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Pre-Workshop Comments of Natural Resources Defense Council

The Natural Resources Defense Council (NRDC) appreciates the opportunity to comment on resource adequacy issues in Zone 4 of Illinois (as defined by the Midcontinent Independent System Operator (MISO)). As the Illinois Commerce Commission (Commission or ICC) staff reports in its White Paper on the subject, there is no near-term resource adequacy shortfall in Zone 4. MISO's prior projections of a resource adequacy shortfall have not come to pass. Moreover, MISO has other programs and tools available to respond to and address any potential resource adequacy shortfalls that could arise in the next decade. We urge the Commission to avoid endorsing any proposals to compensate any resources for ill-defined attributes of resiliency or reliability or resource adequacy, because no such need has been demonstrated in Zone 4. For its part, the Commission can encourage MISO to implement targeted reforms to MISO's markets and planning functions that will increase resource adequacy options and reduce consumer costs in Zone 4.

NRDC would be pleased to speak at the workshop scheduled for December 7, when it would be pleased to elaborate on the following comments in more detail.

DISCUSSION

Resource adequacy has been maintained in Zone 4 for twenty years, since Illinois transitioned to competitive retail markets in 1997, even though MISO has not adopted a mandatory forward capacity market similar to PJM and ISO New England. This is not surprising for many reasons, including the large amount of public and rural electric cooperative power in the region, the fact that the Dynegy resources have relatively low total debt and low fixed costs, nearly flat demand growth, the existence of bilateral contracts, revenue from energy, capacity, and ancillary services markets, extremely robust current and planned transmission, and other factors. Most recently, the resources prioritized in the Future Energy Jobs Act (FEJA) contribute to resource adequacy in Zone 4.

In short, the resource adequacy picture in Zone 4 is much more varied and dynamic than the eight Dynegy plants alone. For that reason, the Commission should avoid endorsing any action

that could increase consumer costs and restrict innovation with no meaningful resource adequacy benefits. In particular, the Commission needs to understand clearly the effects, if any, of the retirement of any or all of the Dynegy coal fleet in Zone 4. The Commission should be especially mindful of the cost and impact differences between resource adequacy and grid reliability. For example, if MISO were to identify a limited, short-term reliability issue involving the retirement of any particular facility in Zone 4, MISO has existing tools to address the issue. Neither the Commission nor the General Assembly should rely on the existence of any (if proven) limited, solvable reliability issue as justification for a costly new program to support uneconomic and unnecessary resources. Nor should the Commission endorse any other program or policy created under the guise of supporting illusory or fictional grid reliability attributes such as “baseload power.”

I. There is excess supply in Zone 4, and resource adequacy requirements will continue to be met through at least 2022 across the MISO footprint

Zone 4 is easily meeting its Planning Reserve Margin Requirement (PRMR). Fifty-seven utility-scale generators with a combined nameplate capacity of more than 16,000 megawatts (MW) and summer capacity of more than 14,000 MW are currently operational in Zone 4. Meanwhile, the 2017/2018 PRMR for the zone is less than 10,000 MW, which means that there is more than 6,000 MW surplus capacity. In fact, Dynegy currently commits 900 MW of power from its plants in southern Illinois into the adjacent PJM market each year, which confirms the existence of excessive supply within Zone 4. Additionally, the trend is promising in Southern Illinois in terms of resource adequacy: Zone 4 PRMRs have consistently decreased between planning years 2014/15 and 2017/18, at an annual rate ranging between 0.4 percent and 4.6 percent. This hardly spells reliability threat.

At the same time, and as the ICC point out in its White Paper, MISO reported in its most recent Organization of MISO States (OMS)-MISO study that there is sufficient capacity to meet MISO’s PRMR through at least 2022. In reaching this conclusion, MISO made significant improvements to its assumptions in its 2017 OMS-MISO Survey compared to its 2016 Survey to more accurately reflect grid conditions. Improvements included a reasonable estimate of new generation development, and a more reasonable forecast of future load growth to better reflect historical trends and the growth of demand-side resources. MISO also now accounts for the Future Energy Jobs Act – namely the continued operation of the Clinton Generating Station and the renewable capacity buildout needed to meet the 25 percent Illinois renewable portfolio standard. These changes to the assumptions resulted in a shift from a capacity deficit in the 2016 study to a capacity surplus in the 2017 study, for a net gain of up to 3,200 megawatts (MW) for the five-year forecast for Zone 4.

Therefore, the major flaw with SB2250/HB4141 is that it addresses a problem that does not currently exist.

II. There is large investor interest in renewables across MISO, especially in Zone 4, which will enhance Zone 4's ability to meet its resource adequacy requirements

Wind and solar energy resources are both growing significantly in Illinois and Zone 4. In addition to the nearly 1,250 MW of current wind and solar energy capacity in Zone 4, there is more than 4,300 MW of solar and wind capacity in the definitive planning phase in the MISO interconnection queue for Zone 4, as of October 2017. This is more renewable energy capacity in the MISO queue than any other MISO Zone. Although not all of those projects will be built, it is a good indicator of the significant investor interest in clean energy in Zone 4, and Southern Illinois should expect to experience a significant increase in wind and solar deployment in the next three years. This new capacity would enhance Zone 4 “load serving entities” (LSEs) ability to meet their resource adequacy requirements.

Across the MISO footprint, more than 45 GW of renewables are in the definitive planning phase of the MISO interconnection queue set to come online in the next three years. This promising influx of new capacity, coupled with the multi-value project (MVP) transmission lines underway (more on this below) means that LSEs in Zone 4 can increasingly take advantage of low-cost generation resources available outside the zone to meet the PRMR. It is also worth noting that, regardless of the number of projects in the current queue that will actually make it to commercial operation, new resources will continue to be built in Zone 4 and across the MISO footprint, as the queue is only a snapshot in time. This gives reason to believe that all MISO zones will continue to experience an influx of capacity and that resource adequacy will continue to be met.

III. Planned transmission and new resources provide another reason for optimism that Zone 4 will continue to meet its resource adequacy requirements

Planned transmission projects as well as expected investments in demand-side and supply-side resources across the MISO footprint give reason to expect that Zone 4 can continue to meet its resource adequacy requirements beyond 2022.

Zone 4 has the second highest electricity import capability across the MISO footprint, characterized by the Capacity Import Limit (CIL). This means that LSEs in Southern Illinois have a bigger opportunity than nearly any other MISO region to take advantage of low-cost resources outside of Zone 4 to meet their PRMR. At the same time, the CIL for Zone 4 has been on a near steady rise between planning years 2014/15 and 2017/18, and nearly doubled between those same planning years (it is also worth noting that MISO's proposed 2018/19 CIL for Zone 4 of nearly 6,300 MW is even higher than the 2017/2018 CIL). Similarly, thanks to its large import capability, Zone 4 also has a relatively low Local Clearing Requirement (LCR), which has also seen a near steady decline between planning years 2014/15 and 2017/18. This means that LSEs need to rely less extensively on generation resources located inside Zone 4 to meet their PRMR. This trend in the CIL and LCR, coupled with the MVP transmission projects (discussed below), provides reason to assume that Zone 4 will keep easily meeting its resource adequacy requirements.

As the Commission staff pointed out in the White Paper, the construction of the MVP transmission lines to help meet state renewable energy standards is now well underway. These projects would move more than 40 terawatt-hours of wind energy annually from western MISO to demand centers in Zone 4 and eastward. This is equivalent to nearly a quarter of Illinois' total electricity generation in 2016. Of the five projects in and crossing through Illinois, one is complete and the remainder are expected to be completed by 2019 (see Figures 1 and 2). These new transmission lines will help all regions of MISO meet their resource adequacy requirements by increasing their electricity import capability and thus access to low-cost wind and other surplus generation located outside of a particular region. This means that LSEs can rely less extensively on generation resources located inside Zone 4 to meet the PRMR and take advantage of lower-cost generation resources available outside the zone.

In its 2017 OMS-MISO Survey, MISO also conservatively estimates that most (75 percent) of the planned generating resources in its current interconnection queue will not be built due to the uncertainty over whether they will be built and put into operation (this conservative assumption is notwithstanding the major improvements to the assumptions that MISO made in the 2017 Survey compared to the 2016 Survey mentioned above). However, MISO concedes that its assumptions about these planned resources are likely to shift in the next OMS-MISO Survey, as generation interconnections are firmed up and more resources come on line. This gives reason to assume that even more resources will be available to meet the PRMRs as projects in the queue advance in their development stage.

MISO also projects that more investments in demand-side and distributed generation resources like rooftop solar will reduce the PRMR even more in the future, thus further enhancing LSEs' ability to meet reliability requirements. Actual PRMRs for the past few years have declined steadily: they have decreased by 1.5 percent (more than 1,500 MW) in the MISO North Region (which includes Zone 4) between planning years 2014/15 and 2017/18. If actual PRMRs continue to flatline (or decline), as is likely with more investment in energy efficiency and demand response programs, and deployment of distributed generation resources, long-term resource adequacy across the MISO footprint, including Zone 4, will be more secure.

Additionally, in anticipation of technology advancements and the increased deployment of demand-side resources, MISO re-evaluated its siting methodologies for generation resources in its MTEP19, and proposed improvements to siting methodologies for renewable energy, distributed energy resources, battery storage, and electric vehicle adoption to inform transmission planning. For instance, MISO's proposed use of industry and National Lab experts to enhance forecasts and siting of distributed generation resources is a testament to MISO's expectation of the increased integration of these resources into the grid. And in turn, these demand-side resources would facilitate LSEs' ability to meet their resource adequacy requirements in Zone 4 and elsewhere.

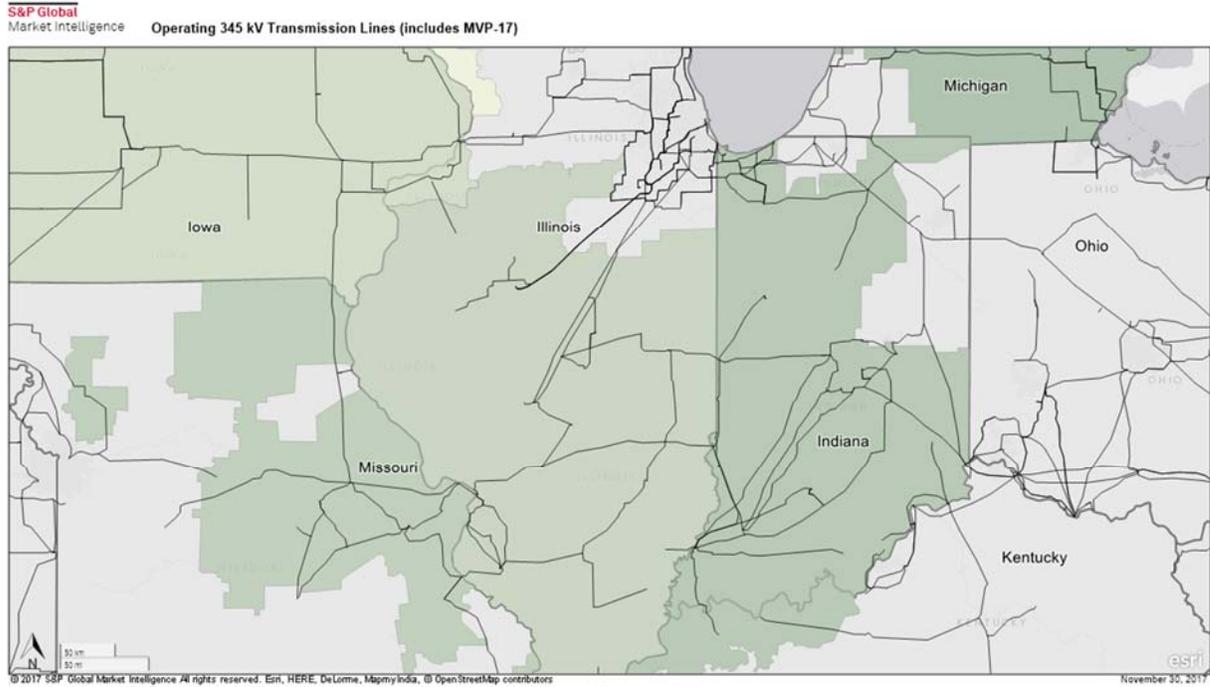


Figure 1: Operating 345 kV Transmission Lines (Includes completed MVP-17)
Source: S&P Global

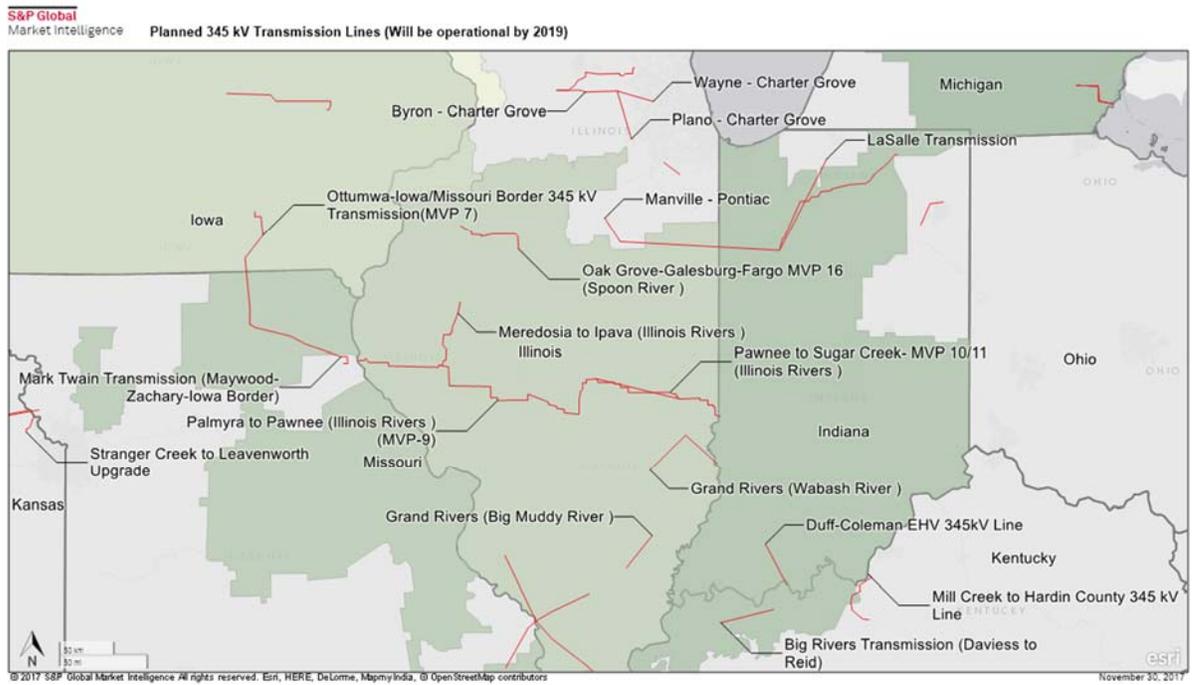


Figure 2: Planned 345 kV Transmission Lines (Will be operational by 2019)
Source: S&P Global

IV. MISO has tools to manage any reliability issues that could arise from plant retirements

Although the retirements of uneconomic power plants in Zone 4 may not create a resource adequacy shortfall, they could create a short-term reliability issue. In that case, MISO has the ability to compensate power providers to continue to operate until all reliability concerns have been resolved. MISO's Attachment Y process requires generation owners wishing to suspend or retire a generation resource to first obtain approval from MISO to do so.¹ The purpose of the process is in large part to ensure that removal of generation units from the grid will not cause reliability issues.

A generation owner initiates the Attachment Y process by submitting an Attachment Y Notice to MISO. MISO then conducts a system analysis to determine whether that retirement or suspension could cause a reliability issue(s), and, if so, what can be done to eliminate the issue(s).² If there are no reliability issues caused by a retiring unit, the unit can retire as planned. However, if a unit's retirement or suspension could cause reliability issues, MISO can establish a System Support Resource (SSR) contract with the generation source that requires that source to operate until the reliability issues have been resolved (usually through construction of new transmission infrastructure that will allow imports of capacity from other generating units which will eliminate the reliability issues and allow the unit to retire).

The SSR solution is a comparatively surgical response to a defined reliability need. The fact that any SSR agreement could ever be necessary is not, in itself, any evidence or justification for any state intervention to pay uneconomic resources to remain operational. MISO has processed thousands of megawatts of retirements without reliability issues. Of those with reliability issues, it has resolved many of them through transmission upgrades and other solutions. It has required an SSR only when necessary to bridge a reliability gap until the installation of transmission, new generation, or other solutions eliminated the need for the retiring generation.³ Similarly, PJM has processed the retirement of more than 32,000 MW of generation since 2003 without reliability issues.⁴ PJM required very few SSR-like agreements for a limited period while transmission and other fixes were implemented, which then eliminated the reliability need for the units.⁵ (Notably,

¹ MISO Tariff Section 38.2.7.

² Id.

³ See https://www.oasis.oati.com/woa/docs/MISO/MISOdocs/Attachment_Y_Requests_with_Reliability_Issues.pdf. Unfortunately, MISO's generator retirement process is less transparent than PJM's process. MISO does not disclose the identity of retiring plants that do not trigger reliability issues, so it is impossible to identify the complete universe of retiring plants in MISO.

⁴ <http://www.pjm.com/-/media/planning/gen-retire/generator-deactivations-xls.ashx?la=en>.

⁵ Id.

PJM found that the retirement of the 1864.5 MW Quad Cities nuclear power plant would not trigger any reliability issues.⁶⁾

V. The stakeholder process is not robust enough to adequately discuss the issue, nor does it afford clear opportunities for the public to weigh in

NRDC appreciates the ICC's efforts to examine this issue. However, given the complexity of the issue (discussed in part above) and outside factors that will impact the outcome, two workshops are simply not enough to appropriately address resource adequacy in MISO Zone 4. NRDC recommends that the ICC extend the number of workshops and timeline to ensure adequate participation and discussion and thus ensure the best outcome for Illinois.

In addition, the timing of the first workshop on December 7 is particularly problematic, because it may be challenging for consumers wanting to participate to do so. Illinoisans wanting to engage may find it challenging to take work off with the holidays fast approaching. Further, the lack of an agenda released well ahead of the meeting, clear opportunities for the public to be heard, start and end times to the workshops, and the ability to reserve speaking times will all stifle public participation. The ICC should incorporate these improvements into the workshops going forward. During the December 7 workshop if held as planned, the ICC should at the very least allow a 30-minute public comment period.

With regards to the timeline, ICC plans to finalize a report by the end of February. This is an unnecessarily accelerated timeline. NRDC recommends the ICC extend this timeline for several reasons. First, as discussed above, even if the ICC accepts that there is a resource adequacy shortfall, the issue is not urgent, and MISO has determined there is no shortfall at the very least until 2022. Second, it will allow further participation and allow for more workshops to discuss this complex issue.

Third, acting quickly forgoes more information that will help the ICC draft a better report. For example, in late October, it was announced that Vistra Energy Corp. (Vistra), a Texas-based company, plans to buy Dynegy (also a Texas-based company). The deal is valued at \$1.74 billion, and Dynegy's stocks soared after the announcement. It is unclear what Vistra's plans are for the Dynegy fleet in Illinois. The deal is anticipated to be finalized by the second quarter of 2018. With all the unknowns surrounding this deal, we urge caution in addressing any of these alleged issues. It would be premature to take any action before understanding the implications of the deal, especially when there is not an urgent crisis. As discussed above, NRDC also anticipates more renewables and more transmission lines to be developed that will benefit MISO Zone 4. Acting hastily may result in costly, duplicative actions that may undermine the functioning market.

⁶ <http://www.pjm.com/-/media/planning/gen-retire/withdrawn-deactivation-requests.xls.ashx?la=en>.

The impacts of any action may be significant, forcing consumers to pay for plants that are uneconomic and unnecessary. For these reasons, we urge the ICC to modify its process and extend its timeline to allow for more information, better discussions, opportunity for public engagement and participation, and a better outcome.

VI. The ICC should not endorse policy that will hinder renewable energy investments that could vitalize Southern Illinois

The ICC should not support any recommendation that will effectively prop up old, inefficient coal plants and hinder cost-effective clean energy investments. Instead, we urge the Commission to endorse policy that would enable Illinois to tap into a significant clean energy opportunity that will make the state more competitive and vitalize its rural Central and Southern regions. The discussion below touches on the many benefits that Southern Illinois could reap from cost-effective renewable energy investments.

Across the country, corporate demand for clean energy is burgeoning. Nearly half of Fortune 500 companies have set climate and clean energy targets, and under the RE100⁷ initiative, 96 of the world's most influential companies- including Facebook, GM, Apple, Google, Amazon, Nike, Starbucks and Walmart- have committed to the ambitious goal of powering their operations with a hundred percent renewable power. To meet their targets, these companies are explicitly siting their facilities based on the availability of and access to renewable energy, beefing up counties' tax base while bringing with them jobs and economic growth.

Illinois can and should join the swath of states ramping up their clean energy investments to attract these large businesses and spur economic growth in their rural communities. Consumers Energy in Michigan is expanding one of its wind projects to cater for a Switch Communications data center expected to yield a \$5 billion investment and 1,000 new jobs.⁸ In Nebraska, Omaha Public Power District is doubling down on its wind investments to power a Facebook data center expected to be an economic boon to the state, creating about 1,000⁹ temporary construction jobs and more than 100¹⁰ permanent jobs in the community. And Apple's investment of \$1.3 billion¹¹ in a data center in Iowa will create more than 550 construction and operations jobs, and the company is contributing up to \$100 million¹² to a Public Improvement Fund dedicated to community development and infrastructure around Waukee, Iowa. The list of examples is

⁷ <http://there100.org/>

⁸ <https://mibiz.com/news/energy/item/23332-switch%E2%80%99s-love-affair-with-michigan-started-with-reliable,-renewable-energy>

⁹ http://www.omaha.com/money/we-want-to-move-fast-facebook-s-new-data-center/article_0ac9beb4-1943-11e7-8206-ef22f010baa4.html

¹⁰ <http://www.ketv.com/article/facebook-to-build-nearly-1-million-square-foot-data-center-in-sarpy-county/9230866>

¹¹ <https://www.apple.com/newsroom/2017/08/apples-next-us-data-center-will-be-built-in-iowa/>

¹² <https://www.apple.com/newsroom/2017/08/apples-next-us-data-center-will-be-built-in-iowa/>

lengthy and cements the idea that large corporations are bringing their business to states that offer clean energy, and utilities/electricity suppliers are ramping up their renewable energy investments to attract them.

Even the most historically coal-reliant utilities are transitioning away from fossil fuels towards clean energy investments. Appalachian Power's new president recently described¹³ why the historically coal-reliant company is looking towards renewables by noting that "at the end of the day, West Virginia may not require us to be clean, but our customers are. So if we want to bring in those jobs [...] we have to be mindful of what our customers want." Many of those customers are companies that he would like to see bring jobs and economic growth to West Virginia. Similarly, in explaining Ameren Missouri's decision to dramatically increase its renewable energy investments, Ameren's president asserted that "This is important for our customers. They're asking us to do it."

Additionally, given that renewable energy can significantly increase the county tax base, Illinois can improve service provision in its rural communities by investing in solar and wind projects. Illinoisan farmers in Central and Southern Illinois also stand to reap large land-lease payments from investments in clean energy. In fact, nationally farmers and ranchers who host wind turbines are paid \$245 million¹⁴ in lease payments every year.

It is also worth noting the enormous out-of-state wealth transfer associated with the Dynegy coal plants in comparison to local clean energy resources. All eight Dynegy coal plants in Zone 4 burn coal sourced from Wyoming's Power River Basin, instead of the Illinois Basin, due to the former's lower coal sulfur content. In 2016 alone, the eight Dynegy plants incurred more than \$500 million in fuel costs; this means that massive amounts of Southern Illinois consumer dollars are being driven out-of-state every year, benefitting states further out West. Instead of relying on out-of-state resources and driving economic growth elsewhere, Illinois should prioritize investments in clean energy projects that utilize local labor and resources and drive economic growth in-state. The Commission should endorse policy supporting clean energy investments and block subsidies to coal plants that send Illinois ratepayer dollars out of the state.

The ICC should support policy that would vitalize Central and Southern Illinois by making them more competitive, delivering large economic benefits to its rural communities and creating jobs for Illinoisans.

¹³ https://www.wvgazettemail.com/business/appalachian-power-president-says-company-is-looking-toward-renewables/article_a0a68436-1525-5782-b9e7-35c2511175e9.html

¹⁴ <https://www.awea.org/Issues/Content.aspx?ItemNumber=9806>

VII. The Commission should encourage MISO to adopt planning and market changes to improve resource adequacy in Zone 4

MISO's market and planning rules significantly affect resource adequacy in Zone 4. For that reason, the Commission should strongly encourage MISO to adopt market and planning rules that would strengthen resource adequacy in Zone 4.

For example, the Commission should encourage MISO to implement a seasonal component to the resource adequacy construct. A seasonal component would extract more capacity value from wind and solar energy, provide flexibility for uneconomic retiring generators, and mitigate seasonal resource adequacy challenges. MISO's current resource adequacy construct does not fully credit the non-summer peak contributions of wind resources, which on average generate more energy during non-summer months. Implementing a seasonal component to MISO's resource adequacy construct will provide more credit for seasonal resources and reduce over-procurement.

The Commission should also recommend that MISO reduce market barriers to entry for new, flexible energy technologies and improve new technologies incorporation in MISO transmission planning and generator retirement processes. Changes in the fuel mix are creating new opportunities for flexible demand response and distributed energy resources that contribute to resource adequacy by providing capacity, energy, and fast-ramping capabilities. To facilitate integration of these resources into the grid, ICC should advocate for MISO reducing the minimum eligibility level for participation in MISO's markets from 5 MW to 100 kilowatts (kW). And, the ICC should endorse MISO allowing the aggregation of distributed and demand resources across planning boundaries. Other markets, including PJM and ISO NE, do not have MISO's barriers; these markets have minimum participation limits of 100 kW and allow for aggregation of distributed resources.

MISO's barriers have real consequences to resource adequacy. Without the ability to earn revenue in energy and ancillary services markets, many developers are unwilling to invest in distributed energy resources in MISO, blocking new technology development and preventing them from contributing to resource adequacy.

Additionally, the ICC should encourage MISO's recently initiated its Renewable Integration Impact Assessment, a technical assessment with the overall goal of better understanding the impacts and contributions of renewable energy in MISO over the long term. MISO acknowledges that wind and solar resources are the fastest growing resources in the MISO footprint, and as their deployment continues to grow, "they will be expected to increase their contribution to grid reliability." The purpose of the assessment is to identify areas on which to focus efforts to reliably integrate high levels of renewables. Given the significant investor interest in solar and wind energy in Zone 4 (as discussed above), as well as the growth in renewables projected across the state under FEJA, it would be useful for the Commission to track

this broader discussion as it could potentially provide insight as to how both reliability and resource adequacy can continue to be achieved with ever-increasing renewable deployment both in Zone 4 and elsewhere, further negating the need for drastic, hasty and unnecessary measures to be taken right now.

CONCLUSION

Again, as the Commission staff reports in its White Paper on the subject, there is no near-term resource adequacy shortfall in Zone 4. And, with new renewable energy and transmission coming online, as well as use of energy efficiency and demand side management, a resource adequacy shortfall may not develop with time. If resource adequacy became problematic, MISO has tools to address concerns.

We urge the Commission to avoid endorsing any proposals to compensate any resources for ill-defined attributes of resiliency or reliability or resource adequacy, because no such need has been demonstrated in Zone 4. For its part, the Commission can encourage MISO to implement targeted reforms to MISO's markets and planning functions that will increase resource adequacy options and reduce consumer costs in Zone 4.

The ICC should modify the workshop process to include more workshops, greater public participation, and an extend timeline for a better resulting report.

Finally, NRDC would be pleased to speak at the workshop scheduled for December 7 and elaborate on the following comments in more detail.

Respectfully submitted,



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