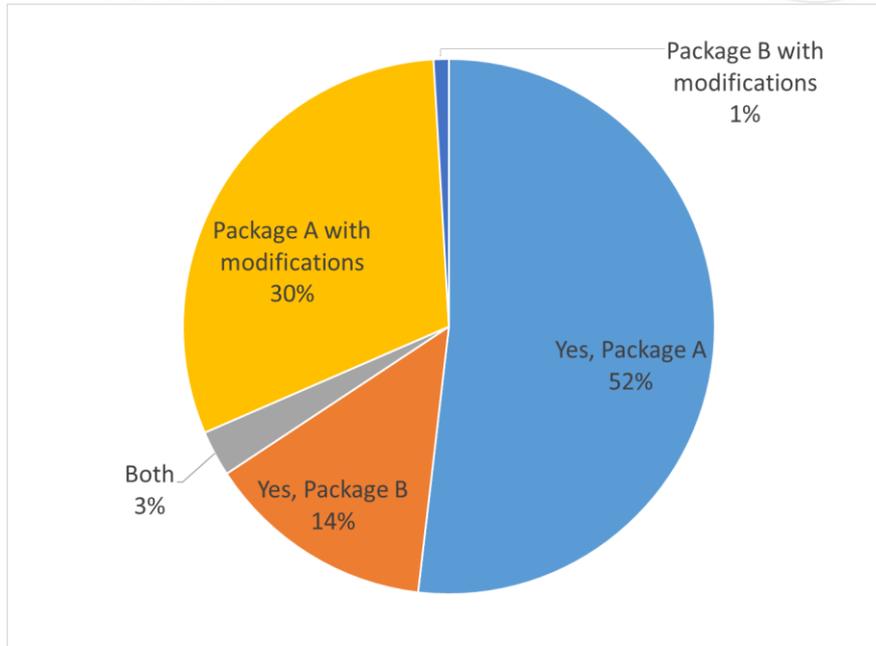
Response	%	#
Yes, I can support this outage reporting business requirement.	69%	75
No, I cannot support this solution option and instead prefer the option in Package B that Utility Microgrid Generation should take a forced outage when islanded.	28%	31
No, I cannot support this solution option.	3%	3

- Regarding Utility Microgrid Generators that are also PJM capacity resources, which solution associated with calculating the resource’s performance during a Performance Assessment Interval when islanded to you prefer (design component 7)?



Response	%	#
Unit is not available, generation MWh not counted towards Wholesale Capacity Requirement	17%	18
Any generation MWh output that is settled through the PJM energy market counts towards Capacity Performance obligation. The expected output during a PAI is what it would have been had the generator still been grid connected.	83%	91

- Can you support Package A, Package B, or both in their current form?



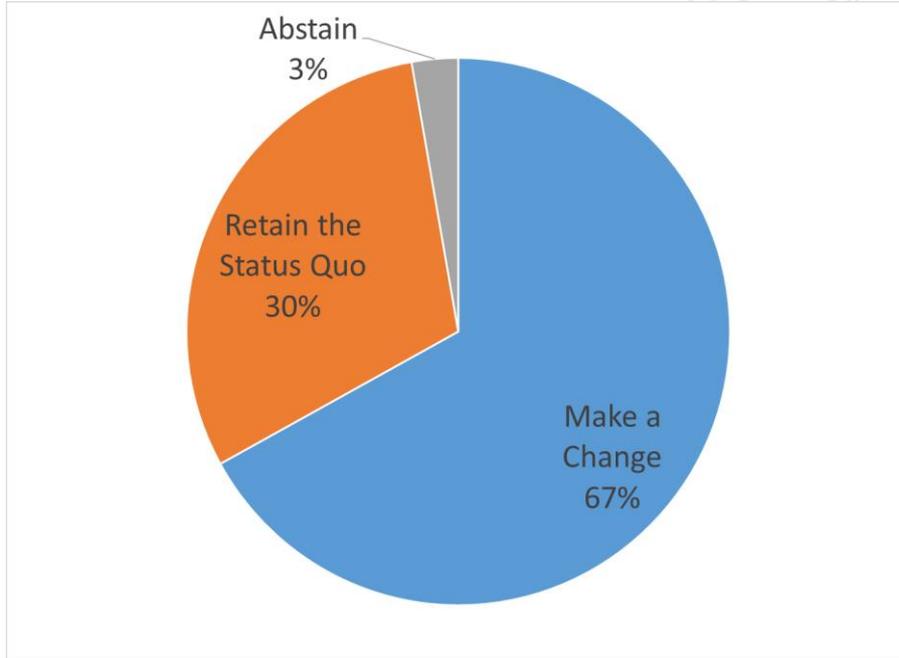
Response	%	#
Yes, Package A	52%	56
Yes, Package B	14%	15
Both	5%	3
Package A with modifications	31%	33
Package B with modifications	1%	1

- “Package B selected - Retain the status quo”
- “Package A selected - It appears that the current proposal gives too much leeway to microgrid operators to voluntarily island the microgrid under their control, which could potentially have negative impacts on wholesale market price formation if utilities can strategically affect wholesale market participants in this way. Also, there should be some mechanism in place to ensure that LSEs that operate microgrids and purchase capacity are not also selling capacity in the BRA. This should be constructed carefully to only apply to net buyers of capacity (to avoid the pitfalls of the current implementation of the Buyer Side Mitigation rules as observed in NYISO).”
- “Package B is preferred but we would also not oppose Package A at this time.”

- “Package A selected - This last question came late in the process. More time is needed to think through the ramifications posed with both Package A and Package B versus the status quo. All generation in an islanded condition should probably be seen as not supporting the remaining PJM grid.”
- “Both - Although multiple switches, there is usually only one PCC.”
- “Package A selected - There needs to be further definition around microgrid operations, how settlements work and what is/is not included; There should be no criteria placed in the PJM governing documents or manuals dealing with the operation of utility microgrids.”

- “There needs to be further definition around microgrid operations, how settlements work and what is/is not included; There should be no criteria placed in the PJM governing documents or manuals dealing with the operation of utility microgrids.”
- “I can support Package B if it removes the list of "acceptable reasons" for islanding and revises the design element #9, Special provisions for islanding, to be a proposed option to prohibit islanding for economic reasons. The support for Package B is based on understanding the rules only apply to Utility Microgrids where to meet that criteria the DER must hold either an ISA/WMPA and registered in PJM markets as PJM Generation Resource.”

- Do you prefer to make a change or to retain the status quo?



Response	%	#
Make a Change	67%	73
Retain the Status Quo	30%	33
Abstain	8%	3