Nos. 21-1123, -1125

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

VIASAT, INC.,

Appellant,

v.

FEDERAL COMMUNICATIONS COMMISSION,

Appellee,

SPACE EXPLORATION HOLDINGS, LLC,

Movant-Intervenor.

On Appeal from the Federal Communications Commission
IBFS File No. SAT-MOD-20200417-00037

VIASAT'S MOTION TO STAY PENDING JUDICIAL REVIEW

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INTRODUCTION

The Federal Communications Commission has granted Space Exploration Holdings, LLC ("SpaceX") authority to deploy 2,824 additional operating satellites into low-Earth orbit ("LEO"), plus an unlimited number of replacements as satellites fail or reach the end of their five-year design lives. By way of comparison, approximately 10,000 satellites, *total*, have been launched in all of human history. The Commission granted SpaceX this authority without performing even the most basic form of environmental review, disregarding ample record evidence of significant environmental consequences. SpaceX has already launched almost three hundred satellites since the Order issued at the end of April, and is set to launch at least 120 satellites per month going forward. This Court should stay the Order pending judicial review, so that SpaceX does not cause irreparable harm to both Viasat and the public interest before the Court is able to review and vacate the Order.

SpaceX's planned deployment, which even the FCC recognizes is "unprecedented," A045 (¶ 58), threatens to affect the environment in myriad ways. As thousands of satellites largely disintegrate in the atmosphere *by design* after their useful lives, the pollutants they leave will deplete the ozone layer and contribute to climate change. SpaceX's satellites have also shown an alarmingly high rate of failure, meaning that—as the Commission essentially acknowledged—

SpaceX's massive deployment materially increases the likelihood of in-orbit collisions. Debris from collisions threatens to damage other satellites and hinder future launches. And SpaceX's large constellation will cause unprecedented light pollution, frustrating efforts to study and enjoy the night sky. Leading scientists and academics warn that SpaceX's planned deployment "risks multiple tragedies of the commons, including tragedies to ground-based astronomy, Earth orbit, and Earth's upper atmosphere." A444.

Under the National Environmental Policy Act ("NEPA") and the Commission's implementing regulations, the Commission must at least *consider* these potential environmental harms before granting SpaceX's application. Specifically, the Commission must "*require* the applicant to prepare an [Environmental Assessment]" ("EA") if available evidence shows that the particular action "*may* have a significant environmental impact," even if the general category of actions into which it falls ordinarily does not. 47 C.F.R. § 1.1307(c) (emphasis added).

The Commission here refused to discharge its legal obligation and approved SpaceX's application without the "well-considered decisionmaking" NEPA requires. *WildEarth Guardians v. Jewell*, 738 F.3d 298, 302 (D.C. Cir. 2013). Viasat and others explained, through hundreds of pages of briefing and more than 1,500 pages of exhibits, that SpaceX's thousands of additional LEO satellites at the

very least *may* impact the environment by polluting the atmosphere, producing dangerous debris, and altering the night sky. The Commission's response was not an explanation, but a conclusory statement that Viasat's arguments were "insufficient," "too vague," or otherwise "failed to set forth in detail reasons justifying or circumstances necessitating environmental consideration." A056, A059 (¶¶ 82, 87).

This Court is likely to vacate that decision. On this extensive record, "there is no real dispute" that granting SpaceX's modification *may* have a significant environmental impact. *American Bird Conservancy v. FCC*, 516 F.3d 1027, 1033 (D.C. Cir. 2008). Indeed, the *existence* of some impact is basically conceded; the Commission decided not to require an EA because it was unsure about the *extent* of that impact. Letting uncertainty cut *against* environmental review reflects precisely the "misunderstanding of the nature of the obligation imposed by [NEPA]" that led this Court to vacate a prior Commission no-EA decision. *Id.* at 1033-1034.

The Commission's Order will cause immediate and irreparable harms to Viasat and to the public. SpaceX can readily launch more than a thousand satellites while this appeal is pending—perhaps more. Once those satellites go up, they cannot be deorbited without leaving harmful compounds in the atmosphere—precisely what NEPA is designed to prevent. And while they are up, their higher

failure rate means a materially increased risk of catastrophic collisions—endangering Viasat's existing and planned satellite operations and irreparably harming *all* operators' ability to reach space. Moreover, SpaceX intends to use the unlawful advantage it has gained by skipping environmental review to compete with Viasat's satellite internet service. Whereas operators like Viasat have designed highly reliable systems, SpaceX has intentionally chosen to launch low-cost and unreliable satellites—and to make up for their high failure rate by launching more of them. The costs SpaceX is avoiding are falling, literally, on everyone else.

This Court should not allow SpaceX to rush its satellites into orbit while this Court decides whether the Commission wrongly skipped the required environmental review. Instead, this Court should complete its review before allowing these harms to occur. At the very least, it should expedite this appeal.

BACKGROUND

A. NEPA.

NEPA requires that federal agencies include "a detailed statement" regarding the environmental impact of any "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). A "major Federal action" includes an "[a]pproval of [a] specific project[]" by "permit or other regulatory decision." 40 C.F.R. § 1508.1(q)(3)(iv). An agency can

determine that a "category of actions" ordinarily does not have a significant environmental impact—known as a "categorical exclusion"—but must adopt procedures to address "extraordinary circumstances in which a normally excluded action may have a significant environmental impact." *Id.* § 1508.4. NEPA thus "places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action," ensuring "fully informed and well-considered decisionmaking." *WildEarth Guardians*, 738 F.3d at 302 (quotation marks omitted).

The Commission's NEPA regulations provide that, even when a particular category of actions (here, satellite licensing) ordinarily has no environmental impact, the Commission "*will require* the applicant to prepare an EA" if evidence is submitted showing that the particular action "*may* have a significant environmental impact." 47 C.F.R. § 1.1307(c) (emphases added). Under this "'may' standard," an EA is needed unless there is *no* possibility of a significant environmental impact: Uncertainty concerning the environmental impact of a Commission action "confirms, rather than refutes," the need for a NEPA assessment. *American Bird Conservancy*, 516 F.3d at 1033-1034. The regulations require no *separate* showing of "extraordinary circumstances"; the "'may' standard" constitutes the Commission's "procedures" for identifying such circumstances. *Id.*; *see also* 40 C.F.R. § 1508.4.

B. The Commission's approval of SpaceX's modification application.

The Order at issue here authorizes SpaceX to launch nearly 3,000 operating satellites—plus unlimited replacements. In two licensing decisions in 2018, the Commission gave preliminary approval for SpaceX to deploy a LEO satellite constellation comprising approximately 12,000 operating satellites. *Space Expl. Holdings, LLC*, 33 FCC Rcd. 3391, 3391 (2018); *Space Expl. Holdings, LLC*, 33 FCC Rcd. 11,434, 11,435 (2018). SpaceX intends to use that constellation to provide satellite-based internet services under the name Starlink. *See, e.g.*, A021-022 (¶¶ 9, 13). These decisions did not finally authorize SpaceX to deploy a single satellite; SpaceX had to make additional license modification applications. A013, A054-055 (¶¶ 2, 79). Accordingly, SpaceX's "Third Modification Application" sought final authorization to deploy a new tranche of 2,824 LEO satellites. A013-014 (¶ 4).

Viasat filed a petition pursuant to 47 C.F.R. § 1.1307(c), arguing that because SpaceX's satellites "may have a significant environmental impact," SpaceX's application required an EA. A093. In thousands of pages of exhibits, Viasat documented multiple environmental effects that SpaceX's deployments will cause over the 15-year term of SpaceX's license. Satellite launch and reentry will release harmful chemicals and metallic compounds into the atmosphere, contributing to climate change and ozone depletion. The satellites will create light

pollution, interfering with scientists' work and stargazers' enjoyment of the night sky. And the increased number of satellites will significantly elevate the risk of collisions, polluting space and threatening additional harms in orbit and on Earth.

The Commission nevertheless refused to conduct *any* environmental assessment. *See* A053 (¶ 77). The Commission implicitly recognized that there was *some* risk of significant environmental impact: It acknowledged that deorbiting satellites will "affect the chemicals entering the atmosphere," *id.* (¶ 82), and that it needed to "continue[] monitoring" *both* orbital debris *and* light pollution, *id.* (¶¶ 82, 87, 97(u)). Yet the Commission concluded that there was still no need for an EA because Viasat had not established with certainty the precise extent of environmental harm.

Viasat sought a stay before the Commission, and asked the Commission to rule on that request by June 1, 2020. The Commission failed to do so.

ARGUMENT

I. This Court is likely to hold that the Commission's refusal to require *any* environmental assessment failed to comply with NEPA.

Viasat documented multiple environmental effects that SpaceX's additional satellites threaten over the 15-year term of SpaceX's license. Yet despite *agreeing* with Viasat that these harms were possible, the Commission refused to conduct *any* environmental assessment.

This Court is likely to vacate that Order. Agency action is "arbitrary and capricious" if the agency "failed to consider an important aspect of the problem [or] offered an explanation for its decision that runs counter to the evidence before the agency." *Motor Vehicle Mfrs. Ass'n of U.S. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983); *see also Nevada v. Dep't of Energy*, 457 F.3d 78, 87-88 (D.C. Cir. 2006) (arbitrary-and-capricious standard applies to a NEPA challenge). Applying these principles, this Court will likely reject the Commission's conclusion that NEPA does not require *any* environmental assessment in this case—indeed, the Order contains the precise errors that led this Court to vacate the Commission's order in *American Bird Conservancy*.

A. The Order erroneously relied on uncertainty as a reason to *refuse* further assessment.

In *American Bird Conservancy*, the Commission made the same error under the same NEPA regulations, concluding that NEPA review was unnecessary because there had been no "scientific showing" of environmental impact. 516 F.3d at 1032-1033. This Court invalidated that decision. Conflict among scientific opinions about environmental impact, this Court explained, "confirms, rather than refutes," the need for NEPA analysis, because requiring "certainty before initiating NEPA procedures would jeopardize NEPA's purpose to ensure that agencies consider environmental impacts before they act rather than wait until it is too late." *Id.* at 1033-1034. By forging ahead where the environmental effects of its action

were not "fully known," the Commission "misunderst[ood] … the nature of the obligation imposed by the statute." *Id.* at 1033.

Despite this Court's "admoni[tion]," *id.* at 1033, the Commission repeated its mistake here. As detailed below, the Commission brushed aside extensive record evidence documenting potential environmental harms with a few cursory sentences that did little more than identify potential *uncertainty* concerning the *extent* of the relevant environmental impact. Indeed, the Commission implicitly recognized the *potential* for harm by requiring "continued monitoring" to protect the "public interest." A056, A059 (¶¶ 82, 87). That analysis "plainly contravenes the 'may' standard" of NEPA. *American Bird Conservancy*, 516 F.3d at 1033.

Correctly applied, the "may" standard is amply met here. The potential environmental harms arising from the Order are manifold, as discussed below.

B. Viasat is likely to succeed in showing that potential environmental harms from deorbiting warrant NEPA review.

Viasat established that chemical changes to the atmosphere resulting from the launch and reentry of thousands of Starlink satellites *may* have a significant environmental impact, satisfying 47 C.F.R. § 1.1307(c). The Commission refused to conduct further environmental assessments only by (1) requiring scientific certainty, and (2) failing to account for entire categories of environmental impact.

1. The Commission improperly dismissed Viasat's evidence of atmospheric harm as insufficiently certain.

As SpaceX itself touts, approval of its Starlink mega-constellation will lead to the launch and ultimate decay of thousands of satellites. Indeed, the whole premise of Starlink is to create a system of short-lived, expendable-by-design satellites that will largely burn up in the atmosphere—only for new, similarly expendable satellites to take their place. Of course, when satellites disintegrate, they do not simply vanish. Putting aside pieces that may fall to earth, *see* pp. 12-13, *infra*, the largely aluminum satellites produce aluminum oxide, or "alumina," which remains in the atmosphere. A097. Researchers have predicted that the reentry of satellite constellations like SpaceX's could lead to over 22 *million* pounds of alumina being dispersed in the atmosphere at a given point in time—of which Starlink will be the dominant contributor. A124.

Because alumina absorbs more radiation from Earth than it reflects from the sun, this mass of alumina will lead to warming of the stratosphere and upper troposphere—contributing to climate change. A122, A097-098. Alumina also damages the ozone layer. A119. SpaceX's many dozens of launches may independently harm the ozone layer as well. A118.

Notably, the Commission was "not persuaded by SpaceX's argument that the modification will not affect the chemicals entering the atmosphere." A056 (¶ 82). Nor did the Commission identify any basis for definitively determining that

the atmospheric impact of each satellite's disintegration, multiplied by the thousands of satellites SpaceX intends to launch, created *zero* risk of substantial environmental impact. The Commission simply concluded that Viasat's evidence did not establish, with sufficient certainty, "that additional environmental consideration is necessary." A056 (¶ 82). Refusing to conduct a NEPA analysis based on *uncertainty* "plainly contravenes the 'may' standard." *American Bird Conservancy*, 516 F.3d at 1033.

Indeed, *even SpaceX* did not dispute that satellite reentry would lead to an increase in alumina in the atmosphere; SpaceX merely quibbled about the precise amount of alumina its satellites would produce. A394. But any dispute over the *magnitude* of the environmental effect of SpaceX-produced alumina is a reason *to require an EA*. That was this Court's precise holding in *American Bird Conservancy*. 516 F.3d at 1034.

The Commission took a similarly flawed tack in sidestepping Viasat's other evidence of atmospheric harm. The Commission dismissed as "vague" Viasat's evidence concerning the release of other chemical compounds, A056 (¶ 82), ignoring studies explaining that "[r]eentry is as much of an 'emission' as launch" and "[v]ery little is known about reentry dust production, the microphysics of the particles and how reentry dust could affect climate and ozone." A442. The Commission should have at least *assessed* these issues through an EA, not

dismissed them out of hand. After all, agencies cannot "shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as 'crystal ball inquiry.'" *Scientists' Institute for Public Information v. AEC*, 481 F.2d 1079, 1092 (D.C. Cir. 1973).

2. The Commission did not address entire categories of atmospheric and terrestrial impact.

The Commission also "entirely failed to consider an important aspect of the problem"—twice. *State Farm*, 463 U.S. at 43. First, the Commission did not evaluate how the substantial number of rocket launches needed to deploy SpaceX's thousands of satellites will affect atmospheric ozone levels. Because the FAA "prepared its own EA on the SpaceX launches," the FCC concluded that "no additional consideration of potential impacts associated with those launches is required." A056 (¶ 82). But the FAA's launch assessment was limited to the effects on air quality *below 3,000 feet* and the effects of greenhouse gas emissions on climate change. A431-432. The FAA did not evaluate how launch emissions affect ozone depletion or atmospheric chemistry more broadly. *See* A118; A447. The Commission never considered whether these missing pieces might warrant an EA.

Second, the Commission did not consider the potential harm from satellites and satellite debris that does *not* fully burn up in the atmosphere. Instead, the Commission explained that it had already "assessed the casualty risk associated

with the SpaceX satellites" when it considered "technical information" SpaceX submitted in a prior modification request. A057 (¶ 85). Even accepting *arguendo* the Commission's premise—that the satellites evaluated in SpaceX's earlier modification request and the satellites at issue here are equivalent—the Commission ignored what SpaceX's "technical information" actually said. Far from dismissing any casualty risk, that information identified "three unique components" that "may have a chance of reaching the Earth's surface with sufficient energy to result in human casualty," not to mention potential damage to wildlife and the natural environment. A409; *see also* A333. The Commission should have assessed the acknowledged potential that components from SpaceX's satellites could reach the Earth with sufficient force to kill.

C. Viasat is likely to succeed in showing that potential harms from light pollution warrant NEPA review.

Viasat also provided substantial evidence that deploying thousands of satellites will significantly alter the night sky. *See* A102-107; A125-169; A222-238; A333-341; A398-400. SpaceX will cause light pollution that is both unprecedented and harmful.

As the number of Starlink satellites grows, so does their light pollution, with a concomitant increase in "the potential for substantial adverse impacts to ground- and space-based astronomy." A423-424; *see also* A418-421. Viasat's evidence—principally from professional astronomers—shows that an extensive satellite

constellation like Starlink will have "significant negative [astronomical] impacts" and "increase significantly" background skyglow, making it difficult to observe and take photographs. *See* A146; A457; *see also* A399-400. For instance, professional astronomer Dr. Andy Lawrence warned that Starlink satellites pose a "[t]hreat to astronomical science" and "regularly 'photobomb[]' observations from both the ground and from space." A403; *see also* A125-169.

Increased light pollution creates aesthetic, social, cultural, and health effects. A102-105. Three separate scientific articles and a report from the United Nations document the negative effects of light pollution in areas ranging from human health (including sleep disruption and eye disorders) to animal migratory patterns. A170-223; A373-377; *Space Expl. Holdings, LLC*, 33 FCC Rcd. at 3399.

The Commission *acknowledged* these environmental impacts—but brushed them aside by pointing to SpaceX's purported attempts to mitigate them. Specifically, the Commission accepted SpaceX's "representation[s]" that it had "diminished the average brightness of its satellites," and "made commitments to the astronomy community regarding further reduction in the visibility of its satellites"; the Commission acknowledged, however, that SpaceX was "still testing some of [its purported] solutions," which presumably means that SpaceX is currently launching satellites without them. A059 (¶ 87). But neither partial mitigation nor "testing" toward more mitigation absolves the agency from

evaluating the impacts that undisputedly will still occur. To avoid the need for further environmental review, mitigation measures must "completely compensate for any possible adverse environmental impacts." *Cabinet Mountains Wilderness v. Peterson*, 685 F.2d 678, 682 (D.C. Cir. 1982); *accord, e.g.*, *Conner v. Burford*, 848 F.2d 1441, 1450 (9th Cir. 1988). And SpaceX's alleged mitigation efforts have *not* resolved the light pollution problem. A337; *see also* A168.

The Commission did not find complete mitigation; to the contrary, it implicitly acknowledged that SpaceX had not resolved the light-pollution issue, promising to "continue to monitor this situation" and encouraging SpaceX to further reduce its impact. A059 (¶ 87). If the evidence identified an ongoing light-pollution problem for SpaceX to "mitigate" and the Commission to "monitor," then it also established, at the very least, that SpaceX's constellation *may* have a significant light-pollution impact.

D. Viasat is likely to succeed in showing that increasing space pollution warrants NEPA review.

Viasat demonstrated that SpaceX's satellite constellation will increase the amount of pollution in space. It is undisputed that some of SpaceX's satellites will fail during its license term—indeed, many already have. A079; A252; A278; A434-437. As the Commission explained, satellites that fail cannot avoid collisions and thus "present a collision risk for as long as they remain on orbit." A047-048 (¶ 63). The Commission recognized that the number of failed satellites

might reach into the *hundreds*. A046-048 (¶¶ 61-63). And because SpaceX is launching its thousands of satellites into an already-crowded part of space, the collision risk is particularly acute. A343. The Order largely agreed, acknowledging that failing SpaceX satellites pose a collision risk, over the license term, of anywhere between 1-in-200 and 1-in-44.5. Quantifying the risk depended on the number of satellites launched and the precise failure rate—which was "a matter of significant contention in the record" that the Commission did not resolve. *See* A044-048 (¶¶ 58, 61, 63–64). This risk, the Commission concluded, requires "continued monitoring." A048 (¶ 64).

The Commission has repeatedly catalogued the dangers of orbital debris and collisions. It recently warned that at least some analysts believe certain orbits "are close to or have already reached a 'runaway' status" whereby the "collision hazard in the orbital region [] may be too high for most space operations." *Mitigation of Orbital Debris in the New Space Age*, FCC 20-54, at *2 & n.6 (Apr. 24, 2020). And it has likewise noted that "orbital debris poses a potential risk to the continued reliable use of these orbital regimes for space-based services and operations, as well as to the continued safety of persons and property in space and on the surface of the Earth." *Mitigation of Orbital Debris*, 19 FCC Rcd. 11,567, 11,570 (2004). It described why "[t]he effects of collisions involving orbital debris can be severe," explaining that a collision with an object as small as one centimeter in diameter

could cause damage to a functional spacecraft that "can be catastrophic." *Id.* The Commission also highlighted that "such collisions can produce a large amount of additional debris, which can be dispersed over a wide orbital area" and consequently cause a cascade of yet more catastrophic collisions. *Id.*

Despite recognizing the serious problems posed by orbital debris and collisions, the Commission *still* decided that no NEPA review was needed—in a single conclusory sentence. A060-061 (¶ 89). The Commission again failed to explain how the risks of collisions and the creation of orbital debris were serious enough to require "continued monitoring," yet simultaneously so inconsequential that even minimal environmental review is unnecessary. A048 (¶ 64). Moreover, the Commission's dismissal of Viasat's evidence cannot be squared with its recognition that it cannot be sure just how severe a collision risk Starlink poses. *Id.* (emphasis added). As discussed, uncertainty is a reason *to* conduct a NEPA review—not to play ostrich and hope that SpaceX's launch of thousands of satellites will somehow have no environmental impact.

II. Allowing SpaceX to launch more than a thousand satellites during the appeal will result in irreparable injury to Viasat.

A party will suffer irreparable harm when the injury it faces is imminent and a court cannot restore the status quo ante by unwinding the effects of the injury or providing adequate monetary compensation to the injured party. *League of Women Voters v. Newby*, 838 F.3d 1, 8 (D.C. Cir. 2016). The injury need not be certain;

where the contemplated harm is substantial and irreversible, a meaningful *risk* of injury is sufficient. *E.g.*, *id.* at 8-9 (injunctive relief "requires only a likelihood of irreparable injury"); *J.D. v. Azar*, 925 F.3d 1291, 1337 (D.C. Cir. 2019) (affirming preliminary injunction where movants demonstrated "increased health risks, and perhaps the permanent inability to obtain the abortion"). That standard is easily satisfied here. Viasat faces a number of imminent and irreversible injuries as a result of the Order—injuries that both confirm its standing to appeal and justify issuing the stay.

First, the materially increased risk of catastrophic collisions poses particular risks to Viasat. As the Commission has recognized, collisions involving even small objects "can produce a large amount of additional debris, which can be dispersed over a wide orbital area." *Orbital Debris*, 19 F.C.C. Rcd. at 11570. And that considerable debris can lead to further collisions, with each successive collision exponentially increasing the pre-existing level of in-orbit collision risk. A240-241; *see also* A499.

As described above, SpaceX's failure rate is troublingly high, and the Commission assumed that at least several of its satellites would fail during the next year. A048 (¶ 64). Those failed satellites cannot maneuver and "will present a collision risk for as long as they remain on orbit." A047-048 (¶ 63). Neither a

decision vacating the Order, nor anything else, can alleviate that threat once SpaceX's satellites fail. *See* A484-497.

Both failed SpaceX satellites and debris from a collision involving a SpaceX satellite can damage, disable, or destroy Viasat's satellites—with disastrous and irreparable consequences for Viasat's operations. *See Mountain States Legal Foundation v. Glickman*, 92 F.3d 1228, 1235 (D.C. Cir. 1996) (where "the potential [for] destruction" is "severe," even "relatively modest increments in risk should qualify" as injury-in-fact); *J.D.*, 925 F.3d at 1337. Viasat, in fact, operates at least one satellite at the same altitude as Starlink. A500; *see also* A482. Failed satellites and debris also increase the costs and complexity of Viasat's upcoming deployments. A482; A500-502. For instance, Viasat is under contract with the Department of Defense to operate a high-value LEO satellite in the same orbital range as the Starlink satellites, which it intends to launch in the next six-to-twelve months. A482; A500. During the likely duration of this appeal, therefore, failed SpaceX satellites pose a direct threat to Viasat.

Second, even without satellite failures or catastrophic collisions, the Order creates a more crowded orbital environment. More SpaceX satellites in LEO mean scarcer, less frequent launch windows for Viasat and every other operator. A501-502. Viasat must expend time and resources ensuring that its own satellite launches and operations avoid collisions caused by SpaceX's satellites. A501-502.

Third, Viasat will suffer unwarranted competitive injury. A502-503. SpaceX has explained that once it has enough Starlink satellites in LEO—and it launched 232 in May alone—it intends to use its environmentally irresponsible constellation to extend its reach geographically and directly compete with Viasat.[1] *See Louisiana Energy & Power Auth. v. FERC*, 141 F.3d 364, 367 (D.C. Cir. 1998) ("parties suffer constitutional injury in fact when agencies lift regulatory restrictions on their competitors").

The rate at which SpaceX is launching satellites makes both the extent and risk of harm during this appeal particularly high. A498-499. SpaceX is deploying satellites at an expedited rate, having carried out four launches in May alone.[2] Each launch carries approximately 60 satellites into orbit, thereby (1) appreciably increasing the risks of failures and collisions, and (2) moving its Starlink service toward full readiness (forecast for late 2021). A461.

These harms are irreparable because they cannot readily be undone and none of them could be adequately redressed by money damages. Though "[r]ecoverable monetary loss" is generally not irreparable, *Wisconsin Gas Co. v. FERC*, 758 F.2d 669, 674 (D.C. Cir. 1985), Viasat's losses occasioned by the Order are *not*

[1] SpaceX's CEO has publicly suggested such direct competition, opining that "Starlink poses a hazard to Viasat's profits[.]" A471.

[2] *See Launch Log*, Spaceflight Now, *available at* https://spaceflightnow.com/launch-log/ (last visited May 26, 2021).

recoverable. The Commission is shielded by sovereign immunity, and Viasat does not have a cause of action against SpaceX for securing the Commission's improper approval in the Order. *See, e.g.*, *Regeneron Pharm. v. HHS*, 2020 WL 7778037, at *4 (S.D.N.Y. Dec. 30, 2020) (collecting cases holding that party suffers irreparable injury when sovereign immunity bars it from recovering for its losses). Even where economic losses *are* recoverable, the loss of customers, goodwill, and market opportunities are irreparable injuries. *E.g.*, *BellSouth Telecomms. v. MCIMetro Access Transmission Servs., LLC*, 425 F.3d 964, 970 (11th Cir. 2005) ("the loss of customers and goodwill is an irreparable injury" (quotation marks omitted)); *Abbott Labs. v. Sandoz, Inc.*, 544 F.3d 1341, 1361-62 (Fed. Cir. 2008) (cataloguing cases holding that loss of market opportunities constitutes irreparable injury); *Tom Doherty Assocs. v. Saban Ent.*, 60 F.3d 27, 37 (2d Cir. 1995) ("a threatened loss of good will and customers, both present and potential" constitutes irreparable injury).

III. Any harm to SpaceX does not warrant denying a stay.

If this Court upholds the Commission's NEPA ruling, the only effect of the stay would be to delay SpaceX's ability to launch satellites pursuant to the Order by some number of months. SpaceX argued before the Commission that staying the Order will disrupt its supply chain and diminish the value of its satellites in orbit. But SpaceX cannot credibly claim significant reliance interests, especially

given that the Order notes that its authorization remains subject to subsequent material modification for a variety of reasons.[3] Moreover, SpaceX's purported harm from a temporary pause is far outweighed by the irreparable injuries to Viasat and the public if a stay is denied—especially given the high likelihood that this Court will vacate the Commission's Order altogether. *See, e.g.*, *Population Institute v. McPherson*, 797 F.2d 1062, 1081-1082 (D.C. Cir. 1986); *Iowa Utilities Bd. v. FCC*, 109 F.3d 418, 426 (8th Cir. 1996). Moreover, Viasat will work with the Commission and other parties to these consolidated appeals to expedite the appeal, mitigating any delay.

IV. A stay is in the public interest.

Because there is a "compelling public interest in the enforcement of NEPA," this Court has held that, "when an action is being undertaken in violation of NEPA, there is a presumption that injunctive relief should be granted"—a presumption that applies equally to stays of agency action. *Realty Income Tr. v. Eckerd*, 564 F.2d 447, 456 (D.C. Cir. 1977); *see also Cuomo v. U.S. Nuclear Regulatory Comm'n*, 772 F.2d 972, 976 (D.C. Cir. 1985) (applying presumption in the stay context).

[3] The Commission warned SpaceX that it might limit "additional deployments," and that "investments made toward operations … authorized in this order … assume the risk that operations may be subject to additional conditions or requirements as a result of any future Commission actions." A065-066 (¶ 97(w)).

Two principles underlie this presumption. First, "a project should not proceed, with its often irreversible effect on the environment, until the possible adverse consequences are known"; instead, courts must stop agencies from acting "in illegal ignorance of the consequences" of their actions. *Realty*, 564 F.2d at 456. Second, if NEPA review takes place after a project is well underway, "the momentum of additional work and investment" may "bind the agency to its initial decision," turning NEPA compliance into "an empty gesture." *Id.* at 456, 457.

Applying these principles, the public interest strongly favors a stay. SpaceX's launches risk precisely the "irreversible effect on the environment" that warrant a stay. *Id.* Thousands of Starlink satellites will release dangerous chemical compounds when they disintegrate in the atmosphere. Pieces of falling satellites can survive reentry and kill people.[4] The satellites will disrupt critical endeavors in astronomy and mar our ancestral commons by changing the appearance of the night sky. And the increased risks of collisions and orbital debris threaten both present and future users of space and the people and industries that depend on satellite-based communications and information services—far outweighing the short-term benefits of any internet access Starlink may provide. A499-500. None of these harms could be reversed after a decision by this Court.

[4] This risk has grown easier to appreciate in recent weeks. *See Chinese Rocket Debris Set to Hit Earth This Weekend—But No One Knows Where*, NBC News (May 7, 2021), *available at* https://tinyurl.com/RocketDebris.

Allowing SpaceX to launch more than a thousand satellites during the course of this appeal would also risk reducing any NEPA review ordered by this Court to "an empty gesture." *Realty*, 564 F.2d at 456-457. Faced with the prospect of decommissioning more than a thousand SpaceX satellites, the Commission would face enormous pressure to brush aside substantial environmental issues disclosed in an EA—pressure it would not face if considering the issue unburdened by a year's worth of improperly authorized satellite deployments.

CONCLUSION

This Court is likely to vacate the Order and direct the Commission to conduct at least *some* NEPA review of Starlink. Any launches should occur after that review, not before. This Court should stay the Order pending its review.

Dated: June 2, 2021

Respectfully submitted,

/s/ *William M. Jay*

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CERTIFICATE OF COMPLIANCE

I, William M. Jay, counsel for Appellant, hereby certify pursuant to Fed. R. App. P. 32(g) that the Motion for a Stay complies with the type-volume limitations of Fed. R. App. P. 27(d)(2). This motion was prepared in a proportionally spaced typeface using 14 point, Times New Roman font, and according to the word count of Microsoft Word, the word-processing system used to prepare the motion, the motion contains 5,200 words, excluding the parts of the document exempted by Fed. R. App. P. 32(f).

Dated: June 2, 2021

/s/ William M. Jay
William M. Jay

CERTIFICATE OF SERVICE

I hereby certify that on June 2, 2021 I electronically filed the foregoing document with the United States Court of Appeals for the D.C. Circuit by using the CM/ECF system. I certify that the counsel of record for Appellee and Movant-Intervenor are registered as ECF Filers and that they will be served by the CM/ECF system.

/s/ William M. Jay
William M. Jay

ADDENDUM

CERTIFICATE OF PARTIES

Pursuant to Circuit Rules 27(a)(4) and 28(a)(1)(A), Viasat, Inc. states that the following are the individuals or entities that participated in the proceedings before the Federal Communications Commission in this matter:

Akiak IRA Council
American Astronomical Society
Astroscale U.S. Inc.
AT&T Services, Inc.
The Balance Group
Cass Cable TV, Inc.
Computer & Communications Industry Association
DIRECTV Enterprises, LLC
DISH Network Corporation
DISH Network LLC
Go Long Wireless, Ltd.
Hughes Network Systems, LLC
INCOMPAS
Kepler Communications Inc.
Kodiak Archipelago Rural Regional Leadership Forum
Kuiper Systems LLC
O3b Limited
Pacific Dataport Inc.
RS Access, LLC
SES Americom, Inc.
Space Exploration Technologies Corp.
Spire Global, Inc.
Story Communications, LLC
Telesat Canada
Viasat, Inc.
Vision Broadband, LLC
WorldVu Satellites Limited, Debtor-in-Possession
Ada Agiak
John Agiak
Lucas Aishanna

Andrea Brower
Jacob Calderwood
Carey Halnier
Kalea Kaleak
Billy Killbear
Jonah Koonce
Kaden Kulukhon
Prof. Andy Lawrence
Jonathan McDowell
Vernon Samson
Collin Solomon
Joel M. Thomas
John Wallace

At present, the parties in this Court are:

Viasat, Inc., appellant/petitioner in Nos. 21-1123, 21-1125
DISH Network Corporation and DISH Network LLC, appellants in No. 21-1127
The Balance Group, appellant in No. 21-1128
Federal Communications Commission, appellee/respondent
United States of America, respondent in No. 21-1125 under 28 U.S.C. § 2344
Space Exploration Technologies Corp., proposed intervenor-appellee-respondent

CORPORATE DISCLOSURE STATEMENT

Pursuant to Federal Rule of Appellate Procedure 26.1 and Circuit Rules 26.1 and 27(a)(4), Viasat, Inc. states that it has no parent company and that no publicly held company has a 10% or greater ownership interest (such as stock or partnership shares) in Viasat, Inc.

Dated: June 2, 2021

Respectfully submitted,

/s/ *William M. Jay*

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