

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Essential Reliability Services and the
Evolving Bulk-Power System – Primary
Frequency Response

Docket No. RM16-6-000

COMMENTS OF THE
ELECTRICITY CONSUMERS RESOURCE COUNCIL
(ELCON)

The Electricity Consumers Resource Council (ELCON) appreciates the opportunity to submit comments on the Commission’s Notice of Proposed Rulemaking (NOPR) in the above-captioned docket. ELCON’s members have a strong interest in the NOPR, in which the Commission proposes to: (i) amend the *pro forma* Large Generator and Small Generator Interconnection Agreements (LGIA and SGIA) to require that all new generating facilities install, maintain, and operate a functioning governor or equivalent controls as a precondition of interconnection; and (ii) amend the *pro forma* LGIA and SGIA to specify certain operating requirements, including maximum droop and deadband parameters, and sustained response provisions.

ELCON is the national association representing large industrial consumers of electricity. ELCON member companies produce a wide range of products from virtually every segment of the manufacturing community. ELCON members operate

hundreds of major facilities and are consumers of electricity in the footprints of all organized markets and other regions throughout the United States. Many ELCON members also operate behind-the-meter generation usually in the form of combined heat and power (CHP) technologies that serve essential steam or thermal requirements. Reliable electricity supply is essential to our members' operations. ELCON submitted comments to the Notice of Inquiry (NOI) previously issued by the Commission in this docket.

I. BACKGROUND

ELCON generally supports the concepts outlined in the NOPR, which represent a logical progression of the Commission's emphasis on securing a reliable electricity system in the context of an evolving market with regard to the composition of generation sources. In this regard, such concepts are consistent with the various recent FERC initiatives to allow the provision and sale of ancillary services. For instance, Order No. 819 allowed sellers with market-based rate authority to sell primary response frequency service at market-based rates. In Orders No. 888 and 890, the Commission opened the market to seven ancillary services sold by transmission owners. To facilitate the ancillary service markets, Order No. 784 removed an existing restriction on market-based rate sales of ancillary services by third parties in a balancing authority area. Similar to the scope of this NOI, Order No. 784 sought to enhance the capabilities of a changing grid by enabling energy storage companies to more easily access a

competitive market. In all of these initiatives, ELCON submitted comments and generally supported FERC's actions.

ELCON agrees with the Commission that the resource mix of the country has evolved, particularly due to the influx of growth in solar and wind nameplate capacity in all three Interconnections as well as a higher proportion of natural gas serving as baseload. Retirements of coal-fired power plants have also shifted the ratio of generating sources and the attendant capability to supply certain ancillary services. Notably, variable energy resources – such as solar and wind – do not provide primary frequency response “unless specifically configured to do so.”¹

ELCON supports the Commission's decision to limit the NOPR to new generation, which is sensible from a cost-benefit perspective, and not to propose at this time to require that the interconnection customer receive specified compensation, which could run the risk of resulting in imposition of inequitable and burdensome costs on load.

ELCON, however, has one major concern with the LGIA and SGIA language as drafted. The currently proposed wording could imply that industrials' behind-the-meter generation, including but not limited to combined heat and power (CHP) units, would be required to provide primary frequency response in the event of frequency deviations. As discussed in greater detail below, such a requirement is not compatible with the integration of industrial CHP units and the manufacturing processes that they

¹ NOPR at P 13.

support. Clarification is needed to explicitly exempt industrial generation units from this requirement (as is proposed for nuclear generation).

II. DISCUSSION

a. **ELCON generally supports the intent of the NOPR and urges its prompt implementation to avoid unintended consequences for load.**

ELCON generally supports the NOPR's proposed amendments to the *pro forma* LGIA and SGIA. Due to an imbalance of frequency and load, primarily resulting from the recent substantial changes in the mix of generation resources, interconnection frequency oscillations can produce disruptions. In particular, the market has traditionally implicitly assigned the responsibility of primary frequency response to fossil-fuel generator owners, but as such units – principally coal-fired units – retire, the share of generators able to provide primary frequency response decreases. U.S. manufacturers are concerned that power quality may be degraded if inadequate Essential Reliability Services are not forthcoming to accommodate the growing amount of intermittent resources that are being added to utility resource mix. For example, in the Eastern Interconnection, frequency can change on a daily basis by 0.036 Hz or greater – a significant deviation. Updating the *pro forma* LGIA and SGIA would serve to more appropriately reflect current and future market conditions while incorporating new language relevant to governors for frequency response purposes. Moreover, the Commission can aim to reduce instances of under-frequency load shedding and frequency nadirs through compliance with governor dead band and droop parameters.

New market incentives can support these technical requirements if applied to each generator.

As noted in ELCON's comments on the NOI, the favorable experience with ERCOT Regional Reliability Standard BAL-001- TRE-01, which as approved by the Commission establishes requirements for generator owners and operators with respect to governor control settings and the provision of primary frequency response within the ERCOT region, provides support for the NOPR.² ELCON also appreciates the NOPR's consideration of NERC Reliability Standard BAL-003-1.1, and its adoption of certain recommended governor settings contained within NERC's Primary Frequency Guidelines, to promote consistency with existing regulations or practices and so that the proposed reforms can help balancing authorities to meet their obligations under the NERC standard.

b. ELCON supports limiting the applicability of the NOPR's requirements to new generators.

FERC appropriately limits the applicability of NOPR's requirements to install, maintain, and operate a functioning governor or equivalent controls for primary frequency response to new generating facilities entering the interconnection process. ELCON concurs with FERC and many of the NOI commenters that the costs of

² North American Electric Reliability Corporation, 146 FERC ¶ 61,025 (2014). As a condition of interconnection, ERCOT currently requires all generators to have effective governor response and to not restrict operations. As explained in the NOI, "NERC recently noted that ERCOT experienced a significant improvement in its frequency response performance as generators within its region adjusted their governor settings with compliance with BAL-001-TRE-01."

implementing primary frequency response capability for new generating facilities are low, whereas the cost of retrofitting existing facilities can be significant.³

c. ELCON supports FERC's decision not to propose compensation requirements at this time.

The NOPR requests comment on FERC's proposal not to mandate compensation for complying with the NOPR's proposed requirements. ELCON supports FERC's decision not to propose compensation requirements at this time, in view of the current circumstances of the markets and the limited scope of the NOPR. As noted above, in view of the low costs triggered by the NOPR's limited applicability to only new generating facilities, the administrative costs of a compensation scheme may outweigh the costs of providing the mandated service. This is consistent with the Commission's prior decisions requiring interconnection customers to install primary frequency response capability or that established specified governor settings, without requiring any accompanying compensation.⁴ In the event of any unusual circumstances, the NOPR notes that a utility retains the opportunity to file a proposal for primary frequency response compensation under FPA section 205.⁵ Finally, the NOPR is not inconsistent with Order No. 819, which gives entities with market-based rate authority the opportunity to enter bilateral agreements to provide primary frequency response service (encompassing existing units) at mutually agreeable rates.

³ NOPR at PP 28, 29.

⁴ NOPR at P 55; *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,097, at n.58 (2015); *CAISO*, 156 FERC ¶ 61,182, at PP 10-12 and 17 (2016); *New England Power Pool*, 109 FERC ¶ 61,155 (2004), *order on reh'g*, 110 FERC ¶ 61,335 (2005).

⁵ NOPR at P 55.

ELCON wishes to be very clear that its comments on compensation are limited to the currently proposed limited applicability of new requirements to new generation facilities. Any broader applicability would trigger more significant costs and should focus on market-based solutions such as that under Order No. 819. Moreover, as ELCON noted in its comments on the NOI in this docket, to the extent that the Commission were to allow, in this proceeding or in the future, generators with “primary frequency response” capabilities (as broadly defined as possible to include all relevant and related services) to be compensated in order to balance the playing field while facilitating innovation in the renewable energy sector, ELCON recommends that it be made clear that such compensation will be paid by generators without “primary frequency response” capabilities, not by load. For a sustainable solution amidst the increasing market share of variable generation, “the industry needs to research, develop, and demonstrate newer and less familiar sources to provide frequency support.”⁶

FERC’s proposal not to require compensation at this time, however, is supportable as consistent with its previously accepted changes to transmission provider tariffs that similarly required interconnection customers to install primary frequency

⁶ NREL. *Role of Wind Power in Primary Frequency Response of an Interconnection*. Conference Paper. September 2013. Located at: <http://www.nrel.gov/docs/fy13osti/58995.pdf>.

response capability or that established specified governor settings, without requiring any accompanying compensation.⁷

d. Industrials' Behind the Meter Generation, such as CHP units, are integrated with a manufacturing process and should not be required to provide primary frequency response.

An important concern of relevance to ELCON's members is the proposed language as currently drafted in section 9.6.4.2 of the revised LGIA (see page 45 of the NOPR) that could be read to imply that all generation, potentially including behind the meter generation operated by industrials, such as CHP units, must provide response to all possible frequency deviations without respect to integrated manufacturing process priorities and constraints. The same language would be added in section 1.8.4.2 of the SGIA (see page 47 of the NOPR).

Generation equipment that is integrated with industrial process equipment is operated to optimize the overall manufacturing process including the safe operation of critical infrastructure. The reliabilities of the generation and the industrial process are tightly coupled. Requiring all industrial generation to provide frequency response without respect to the operational needs of the manufacturing process may jeopardize the reliability and safe operation of both. The manufacturing process, including the elements that provide electricity as a by-product, is the load (retail customer), not a supply-side utility resource that has an obligation to serve.

⁷ NOPR at P 55; see *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,097, at n.58 (2015); *CAISO*, 156 FERC ¶ 61,182, at PP 10-12 and 17 (2016); *New England Power Pool*, 109 FERC ¶ 61,155 (2004), *order on reh'g*, 110 FERC ¶ 61,335 (2005).

As one tangible example, many manufacturing processes use steam (or other thermal applications) as the primary driver and the cogeneration of steam and electricity is an essential feature of the process. These devices, which are part and parcel of the load itself, cannot be treated as if they were conventional, stand-alone generators, and forcing them to act as stand-alone generation will compromise and potentially harm the manufacturing process by interfering with the steam balance. Retrofits to these devices are also out of the question on economic grounds, and requiring such capabilities of new machine (via revisions to the LGIA or SGIA) gives the management of the manufacturing process (*i.e.*, the load) to Transmission Providers and Balancing Authorities. These loads should not be singled out for this type of treatment simply because they produce some electricity as a by-product of their operation. The appropriate mechanism for involving loads with the provision of any Essential Reliability Service is demand response, which ELCON has long supported.

To address this issue, the proposed LGIA and SGIA language should be revised to explicitly exclude imposition of mandatory primary frequency response obligations on industrial CHP units and other similarly-situated forms of industrial behind-the-meter generation. In this regard, ELCON notes that LGIA section 9.6.4.3 and SGIA section 1.8.4.3 as proposed would provide an exemption from this requirement for nuclear plants; industrials' behind-the-meter generation, including but not limited to CHP units, should similarly be exempted. Exemption from the mandatory obligation still could allow industrial processes that are capable of providing primary frequency response to opt-in to such arrangements.

III. CONCLUSION

ELCON supports the concepts of the NOPR and more generally the Commission's emphasis on securing a reliable electricity system in the context of an evolving market with regard to the composition of generation sources. ELCON, however, has one major concern with the LGIA and SGIA language as drafted. As discussed above, the currently proposed wording should be revised to avoid any implication that industrials' behind the meter generation, including but not limited to CHP units, would be required to provide primary frequency response in the event of frequency deviations, as that would be incompatible with their connected manufacturing processes.

NOTICES AND COMMUNICATIONS

Notices and communications with regard to these proceedings should be addressed to:

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Dated: January 24, 2017

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary of this proceeding.

Dated at Washington, D.C.: January 24, 2017

/s/ W. RICHARD BIDSTRUP
W. Richard Bidstrup