

GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Energy and Environment

COMMENT RECONCILIATION MEMORANDUM

TO: File

FROM: Joseph M. Jakuta
Environmental Protection Specialist, Monitoring and Assessment Branch

SUBJECT: **Response to Comments on the Proposed Rule “Demand Response
Generating Sources”**

DATE: January 28, 2020

BACKGROUND

On June 28, 2019, the Department of Energy and Environment (“DOEE” or “the Department”) issued a proposed rulemaking “Demand Response Generating Sources”, hereafter referred to as the “DRGS”, for public comment (66 DCR 7692). The public comment period for the proposed rulemaking continued through July 28, 2019.

Two comment letters were received during the public comment period. These letters were received from the New Jersey Department of Environmental Protection (“NJ DEP”) and Advanced Energy Management Alliance (“AEMA”). NJ DEP in their letter generally wanted to see stricter regulations. NJ DEP had four specific comments in their letter, none of which were adopted. AEMA requested that three specific aspects of the proposed rule be altered to address their concerns and in general thought that the District should be supportive and promoting of usage of demand response. The fashion in which DOEE parsed AEMA’s comment letter resulted in 11 distinct comments. Each comment has been addressed in the table below, and where comments were accepted, the regulation has been revised.

Following careful consideration of public comments received, DOEE has made two modifications to the proposed regulatory text. Responses to individual comments can be found in the table below.

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DOEE RESPONSES TO COMMENTS

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NJ DEP	<u>Applicability:</u> The DOEE rule should be applicable to all stationary internal combustion engines, including engines, which generate electricity but do not have an agreement or obligation to provide electricity to the grid.	The Air Quality Amendment Act of 2014, which is being implemented through this proposed rulemaking, is specific to regulating Demand Response Generating Sources (DRGS) so this rulemaking is thus limited to only those types of sources. DOEE does not accept this comment.
	<u>Compliance Date:</u> The DOEE rule should require all existing generators to achieve compliance with applicable NOx emission limits by a specific date. Facilities may need additional time to comply. NJDEP has allowed 16 months in New Jersey's Reasonably Available Control Technology (RACT) rules for compliance purposes.	Since compliance with requirements to be permitted by DOEE and apply Best Available Control Technology (BACT) was required as of June 3, 2014 for generators acting as DRGS and this regulation is only clarifying the requirements, DOEE does not expect that extension of compliance is necessary for these sources. DOEE does not accept this comment.
	<u>Minimum Floor/Emission Limits for Existing Generators:</u> The DOEE rule should provide specific emission limits for existing generators. On September 8, 2005, NJDEP adopted Reasonably Available Control Technology (RACT) rules for existing generators at N.J.A.C. 7:27-19.8 (available at http://www.state.nj.us/dep/agm/currentrules/Sub19.pdf); in New Jersey, an existing generator with a maximum rated power output of 37 kilowatts or greater and that has commenced operation or has been modified on or after March 7, 2007, must comply with a NOx emission limit no greater than 0.90 grams per brake horse power hour (g/bhp-hr). New Jersey NOx emission limits for the existing electric generators are shown in Table 1...	The District is proposing strict emissions standards consistent with the definitions outlined in the Air Quality Amendment Act of 2014 for DRGS and a further floor is not required to meet the statutory language. Additional assessment of RACT requirements are required by August 2020. DOEE does not accept this comment.
	<u>Minimum Floor/ Emission limits for New and Modified Generators:</u> The DOEE rule should provide specific	The District is proposing strict emissions standards consistent with the definitions outlined in the Air

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	emission limits for new and modified generators. The NJDEP requires new or modified generators to comply with a minimum NO_x emission limit of 0.15 g/bhp-hr, when subject to the state-of-the-art requirements, pursuant to N.J.A.C. 7:27-8.12 or N.J.A.C. 7:27-22.35. NJDEP has developed state of the art manual for generators, which is available at https://www.state.nj.us/dep/aqpp/downloads/sota/sota13.pdf. The proposed rule requires a feasibility determination of an emission control system based on available technologies, environmental impacts, economic impacts, and energy impacts. This case-by-case evaluation should ensure that each new and modified generator achieves a NO_x emission limit at least as stringent as New Jersey and incorporates the most recent technological advancements for the control of NO_x emissions.	Quality Amendment Act of 2014 for DRGS and a further floor is not required to meet the statutory language. DOEE does not accept this comment.
AEMA	The District should encourage participation in PJM DR to prevent black outs, improve public health, and protect the environment.	Promotion of participation in DR programs goes beyond the scope of this regulation, which is intended solely to implement the Air Quality Amendment Act of 2014. DOEE strongly supports demand response programs in general, including efforts to reduce energy use during peak periods, utilize battery backup systems, generate electricity from clean sources, etc. However, consistent with the requirements of the Air Quality Amendment Act of 2014, it is appropriate to strictly regulate emissions from behind-the-meter generation to ensure that the generators used do not unnecessarily exacerbate air pollution during those periods.

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		DOEE does not accept this comment.
	AEMA respectfully requests that the DC DOEE remove the new proposed environmental regulation described in Article 1200.8 of the NOPR on Demand Response Generating source. AEMA members share the DC DOEE Commitment to reducing emissions. This proposed language will make it more difficult for the District to maintain good air quality. Nowhere in the Clean Air Act of the U.S. Environmental Protection Agency (“EPA”) BACT guidance is there a requirement for a BACT floor similar to what is proposed in 1200.8. AEMA believes the requirement for any generating source to meet the non-road engines for 2014 and newer model year engines found in 40 CFR §§ 1039.101, 1039.105, 1039.107, and 1039.115 imposes a significantly higher capital cost on customers. The increased capital costs will make it economically infeasible for customers to participate in DR programs.	This comment asserts several reasons for removal of § 1200.8 of the proposed regulation. First, it asserts that the proposed language will make it more difficult for the District to maintain air quality. However, this comment provides no basis for this assertion, so it will not be addressed here. Note that later comments provide additional reasoning for this statement, so it will be discussed at a later point in this document. Second, it asserts that EPA BACT guidance does not require a BACT floor similar to this standard. DOEE agrees that EPA guidance does not specifically require this level of control in all cases, however, the Air Quality Amendment Act of 2014 does not establish federal BACT as the sole standard, but rather as a floor for implementation of the statute. Specifically, Sec. 203 of the statute indicates that the source must implement, “at a minimum, current best available control technology...”. DOEE interprets that the reason the word “current” was added to that phrase was to tie the standard to BACT for a new source. However, even if this were not the case, Sec. 203(c) gives the Director [of DOEE] the authority to deny applications in order to “protect air quality or to encourage energy efficiency or conservation-based demand response”. DOEE has determined that a level of control equivalent to current non-road engine standards for new engines is necessary to protect air quality with respect to DRGS because

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		demand response programs are likely to be activated on days when ozone levels are already high. Third, the comment asserts that compliance with the standard, as proposed, would impose significantly higher costs on customers and make it economically infeasible for customers to participate in DR programs. While DOEE agrees that requiring state of the art emission controls will impose additional costs on persons wishing to use older, higher-emitting generators in a demand response capacity, this is necessary to protect air quality. Additionally, this comment is vague and provides no economic analysis to support this generalized assertion. DOEE does not accept this comment.
	In addition, we note that that the CFR references in proposed Article 1200.8 only apply to compression ignition (“CI”) engines. No references are provided for spark ignition (“SI”) engines. However, this point should be null, as we recommend removing 1200.8 in its entirety to accomplish the overall goals of the NOPR and 2014 Act: establishing BACT standards.	The point about not including references to regulations for spark ignition (“SI”) engines is valid. Since DOEE is maintaining §1200.8 as stated in the previous response, DOEE will include references to spark ignition (“SI”) engines in the final rule. DOEE will include emissions limits similar in stringency to those for CI engines. DOEE does accept this correction and has addressed it, but does not accept the removal of 1200.8.
	Proposed Section 1200.9 correctly describes a top-down BACT analysis except for the requirement in Subsection (c)(3)(B). BACT does not require that revenue associated with using the generator be included as Section 1200.9(c)(3)(B)	This regulation is outlining how the District is implementing what it considers to be current BACT as part of implementing the Air Quality Amendment Act of 2014, not how the District is implementing a BACT

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	does. As a result, AEMA believes that Section 1200.9(c)(3)(B) should be removed since it is not a part of BACT.	program as required under the Clean Air Act for Prevention of Significant Deterioration (PSD) program purposes. Furthermore, EPA’s BACT guidance for implementing BACT, is guidance, not a regulatory requirement, so the District can deviate within reason, as long as it is at least as stringent as federal BACT as required in the language of the Air Quality Amendment Act of 2014. In this case, the District considers it appropriate, when evaluating the cost effectiveness of a control strategy, to consider the applicant’s net costs, not gross costs. Including only costs (and not benefits) in the evaluation inappropriately tilts results toward a no- or minimal-control alternative. DOEE does not accept this comment.
	Significant evidence demonstrates that engines participating in emergency DR programs are vital resources and do not cause adverse impacts <i>Note, four sub headings were introduced under this comment and are subsequently addressed.</i>	DRGS are allowed to participate in DR programs, following permitting, under the Air Quality Amendment Act of 2014. This regulation is intended to ease the regulatory process associated with obtaining these permits by clarifying the pollution control requirements, thus allowing DRGS to participate in DR programs. DOEE does not accept this comment.
	A. Study identifies that PJM demand response resources are called extremely infrequently.	AEMA cites Attachment 1 in regards to the point that demand response events are called infrequently and do not cause adverse impacts. DOEE analysis of the attachment does not support this conclusion. DOEE does agree from the attachment that “emergency demand response” events have historically been

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		infrequent. However, this does not guarantee that as the grid evolves, it would not become more reliant on demand response programs that incorporate the type of behind-the-fence generation addressed by this proposed regulation. Additionally, even if events are infrequent, if they are called on high ozone days, they can exacerbate an already existing ozone problem and contribute to ozone NAAQS exceedances. It does not take a large number of exceedances to keep an area from achieving ozone NAAQS attainment. Additionally, it should be noted that the events cited in the study were all “emergency demand response” events. Participation in capacity markets has evolved beyond emergency-only events and no evidence is provided for how often these types of events occur. DOEE does not accept this comment.
	B. EPA report identifies that there is no correlation between air quality days and back up generators running	AEMA cites Attachment 2 to support their comment that backup generator use during a demand response does not impact air quality. DOEE analysis of the attachment does not support this conclusion. First, concerning ozone pollution, Table 2 in the attachment shows that during 11 days in which there was a demand response event, 8 of those days experienced high ozone levels in at least some portion of the region. This evidence does not support the conclusion for several reasons: 1. That 72 % of demand response days are also high ozone days appears to support the

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		conclusion that demand response events do correspond with days with ozone NAAQS violations and may contribute to their occurrence. 2. No analysis is presented of wind patterns and other meteorological factors on the days analyzed, which would have a significant impact on the results of this study. For instance, pollution from backup generators could have been transported away from or toward monitors. 3. Demand response is intended to encourage reductions in demand rather than expansion of onsite capacity, no evidence is provided to show which days the demand response events were responded to in that fashion. It is possible, that on those days without ozone exceedences no or few back up generators were even running. Finally, concerning fine particulate matter pollution, running backup generators would be expected to affect micro geographies with respect to fine particulate matter pollution, but air quality monitors located to collect data representative of region-wide pollution are the only data cited. No evidence is provided to show that vulnerable populations living in close proximity to back up generators did not experience negative exposures during this event. DOEE does not accept this comment.

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	C. Evidence from Washington, DC region demonstrates backup generator use during a summer blackout does not impact air quality.	AEMA cites Attachment 3 in regards to the point that backup generator use during a summer blackout does not impact air quality. DOEE analysis of the attachment comes to the opposite conclusion. First, concerning ozone pollution, in Figure 5 air quality levels are shown at points before, during, and after the 2012 derecho event, when a multiple day blackout occurred. Several factors are not mentioned that impact the conclusions being espoused in the paper: 1. On four of the five days when partial to full blackout conditions occurred, exceedances of the current 70 ppb ozone NAAQS were observed, implying that backup generator may affect regional ozone. 2. On the days both before and after the blackout conditions, the average temperature was in the mid-100's in the Washington, DC area, where as the other days were in the mid to high 90's so it is likely that meteorological conditions played a strong role in the variation in ozone levels.. Additionally, this report evaluates an emergency situation where emergency engines were operating, but crucially, the rest of the power grid was not operating in a way comparable to the way it would operate on a high energy demand day. As such, while emergency generator emissions peaked during this event, overall energy use was much lower than would normally be expected during similar weather conditions. This analysis does not take into account offsetting emissions

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		from reduced use of the grid due to its unavailability. Additionally, it did not take into account reduced traffic emissions resulting from reduced commercial/ governmental activity due to lack of power at work sites. As such, this evaluation does not prove that a demand response program using behind-the-fence generation from reciprocating internal combustion engines (RICE) does not significantly contribute to pollution on high ozone days. Finally, concerning fine PM pollution, running back up generators would be expected to affect micro geographies with respect to fine particulate matter pollution, but air quality monitors located to collect data representative of region-wide pollution are the only data cited. No evidence is provided to show that vulnerable populations living in close proximity to back up generators did not experience negative exposures during this event. DOEE does not accept this comment.
	D. Air pollution increases from dirty power plants when backup generators are prohibited from participating in DR	AEMA cites Attachment 4 in support of their point that backup generator use during a summer blackout does not impact air quality. DOEE analysis of the attachment comes to the opposite conclusion. First, in Table 1 of the study, the use of the substitute sources during an emergency event leads to substantial decreases in criteria pollutants over the use of emergency generators, which from the perspective of public health is an environmental benefit. In particular,

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		NOx emissions, a primary ozone precursor, show a 22% decrease in this circumstance. The only analyzed pollutant with higher emissions in the substitute source scenario is CO2. These CO2 increases would account for approximately 0.07% of the District’s CO2 emissions (according to the Energy Information Administrations 2016 greenhouse gas inventory). While the analysis does show overall emission increases from day-to-day system operation (aside from emergency event operation), this is based on numerous assumptions related to existing source retirements and appears to assume minimum replacement of existing capacity with renewable energy resources. These assumptions may or may not be accurate. However, for purposes of attaining the ozone NAAQS, DOEE finds that the emergency event reductions deserve added weight in the analysis due to their correspondence with high ozone days. Second, Attachment 4 shows no evidence of the use of other demand response resources (e.g., demand reduction, battery backups) in the comparison. Such approaches would reduce both CO2 and criteria pollutant emissions. Finally, concerning fine particulate matter pollution, running back-up generators would be expected to affect micro geographies with respect to fine particulate matter pollution. No evidence is provided to show that vulnerable populations living in close proximity to back

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		up generators did not experience negative exposures during this event. DOEE does not accept this comment.
	DC DOEE should improve its permit application review process.	This regulation is intended to clarify the regulatory process associated with obtaining permits for DRGS so it is expected that the permit review process will improve following adoption of this regulation. DOEE does accept this comment.
	It is assumed that any generator assets currently approved by DC DOEE for non-emergency use do not require a new permit for DR use, but DC DOEE should make this clear.	This interpretation is correct. DOEE will amend the final rulemaking to clarify this assumption. DOEE does accept this comment.

CONCLUSIONS

DOEE accepted no comments from NJDEP and three of the comments from AEMA. DOEE has made two modifications to the proposed regulation in response to these comments.