

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

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**Northern Natural Gas Co.  
Docket Nos. CP 82-401; CP 24-83  
West Leg 2024 Expansion Project**

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May 10, 2024

**DAKOTA RURAL ACTION’S PROTEST TO PROPOSED BLANKET  
CERTIFICATE ACTIVITY AND MOTION TO INTERVENE**

Dakota Rural Action (“DRA”) hereby protests the prior notice request filed by Northern Natural Gas Co. to construct, own, and operate the West Leg 2024 Expansion Project (“the Project”) under §§ 157.205, 157.208, 157.210, and 157.216 of the Commission’s regulations. Protestor seeks to have this request processed as a separate application.

DRA also moves to intervene in these proceedings. *See* 18 C.F.R. §§ 157.205(e)(2), 385.214. As described below, DRA and its members have interests which may be directly affected by the outcome of the proceedings and DRA’s participation is in the public interest. 18 C.F.R. § 385.214(b)(2). DRA also seeks a formal hearing on Northern Natural Gas’s prior notice request. *See* 18 C.F.R. § 157.10(a)(1).

**I. Intervention**

DRA seeks to intervene as a party to these proceedings pursuant to 18 C.F.R. § 345.214.<sup>1</sup> DRA is a member organization active across South Dakota which organizes

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<sup>1</sup> DRA herein “state[s], to the extent known . . . the basis in fact and law for” DRA’s opposition to the Project. 18 C.F.R. § 385.214(b)(1). Should new information come to light, DRA reserves the right to amend the grounds for its opposition or to raise new grounds for denying the Project.

people and builds leadership to protect environmental resources, advocate for resilient agriculture systems, and empower people to create policy change that strengthens their communities and cultures. *See* Dakota Rural Action, “About Us” (last accessed May 2, 2024), <https://www.dakotarural.org/who-we-are/about-us>. As part of its work, DRA has fought the expansion of industrial dairy operations since the 1990s. DRA’s principal place of business is 910 4th St., Ste. A, Brookings, South Dakota 57006. *See* 18 C.F.R. § 385.203(b)(2).

DRA’s membership includes individuals who live near the Agropur, Inc. dairy processing facility near Lake Norden, South Dakota, which is one of the prospective customers for the Project. *See* Northern Natural Gas Co.’s Request for Authorization Under the Blanket Certificate, at 4 (Mar. 7, 2024) (accession no. 20240307-5178) (hereinafter “Prior Notice Request”). DRA’s members would be harmed by the environmental effects of the Project, which are described in greater detail in Part II, *infra*. Moreover, DRA opposes and advocates against the expansion of factory-farm gas, *i.e.*, the production of methane from industrial factory-farming practices that pollute the environment and harm small-scale farmers and ranchers. Thus, DRA “represents . . . interest[s] which may be directly affected by the outcome of the proceeding.” 18 C.F.R. § 385.214(b)(ii).

DRA’s “participation” would also be “in the public interest,” *id.* § 385.214(b)(2)(iii), because it seeks to require the Commission fairly to consider the upstream, downstream, and cumulative environmental effects of allowing the introduction of factory-farm gas into the nation’s interstate gas pipeline network.

Whatever the outcome of these proceedings, the agency’s consideration of these environmental effects is in the public interest.

**Communications and Service**

Pursuant to 18 C.F.R. § 385.203(b)(3), the names and addresses of the persons upon whom all communications concerning these proceedings should be served are as follows:

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**II. Protest and Comments in Opposition**

DRA objects to the Project to the extent the Project would lead to the increased production, interstate shipment, and/or sale of factory-farm gas. The Commission has an obligation to develop the record to determine whether and the extent to which the Project would, in fact, facilitate the expansion, interstate shipment, and/or sale of factory-farm gas. If development of the record reveals the Project would do so, the Commission should refuse to allow Northern Natural Gas to construct the Project, or alternatively should impose conditions on the Project to prevent it from being used for factory-farm gas.

*A. Legal Standard*

Section 7 of the Natural Gas Act permits the Commission to approve a certificate application only if the proposed project “is or will be required by the present or future public convenience and necessity; otherwise such application shall be denied.” 15 U.S.C. § 717f(e). The Commission may “attach” to a certificate “such reasonable terms and conditions as the public convenience and necessity may require.” *Id.*

The “public convenience and necessity” standard is broad. It encompasses not only the Natural Gas Act’s “principal purpose . . . to encourage the orderly development of plentiful supplies of . . . natural gas at reasonable prices,” but also “other subsidiary purposes,” such as “conservation, environmental, and antitrust questions.” *NAACP v. Fed. Power Comm’n*, 425 U.S. 662, 669–70 & n.6 (1976); *Myersville Citizens for a Rural Cmty., Inc. v. FERC*, 783 F.3d 1301, 1307 (D.C. Cir. 2015). Under this standard, the Commission “could deny a pipeline certificate on the ground that the pipeline would be too harmful to the environment.” *Sierra Club v. FERC*, 867 F.3d 1357, 1373 (D.C. Cir. 2017) (*Sabal Trail*).

Indeed, not only is the Commission *permitted* to consider the environmental effects of a proposed project; the Natural Gas Act *requires* that it do so, because the Commission cannot determine whether a project “is or will be required by the present or future public convenience and necessity” unless it considers the environmental effects of a project as part of its analysis. 15 U.S.C. § 717f(e); *see also Fed. Power Comm’n v. Transcont’l Gas Pipe Line Corp.*, 365 U.S. 1, 30 (1961) (explaining that evidence regarding a pipeline’s effects on downstream air pollution is “entitled to great weight” in the Section 7 analysis); *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321, 1331 (D.C. Cir. 2021) (holding that FERC’s inadequate environmental analysis invalidated its Section 7 analysis); Romany M. Webb, *Climate Change, FERC, and Natural Gas Pipelines: The Legal Basis for Considering Greenhouse Gas Emissions Under Section 7 of the Natural Gas Act*, 28 N.Y.U. Env’t L. J. 179 (2020) (explaining why text, case law, statutory and legislative history, and agency practice confirm the requirement that the Commission weigh the environmental effects of a proposed pipeline

project as part of its § 7 analysis). If the Commission were to fail to consider a project’s environmental effects before issuing a certificate, such a “fail[ure] to consider an important aspect of the problem” would result in a quintessentially arbitrary and capricious decision. *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983); *see also Env’t Def. Fund v. FERC*, 2 F.4th 953, 967 (D.C. Cir. 2021) (“The Commission’s award of a [Section 7] Certificate is reviewed under the Administrative Procedure Act’s arbitrary and capricious standard.”).

The National Environmental Policy Act (“NEPA”) reinforces the Commission’s obligation to consider the upstream and downstream environmental effects of its certificate decisions. “Prior to approving a certificate on a proposed pipeline, [NEPA] requires the Commission to evaluate the action’s environmental impacts.” *Sierra Club v. FERC*, 38 F.4th 220, 226 (D.C. Cir. 2022). These environmental impacts include:

- “Direct effects, which are caused by the action and occur at the same time and place”;
- “Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable,” and which “may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems”; and
- “Cumulative effects, which are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.”

40 C.F.R. § 1508.1(g)(1)–(3).<sup>2</sup>

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<sup>2</sup> On May 1, 2024, the Council on Environmental Quality finalized revisions to its NEPA regulations. *See National Environmental Policy Act Implementing Regulations*

In the context of Section 7 certificate proceedings, indirect effects include both “the impacts of upstream gas production and downstream gas combustion.” *Birckhead v. FERC*, 925 F.3d 510, 517 (D.C. Cir. 2019) (per curiam). If the Commission fails to “either quantify and consider [these effects] . . . or explain in . . . detail why it cannot do so,” its approval of a pipeline project is arbitrary and capricious. *Sabal Trail*, 867 F.3d at 1375 (applying this principle to downstream effects); *see also Eagle Cnty. v. Surface Transp. Bd.*, 82 F.4th 1152, 1179–80 (D.C. Cir. 2023) (applying this principle to upstream effects), *cert. pet. docketed sub nom. Seven Cnty. Infrastructure Coal. v. Eagle Cnty.*, No. 23-975 (U.S. Mar. 6, 2024).

Where the Commission lacks sufficient information to evaluate fully the environmental effects of approving a Section 7 certificate, “[i]t should go without saying that NEPA . . . requires the Commission to at least *attempt* to obtain the information necessary to fulfill its statutory responsibilities.” *Birckhead*, 925 F.3d at 520; *see also Food & Water Watch v. FERC*, 28 F.4th 277, 286 (D.C. Cir. 2022) (discussing “the Commission’s record-development obligation” under NEPA). Thus, the Commission “is not allowed to shirk its responsibilities under NEPA by labeling . . . reasonably foreseeable upstream and downstream environmental effects as crystal ball inquiry.” *Eagle Cnty.*, 82 F.4th at 1179–80 (cleaned up). A failure to seek out information necessary to evaluate a proposed project’s environmental effects violates NEPA and is arbitrary and capricious. *Birckhead*, 925 F.3d at 520.

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Revisions Phase 2, 89 Fed. Reg. 35,442 (May 1, 2024) (to be codified at 40 C.F.R. pts. 1500–08). The final revisions take effect July 1, 2024. *See id.* at 35,442. In relevant part, 40 C.F.R. § 1508.1(g) will be recodified at 40 C.F.R. § 1508.1(i). *See id.* at 35,575. The quoted definitions have not changed. Unless otherwise indicated, DRA cites herein to the version of the regulations in force at the time of this filing.

B. *The Record and Publicly Available Documents Suggest this Project Would Facilitate the Expansion of Factory-Farm Gas and the Introduction of Such Gas into the Interstate Gas Pipeline Network*

Northern Natural Gas’s prior notice request indicates the Project would provide an additional 12,960 dth/day of incremental firm capacity to serve “nine customers,” including Agropur’s “existing dairy processing plant near Lake Norden, South Dakota.” *See* Prior Notice Request 3–4. Agropur has publicly touted its installation of “an anaerobic digester and biogas generation technology . . . into [its] wastewater treatment plant” at Lake Norden. Agropur, “Environmental, Social and Governance Report,” at 26 (2023), <https://perma.cc/BGJ5-ZJPG>. And Agropur has previously expressed interest in using the gas produced by this digester to “offset[] use of non-renewable natural gas.” *Id.* To do so, Agropur would presumably require a means to transport that gas to market — such as by using the additional pipeline capacity the Project would provide.

Agropur’s Lake Norden facility processes milk from numerous Confined Animal Feeding Operations (CAFOs), *i.e.*, factory farms. For example, Agropur’s expansion of its Lake Norden facility led Riverview LLP, a major dairy agribusiness reliant on CAFOs, to open “a large-scale dairy farm” with a capacity of 9,500 cows “[j]ust a 10-minute drive from [Agropur’s] plant.” *See* Agropur, “Lake Norden: Partnership Creates Optimism, Opportunity and Economic Growth,” at 2 (Mar. 15, 2021), <https://perma.cc/L8AF-D9TQ>. Riverview is heavily invested in factory-farm gas. *See, e.g.*, Christopher Vondracek & Walker Orenstein, *A Pipeline for Cow Gas Draws Environmental Support, Ag Concentration Concerns*, Minneapolis Star-Trib. (Jan. 31, 2024), <https://perma.cc/63UU-3XTC>.

Given this publicly available information, the Commission must confirm whether Agropur requires the additional capacity that would be provided by the Project to ship

factory-farm gas produced at or near its Lake Norden facility. NEPA imposes this record-development obligation on the Commission because if the Project would facilitate the production, interstate shipment, and/or sale of factory-farm gas, the Commission must consider the environmental effects of that additional factory-farm gas production as part of its NEPA review and Section 7 analysis. These effects are discussed further in Part II.C, *infra*. A list of specific topics to serve as a starting point for the Commission's development of the record is provided in Part II.D, *infra*.

*C. The Production of Factory-Farm Gas Has Severe Environmental Consequences*

As part of its NEPA review and Section 7 analysis, the Commission must investigate and evaluate the extent to which the Project will induce the production, shipment, and sale of factory-farm gas. This is because, far from being the greenwashed panacea its backers claim, factory-farm gas has serious environmental consequences for neighboring communities and the planet.

*i. Factory-Farm Gas Often Fails to Fulfill Promises of Methane Emissions Reductions, and in Some Cases May Actually Increase Methane Emissions*

Industry proponents of factory-farm gas claim that installing anaerobic digesters reduces methane emissions. Often, however, these promises prove illusory. In some cases, incentivizing digesters may *increase* methane emissions. Because methane has a 100-year global warming potential 27–30 times greater than that of CO<sub>2</sub>, an accurate accounting of how approving the Project would affect methane emissions is crucial to the Commission's environmental analysis. *See* Env't Prot. Agency, *Understanding Global Warming Potentials* (last updated Mar. 27, 2024), <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials>.



First, anaerobic digesters are notoriously leaky. The California Methane Project, a years-long effort to track methane plumes across California led by researchers from NASA's Jet Propulsion Laboratory, tracked about twenty-five digesters and identified "significant methane point sources at four [dairy digester] facilities in the" San Joaquin Valley. See Riley Duren et al., *The California Methane Survey* 41–42 (July 2020), <https://www.energy.ca.gov/sites/default/files/2021-05/CEC-500-2020-047.pdf>; see also Riley M. Duren et al., *California's Methane Super Emitters*, 575 *Nature* 180 (2019) (summarizing results of the California Methane Project). Another analysis relying on satellite and airborne sensors identified 59 methane plumes from digester-equipped factory farms. See Food & Water Watch, *The Proof Is in the Plumbing* (Jan. 30, 2024), <https://storymaps.arcgis.com/stories/4b708bdc0d2d419ba34cb352ca79b6e3>. Given the non-continuous nature of the monitoring in this study, the true amount of methane plumbing from digesters is almost certainly much greater. A third study, using ground-based remote optical sensing, found that cesspools with covers (and thus presumed to be equipped with digesters) "did not emit significantly less [methane] than those [cesspools] without a cover." N.T. Vechi et al., *Ammonia and Methane Emissions from Dairy Concentrated Animal Feeding Operations in California, Using Mobile Optical Remote Sensing*, 293 *Atmospheric Env't* 1, 10 (2023), <https://www.sciencedirect.com/science/article/pii/S1352231022005131?via%3Dihub>. Thus, the Commission must view skeptically and rigorously verify any claims that factory-farm gas associated with the Project will reduce methane emissions.

Second, the installation of anaerobic digesters can cause factory farms to *abandon* lower-carbon methods of waste management to maximize the amount of methane

produced and sold. For example, a recent report revealed that when “Threemile Canyon, a mega-dairy in Oregon . . . began participating in California’s Low Carbon Fuel Standard [(‘LCFS’)] Program,” it stopped using solid-liquid separation before sending manure to a digester because solid-liquid separation reduces “the methane emissions that could be captured and sold as credits under the program.” *See* Chloë Waterman & Molly Armus, Friends of the Earth & Soc. Resp. Agric. Project, *Biogas or Bull\*\*\*\*? The Deceptive Promise of Manure Biogas as a Methane Solution* 28–29 (2024), [https://foe.org/wp-content/uploads/2024/03/Factory-Farm-Gas-Brief\\_final.pdf](https://foe.org/wp-content/uploads/2024/03/Factory-Farm-Gas-Brief_final.pdf).<sup>3</sup> Thus, the Commission must acquire information on the waste-management practices currently employed by Agropur’s Lake Norden facility (or other facilities that would produce feedstock for the digester(s) in question), and what waste-management practices Agropur or those other facilities would use should the Project be approved. Without that information, the Commission cannot evaluate the degree to which the Project might cause the production of more methane than would otherwise exist, and how much of that additional methane may escape into the atmosphere.

Third, as discussed in greater detail below, the production and sale of factory-farm gas leads factory farms to expand their herd sizes. *See infra* at II.C.ii. When the animals in question are ruminants (such as cattle), this increase in herd size corresponds to more enteric emissions — the largest source of U.S. methane emissions. *See* Env’t Prot. Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2022*, at 2-4 (Apr. 11, 2024), <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions->

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<sup>3</sup> The LCFS requires participating digesters outside of California to connect to the interstate gas pipeline network. *See* Cal. Code Regs. tit. 17, § 95488.8(i)(2)(A).

and-sinks-1990-2022. This induced increase in enteric emissions offsets, and may overwhelm, any reductions in methane emissions achieved by installing digesters. Even if the Commission believes that methane emissions reductions from installing digesters will outweigh any increase in enteric emissions, the Commission is not “excused from making emissions estimates just because the emissions in question might be partially offset by reductions elsewhere. . . . In other words, when an agency thinks the good consequences of a project will outweigh the bad, the agency still needs to discuss both the good and the bad.” *Sabal Trail*, 867 F.3d at 1374–75; *see also* 40 C.F.R. 1508.1(g)(4) (“Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effects will be beneficial.”).<sup>4</sup>

Thus, the Commission must seek out information regarding the extent to which the Project would cause additional factory-farm gas production, and how that additional production will affect upstream methane emissions.

ii. *Anaerobic Digesters Cause Factory Farms to Expand*

For factory farms, digesters not only add a new revenue stream; they also incentivize herd size expansion. The reason is simple: more animals mean more feedstock for digesters, and more feedstock for digesters means more money — both in absolute terms, and because of economies of scale, on a per-animal basis. As noted above, more

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<sup>4</sup> The Commission on Environmental Quality’s May 1, 2024, revisions to its NEPA implementing regulations will move this language to 40 C.F.R. § 1508.1(i)(4) as of July 1, 2024, and change the word “detrimental” to “adverse.” *See* 89 Fed. Reg. at 35,575. This latter change was made “for consistency with the usage of the phrase ‘adverse effects’ in other provisions in the regulations,” and does not substantively alter the relevant standard. *See id.* at 35,538–39.

cows mean more methane. But as discussed below, CAFO herd size expansion has adverse environmental effects well beyond the climate impacts.

If Agropur intends to use the additional capacity the Project would provide to ship gas produced from wastewater, but not from manure (as is often the case for factory-farm gas), Agropur or Northern Natural Gas may argue that any increase in herd size is not “reasonably foreseeable.” 40 C.F.R. § 1508.1(g)(2). But the incentive structure leading to herd size expansion would, at most, simply move one step up the production chain. Providing an additional revenue stream for wastewater would incentivize Agropur to purchase more milk in order to produce more wastewater. And incentivizing Agropur to purchase more milk translates directly into an incentive for Agropur’s CAFO-based suppliers to expand the sizes of their dairy herds in order to produce that milk. Thus, herd size expansion is a “reasonably foreseeable” effect of anaerobic digestion at or near Agropur’s facility, whether those digesters use manure or wastewater as a feedstock. *Id.*

An economic modeling analysis commissioned by the Union of Concerned Scientists of California’s Low Carbon Fuel Standard — a program through which many factory farms around the country make money by producing and selling factory-farm gas — illustrates the effect of digesters on herd size. Those researchers found that profits from factory-farm gas increase as herd size increases, and explained that “[t]his market distortion” means “dairies are incentivized to purchase more cows.” Amin Younes & Kevin Fingerman, *Quantification of Dairy Farm Subsidies Under California’s Low Carbon Fuel Standard* 17 (Sept. 2021), <https://perma.cc/6XGF-LDLT>.<sup>5</sup> Younes and

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<sup>5</sup> The referenced analysis begins at page 186 of the comments in the linked document.

Fingerman conclude that “[t]he resulting trend is expected to be one of an increased number of animals . . . and a greater size of individual herds.” *Id.*

Empirical evidence confirms that the expansion of factory-farm gas goes hand-in-hand with the expansion of factory farms. A recent analysis compared dairies with and without digesters, and found that “[h]erd sizes at facilities with digesters grew 3.7% year-over year, 24 times the growth rate for overall dairy herd sizes in the states covered by” the study. *See* Waterman & Armus 38.

The “growth inducing effects” of factory-farm gas on herd size will have environmental consequences, which the Commission must consider. 40 C.F.R. § 1508.1(g)(2). These environmental impacts include, but are not limited to:

1. Increased methane emissions from enteric fermentation. As noted above, enteric emissions are the largest source of the United States’s methane emissions. EPA, *Inventory*, at 2-4. Moreover, anaerobic digesters do nothing to mitigate enteric emissions. Thus, by increasing herd sizes, anaerobic digesters lead to increased enteric emissions that offset, and may overwhelm, methane reductions that might be achieved by installing digesters.

2. Increased localized air pollution. Factory farms release a host of harmful air pollutants into the surrounding air. *See* Steve Wing et al., *Air Pollution from Industrial Swine Operations and Blood Pressure of Neighboring Residents*, 121 *Env’t Health Perspectives* 92, 92 (2013) (explaining that “CAFO airborne emissions, including ammonia, hydrogen sulfide (H<sub>2</sub>S), volatile organic compounds, and endotoxins, originate from confinement buildings, waste storage areas, and land application of animal waste”). More animals in factory farms mean more localized pollution, which is a reasonably

foreseeable effect of causing additional factory-farm gas production that the Commission must consider.

In large part because of these emissions, research confirms that residing near a factory farm leads to worse health outcomes on a range of indicators. *See, e.g.*, Ji-Young Son et al., *Exposure to Concentrated Animal Feeding Operations (CAFOs) and Risk of Mortality in North Carolina, USA*, 799 *Sci. Total Env't* (2021); Julia Kravchenko et al., *Mortality and Health Outcomes in North Carolina Communities Located in Close Proximity to Hog Concentrated Animal Feeding Operations*, 79 *N.C. Med. J.* 278 (2018); Leah Shinasi et al., *Air Pollution, Lung Function, and Physical Symptoms in Communities Near Concentrated Swine Feeding Operations*, 22 *Epidemiology* 208 (2011). The Commission must consider these “[e]ffects on public health and safety” as part of its NEPA and Section 7 analyses. 40 C.F.R. § 1501.3(b)(2)(iii).<sup>6</sup>

3. “[I]nduced changes in the pattern of land use” to produce the feedcrops to sustain these additional animals. 40 C.F.R. § 1508.1(g)(2). For example, a high-producing dairy cow eats between 110 to 120 pounds of wet feed, or 50 to 55 pounds of dry matter, every day. *See* Extension Found., *How Many Pounds of Feed Does a Cow Eat in a Day?*, DAIREXNET (Aug. 16, 2019), <https://dairy-cattle.extension.org/how-many-pounds-of-feed-does-a-cow-eat-in-a-day>. As Agropur itself has noted, when its facility causes suppliers to expand their herd sizes, “[t]hose . . . cows needs to eat, which brings forth another layer of . . . impact: increased feed production.” *See* Agropur, “Lake Norden: Partnership Creates Optimism, Opportunity and Economic Growth,” at 2 (Mar. 15, 2021),

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<sup>6</sup> The Council on Environmental Quality’s updated regulations similarly require agencies to “consider[] . . . [t]he degree to which the action may adversely affect public health and safety.” *See* 85 *Fed. Reg.* at 35,557.

<https://perma.cc/L8AF-D9TQ>. In short, the increase in demand for livestock feed from the expansion of factory-farm herd sizes requires an increase in feed production, which may translate to the conversion of land to feedcrop production or other environmental effects, which the Commission must consider as part of its NEPA and Section 7 analyses.

In sum, the Commission must seek out information regarding the extent to which the Project would cause additional factory-farm gas production, the degree to which that additional production will induce herd size expansion, and the environmental effects of growing herd sizes.

iii. *Anaerobic Digestion Mineralizes Nitrogen in Feedstock, Resulting in Increased Ammonia Emissions*

If the Commission approves a project that will cause the upstream production of factory-farm gas, it will increase ammonia (NH<sub>3</sub> or NH<sub>4</sub>) emissions. These additional ammonia emissions are “reasonably foreseeable” effects of any project that leads to an increase in factory-farm gas production, and so must be part of the Commission’s NEPA and Section 7 analyses.

The process of anaerobic digestion “mineraliz[es]” the nitrogen in waste by breaking down complex organic molecules comprised, in part, of nitrogen atoms. Michael A. Holly et al., *Greenhouse Gas and Ammonia Emissions from Digested and Separated Dairy Manure During Storage and After Land Application*, 239 *Agric., Ecosystems & Env’t* 410, 411 (2017). Particularly when digestate is used as a fertilizer — a common method of disposal — much of this nitrogen enters the surrounding environment as ammonia. Holly et al. found that anaerobically digesting animal manure and using it as fertilizer “resulted in an 81% increase in cumulative NH<sub>3</sub> emissions compared to” raw manure. *Id.* at 413.

As one review summarizes, “because of their higher pH and NH<sub>3</sub>/NH<sub>4</sub> contents, anaerobic digestates have a higher potential than [undigested] livestock manures for emitting ammonia . . . into the atmosphere. Hence, they can adversely affect air and water quality . . . .” Roger Nkoa, *Agricultural Benefits and Environmental Risks of Soil Fertilization with Anaerobic Digestates: A Review*, 34 *Agronomy for Sustainable Dev.* 473, 485 (2014).

The additional ammonia created by factory-farm gas production “can volatilise . . . and react with compounds in the atmosphere to form ammonium aerosols and particulate matter (such as ammonium nitrate and ammonium sulphate particles), which contribute to atmospheric pollution.” Advait Palakodeti et al., *A Critical Review of Ammonia Recovery from Anaerobic Digestate of Organic Wastes Via Stripping*, 143 *Renewable & Sustainable Energy Rev.* 1, 2 (2021). Ammonia emissions can cause health impacts including “respiratory tract, skin, or eye irritations, coughing, chronic lung disease, inflammation of the membranes, and odors.” Son et al. at 2. Moreover, this ammonia “can also be oxidized in the atmosphere to form HNO<sub>3</sub>, causing acid rain” and “runoff from ammonia-rich waste streams into water bodies can cause eutrophication, causing a decrease in dissolved oxygen levels, which is harmful to aquatic organisms.” Palakodeti et al. at 2.

Insofar as approving the Project will lead to additional factory-farm gas production, these environmental impacts of increased ammonia emissions would be reasonably foreseeable effects of the Commission’s decision to greenlight the Project. Thus, the Commission must seek out information regarding the extent to which the



Project would cause additional factory-farm gas production, and the ammonia-related environmental effects of doing so.

iv. *Anaerobic Digestion Leads to Increased Nitrous Oxide Emissions*

In addition to ammonia, when digestate is exposed to the atmosphere (such as when it is used as a fertilizer), the nitrogen made available by anaerobic digestion can also react with ambient oxygen to form nitrous oxide (N<sub>2</sub>O). Holly et al. found that N<sub>2</sub>O emissions from digestate were 13.5 times higher than from undigested animal manure. Holly et al. at 414 (5.4mg N<sub>2</sub>O/kg digestate versus 0.4mg N<sub>2</sub>O/kg undigested manure). Another study found that applying digestate to fields “led to . . . 4.1 times the cumulative growing season N<sub>2</sub>O emissions of . . . cattle manure.” Ben W. Thomas & Xiying Hao, *Nitrous Oxide Emitted from Soil Receiving Anaerobically Digested Solid Cattle Manure*, 46 J. Env’t Qual. 741, 745 (2017). When used as fertilizer, digestate also induces greater N<sub>2</sub>O emissions than would using urea, a common inorganic nitrogen fertilizer. See Haoruo Li et al., *Digestate Induces Significantly Higher N<sub>2</sub>O Emission Compared to Urea Under Different Soil Properties and Moisture*, 241 Env’t Rsch. 1, 9 (2024); see also Maria Dietrich et al., *Anaerobic Digestion Affecting Nitrous Oxide and Methane Emissions from the Composting Process*, 15 Biores. Tech. Reps. 1, 3 (2021) (finding that when composted, digestate produces almost seven times as much N<sub>2</sub>O as undigested organic waste). Though factors like soil conditions can affect how much additional N<sub>2</sub>O is produced from digestate, research consistently finds that by making nitrogen available to react with ambient atmospheric gases, digestion results in more N<sub>2</sub>O emissions than would leaving the same feedstocks undigested.

The increased N<sub>2</sub>O emissions associated with factory-farm gas production matter because N<sub>2</sub>O is a climate super-polluter. The EPA estimates that N<sub>2</sub>O has a 100-year global warming potential 273 times greater than that of CO<sub>2</sub>. *See* Env't Prot. Agency, *Understanding Global Warming Potentials*. Thus, even a small increase in N<sub>2</sub>O emissions resulting from anaerobic digestion can offset a significant portion of any methane reductions achieved by employing a digester. (And those methane reductions are often themselves overstated, as discussed *supra*.)

Even if increased N<sub>2</sub>O emissions do not completely overwhelm methane reductions, the Commission still has an obligation to determine and weigh the relative climate effects of methane and N<sub>2</sub>O emissions from anaerobic digestion. *See Sabal Trail*, 867 F.3d at 1374–75 (“Nor is FERC excused from making emissions estimates just because the emissions in question might be partially offset by reductions elsewhere. . . . In other words, when an agency thinks the good consequences of a project will outweigh the bad, the agency still needs to discuss both the good and the bad.”); 40 C.F.R. 1508.1(g)(4) (“Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effects will be beneficial.”). Thus, the Commission has an obligation to determine whether the Project would cause increased factory-farm gas production, the extent to which that factory-farm gas production would result in increased N<sub>2</sub>O emissions, and the effects of any increased emissions of this climate super-polluter.

v. *Anaerobic Digestion Concentrates Heavy Metals to Potentially Hazardous Levels*

The process of anaerobic digestion concentrates heavy metals in the digested waste. *See* Christine Knoop et al., *Nutrient and Heavy Metal Accumulation in Municipal*

*Organic Waste from Separate Collection During Anaerobic Digestion in a Two-Stage Laboratory Biogas Plant*, 239 *Biores. Tech.* 437, 437, 445 (2017) (finding that anaerobic digestion concentrated heavy metals in feedstock by factor of 1.6, and that for one experiment, the resulting levels of heavy metals meant the digestate would “not be suitable as soil amendment”). One study found that soil irrigated with agricultural digestate contained unsafe levels of various heavy metals. *See* Bo Bian et al., *Contamination and Risk Assessment of Heavy Metals in Soils Irrigated with Biogas Slurry: A Case Study of Taihu Basin*, 187 *Env’t Monitoring Assessment* 155, at 13 (2015) (“Significant accumulation of toxic heavy metals in different kinds of soils samples is due to the biogas slurry [*i.e.*, digestate] irrigation in the Taihu basin.”). Crop uptake of these heavy metals can lead to dangerous levels of heavy metals in food. *See* Yajun Chang et al., *Resource Utilization of Biogas Waste as Fertilizer in China Needs More Inspections Due to the Risk of Heavy Metals*, 12 *Agric.* 72, at 11 (2022) (finding that lead concentration in digestate slurry from a dairy was 29 times higher than the maximum permissible level, and that “the return of such slurry to the field would cause environmental pollution and Pb enrichment in crops, and eventually lead to human lead poisoning”); Qingyu Liu et al., *Comprehensive Risk Assessment of Applying Biogas Slurry in Peanut Cultivation*, 8 *Frontiers in Nutrition*, at 4–5, 10 (2021) (finding that arsenic and mercury concentrations in soil treated with digestate were 11.12 and 26.67 times higher than in untreated soil, respectively, and that peanuts grown in soil treated with digestate contained unsafe levels of mercury).

The concentrations of heavy metals in digestate depend on various factors, including the concentration of those metals in the untreated feedstock and the degree to

which the feedstock or digestate is treated to remove these metals. The Commission cannot adequately discharge its NEPA obligations unless it obtains additional information about the degree to which any factory-farm gas production caused by the Project will lead to the production and use of digestate containing potentially unsafe levels of heavy metals, and what systems will be in place to monitor and prevent adverse environmental effects from these concentrated heavy metals.

*D. The Commission Must Develop the Record Regarding the Involvement of Factory-Farm Gas in the Project*

When the administrative record lacks sufficient information to allow the Commission to evaluate a project's environmental effects, NEPA requires the Commission to attempt to acquire such information. *See Birckhead*, 925 F.3d at 520; *Food & Water Watch*, 28 F.4th at 286. Here, as discussed *supra*, the record suggests that the Project may lead to the upstream production of additional factory-farm gas. Thus, the Commission requires more information to determine if in fact the Project would lead to the production of factory-farm gas; and if it would, to evaluate the environmental effects of this increased upstream production.

Specifically, the Commission must seek answers to the following questions from Northern Natural Gas, Agropur, and any other relevant stakeholders identified in the Commission's review of Northern Natural Gas's prior notice request:

- Does Agropur, or any other entity identified in the Commission's review of Northern Natural Gas's prior notice request, require the additional capacity this Project would provide to ship factory-farm gas?
- To what extent do Agropur's, or any other entity's, plans to produce, acquire, ship, and/or sell factory-farm gas depend upon the completion of the Project?

- If Agropur intends to use the additional capacity this Project would provide to ship factory-farm gas produced at or near its Lake Norden facility, what digester feedstocks would be used to produce that gas? For example, would Agropur use only wastewater to produce that gas, or would it co-digest other feedstocks such as livestock manure from nearby CAFOs?
- How would Agropur's methods of treating and disposing of its wastewater change were the Project to be constructed?
- If Agropur, or any other entity identified in Northern Natural Gas's prior notice request, intends to use livestock manure as a feedstock for anaerobic digesters to produce gas to be shipped using the additional capacity provided by the Project, what manure-management methods are used for that manure now, and what manure-management methods would be used were the Project to be constructed?
- Regardless of digester feedstock, what herd sizes do Agropur's suppliers project over the next ten years, both with and without the Project? How much revenue per animal do those suppliers project over the next ten years, both with and without the Project?
- How will Agropur dispose of any digestate associated with the production of any factory-farm gas to be shipped using the additional capacity provided by the Project?
- What systems are in place to detect and mitigate ammonia and nitrous oxide emissions from the digestate created by the production of factory-farm gas that would be shipped using the additional capacity provided by the Project?

- What systems are in place to detect and mitigate unsafe levels of heavy metals in the digestate created by the production of factory-farm gas that would be shipped using the additional capacity provided by the Project? If that digestate is to be used as fertilizer, what systems are in place to detect and mitigate unsafe levels of heavy metals in the soil and in plants grown in that soil?
- What measures will be in place to ensure that the production of factory-farm gas to be shipped using the additional capacity provided by the Project will not result in the pollution of nearby watersheds?

This list of questions is a starting point, and is not intended to be exclusive. If the Commission's development of the record confirms that Agropur requires the additional capacity provided by the Project to ship factory-farm gas, DRA may amend its grounds for opposing the Project and supplement these questions as appropriate.

### **III. Conclusion**

For the foregoing reasons, DRA respectfully requests that the Commission grant its motion to intervene, and further requests that the Commission deny Northern Natural Gas's request for authorization under its blanket certificate and instead require a separate application and conduct a robust investigation and evaluation of the environmental effects of the Project.

Respectfully submitted this 10th day of May, 2024.

/s/ Nathan Leys

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### **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 in this proceeding.

Dated at this 10th day of May, 2024.

/s/ Nathan Leys

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