

January 10, 2019

Lynnea Johnson
University of Illinois
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Re: Comments on the NextGrid Draft Final Report by the Union of Concerned Scientists

Dear Ms. Johnson,

The Union of Concerned Scientists (“UCS”) is pleased to have participated in the NextGrid process and thanks the University of Illinois for its facilitation. The effort is important to the continuance of effective and efficient grid modernization in Illinois.

The [Union of Concerned Scientists](#) is a national organization that puts science into action to build a healthier planet and a safer world. UCS conducts rigorous technical analysis and uses it to advocate for change: informing decision makers, shaping public opinion, and creating policies to help solve some of today’s most pressing problems. Backed by more than a half-million supporters, we strategically mobilize our members, including some of the nation’s top scientists, and our unique UCS Science Network—more than 20,000 scientists and technical experts across the country—to take action in support of science-based decision making.

UCS staff members participated as members of *Working Group 6: Regulatory and Environmental Policy Issues* and *Working Group 7: Ratemaking*. In addition to attending the working group meetings and commenting on the formation of those draft chapters, UCS also submitted written materials and contributed a [presentation](#) on time-varying rates to Working Group 7. *See, e.g.*, Draft Final Report at 18 (“Expert presentations on various time-varying rates and on a broad range of options for the future were effective to get the deliberations of the WG7 participating stakeholders into high gear.”).

Furthering our involvement, UCS also submitted written comments to Working Groups [3](#) and [4](#) and supported members of our Science Network in providing public comments both written and in-person to the NextGrid process. UCS is pleased that one of our recent reports is cited in the Draft Final Report on page 82 and written comments from one of our Science Network members are referenced on page 201.

UCS would like to provide the following comments on the NextGrid Draft Final Report. Please note that failure to address any particular issue should not be construed as agreement or disagreement, or support or lack of support, by UCS.

NextGrid: Illinois’ Utility of the Future Study

The Draft Final Report states that the NextGrid process “was not designed to be a consensus building exercise” and “[t]he NextGrid Study was not intended to develop a specific roadmap for Illinois to pursue.” Pages 212, 213. Given the urgent need to respond to climate change by decarbonizing the

electric grid and the many environmental and economic opportunities offered by advancing clean energy, this is unfortunate and disappointing.

The Draft Final Report does, however, advance three specific recommendations in the areas of (1) electric vehicle charging infrastructure, (2) deployment of energy storage resources to enable further integration of renewable energy, and (3) proactiveness on protecting consumer data privacy. *See* Draft Final Report at 213-214. UCS generally supports these recommendations and welcomes their inclusion in the NextGrid report.

While it is a missed opportunity that the NextGrid process did not result in a roadmap or larger set of policy recommendations for Illinois, stakeholders should nonetheless seek to identify areas where Illinois can move forward on policy changes to further the goals of a reliable, affordable, increasingly clean energy system. *See, e.g.*, 220 ILCS 5/1-102 (establishing Illinois’ goal of “adequate, efficient, reliable, environmentally safe and least-cost public utility service”).

Some additional comments to highlight include:

- The summary of Chapter 3 fails to identify the advantages of renewable energy, especially solar paired with storage, in the context of reliability and resiliency benefits both on a distributed level and as compared to fossil fuels. Please see our comments below on Chapter 3 for additional discussion.
- The summary of Chapter 4 at pages 15-16 should mention the potential for increasing customer participation in Illinois hourly pricing programs and the possibility of adding a well-designed time-of-use (“TOU”) rate option for residential customers. These topics were extensively discussed by the Working Group as further noted in our comments below.
- UCS is pleased that the Draft Final Report on page 17 reflects the consensus within Working Group 6 on the importance of addressing climate change.

Chapter 1: New Technology Deployment and Grid Integration

This chapter serves a valuable resource guide on the structure and functioning of the electric system for policymakers, stakeholders, and the public. One specific comment is that the phrase “baseload generators” is used twice on page 30; UCS believes that the phrase “traditional baseload generators” would be more accurate because baseload is a category of demand not generation (*i.e.*, any type of resource can fulfill the “bottom” row in the demand stack meaning that nuclear and coal plants should not be construed as the only type of “baseload generators”).

Chapter 2: Metering, Data and Communications

UCS does not currently have any comments to offer on Chapter 2 and thanks the Working Group for its efforts.

Chapter 3: Reliability, Resiliency and Security

As stated above, UCS appreciates that our report [*Lights Out? Storm Surge, Blackouts, and How Clean Energy Can Help*](#) (2015) is cited on page 82 of the Draft Final Report. However, in our [comments](#) to Working Group 3 dated July 2, 2018, we also stated that “UCS believes high penetrations of renewable energy generation will make the grid more resilient than the current fossil-fuel dominated system.” We

went on to point out that fossil-fuel power plants are susceptible to resiliency issues and that renewable energy offers relative advantages because they are not affected by changes in fuel delivery and availability and generally do not suffer long-duration outages:

Diversifying energy sources on the grid will improve reliability rather than harm grid operations. Renewable resources have less of an impact on grid operations when a single plant goes offline, and they are less vulnerable to long-duration interruptions in fuel supply. Slight variability associated with wind and solar generation cause less harm to the electricity system than prolonged, far-reaching, costly outages associated with thermal power plants.

Perhaps these points are not included in the Draft Final Report Chapter 3 because they are viewed more as a “bulk supply” resiliency issue than the “distribution grid” topics focused on in the NextGrid process. Even so, UCS believes that noting these points in the Chapter, albeit with a disclaimer that detailed discussion is beyond the scope of the report, would provide a more fulsome picture of the benefits of renewable energy to reliability and resiliency.

Chapter 4: Customer and Community Participation

Chapter 4 is an excellent chapter, but UCS particularly supports the discussion on pages 122-126 with respect to time-varying rates, especially the potential ways to increase participation in Illinois’ hourly pricing programs and the possibility of introducing a well-designed time-of-use (“TOU”) rate. The latter echoes many themes advanced in comments UCS submitted to Working Groups [4](#) and [7](#) on how a TOU rate offering could be a strong complement to existing time-varying rate options in Illinois, such as hourly pricing and critical peak-time rebates.

UCS does believe that the discussion on Page 125 could benefit from elaboration of the environmental benefits of customer participation in TOU rates; specifically, the ability for customers to align their usage with periods of high wind generation at night and in the morning and with high solar production in the afternoons, thereby reducing potential curtailment of renewables and reducing emissions from fossil plants.

Chapter 5: Electricity Markets

UCS does not currently have any comments to offer on Chapter 5 and thanks the Working Group for its efforts.

Chapter 6: Regulatory and Environmental Policy Issues

As stated above, UCS appreciates that Chapter 6 and the NextGrid process included strong focus on the importance of climate change. Equally important is that concepts of equity, fairness, and environmental justice appear throughout the Chapter 6 discussion and Draft Final Report. Indeed, UCS supports and applauds the ability of the NextGrid Working Groups and participants to prioritize inclusion of low-income communities and communities of color in the benefits of transitioning to a clean energy economy and modern grid—as these constituencies have historically suffered disproportionate impacts from pollution and traditional energy infrastructure.

Another key aspect of Chapter 6 is the acknowledgment that the lack of a carbon policy, both in Illinois and at the federal level, serves as a major impediment to wider adoption of distributed energy resources such as solar. *See* Draft Final Report at 174 (“Without a dollar value associated with carbon emissions,

electricity generators, distribution utilities and customers lack incentives to reduce carbon production or chose a supplier simply based on reduced carbon levels via deployment of cleaner technologies and implementation of additional efficiency or supply strategies.”).

Other key passages from Chapter 6 that UCS strongly supports are as follows:

- “For Illinois, the anticipated impact of climate change requires a power grid that ensures equitable and reliable access to power in times of extreme weather events to all communities and individuals across the state. According to the insurance professional, Illinois is already experiencing disruptions caused by a changing climate. For instance, heavy rains and floods have increased in recent years and the state experienced its hottest May on record in 2018, immediately after its coldest April in over a century. As extreme weather events become more common and frequent, disasters such as floods will take a toll on the state’s infrastructure and its people. As observed in other US venues, large storms can cause massive disruptions, destroy communities and claim thousands of lives, as they did in Puerto Rico, Florida and Texas in 2017. Due to climate change, the likelihood of such an event in Illinois continues to increase.” Page 175.
- “With these impacts in mind, investments in the grid and policies relating to the grid must take into consideration the twin principles of climate adaptation—the dispatch of actions to prepare for and adapt to new conditions, in order to reduce harm or take advantage of new opportunities—and climate mitigation—the implementation of appropriate measures to reduce the amount and speed of future climate change via reductions in emissions of heat-trapping gases or removal of carbon dioxide from the atmosphere by needed shifts in the state’s resource mix to include more carbon-free resources.” Pages 175-76.
- “Social impacts can also include increases in inequity to the extent that the costs associated with climate change affect more severely already vulnerable populations in terms of their housing, transportation, employment aspects and/or in the manner that investments in adaptation and resiliency are allocated. Environmental impacts of climate change can consist of additional pollution from existing fossil fueled plants that may be operated more intensely to meet the increased energy demand. On the positive side, climate changes may drive more customers to adopt energy conservation measures and to show preference in their consumption for more renewable resource outputs. Such outcomes can lead to increased reliance on cleaner resources and more efficient energy utilization.” Pages 178-79.

Chapter 7: Ratemaking

UCS appreciates Chapter 7’s efforts to reflect the robust discussion in the Working Group and the different viewpoints and opinions on rates and ratemaking. Through UCS’ [presentation](#) and [commentary](#) to the Working Group, we recommended consideration of introducing a well-designed time-of-use rate option to residential customers:

UCS believes that a well-designed and user-friendly time-varying rate system benefits the grid operator, consumers, and the environment. However, the complexity of the hourly pricing programs currently offered by Illinois utilities may be prohibitive to many users. Therefore, UCS suggests adding additional time-of-use pricing programs that have fewer daily price fluctuations, allowing the user more consistency in making consumption decisions.

UCS Working Group 7 Comments (June 25, 2018).

We also provided to Working Group 7 a [summary](#) of Xcel Energy’s pilot program in Minnesota as a potential starting point for Illinois stakeholders to consider in crafting an Illinois TOU rate. While Chapter 7 does not explicitly endorse our recommendation of pursuing an Illinois TOU rate, we do note that ComEd has recently filed a proposed pilot project on TOU that is now pending before the Illinois Commerce Commission. UCS looks forward to working with regulators, the utilities, and stakeholders to develop a well-designed TOU rate for Illinoisans.

One of the aspects missing from Chapter 7’s time-varying rates (“TVR”) discussion is that effective TOU rates can assist with incorporating increasing levels of renewables by encouraging customers to shift their usage to times of higher renewable generation (see above discussion with respect to Chapter 4).

Chapter 8: Concluding Remarks

Although it does not make specific policy recommendations, UCS is pleased to see the following passage in the Draft Final Report:

There is very broad interest in active participation to mitigate climate change impacts in every possible way. Virtually, all participants share the goal to make the grids greener through the continued integration of deeper penetrations of renewable energy resources (RERs) so as to reduce emissions. Stakeholders share the desire to pursue sustainable ways to meet energy needs. There is broad interest in adopting advances in technology to make the grids smarter, to deploy more sensors to improve visibility and situational awareness, to deploy analytics and data with finer granularity to provide enhanced information and to extend the benefits of cleaner and environmentally sensitive electricity by various electrification targets. Many stakeholders are clamoring for more customer education and training to take advantage of what the modernized grid offers. Indeed, it is clear that many stakeholders are keenly interested in the provision of help to customers to use technology to transform energy into creation of new opportunities.

Draft Final Report at 212.

Additionally, as stated above, UCS generally supports the three specific recommendations advanced in the Draft Final Report’s Concluding Remarks on electric vehicle charging infrastructure, energy storage deployment, and data privacy.

Appendix I: List of Participating Stakeholders

With respect to Draft Final Report page 258, please note that James Gignac of the Union of Concerned Scientists participated in both Working Groups 6 [and](#) 7.

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Thank you for your consideration of these comments.

Sincerely,



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