June 18, 2020

OPP Docket, U.S. EPA Docket Center (EPA/DC), (28221T)
1200 Pennsylvania Ave. NW
Washington, DC 20460-0001

RE: Comments on the Proposed Interim Registration Review Decisions for the Neonicotinoid Insecticide Class

The following comments are submitted on behalf of the Natural Resources Defense Council (NRDC) and our millions of members and activists nationwide. These comments supplement those previously submitted by NRDC, Sierra Club, and Pollinator Action Network North America (collectively, "Environmental Groups") on May 4, 2020 ("Comments," Attachment 1)[1] as well as the comments and petition submitted by NRDC (Attachment 2) on that date; both the Comments and petition are re-submitted along with this supplement. NRDC opposes the Environmental Protection Agency's (EPA) proposed interim registration review decisions (PID), which would permit continued widespread use of neonicotinoid pesticides. These comments are submitted to the following dockets:

Imidacloprid	(EPA-HQ-OPP-2008-0844)
Thiamethoxam	(EPA-HQ-OPP-2011-0581)
Clothianidin	(EPA-HQ-OPP-2011-0865)
Acetamiprid	(EPA-HQ-OPP-2012-0329)
Dinotefuran	(EPA-HQ-OPP-2011-0920)

I. LEGAL BACKGROUND

No pesticide may be sold or used unless it is registered with EPA under the Federal Insecticide, Fungicide, and Rodenticide Act. 7 U.S.C. § 136a(a). Before registering a pesticide, EPA must determine that it will "perform its intended function without unreasonable adverse effects on the environment" ("FIFRA standard"). *Id.* § 136a(c)(5)(C). The term "unreasonable adverse effects on the environment" means (1) "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide," or (2) "a human dietary risk from residues that result from a use of a pesticide in or on any food inconsistent with the standard under [the FDCA, 21 U.S.C. § 346a]." 7 U.S.C. § 136(bb).

During registration review, EPA prepares risk and benefit assessments to assess "any changes that may have occurred since the Agency's last registration decision" and determine whether those changes affect the registration's compliance with the FIFRA standard. 40 C.F.R. § 155.53(a). Based on those assessments, EPA ultimately issues a registration review decision, which is "the Agency's determination whether a pesticide meets, or does not meet, the standard for registration in FIFRA." *Id.* §

[1] Environmental Groups' Comments can be found at EPA-HQ-OPP-2008-0844-1780. These same comments were submitted to all five neonic dockets. *See* Comment Tracking Numbers 1k4-9gi2-aihp; 1k4-9gi2-u7s7; 1k4-9gi2-fdkx; 1k4-9gi2-1mmj; 1k4-9gi2-qvxy. However, it appears these comments have not yet been uploaded to all five dockets. NRDC has reattached both Environmental Groups' Comments and NRDC's petition with this Supplement.

155.57. As it has proposed for neonics, EPA may also issue an interim registration review decision before its final decision to "require new risk mitigation measures, impose interim risk mitigation measures, identify data or information required to complete the review, and include schedules for submitting the required data, conducting the new risk assessment and completing the registration review." *Id.* § 155.56. An interim registration review decision is itself final agency action.

II. COMMENTS

1. Neonics are broad-spectrum insecticides and do not offer selective control of insect pests. In the proposed interim decisions (PID), EPA indicates that neonics selectively target insect crop pests while preserving beneficial insects. *See, e.g.*, Imid. PID at 32 (imidacloprid demonstrates "minimal toxicity to *most* predatory and parasitoid insects") (emphasis added); C&T PID at 47 (drawing a distinction between neonics and "broad-spectrum insecticides like pyrethroids," which "may reduce populations of predatory and parasitic insects and result in secondary pest outbreaks later"). Likewise, organizations have asserted in comments that neonics selectively target crop pests while preserving beneficial insects. *See, e.g.*, Comments of the American Farm Bureau Federation at 1, 2, EPA-HQ-OPP-2008-0844-1752 (May 4, 2020) ("Farm Bureau Comments") ("Neonicotinoids offer farmers selective control over pests to maintain the presence of beneficial insects while keeping potential pests away."). This assumption is unfounded and contradicted by EPA's own analysis and evidence in the record; EPA's consideration of this purported benefit is, therefore, unsupported by substantial evidence.

EPA's risk assessments show that neonics demonstrate broad-spectrum, non-selective toxicity to insects. Initially, one of the central conclusions of EPA's environmental risk assessments is that neonics are extremely toxic to the most well-known, quintessentially "beneficial" insects: honeybees. *See, e.g.*, Imid. PID at 24 ("imidacloprid is classified as very highly toxic to adult honeybees"); C&T PID at 35 ("clothianidin and thiamethoxam are classified as toxic to adult honeybees").

Moreover, the Worldwide Integrated Assessment of the Impact of Systemic Pesticides on Biodiversity and Ecosystems—a comprehensive, international review of studies of the ecological effects of neonics—summarizes their broad-spectrum toxicity: "Neonicotinoid insecticides exhibit very high toxicity to a wide range of invertebrates, particularly insects, and field-realistic exposure is likely to result in both lethal and a broad range of important sublethal impacts." Leonard Pisa et al., *Effects of Neonicotinoids and Fipronil on Non-Target Invertebrates*, 22 Env. Sci. and Pollution Research, 68-102 (Sept. 17, 2014), https://bit.ly/2Y4uvdi. EPA repeatedly echoes the Worldwide Integrated Assessment, referring to neonics as "broad-spectrum" insecticides. *E.g.*, Benefits of Neonicotinoid Insecticide Use in Cucurbit Production and Impacts of Potential Risk Mitigation at 18, EPA-HQ-OPP-2008-0844-1634 ("growers rely on the neonicotinoids for the broad-spectrum activity and systemic properties."); *cf.* Review of "The Value of Neonicotinoids in North American Agriculture" prepared by AgInfomatics, LLC, for Bayer CropScience L.P., Mitsui Chemicals Agro, Inc., Syngenta Crop Protection, LLC, and Valent U.S.A. LLC, EPA-HQ-OPP-2008-0844-1641 ("[A]n important feature of neonicotinoids is the relatively broad-spectrum of activity."). Comments in support of neonics' continued registration similarly touted "the importance of neonicotinoids to growers" as a "broad-spectrum insecticide." Response from the Pesticide Re-evaluation Division to Comments on the Draft Risk Assessments and

Benefits Assessments Supporting the Registration Review of the Nitroguanidine-substituted Neonicotinoid Insecticides, EPA-HQ-OPP-2008-0844-1639 (Jan. 16, 2020). EPA's and commenters' characterization of neonics as "broad-spectrum" insecticides contradicts EPA's claim that they are "minimally toxic to most predatory and parasitoid insects."

In the PIDs, EPA does not explain any basis for its assumption that neonics exhibit selective toxicity, while preserving beneficial invertebrates; on this basis alone, its assumption is arbitrary and unsupported. EPA does, however, state at two places in the record that selective toxicity contributes to neonics' value. *See* Review of "The Value of Neonicotinoids in Turf and Ornamentals" prepared by AgInformatics, LLC for Bayer CropScience, Mitsui, Syngenta, and Valent, EPA-HQ-OPP-2011-0581-0385 (Feb. 3, 2020) (referencing the value of neonics' "target pest selectivity"); Review of "The Value of Neonicotinoids in North American Agriculture" prepared by AgInfomatics, LLC, for Bayer CropScience L.P., Mitsui Chemicals Agro, Inc., Syngenta Crop Protection, LLC, and Valent U.S.A. LLC ("The reports determined the value of neonicotinoids in their cropping systems *based on their target selectivity*" (emphasis added)). Neither review contains any evidence to support this characteristic. Instead, EPA explains that these statements are based on interviews with pesticide users. Those users allegedly reported valuing neonics because they *believed* that neonics exhibit selective toxicity for insect pests. But these statements do not support that assumption, and as explained above, EPA's analysis directly contradicts it.

Moreover, neither AgInformatics report is available in the docket. They are also not available in EPA's Docket Center and Reading Room, as the room has been closed to the public during the covid-19 pandemic. *See* EPA, EPA Docket Center and Reading Room Closed to Public Visitors, https://bit.ly/3ei6yFm (last visited June 17, 2020) ("Out of an abundance of caution for members of the public and our staff, the EPA Docket Center and Reading Room will be closed to public visitors beginning at the close of business on March 31, 2020 (4:30 pm) to reduce the risk of transmitting COVID-19."). Accordingly, EPA may not support its PIDs with these reports because they are not available in the record. *See* Comment at 38-40.

In sum, available evidence squarely contradicts the generalized claim that neonics target only pests, while preserving "most" beneficial invertebrate species. Imid. PID at 32. Consistent with its statutory responsibility to support its registration decisions with "substantial evidence," 7 U.S.C. § 136n(b), EPA cannot rely on this assumption—which is contradicted by the record— in its registration review decisions.

2. Prophylactic neonic use is antithetical to the core principles of Integrated Pest Management (IPM). Though definitions of IPM vary, none suggest that widespread, prophylactic pesticide use—which is the standard with neonic use in agriculture and elsewhere—is consistent with its principles. *See, e.g.*, U.S. Fish & Wildlife Service, Use of Agricultural Practices in Wildlife Management in the National Wildlife Refuge System (July 17, 2014) ("prophylactic use, such as seed treatment" of neonics "is not consistent with" IPM principles). EPA itself explains that under IPM, chemical control of pests should be a last resort: "Once monitoring, identification, and action thresholds indicate that pest control is required, and preventive methods are no longer effective or available, IPM programs then evaluate the proper control method both for effectiveness and risk." EPA, Integrated Pest Management (IPM) Principles, https://bit.ly/36H5pUO, last visited May 28, 2020. The "preventative

methods" referred to by EPA include "using cultural methods, such as rotating between different crops, selecting pest-resistant varieties, and planting pest-free rootstock." *Id.* Preventative methods do not include use of synthetic pesticides.

Other definitions similarly emphasize that use of synthetic pesticides should be used—if at all—only to address a demonstrated pest problem where other methods have failed. *See, e.g.*, University of California Agriculture and Natural Resources, Statewide Integrated Pest Management Program, https://bit.ly/2ZJDMJ3, last visited May 28, 2020 ("In IPM, pesticides are used only when needed and in combination with other approaches for more effective, long-term control. Pesticides are selected and applied in a way that minimizes their possible harm to people, nontarget organisms, and the environment. With IPM you'll use the most selective pesticide that will do the job and be the safest for other organisms and for air, soil, and water quality; use pesticides in bait stations *rather than sprays*; or spot-spray a few weeds *instead of an entire area*.") (emphasis added); IPM Institute of North America, What is Integrated Pest Management?, https://bit.ly/2X7BiT7 (last visited May 28, 2020) ("Non-chemical methods including prevention are the first line of defense. If pesticide use is necessary, products are available such as baits, gels and dusts, with low-toxicity active ingredients applied in ways that greatly limit potential for exposure.").

Neonics, as commonly used, do not comply with these principles. Neonics are used on over 80% of corn acres and about half of soybean acres nationwide. *See* Comments at 8. These treatments are entirely preventative, used without regard for whether there is a demonstrated pest problem. In fact:

> [Neonic seed treatments (NST)] are now used on almost triple the area historically treated with non-seed treatment insecticides . . . ; therefore, NSTs . . . have more than displaced non-seed treatment insecticide use on an area basis. This finding supports the apparent shift toward an "insurance" paradigm of pest management in maize, in which transgenic crops and NSTs are deployed even when target pest densities are expected to be low. This notion is also supported by a recent survey, in which 39% of maize growers using NSTs were not targeting any particular pest.

Margaret Douglas & John Tooker, *Large-Scale Deployment of Seed Treatments Has Driven Rapid Increase inUse of Neonicotinoid Insecticides and Preemptive Pest Management in U.S. Field Crops*, 49(8) Envtl. Sci. & Technol. 5088-97 (Mar. 20, 2015), https://bit.ly/3bNaXyM. The most widespread uses of neonics, therefore, contradict established IPM principles.

Several commenters assert, without support, that restricting neonic use will interfere with IPM measures. *See, e.g.*, Farm Bureau Comments at 2 (neonic use "makes IPM possible"); Comments of the Golf Course Superintendents Ass'n of America at 3, Document No. EPA-HQ-OPP-2008-0844-1760 (imidacloprid restrictions would "compromise the most cost-effective chemical tool they have in their insect IPM program"). To the contrary, EPA's proposed restrictions do not go nearly far enough to ensure that neonics are used in accordance with IPM principles. For example, EPA should, at a minimum, ban seed treatments and other prophylactic uses that carry enormous ecological costs with little or no demonstrated benefit. *See* Comments at 18-19 (citing peer-reviewed studies finding little benefit of seed treatments). Because such uses cause unreasonable adverse effects on the environment,

EPA must cancel their registrations. EPA should also explain how and why its ultimate registration review decisions are consistent with IPM principles.

3. EPA's failure to explain the connection between its cost-benefit analysis and its decision to approve continued registration of neonics is unlawful. Before approving continued use of neonic products, EPA must determine that they do not cause "unreasonable adverse effects on the environment," 7 U.S.C. § 136a(c)(5), "taking into account economic, social, and environmental costs and benefits of their use." *Id.* § 136(bb). This determination must be supported by substantial evidence. *Id.* § 136n(b). EPA must, therefore, weigh the costs and benefits of neonic use and *explain* how that analysis supports its decision to approve continued use. *See Motor Vehicle Mfrs' Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (agency must "examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made." (emphasis added) (quotations omitted)).

Instead of explaining how its cost-benefit analysis relates to its decision, EPA routinely relies on conclusory assertions that neonics satisfy the FIFRA standard. *See, e.g.*, Imid. PID at 40 ("The agency finds the remaining risks to be reasonable under FIFRA given the benefits of the use of imidacloprid."); C&T PID at 52 ("The agency finds the remaining risks to be reasonable under FIFRA, given the benefits of using clothianidin and thiamethoxam."). Such conclusory assertions are insufficient to support EPA's decision. *See, e.g.*, *Center for Biological Diversity v. NHTSA*, 538 F.3d 1198, 1223-24 (9th Cir. 2008). Because EPA fails to explain *why* the costs of neonic use are outweighed by their benefits, its PIDs are unsupported by substantial evidence.

5. EPA must, at minimum, attempt to quantify the costs of neonic use. The cost-benefit analysis required by FIFRA is meaningless if EPA may rely on purely qualitative assessments of costs and benefits of pesticide use. In its PIDs, EPA relies solely on general statements of risk without attempting to quantify the costs associated with those risks. *See, e.g.*, Imid. PID at 39 ("Risks of concern were identified to aquatic invertebrates, which play a foundational role in aquatic ecosystems. . . . Risks of concern were identified to honeybees"), 40 ("mitigation does not completely eliminate all risks of concern from the use of imidacloprid, however does reduce overall risk"). EPA also lists purported benefits—frequently with little or no support—and makes no attempt to quantify them. *See, e.g.*, Imid. PID at 39 (neonics are a "key tool for growers that provide unique and effective pest control"). Such conclusory statements cannot adequately support EPA's cost-benefit assessment or its determination that neonics satisfy the FIFRA standard.

Further, the agency does not explain why a quantitative assessment of costs and benefits is not required or feasible. Even if these impacts are difficult to quantify—a justification not actually provided by EPA—that does not excuse EPA's failure to try. *See, e.g.*, *Nat'l Treasury Empl. Union v. Horner*, 854 F.2d 490, 499 (D.C. Cir. 1988) (EPA's failure to "ma[k]e an expert judgment" about costs "despite plaintiffs' challenge to their cost justification as a bald and unsubstantiated claim" was arbitrary.); *Business Roundtable v. S.E.C.*, 647 F.3d 1144, 1149 (D.C. Cir. 2011) (explaining agency's decision was arbitrary because it "failed adequately to quantify the certain costs or to explain why those costs could not be quantified"). EPA's conclusory statements about the qualitative costs and benefits of neonic use fail to provide substantial evidence for its PIDs.

6. EPA must analyze and address substantial harms resulting from use and disposal of treated seeds via ethanol processing plants. EPA has failed to consider the significant environmental risks and costs of the use of neonic-treated seed to produce ethanol. Ethanol distilling plants may use excess neonic-treated seeds in the production process. *See* Croplife America et al., The Guide to Seed Treatment Stewardship at 11 (Attachment A) ("Properly permitted ethanol plants can use treated seed as an alternate power source" and "[a] very limited number of ethanol plants have permits to ferment treated seed."). Processing of excess neonic-treated seeds in this manner is likely to result in byproducts that accumulate enormous concentrations of neonics, resulting in a high risk of environmental contamination and harm. EPA must consider these effects during registration review.

For example, AltEn Ethanol operates an ethanol plant in Mead, Nebraska, that processes treated seeds. *See* Mark Pomajzl, Nebraska Department of Energy and Environment (NDEE), NPDES Wastewater Section, Memo to File (Mar. 17, 2020) (Attachment B) (recounting phone call wherein the manager of the AltEn plant expressed plans to begin rinsing pesticides off of treated seeds prior to processing). There are two main byproducts of the production process: leftover seed pulps known as "wet cakes," and wastewater. *See* Letter from David Haldeman, NDEE, to Tanner Shaw, President, AltEn (Jan. 30, 2020) (discussing notice of violation regarding disposal of wet cakes) (Attachment C). These cakes are stored outdoors at the facility and reportedly sold, likely as soil enhancements and/or feed grain for livestock. *See* Attachment C (discussing storage of wet cakes at site of AltEn plant and AltEn's claim that wet cakes "have value" and "can be land applied"); Letter from Scott Tingelhoff to David Haldeman, NDEE (Feb. 18, 2020) (Attachment D).

NDEE has detected enormous concentrations of neonics in wet cakes and wastewater at the AltEn facility. *See* Attachment J. The following is a summary of survey results.

Sampling Medium/Location	**Chemical**	**Concentration (ppb)**
Wastewater/West Lagoon	Clothianidin	58,400
	Imidacloprid	108
	Thiamethoxam	35,400
Wastewater/Overflow Lagoon	Clothianidin	44.7
	Thiamethoxam	26
Wet Cakes	Clothianidin	112,000
	Imidacloprid	485
	Thiamethoxam	30,500

Sampling Results (Oct. 8, 2019) (Excerpt- Attachment E; full text available through Nebraska Content Management Portal, https://bit.ly/2UZkmwD). These sampling results suggest that AltEn is collecting and processing large amounts of treated seed, concentrating neonics and other pesticides into waste materials that are stored on-site.

Moreover, NDEE inspectors have reported pollution emanating from the AltEn plant. First, blue dust, likely from treated seeds stored on-site, has been seen blowing out of barns and coating the surrounding area. *See* Jason Windhorst, NDEE, Memorandum to File (Feb. 18, 2020) (Attachment F). Second, NDEE inspectors witnessed and photographed a dark liquid discharge from the wet cake piles.

Id. Moreover, NDEE has issued at least one notice of violation to AltEn for unpermitted discharge of "wet cake containing pesticides." Letter from Shelley Schneider, NDEE, to Tanner Shaw, AltEn (May 1, 2020) (Attachment G) ("unidentified culvert has discharged liquid material from the wet cake storage area into the ditch along County Rd 10").

NDEE records also detail plans and attempts by AltEn to land apply waste products that likely contain neonics and/or other pesticides. First, AltEn applies wastewater from lagoons—found by EPA to contain neonic concentrations exceeding 50 thousand ppb—to fields as a means of disposal. *See* AltEn, 2019 NPDES Annual Report, (Excerpt- Attachment H; full text available through Nebraska Content Management Portal, https://bit.ly/2UZkmwD). AltEn also sought permission to land apply wet distillers grain contaminated with "pesticides and fungicides." Fax Transmission from AltEn Fax to NDEE-Waste Management Division (May 12, 2020) (Attachment I). That application was denied. Letter from Daniel LeMaistre, NDEE, to Scott Tingelhoff (May 20, 2020) (Attachment J). Further still, AltEn has been cited for numerous violations of its NPDES stormwater permit. *See* Complaint, Compliance Order, and Notice of Opportunity for Hearing, *In re: AltEn, LLC*, Case No. 3475 (Nebraska Dep't of Env. Quality, Dec. 28, 2018) (Attachment K). Based on these records, NRDC is concerned that use of neonic treated seeds in the ethanol production process may result in substantial environmental contamination and adverse effects on the environment.

Environmental impacts have been reported around the facility. Nearby residents have reportedly witnessed bee kills in the last several years as well as wildlife deaths during rain storms, possibly as a result of runoff or other neonic contamination from the facility. Local news outlets have reported residents' concerns about pesticide contamination from the facility. Mike McKnight, *Ethanol byproduct storage raises a stink around small community*, WOWT 6 News (Feb. 7, 2020), https://bit.ly/3e9MXqM.

EPA must consider and address costs associated with use of excess, expired, or otherwise leftover neonic treated seeds as an ethanol feedstock in its registration review decisions. FIFRA requires EPA to determine, based on substantial evidence, that the use of neonic-treated seeds do not cause "unreasonable adverse effects on the environment." 7 U.S.C. § 136a(c)(5). Such effects include the effects of both use and disposal. *See id.* § 136q(a)(1) (EPA may require registrants to submit data or studies regarding "disposal of excess quantities of the pesticide to support the . . . continued registration of a pesticide."). EPA must, therefore, investigate the effects of this practice, as well as its prevalence in ethanol facilities across the country. This is especially important because it appears likely that farmers have a greater incentive to sell their excess seed to an ethanol plant than they do to dispose of treated seed by burying it, in accordance with EPA's guidance. Critically, the practice at AltEn may not be an isolated incident; this destructive practice may be in use at many of the approximately 200 ethanol plants across the Midwest—many of which have a larger capacity than AltEn's Mead facility. *See* Ethanol Producer Magazine, U.S. Ethanol Plants, https://bit.ly/3egREik (last visited June 18, 2020). If EPA were to finalize its registration decision without conducting a full analysis of the risks and costs of this practice, its decision would be contrary to FIFRA, arbitrary, and unsupported by substantial evidence.

The treated article exemption cannot prevent EPA from exercising its authority to regulate and address this disposal method. FIFRA authorizes EPA to exempt from the act's requirements any pesticide that it determines "to be of a character which is unnecessary to be subject to [FIFRA] in order to carry out the purposes of [FIFRA]." 7 U.S.C. § 136w. Pursuant to this provision, EPA has exempted

neonic treated seeds from regulation as "treated articles."[2] 40 C.F.R. § 152.25. The ordinary use of treated seed carries substantial environmental costs, *see* Comments at 34, and the same is likely true for their use as feedstock in ethanol production. As we've argued, EPA must rescind its application of the treated article exemption to neonic-treated seeds in order to provide adequate mitigation for risks associated with their planting. *Id.* Any adverse impacts or risks identified from their use in ethanol production provides additional support for this argument.

7. Aquatic contamination with imidacloprid can be expected to have ecosystem-wide impacts at all concentrations above 0.01 µg /L. EPA has established a chronic benchmark for imidacloprid's toxicity to aquatic invertebrates: 0.01 µg /L, representing the most sensitive endpoint for these organisms. EPA, Comparative Analysis of Aquatic Invertebrate Risk Quotients Generated for Neonicotinoids Using Raby *et al.* (2018) Toxicity Data at 9 (Jan. 7, 2020). Concentrations of imidacloprid above this benchmark can be expected to have adverse effects on aquatic invertebrates. Indeed, because of additive and possible synergistic effects of exposure to multiple neonics, adverse effects are possible if the sum of all neonic concentrations exceeds 0.01 µg /L. *See* Dr. Pierre Mineau, *Impacts of Neonics in New York Water: Their Use and Threats to the State's Aquatic Ecosystems* at 4-5, https://on.nrdc.org/2zB6OQs.

Accordingly, those concentrations can also be expected to have indirect, trophic impacts on species that prey on aquatic invertebrates. As the Environmental Groups previously argued, EPA must fully consider indirect effects of pesticide use in its cost-benefit analysis and the resulting PIDs for all neonics. Comments at 16, 17.

Bayer CropScience claims in comments that "a threshold of 1.01 µg a.i./L (ppb) has been established as a level below which chronic exposures will not result in impacts on the aquatic invertebrate system function." As a result, Bayer claims that levels below 1.01 µg /L "will not have cascading impacts on other taxa or trophic levels." As explained above, EPA has established a benchmark of 0.01 µg /L; Bayer's statement to the contrary is not supported on balance in the record. Accordingly, EPA must take into account the indirect, ecosystem-wide impacts of aquatic invertebrate toxicity that results at neonic concentrations that exceed .01 µg /L.

8. EPA must consider the value of pollination services and honey production lost as a result of widespread neonic use. FIFRA requires EPA to consider economic, social, and environmental costs of pesticide use. 7 U.S.C. § 136(bb). In the PIDs, EPA identifies—but underestimates—the environmental risks posed by neonics, *see* Comments at 6-17, and completely ignores economic or social costs of neonic use. These costs are likely to be substantial. For example, the American Beekeeping Federation estimates that honey bees alone contribute nearly $20 billion dollars to the nation's agricultural economy. American Beekeeping Federation, Pollinator Facts, https://bit.ly/3ecW360. A Cornell University study found that insect pollinators contributed $29 billion to farm income in the U.S. in 2010. Krisha Ramanujan, *Insect pollinators contribute $29 billion to U.S. farm income*, Cornell Chronicle (May 22, 2012).

[2] EPA & the Pest Management Regulatory Agency of Canada, *Regulatory Directive: Harmonization of Regulation of Pesticide Seed Treatment in Canada and the United States*, § 2.1 (Apr. 11, 2003), https://bit.ly/3alDJ8T.

Similarly, EPA ignores the economic impact that widespread neonic use may have on the value of the commercial honey industry. The nation's honey crop in 2013 was valued at over $317 million. National Honey Board, Honey Industry Facts (April 2014), https://bit.ly/37CAg53. And honey bee declines have contributed to decreased honey production in recent years. *See* National Agricultural Statistics Service, Statistical Summary: Honey Bees at 2 (Sept. 2019), https://bit.ly/3e9yOKa (showing decrease in production from 2001 to the present). Even where beekeepers are able to replace lost hives, that comes at a substantial cost. Jodi Helmer, *Adopt a Beehive—Save a Beekeeper?*, NPR (Mar. 29, 2016) (replacement costs upward of $100 per hive).

The economic impact of neonics' toxicity to bees is, therefore, not just substantial; it is quantifiable. EPA must consider these costs and explain how the benefits of neonic use outweigh them.

III. CONCLUSION

For the foregoing reasons, as well as those set forth in comments submitted by Environmental Groups on May 4, 2020, EPA's PIDs violate FIFRA. The decisions would permit continued, widespread, prophylactic use of neonics in stark contrast with established IPM principles. These neonic uses cause unreasonable adverse effects on the environment. Accordingly, EPA must revise its PIDs to impose significant restrictions on neonic use, including bans on prophylactic uses, such as seed treatments.

Respectfully submitted,

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