United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued January 25, 2021 Decided August 13, 2021

No. 20-1025

ENVIRONMENTAL HEALTH TRUST, ET AL.,
PETITIONERS

v.

FEDERAL COMMUNICATIONS COMMISSION AND UNITED STATES OF AMERICA,
RESPONDENTS

Consolidated with 20-1138

On Petitions for Review of an Order
of the Federal Communications Commission

W. Scott McCollough argued the cause for petitioners. With him on the joint briefs were *Edward B. Myers* and *Robert F. Kennedy, Jr.*

Sharon Buccino was on the brief for *amici curiae* Natural Resources Defense Council and Local Elected Officials in support of petitioners.

Dan Kleiber and *Catherine Kleiber*, pro se, were on the brief for *amici curiae* Dan and Catherine Kleiber in support of peititioners.

James S. Turner was on the brief for *amicus curiae* Building Biology Institute in support of petitioners.

Stephen L. Goodman was on the brief for *amicus curiae* Joseph Sandri in support of petitioners.

Ashley S. Boizelle, Deputy General Counsel, Federal Communications Commission, argued the cause for respondents. With her on the brief were *Jonathan D. Brightbill*, Principal Deputy Assistant Attorney General at the time the brief was filed, U.S. Department of Justice, *Eric Grant*, Deputy Assistant Attorney General at the time the brief was filed, *Jeffrey Beelaert* and *Justin Heminger*, Attorneys, *Thomas M. Johnson, Jr.*, General Counsel at the time the brief was filed, Federal Communications Commission, *Jacob M. Lewis*, Associate General Counsel, and *William J. Scher* and *Rachel Proctor May*, Counsel. *Richard K. Welch*, Deputy Associate General Counsel, entered an appearance.

Before: HENDERSON, MILLETT and WILKINS, *Circuit Judges*.

Opinion for the Court filed by *Circuit Judge* WILKINS.

Opinion dissenting in part filed by *Circuit Judge* HENDERSON.

WILKINS, *Circuit Judge*: Environmental Health Trust and several other groups and individuals petition for review of an order of the Federal Communications Commission ("the Commission") terminating a notice of inquiry regarding the

adequacy of the Commission's guidelines for exposure to radiofrequency radiation. The notice of inquiry requested comment on whether the Commission should initiate a rulemaking to modify its guidelines. The Commission concluded that no rulemaking was necessary. Petitioners argue that the Commission violated the requirements of the Administrative Procedure Act by failing to respond to significant comments. Petitioners also argue that the National Environmental Policy Act required the Commission to issue an environmental assessment or environmental impact statement regarding its decision to terminate its notice of inquiry.

We grant the petitions in part and remand to the Commission. The Commission failed to provide a reasoned explanation for its determination that its guidelines adequately protect against the harmful effects of exposure to radiofrequency radiation unrelated to cancer.

I.

The Federal Communications Commission regulates various facilities and devices that transmit radio waves and microwaves, including cell phones and facilities for radio, TV, and cell phone communications. 47 U.S.C. §§ 301, 302a(a); *see EMR Network v. FCC*, 391 F.3d 269, 271 (D.C. Cir. 2004). Radio waves and microwaves are forms of electromagnetic energy that are collectively described by the term "radiofrequency" ("RF"). Office of Eng'g & Tech., Fed. Commc'ns Comm'n, *OET Bulletin No. 56*, *Questions and Answers about Biological Effects and Potential Hazards of Radiofrequency Electromagnetic Fields* 1 (4th ed. Aug. 1999). The phenomenon of radio waves and microwaves moving through space is described as "RF radiation." *Id.*

We often associate the term "radiation" with the term "radioactivity." "Radioactivity," however, refers only to the

emission of radiation with enough energy to strip electrons from atoms. *Id.* at 5. That kind of radiation is called "ionizing radiation." *Id.* It can produce molecular changes and damage biological tissue and DNA. *Id.* Fortunately, RF radiation is "non-ionizing," meaning that it is not sufficiently energetic to strip electrons from atoms. *Id.* It can, however, heat certain kinds of materials, like food in your microwave oven or, at sufficiently high levels, human body tissue. *Id.* at 6–7. Biological effects that result from the heating of body tissue by RF energy are referred to as "thermal" effects, and are known to be harmful. *Id.* Exposure to lower levels of RF radiation might also cause other, "non-thermal" biological effects. *Id.* at 8. Whether it does, and whether such effects are harmful, are subjects of debate. *Id.*

The National Environmental Policy Act ("NEPA") and its implementing regulations require federal agencies to "establish procedures to account for the environmental effects of [their] proposed actions." *Am. Bird Conservancy, Inc. v. FCC*, 516 F.3d 1027, 1032 (D.C. Cir. 2008) (per curiam). If an agency proposes a "major Federal action[]" that stands to "significantly affect[] the quality of the human environment," the agency must prepare an environmental impact statement ("EIS") that examines the adverse environmental effects of the proposed action and potential alternatives. 42 U.S.C. § 4332(C). Not every agency action, however, requires the preparation of a full EIS. *Theodore Roosevelt Conservation P'ship v. Salazar*, 616 F.3d 497, 503 (D.C. Cir. 2010). If it is unclear whether a proposed action will "significantly affect[] the quality of the human environment," 42 U.S.C. § 4332(C), the responsible agency may prepare a more limited environmental assessment ("EA"). *See* 40 C.F.R. § 1501.5(a). An EA serves to "[b]riefly provide sufficient evidence and analysis for determining whether to prepare an [EIS] or a finding of no significant impact." 40 C.F.R. § 1501.5(c)(1).

Additionally, an agency may use "categorical exclusions" to "define categories of actions that normally do not have a significant effect on the human environment and therefore do not require preparation of an environmental impact statement." 40 C.F.R. § 1500.4(a); *see also* 40 C.F.R. § 1501.4(a).

To fulfill its obligations under NEPA, the Commission has promulgated guidelines for human exposure to RF radiation. *Cellular Phone Taskforce v. FCC*, 205 F.3d 82, 87 (2d Cir. 2000). The guidelines set limits for RF exposure. Before the Commission authorizes the construction or use of any wireless facility or device, the applicant for authorization must determine whether the facility or device is likely to expose people to RF radiation in excess of the limits set by the guidelines. 47 C.F.R. § 1.1307(b). If the answer is yes, the applicant must prepare an EA regarding the likely effects of the Commission's authorization of the facility or device. *Id.* Depending on the contents of the EA, the Commission may require the preparation of an EIS, and may subject approval of the application to a full vote by the Commission. Office of Eng'g & Tech., Fed. Commc'ns Comm'n, *OET Bulletin No. 65*, *Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields* 6 (ed. 97-01, Aug. 1997). If the answer is no, the applicant is generally not required to prepare an EA. 47 C.F.R. § 1.1306(a).

The Commission last updated its limits for RF exposure in 1996. *Resolution of Notice of Inquiry, Second Report and Order, Notice of Proposed Rulemaking, and Memorandum Opinion and Order*, 34 FCC Rcd. 11,687, 11,689–90 (2019) ("2019 Order"); *see also* Telecommunications Act of 1996, Pub. L. No. 104-104, § 704(b), 110 Stat. 56, 152 (directing the Commission to "prescribe and make effective rules regarding the environmental effects of radio frequency emissions" within 180 days). The limits are based on standards for RF exposure

issued by the American National Standards Institute Committee ("ANSI"), the Institute of Electrical and Electronic Engineers, Inc. ("IEEE"), and the National Council on Radiation Protection and Measurements ("NCRP"). *In re Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, 11 FCC Rcd. 15,123, 15,134–35, 15,146–47 (1996). The limits are designed to protect against "thermal effects" of exposure to RF radiation, but not "non-thermal" effects. *EMR Network*, 391 F.3d at 271.

In March 2013, the Commission issued a notice of inquiry regarding the adequacy of its 1996 guidelines. *See Reassessment of Radiofrequency Exposure Limits & Policies, Notice of Inquiry*, 28 FCC Rcd. 3,498 (2013) ("2013 Notice of Inquiry"). The Commission divided its notice of inquiry into five sections. In the first section, it sought comment on the propriety of its exposure limits for RF radiation, particularly as they relate to device use by children. *Id.* at 3,575–80. In the second section, the Commission sought comment on how to better provide information to consumers and the public about exposure to RF radiation and methods for reducing exposure. *Id.* at 3,580–82. In the third section, the Commission sought comment on whether it should impose additional precautionary restrictions on devices and facilities that are unlikely to expose people to RF radiation in excess of the limits set by the Commission's guidelines. *Id.* at 3,582–85. In the fourth and fifth sections, the Commission sought comment on whether it should change its methods for determining whether devices and facilities comply with the Commission's guidelines. *Id.* at 3,585–89.

The Commission explained that it was issuing the notice of inquiry in response to changes in the ubiquity of wireless devices and in scientific standards and research since 1996. *Id.* at 3,570. Specifically, the Commission noted that the IEEE had

"published a major revision to its RF exposure standard in 2006." *Id.* at 3,572. The Commission also noted that the International Commission on Non-Ionizing Radiation Protection had published RF exposure guidelines in 1998 that differed somewhat from the Commission's 1996 guidelines, and was likely to release a revision of those guidelines "in the near future." *Id.* at 3,573. And the Commission noted that the International Agency for Research on Cancer ("IARC") had classified RF radiation as possibly carcinogenic to humans, and was likely to release a detailed monograph regarding that classification prior to the resolution of the notice of inquiry. *Id.* at 3,575 & n.385. The Commission invited public comment on all of these developments, but underscored that it would "work closely with and rely heavily—but not exclusively—on the guidance of other federal agencies with expertise in the health field." *Id.* at 3,571.

In December 2019, the Commission issued a final order resolving its 2013 notice of inquiry by declining to undertake any of the changes contemplated in the notice of inquiry. *See 2019 Order*, 34 FCC Rcd. at 11,692–97.

In January 2020, Petitioners Environmental Health Trust, Consumers for Safe Cell Phones, Elizabeth Barris, and Theodora Scarato timely petitioned this Court for review of the Commission's 2019 final order. In February 2020, Petitioners Children's Health Defense, Michele Hertz, Petra Brokken, Dr. David O. Carpenter, Dr. Paul Dart, Dr. Toril H. Jelter, Dr. Ann Lee, Virginia Farver, Jennifer Baran, and Paul Stanley, M.Ed., timely petitioned the Ninth Circuit for review of the same order, and the Ninth Circuit transferred their petition to this Court pursuant to 28 U.S.C. § 2112. This Court consolidated the petitions. We have jurisdiction under 47 U.S.C. § 402(a) and 28 U.S.C. § 2342(1).

II.

Petitioners challenge the 2019 final order under NEPA and the Administrative Procedure Act ("APA"). We begin with the APA.

A.

Petitioners argue that the order is arbitrary and capricious and therefore must be set aside under 5 U.S.C. § 706(2)(A) for the following reasons: (1) the order fails to acknowledge evidence of negative health effects caused by exposure to RF radiation at levels below the limits set by the Commission's 1996 guidelines, including evidence of cancer, radiation sickness, and adverse effects on sleep, memory, learning, perception, motor abilities, prenatal and reproductive health, and children's health; (2) the order fails to respond to comments concerning environmental harm caused by RF radiation; (3) the order fails to discuss the implications of long-term exposure to RF radiation, exposure to RF pulsation or modulation (two methods of imbuing radio waves with information), and the implications of technological developments that have occurred since 1996, including the ubiquity of wireless devices and Wi-Fi, and the emergence of "5G" technology; (4) the order fails to adequately explain the Commission's refusal to modify its procedures for determining whether cell phones comply with its RF limits; and (5) the order fails to respond to various "additional legal considerations," Pet'rs' Br. at 84.

Before discussing these arguments, and the Commission's responses to them, we clarify our standard of review. The arbitrary and capricious standard of the Administrative Procedure Act "encompasses a range of levels of deference to the agency." *Am. Horse Prot. Ass'n v. Lyng*, 812 F.2d 1, 4 (D.C. Cir. 1987). We completely agree with the dissenting

opinion that the Commission's order is entitled to a high degree of deference, both because it is akin to a refusal to initiate a rulemaking, *see id.* at 4–5, and because it concerns highly technical determinations of the kind courts are ill-equipped to second-guess, *see Am. Radio Relay League, Inc., v. FCC*, 524 F.3d 227, 233 (D.C. Cir. 2008). So as to the governing law, the dissenting opinion and we are on the same page. Nevertheless, the Commission's decision to terminate its notice of inquiry must be "reasoned" if it is to survive arbitrary and capricious review. *See Am. Horse*, 812 F.2d at 5; *Am. Radio*, 524 F.3d at 241. As with other agency decisions not to engage in rulemaking, we will overturn the Commission's decision if there is "compelling cause, such as plain error of law or a fundamental change in the factual premises previously considered by the agency[.]" *Flyers Rights Educ. Fund, Inc. v. Fed. Aviation Admin.*, 864 F.3d 738, 743 (D.C. Cir. 2017) (quoting *WildEarth Guardians v. EPA*, 751 F.3d 649, 653 (D.C. Cir. 2014)). When an agency in the Commission's position is confronted with evidence that its current regulations are inadequate or the factual premises underlying its prior judgment have eroded, it must offer more to justify its decision to retain its regulations than mere conclusory statements. *See Am. Horse*, 812 F.2d at 6; *Am. Radio*, 524 F.3d at 241. Rather, the agency must provide "assurance that [it] considered the relevant factors," and it must provide analysis that follows "a discernable path to which the court may defer." *Am. Radio*, 524 F.3d at 241.

i.

Under this highly deferential standard of review, we find the Commission's order arbitrary and capricious in its failure to respond to record evidence that exposure to RF radiation at levels below the Commission's current limits may cause negative health effects unrelated to cancer. (As we explain

below, we find that the Commission offered an adequate explanation for its determination that exposure to RF radiation at levels below the Commission's current limits does not cause cancer.) That failure undermines the Commission's conclusions regarding the adequacy of its testing procedures, particularly as they relate to children, and its conclusions regarding the implications of long-term exposure to RF radiation, exposure to RF pulsation or modulation, and the implications of technological developments that have occurred since 1996, all of which depend on the premise that exposure to RF radiation at levels below its current limits causes no negative health effects. Accordingly, we find those conclusions arbitrary and capricious as well. Finally, we find the Commission's order arbitrary and capricious in its complete failure to respond to comments concerning environmental harm caused by RF radiation.

Petitioners point to multiple studies and reports, which were published after 1996 and are in the administrative record, purporting to show that RF radiation at levels below the Commission's current limits causes negative health effects unrelated to cancer, such as reproductive problems and neurological problems that span from effects on memory to motor abilities. *See, e.g.*, J.A. 3,068 (BIOINITIATIVE WORKING GROUP, BIOINITIATIVE REPORT (Cindy Sage & David O. Carpenter eds., 2012) (describing evidence that human sperm and their DNA are damaged by low levels of RF radiation)); J.A. 5,243 (Igor Yakymenko et al., *Oxidative Mechanisms of Biological Activity of Low-Intensity Radiofrequency Radiation*, ELECTROMAGNETIC BIOLOGY & MED., EARLY ONLINE, 1–16 (2015)); J.A. 5,259–69 (Henrietta Nittby et al., *Increased Blood-Brain Barrier Permeability in Mammalian Brian 7 Days After Exposure to the Radiation from a GSM-900 Mobile Phone*, 16 PATHOPHYSIOLOGY 103 (2009)); J.A. 5,320–68 (Henry Lai, *A Summary of Recent Literature on*

Neurobiological Effects of Radiofrequency Radiation, *in* MOBILE COMMUNICATIONS AND PUBLIC HEALTH 187–222 (M. Markov ed., 2018)); J.A. 5,994–6,007 (Milena Foerster et al., *A Prospective Cohort Study of Adolescents' Memory Performance and Individual Brain Dose of Microwave Radiation from Wireless Communication*, 126 ENV'T HEALTH PERSPS. 077007 (July 2018)). Petitioners also point to approximately 200 comments submitted by individuals who advised the Commission that either they or their family members suffer from radiation sickness, "a constellation of mainly neurological symptoms that manifest as a result of RF[] exposure." Pet'rs' Br. at 30–31, 30 n.99.

The Commission argues that its order adequately responded to this evidence by citing the Food and Drug Administration ("FDA")'s determination that exposure to RF radiation at levels below the Commission's current limits does not cause negative health effects. The order cites three statements from the FDA. First, the order cites an FDA webpage titled "Do cell phones pose a health hazard?" that, as of December 4, 2017, stated that "[t]he weight of scientific evidence has not linked cell phones with any health problems." *2019 Order*, 34 FCC Rcd. at 11,692–93, 11,693 n.31. Second, the order cites a February 2018 statement from the Director of the FDA's Center for Devices and Radiological Health advising the public that

> As part of our commitment to protecting the public health, the FDA has reviewed, and will continue to review, many sources of scientific and medical evidence related to the possibility of adverse health effects from radiofrequency energy exposure in both humans and animals and will continue to do so as new scientific data are published. Based on our ongoing evaluation

> of the issue, the totality of the available scientific evidence continues to not support adverse health effects in humans caused by exposures at or under the current radiofrequency energy exposure limits.

Id. at 11,695 n.42. Third, the order cites an April 2019 letter from the Director of the FDA's Center for Devices and Radiological Health that does not discuss non-cancer-related health effects but instead addresses a 2018 study by the National Toxicology Program that found that exposure to RF radiation emitted by cell phones may cause cancer in rodents. *2019 Order*, 34 FCC Rcd. at 11,692 & n.28. The letter explains that "[a]s a part of our ongoing monitoring activities, we have reviewed the results and conclusions of the recently published rodent study from the National Toxicology Program in the context of all available scientific information, including epidemiological studies, and concluded that no changes to the current standards are warranted at this time." Letter from Jeffrey Shuren, M.D., J.D., Dir., Ctr. for Devices & Radiological Health, Food & Drug Admin., Dep't of Health & Hum. Servs., to Julius Knapp, Chief, Off. Of Eng'g & Tech., FCC (April 24, 2019).

We do not agree that these statements provide a reasoned explanation for the Commission's decision to terminate its notice of inquiry. Rather, we find them to be of the conclusory variety that we have previously rejected as insufficient to sustain an agency's refusal to initiate a rulemaking. In *American Horse*, this Court considered whether the Secretary of Agriculture had offered a satisfactory explanation under the APA of his refusal to institute rulemaking proceedings regarding the practice of deliberately injuring show horses by fastening heavy chains or similar equipment—referred to as "action devices"—to the horses' front limbs. 812 F.2d at 2. In

response to the argument that a certain study presented facts that merited a new rulemaking, the Secretary offered the following two-sentence explanation:

> 6. I have reviewed studies and other materials, relating to action devices, presented by humane groups, Walking Horse industry groups, and independent institutions, including the study referred to in the Complaint.
>
> 7. On the basis of this information, I believe that the most effective method of enforcing the Act is to continue the current regulations.

Id. at 5. This Court found these "two conclusory sentences . . . insufficient to assure a reviewing court that the agency's refusal to act was the product of reasoned decisionmaking." *Id.* at 6. *American Horse* explained that the study at issue "may or may not remove a 'significant factual predicate' of the original rules' gaps[,]" and remanded to the Secretary to make that determination. *Id.* at 7.

Similarly, in *American Radio*, this Court considered whether the Commission had offered a satisfactory explanation for its decision to retain in its regulations a particular "extrapolation factor"—an estimate of the projected rate at which radio frequency strength decreases from a radiation-emitting source—despite studies submitted in a petition for reconsideration indicating that a different extrapolation factor would be more appropriate. 524 F.3d at 240–41. The Commission explained its decision by asserting that "[n]o new information has been submitted that would provide a convincing argument for modifying the extrapolation factor . . . at this time." *Id.* (internal alterations omitted). We rejected that explanation as conclusory and unreasoned. *Id.*

The statements from the FDA on which the Commission's order relies are practically identical to the Secretary's statement in *American Horse* and the Commission's statement in *American Radio*. They explain that the FDA has reviewed certain information—here, "all," "the weight," or "the totality" of "scientific evidence." And they state the FDA's conclusion that, in light of that information, exposure to RF radiation at levels below the Commission's current limits does not cause harmful health effects. But they offer "no articulation of the factual . . . bases" for the FDA's conclusion. *Am. Horse*, 812 F.2d at 6 (internal quotation marks omitted). In other words, they do not explain why the FDA determined, despite the studies and comments that Petitioners cite, that exposure to RF radiation at levels below the Commission's current limits does not cause harmful health effects. Such conclusory statements "cannot substitute for a reasoned explanation," for they provide "neither assurance that the [FDA] considered the relevant factors nor [do they reveal] a discernable path to which the court may defer." *Am. Radio*, 524 F.3d at 241. They instead represent a failure by the FDA to address the implication of Petitioners' studies: The factual premise—the non-existence of non-thermal biological effects—underlying the current RF guidelines may no longer be accurate.

When repeated by the Commission, the FDA's conclusory statements still do not substitute for the reasoned explanation that the APA requires. It is the Commission's responsibility to regulate radio communications, 47 U.S.C. § 301, and devices that emit RF radiation and interfere with radio communications, *id.* § 302a(a), and to do so in the public interest, including in regard to public health, *Banzhaf v. FCC*, 405 F.2d 1082, 1096 (D.C. Cir. 1968). Even the Commission itself recognizes this. *See 2019 Order*, 34 FCC Rcd. at 11,689 ("The Commission has the responsibility to set standards for RF emissions"); *2013 Notice of Inquiry*, 28 FCC Rcd. at 3,571

(explaining that the Commission opened the notice of inquiry "to ensure [it] [was] meeting [its] regulatory responsibilities" and that it would "work closely with and rely heavily—*but not exclusively*—on the guidance of other federal agencies with expertise in the health field" in order to "fully discharge[] [its] regulatory responsibility") (emphasis added). And the APA requires that Commission's decisions concerning the regulation of radio communications and devices be reasoned. The Commission's purported reasoning in this case is that it chose to rely on the FDA's evaluation of the studies in the record. Absent explanation from the FDA as to how and why it reached its conclusions regarding those studies, however, we have no basis on which to review the reasonableness of the Commission's decision to adopt the FDA's conclusions. Ultimately, the Commission's order remains bereft of any explanation as to *why*, in light of the studies in the record, its guidelines remain adequate. The Commission may turn to the FDA to provide such an explanation, but if the FDA fails to do so, as it did in this case, the Commission must turn elsewhere or provide its own explanation. Were the APA to require less, our very deferential review would become nothing more than a rubber stamp.

The Commission also argues that its order provided a reasoned explanation for its decision to terminate the notice of inquiry, despite Petitioners' evidence, by observing that "no expert health agency expressed concern about the Commission's RF exposure limits," and that "no evidence has moved our sister health and safety agencies to issue substantive policy recommendations for strengthening RF exposure regulation." *2019 Order*, 34 FCC Rcd. at 11,692. The silence of other expert agencies, however, does not constitute a reasoned explanation for the Commission's decision to terminate its notice of inquiry for the same reason that the FDA's conclusory statements do not constitute a reasoned

explanation: silence does not indicate why the expert agencies determined, in light of evidence suggesting to the contrary, that exposure to RF radiation at levels below the Commission's current limits does not cause negative health effects unrelated to cancer. Silence does not even indicate whether the expert agencies made any such determination, or whether they considered any of the evidence in the record.

Our decision in *EMR Network* is not to the contrary. There, we rejected the argument that the Commission improperly delegated its NEPA duties by relying on input from other government agencies and non-governmental expert organizations in deciding whether to initiate a rulemaking to modify its RF radiation guidelines. 391 F.3d at 273. We found the Commission "not to have abdicated its responsibilities, but rather to have properly credited outside experts," and noted that "the FCC's decision not to leap in, at a time when the EPA (and other agencies) saw no compelling case for action, appears to represent the sort of priority-setting in the use of agency resources that is least subject to second-guessing by courts." *Id.* (citing *Am. Horse*, 812 F.2d at 4). We agree with the dissenting opinion that the Commission may credit outside experts in deciding whether to initiate a rulemaking to modify its RF radiation guidelines. To be sure, "[a]gencies can be expected to respect the views of such other agencies as to those problems for which those other agencies are more directly responsible and more competent." *City of Boston Delegation v. FERC*, 897 F.3d 241, 255 (D.C. Cir. 2018) (internal alteration and quotation marks omitted). What the Commission may not do, however, is rely on an outside expert's silence or conclusory statements in lieu of some reasoned explanation for its decision. And while it is certainly true that an agency's decision not to initiate a rulemaking at a time when other agencies see no compelling case for action may represent "the sort of priority-setting in the use of agency

resources that is least subject to second-guessing by courts," *EMR Network*, 391 F.3d at 273, the same is true of most agency decisions not to initiate a rulemaking, *see Am. Horse*, 812 F.2d at 4–5. Nevertheless, an agency's decision not to initiate a rulemaking must have some reasoned basis, and an agency cannot simply ignore evidence suggesting that a major factual predicate of its position may no longer be accurate. *Id.* at 5.

Nor does *Cellular Phone Taskforce* help the Commission. There, the Second Circuit rejected the argument that the Commission was required to consult with the Environmental Protection Agency ("EPA") or other outside agencies before declining to modify its RF radiation guidelines in the face of new evidence regarding non-thermal effects caused by RF radiation. 205 F.3d at 90–91. In so holding, the Second Circuit found that "[i]t was fully reasonable for the FCC to expect the agency with primacy in evaluating environmental impacts to monitor all relevant scientific input into the FCC's reconsideration, particularly because the EPA had been assigned the lead role in RF radiation health effects since 1970," and that the Commission was not required to "supply the new evidence to the other federal agencies with expertise in the area." *Id.* at 91. But the Second Circuit did not hold that the Commission could rely solely on the silence or unexplained conclusions of other federal agencies to justify its own inaction. It merely held that the Commission was not required to consult with outside agencies before declining to modify its RF radiation guidelines. No party before us today questions the propriety of that holding.

Finally, the Commission argues that the Commission itself addressed the major studies in the record in its order terminating the notice of inquiry. Specifically, the Commission points to its statement that "[t]he vast majority of filings were unscientific." *2019 Order*, 34 FCC Rcd. at 11,694.

Elsewhere, however, the order acknowledges that "the record include[d] some research information" and "filings that sought to present scientific evidence." *Id.* The order dismisses that research and evidence as "fail[ing] to make a persuasive case for revisiting our existing RF limits," *id.*, but again, such a conclusory statement cannot substitute for the minimal reasoning required at this stage, *Am. Radio*, 524 F.3d at 241. And while "[a]n agency is not obliged to respond to every comment, only those that can be thought to challenge a fundamental premise," *MCI WorldCom, Inc. v. FCC*, 209 F.3d 760, 765 (D.C. Cir. 2000), the studies in the record to which Petitioners point *do* challenge a fundamental premise of the Commission's decision to terminate its notice of inquiry—namely, the premise that exposure to RF radiation at levels below the Commission's current limits does not cause negative health effects. But the Commission said nothing at all in its order about any specific health effects unrelated to cancer.

The Commission also points to its statement that "the record [does not] include actionable alternatives or modifications to the current RF limits supported by scientifically rigorous data or analysis." *2019 Order*, 34 FCC Rcd. at 11,692; *see also id.* at 11,694. Had the notice of inquiry focused exclusively on whether the Commission should modify its RF exposure limits, we might agree that the failure of any commenter to propose actionable modifications to the RF limits would have justified the Commission's decision to terminate the notice of inquiry. But the notice of inquiry did not focus exclusively on whether the Commission should modify its RF exposure limits. Instead, it also sought comment on how to better provide information to consumers and the public about exposure to RF radiation and methods for reducing exposure, and whether the Commission should impose additional precautionary restrictions on devices and facilities that are unlikely to expose people to RF radiation in

excess of the Commission's limits. The Commission needed no actionable alternative to its current limits in order to provide additional information to the public or to impose precautionary restrictions in addition to its current limits. The failure of any commenter to propose actionable modifications to the Commission's RF exposure limits therefore does not justify the Commission's decision to terminate the notice of inquiry.

ii.

The Commission's failure to provide a reasoned explanation for its determination that exposure to RF radiation at levels below its current limits does not cause negative health effects unrelated to cancer renders the order arbitrary and capricious in three additional respects. First, it undermines the Commission's explanation for retaining its procedures for determining whether cell phones and other portable electronic devices comply with its RF limits. These procedures consist of testing the device against the head of a specialized mannequin, *2013 Notice of Inquiry*, 28 FCC Rcd. at 3,586 n.434, and no more than 2.5 centimeters away from the body of the mannequin, *id.* at 3,588 n.447. Petitioners claim that the testing is inaccurate because of the space between the device and the mannequin's body. On this point, the Commission's order cites the "large safety margin" incorporated in its existing RF exposure limits as a justification for its refusal to modify these procedures to include testing against the body. *2019 Order*, 34 FCC Rcd. at 11,696. Because the Commission's existing RF limits are overprotective, the order explains, the Commission need not worry about whether its testing procedures accurately detect devices that are likely to expose people to RF emissions in excess of the Commission's limits. *See id.* ("[E]ven if certified or otherwise authorized devices produce RF exposure levels in excess of Commission limits under normal use, such exposure would still be well below levels considered to be

dangerous, and therefore phones legally sold in the United States pose no health risks."). As the Commission itself recognizes, this explanation depends on the premise that RF radiation does not cause harmful effects at levels below its current limits. *See id.* at 11,696 n.49 ("We note that any claim as to the adequacy of the FCC required testing, certification, and authorization regime is no different than a challenge to the adequacy of the federal RF exposure limits themselves. Both types of claims would undermine the FCC's substantive policy determinations."). The Commission's failure to provide a reasoned explanation for its determination that exposure to RF radiation at levels below its current limits does not cause negative health effects therefore renders inadequate the Commission's explanation for its refusal to modify its testing procedures.

Second, the Commission equally failed to provide a reasoned explanation for brushing off record evidence addressing non-cancer-related health effects arising from the impact of RF radiation on children. Many commenters, including the American Academy of Pediatrics, urged the Commission to adopt limits that account for the use of RF-emitting devices by vulnerable children and pregnant women. *See, e.g.*, J.A. 4,533–34. In dismissing those concerns, the Commission again relied on a conclusory statement from the FDA that "[t]he scientific evidence does not show a danger to any users of cell phones from RF exposure, including children and teenagers." *2019 Order*, 34 FCC Rcd. at 11,696. But, as we have already explained, such a conclusory and unexplained statement is not the "reasoned" explanation required by the APA. In addition, the Commission noted that the testing to determine compliance with its limits "represents a conservative case" for both adults and children. *Id.* at 11,696 n.50. Whether the testing of compliance with existing limits was conservative is not the point. The unanswered question remains whether low

levels of RF radiation allowed by those existing limits cause negative health effects. So once again, the Commission's failure to provide a reasoned or even relevant explanation of its position that RF radiation below the current limits does not cause health problems unrelated to cancer renders its explanation as to the effect of RF radiation on children arbitrary and capricious.

Third, the Commission's failure to provide a reasoned explanation for its determination that exposure to RF radiation at levels below its current limits does not cause negative health effects unrelated to cancer renders inadequate the Commission's explanation for its failure to discuss the implications of long-term exposure to RF radiation, exposure to RF pulsation or modulation, or the implications of technological developments that have occurred since 1996, including the ubiquity of wireless devices and Wi-Fi, and the emergence of "5G" technology. In its brief, the Commission responds that it was not required to address these topics in its order because it "rationally concluded that the weight of scientific evidence does not support the existence of adverse health effects from radiofrequency exposure below the FCC's limits, regardless of the service or equipment at issue." Resp't's Br. at 45–46. (The Commission points out that "5G" cell towers, unlike traditional cell towers, are subject to its RF exposure limits.) Again, this explanation depends on the premise that RF radiation does not cause harmful health effects at levels below the Commission's current limits, and will not suffice absent a reasoned explanation for the Commission's determination that that premise is correct.

iii.

In addition to the Commission's inadequate response to the non-cancer-related effects of RF radiation on human health,

the Commission also completely failed even to acknowledge, let alone respond to, comments concerning the impact of RF radiation on the environment. That utter lack of a response does not meet the Commission's obligation to provide a reasoned explanation for terminating the notice of inquiry. The record contains substantive evidence of potential environmental harms. Most relevantly, the record included a letter from the Department of the Interior voicing concern about the impact of RF radiation from communication towers on migratory birds, *see* J.A. 8,379, 8,383–86. In the Department of the Interior's expert view, the Commission's RF radiation limits "continue to be based on thermal heating, a criterion now nearly 30 years out of date and inapplicable today." J.A. 8,383. "The [current environmental] problem," according to the Department of the Interior, "appears to focus on very low-level, non-thermal electromagnetic radiation." *Id.* Although the Commission has repeatedly claimed that it considered "inputs from [its] sister federal agencies[,]" *2019 Order*, 34 FCC Rcd. at 11,689, the Commission entirely failed to address the environmental harm concerns raised by the Department of the Interior. To be sure, the Commission could conclude that the link between RF radiation and environmental harms is too weak to warrant an amendment to its RF radiation limits. All we hold now is that the Commission should have said something about its sister agency's view rather than ignore it altogether. That lack of any reasoned explanation as to environmental harms does not satisfy the requirements of the APA.

iv.

The dissenting opinion portrays this case as about the Commission's disregard of just five articles and one Department of Interior letter. Not so. The record contained substantial information and material from, for example, the

American Academy of Pediatrics, J.A. 4,533; the Council of Europe, J.A. 4,242–44, 4,247–57; the Cities of Boston and Philadelphia, J.A. 4,592–99; medical associations, *see, e.g.*, J.A. 4,536–40 (California Medical Association); thousands of physicians and scientists from around the world, *see, e.g.*, J.A. 4,197–4,206 (letter to United Nations); J.A. 4,208–17 (letter to European Union); J.A. 5,173–86 (Frieburger Appeal by over one thousand German physicians); and hundreds of people who were themselves or who had loved ones suffering from the alleged effects of RF radiation, *see, e.g.*, J.A. 8,774–9,940; *see also* J.A. 4,218–39 (collecting statements from physicians and health organizations expressing concern about health effects of RF radiation).

The dissenting opinion then offers its own explanation as to why those select sources were not worth being addressed by the agency. This in-the-weeds assessment of scientific studies and assessments falls "outside our bailiwick[,]" Dissenting Op. at 10. More to the point, the Commission said none of what the dissenting opinion does. If it had and if those six sources fairly represented the credible record evidence seeking a change in Commission policy, that discussion likely would have sufficed. But just as *post hoc* rationales offered by counsel cannot fill in the holes left by an agency in its decision, neither can a dissenting opinion. *See Grace v. Barr*, 965 F.3d 883, 903 (D.C. Cir. 2020) ("[W]hen 'assessing the reasonableness of [an agency's action], we look only to what the agency said at the time of the [action]—not to its lawyers' post-hoc rationalizations.'") (second and third alterations in original) (quoting *Good Fortune Shipping SA v. Commissioner*, 897 F.3d 256, 263 (D.C. Cir. 2018)).

Instead, the Commission chose to hitch its wagon to the FDA's unexplained disinterest in some similar information. Importantly, the dissenting opinion does not dispute that the

FDA's conclusory dismissal of that evidence ran afoul of our precedent in *American Horse* and *American Radio*. It just says that the deficiency in the FDA's analysis cannot be imputed to a second agency, and so the dissenting opinion would hold dispositive "the fact that the Commission and the FDA are, to state the obvious, distinct agencies." Dissenting Op. at 5.

They certainly are. But that does not amount to a legal difference here. While imitation may be the highest form of flattery, it does not meet even the low threshold of reasoned analysis required by the APA under the deferential standard of review that governs here. One agency's unexplained adoption of an unreasoned analysis just compounds rather than vitiates the analytical void. Said another way, two wrongs do not make a right. *Compare City of Tacoma v. FERC*, 460 F.3d 53, 76 (D.C. Cir. 2006) ("[T]he action agency must not blindly adopt the conclusions of the consultant agency, citing that agency's expertise. Rather, the ultimate responsibility for compliance with the [Endangered Species Act] falls on the action agency."), *and Ergon-West Virginia, Inc. v. EPA*, 896 F.3d 600, 612 (4th Cir. 2018) ("Although the EPA is statutorily required to consider the [Department of Energy]'s recommendation, it may not turn a blind eye to errors and omissions apparent on the face of the report, which [petitioner] pointed out and the EPA did not address in any meaningful way. In doing so, the EPA 'ignore[d] important aspects of the problem.'") (internal citations omitted), *with Bellion Spirits, LLC v. United States*, No. 19-5252, slip op. at 13–14 (D.C. Cir. Aug. 6, 2021) (approving consultation by the Alcohol and Tobacco Tax and Trade Bureau ("TTB") with the FDA where the TTB "did not rubberstamp FDA's analysis of the scientific evidence or delegate final decisionmaking authority to FDA," but instead "systematically evaluated and explained its reasons for agreeing with FDA's analysis of each scientific study" and "then made its own determinations" about the claims at hand).

B.

Petitioners' remaining challenges under the APA are unavailing.

Petitioners first argue that the Commission failed to respond to record evidence that exposure to RF radiation at levels below the Commission's current limits may cause cancer. Specifically, Petitioners argue the Commission failed to mention the IARC's classification of RF radiation as possibly carcinogenic to humans, and its 2013 monograph regarding that classification, on which the Commission's notice of inquiry specifically sought comment. Petitioners also argue that the Commission failed to adequately respond to two 2018 studies—the National Toxicology Program ("NTP") study and the Ramazzini Institute study—that found increases in the incidences of certain types of cancer in rodents exposed to RF radiation. Had these 2018 studies been available prior to the IARC's publication of its monograph, Petitioners assert, the IARC would have likely classified RF radiation as "probably carcinogenic," rather than "possibly carcinogenic." This is so, according to Petitioners, because the IARC will classify an agent as "possibly carcinogenic" if there is "limited evidence" that it causes cancer in humans and animals, and as "probably carcinogenic" if there is "limited evidence" that it causes cancer in humans and "sufficient evidence" that it causes cancer in animals. In its 2013 monograph, the IARC found "limited evidence" that RF radiation causes cancer in humans and animals, and therefore classified RF radiation as "possibly carcinogenic." Int'l Agency for Rsch. on Cancer, *Non-Ionizing Radiation, Part 2*: *Radiofrequency Electromagnetic Fields*, 102 IARC MONOGRAPHS ON THE EVALUATION OF CARCINOGENIC RISKS TO HUMANS 419 (2013) (emphases omitted). Petitioners assert that the NTP and Ramazzini Institute studies provide "sufficient evidence" that RF radiation

causes cancer in animals. Therefore, according to Petitioners, had those studies been available prior to the IARC's publication of its monograph, the IARC would have found "limited evidence" that RF radiation causes cancer in humans and "sufficient evidence" that it causes cancer in animals, and would have accordingly classified RF radiation as "probably carcinogenic."

Although the Commission's failure to make any mention of the IARC monograph does not epitomize reasoned decision making, we find that the Commission's order adequately responds to the record evidence that exposure to RF radiation at levels below the Commission's current limits may cause cancer. In contrast to its silence regarding non-cancerous effects, the order provides a reasoned response to the NTP and Ramazzini Institute studies. It explains that the results of the NTP study "cannot be extrapolated to humans because (1) the rats and mice received RF radiation across their whole bodies; (2) the exposure levels were higher than what people receive under the current rules; (3) the duration of exposure was longer than what people receive; and (4) the studies were based on 2G and 3G phones and did not study WiFi or 5G." *2019 Order*, 34 FCC Rcd. at 11,693 n.33. And the order cites a response to both studies published by the International Commission on Non-Ionizing Radiation Protection that provides a detailed explanation of various inconsistencies and limitations in the studies and concludes that "consideration of their findings does not provide evidence that radiofrequency EMF is carcinogenic." INT'L COMM'N ON NON-IONIZING RADIATION PROT., ICNIRP NOTE ON RECENT ANIMAL CARCINOGENESIS STUDIES 6 (2018), https://www.icnirp.org/cms/upload/publications/ICNIRPnote2018.pdf; *see also 2019 Order*, 34 FCC Rcd. at 11,693 n.34. Petitioners' contention that the IARC would have classified RF radiation as "probably carcinogenic" had the NTP and Ramazzini Institute studies

been published earlier is speculative, particularly in light of the International Commission on Non-Ionizing Radiation Protection's evaluation of those studies. And the IARC monograph's classification of RF radiation as "possibly carcinogenic" is not so contrary to the Commission's determination that exposure to RF radiation at levels below its current limits does not cause cancer as to render that determination arbitrary or capricious.

Petitioners also argue that the Commission's order impermissibly fails to respond to various "additional legal considerations." Specifically, Petitioners argue that the order (i) ignores "express invocations of constitutional, statutory and common law based individual rights," including property rights and the rights of "bodily autonomy and informed consent"; (ii) fails to explain whether FCC regulation preempts rights and remedies under the Americans with Disabilities Act and the Fair Housing Act; (iii) does not assess the costs and benefits associated with maintaining the Commission's current limits; (iv) does not resolve the question of whether "those advocating more protective limits have to prove the existing limits are inadequate," or whether the Commission carries the burden of proving that its existing limits are adequate; and (v) overlooks that the Supreme Court's decision in *Jacobson v. Massachusetts*, 197 U.S. 11 (1905), "flatly requires that the Commission allow for some remedy for those who suffer from exposure." Pet'rs' Br. at 84–101.

These arguments are not properly before us. The Communications Act provides that a petition for reconsideration is a "condition precedent to judicial review" of "questions of fact or law upon which the Commission . . . has been afforded no opportunity to pass." 47 U.S.C. § 405(a). We will accordingly only consider a question raised before us if "a reasonable Commission *necessarily* would have seen the

question . . . as part of the case presented to it." *NTCH, Inc. v. FCC*, 841 F.3d 497, 508 (D.C. Cir. 2016) (quoting *Time Warner Ent. Co. v. FCC*, 144 F.3d 75, 81 (D.C. Cir. 1998)). Petitioners did not submit a petition for reconsideration to the Commission, and they point to no comments raising their "additional legal considerations" in such a manner as to necessarily indicate to the Commission that they were part of the case presented to it.

Although Petitioners assert that the "Cities of Boston and Philadelphia specifically flagged [the issue of whether FCC regulation preempts rights and remedies under the Americans with Disabilities Act and the Fair Housing Act] and sought clarification," Pet'rs' Br. at 86, they are incorrect. The Cities of Boston and Philadelphia merely observed that the Second Circuit's decision in *Cellular Phone Taskforce* did not address whether "'electrosensitivity' [is] a cognizable disability under the Americans with Disabilities Act," J.A. 4,598. And the Cities noted that "the FCC and its sister regulatory agencies share responsibility for adherence to the ADA," J.A. 4,598–99, and urged the Commission to "lead in advice to electrosensitive persons about prudent avoidance," J.A. 4,599. This did not put the Commission on notice that the question whether FCC regulation preempts rights and remedies under the Americans with Disabilities Act and the Fair Housing Act was part of the case presented to it. Nor did a comment asserting that "[t]he telecommunications Act should not be interpreted to injure an identifiable segment of the population, exile them from their homes and their city, leave them no place where they can survive, and allow them no remedy under City, State or Federal laws or constitutions." J.A. 10,190. And Petitioners point to no comments that did a better job of flagging their other "additional legal considerations" for the Commission. The Commission therefore did not have an opportunity to pass on

these arguments, so we may not review them. 47 U.S.C. § 405(a).

C.

Petitioners also argue that NEPA required the Commission to issue an EA or EIS regarding its decision to terminate its notice of inquiry.

Petitioners are wrong. The Commission was not required to issue an EA or EIS because there was no ongoing federal action regarding its RF limits. The Commission already published an assessment of its existing RF limits that "'functionally' satisfied NEPA's requirements 'in form and substance.'" *EMR Network*, 391 F.3d at 272 (quoting *Cellular Phone Taskforce*, 205 F.3d at 94–95). NEPA obligations attach only to "proposals" for major federal action. *See* 42 U.S.C. § 4332(c); *see also* 40 C.F.R. § 1502.5. Once an agency has satisfied NEPA's requirements, it is only required to issue a supplemental assessment when "there remains major federal action to occur." *W. Org. of Res. Councils v. Zinke*, 892 F.3d 1234, 1242 (D.C. Cir. 2018) (internal quotation marks omitted) (quoting *Marsh v. Ore. Nat'l Res. Council*, 490 U.S. 360, 374 (1989)). An agency's promulgation of regulations constitutes a final agency action that is not ongoing. *Id.* at 1243. Once an agency promulgates a regulation and complies with NEPA's requirements regarding that regulation, it is not required to conduct any supplemental environmental assessment, *even if* its original assessment is outdated. *Id.* at 1242. Such is the case here. As we explained in *EMR Network* in response to the argument that new data required the Commission to issue a supplemental environmental assessment of its RF guidelines under NEPA, "the regulations having been adopted, there is at the moment no ongoing federal action, and no duty to

supplement the agency's prior environmental inquiries." 391 F.3d at 272 (internal quotation marks and citation omitted).

That the Commission voluntarily initiated an inquiry to "determine whether there is a need for reassessment of the Commission radiofrequency (RF) exposure limits and policies" does not change the analysis. *2013 Notice of Inquiry*, 28 FCC Rcd. at 3,501. As the Supreme Court explained long ago, "the mere contemplation of certain action is not sufficient to require an impact statement" under NEPA, *Kleppe v. Sierra Club*, 427 U.S. 390, 404 (1976) (internal quotation marks omitted), because, as in this case, "the contemplation of a project and the accompanying study thereof do not necessarily result in a proposal for major federal action," *id.* at 406. *See also Pub. Citizen v. Off. of U.S. Trade Representatives*, 970 F.2d 916, 920 (D.C. Cir. 1992) ("In accord with *Kleppe*, courts routinely dismiss NEPA claims in cases where agencies are merely contemplating a particular course of action but have not actually taken any final action at the time of suit.") (collecting cases). Were the Commission to propose revising its RF exposure guidelines, it might be required to prepare NEPA documentation. But since the Commission for now has not proposed to alter its guidelines, it need not yet conduct any new environmental review.

III.

For the reasons given above, we grant the petitions in part and remand to the Commission to provide a reasoned explanation for its determination that its guidelines adequately protect against harmful effects of exposure to radiofrequency radiation unrelated to cancer. It must, in particular, (i) provide a reasoned explanation for its decision to retain its testing procedures for determining whether cell phones and other portable electronic devices comply with its guidelines, (ii)

address the impacts of RF radiation on children, the health implications of long-term exposure to RF radiation, the ubiquity of wireless devices, and other technological developments that have occurred since the Commission last updated its guidelines, and (iii) address the impacts of RF radiation on the evironment. To be clear, we take no position in the scientific debate regarding the health and environmental effects of RF radiation—we merely conclude that the Commission's cursory analysis of material record evidence was insufficient as a matter of law. As the dissenting opinion indicates, there may be good reasons why the various studies in the record, only some of which we have cited here, do not warrant changes to the Commission's guidelines. But we cannot supply reasoning in the agency's stead, *see SEC v. Chenery Corp.*, 318 U.S. 80, 87–88 (1943), and here the Commission has failed to provide any reasoning to which we may defer.

So ordered.

KAREN LECRAFT HENDERSON, *Circuit Judge*, dissenting in part: "[A] court is not to substitute its judgment for that of the agency." *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). We thus must "uphold a decision of less than ideal clarity if the agency's path may reasonably be discerned." *Id.* (quoting *Bowman Transp., Inc. v. Arkansas-Best Freight Sys., Inc.*, 419 U.S. 281, 286 (1974)). I believe my colleagues' limited remand contravenes these first principles of administrative law. Because I would deny the petitions in full, I respectfully dissent from Part II.A.i.–iv. and Part III of the majority opinion.

I.

It is important to emphasize how deferential our standard of review is here—where, first, an agency's decision to terminate a notice of inquiry without initiating a rulemaking occurred after the agency opened the inquiry on its own and, second, the inquiry involves a highly technical subject matter at the frontier of science. As the majority recognizes, "[t]he arbitrary and capricious standard of the Administrative Procedure Act 'encompasses a range of levels of deference to the agency.'" Maj. Op. 8 (quoting *Am. Horse Prot. Ass'n v. Lyng*, 812 F.2d 1, 4 (D.C. Cir. 1987)). The majority further acknowledges that the Federal Communications Commission's (Commission or FCC) "order is entitled to a high degree of deference." *Id.* at 9. And our precedent also makes plain that "[i]t is only in the rarest and most compelling of circumstances that this court has acted to overturn an agency judgment not to institute rulemaking." *WWHT, Inc. v. FCC*, 656 F.2d 807, 818 (D.C. Cir. 1981); *see also Cellnet Commc'n, Inc. v. FCC*, 965 F.2d 1106, 1111 (D.C. Cir. 1992) ("an agency's refusal to initiate a rulemaking is evaluated with a deference so broad as to make the process akin to non-reviewability"). For the reasons that follow, I believe the Commission's order does not fit those rarest and most compelling circumstances.

A.

We have held that research articles containing tentative conclusions do not provide a basis for disturbing an agency's decision not to initiate rulemaking. *See EMR Network v. FCC*, 391 F.3d 269, 274 (D.C. Cir. 2004). Nevertheless, the majority rejects reaching the same conclusion here regarding the petitioners' assertion that radiofrequency (RF) radiation exposure below the Commission's limits can cause negative health effects unrelated to cancer. To do so, it relies on five research articles in an over 10,500-page record. *See* Maj. Op. at 10–11.[1]

A close inspection of the five research articles confirms that they also "are nothing if not tentative." *EMR Network*, 391 F.3d at 274. The Foerster article concludes "[o]ur findings *do not provide conclusive evidence* of causal effects and should be *interpreted with caution* until confirmed in other populations." Joint Appendix (J.A.) 6,006 (Milena Foerster et al., *A Prospective Cohort Study of Adolescents' Memory Performance and Individual Brain Dose of Microwave Radiation from Wireless Communication*, 126 ENV'T HEALTH PERSPS. 077007 (July 2018)) (emphases added).[2] The Lai

[1] "The record in an informal rulemaking proceeding is 'a less than fertile ground for judicial review' and has been described as a 'sump in which the parties have deposited a sundry mass of materials.'" *Pro. Drivers Council v. Bureau of Motor Carrier Safety*, 706 F.2d 1216, 1220–21 (D.C. Cir. 1983) (quoting *Nat'l Res. Def. Council, Inc. v. SEC*, 606 F.2d 1031, 1052 (D.C. Cir. 1979)).

[2] *See also* J.A. 5,995 ("[T]he health effects of [exposure to radiofrequency electromagnetic fields (RF-EMFs)] are still unknown. . . . [T]o date studies addressing this topic have produced inconsistent results."); J.A. 6,005 ("Although we found decreases in figural memory, some experimental and epidemiological studies on

article provides a similarly murky picture of the current science. *See* J.A. 5,320–68 (Henry Lai, *A Summary of Recent Literature (2007–2017) on Neurological Effects of Radiofrequency Radiation*, *in* MOBILE COMMC'NS & PUB. HEALTH 187–222 (M. Markov ed., 2018)). In summarizing the results of human studies on the behavioral effects of RF radiation, the Lai article lists 31 studies that showed *no significant* behavioral effects compared to 20 studies that showed behavioral effects. *See* J.A. 5,327–32. Moreover, of the 20 studies that showed a behavioral effect, at least four found behavioral *improvements*, not negative health effects.

Even the Yakymenko article, which asserts that 93 of 100 peer-reviewed studies found low-intensity RF radiation induces oxidative effects in biological systems, fails to address the critical issue—whether RF radiation below the Commission's current limits can cause negative health effects. *See* J.A. 5,243–58 (Igor Yakymenko et al., *Oxidative Mechanisms of Biological Activity of Low-Intensity Radiofrequency Radiation*, ELECTROMAGNETIC BIOLOGY & MED., EARLY ONLINE, 1–16 (2015)). Specifically, the Yakymenko article discusses the International Commission on Non-Ionizing Radiation Protection's (ICNIRP) recommended RF exposure limit—a specific absorption rate of 2 W/kg. *See* J.A. 5,243–44. But the ICNIRP's recommended RF exposure limit is significantly higher than the Commission's current limit—0.08 W/kg averaged over the whole body and a peak spatial-average of 1.6 W/kg over any 1 gram of tissue. *See* 47 C.F.R. § 1.1310(c). Accordingly, it is uncertain how many, if

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RF-EMF found *improvements* in working memory performance.") (emphasis added).

any, of the referenced peer-reviewed studies were conducted at RF radiation levels below the Commission's current limits.[3]

Given this record, I believe we should have arrived at the same conclusion we did in *EMR Network*—"nothing in th[e]se studies so strongly evidenc[es] risk as to call into question the Commission's decision to maintain a stance of what appears to be watchful waiting." *EMR Network*, 391 F.3d at 274. "An agency is not obliged to respond to every comment, only those that can be thought to challenge a fundamental premise." *MCI WorldCom, Inc. v. FCC*, 209 F.3d 760, 765 (D.C. Cir. 2000). A review of the five articles on which the majority opinion relies makes plain that the articles do not challenge a fundamental premise of the Commission's order. Instead, it "cherry-pick[s] the factual record to reach [its] conclusion." *Ortiz-Diaz v. U.S. Dep't of Hous. & Urb. Dev.*, 867 F.3d 70, 79 (D.C. Cir. 2017) (Henderson, J., concurring in the judgment).

My colleagues assert that "[t]he dissenting opinion portrays this case as about the Commission's disregard of just five articles." Maj. Op. 22. But their attempt to "turn the tables" plainly fails. It is they who chose the five articles, *see* Maj. Op. 10–11, to rely on as the basis for their remand, *see id.* at 15 ("the Commission's order remains bereft of any explanation as to why, *in light of the studies in the record*, its guidelines remain adequate") (emphasis altered); *id.* at 18 ("*the studies in the record* to which Petitioners point *do* challenge a fundamental premise of the Commission's decision to terminate its notice of inquiry") (first emphasis added). I discuss the five articles *only* to demonstrate that the studies "are nothing if not tentative." *EMR Network*, 391 F.3d at 274. Because the studies on which the majority relies plainly are

[3] The BioInitiative Report the majority opinion cites is hardly worth discussing because the self-published report has been widely discredited as a biased review of the science.

tentative, they do not challenge a fundamental premise of the Commission's decision and therefore cannot provide the basis for the majority's limited remand under our precedent.[4]

B.

I reach the same conclusion regarding the majority's remand of the petitioners' environmental harm argument. *See* Maj. Op. 21–22. The majority relies on a 2014 letter from the U.S. Department of the Interior (Interior) to the U.S. Department of Commerce about, *inter alia*, the impact of communications towers on migratory birds. But the Interior letter itself concedes that "[t]o date, no independent, third-party field studies have been conducted in North America on impacts of tower electromagnetic radiation on migratory birds." J.A. 8,383.

Moreover, the petitioners did not raise the Interior letter in the environmental harm section of their briefs. "We apply forfeiture to unarticulated [legal and] evidentiary theories not only because judges are not like pigs, hunting for truffles buried in briefs or the record, but also because such a rule ensures fairness to both parties." *Jones v. Kirchner*, 835 F.3d 74, 83 (D.C. Cir. 2016) (alteration in original) (citation omitted). And finally, the environmental harm studies on which

[4] The majority's hand wave to other record information, *see* Maj. Op. 22–23, does not carry the day. Rather than provide "substantial information," *id.* at 22, the cited material consists primarily of letters expressing generalized concerns about RF limits worldwide.

the petitioners *did* rely "are nothing if not tentative." *EMR Network*, 391 F.3d at 274.[5]

C.

More importantly, the majority's limited remand runs afoul of our precedent on this precise subject matter. In *EMR Network*, the petitioner asked "the Commission to initiate an inquiry on the need to revise [its] regulations to address the non-thermal effects" of RF radiation. 391 F.3d at 271. In denying the petition, we concluded "the [Commission]'s decision not to leap in, at a time when the [Environmental Protection Agency (EPA)] (and other agencies) saw no compelling case for action, appears to represent the sort of priority-setting in the use of agency resources that is least subject to second-guessing by courts." *Id.* at 273.

This time around, the majority faults the Commission for the U.S. Food and Drug Administration's (FDA) allegedly "conclusory statements" in response to the Commission's 2013 notice of inquiry. *See* Maj. Op. 14. The crux of the majority's position is that "[t]he statements from the FDA on which the Commission's order relies are practically identical to the Secretary's statement in *American Horse* and the

[5] *See, e.g.*, J.A. 5,231 (Albert Manville, II, *A Briefing Memorandum: What We Know, Can Infer, and Don't Yet Know about Impacts from Thermal and Non-Thermal Non-Ionizing Radiation to Birds and Other Wildlife* 2 (2016)) ("the direct relationship between electromagnetic radiation and wildlife health continues to be complicated and in cases involving non-thermal effects, still unclear"); J.A. 6,174 (Ministry of Env't & Forest, Gov't of India, *Report on Possible Impacts of Communication Towers on Wildlife Including Birds and Bees* 4 (2011)) ("exact correlation between radiation of communication towers and wildlife, are not yet very well established").

Commission's statement in *American Radio*." *Id.*[6] But the analogy to *American Horse* and *American Radio* does not hold water. The majority's Achilles' heel is the fact that the Commission and the FDA are, to state the obvious, distinct agencies.

In *American Horse*, the appellant relied on the results of a study commissioned by the U.S. Department of Agriculture (Agriculture) to support its request for revised Agriculture regulations. *Am. Horse*, 812 F.2d at 2–3. The study found that devices Agriculture had declined to prohibit caused effects falling within the statutory definition of the condition known as "sore";[7] and the Congress had charged Agriculture to eliminate the practice of soring show horses. *Am. Horse*, 812 F.2d at 2–3. Against this backdrop, we found the Agriculture Secretary's "two conclusory sentences [dismissing the need to revise agency regulations] . . . insufficient to assure a reviewing court that the agency's refusal to act was the product of reasoned decisionmaking." *Id.* at 6. But an agency head's terse dismissal of his own agency's study is not the case here. First, as noted *supra*, there is no conclusive study in the record, much less one commissioned by the agency whose regulations are being considered for revision. Instead, the record contains dozens of highly technical studies from various sources—the credibility and findings of which we are ill-equipped to evaluate. And crucially, unlike in *American Horse*, the Commission requested the opinion of the FDA—the agency charged with "establish[ing] and carry[ing] out an electronic

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[6] *See Am. Radio Relay League, Inc. v. FCC*, 524 F.3d 227 (D.C. Cir. 2008).

[7] *See* 15 U.S.C. § 1821(3) ("The term 'sore' when used to describe a horse means that [as a result of any substance or device used on a horse's limb] such horse suffers, or can reasonably be expected to suffer, physical pain or distress, inflammation, or lameness when walking, trotting, or otherwise moving . . . .").

product radiation control program," 21 U.S.C. § 360ii(a)—studied that opinion and explained why it relied thereon in making its decision.

Similarly, in *American Radio*, the studies summarily dismissed by the FCC were studies the FCC sought to evaluate *itself*; we remanded for the FCC to explain why it failed to do so. *See Am. Radio*, 524 F.3d at 241. Moreover, *American Radio* addressed the reasoning underlying the FCC's *promulgation* of a rule, an action subjected to far less deference than an agency's decision not to initiate a rulemaking.[8]

I believe the Commission reasonably relied on the conclusions of the FDA, the agency statutorily charged with protecting the public from RF radiation. *See* 21 U.S.C. § 360ii(a) (FDA "shall establish and carry out an electronic product radiation control program designed to protect the public health and safety from electronic product radiation").[9] Our precedent is well-settled that "[a]gencies can be expected to 'respect [the] views of such other agencies as to those

[8] *See, e.g.*, *ITT World Commc'ns, Inc. v. FCC*, 699 F.2d 1219, 1245–46 (D.C. Cir. 1983), *rev'd on other grounds*, 466 U.S. 463 (1984) ("Where an agency promulgates rules, our standard of review is diffident and deferential, but nevertheless requires a searching and careful examination of the administrative record to ensure that the agency has fairly considered the issues and arrived at a rational result. Where, as here, an agency chooses *not* to engage in rulemaking, our level of scrutiny is even more deferential . . ." (emphasis in original) (footnotes and internal quotations omitted)).

[9] *See also In re Guidelines for Evaluating the Env't Effects of Radiofrequency Radiation*, 11 FCC Rcd. 15,123, 15,130 ¶ 18 (1996) ("The FDA has general jurisdiction for protecting the public from potentially harmful radiation from consumer and industrial devices and in that capacity is expert in RF exposures that would result from consumer or industrial use of hand-held devices such as cellular telephones.").

problems' for which those 'other agencies are more directly responsible and more competent.'" *City of Bos. Delegation v. FERC*, 897 F.3d 241, 255 (D.C. Cir. 2018) (second alteration in original) (quoting *City of Pittsburgh v. Fed. Power Comm'n*, 237 F.2d 741, 754 (D.C. Cir. 1956)). That is precisely what the Commission did here.

The Commission's *2013 Notice of Inquiry* explained that the Commission intended to rely on, *inter alia*, the FDA to determine whether to reassess its own RF exposure limits. *See In re Reassessment of Fed. Commc'ns Comm'n Radiofrequency Exposure Limits & Policies*, 28 FCC Rcd. 3,498, 3,501 ¶ 6 (2013) (*2013 Notice of Inquiry*) ("Since the Commission is not a health and safety agency, we defer to other organizations and agencies with respect to interpreting the biological research necessary to determine what [RF radiation] levels are safe."). And the Commission has consistently deferred to expert health and safety agencies in this context. *See id.* at 3,572 ¶ 211 (RF exposure limits adopted in 1996 "followed recommendations received from the [EPA], the [FDA], and other federal health and safety agencies").[10]

The Commission was true to its word. On March 22, 2019, it asked the FDA if changes to the RF exposure limits were

[10] *See also In re Guidelines for Evaluating the Env't Effects of Radiofrequency Radiation*, 12 FCC Rcd. 13,494, 13,505 ¶ 31 (1997) ("It would be impracticable for us to independently evaluate the significance of studies purporting to show biological effects, determine if such effects constitute a safety hazard, and then adopt stricter standards that [sic] those advocated by federal health and safety agencies. This is especially true for such controversial issues as non-thermal effects and whether certain individuals might be 'hypersensitive' or 'electrosensitive.'").

warranted by the current scientific research.[11] On April 24, 2019, the FDA responded:

> FDA is responsible for the collection and analysis of scientific information that may relate to the safety of cellphones and other electronic products. . . . As we have stated publicly, . . . the available scientific evidence to date does not support adverse health effects in humans due to exposures at or under the current limits, and . . . the FDA is committed to protecting public health and continues its review of the many sources of scientific literature on this topic.

J.A. 8,187 (Letter from Jeffrey Shuren, M.D., J.D., Dir., Ctr. for Devices and Radiological Health, U.S. Food & Drug Admin., Dep't of Health & Hum. Servs., to Julius Knapp, Chief, Off. of Eng'g & Tech., U.S. Fed. Commc'ns Comm'n (April 24, 2019)).[12] In my view, the Commission, relying on

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[11] *See* J.A. 8,184 (Letter from Julius Knapp, Chief, Off. of Eng'g & Tech., U.S. Fed. Commc'ns Comm'n, to Jeffrey Shuren, M.D., J.D., Dir., Ctr. for Devices and Radiological Health, U.S. Food & Drug Admin. (March 22, 2019)) ("Given that existing studies are continually being evaluated as new research is published, and that the work of key organizations such as [the Institute of Electrical and Electronics Engineers] and ICNIRP is continuing, we ask FDA's guidance as to whether any changes to the standards are appropriate at this time.").

[12] *See also Statement from Jeffrey Shuren, M.D., J.D., director of the FDA's Center for Devices and Radiological Health on the recent National Toxicology Program draft report on radiofrequency energy exposure*, FOOD & DRUG ADMIN. (Feb. 2, 2018), https://www.fda.gov/news-events/press-announcements/statement-jeffrey-shuren-md-jd-director-fdas-center-devices-and-radiological-health-recent-national (Since 1999, "there have been hundreds of

the FDA, reasonably concluded no changes to the current RF exposure limits were warranted at the time. *See In re Reassessment of Fed. Commc'ns Comm'n Radiofrequency Exposure Limits & Policies*, 34 FCC Rcd. 11,687, 11,691 ¶ 10 (2019) (*2019 Order*).

Simply put, the Commission's reliance on the FDA is reasonable "[i]n the face of conflicting evidence at the frontiers of science." *See Cellular Phone Taskforce v. FCC*, 205 F.3d 82, 90 (2d Cir. 2000). The majority takes issue with what it categorizes as "conclusory statements." Maj. Op. 14. But the Supreme Court's "*State Farm* [decision] does not require a word count; a short explanation can be a reasoned explanation." *Am. Radio*, 524 F.3d at 247 (Kavanaugh, J., dissenting in part). Brevity is even more understandable if the agency whose rationale is challenged relies on the agency the Congress has charged with regulating the matter.

Granted, "[w]hen an agency in the Commission's position is confronted with evidence that its current regulations are inadequate or the factual premises underlying its prior judgment have eroded, it must offer more to justify its decision to retain its regulations than mere conclusory statements." Maj.

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studies from which to draw a wealth of information about these technologies which have come to play an important role in our everyday lives. Taken together, all of this research provides a more complete picture regarding radiofrequency energy exposure that has informed the FDA's assessment of this important public health issue, and given us the confidence that the current safety limits for cell phone radiation remain acceptable for protecting the public health. . . . I want to underscore that based on our ongoing evaluation of this issue and taking into account all available scientific evidence we have received, we have not found sufficient evidence that there are adverse health effects in humans caused by exposures at or under the current radiofrequency energy exposure limits.").

Op. 9. But the majority opinion rests on an inaccurate premise—the Commission was not confronted with evidence that its regulations are inadequate nor have the factual premises underlying its RF exposure limits eroded. Sifting through the record's technical complexity is outside our bailiwick. If the record here establishes one point, however, it is that there is no scientific consensus regarding the "non-thermal" effects, if any, of RF radiation on humans. More importantly, the FDA, not the Commission, made the allegedly "conclusory statements" with which the majority takes issue and I believe the Commission adequately explained why it relied on the FDA's expertise.[13]

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[13] The majority asserts that "[o]ne agency's unexplained adoption of an unreasoned analysis just compounds rather than vitiates the analytical void." Maj. Op. 24. As set out *supra*, however, the Commission adequately explained its reliance—for the past 25 years—on the FDA's RF exposure expertise. Plus, after a review of "hundreds of studies," the FDA's conclusion is far from unreasoned. *See supra* note 12. And the two cases to which the majority points are inapposite. *See* Maj. Op. 24 (citing *City of Tacoma v. FERC*, 460 F.3d 53, 76 (D.C. Cir. 2006), and *Ergon-West Virginia, Inc. v. EPA*, 896 F.3d 600, 612 (4th Cir. 2018)). Importantly, unlike these petitions, neither case involves a decision not to initiate a rulemaking. As noted, inaction is reviewed under an especially deferential standard. It would be inappropriate to apply precedent using a less deferential standard to modify the standard applicable here. And finally, the Commission did not "blindly adopt the conclusions" of the FDA. *See City of Tacoma*, 460 F.3d at 76. Nor did it "turn a blind eye to errors and omissions apparent on the face of" the FDA's conclusions. *See Ergon-West Virginia*, 896 F.3d at 612.

The majority's citation to *Bellion Spirits, LLC v. United States*, No. 19-5252 (D.C. Cir. Aug. 6, 2021), is even further afield. First, *Bellion Spirits* addressed a "statutory authority" question—it did not apply arbitrary and capricious review, much less the especially

As in *EMR Network*, the record does not "call into question the Commission's decision to maintain a stance of what appears to be watchful waiting." 391 F.3d at 274. To hold otherwise begs the question: what was the Commission supposed to do? It has no authority over the level of detail the FDA provides in response to the Commission's inquiry. It admits that it does not have the expertise "to interpret[] the biological research necessary to determine what [RF radiation] levels are safe." *2013 Notice of Inquiry*, 28 FCC Rcd. at 3,501 ¶ 6. The Commission opened the *2013 Notice of Inquiry* "as a matter of good government" despite its "continue[d] . . . confidence in the current [RF] exposure limits." *Id.* at 3,570 ¶ 205. If it *had* reached a conclusion contrary to the FDA's, it most likely would have been attacked as *ultra vires*. For us to require the Commission to, in effect, "nudge" the FDA stretches both our jurisdiction as well as its authority beyond recognized limits.

Accordingly, I respectfully dissent from the limited remand set forth in Part II.A.i.–iv. and Part III of the majority opinion.[14]

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deferential standard applicable to a decision not to initiate a rulemaking. *See Bellion Spirits*, slip op. at 13. Second, to the extent *Bellion Spirits* is remotely relevant, I believe it supports my position. There, the Alcohol and Tobacco Tax and Trade Bureau "consulted with [the] FDA on a matter implicating [the] FDA's expertise and then considered that expertise in reaching its own final decision." *Id.* at 14. Again, in my view, the Commission did the same thing.

[14] Although I join Part II.B. of the majority opinion, I do not agree with the majority's aside, contrasting the Commission's purported silence regarding non-cancerous effects and its otherwise reasoned response. *See* Maj. Op. 26. As explained *supra*, I believe the Commission reasonably relied on the FDA's conclusion that RF radiation exposure below the Commission's limits does not cause negative health effects—cancerous or non-cancerous.